Utah Energy Efficiency and Peak Reduction Annual Report

January 1, 2017 – December 31, 2017

Issued May 18, 2018

ROCKY MOUNTAIN POWER

POWERING YOUR GREATNESS

(This page intentionally left blank)

TABLE OF CONTENTS

List of Abbreviations and Acronyms 4
Executive Summary 5
Regulatory Activities 9
DSM Expenditures 13
Planning Process 14
Peak Reduction Programs 17
Irrigation Load Control 17
Cool Keeper 19
Energy Efficiency Programs 22
Residential Programs 24
wattsmart Homes 25
Home Energy Reports 29
Low Income Weatherization 32
Non-Residential Energy Efficiency 35
Communications, Outreach and Education 44
Evaluations 45

LIST OF ABBREVIATIONS AND ACRONYMS

CFL	Compact Fluorescent Lighting
DSM	Demand-side Management
HCD	Utah Department of Workforce Services, Housing and Community Development Division
HVAC	Heating, Ventilation and Air Conditioning
IRP	Integrated Resource Plan
kW	Kilowatt
kWh	Kilowatt hour
LED	Lighting-emitting Diode
MW	Megawatt
MWh	Megawatt hour
NTG	Net-to-Gross
PCT	Participant Cost Test
PTRC	Total Resource Cost Test with 10 percent adder
RIM	Ratepayer Impact Measure Test
Schedule 193	Demand-Side Management Cost Adjustment
TRC	Total Resource Cost Test
UCT	Utility Cost Test
VFD	Variable Frequency Drive

EXECUTIVE SUMMARY

PacifiCorp is a multi-jurisdictional electric utility providing retail service to customers in Utah, California, Idaho, Oregon, Washington, and Wyoming. Rocky Mountain Power, a division of PacifiCorp ("Company"), serves approximately 875,000 customers in Utah. Rocky Mountain Power, working in partnership with its retail customers and with the approval of the Public Utilities Commission of Utah ("Commission"), acquires energy efficiency and peak reduction resources as cost effective alternatives to the acquisition of supply-side resources. These resources assist the Company in efficiently addressing load growth and contribute to the Company's ability to meet system peak requirements.

Company energy efficiency and peak reduction programs provide participating Utah customers with tools that enable them to reduce or assist in the management of their energy usage, while reducing the overall costs to the Company's customers. These resources are relied upon in resource planning as a least cost alternative to supply-side resources.

This report provides details on program results, activities, expenditures, and status of the Demand-Side Management Cost Adjustment tariff rider ("Schedule 193") revenue for the performance period from January 1, 2017 through December 31, 2017.[1] The Company, on behalf of its customers, invested $55.8 million in energy efficiency and peak reduction resource acquisitions during the reporting period. The investment yielded approximately 372,945 megawatt hours ("MWh") in first year energy savings,[2] 3,889,755 MWh of lifetime savings[3] from 2017 energy efficiency acquisitions and approximately 71 megawatts ("MW") of capacity reduction from energy efficiency savings[4] and realized reductions associated with peak management activities of approximately 133 megawatts[5]. Net benefits based on the projected value of the energy savings over the life of the individual measures are estimated at $139.8 million[6].

The Demand-side Management ("DSM") portfolio was cost effective based on four of the five standard cost effectiveness tests[7] for the reporting period. The ratepayer impact cost test was less than 1.0 indicating near-term upward pressure was placed on the price per kilowatt-hour ("kWh") given a reduction in sales. The DSM portfolio cost effectiveness is provided in Table 1. Annual performance information for 2017 cost effectiveness, including inputs, is provided in detail in Appendix 2.

[1] Appendix 1 provides specific requirements from Docket No. 17-035-04 and where they are located in the annual report and appendices.
[2] Reported ex-ante savings are gross and at generation.
[3] Estimated lifetime savings of 2017 Energy Efficiency Acquisitions was calculated by multiplying First Year Acquisitions (measured at the generator) by the weighted average measure life of the portfolio of 10.6 years. No discount was assumed for possible savings degradation over the life of the measures. Savings are gross at generator.
[4] See Energy Efficiency Section for explanation on how the capacity contribution savings values are calculated.
[5] Realized load as measured at generation.
[6] See Table 1 – Utility Cost Test Net Benefits.
[7] Cost effectiveness results include realization rates and Net-to-Gross ("NTG") ratios.

Table 1 – DSM Portfolio Cost Effectiveness

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PacifiCorp Total Resource Test plus 10 percent (PTRC)[8]	2.18	$150,535,412
Total Resource Cost Test (TRC)[9]	1.98	$125,224,032
Utility Cost Test (UCT)[10]	2.23	$139,826,758
Participant Cost Test (PCT)[11]	3.31	$186,513,734
Ratepayer Impact Cost Test (RIM)[12]	0.89	($30,347,869)

2017 Performance Compared to Forecast

In Docket No 16-035-30 filed November 1, 2016, the Company filed its 2017 forecast for Class I load control and Class II energy efficiency programs against its Integrated Resource Plan ("IRP"). Overall, the Company achieved 97 percent of its Class I and Class II forecast. Table 2 compares the November filings to actual savings achieved.

[8] The PTRC is the total resource cost test with an additional 10 percent added to the benefit side of the benefit/cost formula to account for non-quantified environmental and non-energy benefits of conservation resources over supply side alternatives.
[9] The TRC considers the benefits and costs from the perspective of all utility customers, comparing the total costs and benefits from both the utility and utility customer perspectives. It's assumed to be the closest in valuation methodology to how supply-side resources are valued.
[10] The UCT provides a benefit to cost perspective from the utility only, comparing the total utility cost incurred to the benefit/value of the energy and capacity saved and contains no customer costs or benefits in calculation of the ratio.
[11] The PCT compares the portion of the resource paid directly by participants to the savings realized by the participants.
[12] The RIM examines the impact of energy efficiency expenditures on non-participating ratepayers overall. Unlike supply-side investments, energy efficiency programs reduce energy sales. Reduced energy sales can lower revenue requirements while putting near-term upward pressure on rates as the remaining fixed costs are spread over fewer kilowatt-hours.

Table 2
2017 Forecast to Actual Savings Comparison

Utah 2017 DSM Programs	2015 IRP for 2017 (Gross - at Gen)		2017 Forecast (Gross - at Gen)		2017 Actual (Gross - at Gen)	
	MWH	MW	MWH	MW	MWH	MW
Class 1 - Load Control Programs						
A/C Load Control		115		115		112
Irrigation Load Control		20		20		21
Total Class 1		**135**		**135**		**133**
Class 2 - Residential Programs						
Low Income			250	-	256	-
Home Energy Reports			53,566	10	55,274	10
wattsmart Homes			78,240	15	86,478	17
Total Residential Class 2	**N/A**		**132,056**	**25**	**142,008**	**27**
Class 2 - Non-Residential Programs						
wattsmart Business			251,954	48	230,937	44
Total Non-Residential Class 2	**N/A**		**251,954**	**48**	**230,937**	**44**
Total Class 2	**333,400**	**58**	**384,010**	**73**	**372,945**	**71**
Total Class 2 w/incremental HER savings			**330,444**	**62**	**319,112**	

2017 Performance

Program and Sector level results for 2017 are provided in Table 3.

Table 3[13]
Utah Program Results for January 1, 2017 – December 31, 2017[14]

Load Management Programs	MW/Yr Savings (at site)	MW/Yr Savings (at gen)	Program Expenditures
Cool Keeper	102	112	$ 4,022,435.95
Irrigation Load Control	19	21	$ 343,170.34
Total Load Management	**121**	**133**	**$ 4,365,606**
Energy Efficiency Programs	**kWh/Yr Savings (at site)**	**kWh/Yr Savings (at gen)**	**Program Expenditures**
Low Income Weatherization	234,206	256,030	$ 64,649
Home Energy Reporting	50,562,602	55,274,025	$ 3,020,132
wattsmart Homes	79,107,147	86,478,351	$ 11,837,537
Total Residential	**129,903,955**	**142,008,406**	**$ 14,922,318**
*watt*smart Business Agricultural	1,923,652	2,101,340	$ 614,753
*watt*smart Business Commercial	161,568,617	175,644,475	$ 26,035,542
*watt*smart Business Industrial	50,253,717	53,191,047	$ 7,755,149
Total *watt* smart Business	**213,745,986**	**230,936,861**	**$ 34,405,444**
Total Energy Efficiency	**343,649,941**	**372,945,267**	**$ 49,327,762**
Other Portfolio Expenditures			
		Outreach and Communications	$ 1,227,072
		Portfolio - EM&V Non-Residential	$ 300,233
		Portfolio - EM&V Residential	$ 377,464
		Portfolio - Systems Support	$ 147,244
		Portfolio Potential Study	$ 10,659
		Portfolio Energy Code Training	$ 49,927
		Total Utah Program Expenditures	**$ 55,805,968**

[13] Reported savings are ex-ante.
[14] The values at generation include line losses between the customer site and the generation source. The Company's line losses by sector for 2017 are 9.32 percent for residential, 8.71 percent for commercial, 5.85 percent for industrial and 9.24 percent for irrigation.

REGULATORY ACTIVITIES

During the reporting period, the Company made a number of filings with the Commission to be in compliance with various reporting requirements and to modify DSM programs. The Company also provided various reports and evaluations to the DSM Steering Committee.

- On January 18, 2017, the Company filed an application to adjust the requirements for the DSM Annual Energy Efficiency and Peak Load Reduction Report in Docket No. 17-035-04. Key modifications included changing the due date of the report and updating the type of information to be included. The Commission approved these modifications in its order issued February 16, 2017, with an effective date of February 17, 2017.

- On January 24, 2017, the Company circulated its quarterly DSM Balancing Account Report for the fourth quarter of 2016 to the DSM Steering Committee.

- On February 27, 2017, the Company filed an advice letter in Docket No. 17-035-T04 to modify Schedule 140 tariff sheets for the wattsmart Business program. Key modifications included the addition of a new HVAC check-up program. The Commission approved these modifications in its order issued March 28, 2017, with an effective date of April 1, 2017.

- On February 27, 2017, the Company provided notice to the DSM Steering Committee that the 2014-2015 wattsmart Business Evaluation Report had been posted to the Company's website.

- On March 3, 2017, the Company posted a 45-day notice on its website to make modifications to the wattsmart Homes program through the "up to" incentive process established in Docket No. 15-035-T13. Key modifications included shifting evaporative coolers and room air conditioning units to the mid-market channel and reduce evaporative cooler incentive levels. Notice of these changes was also sent to the DSM Steering Committee on March 3, 2017. These modifications went into effect April 17, 2017.

- On March 15, 2017, the Company filed an advice letter in Docket No. 17-035-T05 to modify Schedule 111 tariff sheets for the wattsmart Homes program. Key modifications included the addition of customer participation language and 70 percent caps to non-lighting measures. The addition of customer participation language was withdrawn in the Company's reply comments filed April 4, 2017. The Commission approved the 70 percent caps to non-lighting measures in its order issued April 5, 2017, with an effective date of April 14, 2017.

- On April 7, 2017, the Company posted a 45-day notice on its website to make modifications to the wattsmart Homes program through the "up to" incentive process established in Docket No. 15-035-T13. Key modifications included aligning smart thermostat incentives for heating and cooling and retiring/lowering insulation measures. Notice of these changes was also sent to the DSM Steering Committee on April 7, 2017. Modifications for smart

thermostats and insulation measures went into effect May 22, 2017, and June 1, 2017, respectively.

- On April 10, 2017, the Company filed an expedited advice letter in Docket No. 17-035-T04 to correct the inadvertent removal of variable refrigerant flow heat pumps from Schedule 140, wattsmart Business program. The Commission approved this correction in its order issued April 11, 2017, with an effective date of April 17, 2017.

- On April 26, 2017, the Company circulated its quarterly DSM Balancing Account Report for the first quarter of 2017 to the DSM Steering Committee.

- On May 15, 2017, the Company filed its 2016 Energy Efficiency and Peak Reduction Report in Docket No. 17-035-32. The Company filed a replacement page and revised report May 23, 2017, and June 15, 2017, respectively. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued July 27, 2017.

- On July 3, 2017, the Company filed its DSM Spring Semi-Annual Forecast Report in Docket No. 17-035-41. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued August 31, 2017.

- On July 10, 2017, the Company filed an advice letter in Docket No. 17-035-T09 to modify Schedule 140 tariff sheets for the wattsmart Business program. Key modifications included the restructuring of lighting incentives to add controls. The Commission approved these modifications in its order issued August 3, 2017, with an effective date of August 10, 2017.

- On July 14, 2017, the Company filed an advice letter in Docket No. 17-035-T10 to temporarily suspend Schedule 193 rates. The Commission approved this suspension in its order issued July 28, 2017, with an effective date of August 1, 2017.

- On July 27, 2017, the Company circulated its quarterly DSM Balancing Account Report for the second quarter of 2017 to the DSM Steering Committee.

- On September 8, 2017, the Company filed an advice letter in Docket No. 17-035-T12 to modify Schedule 111 tariff sheets for the wattsmart Homes program. Key modifications included the addition of a custom multi-family program. The Commission approved these modification in its order issued October 6, 2017, with an effective date of October 9, 2017.

- On October 23, 2017, the Company circulated its quarterly DSM Balancing Account Report for the third quarter of 2017 to the DSM Steering Committee.

- On October 23, 2017, the Company provided notice to the DSM Steering Committee that the 2014-2015 Low Income Weatherization Evaluation Report had been posted to the Company's website.

- On November 1, 2017, the Company filed its DSM Fall Semi-Annual Forecast Report in Docket No. 17-035-41. The Commission acknowledged the report as being compliant with reporting requirements in its correspondence issued December 19, 2017.

- On November 15, 2017, the Company filed an advice letter in Docket No. 17-035-T13 to reinstate and adjust Schedule 193 rates. The Commission approved the reinstatement in its order issued December 12, 2017, with an effective date of January 1, 2018.

- On December 1, 2017, the Company posted a 45-day notice on its website to make modifications to the wattsmart Homes program through the "up to" incentive process established in Docket No. 15-035-T13. Key modifications included adjusting HVAC incentives. Notice of these changes was sent to the DSM Steering Committee on December 4, 2017. These modifications went into effect February 1, 2018.

- On December 14, 2017, the Company filed for approval of its 2018 Strategic Communications and Outreach Plan for DSM programs in Docket No. 17-035-67. The Commission approved the plan in its order issued January 11, 2018, with an effective date of January 15, 2018.

- On December 22, 2017, the Company filed an advice letter in Docket No. 17-035-T16 to modify Schedule 140 tariff sheets for the wattsmart Business program. Key modifications included the expansion of mid-market offerings and other house-cleaning updates. The Commission approved these modifications in its order issued January 17, 2018, with an effective date of January 22, 2018.

- On December 22, 2017, the Company filed a request letter in Docket No. 12-035-77 to continue the Home Energy Reports pilot program beyond 2017 as a full-fledged program. The Commission approved this request in its order issued January 19, 2018, with an effective date of January 22, 2018.

- On December 27, 2017, the Company provided notice to the DSM Steering Committee that the 2015-2016 Home Energy Savings Evaluation Report had been posted to the Company's website.

Advisory Group and Steering Committee Activities:

Consistent with the discussion in Docket No. 12-035-69, the Company seeks input regarding its energy efficiency programs from both the Utah DSM Steering Committee and the Utah DSM Advisory Group. Both groups include representatives from a variety of constituent organizations. Members of the Steering Committee, who are not already governed by Commission confidentiality rules, signed Confidentiality Agreements with the Company in order to provide input on issues involving sensitive, confidential, or proprietary information.

The Company consulted with the DSM Steering Committee and DSM Advisory Group throughout 2017 on various matters, and held formal, in-person meetings on the following matters:

February 2, 2017 – DSM Steering Committee

- Discussed proposed modifications to the wattsmart Business Program; and
- Provided an update on the wattsmart Homes midstream timeline.

February 2, 2017 – DSM Advisory Group

- Provided a demonstration of the Company's internal systems, such as the Measure Library and DSM Central.

June 13, 2017 – DSM Steering Committee

- Discussed proposed modifications to the wattsmart Business program;
- Discussed proposed modifications to the Low Income Weatherization program; and
- Discussed the concept of a custom multi-family program.

June 13, 2017 – DSM Advisory Group

- Reviewed the 2014-2015 wattsmart Business Program Evaluation; and
- Reviewed the 2016 DSM Annual Report.

September 5, 2017 – DSM Steering Committee

- Reviewed the 2017 IRP selections and decrement values;
- Discussed comments on the 2017 Annual Report; and
- Provided updates on the wattsmart Business, wattsmart Homes, and Home Energy Reports programs.

October 26, 2017 – DSM Steering Committee

- Reviewed the November 1st Forecast Report;
- Discussed the Schedule 193 rate analysis and proposed reinstatement;
- Provided an updates on Strategic Energy Management and Small Business Direct; and
- Discussed the potential expansion of the Cool Keeper program by using smart thermostats.

DSM EXPENDITURES

Energy efficiency and peak reduction activities are funded by revenue collected through Schedule 193. Expenditures are charged as incurred. The DSM balancing account is the mechanism used for managing Schedule 193 revenues collected and tracking the offsetting DSM incurred expenses. The balancing account summary for 2017 is shown in Table 4.

Table 4
Schedule 193 Balancing Account Summary

Month	Monthly Program Costs	Monthly Net Accrued Costs*	Rate Recovery	Carrying Charge	Cash Basis Accumulated Balance	Accrual Based Accumulated Balance
Balance Dec. 2016					$ (7,097,889)	$ (4,404,501)
Jan-17	$ 2,648,142	$ 262,689	$ (6,073,075)	$ (78,192)	$ (10,601,014)	$ (7,644,937)
Feb-17	$ 3,754,612	$ 348,093	$ (5,423,644)	$ (101,490)	$ (12,371,535)	$ (9,067,365)
Mar-17	$ 3,478,015	$ (117,206)	$ (4,738,883)	$ (115,458)	$ (13,747,861)	$ (10,560,897)
Apr-17	$ 4,355,254	$ 586,848	$ (4,768,815)	$ (123,847)	$ (14,285,269)	$ (10,511,457)
May-17	$ 3,686,017	$ (291,172)	$ (4,697,674)	$ (131,271)	$ (15,428,198)	$ (11,945,558)
Jun-17	$ 3,848,077	$ 669,594	$ (6,153,679)	$ (147,156)	$ (17,880,956)	$ (13,728,722)
Jul-17	$ 3,924,229	$ 1,047,010	$ (7,926,360)	$ (176,453)	$ (22,059,540)	$ (16,860,297)
Aug-17	$ 4,036,553	$ (195,749)	$ (4,808,276)	$ (199,203)	$ (23,030,467)	$ (18,026,972)
Sep-17	$ 2,972,860	$ 924,940	$ 9,655	$ (191,160)	$ (20,239,111)	$ (14,310,676)
Oct-17	$ 4,678,938	$ 39,552	$ (22,877)	$ (158,897)	$ (15,741,948)	$ (9,773,961)
Nov-17	$ 6,803,166	$ (694,191)	$ 5,490	$ (109,496)	$ (9,042,788)	$ (3,768,992)
Dec-17	$ 9,380,581	$ (1,204,040)	$ 94	$ (38,628)	$ 299,260	$ 4,369,016
2017 Total	**$ 53,566,445**	**$ 1,376,368**	**$ (44,598,044)**	**$ (1,571,251)**		

*December 2017 total accrual was $4,069,756

Column Explanations:

Monthly Program Costs - Monthly expenditures for all DSM program activities posted in 2017.

Monthly Net Accrued Costs - Monthly net change of program costs incurred during the period not yet posted.

Rate Recovery - Revenue collected through Schedule 193.

Carrying Charge - Monthly carrying charge based on "Cash Basis Accumulated Balance" of the account.

Cash Basis Accumulated Balance - A running total of account activities. A negative accumulative balance means cumulative revenue exceeds cumulative expenditures; positive accumulative balance means cumulative expenditures exceed cumulative revenue.

Accrual Based Accumulative Balance: Current balance of account including accrued costs.

PLANNING PROCESS

Integrated Resource Plan

The Company develops a biennial integrated resource plan ("IRP") as a means of balancing cost, risk, uncertainty, supply reliability/deliverability and long-run public policy goals.[15] The plan presents a framework of future actions to ensure the Company continues to provide reliable, reasonably priced service to customers. Energy efficiency and peak management opportunities are incorporated into the IRP based on their availability, characteristics and costs.

PacifiCorp divides energy efficiency and peak management resources into four general classes:

- **Class 1 DSM – Resources from fully dispatchable or scheduled firm capacity product offerings/programs** – After a customer agrees to participate in a Class 1 DSM program, the timing and persistence of the load reduction is involuntary on their part within the agreed upon limits and parameters of the program. Program examples include residential and small commercial central air conditioner load control programs that are dispatchable, and irrigation load management and interruptible or curtailment programs (which may be dispatchable or scheduled firm, depending on the particular program design or event noticing requirements).

- **Class 2 DSM – Resources from non-dispatchable, firm energy and capacity product offerings/programs** – Class 2 DSM programs are those for which sustainable energy and related capacity savings are achieved through facilitation of technological advancements in equipment, appliances, lighting and structures, or repeatable and predictable voluntary actions on a customer's part to manage the energy use at their facility or home. Class 2 DSM programs generally provide financial or service incentives to customers to improve the efficiency of existing or new customer-owned facilities through: (1) the installation of more efficient equipment, such as lighting, motors, air conditioners, or appliances; (2) upgrading building efficiency through improved insulation levels, windows, etc.; or (3) behavioral modifications, such as strategic energy management efforts at business facilities and home energy reports for residential customers. The savings endure (are considered firm) over the life of the improvement or customer action. Program examples include comprehensive commercial and industrial new and retrofit energy efficiency programs, comprehensive home improvement retrofit programs, strategic energy management and home energy reports.

- **Class 3 DSM – Resources from price responsive energy and capacity product offerings/programs** – Class 3 DSM programs seeks to achieve short-duration (hour by hour) energy and capacity savings from actions taken by customers voluntarily, based on a financial incentive or signal. As a result of their voluntary nature, participation tends to be low and savings are less predictable, making Class 3 DSM resources less suitable to

[15] Information on the Company's integrated resource planning process can be found at the following address: http://www.pacificorp.com/es/irp.html

incorporate into resource planning, at least until their size and customer behavior profile provide sufficient information for a reliable diversity result (predictable impact) for modeling and planning purposes. Savings typically only endure for the duration of the incentive offering and, in many cases, loads tend to be shifted rather than being avoided. The impacts of Class 3 DSM resources may not be explicitly considered in the resource planning process; however, they are captured naturally in long-term load growth patterns and forecasts. Program examples include time-of-use pricing plans, critical peak pricing plans, and inverted block tariff designs

- **Class 4 DSM—Non-incented behavioral-based savings achieved through broad energy education and communication efforts –** Class 4 DSM programs promote reductions in energy or capacity usage through education. These efforts seek to help customers better understand how to manage their energy usage through no-cost actions such as conservative thermostat settings and turning off appliances, equipment and lights when not in use. The programs are also used to increase customer awareness of additional actions they might take to save energy and the service and financial tools available to assist them. Similar to Class 3 DSM resources, the impacts of Class 4 programs may not be explicitly considered in the resource planning process; however, they are captured naturally in long-term load growth patterns and forecasts. Program examples include Company brochures with energy savings tips, customer newsletters focusing on energy efficiency, case studies of customer energy efficiency projects, and public education campaigns.

Class 1 and 2 DSM resources are included as resource options in the resource planning process. Class 3 and 4 DSM actions are not considered explicitly in the resource planning process, however, the impacts are captured naturally in long-term load growth patterns and forecasts.

As technical support for the IRP, the Company engages a third-party consultant to conduct a DSM Potential Assessment ("Potential Assessment").[16] The study primarily seeks to develop reliable estimates of the magnitude, timing and cost of DSM resources likely available to PacifiCorp over the 20-year planning horizon of the IRP. The main focus of the Potential Assessment is on resources with sufficient reliability characteristics that are anticipated to be technically feasible and considered achievable during the IRP's 20-year planning horizon. By definition, the estimated achievable technical potential is the energy efficiency potential that may be achievable to acquire during the 20-year planning horizon prior to cost-effectiveness screening.

Demand-side resources vary in their reliability, load reduction and persistence over time. Based on the significant number of measures and resource options reviewed and evaluated in the Potential Assessment, it is impractical to incorporate each as a stand-alone resource in the IRP. To address this issue, Class 2 DSM measures and Class 1 DSM programs are bundled by cost for modeling against competing supply-side resource options reducing the number of discrete resource options the IRP must consider to a more manageable number.

[16] PacifiCorp's Demand-side Resource Potential Assessments can be found at http://www.pacificorp.com/es/dsm.html.

Cost-effectiveness

The Company evaluates program implementation cost-effectiveness (both prospectively and retrospectively) under a variety of tests to identify the relative impact and/or value (*e.g.*, near-term rate impact, program value to participants, etc.) to customers and the Company.

Program cost-effectiveness is performed using a Company specific modeling tool, created by a third party consultant. The tool is designed to incorporate PacifiCorp data and values such as avoided costs, and generally follows the methodology specified in California's Standard Practice Manual. The analysis assesses the costs and benefits of DSM resource programs from different stakeholder perspectives, including participants and non-participants, based on four tests described in the Standard Practice Manual (TRC, UCT, PCT and RIM) as well as an additional fifth test, PTRC. Utah observes the UCT as the primary cost effectiveness test.

PEAK REDUCTION PROGRAMS

Peak Reduction programs assist the Company in balancing the timing of customer energy requirements during heavy summer use hours. Peak reduction programs are intended to defer the need for higher cost investments in delivery infrastructure and peak generation resources that would otherwise be needed to serve those loads for a few select hours each year. These programs help the Company maximize the efficiency of the Company's existing electrical system and reduce costs for all customers.

Programs targeting capacity related resources are often specific to end use loads most prevalent in a given jurisdiction, such as the agricultural pumping and residential cooling loads in Utah. In 2017, the Company offered the *Irrigation Load Control* program (Schedule 105) for the agricultural sector and the *Air Conditioner Peak Management* Program (Cool Keeper Program, Schedule 114) for the residential and small commercial sectors.

The Peak Reduction Programs achieved a total of 133 MW of maximum realized demand reduction (gross at generation) in 2017. Cost effectiveness results for the reporting period are provided in Table 5.

Table 5
Cost Effectiveness for Load Control Portfolio[17]

Benefit/Cost Test	Benefit/Cost Ratio
PTRC	Pass
TRC	Pass
UCT	Pass
PCT	N/A
RIM	Pass

Irrigation Load Control

The *Irrigation Load Control* program is offered to irrigation customers receiving electric service on Schedule 10, Irrigation and Soil Drainage Pumping Power Service. Participants enroll with a third party administrator and allow the curtailment of their electricity usage in exchange for an incentive. Customer incentives are based on a site's average available load during load control program hours adjusted for the number of opt outs or non-participation. The program hours are from 12 pm to 8 pm Mountain Time, Monday through Friday, and do not include holidays. For most participants, their irrigation equipment is set up with a dispatchable two-way control system

[17] Decrement values or avoided costs are considered confidential on load control programs. Cost effectiveness ratios and inputs will be available under a protective agreement. A "Pass" designation equates to a benefit to cost ratio of 1.0 or better.

giving the Company control over their loads. Participants are provided a day-ahead notification of control events and have the choice to opt-out of a limited number of dispatch events per season.

A summary of the program's cost effectiveness results, performance and participation for the reporting period of May 30, 2017 – August 18, 2017 are provided in Tables 6 and 7.

Table 6
Cost Effectiveness for Irrigation Load Control

Benefit/Cost Test	Benefit/Cost Ratio
PTRC	Pass
TRC	Pass
UCT	Pass
PCT	N/A
RIM	Pass

Table 7
Irrigation Load Control Program Performance

Total Enrolled MW (Gross – at Gen)	40
Maximum Potential MW (at Gen)	21
Average Realized load MW (at Gen)	9
Maximum Realized load MW (at Gen)	11
Participation Customers	50
Participation (Sites)	266

Program Management

The program manager who is responsible for the *Irrigation Load Control* programs in Utah is also responsible for the *Irrigation Load Control* program in Idaho and the *Cool Keeper* program in Utah along with *Home Energy Reports* program in Utah, Idaho and Wyoming. For each state the program manager is responsible for managing the program administrator, the cost effectiveness of the program, contracting with program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes to increase participation.

Program Administration

EnerNoc administers and manages the *Irrigation Load Control* program through a pay-for-performance structure and is responsible for all aspects of the program, including

- Customer satisfaction including call center support,
- Marketing to maintain a minimum level of megawatt reductions,
- Field operations including installation and maintenance of the EnerNOC devices,

- Management of participation data and reporting to actively manage the program,
- Quality control of the Irrigation Load Control device infrastructure,
- A platform to dispatch the communication network, and
- Customer incentives.

Irrigation Load Control Events and Performance

There were five load control events initiated in 2017. The date, time and estimated impact for each event is provided in Table 8.

Table 8
Irrigation Load Control Events

Date	Event	Event Times	Load Reduction - Utah at Gen (MW)
June20, 2017	1	4pm-8pm MDT	6
June 22, 2017	2	4pm-8pm MDT	10
July 6, 2017	3	3pm-7pm MDT	10
August 2, 2017	4	4pm-8pm MDT	11
August 28, 2017	5	3pm-7pm MDT	7

Program Changes

No program changes occurred during 2017.

Evaluation

An analysis of the 2016 – 2017 Irrigation Load Control program began in 2017. The results are anticipated in 2018.

Cool Keeper

The *Cool Keeper* program is an air conditioner direct load management program targeting residential and qualifying commercial customers (equipment size equal to or less than 15 tons) who cool their homes and businesses with electric central air conditioners. On select summer weekday afternoons, when electricity demand is at its highest, the *Cool Keeper* control equipment installed on a participating customer's cooling equipment is sent a signal to cycle the operation of the air conditioners compressor "off and on" for brief periods each hour in coordination with the air conditioners of other participating customers. For their participation, customers receive an annual bill credit of $5 to $40 per air conditioner depending on the size of the air conditioner and when the customer signed up. If the customer signs up prior to June 1, the incentive is $20 or $40 and depends on the size of the A/C unit. After June 1, the incentive is pro-rated.

The Cool Keeper load control system operates through two-way communications equipment with a wireless mesh network for improved control, measurement and verification of program performance.

A summary of the program's cost effectiveness, performance and participation are provided in Tables 9 and 10 below.

Table 9
Cost Effectiveness for Cool Keeper

Benefit/Cost Test	Benefit/Cost Ratio
PTRC	Pass
TRC	Pass
UCT	Pass
PCT	NA
RIM	Pass

Table 10
Program Performance for Cool Keeper

Total Enrolled MW (at Gen)	217
Maximum Potential MW (at Gen)	112
Average Realized Load MW (at Gen)	109
Maximum Realized MW (Gross – at Gen)	113
Total Participation	108,488

Cool Keeper Load Control Events and Performance

There were two control events initiated in 2017. The date, time and estimated impact for each event is provided in Table 11.

Table 11
Cool Keeper Load Control Events

Date	Event	Event Times	Estimated Load Reduction - Utah at Gen (MW)
June 21, 2017	1	7:00PM – 7:30PM	106
August 29, 2017	2	4:45PM – 6:00PM	112

Program Management

The program manager who is responsible for the *Cool Keeper* program in Utah is also responsible for the *Irrigation Load Control* programs in Utah and Idaho along with *Home Energy Reports* in Utah, Idaho and Wyoming. The program manager is responsible for managing the program

administrators, the cost effectiveness of the program, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set out in each tariff or state's compliance requirements.

Program Administration

The *Cool Keeper* program is administered by GoodCents and Eaton. GoodCents is responsible for:

- Field operations including trouble calls, installation, and maintenance of the Cool Keeper devices,
- Customer satisfaction including call center support,
- Management of Cool Keeper participation data and reporting to actively manage the program,
- Quality control of the Cool Keeper device infrastructure to ensure a 99% availability of active devices, and
- Marketing to maintain a minimum level of participation and megawatt reductions.

Eaton is responsible for:

- Manufacture and delivery of the Cool Keeper devices,
- Installation, operation, and maintenance of the wireless mesh communication network,
- Quality control of the wireless mesh network,
- A hosted solutions platform to dispatch and monitor the health of the communication network, and
- Program analytics including the ability to gain insight into the system and identify Cool Keeper devices which are no longer communicating.

Program Changes

In late 2017, a Request for Proposal ("RFP") was issued to investigate the possibility to use smart thermostats for demand response. Proposals are currently being reviewed and evaluated.

Evaluation

An analysis of the 2016 – 2017 A/C Cool Keeper program began in 2017. The results are anticipated in 2018.

ENERGY EFFICIENCY PROGRAMS

Energy Efficiency programs are offered to all major customer sectors: residential, commercial, industrial and agricultural. The overall energy efficiency portfolio included four programs: *wattsmart Homes* – Schedule 111, *Home Energy Reports, Low Income Weatherization* – Schedule 118, and *Non-Residential Energy Efficiency* (*watt*smart Business) – Schedule 140. In addition to the energy efficiency programs, the Company, on behalf of customers, invested in outreach and education for the purpose of promoting the efficient use of electricity and improving program performance.

Energy efficiency savings are reported as ex-ante, gross and at site. In 2017, portfolio savings increased by approximately 12% from 2016, while program-level expenditures decreased 8%. The portfolio was cost effective from four of the five cost tests. The ratepayer impact test was less than 1.0 indicating that there is near term upward pressure placed on the price per kWh given a reduction in sales. Cost effectiveness results of the 2017 energy efficiency portfolio is provided in Table 12.

Table 12
Cost Effectiveness for Energy Efficiency Portfolio

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	1.89	$76,261,313
TRC	1.72	$61,568,177
UCT	2.86	$95,490,993
PCT	3.07	$167,193,644
RIM	0.66	($74,683,633)

Table 13 provides a program-level summary of gross and net savings acquired in 2017 at site and at generation.

Table 13
Energy Efficiency Gross and Net Savings[18]

Program	Gross kWh Savings at Site	Net kWh Savings at Site	Gross kWh Savings at Gen	Net kWh Savings at Gen
Low Income	234,206	234,206	256,030	256,029
Home Energy Reporting	50,562,602	50,562,602	55,274,025	55,274,025
wattsmart Homes	79,107,147	46,377,357	86,478,351	50,698,799
*watt*smart Business	213,745,986	157,732,430	230,936,861	168,872,220
Total	**343,649,941**	**254,906,595**	**372,945,267**	**275,101,074**

[18] Net savings include realization rates and NTG ratios.

Estimated Peak Contributions

The reported capacity reduction of 71 MW (at generation) for energy efficiency programs during 2017 represents the estimated MW impact of the energy efficiency portfolio during PacifiCorp's system peak period. An energy-to-capacity conversion factor developed from Class 2 DSM selections in the 2015 IRP is used to translate 2017 energy savings to estimated demand reduction during the system peak. The use of this factor in the MW calculation assumes that the energy efficiency resources acquired through the Company's programs have the same average load profile as those energy efficiency resources selected in the 2015 IRP. Use of this factor in determining the MW contribution of energy efficiency programs is detailed in Table 14.

Table 14
Estimated Peak Contribution

Description	Value
First year energy efficiency program MWh savings acquired during 2017	372,945
Conversion factor: Coincident MW/MWh	0.000189
Estimated coincident peak MW contribution of 2017 energy efficiency acquisitions	70.51

RESIDENTIAL PROGRAMS

The residential energy efficiency portfolio was comprised of three programs: *wattsmart Homes* (formerly Home Energy Savings), *Home Energy Reports*, and *Low Income Weatherization.* Residential savings increased by approximately 32% from 2016.

The residential portfolio was cost effective based on four of the five standard cost effectiveness tests for the 2017 reporting period. Table 15 shows the cost effectiveness results for the residential portfolio.

Table 15
Cost Effectiveness for Residential Portfolio

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	1.92	$18,055,613
TRC	1.74	$14,622,791
UCT	2.24	$19,028,433
PCT	5.36	$67,620,019
RIM	0.47	($39,315,447)

wattsmart Homes

The *wattsmart Homes* program is designed to provide access to and incentives for more efficient products and services installed or received by customers in new or existing homes, multi-family housing units or manufactured homes for residential customers under Electric Service Schedules 1, 2, or 3. Landlords who own property where the tenant is billed under Electric Service Schedules 1, 2, or 3 also qualify for the program. Program cost effectiveness is provided in Table 16 below.

Table 16
Cost Effectiveness for wattsmart Homes

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	2.13	$18,326,786
TRC	1.93	$15,184,062
UCT	2.65	$19,589,703
PCT	4.97	$61,525,105
RIM	0.49	($32,702,854)

Program participation by measure category is provided in Table 17 and by delivery channel in Table 18.

Table 17
Program Performance by Measure Categories (Units)

Measure Category	Total kWh (at Site)	Total Incentive	Total Quantity
Appliances	147,420	$ 56,300	1,126
Building Shell	448,222	$ 261,635	1,370,700 (sq ft)
Energy Kits	1,057,331	$ 36,976	4,206
HVAC	9,867,797	$ 2,171,858	19,147
Lighting	66,428,270	$ 4,891,953	2,967,726
Water Heating	9,226	$ 3,425	6
Whole Home	1,148,880	$ 546,950	3,865
Grand Total	**79,107,147**	**$ 7,969,097**	

Table 18
Program Performance by Delivery Channel

Delivery Channel	Total kWh (at Site)	Total Incentive	Total Quantity
Downstream	**6,302,829**	**$ 2,041,729**	
Appliances	147,420	$ 56,300	1,126
Building Shell	448,222	$ 261,635	1,370,700 (sq ft)
Energy Kits	1,057,331	$ 36,976	4,206
HVAC	3,491,749	$ 1,136,443	10,447
Water Heating	9,226	$ 3,425	6
Whole Home	1,148,880	$ 546,950	3,865
Midstream	**6,376,048**	**$ 1,035,415**	
HVAC	6,376,048	$ 1,035,415	8,700
Upstream	**66,428,270**	**$ 4,891,953**	
Lighting	66,428,270	$ 4,891,953	2,967,726
Grand Total	**79,107,147**	**$ 7,969,097**	**-**

In 2017, the New Homes residential program was modified and combined into the *wattsmart Homes* program. See Docket No. 16-035-T13. Consistent with previous annual reports, Table 19 shows the single family and multifamily participation rates.

Table 19
Whole Home Measure Category
Single Family and Multifamily Participation

New Construction Measures	Total kWh (at Site)	Total Incentives	Total Quantity
Single Family			
Central Air Conditioner	9,487	$ 5,300	53
Gas Furnace w/ ECM	49,496	$ 27,600	184
Whole Home ENERGY STAR Certification	22,320	$ 6,975	279
Whole Home HERS Index 56-62	336,326	$ 174,650	998
Whole Home HERS Index 49-55	272,296	$ 121,200	404
Whole Home HERS Index <= 48	9,099	$ 4,500	9
Total Single Family	**699,024**	**$ 340,225**	**1,927**
Multi Family			
Central Air Conditioner	2,014	$ 1,425	19
Gas Furnace w/ ECM	-	$ -	-
Whole Home ENERGY STAR Certification	15,984	$ 7,200	360
Whole Home HERS Index 56-62	251,572	$ 115,400	1,154
Whole Home HERS Index 49-55	169,168	$ 77,600	388
Whole Home HERS Index <= 48	11,118	$ 5,100	17
Total Multi Family	**449,856**	**$ 206,725**	**1,938**
Grand Total	**1,148,880**	**$ 546,950**	**3,865**

Program Management

The program manager who is responsible for the *wattsmart Homes* program in Utah is also responsible for the residential energy efficiency program in Idaho and Wyoming. For each program and in each state the program manager is responsible for program cost effectiveness, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending tariff changes in the terms and conditions.

Program Administration

The *wattsmart Homes* program is administered by CLEAResult and Nexant, who are responsible for:

- Retailer – CLEAResult identifies, recruits, supports and assists retailers to increase the sale of energy efficient lighting, appliances and electronics. CLEAResult enters into promotion agreements with each manufacturer and retailer for the promotion of discounted LED bulbs, evaporative coolers, and room air conditioners. The agreements include specific retail locations, products receiving incentives and not-to-exceed annual budgets. Weatherization and HVAC trade allies engaged with the program are provided with program materials, training, and regular updates.
- Trade ally engagement – CLEAResult provides participating weatherization and HVAC trade allies with program materials, training, and regular updates. Nexant provides participating Central Air Conditioner and Gas furnace Distributors and trade allies with program materials, training, and regular updates.
- Inspections – CLEAResult and Nexant recruit and hire inspectors to verify the installation of measures. A summary of the inspection processes is in Appendix 3.
- Manage savings acquisition to targets within budget.
- Continual improvement of program operations and customer satisfaction.
- Incentive processing and call-center operations – CLEAResult receives requests for incentives, determines whether the applications are completed, works directly with customers when information is incorrect and/or missing from the application and processes the application for payment. Nexant receives requests for Central Air Conditioner and Gas Furnace incentives, determines eligibility requirements are met, works directly with Distributors and trade allies when information is incorrect and/or missing and processes the application for payment.
- Program specific customer communication and outreach – A summary of the communication and outreach conducted by CLEAResult and Nexant on behalf of the Company are outlined in Appendix 7.

Infrastructure

Multiple retailers and trade allies help deliver energy efficient products on behalf of the Company. The list of participating and non-participating retailers and trade allies by delivery channel and measure is provided in Appendix 4.

Program Changes

In 2017, the *wattsmart Homes* program transitioned some measures to the midstream delivery channel through distributors and retailers. Additionally, new homes incentives moved to the Home Energy Rater Score (HERS) model and two stand-alone measures.

The following measures were part of the midstream transition:

Retail midstream:
- Evaporative Cooler
- Room Air Conditioner

Distributor midstream:
- Gas Furnace
- Central Air Conditioner

The HERS program model provides incentives for new homes, single and multi-family, meeting the specific HERS requirements as outlined in the program's tariff. To be eligible for program incentives, a home must have installed qualifying stand-alone measures, or a residence must meet the minimum HERS standards and certifications set by the program.

In 2017, the Company issued an RFP for a program administrator to deliver services targeting multifamily properties, including low income and market rate. International Center for Appropriate and Sustainable Technology ("ICAST") was awarded the contract and will be responsible for program design and management, quality control and tariff compliance, marketing, and trade ally recruitment and training. ICAST spent the latter part of 2017 conducting outreach to market actors including housing authorities, developers, property management companies and property owners in preparation for program launch in early 2018.

Evaluation

A process and impact evaluation was published for program years 2015-2016. Key findings include:
- Overall realization rate was 79 percent and the NTG ratio was 75 percent.
- The program was cost effective over the two-year period, with a UCT of 2.48.
- Thirty-six percent of customers reported that they primarily learned of the upstream/midstream incentives through bill inserts. Similarly, forty-one percent of participants learned of the wattsmart Starter Kits through bill inserts. For downstream lighting fixtures incentives and non-lighting incentives, respondents primarily learned of the program through retailer marketing, cited by 44% and 31%, respectively.
- LED prices served as a motivating factor for 26% of LED purchasers in 2015–2016, up from 8% in 2013–2014. This corresponds to the steady decline in LED prices over the period.

The full evaluation is available on the Company's website at
http://www.pacificorp.com/es/dsm/utah.html

Home Energy Reports

The *Home Energy Reports* program is a behavioral program designed to decrease participant energy usage by providing comparative energy usage data for similar homes located in the same geographical area. Additionally, the report provides the participant with information on how to decrease their energy usage. Equipped with this information, participants can modify behavior and/or make structural equipment, lighting or appliance modifications to reduce their overall electric energy consumption.

The Company transitioned from its implementer, Oracle, to Bidgely in early 2018. Subsequently, close out costs were accrued and applied in the 2017 cost effectiveness analysis, resulting in a UCT of 0.91. However, the UCT passes at 1.02 when close out costs are excluded as shown in Table 20 below.

Table 20
Cost Effectiveness for Home Energy Reports

Benefit/Cost Test	Benefit/Cost Ratio with closeout costs	Benefit/Cost Ratio w/out closeout costs
PTRC	1.00	1.12
TRC	0.91	1.02
UCT	0.91	1.02
PCT	N/A	N/A
RIM	0.31	0.32

In 2017, the program achieved total savings at site of 50,562,602 kWh; 22,655,940 kWh for the legacy group, 22,992,887 kWh for the expansion group and 4,913,775 kWh from the refill group. The "legacy" group is defined as the July 2012 initial participant wave, the "expansion" group is defined as the August 2014 participant expansion wave and the "refill" group is defined as the additional customers added in August 2016.

Reports were initially provided to approximately 95,000 customers in the legacy group and an additional 220,000 customers were added to the expansion group. In order to address customer attrition, a refill wave of 39,000 customers was added in August 2016. The number of participants decreased over time due to customer attrition related to general customer churn (customer move-outs) and customers requesting to be removed from the program. As of December 2017, 244,442 customers were active recipients of Home Energy Reports. In 2017, 995 customers opted out of the program. Total savings and participation by group is provided in Table 21.

Table 21
Savings and Participation for Home Energy Reports

	Legacy	Expansion	Refill	Total
2017 Savings kWh	22,655,940	22,992,887	4,913,775	**50,562,602**
Dec. 2017 Participation	64,628	147,724	32,090	**244,442**

All participating customers may request an electronic version delivered via email and have access to a web portal containing the same information about their usage provided in the report. In addition, all Utah residential customers have access to a web portal which contains other benefits such as a home energy audit tool, the ability for customers to update their home profile (for more accurate comparisons), understand annual usage, see how weather impacts usage, and suggestions on more ways to save energy around their home.

Program Management

The program manager responsible for the *Home Energy Reports* program in Utah is also responsible for the program in Idaho and Wyoming, the *Irrigation Load Control* in Utah and Idaho, and the *Cool Keeper* program in Utah. For each program and in each state the program manager is responsible for the cost effectiveness of the program, identifying and contracting with the program administrator through a competitive bid process, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set in each state's compliance requirements.

Program Administration

The *Home Energy Reports* program is administered by Oracle. Oracle's software creates individualized energy reports for utility customers that analyze their energy usage and offers recommendations on how to save energy and money by making small changes to their energy consumption. The Company contracts with Oracle to provide energy savings, software services, and printing and delivery of energy reports to customers.

Oracle is responsible for the following:

- Selecting Qualifying Customers – Oracle conducts an analysis to identify qualifying customers that are then randomly selected into the program's treatment (those who will receive reports) and control groups (for measurement and verification).
- Customer Comparison Analysis – Oracle conducts statistical analysis to perform pattern recognition in order to derive actionable insights to selected customers. Oracle uses information about customers' homes (e.g., size, heat type, home type) to find similar homes for comparison.
- Energy Report Delivery – By mail or email.
- Web Portal Design and Support – Oracle operates and maintains a customer Web portal that participants may visit for additional information about their energy usage and saving opportunities, including an online home energy audit.

Program Changes

In 2017 Rocky Mountain Power's contract with Oracle ended. Subsequently, an RFP was issued for a new program administrator and an award was issue January 2018. The new program will be introduced in 2018 and will provide an enhanced customer experience. The reports will be available through paper or email and will provide more detailed personalized insights on how customers are using energy. The reports will also provide individualized tips on how customers can conserve energy.

Evaluation

In 2017, an RFP was issued to evaluate the 2016 – 2017 program years. An evaluation report will be published in 2018.

Low Income Weatherization

The *Low Income Weatherization* program provides energy efficiency services to income-eligible households through a partnership with the Utah Department of Workforce Services, Housing and Community Development Division ("HCD"). Services are at no cost to the program participants.

In 2017, the program achieved savings at site of 234,206 kWh and served 296 homes. The measures installed through the *Low Income Weatherization* program are limited to those that reduce electricity use in participant's homes. The majority of homes served are not electrically heated and do not have electric water heaters. Therefore, most of the Company funds cover lighting and refrigerator replacement costs.

Cost effectiveness results for 2017 are provided in Table 22.

Table 22
Cost Effectiveness for Low Income Weatherization

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	2.73	$111,828
TRC	2.48	$95,784
UCT	2.48	$95,784
PCT	N/A	N/A
RIM	0.44	($200,386)

Total savings, measure type and the corresponding numbers of homes that installed the measure type are provided in Table 23.

Table 23
Total Savings, Homes Served and Measure Counts

Total kWh Savings @ Site	234,206
Participation – Total number of Homes Served	296
Measure Type Installed in Each Home	**#**
Furnace Fans	131
Compact Fluorescent Light Bulbs	32
Refrigerator Testing on Models not Replaced	47
Refrigerator Replacements	64
Light Emitting Diode Light Bulbs	219
Window Replacement	1

Program Management

The program manager responsible for the *Low Income Weatherization* program in Utah is also responsible for the *Low Income Weatherization* program in California, Idaho, Washington and Wyoming; energy assistance programs in Utah, California, Idaho, Oregon, Washington and Wyoming; and bill discount programs in Utah, California and Washington. The program manager is responsible for the cost effectiveness of the weatherization program in each state, partnerships and agreements in place with agencies that serve income eligible households, establishing and monitoring program performance and compliance, and recommending changes in the terms and conditions set out in the agency contracts and state specific tariffs.

Program Administration

The Company currently has a contract in place with HCD to provide services through the *Low Income Weatherization* program. The state agency receives federal funds and subcontracts with seven non-profit agencies that install energy efficiency measures in the homes of income eligible households throughout the Company's service area. Company funding of 50 percent of the cost of approved measures is leveraged by HCD with the federal funding they receive, allowing more homes to be served each year.

By contract with the Company, HCD and their subcontracting local agencies are responsible for the following:

- Income Verification – The local agencies determine if participants are income eligible based on HCD guidelines. Household's interested in obtaining weatherization services apply through the agencies. The current income guidelines can be viewed at https://jobs.utah.gov/housing/wap/qualify.html .
- Energy Audit – Agencies use a United States Department of Energy approved audit tool to determine the cost effective measures to install in the participant's homes (audit results must indicate a savings to investment ratio of 1.0 or greater).
- Installation of Measures – Agencies install the energy efficiency measures.
- Post Inspections – Agencies inspect 100 percent of completed homes. HCD also inspects a random sample of homes. See Appendix 3 for verification summary.
- Billing Notification – HCD is required to submit a billing to Company within 60 days after job completion. They include a form indicating the measures installed and associated cost on each completed home along with their invoice.

Program Changes

No programmatic changes occurred in 2017.

Evaluation

A process and impact evaluation for program years 2013 – 2015 was performed by Opinion Dynamics and was published in 2017.

Key findings include:

- An overall realization rate was 108 percent.
- Average annual net energy savings per participant was estimated at 922 kWh.
- The program was cost effective with an overall UCT of 2.76.
- The program is meeting customer needs well. Participant experience with the program is positive with nine of ten surveyed participants reporting they were “extremely satisfied” with services received.
- The Company is adhering to best practices by contracting with HCD to implement the program.

The full evaluation is available on the Company’s website at
http://www.pacificorp.com/es/dsm/utah.html

NON-RESIDENTIAL ENERGY EFFICIENCY

The *Non-Residential Energy Efficiency* program is promoted to the Company's customers as *watt*smart Business. The *watt*smart Business program is intended to maximize the efficient utilization of electricity for new and existing non-residential customers through the installation of energy efficiency measures and energy management protocols. Qualifying measures are any measures which, when implemented in an eligible facility, result in verifiable electric energy efficiency improvements.

Total non-residential program savings increased slightly from 2016. Energy savings from commercial lighting derived the largest source of savings.

The program was cost effective from every test perspective except the RIM. Cost effectiveness results for 2017 is provided in Table 24.

Table 24
Cost Effectiveness for Non-Residential Energy Efficiency

Benefit/Cost Test	Benefit/Cost Ratio	Net Benefits
PTRC	1.94	$59,940,835
TRC	1.76	$48,680,521
UCT	3.27	$78,197,695
PCT	2.53	$99,573,624
RIM	0.77	($33,633,051)

Total incentives, savings and completed projects are provided in Tables 25 - 27 by customer sector, measure category and delivery channel.

Table 25
Participation by Sector

Sector	Total kWh Savings @ Site	Cash Incentive	Bill Credits	Total # of Projects
Commercial	161,568,617	$15,907,172	$1,450,954	7,101
Industrial	50,253,717	$4,093,475	$839,239	487
Irrigation	1,923,652	$187,861	$0	79
Grand Total	**213,745,986**	**$20,188,508**	**$2,290,193**	**7,667**

Table 26
Participation by Measure Category

Measure Categories	Total kWh (at site)	Cash Incentive	Bill Credits	Total # of Projects
Additional Measures	5,907,216	$ 500,978	$ 249,133	43
Building Shell	1,334,213	$ 486,248	$ -	163
Compressed Air	6,302,283	$ 793,399	$ 12,066	65
Direct Install	9,677,320	$ 2,777,020		1,221
Energy Management	47,455,869	$ 949,117	$ -	88
Energy Manager Co-Funding		$ 636,252		12
Farm & Dairy	32,910	$ 3,356	$ -	3
Food Service Equipment	2,243,303	$ 206,993	$ -	62
HVAC	24,438,380	$ 3,489,983	$ 115,831	292
Irrigation	1,631,283	$ 154,736	$ -	75
Lighting	100,004,517	$ 8,811,208	$ 1,552,528	5,529
Motors	8,827,909	$ 583,660	$ 360,635	81
Oil & Gas	38,828	$ 6,000	$ -	1
Refrigeration	5,850,408	$ 789,007	$ -	31
Water Heating	1,547	$ 550	$ -	1
Grand Total	**213,745,986**	**$ 20,188,508**	**$ 2,290,193**	**7,667**

Table 27
Participation by Delivery Channel

Delivery Channel	Total kWh (at site)	Cash Incentive	Bill Credits	Total # of Projects
Contracted	**117,190,364**	**$ 12,904,037**	**$ 156,192**	**7,371**
Additional Measures	438,359	$ 65,754	-	6
Building Shell	896,102	$ 297,563	-	123
Compressed Air	1,918,625	$ 263,625	-	41
Direct Install	9,677,320	$ 2,777,020	-	1,221
Energy Management	4,081,481	$ 81,630	-	4
Farm & Dairy	32,910	$ 3,356	-	3
Food Service Equipment	559,818	$ 36,630	-	63
HVAC	4,078,571	$ 672,221	-	182
Irrigation	1,631,283	$ 154,736	-	124
Lighting	90,960,514	$ 8,352,045	$ 67,893	5,540
Motors	2,783,730	$ 180,024	$ 88,299	58
Oil & Gas	38,828	$ 6,000	-	1
Refrigeration	91,276	$ 12,884	-	4
Water Heating	1,547	$ 550	-	1
In-house	**96,555,622**	**$ 7,121,127**	**$ 2,134,001**	**498**
Additional Measures	5,468,857	$ 435,224	$ 249,133	38
Building Shell	438,111	$ 188,685	-	52
Compressed Air	4,383,658	$ 529,774	$ 12,066	27
Energy Management	43,374,388	$ 867,488	-	84
Energy Manager Co-Funding	-	$ 472,908	-	9
Food Service Equipment	1,683,485	$ 170,363	-	10
HVAC	20,359,809	$ 2,817,762	$ 115,831	142
Lighting	9,044,003	$ 459,164	$ 1,484,635	79
Motors	6,044,179	$ 403,636	$ 272,336	24
Refrigeration	5,759,132	$ 776,123	-	33
In-house EM	**-**	**$ 163,344**	-	**3**
Energy Manager Co-Funding	-	$ 163,344	-	3
Grand Total	**213,745,986**	**$ 20,188,508**	**$ 2,290,193**	**7,872**

Services offered through the program include:

- Typical Upgrades: Provides streamlined incentives for lighting, HVAC, compressed air and other equipment upgrades that increase electrical energy efficiency and exceed code requirements.
- Small Business Direct: Provides enhanced incentives and direct installation of lighting retrofits to qualified small business customers
- Custom Analysis: Offers investment-grade energy analysis studies and recommendations for more complex projects.
- Energy Management: Provides expert facility and process analysis to help lower energy costs by optimizing customer's energy use.
- Energy Project Manager Co-funding: Available to customers who can commit to an energy savings of a minimum of 1,000,000 kWh/year.
- Midstream/LED instant incentive: Provides instant, point-of-purchase incentive for LED lamps and retrofit kits sold through qualifying participating distributors. Customers purchasing lamps from non-participating suppliers can apply for incentives after purchase.

Program Management

The program manager overseeing the business energy efficiency program activity in Utah is also responsible for the programs in Idaho and Wyoming. For each state the program manager is responsible for the management of the program administrators, cost effectiveness, identifying and contracting with the program administrators through a competitive bid process, program marketing, achieving and monitoring program performance and compliance, and recommending changes in the terms and conditions of the program.

Program Administration

The program is primarily administered through two delivery channels that are differentiated based upon customer needs: contracted DSM delivery and internal DSM delivery. For customers with high energy savings potential, the program offers Energy Project Manager Co-funding administered through its in-house DSM delivery.

Contracted DSM Delivery

The contracted DSM delivery channel generally targets typical opportunities which serves small to medium sized business customers and, to a lesser extent, large business customers. Administration is provided through Company contracts with Nexant, Inc. ("Nexant"), Cascade Energy ("Cascade") and Willdan Energy Solutions ("Willdan"). Nexant and Cascade manage trade ally coordination, training and application processing services for commercial measures and industrial/agricultural measures respectively. Willdan manages the small business direct installation offer and administration of oil and gas sector projects.

Nexant and Cascade are responsible for the following:

- Trade ally engagement – includes identification, recruiting, training, supporting and assisting trade allies to increase sales and installation of energy efficient equipment at qualifying business customer facilities.
- Incentive processing and administrative support – includes handling incoming inquiries as assigned, processing incentive applications, developing and maintaining standardized analysis tools, providing program design services, and evaluation and regulatory support upon request.
- Custom analysis and project facilitation for small/medium customer projects.
- Managing savings acquisition to targets within budget.
- Continual improvement of program operations and customer satisfaction.
- Inspections – includes verifying on an on-going basis the installation of measures. A summary of the inspection process is in Appendix 3.

Willdan is responsible for the following:

- Small business engagement - includes identification, outreach, assessing/auditing, installing and inspecting installation of energy efficient equipment at qualifying business customer facilities.
- Administrative support – includes handling incoming inquiries as assigned, processing applications, developing and maintaining standardized analysis tools, providing program design services, and evaluation and regulatory support upon request.
- Managing savings acquisition to targets within budget.
- Continual improvement of program operations and customer satisfaction.
- Administrative support, and engineering analysis for oil and gas sector customer energy efficiency savings projects.

Internal DSM Delivery

The internal DSM delivery channel targets large energy users who generally have multiple opportunities for energy efficiency improvements, such as those that require complex custom analysis. These large projects are administered by internal Company project managers and allows for a single point of contact to assist customers with their various opportunities. In this delivery channel, project managers are responsible for the following:

- Single point of contact for large customers to assist with their energy efficiency projects.
- Provide customer outreach and education of energy efficiency opportunities.
- Facilitate custom energy efficiency analysis, quality assurance and verification of savings through a pre-contracted group of engineering firms. See Table 27.
- Manage engineering firms to ensure program compliance, quality of work and customer satisfaction.
- Manage *watt*smart Business projects through the entire project lifecycle.

Infrastructure

Contracted DSM Delivery – Trade Ally Networks

To help increase and improve the supplier and installation contractor infrastructure for energy-efficient equipment and services, the Company established and developed trade ally networks for lighting, HVAC, motors/VFDs, and irrigation. This work includes identifying and recruiting trade allies, providing program and technical training and providing sales support on an ongoing basis. The current list of the trade allies who have applied and been approved as participating vendors are posted on the Company website and is included as Appendix 5 to this report. In most cases, customers are not required to select a vendor from these lists to receive an incentive[19].

Since 2002, the Company's trade ally network grew into a large, mature network of trade allies. However, the performance of trade allies varied with regard to industry experience, quality of workmanship, program knowledge and willingness to be a utility partner.

In 2017 all trade allies were asked to re-apply under new program guidelines put in place to encourage good market behavior. To improve trade ally network performance, a variety of actions were taken. Minimum participation requirements were raised, including mandatory industry trainings, proof of insurance, and proof of applicable licenses. Quarterly trade ally performance scorecards were introduced to provide timely feedback and encourage trade allies to reach "Premium" status. The following trade ally performance categories were established to align with program objectives:

- Level of participation (project count and savings)
- Customer satisfaction
- Program satisfaction
- Project submission quality
- Experience/training

Contracted DSM Delivery – Small Business Direct Installation Offer

Program year 2017 was the first full operational year of the small business direct installation offer, branded as "wattsmart Small Business Direct". The offering targets the small business customers with an expedited lighting incentive and targets specific geographical locations with marketing and outreach. In 2017, the offer resulted in:

- 9,677,319 kWh installed directly at customer sites;
- 51 cities served: American Fork; Aurora; Castle Dale; Cedar City; Cleveland; Delta; Enoch; Far West; Ferron; Garland; Grantsville; Holladay; Huntington; Hyde Park; Lake Point; Layton; Lindon; Logan; Marriot-Slaterville; Millcreek; Naples; Nibley;

[19] Customers receiving Small Business Lighting incentives are required to use an approved contractor selected from a competitive request for bid process.

North Logan; Ogden; Orangeville; Orem; Panguitch; Plain City; Pleasant Grove; Providence; Richfield; Richmond; Roy; Salina; Sandy; Smithfield; Tooele; Tremonton; Uintah; Venice; Vernal; Wellsville; West Haven; and West Valley;

- Average customer energy savings first year: 8,330 kWh;
- Average customer copay: $754;
- Average customer incentive: $2,264.

In the first year of operating this program it was discovered that there is a greater demand in rural markets than originally expected presenting an opportunity to extend the amount of time spent in each location and limit the number of locations. Rural communities also produced higher eligible customer participation rates (18%) than urban communities (7%).

Internal DSM Delivery

Given the diversity of the non-residential customers served by the Company, a pre-approved, pre-contracted group of engineering firms are used to perform facility specific energy efficiency analysis, quality assurance and verification services. Larger customers are managed by in-house project managers, while small and/or mid-market customers are outsourced directly to a qualified engineering firm for custom analysis. Each customer's project is directly managed by one of the Company's in-house project managers, or a program manager. The in-house team works directly with the customer or through the appropriate Company regional business manager located in Utah.

Table 28 lists the engineering firms under contract with the Company to provide energy efficiency analysis for in-house project managers.

Table 28
Energy Engineering Firms

Engineering Firm	Main Office Location
Brendle Group	Fort Collins, CO
Cascade Energy Engineering	Cedar Hills, UT
EMP2, Inc	Richland, VA
Energy Resource Integration, LLC	Sausalito, CA
4Sight Energy	Boise, ID
ETC Group, Incorporated	Salt Lake City, UT
Evergreen Consulting Group	Beaverton, OR
kW Engineering, Inc.	Salt Lake City, UT
Nexant, Incorporated	Salt Lake City, UT
RM Energy Consulting	Pleasant Grove, UT
Rick Rumsey, LLC	Ammon, ID
Solarc Architecture & Engineering, Inc.	Eugene, OR

Energy Management

Energy management is a system of practices that creates reliable and persistent electric energy savings through improved operations, maintenance and management practices in customer facilities. Energy management can result in improved system operation, lower energy costs, reduced maintenance and repair costs and extended equipment life, and improved occupant comfort and productivity for tenants and employees. This program offering is being emphasized by the utility and pushed out into the market in the coming year.

Energy Project Manager Co-Funding

An Energy Project Manager is a co-funded staff resource at a customer facility to develop and manage energy projects. Customers can establish an annual energy-savings goal and receive Energy Project Manager Co-funding proportionate to that goal (subject to caps). To date, the Company has assisted dozens of customers in Utah who have participated in this offer due to their large size. The below table illustrates how EPMs may be incented.

Table 29
Energy Project Manager Incentive Structure

Payment Structure	Payment Amount	Milestone
1 - Initial payment (optional)	1/3 of funding amount* (not to exceed $25,000)	1. Customer selects an Energy Project Manager 2. Company & Customer work together on Comprehensive Plan for electric energy savings 3. Customer signs the Energy Project Manager Offer
2 - Final payment	$0.025 per kWh of energy savings achieved, to a maximum 100 percent of approved Energy Project Manager Salary and less the initial payment	1. At the end of performance period as defined in the Energy Project Manager Offer

To summarize the *watt*smart Business internal structure, Table 30 shows the delivery channel, its targeted customer segment, provider(s), and the type of services.

Table 30
*watt*smart Business Structure

Delivery Channel	Targeted Customer Segment	Providers	Services
Internal Delivery	Commercial & Industrial	Outsourced Engineers	Custom, typical, energy management, energy project manager co-funding
Contracted Delivery (Small Business Direct Install, Trade Ally)	Small Businesses	Willdan	Typical
	Oil and Gas	Willdan	Custom, typical
	Commercial & Industrial	Nexant/Trade Allies	Typical

Program Changes

Several notable changes occurred within the *watt*smart Business Program in 2017. These changes include the addition of a midstream HVAC incentive program, the restructuring of LED lighting incentives and the expansion of the midstream lighting program.

The program added a midstream HVAC offering to encourage customers to maintain existing rooftop units. The HVAC Check-up offering targets small to medium commercial customers with rooftop units ranging in size from 7.5 to 15 tons. The installed HVAC capacity in this segment is very large; HVAC costs make up a significant portion of total energy costs and this segment is underserved by traditional recommissioning or prescriptive HVAC replacement options. Customers participating in the HVAC Check-up program should benefit from increased equipment efficiencies, energy savings, prolonged equipment life, reduced equipment repair costs, and improved comfort. HVAC distributors may also receive a small incentive for stocking and selling higher-efficiency units than required by code.

Commercial lighting incentives were restructured and shifted toward greater incentives for lighting controls. The intent and need of the restructuring was in response to the continual market changes with LED lighting and the evolution towards lighting controls with lighting retrofits for increased energy efficiency. Previous stand-alone incentives for controls were combined with retrofit incentives to create a single offering structure for interior and exterior lighting retrofits that promotes controllability. While replacement lamps are a good option, replacement lamps typically provide lower savings, life, and costs than full fixture replacements. The new combined approach was intended to augment prudent spending on lighting incentives by paying for energy savings that adopt basic or advanced controls, while still allowing customers to select LED products that best fit their lighting needs and budgets.

LEDs have entered the mainstream lighting market and LED lighting options have become more varied in application, efficiency, quality, and price. During this market transition, the following changes have occurred:

- Improvements in LED efficiency/efficacy;
- Rapid price shifts;
- Development of various LED types and applications;
- Growing disparity between good/better/best products;
- Increasing controllability, enabling significant advances in lighting control systems; and
- Widespread market acceptance of LED technology.

Customers now have access to a broad selection of lighting upgrade options ranging from basic lamp replacements to full system redesign with new fixtures and advanced controls. The program changes toward incenting lighting controllability will increase the market evolution in the future.

Building upon the restructuring of lighting retrofit incentives the Company also expanded the offered lighting technologies available through the mid-market incentive channel in 2017. The mid-market lighting offering allow customers to receive point-of-purchase incentives and benefit from reduced paperwork. To build upon these benefits, measures were added to give customers expanded options to implement lighting upgrades and select replacement lamps or lighting system upgrades that best fit their needs and budgets.

Other changes to the wattsmart Business Program that occurred on 2017 included:

1. Added HVAC Check-up incentives for existing rooftop units to Schedule 140;
2. Made updates to prescriptive HVAC measures:
    a. Simplified the HVAC incentives table to allow better flexibility in responding to changes in codes and standards.
    b. Removed single package unitary commercial air conditioners from the prescriptive HVAC incentives offerings.
    c. Updated federal standards for HVAC offerings and adjusted incentives;
3. Added an advanced rooftop unit control measure.
4. Made updates to prescriptive Food Service measures:
    a. Removed sunset date on commercial transparent door refrigerators and freezers.
5. Removed induction and CFL offerings from new construction and major renovations.
6. Lower offered incentive amounts for cool roof offerings.

Evaluation

The *watt*smart Business program evaluation for program years 2014-2015 was published in 2017. Key findings include:

- Overall realization rate of 99.7 percent and net-to-gross of 77 percent.
- Program was cost effective from the UCT perspective at 1.99.
- Participants in the SBL, typical upgrades, custom analysis and LED instant incentives reported being very satisfied with the work provided by their contractor, program staff or their distributor.

The results of the evaluation can be viewed at http://www.pacificorp.com/es/dsm/utah.html.

COMMUNICATIONS, OUTREACH AND EDUCATION

*watts*mart is an overarching energy efficiency campaign with the overall goal to engage customers in reducing their energy usage through behavioral changes, and pointing them to the programs and information to assist them. "Rocky Mountain Power wants to help you save energy and money" is the key message, and the Company utilizes earned media, customer communications, education and outreach, advertising and program specific marketing to communicate the value of energy efficiency, provide information regarding low-cost, no-cost energy efficiency measures and to educate customers on the availability of programs, services and incentives.

A summary of 2017 (Year 8) "Utah Demand-side Management Outreach and Communications Campaign" is included in Appendix 7.

EVALUATIONS

Evaluations are performed by independent external evaluators to validate energy and demand savings derived from the Company's energy efficiency programs. Industry best practices are adopted by the Company with regards to principles of operation, methodologies, evaluation methods, and protocols including those outlined in the National Action Plan for Energy Efficiency Program Impact Evaluation and the California Evaluation Framework guides.

A component of the overall evaluation efforts is aimed at the reasonable verification of installations of energy efficient measures and associated documentation through review of documentation, surveys and/or ongoing onsite inspections.

Verification of the potential to achieve savings involves regular inspection and commissioning of equipment. The Company engages in programmatic verification activities, including inspections, quality assurance reviews, and tracking checks and balances as part of routine program implementation and may rely upon these practices in the verification of installation information for the purposes of savings verifications in advance of more formal impact evaluation results. A summary of the inspection process is included in Appendix 3.

Evaluation, measurement and verification tasks are segregated within the Company organization to ensure they are performed and managed by personnel who are not directly responsible for program management.

Information on evaluation activities completed or in progress during 2017 is summarized in the chart below. A summary of the recommendations are provided in Appendix 6. The evaluation report is available at www.pacificorp.com/es/dsm/utah.html

Program	Years Evaluated	Evaluator	Progress Status
Home Energy Savings	2015 - 2016	Cadmus	Completed
Low Income Weatherization	2013 - 2015	Opinion Dynamics	Completed
*watt*smart Business	2014 - 2015	Cadmus	Completed
Home Energy Reports	2016 - 2017	AEG	In Progress
*watt*smart Business	2015 - 2016	Cadmus	In Progress
A/C Cool Keeper & Irrigation Load Control	2016 – 2017	ADM	In Progress

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 1

Report Requirements

Report requirements were revised and approved pursuant to the Commission's Order issued February 16, 2017, in Docket No. 17-035-04, effective February 17, 2017.

Requirement No.	Description	Report Reference
1.	The Company will file the Annual Report between May 1 and June 1.	Filed May 18, 2018
2.	The Company shall report Class 1 capacity reduction, estimated Class 2 megawatt savings during system peak, and Class 2 megawatt-hour savings achieved, all compared against the Integrated Resource Plan targets and forecast targets submitted in the applicable DSM November 1st Deferred Account and Forecast Report.[1]	Table 2, Page 7
3.	In the executive summary, include the lifetime megawatt-hour savings in addition to first year megawatt-hour savings.	Page 5
4.	The Company shall clearly state for each program and measure whether all reported savings are ex-post or ex-ante.	Pg. 5, footnote 2; pg. 8, footnote 13
5.	The Company shall accurately and clearly report all cost effectiveness test results at the portfolio and sector level in addition to the program and measure category levels.	Appendix 2
6.	The Company shall perform cost effectiveness tests using avoided costs from planned assumptions.	Appendix 2
7.	The Company shall provide cost effectiveness results with associated decrement values and program expenditures for the year's performance of the Company's Class 1 programs, subject to the confidentiality requirements of Utah Administrative Code R746-100-16.	Confidential Appendix 8
8.	For Class 1 programs, capacity reduction will be reported in megawatts.	Tables 2, 3, and Peak Reduction section
9.	The Company shall provide Class 1 program data regarding loads available for curtailment, actual curtailment achieved, and program expenditures.	Peak Reduction section
10.	The Company shall include published evaluations that have not previously been provided in an Annual Report, and also include a schedule of current and upcoming evaluations.	Evaluation section
11.	The Company shall submit process and impact evaluation and annual reporting costs at the sector level for the cost effectiveness tests.	Appendix 2

[1] Pursuant to the Phase I Stipulation filed August 3, 2009, in Docket No. 09-035-T08, and approved in the order dated August 25, 2009, in the same, the Company must provide a forecast of expenditures for approved programs and their acquisition targets for the next calendar year by November 1st of each year.

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 2

Utah Cost Effectiveness

NAVIGANT

Memorandum

Navigant estimated the cost-effectiveness for the overall energy efficiency portfolio and component sectors, based on 2017 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall energy efficiency portfolio and the two sector components.

The portfolio passes the cost-effectiveness for all the tests except the RIM test. The memo consists of the following tables.

Table 1 - Utility Inputs
Table 2 – Portfolio Level Costs 2017
Table 3 – Benefit/Cost Ratios by Portfolio Type
Table 4 - 2017 DSM Portfolio with Load Control Programs Cost-Effectiveness Results
Table 5 - 2017 Total Portfolio Cost-Effectiveness Results
Table 6 – 2017 C&I Energy Efficiency Portfolio Cost-Effectiveness Results
Table 7 – 2017 Residential Energy Efficiency Portfolio Cost-Effectiveness Results

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Utility Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.32%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Irrigation Line Loss	9.24%
Residential Energy Rate ($/kWh)[1]	$0.1117
Commercial Energy Rate ($/kWh)[1]	$0.0843
Industrial Energy Rate ($/kWh)[1]	$0.0592
Irrigation Energy Rate ($/kWh)[1]	$0.0792
Inflation Rate	1.90%

[1] Future rates determined using a 1.9% annual escalator.

Table 2 – Portfolio Level Costs 2017

Expense	Cost
Outreach and Communications	$1,227,072
Portfolio - EM&V Non-Residential	$300,233
Portfolio - EM&V Residential	$377,464
Portfolio - Systems Support	$147,244
Portfolio Potential Study	$10,659
Portfolio Energy Code Training	$49,927
Total Costs	**$2,112,599**

Table 3 – Benefit/Cost Ratios by Portfolio Type

Measure Group	PTRC	TRC	UCT	RIM	PCT
DSM Portfolio with Load Control Programs	2.18	1.98	2.23	0.89	3.31
Total Energy Efficiency Portfolio	1.89	1.72	2.86	0.66	3.07
C&I Programs	1.93	1.75	3.24	0.77	2.53
Residential Programs	1.92	1.74	2.24	0.47	5.36
Load Control Programs	PASS	PASS	PASS	PASS	n/a

Table 4 - 2017 DSM Portfolio with Load Control Programs Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	n/a	$127,889,772	$278,425,184	$150,535,412	2.18
Total Resource Cost Test (TRC) No Adder	n/a	$127,889,772	$253,113,804	$125,224,032	1.98
Utility Cost Test (UCT)	n/a	$113,287,046	$253,113,804	$139,826,758	2.23
Rate Impact Test (RIM)		$283,461,672	$253,113,804	-$30,347,869	0.89
Participant Cost Test (PCT)		$80,598,582	$267,112,315	$186,513,734	3.31
Lifecycle Revenue Impacts ($/kWh)					$0.0001186536
Discounted Participant Payback (years)					n/a

Table 5 - 2017 Total Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0470	$85,363,177	$161,624,490	$76,261,313	1.89
Total Resource Cost Test (TRC) No Adder	$0.0470	$85,363,177	$146,931,354	$61,568,177	1.72
Utility Cost Test (UCT)	$0.0283	$51,440,361	$146,931,354	$95,490,993	2.86
Rate Impact Test (RIM)		$221,614,988	$146,931,354	-$74,683,633	0.66
Participant Cost Test (PCT)		$80,598,582	$247,792,225	$167,193,644	3.07
Lifecycle Revenue Impacts ($/kWh)					$0.0000087450
Discounted Participant Payback (years)					2.28

Table 6 – 2017 C&I Energy Efficiency Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0483	$64,222,852	$123,863,453	$59,640,602	1.93
Total Resource Cost Test (TRC) No Adder	$0.0483	$64,222,852	$112,603,140	$48,380,288	1.75
Utility Cost Test (UCT)	$0.0261	$34,705,677	$112,603,140	$77,897,462	3.24
Rate Impact Test (RIM)		$146,536,424	$112,603,140	-$33,933,284	0.77
Participant Cost Test (PCT)		$65,100,846	$164,674,471	$99,573,624	2.53
Lifecycle Revenue Impacts ($/kWh)					$0.0000072219
Discounted Participant Payback (years)					3.78

Table 7 – 2017 Residential Energy Efficiency Portfolio Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0404	$19,705,423	$37,761,036	$18,055,613	1.92
Total Resource Cost Test (TRC) No Adder	$0.0404	$19,705,423	$34,328,215	$14,622,791	1.74
Utility Cost Test (UCT)	$0.0314	$15,299,782	$34,328,215	$19,028,433	2.24
Rate Impact Test (RIM)		$73,643,662	$34,328,215	-$39,315,447	0.47
Participant Cost Test (PCT)		$15,497,735	$83,117,754	$67,620,019	5.36
Lifecycle Revenue Impacts ($/kWh)					$0.0000102344
Discounted Participant Payback (years)					0.68

NAVIGANT

Memorandum

Navigant estimated the cost-effectiveness results for the Utah Home Energy Savings Program, based on 2017 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for the 8 measure categories.

Cost-effectiveness was tested using the 2015 IRP east residential whole house 31%, east residential lighting 47%, and east water heating – 53% decrements. The program passes the cost-effectiveness for all tests except the RIM test. The memo consists of the following tables.

Table 1 - Home Energy Savings Inputs
Table 2 – Home Energy Savings Annual Program Costs
Table 3 – Home Energy Savings – Savings by Measure Category
Table 4 - Benefit/Cost Ratios by Measure Category
Table 5 – Home Energy Savings Program Level Cost-Effectiveness Results
Table 6 - Home Energy Savings Appliances Cost-Effectiveness Results
Table 7 - Home Energy Savings Building Shell Cost-Effectiveness Results
Table 8 - Home Energy Savings Energy Kits – DHW Cost-Effectiveness Results
Table 9 - Home Energy Savings Energy Kits – Lighting Cost-Effectiveness Results
Table 10 - Home Energy Savings HVAC Cost-Effectiveness Results
Table 11 - Home Energy Savings Lighting Cost-Effectiveness Results
Table 12 - Home Energy Savings Water Heating Cost-Effectiveness Results
Table 13 - Home Energy Savings Whole Home Cost-Effectiveness Results

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Home Energy Savings Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh) [1]	$0.1117
Inflation Rate	1.90%

[1] Future rates determined using a 1.9% annual escalator.

Table 2 – Home Energy Savings Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Dev.	Incentives	Total Utility Costs	Gross Customer Costs
Appliances	$0	$488	$34,450	$197	$56,300	$91,435	$243,785
Building Shell	$0	$1,484	$104,742	$600	$261,635	$368,461	$1,199,958
Energy Kits - DHW	$0	$803	$12,888	$325	$18,430	$32,445	$16,826
Energy Kits - Lighting	$0	$2,698	$43,299	$1,091	$18,546	$65,634	$17,118
HVAC	$0	$32,255	$2,431,965	$13,208	$2,171,858	$4,649,286	$2,061,522
Lighting	$0	$219,946	$685,229	$88,915	$4,891,953	$5,886,043	$9,516,329
Water Heating	$0	$31	$2,156	$12	$3,425	$5,624	$6,113
Whole Home	$0	$3,804	$186,317	$1,538	$546,950	$738,609	$2,436,084
Total	**$0**	**$261,508**	**$3,501,046**	**$105,886**	**$7,969,097**	**$11,837,537**	**$15,497,735**

Table 3 – Home Energy Savings – Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Appliances	147,420	84%	123,833	65%	80,491	14
Building Shell	448,222	100%	448,222	100%	448,222	30
Energy Kits - DHW	242,523	100%	242,523	89%	215,846	11
Energy Kits - Lighting	814,808	100%	814,808	89%	725,179	12
HVAC	9,867,797	100%	9,867,797	90%	8,881,017	14
Lighting	66,428,270	74%	49,156,920	71%	34,901,413	12
Water Heating	9,226	100%	9,226	87%	8,027	14
Whole Home	1,148,880	100%	1,148,880	97%	1,117,162	29
Total	**79,107,147**	**78%**	**61,812,209**	**75%**	**46,377,357**	**13**

Table 4 - Benefit/Cost Ratios by Measure Category

Measure Group	PTRC	TRC	UCT	RIM	PCT
Appliances	0.28	0.25	0.54	0.26	0.84
Building Shell	0.58	0.53	1.88	0.57	0.93
Energy Kits - DHW	4.06	3.69	3.29	0.43	15.61
Energy Kits - Lighting	7.60	6.91	6.56	0.51	52.29
HVAC	2.09	1.90	1.77	0.54	6.82
Lighting	2.94	2.68	3.52	0.48	6.07
Water Heating	0.72	0.65	0.87	0.32	2.38
Whole Home	0.51	0.46	1.61	0.42	1.11
Total	**2.13**	**1.93**	**2.65**	**0.49**	**4.97**

Table 5 – Home Energy Savings Program Level Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0372	$16,243,179	$34,569,965	$18,326,786	2.13
Total Resource Cost Test (TRC) No Adder	$0.0372	$16,243,179	$31,427,241	$15,184,062	1.93
Utility Cost Test (UCT)	$0.0271	$11,837,537	$31,427,241	$19,589,703	2.65
Rate Impact Test (RIM)		$64,130,095	$31,427,241	-$32,702,854	0.49
Participant Cost Test (PCT)		$15,497,735	$77,022,840	$61,525,105	4.97
Lifecycle Revenue Impacts ($/kWh)					$0.0000095196
Discounted Participant Payback (years)					1.45

Table 6 through Table 12 provides cost-effectiveness results for all 8 measures.

Table 6 - Home Energy Savings Appliances Cost-Effectiveness Results
(Decrement - East Water Heating – 53%, Load Shape – Residential_ERWH_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.2393	$193,595	$54,243	-$139,353	0.28
Total Resource Cost Test (TRC) No Adder	$0.2393	$193,595	$49,311	-$144,284	0.25
Utility Cost Test (UCT)	$0.1130	$91,435	$49,311	-$42,124	0.54
Rate Impact Test (RIM)		$188,387	$49,311	-$139,076	0.26
Participant Cost Test (PCT)		$243,785	$205,457	-$38,328	0.84
Lifecycle Revenue Impacts ($/kWh)					$0.0000003909
Discounted Participant Payback (years)					n/a

Table 7 - Home Energy Savings Building Shell Cost-Effectiveness Results
(Decrement - East Residential Whole House - 31%, Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.1845	$1,306,784	$760,574	-$546,210	0.58
Total Resource Cost Test (TRC) No Adder	$0.1845	$1,306,784	$691,431	-$615,353	0.53
Utility Cost Test (UCT)	$0.0520	$368,461	$691,431	$322,970	1.88
Rate Impact Test (RIM)		$1,221,044	$691,431	-$529,613	0.57
Participant Cost Test (PCT)		$1,199,958	$1,114,218	-$85,740	0.93
Lifecycle Revenue Impacts ($/kWh)					$0.0000007063
Discounted Participant Payback (years)					32.31

Table 8 - Home Energy Savings Energy Kits – DHW Cost-Effectiveness Results
(Decrement - East Water Heating - 53%, Load Shape – Residential_ERWH_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0160	$28,990	$117,560	$88,569	4.06
Total Resource Cost Test (TRC) No Adder	$0.0160	$28,990	$106,873	$77,882	3.69
Utility Cost Test (UCT)	$0.0179	$32,445	$106,873	$74,427	3.29
Rate Impact Test (RIM)		$249,787	$106,873	-$142,914	0.43
Participant Cost Test (PCT)		$16,826	$262,634	$245,808	15.61
Lifecycle Revenue Impacts ($/kWh)					$0.0000005087
Discounted Participant Payback (years)					n/a

Table 9 - Home Energy Savings Energy Kits – Lighting Cost-Effectiveness Results
(Decrement - East Residential Lighting - 47%, Load Shape – Residential_Lighting_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0096	$62,323	$473,889	$411,566	7.60
Total Resource Cost Test (TRC) No Adder	$0.0096	$62,323	$430,809	$368,485	6.91
Utility Cost Test (UCT)	$0.0101	$65,634	$430,809	$365,175	6.56
Rate Impact Test (RIM)		$845,793	$430,809	-$414,985	0.51
Participant Cost Test (PCT)		$17,118	$895,130	$878,011	52.29
Lifecycle Revenue Impacts ($/kWh)					$0.0000013560
Discounted Participant Payback (years)					n/a

Table 10 - Home Energy Savings HVAC Cost-Effectiveness Results
(Decrement - East Residential Whole House - 31%, Load Shape – UT_Single_Family_Cooling)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0485	$4,332,797	$9,045,263	$4,712,466	2.09
Total Resource Cost Test (TRC) No Adder	$0.0485	$4,332,797	$8,222,966	$3,890,169	1.90
Utility Cost Test (UCT)	$0.0521	$4,649,286	$8,222,966	$3,573,680	1.77
Rate Impact Test (RIM)		$15,346,479	$8,222,966	-$7,123,512	0.54
Participant Cost Test (PCT)		$2,061,522	$14,057,628	$11,996,106	6.82
Lifecycle Revenue Impacts ($/kWh)					$0.0000200233
Discounted Participant Payback (years)					n/a

Table 11 - Home Energy Savings Lighting Cost-Effectiveness Results
(Decrement - East Residential Lighting - 47%, Load Shape – Residential_Lighting_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0247	$7,750,683	$22,807,339	$15,056,655	2.94
Total Resource Cost Test (TRC) No Adder	$0.0247	$7,750,683	$20,733,944	$12,983,261	2.68
Utility Cost Test (UCT)	$0.0188	$5,886,043	$20,733,944	$14,847,902	3.52
Rate Impact Test (RIM)		$43,433,535	$20,733,944	-$22,699,590	0.48
Participant Cost Test (PCT)		$9,516,329	$57,775,745	$48,259,416	6.07
Lifecycle Revenue Impacts ($/kWh)					$0.0000741734
Discounted Participant Payback (years)					1.17

Table 12 - Home Energy Savings Water Heating Cost-Effectiveness Results
(Decrement - East Water Heating - 53%, Load Shape – Residential_ERWH_7P)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0932	$7,517	$5,409	-$2,108	0.72
Total Resource Cost Test (TRC) No Adder	$0.0932	$7,517	$4,917	-$2,600	0.65
Utility Cost Test (UCT)	$0.0697	$5,624	$4,917	-$707	0.87
Rate Impact Test (RIM)		$15,292	$4,917	-$10,375	0.32
Participant Cost Test (PCT)		$6,113	$14,538	$8,425	2.38
Lifecycle Revenue Impacts ($/kWh)					$0.0000000292
Discounted Participant Payback (years)					3.09

Table 13 - Home Energy Savings Whole Home Cost-Effectiveness Results
(Decrement - East Res. Whole House - 31%, Load Shape – UT_Single_Family_Heat_Pump)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.1474	$2,560,488	$1,305,688	-$1,254,800	0.51
Total Resource Cost Test (TRC) No Adder	$0.1474	$2,560,488	$1,186,989	-$1,373,499	0.46
Utility Cost Test (UCT)	$0.0425	$738,609	$1,186,989	$448,380	1.61
Rate Impact Test (RIM)		$2,829,778	$1,186,989	-$1,642,789	0.42
Participant Cost Test (PCT)		$2,436,084	$2,697,491	$261,407	1.11
Lifecycle Revenue Impacts ($/kWh)					$0.0000022653
Discounted Participant Payback (years)					23.83

NAVIGANT

Memorandum

Navigant estimated the cost-effectiveness results for the Utah Home Energy Reporting Program, based on 2017 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program.

Cost-effectiveness was tested using the 2015 IRP east residential whole house 31% load factor decrement. The program passes the cost-effectiveness for the PTRC test.

Table 1 - Home Energy Reporting Inputs
Table 2 – Home Energy Reporting Annual Program Costs
Table 3 – Home Energy Reporting Savings by Measure Category
Table 4 - Home Energy Reporting Program Level Cost-Effectiveness Results

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Home Energy Reporting Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh) [1]	$0.1117
Inflation Rate	1.90%

[1] Future rates determined using a 1.9% annual escalator.

Table 2 – Home Energy Reporting Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Development	Incentives	Total Utility Costs	Gross Customer Costs
Home Energy Reports	$0	$44,867	$2,973,933	$1,332	$0	$3,020,132	$0
Total	**$0**	**$44,867**	**$2,973,933**	**$1,332**	**$0**	**$3,020,132**	**$0**

Table 3 – Home Energy Reporting Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Home Energy Reports	50,562,602	100%	50,562,602	100%	50,562,602	1
Total	**50,562,602**	**100%**	**50,562,602**	**100%**	**50,562,602**	**1**

Table 4 - Home Energy Reporting Program Level Cost-Effectiveness Results
(Decrement - East Res. Whole House - 31%, Load Shape – UT_Single_Family_Heat_Pump)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0626	$3,020,132	$3,014,595	-$5,537	1.00
Total Resource Cost Test (TRC) No Adder	$0.0626	$3,020,132	$2,740,540	-$279,591	0.91
Utility Cost Test (UCT)	$0.0626	$3,020,132	$2,740,540	-$279,591	0.91
Rate Impact Test (RIM)		$8,775,283	$2,740,540	-$6,034,743	0.31
Participant Cost Test (PCT)		$0	$5,755,152	$5,755,152	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0002344208
Discounted Participant Payback (years)					n/a

NAVIGANT

Memorandum

Navigant estimated the cost-effectiveness results for the Utah Home Energy Reporting Program, based on 2017 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program. In addition to the results memo detailing cost-effectiveness results for the full amount of program costs incurred in 2017, this memo provides additional context for program cost-effectiveness by excluding the 2017 contractor closeout costs to detail the extent of the impact on the tests.

Cost-effectiveness was tested using the 2015 IRP east residential whole house 31% load factor decrement. The program passes the cost-effectiveness for the PTRC test.

Table 1 - Home Energy Reporting Inputs
Table 2 – Home Energy Reporting Annual Program Costs
Table 3 – Home Energy Reporting Savings by Measure Category
Table 4 - Home Energy Reporting Program Level Cost-Effectiveness Results

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Home Energy Reporting Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh) [1]	$0.1117
Inflation Rate	1.90%

[1] Future rates determined using a 1.9% annual escalator.

Table 2 – Home Energy Reporting Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Development	Incentives	Total Utility Costs	Gross Customer Costs
Home Energy Reports	$0	$44,867	$2,640,973 [1]	$1,332	$0	$2,687,172	$0
Total	**$0**	**$44,867**	**$2,640,973**	**$1,332**	**$0**	**$2,687,172**	**$0**

[1] Excludes 2017 contractor closeout costs of $332,960

Table 3 – Home Energy Reporting Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Home Energy Reports	50,562,602	100%	50,562,602	100%	50,562,602	1
Total	**50,562,602**	**100%**	**50,562,602**	**100%**	**50,562,602**	**1**

Table 4 - Home Energy Reporting Program Level Cost-Effectiveness Results
(Decrement - East Res. Whole House - 31%, Load Shape – UT_Single_Family_Heat_Pump)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0557	$2,687,172	$3,014,595	$327,423	1.12
Total Resource Cost Test (TRC) No Adder	$0.0557	$2,687,172	$2,740,540	$53,369	1.02
Utility Cost Test (UCT)	$0.0557	$2,687,172	$2,740,540	$53,369	1.02
Rate Impact Test (RIM)		$8,442,323	$2,740,540	-$5,701,783	0.32
Participant Cost Test (PCT)		$0	$5,755,152	$5,755,152	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0002214869
Discounted Participant Payback (years)					n/a

NAVIGANT

Memorandum

Navigant estimated the cost-effectiveness results for the Utah Low Income Weatherization Program, based on 2017 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program.

Cost-effectiveness was tested using the 2015 IRP east residential whole house 31% load factor decrement. The program passes the PTRC, TRC and UCT cost-effectiveness tests.

Table 1 - Low Income Weatherization Inputs
Table 2 - Low Income Weatherization Annual Program Costs
Table 3 - Low Income Weatherization Savings by Measure Category
Table 4 - Low Income Weatherization Program Level Cost-Effectiveness

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Low Income Weatherization Inputs

Parameter	Value
Discount Rate	6.66%
Residential Line Loss	9.32%
Residential Energy Rate ($/kWh)[1]	$0.1117
Inflation Rate	1.90%

[1] Future rates determined using a 1.90% annual escalator.

Table 2 - Low Income Weatherization Annual Program Costs

Measure Group	Engineering Costs	Utility Admin	Program Delivery	Program Development	Incentives	Total Utility Costs	Gross Customer Costs
Low Income Weatherization	$0	$13,956	$4,045	$3,055	$43,592	$64,649	$0
Total	**$0**	**$13,956**	**$4,045**	**$3,055**	**$43,592**	**$64,649**	**$0**

Table 3 - Low Income Weatherization Savings by Measure Category

Measure Group	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Low Income Weatherization	234,206	100%	234,206	100%	234,206	15
Total	**234,206**	**100%**	**234,206**	**100%**	**234,206**	**15**

Table 4 - Low Income Weatherization Program Level Cost-Effectiveness
(Decrement - East Res. Whole House - 31%, Load Shape – UT_Single_Family_Heat_Pump)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0262	$64,649	$176,477	$111,828	2.73
Total Resource Cost Test (TRC) No Adder	$0.0262	$64,649	$160,433	$95,784	2.48
Utility Cost Test (UCT)	$0.0262	$64,649	$160,433	$95,784	2.48
Rate Impact Test (RIM)		$360,819	$160,433	-$200,386	0.44
Participant Cost Test (PCT)		$0	$339,762	$339,762	n/a
Lifecycle Revenue Impacts ($/kWh)					$0.0000005267
Discounted Participant Payback (years)					n/a

NAVIGANT

Memorandum

Navigant estimated the cost-effectiveness results for the Utah Wattsmart Business Program, based on 2017 costs and savings estimates provided by PacifiCorp. This memo provides the cost-effectiveness results for the overall program and for the 15 measure categories.

Cost-effectiveness was tested using the 2015 IRP east commercial cooling – 14%, east commercial lighting – 53%, east residential – 9%, east water heating – 53%, east industrial – 40% decrements. The program passes PTRC, TRC, UCT and PCT cost-effectiveness tests. The memo consists of the following tables.

Table 1 - Utility Inputs
Table 2 – Annual Wattsmart Business Program Costs by Measure Category
Table 3 – Annual Wattsmart Business Program Savings by Measure Category
Table 4 - Benefit/Cost Ratios by Measure Category
Table 5 – Wattsmart Business Program Level Cost-Effectiveness Results
Table 6 - Wattsmart Business Additional Measures Cost-Effectiveness Results
Table 7 - Wattsmart Business Building Shell Cost-Effectiveness Results
Table 8 - Wattsmart Business Compressed Air Cost-Effectiveness Results
Table 9 - Wattsmart Business Direct Install Cost-Effectiveness Results
Table 10 - Wattsmart Business Energy Management Cost-Effectiveness Results
Table 11 - Wattsmart Business Energy Management Co-Funding Cost-Effectiveness Results
Table 12 - Wattsmart Business Farm & Dairy Cost-Effectiveness Results
Table 13 - Wattsmart Business Food Service Equipment Cost-Effectiveness Results
Table 14 - Wattsmart Business HVAC Cost-Effectiveness Results
Table 15 - Wattsmart Business Irrigation Cost-Effectiveness Results
Table 16 - Wattsmart Business Lighting Cost-Effectiveness Results
Table 17 - Wattsmart Business Motors Cost-Effectiveness Results
Table 18 - Wattsmart Business Oil & Gas Cost-Effectiveness Results
Table 19 - Wattsmart Business Refrigeration Cost-Effectiveness Results
Table 20 - Wattsmart Business Water Heating Cost-Effectiveness Results

1375 Walnut Street
Suite 100 | Boulder, CO 80302
303.728.2500 main
navigant.com

Table 1 - Utility Inputs

Parameter	Value
Discount Rate	6.66%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Irrigation Line Loss	9.24%
Commercial Energy Rate ($/kWh)[1]	$0.0843
Industrial Energy Rate ($/kWh)[1]	$0.0592
Irrigation Energy Rate ($/kWh)[1]	$0.0792
Inflation Rate	1.90%

[1] Future rates determined using a 1.90% annual escalator.

Table 2 – Annual Wattsmart Business Program Costs by Measure Category

Measure Category	Engineering Costs and Inspection	Utility Admin	Program Delivery	Program Dev.	Incentives	Bill Credits	Total Utility Costs	Gross Customer Costs
Additional Measures	$134,146	$34,473	$10,249	$12,565	$500,978	$249,133	$941,544	$2,111,582
Building Shell	$10,614	$4,434	$47,745	$2,838	$486,248	$0	$551,880	$1,439,145
Compressed Air	$108,047	$39,969	$162,720	$13,406	$793,399	$12,066	$1,129,606	$1,665,843
Direct Install	$0	$3,720	$773,056	$20,585	$2,777,020	$0	$3,574,381	$925,671
Energy Management	$1,240,808	$210,698	$518,791	$100,944	$949,117	$0	$3,020,358	$928,957
Energy Manager Co-Funding	$0	$9,199	$0	$0	$636,252	$0	$645,451	$0
Farm & Dairy	$0	$221	$8,090	$70	$3,356	$0	$11,737	$17,225
Food Service Equipment	$40,762	$7,357	$28,323	$4,772	$206,993	$0	$288,206	$681,621
HVAC	$495,392	$101,617	$180,952	$51,983	$3,489,983	$115,831	$4,435,757	$14,827,080
Irrigation	$0	$10,820	$398,871	$3,470	$154,736	$0	$567,896	$385,914
Lighting	$848,697	$345,225	$5,013,411	$212,720	$8,811,208	$1,552,528	$16,783,790	$37,350,671
Motors	$148,650	$52,675	$294,925	$18,778	$583,660	$360,635	$1,459,322	$2,037,566
Oil & Gas	$0	$267	$4,911	$83	$6,000	$0	$11,261	$13,544
Refrigeration	$140,793	$30,090	$11,286	$12,444	$789,007	$0	$983,620	$2,715,082
Water Heating	$0	$5	$78	$3	$550	$0	$636	$945
Total	**$3,167,907**	**$850,769**	**$7,453,407**	**$454,660**	**$20,188,508**	**$2,290,193**	**$34,405,444**	**$65,100,846**

Table 3 – Annual Wattsmart Business Program Savings by Measure Category

Measure Category	Gross kWh Savings	Realization Rate	Adjusted Gross kWh Savings	Net to Gross Ratio	Net kWh Savings	Measure Life
Additional Measures	5,907,216	74%	4,371,340	76%	3,322,218	15
Building Shell	1,334,213	84%	1,114,537	78%	871,573	16
Compressed Air	6,302,283	74%	4,663,689	76%	3,544,404	15
Direct Install	9,677,320	90%	8,709,588	90%	7,838,629	12
Energy Management	47,455,869	90%	42,603,639	87%	36,921,188	4
Energy Manager Co-Funding	0	n/a	0	n/a	0	0
Farm & Dairy	32,910	81%	26,657	76%	20,259	15
Food Service Equipment	2,243,303	93%	2,093,663	77%	1,603,483	7
HVAC	24,438,380	93%	22,724,317	76%	17,272,051	16
Irrigation	1,631,283	81%	1,321,339	76%	1,004,218	12
Lighting	100,004,517	98%	98,004,427	76%	74,380,329	14
Motors	8,827,909	98%	8,688,989	76%	6,606,481	15
Oil & Gas	38,828	93%	36,110	93%	33,582	15
Refrigeration	5,850,408	97%	5,674,896	76%	4,312,921	14
Water Heating	1,547	93%	1,439	76%	1,093	15
Total	**213,745,986**	**94%**	**200,034,629**	**79%**	**157,732,430**	**12**

Table 4 - Benefit/Cost Ratios by Measure Category

Measure Category	PTRC	TRC	UCT	RIM	PCT
Additional Measures	1.27	1.15	2.50	0.67	1.83
Building Shell	1.32	1.20	2.60	1.01	1.11
Compressed Air	1.69	1.54	2.18	0.67	2.48
Direct Install	3.43	3.11	1.42	0.51	10.57
Energy Management	2.90	2.64	2.51	0.64	12.05
Energy Manager Co-Funding	n/a	n/a	n/a	n/a	n/a
Farm & Dairy	0.74	0.67	1.23	0.48	1.58
Food Service Equipment	1.07	0.97	2.04	0.52	1.92
HVAC	2.56	2.33	6.42	1.42	1.62
Irrigation	2.58	2.35	2.92	1.24	3.03
Lighting	1.67	1.52	3.28	0.67	2.54
Motors	2.17	1.97	3.28	0.75	3.47
Oil & Gas	1.43	1.30	2.06	0.69	2.23
Refrigeration	1.50	1.36	3.12	0.71	1.91
Water Heating	1.03	0.93	1.18	0.45	2.03
Total	**1.94**	**1.76**	**3.27**	**0.77**	**2.53**

Table 5 – Wattsmart Business Program Level Cost-Effectiveness Results

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0481	$63,922,618	$123,863,453	$59,940,835	1.94
Total Resource Cost Test (TRC) No Adder	$0.0481	$63,922,618	$112,603,140	$48,680,521	1.76
Utility Cost Test (UCT)	$0.0259	$34,405,444	$112,603,140	$78,197,695	3.27
Rate Impact Test (RIM)		$146,236,191	$112,603,140	-$33,633,051	0.77
Participant Cost Test (PCT)		$65,100,846	$164,674,471	$99,573,624	2.53
Lifecycle Revenue Impacts ($/kWh)					$0.0000071580
Discounted Participant Payback (years)					3.80

Table 6 through Table 20 provide cost-effectiveness results for all 15 measures.

Table 6 - Wattsmart Business Additional Measures Cost-Effectiveness Results
(Decrement - East Industrial - 40%, Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0576	$2,045,369	$2,588,263	$542,895	1.27
Total Resource Cost Test (TRC) No Adder	$0.0576	$2,045,369	$2,352,967	$307,598	1.15
Utility Cost Test (UCT)	$0.0265	$941,544	$2,352,967	$1,411,423	2.50
Rate Impact Test (RIM)		$3,504,186	$2,352,967	-$1,151,219	0.67
Participant Cost Test (PCT)		$2,111,582	$3,872,875	$1,761,293	1.83
Lifecycle Revenue Impacts ($/kWh)					$0.0000030260
Discounted Participant Payback (years)					8.36

Table 7 - Wattsmart Business Building Shell Cost-Effectiveness Results
(Decrement - East Commercial Cooling - 14%, Load Shape – UT_Large_Office_Space_Cool)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.1238	$1,191,049	$1,575,616	$384,567	1.32
Total Resource Cost Test (TRC) No Adder	$0.1238	$1,191,049	$1,432,378	$241,329	1.20
Utility Cost Test (UCT)	$0.0574	$551,880	$1,432,378	$880,498	2.60
Rate Impact Test (RIM)		$1,415,784	$1,432,378	$16,594	1.01
Participant Cost Test (PCT)		$1,439,145	$1,590,979	$151,834	1.11
Lifecycle Revenue Impacts ($/kWh)					-$0.0000000410
Discounted Participant Payback (years)					18.61

Table 8 - Wattsmart Business Compressed Air Cost-Effectiveness Results
(Decrement - East Industrial - 40%, Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0428	$1,602,248	$2,707,354	$1,105,107	1.69
Total Resource Cost Test (TRC) No Adder	$0.0428	$1,602,248	$2,461,231	$858,983	1.54
Utility Cost Test (UCT)	$0.0302	$1,129,606	$2,461,231	$1,331,625	2.18
Rate Impact Test (RIM)		$3,670,656	$2,461,231	-$1,209,425	0.67
Participant Cost Test (PCT)		$1,665,843	$4,136,886	$2,471,043	2.48
Lifecycle Revenue Impacts ($/kWh)					$0.0000031790
Discounted Participant Payback (years)					4.09

Table 9 - Wattsmart Business Direct Install Cost-Effectiveness Results
(Decrement - East Commercial Lighting - 53%, Load Shape – UT_Large_Office_Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0232	$1,630,464	$5,585,870	$3,955,406	3.43
Total Resource Cost Test (TRC) No Adder	$0.0232	$1,630,464	$5,078,064	$3,447,600	3.11
Utility Cost Test (UCT)	$0.0508	$3,574,381	$5,078,064	$1,503,683	1.42
Rate Impact Test (RIM)		$9,879,267	$5,078,064	-$4,801,203	0.51
Participant Cost Test (PCT)		$925,671	$9,782,450	$8,856,779	10.57
Lifecycle Revenue Impacts ($/kWh)					$0.0000156885
Discounted Participant Payback (years)					n/a

Table 10 - Wattsmart Business Energy Management Cost-Effectiveness Results
(Decrement - East Industrial - 40%, Load Shape – UT_Miscellaneous_HVAC_Aux)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0262	$2,876,293	$8,346,352	$5,470,059	2.90
Total Resource Cost Test (TRC) No Adder	$0.0262	$2,876,293	$7,587,593	$4,711,300	2.64
Utility Cost Test (UCT)	$0.0275	$3,020,358	$7,587,593	$4,567,235	2.51
Rate Impact Test (RIM)		$11,900,435	$7,587,593	-$4,312,842	0.64
Participant Cost Test (PCT)		$928,957	$11,195,906	$10,266,950	12.05
Lifecycle Revenue Impacts ($/kWh)					$0.0000420070
Discounted Participant Payback (years)					n/a

Table 11 - Wattsmart Business Energy Management Co-Funding Cost-Effectiveness Results
(Decrement – n/a, Load Shape – n/a)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	n/a	$9,199	$0	-$9,199	n/a
Total Resource Cost Test (TRC) No Adder	n/a	$9,199	$0	-$9,199	n/a
Utility Cost Test (UCT)	n/a	$645,451	$0	-$645,451	n/a
Rate Impact Test (RIM)		$645,451	$0	-$645,451	n/a
Participant Cost Test (PCT)		$0	$636,252	$636,252	n/a
Lifecycle Revenue Impacts ($/kWh)					n/a
Discounted Participant Payback (years)					n/a

Table 12 - Wattsmart Business Farm & Dairy Cost-Effectiveness Results
(Decrement - East Industrial - 40%, Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.1005	$21,472	$15,900	-$5,572	0.74
Total Resource Cost Test (TRC) No Adder	$0.1005	$21,472	$14,455	-$7,018	0.67
Utility Cost Test (UCT)	$0.0549	$11,737	$14,455	$2,718	1.23
Rate Impact Test (RIM)		$29,902	$14,455	-$15,447	0.48
Participant Cost Test (PCT)		$17,225	$27,257	$10,032	1.58
Lifecycle Revenue Impacts ($/kWh)					$0.0000000406
Discounted Participant Payback (years)					10.43

Table 13 - Wattsmart Business Food Service Equipment Cost-Effectiveness Results
(Decrement - East Commercial Lighting - 53%, Load Shape – UT_Grocery_Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0645	$603,249	$645,615	$42,366	1.07
Total Resource Cost Test (TRC) No Adder	$0.0645	$603,249	$586,923	-$16,326	0.97
Utility Cost Test (UCT)	$0.0308	$288,206	$586,923	$298,717	2.04
Rate Impact Test (RIM)		$1,132,494	$586,923	-$545,571	0.52
Participant Cost Test (PCT)		$681,621	$1,309,378	$627,756	1.92
Lifecycle Revenue Impacts ($/kWh)					$0.0000030384
Discounted Participant Payback (years)					3.67

Table 14 - Wattsmart Business HVAC Cost-Effectiveness Results
(Decrement - East Commercial Cooling - 14%, Load Shape – UT_Large_Office_Space_Cool)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0657	$12,215,380	$31,320,365	$19,104,985	2.56
Total Resource Cost Test (TRC) No Adder	$0.0657	$12,215,380	$28,473,059	$16,257,679	2.33
Utility Cost Test (UCT)	$0.0238	$4,435,757	$28,473,059	$24,037,302	6.42
Rate Impact Test (RIM)		$19,995,704	$28,473,059	$8,477,355	1.42
Participant Cost Test (PCT)		$14,827,080	$23,961,736	$9,134,656	1.62
Lifecycle Revenue Impacts ($/kWh)					-$0.0000209280
Discounted Participant Payback (years)					10.03

Table 15 - Wattsmart Business Irrigation Cost-Effectiveness Results
(Decrement – East Residential Cooling - 9%, Load Shape – UT_Irrigation_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0780	$706,455	$1,823,454	$1,116,999	2.58
Total Resource Cost Test (TRC) No Adder	$0.0780	$706,455	$1,657,686	$951,231	2.35
Utility Cost Test (UCT)	$0.0627	$567,896	$1,657,686	$1,089,790	2.92
Rate Impact Test (RIM)		$1,338,773	$1,657,686	$318,913	1.24
Participant Cost Test (PCT)		$385,914	$1,169,048	$783,134	3.03
Lifecycle Revenue Impacts ($/kWh)					-$0.0000010421
Discounted Participant Payback (years)					2.98

Table 16 - Wattsmart Business Lighting Cost-Effectiveness Results
(Decrement - East Commercial Lighting - 53%, Load Shape – UT_Large_Office_Lighting)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0486	$36,319,824	$60,592,431	$24,272,607	1.67
Total Resource Cost Test (TRC) No Adder	$0.0486	$36,319,824	$55,084,029	$18,764,205	1.52
Utility Cost Test (UCT)	$0.0225	$16,783,790	$55,084,029	$38,300,238	3.28
Rate Impact Test (RIM)		$81,974,936	$55,084,029	-$26,890,907	0.67
Participant Cost Test (PCT)		$37,350,671	$94,707,855	$57,357,184	2.54
Lifecycle Revenue Impacts ($/kWh)					$0.0000755869
Discounted Participant Payback (years)					5.08

Table 17 - Wattsmart Business Motors Cost-Effectiveness Results
(Decrement - East Industrial - 40%, Load Shape – UT_Industrial_Machinery_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0348	$2,424,880	$5,258,980	$2,834,099	2.17
Total Resource Cost Test (TRC) No Adder	$0.0348	$2,424,880	$4,780,891	$2,356,010	1.97
Utility Cost Test (UCT)	$0.0209	$1,459,322	$4,780,891	$3,321,568	3.28
Rate Impact Test (RIM)		$6,393,529	$4,780,891	-$1,612,639	0.75
Participant Cost Test (PCT)		$2,037,566	$7,073,237	$5,035,671	3.47
Lifecycle Revenue Impacts ($/kWh)					$0.0000042388
Discounted Participant Payback (years)					3.47

Table 18 - Wattsmart Business Oil & Gas Cost-Effectiveness Results
(Decrement - East Industrial – 40%, Load Shape – UT_Miscellaneous_Mfg_General)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0504	$17,857	$25,538	$7,681	1.43
Total Resource Cost Test (TRC) No Adder	$0.0504	$17,857	$23,216	$5,359	1.30
Utility Cost Test (UCT)	$0.0318	$11,261	$23,216	$11,955	2.06
Rate Impact Test (RIM)		$33,768	$23,216	-$10,552	0.69
Participant Cost Test (PCT)		$13,544	$30,201	$16,657	2.23
Lifecycle Revenue Impacts ($/kWh)					$0.0000000277
Discounted Participant Payback (years)					3.99

Table 19 - Wattsmart Business Refrigeration Cost-Effectiveness Results
(Decrement - East Industrial – 40%, Load Shape – UT_Miscellaneous_Refrigeration)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0521	$2,258,075	$3,376,887	$1,118,812	1.50
Total Resource Cost Test (TRC) No Adder	$0.0521	$2,258,075	$3,069,897	$811,822	1.36
Utility Cost Test (UCT)	$0.0227	$983,620	$3,069,897	$2,086,278	3.12
Rate Impact Test (RIM)		$4,319,625	$3,069,897	-$1,249,727	0.71
Participant Cost Test (PCT)		$2,715,082	$5,178,487	$2,463,405	1.91
Lifecycle Revenue Impacts ($/kWh)					$0.0000035128
Discounted Participant Payback (years)					6.98

Table 20 - Wattsmart Business Water Heating Cost-Effectiveness Results
(Decrement - East Water Heating – 53%, Load Shape – UT_Large_Office_Water_Heat)

Cost-Effectiveness Test	Levelized $/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	$0.0698	$805	$827	$22	1.03
Total Resource Cost Test (TRC) No Adder	$0.0698	$805	$752	-$53	0.93
Utility Cost Test (UCT)	$0.0551	$636	$752	$116	1.18
Rate Impact Test (RIM)		$1,680	$752	-$928	0.45
Participant Cost Test (PCT)		$945	$1,923	$978	2.03
Lifecycle Revenue Impacts ($/kWh)					$0.0000000024
Discounted Participant Payback (years)					4.57

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 3

Utah Measure Installation Verifications

Utah Measure Installation Verification

Low Income Weatherization

All projects

- All measures are qualified through US Department of Energy approved audit tool or priority list.
- 100 percent inspection by agency inspector of all homes treated, reconciling work completed and quality prior to invoicing Company.
- State inspectors randomly inspect 5-10 percent of completed homes.

wattsmart Homes

Site inspections are performed by Program Administrator staff for retrofit and/or new homes measures. Inspections are performed on >=5 percent of single family homes, >=5 percent of manufactured homes, and 100 percent of multifamily projects. Measures include:

- Ductless heat pumps
- Duct sealing
- Duct sealing and insulation
- Electrically commutated motor (ECM) retrofit on existing gas furnace
- Heat pumps
- Heat pump water heaters
- Insulation

Site inspections are not performed for some measures. However all post-purchase incented measures undergo a quality assurance review prior to the issuance of the customer/dealer incentive. The quality assurance includes verification of proof of purchase receipt review and eligible equipment review. Additionally, customer accounts and customer addresses are verified to ensure the Company does not double pay for the same measure or double count measure savings. The following measures do not receive a site inspection:

- Central air conditioners
- Gas furnace with ECM
- Electric water heaters
- Evaporative coolers
- Smart thermostats
- Light fixtures

Site inspections are not performed on measures that are upstream, manufacturer buy-down model. Promotion agreement contracts are signed with manufacturers and retailers to set incentive levels, final product prices, and limits to the total number of units that can be purchased

per customer. The Program Administrator verifies measures for product eligibility and correct pricing. Pricing is also verified by Program Administrator field visits to retail locations. These measures include:

- LED bulbs
- Evaporative coolers
- Room air conditioners
- Advanced power strips

Customer eligibility for *watt*smart Starter Kits is verified using the customer's account number and last name, and cross-verifying with the current PacifiCorp customer database.

***watt*smart Business**

For projects delivered by third part program administrator

Lighting projects

- Retrofits - 100 percent pre- and post-installation site inspections by third party consultant of all projects with incentives over a specified dollar amount. Project cost documentation reviewed for all projects.
- New construction - 100 percent post-installation site inspections by third party consultant of all projects with incentives over a specified dollar amount.
- A percent of post-installation site inspections by program administrator of projects with incentives under a specified dollar amount.

Non-lighting projects (typical upgrades/listed measures, custom measures)

- 100 percent of applications with an incentive that exceeds a specified dollar amount will be inspected (via site inspection) by program administrator.
- A minimum of a specified percent of remaining non-lighting applications will be inspected, either in person or via telephone interview, by program administrator.

For Company in-house project manager delivered projects

Lighting and non-lighting

- 100 percent pre/post-installation site inspections by third party consulting engineering firms, invoice reconciled to inspection results.
- No pre-inspection for new construction

All Programs

As part of the third-party program evaluations (two-year cycle) process, the Company is implementing semi-annual customer surveys to collect evaluation-relevant data more frequently to cure for memory loss and other detractors such as customers moving and data not be readily

available at evaluation time). This will serve as a further check verifying customer participation and measures installed.

Additional record reviews and site inspections (including metering/data logging) is conducted as part of the process and impact evaluations, a final verification of measure installations.

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 4

Home Energy Savings Retailers
2017

Table of Contents

Table 1: 2017 Participating Midstream/Upstream Retailers 3
Table 2: 2017 Participating Downstream Retailers 7
Table 3: 2017 Participating Utah HVAC Trade Allies 17
Table 4: 2017 Participating Utah Weatherization Trade Allies 24
Table 5: 2017 Participating Utah Manufactured Homes Trade Allies 27

Table 1: 2017 Participating Midstream/Upstream Retailers

Retailer	City	State	Fixtures	LEDs
Ace Hardware - Hurst #5738	Cedar City	UT		x
Ace Hardware - Jones	Castle Dale	UT		x
Ace Hardware - Rasmussen #3961	Gunnison	UT		x
Ace Hardware - Smith & Edwards	Ogden	UT		x
Ace Hardware - Tremonton #14654	Tremonton	UT		x
Ace Hardware #14886	Highland	UT		x
Ace Hardware #9314	Pleasant Grove	UT		x
Ace Hardware Clearfield #15411	Clearfield	UT		x
Ace Hardware Delta #4954	Delta	UT		x
Barrett's Foodtown	Salina	UT		x
Batteries Plus #358	Salt Lake City	UT		x
Batteries Plus #754	West Jordan	UT		x
Batteries Plus #802	Riverdale	UT		x
Batteries Plus #909	West Valley City	UT		x
Costco #1019	South Jordan	UT		x
Costco #113	Salt Lake City	UT		x
Costco #487	Sandy	UT		x
Costco #622	West Valley City	UT		x
Costco #764	Murray	UT		x
Costco #770	Ogden	UT		x
Delta Jubilee Foods	Delta	UT		x
Dollar Tree #2630	Draper	UT		x
Dollar Tree #2665	Cedar City	UT		x
Dollar Tree #2678	Tooele	UT		x
Home Depot #4401	Riverdale	UT	x	x
Home Depot #4402	Salt Lake City	UT	x	x
Home Depot #4403	Salt Lake City	UT	x	x
Home Depot #4406	West Valley City	UT	x	x
Home Depot #4409	Sandy	UT	x	x
Home Depot #4410	West Jordan	UT	x	x
Home Depot #4411	Ogden	UT	x	x
Home Depot #4413	Salt Lake City	UT	x	x
Home Depot #4415	Park City	UT	x	x
Home Depot #4418	Cedar City	UT	x	x
Home Depot #4419	Tooele	UT	x	x
Home Depot #4421	Sandy	UT	x	x
Home Depot #8566	Riverton	UT	x	x

Retailer	City	State	Fixtures	LEDs
Kamas Foodtown (Fresh Market)	Kamas	UT		x
Lowe's #1080	Riverdale	UT	x	x
Lowe's #1133	West Valley City	UT	x	x
Lowe's #15	Layton	UT	x	x
Lowe's #1613	West Jordan	UT	x	x
Lowe's #2275	Salt Lake City	UT	x	x
Lowe's #2296	Riverton	UT	x	x
Lowe's #2606	Sandy	UT	x	x
Lowe's #2845	Clinton	UT	x	x
Lowe's #2858	Ogden	UT	x	x
Lowe's #342	Murray	UT	x	x
Petersons Fresh Market	Riverton	UT		x
Rancho Markets #2	West Valley City	UT		x
Rancho Markets #3	Salt Lake City	UT		x
Rancho Markets #5	Magna	UT		x
Rancho Markets #6	Ogden	UT		x
Rancho Markets #8	Ogden	UT		x
Ream's Foods #10	Kearns	UT		x
Ream's Foods #11	West Jordan	UT		x
Ream's Foods #12	Salt Lake City	UT		x
Ream's Foods #15	Sandy	UT		x
Ream's Foods #2	Salt Lake City	UT		x
Ream's Foods #6	Salt Lake City	UT		x
Ream's Foods #8	Magna	UT		x
Ream's Foods #9	Sandy	UT		x
Ridley's #1151	Tremonton	UT		x
Ridley's #15198	Orem	UT		x
Ridley's #15670	Orem	UT		x
Sam's Club #4718	South Jordan	UT		x
Sam's Club #4730	West Jordan	UT		x
Sam's Club #6682	Layton	UT		x
Sam's Club #6683	Murray	UT		x
Sam's Club #6684	Riverdale	UT		x
Sam's Club #6686	Salt Lake City	UT		x
Smith's #108	Herriman	UT		x
Smith's #131	Ogden	UT		x
Smith's #132	Draper	UT		x
Smith's #137	West Valley City	UT		x
Smith's #138	South Jordan	UT		x
Smith's #139	West Jordan	UT		x
Smith's #140	Sunset	UT		x

Retailer	City	State	Fixtures	LEDs
Smith's #142	Syracuse	UT		x
Smith's #144	Orem	UT		x
Smith's #147	West Valley City	UT		x
Smith's #153	Sandy	UT		x
Smith's #158	West Jordan	UT		x
Smith's #28	Salt Lake City	UT		x
Smith's #30	Ogden	UT		x
Smith's #42	Cedar City	UT		x
Smith's #44	Salt Lake City	UT		x
Smith's #47	Sandy	UT		x
Smith's #65	Magna	UT		x
Smith's #66	Salt Lake City	UT		x
Smith's #69	Salt Lake City	UT		x
Smith's #72	Park City	UT		x
Smith's #73	Pleasant Grove	UT		x
Smith's #77	Salt Lake City	UT		x
Smith's #80	Salt Lake City	UT		x
Smith's #81	Salt Lake City	UT		x
Smith's Marketplace #274	West Jordan	UT		x
Smith's Marketplace #475	Salt Lake City	UT		x
Smith's Marketplace #495	West Jordan	UT		x
Smith's Marketplace #94	Salt Lake City	UT		x
Sutherlands Lumber #2810	Salt Lake City	UT		x
Target #T0768	West Jordan	UT		x
Target #T0768	West Jordan	UT		x
Target #T1751	Salt lake City	UT		x
Target #T1751	Salt lake City	UT		x
Target #T1752	Sandy	UT		x
Target #T1752	Sandy	UT		x
Target #T1755	Layton	UT		x
Target #T1755	Layton	UT		x
Target #T2123	South Jordan	UT		x
Target #T2123	South Jordan	UT		x
Target #T2150	West Jordan	UT		x
Target #T2150	West Jordan	UT		x
Target #T2609	West Valley City	UT		x
Target #T2609	West Valley City	UT		x
Target #T2641	Salt Lake City	UT		x
Target #T2641	Salt Lake City	UT		x
Target of Riverdale	Riverdale	UT		x
Target of Riverdale	Riverdale	UT		x

Retailer	City	State	Fixtures	LEDs
True Value Family Stores	Salt Lake City	UT		x
True Value Hardware - Losee Lumber	Delta	UT		x
True Value Hardware - Valley Builder	Gunnison	UT		x
Wal-Mart - Supercenter #1699	Layton	UT		x
Wal-Mart - Supercenter #2921	Harrisville	UT		x
Wal-Mart - Supercenter #3589	Salt Lake City	UT		x
Wal-Mart - Supercenter #3620	Riverton	UT		x
Walmart #1438	Cedar City	UT		x
Walmart #1440	Tooele	UT		x
Walmart #1686	Taylorsville	UT		x
Walmart #1708	Riverdale	UT		x
Wal-Mart #1827	Park City	UT		x
Walmart #2207	Midvale	UT		x
Walmart #2307	South Jordan	UT		x
Walmart #3232	West Jordan	UT		x
Walmart #3568	West Valley City	UT		x
Walmart #3789	Ogden	UT		x
Walmart #3848	Syracuse	UT		x
Walmart #3848	Syracuse	UT		x
Walmart #4208	Salt Lake City	UT		x
Walmart #4689	Cedar Hills	UT		x
Walmart #5109	West Valley City	UT		x
Walmart #5110	Draper	UT		x
Walmart #5120	South Jordan	UT		x
Walmart #5205	Layton	UT		x
Walmart #5206	South Ogden	UT		x
Walmart #5233	West Valley City	UT		x
Walmart #5234	Clinton	UT		x
Wal-Mart #5350	Salt Lake City	UT		x
Walmart #5763	South Jordan	UT		x
Wal-Mart #7168	Herriman	UT		x
Wal-Mart of Lindon #5270	Lindon	UT		x
Walmart of Sandy #5235	Sandy	UT		x
Winegar's Supermarkets Inc Roy	Roy	UT		x

Table 2: 2017 Participating Downstream Retailers

Participating Retailer (Retailers who are actively enrolled in the program)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Room Air Conditioner	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
Ace Hardware - Hurst #5738	Cedar City	UT				x							
Ace Hardware - Jones	Castle Dale	UT											x
Ace Hardware - Olympus Hills	Salt Lake City	UT											x
Ace Hardware - Salt Lake City	Salt Lake City	UT											x
Ace Hardware - Tremonton #14654	Tremonton	UT		x									
Ace Hardware - Turner Lumber #4097	Moab	UT											x
Ace Hardware #14886	Highland	UT											x
Ace Hardware #9314	Pleasant Grove	UT											x
Ace Hardware Delta #4954	Delta	UT				x							
Ace Hardware of South Ogden	Ogden	UT		x									
AT&T - Jordan Landing	West Jordan	UT		x									
AT&T - Murray	Murray	UT		x									
AT&T #SM90 - South Jordan	South Jordan	UT		x									
Basin Appliance	Vernal	UT											x
Batteries Plus #754	West Jordan	UT											x
Bed Bath & Beyond #0783	Ogden	UT		x									
Bed Bath & Beyond #0802	West Jordan	UT		x									
Bed Bath & Beyond #1140	American Folk	UT		x									
Bed Bath & Beyond #1260	Sandy	UT		x									
Bed Bath & Beyond #198	Midvale	UT		x									
Bed Bath & Beyond #270	West Valley	UT		x									
Bed Bath & Beyond #292	South Orem	UT		x									
Bed Bath & Beyond #294	Salt Lake City	UT		x									
Bed Bath & Beyond #498	Layton	UT		x									
Best Buy #1146	West Jordan	UT	x	x									
Best Buy #1402	American Fork	UT	x	x									
Best Buy #1761	Park City	UT		x									
Best Buy #496	Riverdale	UT		x									
Best Buy #497	Sandy	UT		x	x								
Best Buy #521	Murray	UT	x	x	x								
Best Buy #527	Salt Lake City	UT		x									
Best Buy #773	Orem	UT	x	x									
Best Buy #891	Washington	UT		x									
Best Buy #945	Logan	UT		x									
Bill's Home Furnishings Inc	Price	UT											x

Participating Retailer (Retailers who are actively enrolled in the program)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Room Air Conditioner	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
Boulevard Home Furnishings	St. George	UT	x		x								
Boyle Appliance Center	Ogden	UT	x		x								
Brio Energy LLC	Provo	UT		x									
C-A-L Ranch Stores - Cedar City	Cedar City	UT											x
C-A-L Ranch Stores - Farwest	Farwest	UT											x
C-A-L Ranch Stores - Layton	Layton	UT											x
C-A-L Ranch Stores - Tooele	Tooele	UT											x
C-A-L Ranch Stores - West Jordan	West Jordan	UT											x
Charlie Fuller's Appliance	Woods Cross	UT											x
Clark's Wholesale	Salt Lake City	UT											x
Codale Electric Supply #2	Sandy	UT		x									
Codale Electric Supply #8	Cedar City	UT		x									
Codale Electric Supply, Inc.	Ogden	UT		x									
Codale Electric Supply, Inc.	Salt Lake City	UT		x									
Comfort Climate Solutions LLC	American Fork	UT		x									
Costco #1019	South Jordan	UT		x	x								
Costco #1033	Pocatello	UT		x									
Costco #1118	Spanish Fork	UT		x									
Costco #113	Salt Lake City	UT		x	x								
Costco #484	Orem	UT		x	x								
Costco #487	Sandy	UT		x									
Costco #622	West Valley	UT		x									
Costco #672	St. George	UT		x									
Costco #733	Lehi	UT		x	x								
Costco #735	West Bountiful	UT		x									
Costco #764	Murray	UT		x									
Costco #770	Ogden	UT		x									
Darrell's Appliance Service & Sales	Benson	UT	x										
Designer Media Systems, Inc	Salt Lake City	UT		x									
Diamond Heating	Provo	UT		x									
Dollar Tree #2605	Orem	UT											x
Dollar Tree #2609	Taylorsville	UT											x
Dollar Tree #2669	Clinton	UT											x
Dollar Tree #3693	Ogden	UT											x
Dollar Tree #3696	West Jordan	UT											x
Dollar Tree #3779	Riverdale	UT											x
Dollar Tree #3869	Syracuse	UT											x
Dollar Tree #4979	South Jordan	UT											x
Dollar Tree #5018	Ogden	UT											x
Dollar Tree #5036	Lindon	UT											x

Participating Retailer (Retailers who are actively enrolled in the program)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Room Air Conditioner	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
Duerden's Appliance	Bountiful	UT	x										
Edge Home Security	Odgen	UT		x									
Encor Solar	Lehi	UT		x									
Goodman Distribution Inc #512	Salt Lake City	UT		x									
Heating & Cooling Guys Inc	Provo	UT		x									
Home Depot #1801	Boise	ID		x									
Home Depot #1807	Chubbuck	ID						x					
Home Depot #4401	Riverdale	UT	x	x	x	x	x		x		x		
Home Depot #4402	Salt Lake City	UT	x	x		x	x		x		x		
Home Depot #4403	Salt Lake City	UT	x	x		x	x		x		x		
Home Depot #4406	West Valley	UT	x	x	x	x	x		x		x		
Home Depot #4407	Lindon	UT	x	x	x	x							
Home Depot #4408	Centerville	UT	x	x		x			x				
Home Depot #4409	Sandy	UT	x	x	x	x	x		x		x		
Home Depot #4410	West Jordan	UT	x	x	x	x	x		x		x		
Home Depot #4411	Ogden	UT	x	x		x	x		x		x		
Home Depot #4412	Washington	UT	x	x		x							
Home Depot #4413	Salt Lake City	UT	x	x		x	x		x		x		
Home Depot #4414	Logan	UT	x	x	x	x				x			
Home Depot #4415	Park City	UT	x	x		x	x		x				
Home Depot #4416	Provo	UT		x	x	x							
Home Depot #4417	American Fork	UT	x	x	x	x			x		x		
Home Depot #4418	Cedar City	UT	x	x	x	x	x		x		x		
Home Depot #4419	Tooele	UT	x	x	x	x	x		x	x			
Home Depot #4420	St. George	UT	x	x									
Home Depot #4421	Sandy	UT	x	x	x	x	x		x				
Home Depot #4422	Richfield	UT	x	x		x			x		x		
Home Depot #8566	Riverton	UT	x	x		x	x		x				
Home Depot #8583	Layton	UT	x	x		x	x		x		x	x	
Home Selections by Fergusons	Salt Lake City	UT											x
Hooker Appliance Inc	Logan	UT	x		x								
Hutch's Home Furnishings	Lehi	UT											x
Larsen's Ace Hardware #1044	Richfield	UT				x							
Liddiard Home Furnishings	Tooele	UT	x										
Lowe's #1080	Riverdale	UT	x	x	x	x							
Lowe's #1118	St. George	UT	x	x		x							
Lowe's #1133	West Valley	UT	x	x	x				x		x		
Lowe's #15	Layton	UT	x	x		x				x			
Lowe's #1501	Logan	UT	x	x	x				x		x		
Lowe's #1613	West Jordan	UT	x	x	x	x			x		x		

Participating Retailer (Retailers who are actively enrolled in the program)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Room Air Conditioner	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
Lowe's #178	Orem	UT	x	x	x	x		x					
Lowe's #2275	Salt Lake City	UT	x	x		x		x	x			x	
Lowe's #2293	Lehi	UT	x	x	x				x		x		
Lowe's #2296	Riverton	UT	x	x	x	x			x		x		
Lowe's #2606	Sandy	UT	x	x		x			x				
Lowe's #2662	West Bountiful	UT	x	x	x				x				
Lowe's #2834	Vernal	UT		x									
Lowe's #2845	Clinton	UT	x	x	x	x							
Lowe's #2858	Ogden	UT	x	x	x	x			x				
Lowe's #342	Murray	UT	x	x	x	x					x	x	
Mountain Land Design - SLC	Salt Lake City	UT											x
Mountain West Distributors Inc	Salt Lake City	UT		x									
Murphy's Appliance	Brigham City	UT											x
Ogden's Superstore	Richfield	UT	x		x								
Ok and Sons Electric Co	Orem	UT		x									
Olsen Electric	Park City	UT		x									
PCS HVAC	Ogden	UT		x									
Prime 3 Windows	Salt Lake City	UT										x	
Progressive Power Solutions, Inc.	Orem	UT		x									
RC Willey	Sandy	UT	x										
RC Willey - Murray	Murray	UT	x	x									
RC Willey - Orem	Orem	UT	x										
RC Willey - Orem Mall	Orem	UT	x	x	x								
RC Willey - Riverdale	Riverdale	UT	x	x	x								
RC Willey - Syracuse	Syracuse	UT	x	x	x								
RC Willey- Draper	Draper	UT	x	x	x								
RC Willey Home Furnishings	Salt Lake City	UT	x	x									
Sam's Club #4718	South Jordan	UT		x									
Sam's Club #4730	West Jordan	UT		x									
Sam's Club #4786	Logan	UT		x									
Sam's Club #6682	Layton	UT		x									
Sam's Club #6683	Murray	UT		x									
Sam's Club #6684	Riverdale	UT		x									
Sam's Club #6685	Provo	UT		x									
Sam's Club #6686	Salt Lake City	UT		x									
Sears - Layton	Layton	UT		x									
Sears #1118	Salt Lake City	UT	x										
Sears #1301	Provo	UT	x										
Sears #1718	Ogden	UT	x										
Sears #1888	West Jordan	UT	x										

Participating Retailer (Retailers who are actively enrolled in the program)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Room Air Conditioner	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
Sears #2220	St. George	UT											x
Sears #2559	Sandy	UT											x
Sears #3058	Price	UT											x
Sears #3519	Vernal	UT											x
Sears #3529	Cedar City	UT											x
Sears #3539	Logan	UT											x
Sears #3962	Richfield	UT											x
Sears #4654	Murray	UT	x										
Sears #7408	Tooele	UT											x
Smith's Marketplace #94	Salt Lake City	UT											x
Solcius, LLC	Orem	UT		x									
Southeastern Appliance Center	Moab	UT											x
Southwest Appliance Wholesale	Cedar City	UT											x
Sparrow's Home Furnishings	Roy	UT	x										
STANDARD PLUMBING SUPPLY CO	Sandy	UT		x				X					
Sunroc Insulation	St. George	UT							x				
Sutherlands Lumber #2810	Salt Lake City	UT				x	x						
Target #T0768	West Jordan	UT		x									
Target #T1751	Salt Lake City	UT		x									
Target #T1752	Sandy	UT		x									
Target #T1754	Orem	UT		x									
Target #T1755	Layton	UT		x									
Target #T2123	South Jordan	UT		x									
Target #T2609	West Valley	UT		x									
Target #T2641	Salt Lake City	UT		x									
Target of American Fork	American Fork	UT		x									
Target of Riverdale	Riverdale	UT		x									
Target-Centerville	Centerville	UT		x									
The NPS Store Industrial	Salt Lake City	UT		x									
True Value Hardware - Losee Lumber	Delta	UT											x
Verizon Wireless - American Fork	American Fork	UT		x									
Verizon Wireless - Draper	Draper	UT		x									
Verizon Wireless - Layton	Layton	UT		x									
Verizon Wireless - Midvale	Midvale	UT		x									
Verizon Wireless - Salt Lake City	Salt Lake City	UT		x									
Verizon Wireless - West Jordan	West Jordan	UT		x									
Verizon Wireless - West Valley	West Valley	UT		x									
Vision Solar	Provo	UT		x									
Visix Technologies, LLC	Farmington	UT		x									
Walmart	Orem	UT		x									

Participating Retailer (Retailers who are actively enrolled in the program)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Room Air Conditioner	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
Wal-Mart - Supercenter #1699	Layton	UT		x									
Wal-Mart - Supercenter #2921	Harrisville	UT		x									
Wal-Mart - Supercenter #3589	Salt Lake City	UT											x
Wal-Mart - Supercenter #3620	Riverton	UT											x
Walmart #1438	Cedar City	UT		x									
Walmart #1440	Tooele	UT		x									
Walmart #1456	Evanston	WY		x									
Walmart #1686	Taylorsville	UT		x									
Walmart #1708	Riverdale	UT		x									
Wal-Mart #1827	Park City	UT											x
Walmart #2307	South Jordan	UT		x									
Walmart #3232	West Jordan	UT		x									
Walmart #3568	West Valley	UT											x
Walmart #3789	Ogden	UT											x
Walmart #3848	Syracuse	UT		x									
Walmart #4208	Salt Lake City	UT		x									
Walmart #4689	Cedar Hills	UT											x
Walmart #5109	West Valley	UT											x
Walmart #5110	Draper	UT											x
Walmart #5120	South Jordan	UT											x
Walmart #5205	Layton	UT											x
Walmart #5206	South Ogden	UT											x
Walmart #5233	West Valley	UT											x
Walmart #5234	Clinton	UT		x									
Walmart of American Fork	American Fork	UT		x									
Walmart of Centerville	Centerville	UT		x									
Walmart of Logan #4272	Logan	UT		x									
Walmart of North Logan #1888	North Logan	UT		x									
Walmart of Sandy #5235	Sandy	UT		x									
Walmart of Saratoga Springs	Saratoga Springs	UT		x									

Redemptions from Non-Participating Retailer's (Retailer may not be located in the service territory)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows
@Work Heating & Air	Salt Lake City	UT				x					
AbtElectronics.com	Orem	UT									
acwholesalers.com	N/A	N/A		x							
Airic's Heating Cooling LLC	Provo	UT		x							
AllergyandAir.com	Austin	TX				x					
Alside Supply Center	Salt Lake City	UT									x
Amazon.com	Seattle	WA		x		x					
AnyPerk	San Francisco	CA		x							
Appliancesconnection.com	Brooklyn	NY	x				x				
Beck's Home Furnishings	Mt Pleasant	UT			x						
Bed Bath & Beyond #1141	Peoria	AZ		x							
Bed Bath & Beyond #833	Melbourne	FL		x							
Bed Bath & Beyond Inc	Union	NJ		x							
Best Buy #1141	Bradenton	FL		x							
Best Buy #1143	Oro Valley	AZ		x							
Best Buy #212	Colorado Springs	CO		x							
Best Buy #285	Akron	OH		x							
BestBuy.com	N/A	N/A	x	x	x						
bhphotovideo.com	New York	NY		x							
Big Sky AV Solutions	South Jordan	UT		x							
binionstore.com	Santa Paula	CA		x							
Bonanza.com	Seattle	WA		x							
Bountiful Window and Door	Bountiful	UT									x
Brody's Glass House	Ogden	UT									x
Brookstone #388	Murray	UT		x							
Build.com, Inc.	Chico	CA		x							
Circuit City - Brooklyn	Brooklyn	NY		x							
CleanAir of Utah	North Salt Lake	UT		x							
Comfort Pro's	West Jordan	UT		x							
Compact Appliance	Austin	TX				x					
Cool Time Heating & Air Inc	Lindon	UT		x							
Costco #0765	Folsom	CA		x							
Costco #644	Gilbert	AZ		x							
Costco #646	Sparks	NV		x							
Costco #685	Las Vegas	NV		x							
Costco of Twin Falls	Twin Falls	ID		x							
Costco.com	N/A	N/A	x	x							
Crutchfield.com	Charlottesville	VA		x							
Custom Sound Company	Salt Lake City	UT		x							

Redemptions from Non-Participating Retailer's (Retailer may not be located in the service territory)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows
Dan's HVAC	Salt Lake City	UT		x							
Dell.com	Round Rock	TX		x							
E Zee Electronics	Los Angeles	CA		x							
E-Bay	N/A	N/A		x							
EcoAir	Salt Lake City	UT		x							
Ecobee.com	Toronto	ON		x							
Energy Solstice LLC	Draper	UT		x							
Ferguson #3112	Sandy	UT		x							
Fifth Gear A/V	Orem	UT		x							
Fingerhut.com	St. Cloud	MN		x							
FocusCamera.com	N/A	N/A		x							
Fond.co	N/A	N/A		x							
Frontier Secure	N/A	N/A		x							
GE Appliance Store--online	N/A	N/A	x								
GLOBAL INDUSTRIAL	Port Washington	NY		x							
GoodGuysElectronics.com	N/A	N/A		x							
Google, Inc.	Mountain View	CA		x							
Greton Inc.	Albany	NY		x							
Groupon Inc	Chicago	IL		x							
HD Supply	San Fernando	CA		x							
HepTech	Salt Lake City	UT		x							
Hill Main Exchange Store	Hill AFB	UT	x								
Home Depot #3102	Missoula	MT		x							
Home Depot #3302	Henderson	NV		x							
Home Depot #6807	San Angelo	TX		x							
Home Depot #8119	Atlanta	GA		x				x			
HomeDepot.com	N/A	N/A	x	x	x	x		x			
HSN.com	Clearwater	FL		x							
HVACSTORES.COM	Doral	FL		x							
JCPenny.com	Plano	TX	x		x						
Johnson Mechanical Solutions	Brigham City	UT		x							
K&C Windows - Arizona	Gilbert	AZ									x
K&C Windows - Utah	Clearfield	UT									x
Kohl's - American Fork	American Fork	UT		x							
Kohl's - Boise	Boise	ID		x							
Kohl's - Brickyard	Salt Lake City	UT		x							
Kohl's - Centerville	Centerville	UT		x							
Kohl's - Clinton	Clinton	UT		x							

Redemptions from Non-Participating Retailer's (Retailer may not be located in the service territory)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows
Kohl's - Draper	Draper	UT		x							
Kohl's - Layton	Layton	UT		x							
Kohl's - North Logan	North Logan	UT		x							
Kohl's - Orem	Orem	UT		x							
Kohl's - Riverton	Riverton	UT		x							
Kohl's - West Jordan	West Jordan	UT		x							
Kohl's - West Valley City	West Valley	UT		x							
Kohls.com	Middletown	OH		x							
Lansing Building Products	Ogden	UT									x
Lansing Building Products	Sandy	UT									x
Lowell E Smith Construction	Riverton	UT		x							
Lowe's Home Centers, LLC	Henderson	NV		x							
Lowe's of Las Vegas	Las Vegas	NV		x							
Lowe's of Wilkesboro	Wilkesboro	NC	x								
Lowes.com	N/A	N/A	x	x	x	x					
Mechanical Air, LLC.	Riverton	UT		x							
Mel Hanks & Sons, Inc.	Salem	UT	x								
Method Air Heating & Air Conditioning	Draper	UT		x							
MileagePlus	N/A	N/A		x							
Minute Bargains	Linden	NJ		x							
Mohave Service	Colorado City	AZ		x							
Mountain Land Design - SLC	Salt Lake City	UT			x						
My Snack Bars LLC (mysnackbars.net)	Nashville	TN		x							
Nayliner, LLC	Kaysville	UT		x							
Neraxa.com	Morris Plains	NJ		x							
Nest.com	Palo Alto	CA		x							
Netaora.com	Garfield	NJ		x							
Newegg.com	Whittier	CA		x							
Nordstrom Inc	Seattle	WA		x							
paypal.com	N/A	N/A		x							
Perry Homes Utah Inc	Riverton	UT			x						
Platt Electric	Beaverton	OR			x						
Qualitycellz.com	Chatsworth	CA		x							
QVC.com	N/A	N/A		x							
Rakuten.com	Aliso Viejo	CA		x							
RC Willey Appliances - Treasure Valley Store	Meridian	ID	x								
RC WIlley Appliances Online Order	N/A	N/A	x		x						

Redemptions from Non-Participating Retailer's (Retailer may not be located in the service territory)	City	State	Clothes Washer	Smart Thermostat	Freezer	Evaporative Cooler	Heat Pump Water Heater	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows
Reward Headquarters	Fenton	MO		x							
Royal Wholesale Electric	Ogden	UT		x							
Royal Wholesale Electric	Salt Lake City	UT		x							
Sage Solar LLC	Spanish Fork	UT		x							
samssclub.com	N/A	N/A		x							
SCS Sheet Metal	Oakley	UT				x					
Sears.com	N/A	N/A	x		x						
shopmyexchange.com	Dallas	TX		x							
Skywalker - Phoenix	Phoenix	AZ		x							
SmartHome	N/A	N/A		x							
Smith's - Lehi	Lehi	UT		x							
Solar Ready Solutions	Ogden	UT		x							
Strand Heating & Air	Park City	UT		x							
SupplyHouse.com	N/A	N/A		x							
Sutherland Bldg Material Shopping Centers, Inc.	Price	UT				x					
Synergy Power	Lehi	UT		x							
Target.com	Minneapolis	MN		x							
Tekspree.com	Gainesville	FL		x							
Thomson Mechanical, Inc.	Mesa	AZ		x							
Total Home Comfort	Kaysville	UT		x							
Turbo Vacuum	Orlando	FL	x								
US-Appliance.com	Auburn Hills	MI	x								
Unanimity	St. George	UT		x							
Utah Discount Windows	Sandy	UT								x	
Verizon Wireless - Alpharertta	Alpharetta	GA		x							
Verizon.com	N/A	N/A		x							
Vibrant Smart Home, LLC	West Valley	UT		x							
Vivint Smart Home	Provo	UT		x							
VR Plumbing	Park City	UT					x				
wal-mart.com	N/A	N/A		x							
Wasatch Building Supply	Provo	UT		x							
Wasatch Integration & Technical Support, LLC	Kaysville	UT		x							
Wetsel Heating & Air Conditioning	Cedar Hills	UT		x							
Wheelwright Lumber	Ogden	UT								x	
Whirlpool Corporation	Salt Lake City	UT	x								
Wikibuy.com	Austin	TX		x							

Table 3: 2017 Participating Utah HVAC Trade Allies

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Central Air Conditioner Equipment	Duct Sealing & Insulation	ECM Retrofit, Gas Furnace	Efficient Gas Furnace with ECM	Electric System to Heat Pump Conversion	Evaporative Cooler	Heat Pump to Heat Pump Upgrade	Heat Pump, Ductless	Heat Pump Water Heater	Smart Thermostat	No Redemptions in 2017
ABC Swamp Cooler	Layton	UT						x					
Absolute Air Heating and Air Conditioning	Mapleton	UT	x			x				x		x	
ABT Mechanical	Orem	UT				x							
Ace Air Conditioning & Heating	Bluffdale	UT						x					
Action Plumbing, Heating, and AC	West Jordan	UT	x		x	x		x				x	
ACX Service	West Haven	UT										x	
Advanced Air Inc	Hurricane	UT								x			
Advanced Heating & Air Conditioning, Inc.	Logan	UT	x			x							
Affordable Heating and Cooling Inc	Salt Lake City	UT	x		x	x		x		x			
After Hours Heating & Cooling	Holladay	UT								x		x	
Air Care Professionals, LLC.	St. George	UT											x
Air Conditioning & Heating Service	North Ogden	UT										x	
Air Design Heating and Cooling LLC	Murray	UT	x			x		x					
Air Express Heating and Air Conditioning Inc	Lehi	UT										x	
Air Force Heating & AC Inc	Springville	UT				x							
Air Now Heating & Air Conditioning	Ogden	UT	x			x						x	
Air Source Heating & Cooling, Inc.	Lehi	UT	x			x							
Air Tight Energy Inc. (Omnia Services Group)	Orem	UT		x									
Air Tight Energy, Inc.	Eagle Mountain	UT										x	
Aire Expresso Heating & Cooling	Tooele	UT				x				x		x	
Aire Serv of Salt Lake/Tooele	Salt Lake City	UT	x		x	x							
Aire-Flo Heating and Air Conditioning, Inc.	Murray	UT											x
All Hours	Cottonwood	UT										x	

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Central Air Conditioner Equipment	Duct Sealing & Insulation	ECM Retrofit, Gas Furnace	Efficient Gas Furnace with ECM	Electric System to Heat Pump Conversion	Evaporative Cooler	Heat Pump to Heat Pump Upgrade	Heat Pump, Ductless	Heat Pump Water Heater	Smart Thermostat	No Redemptions in 2017
All Service LLC	Ogden	UT										x	
All-Pro HVAC	Ogden	UT	x			x							
Allred's Inc.	Midvale	UT						x				x	
Alta Air Conditioning & Heating	Woods Cross	UT				x		x				x	
Amador Inc	Pleasant Grove	UT										x	
Amador Heating & Air	American Fork	UT											x
American HVAC	Orem	UT											x
Angler's HVAC	North Salt Lake	UT	x										
Any Climate Mechanical	Sandy	UT	x										
Any Hour	Syracuse	UT										x	
Any Hour, Inc.	Orem	UT	x									x	
Apollo Energy, LLC	Orem	UT										x	
Arrant Heating	Clearfield	UT	x			x							
Aspen Heating & Cooling LLC	Cottonwood Heights	UT										x	
Atkinson Electronics, Inc.	Murray	UT											x
Authority Heating & Cooling	Orem	UT	x		x	x							
Barwick Heating & Cooling	Springville	UT											x
Bergmann Heating and Air Conditioning	Orem	UT	x			x				x			
Best Heating & Cooling	Highland	UT											x
Bill's Comfort Systems	Layton	UT	x							x			
Bill's Comfort Systems Murray	Murray	UT	x			x				x			
Black Diamond Service Experts	South Salt Lake	UT	x			x						x	
Boulard Heating & Air Conditioning	West Jordan	UT				x		x					
Brian's Canvas Products	Clearfield	UT						x					
Brigham Heating & Cooling	Brigham City	UT								x			
Bryan Pons Enterprises	Taylorsville	UT											x
Call Climate Services	Centerville	UT											x
Canyon Heating and Air Conditioning	Salt Lake City	UT											x
Carpenter Furnace Co Inc	Ogden	UT	x			x							
Cedar Valley Heating & Air Conditioning	Cedar City	UT	x					x		x			
Climate Doctor LLC	Payson	UT											x
Comfort Champions	Draper	UT	x			x							
Comfort Maxx LLC	Salem	UT											x
Comfort Solutions	Ogden	UT	x			x				x			

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Central Air Conditioner Equipment	Duct Sealing & Insulation	ECM Retrofit, Gas Furnace	Efficient Gas Furnace with ECM	Electric System to Heat Pump Conversion	Evaporative Cooler	Heat Pump to Heat Pump Upgrade	Heat Pump, Ductless	Heat Pump Water Heater	Smart Thermostat	No Redemptions in 2017
Comfort Systems USA	Salt Lake City	UT	x			x							
Comfort Zone/ PC Industries	Salt Lake City	UT	x			x						x	
Complete Comfort Heating & Air Conditioning	Springville	UT				x							
Comprehensive Home Inspections LLC	Salt Lake City	UT											x
Concept Property Management, Inc.	Riverton	UT						x					
Connect Building Services, Inc	Sandy	UT				x							
Craig's Superior Appliance	Bountiful	UT								x			
CTR Heating and Air	South Jordan	UT	x			x							
Custom Air, Inc.	Murray	UT											x
Customer Comfort LLC	Centerville	UT	x			x							
CW Heating and Air	Riverton	UT											x
D Blake Electric & Refrigeration, Inc.	St. George	UT							x				
Daniels Plumbing & Heating, Inc.	Vernal	UT											x
Davis Heating & A/C Service, Inc.	Cedar City	UT								x			
Denny's Service Co	South Ogden	UT			x					x			
Design Comfort	Salt Lake City	UT	x										
Dick Kearsley Service Center	Clearfield	UT	x			x		x				x	
Eagar Heating & Cooling	Pleasant Grove	UT				x						x	
EcoServices Intermountain	Ogden	UT	x			x				x			
Elite Energy Solutions	Lindon	UT		x									
Elite Heating & Air Conditioning, LLC.	West Jordan	UT								x			
Energy Rewards Heating and Air Conditioning LLC	West Haven	UT	x			x						x	
Energy Savers Insulation	Layton	UT		x									
Energy Tech of Utah	Draper	UT											x
ERS Inc Heating & Cooling	Plain City	UT	x										
ESCO Services	Salt Lake City	UT	x		x	x				x	x		
Extraordin-Aire	Plain City	UT	x									x	
Fahrenheit Heating & Air Conditioning	Mapleton	UT				x							
Fisher HVAC	Salt Lake City	UT				x							
Five County Association of Government	St. George	UT											x
Forced Aire LLC	Layton	UT											x
Friendly Plumber LLC	South Salt Lake City	UT											x

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Central Air Conditioner Equipment	Duct Sealing & Insulation	ECM Retrofit, Gas Furnace	Efficient Gas Furnace with ECM	Electric System to Heat Pump Conversion	Evaporative Cooler	Heat Pump to Heat Pump Upgrade	Heat Pump, Ductless	Heat Pump Water Heater	Smart Thermostat	No Redemptions in 2017
Genuine Comfort HVAC	Centerville	UT						x					
Gillette Heating and Air Conditioning	Salem	UT	x			x							
Gray Wolf Mechanical	Provo	UT	x			x							
Greenhome Specialties	Layton	UT		x								x	
Greenify Energy Savers	Sandy	UT										x	
Gunther's Comfort Air	American Fork	UT	x			x				x			
H & M Heating	Kaysville	UT				x							
Hansen HVAC & Plumbing Services	West Jordan	UT	x			x							
Harris-Dudley Plumbing Co.	Salt Lake City	UT											x
Hatch Heating and A/C	Farmington	UT								x			
Healthy Home	Salt Lake City	UT					x						
Heavenly Heating and Cooling	Magna	UT	x			x							
Heber Park City Appliance Sales and Service	Heber City	UT								x			
High Country HVAC, Inc.	Centerville	UT	x		x	x							
Hill Heating & Air	West Bountiful	UT	x			x						x	
HMI Heating and Air	Nibley	UT				x							
Holbrook Service, LLC	Salt Lake City	UT											x
Holmes Heating & Cooling	Lehi	UT											x
Holmes & Holmes Industrial	Magna	UT	x			x						x	
Home Energy Experts, LLC	Clearfield	UT		x									
Huish Heating and A/C Inc.	Taylorsville	UT											x
Humphrey Heating and Air	Bountiful	UT								x			
HVAC Construction Inc	North Salt Lake	UT	x			x							
HVAC Plus, Inc.	Salt Lake City	UT											x
HVAC Utah	Layton	UT	x		x	x		x		x			
Hyland Heating	West Jordan	UT				x		x					
Ideal Heating & Cooling, Inc.	Park City	UT											x
iRepair Heating & Air, Inc.	Sandy	UT											x
Jenson Refrigeration	Salt Lake City	UT											x
JM Mechanical	Hyde Park	UT	x			x							
Johnstone Supply - SLC	Salt Lake City	UT						x				x	
Jones Heating & Air Conditioning	West Valley City	UT	x			x						x	
Just Right Heating & Cooling, LLC.	Salt Lake City	UT	x			x				x			
K.O. Installers, Inc.	Plain City	UT						x					
KC Heating and Air	Murray	UT											x

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Central Air Conditioner Equipment	Duct Sealing & Insulation	ECM Retrofit, Gas Furnace	Efficient Gas Furnace with ECM	Electric System to Heat Pump Conversion	Evaporative Cooler	Heat Pump to Heat Pump Upgrade	Heat Pump, Ductless	Heat Pump Water Heater	Smart Thermostat	No Redemptions in 2017
Kelly's Heating and Cooling	South Salt Lake City	UT	x										
Knowlton Construction	Salt Lake City	UT						x					
L.J. Kaufman Construction	Salt Lake City	UT											x
Larkin HVAC of Utah, Inc.	Sandy	UT				x							
Larsen Heating & Air Conditioning	Saratoga Springs	UT	x									x	
Lee's Heating and Air	Salt Lake City	UT	x			x							
Long's Air Service Inc	American Fork	UT				x							
Luxaire Corporation	Salt Lake City	UT										x	
Main Street Heating & Cooling	Sandy	UT	x			x						x	
Manwill Plumbing and Heating	Salt Lake City	UT	x		x	x		x		x			
Mark A Stimson	Orem	UT	x			x							
Max Comfort Air Systems	West Valley	UT	x										
McLaughlin Air Conditioning and Heating Inc	Hurricane	UT											x
Method Air HVAC	Sandy	UT	x			x							
Mike Atkinson Heating and Air Conditioning	Ogden	UT											x
Moab Heat & Cool, LLC.	Moab	UT						x					
Modern Furnace And Air Conditoning LLC	Salt Lake City	UT											x
Modern Mechanical	Ogden	UT										x	
Mountain Air Conditioning and Heating	Ogden	UT	x			x	x						
Mountain Valley Heating & Air	Wellsville	UT											x
Mountainwest Service Experts	North Salt Lake City	UT											x
Mr Expert Plumbing	Murray	UT						x					
My Buddy the Plumber Heating & Air	Salt Lake City	UT	x			x						x	
Nebo Comfort Systems	Payson	UT	x			x							
Neerings Plumbing & Heating	Salt Lake City	UT				x							
Nichols HVAC, LLC.	Murray	UT	x										
North Star Heating & Air Conditioning	West Jordan	UT			x	x							
Outwest Insulation/HVAC	St. George	UT	x										
Parley's PPM LLC	Orem	UT								x			
Peace of Mind Mechanical	Kearns	UT											x
PerfecTemp Heating and Air	Ogden	UT				x							

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Central Air Conditioner Equipment	Duct Sealing & Insulation	ECM Retrofit, Gas Furnace	Efficient Gas Furnace with ECM	Electric System to Heat Pump Conversion	Evaporative Cooler	Heat Pump to Heat Pump Upgrade	Heat Pump, Ductless	Heat Pump Water Heater	Smart Thermostat	No Redemptions in 2017
Performance HVAC LLC	Sandy	UT				x							
Peterson Refrigeration	Gunnison	UT											x
Platinum Air Inc.	American Fork	UT											x
Pond's Plumbing Heating AC	North Salt Lake	UT	x			x						x	
Precise Plumbing Heating & AC	Midvale	UT				x							
Precision Air Management	Lehi	UT											x
Precision Comfort Systems	Murray	UT	x			x							
Preferred Service Heating, Cooling and Air Purity Inc	South Jordan	UT				x						x	
Professional Heating and Air Conditioning	Pleasant Grove	UT										x	
Rams Industries	Orangeville	UT											x
Rentmeister Total Home Services	Syracuse	UT								x			
Retro Man Heating and Air	Layton	UT											x
Riverside Plumbing and Heating Inc.	Moab	UT						x					
Royal Plumbing, Heating & Air Conditioning	Morgan	UT	x										
S&S Mechanical	St. George	UT											x
Salmon HVAC	Centerville	UT	x		x	x						x	
Salt City Heating and Air Conditioning	Salt Lake City	UT						x					
Same Day Heating and Air	Salt Lake City	UT	x			x						x	
Sammy's Heating and Air, LLC	Bountiful	UT	x			x							
Scott Hale Plumbing, Heating & Air	Salt Lake City	UT				x							
Scott Heating & Air Inc	Ogden	UT	x		x	x							
Select Comfort Systems	West Valley City	UT	x			x				x			
Service Experts Heating & Air Conditioning	Ogden	UT	x			x		x		x			
Service Experts of Salt Lake City	Midvale	UT	x			x							
Service Experts of Utah - Provo	Midvale	UT	x			x							
Sevier Heating & Air Conditioning	Elsinore	UT											x
SK Air LLC	Murray	UT											x
Sloan Construction Corp.	Salt Lake City	UT						x					
Smedley & Associates Plumbing and Heating	Layton	UT	x			x							
Smith HVAC	Lehi	UT	x			x							
Southwest Air Conditioning Heating and Energy LLC	St. George	UT											x

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Central Air Conditioner Equipment	Duct Sealing & Insulation	ECM Retrofit, Gas Furnace	Efficient Gas Furnace with ECM	Electric System to Heat Pump Conversion	Evaporative Cooler	Heat Pump to Heat Pump Upgrade	Heat Pump, Ductless	Heat Pump Water Heater	Smart Thermostat	No Redemptions in 2017
Spring Creek Mechanical	Springville	UT	x										
Squires Construction	Centerville	UT		x									
Stallings Sheet Metal	Mt. Pleasant	UT											x
Stoddard HVAC	Murray	UT											x
Stott Plumbing & Heating Inc	South Salt Lake	UT											x
Straightline Plumbing LLC	St. George	UT											x
Stoddco Heating & Air Conditioning	West Jordan	UT										x	
Superior Water and Air, Inc.	West Valley City	UT	x			x				x			
SwampTech	Murray	UT						x					
The Furnace Man Heating-Cooling LLC	Salt Lake City	UT											x
Thompson's Comfort Connection	Midvale	UT	x			x				x		x	
Titan Heating & Air Conditioning	West Jordan	UT				x						x	
Tod R Packer Heating & Air	Bluffdale	UT										x	
Total Air Control	Layton	UT										x	
Triple T Inc	Spanish Fork	UT	x			x				x			
Uintah Heating, Air Conditioning, Fireplaces & Plumbing	Holladay	UT	x			x							
Warner Heating	Riverton	UT	x			x							
West Brothers Inc	Salt Lake City	UT								x			
Western Heating & Air Conditioning	Orem	UT	x			x							
Western Mechanical Inc.	Logan	UT				x							
Whipple Service Champions	Salt Lake City	UT	x			x						x	

Table 4: 2017 Participating Utah Weatherization Trade Allies

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
5 Star Building Products, LLC	Orem	UT	x		x		
Absolute Air Heating and Air Conditioning	Mapleton	UT	x				
Advanced Insulation	Morgan	UT	x				
Advanced Window Products, Inc.	Salt Lake City	UT				x	
Advantage Window & Door LLC	Taylorsville	UT				x	
Air Tight Energy Inc. (Omnia Services Group)	Orem	UT	x				
All-Purpose Windows & Doors-Salt Lake City 84119	Salt Lake City	UT				x	
Alpine Exteriors, LLC.	South Jordan	UT				x	
Amazing Windows & Doors	Riverton	UT					x
American Exteriors LLC	West Valley City	UT				x	
Apex Energy Solutions LLC	Salt Lake City	UT				x	
Apex Insulation, LLC - UT	North Logan	UT					x
Attic Pro Insulation	American Fork	UT	x		x		
Barton Insulation	Vernal	UT	x				
BDI Insulation of Salt Lake City	Salt Lake City	UT					x
Bennett's Glass of Logan	Logan	UT				x	
Best Property Improvements Inc.	Holladay	UT	x		x		
Bonded Insulation	Salt Lake City	UT	x		x		
Building Services Group	Midvale	UT	x		x		
Burton Lumber Insulation	Salt Lake City	UT					x
Caco Construction Corp.	Lehi	UT				x	
Champion Windows	Salt Lake City	UT				x	
Chris W. Thurgood Construction Inc.	Bothwell	UT				x	
CJ's Home Improvement	West Valley City	UT				x	
Clean Cut Glass	West Valley City	UT				x	
Clear View Installs, LLC.	Sandy	UT				x	
Cornerstone Worx Inc	Riverdale	UT	x		x	x	
Cropper Roofing	Provo	UT					x
Eco Insulation	St. George	UT	x				
Ecostar Insulation	Bountiful	UT	x				
Elite Energy Solutions	Lindon	UT	x				
Energy One	Sandy	UT				x	
Energy Pro	Syracuse	UT	x		x		
Energy Savers Insulation	Layton	UT	x		x		
Greenhome Specialties	Layton	UT	x		x		

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
Greenify Energy Savers	Sandy	UT	x		x		
Hansen All Seasons	Lindon	UT	x		x		
Home Energy Experts, LLC	Clearfield	UT	x				
Home Energy Solutions, INC.	Centerville	UT	x				
Homestar Windows and Doors	Sandy	UT				x	
Hone Insulation	Levan	UT	x				
IDI Distributors	Salt Lake City	UT	x				
Insulation From Hale, LLC	Salt Lake City	UT	x				
International Installations LLC	Lehi	UT				x	
J & K Insulation LLC	Pleasant View	UT	x		x		
Jake Steenbergen Construction, Inc.	Murray	UT				x	
Jarrett Construction Inc	Orem	UT					x
K-Designers	West Valley City	UT				x	
Kendall Insulation	Ogden	UT					x
L.J. Kaufman Construction	Salt Lake City	UT					x
LesCo Insulation	Kerns	UT					x
LP Windows & Doors	St George	UT	x				
Merryweather & Son Construction, Inc	Tremonton	UT				x	
Mountain Fiber Insulation	Hyrum	UT	x		x		
Mountain States Windows & Siding	Lehi	UT				x	
Mountainland Exteriors	Riverton	UT				x	
Moyes Glass and Supply	Ogden	UT				x	
Nelson Insulation	Roy	UT	x				
New Look Siding, LLC	Midvale	UT				x	
Outwest Insulation/HVAC	St. George	UT					x
Peach Building Products	Midvale	UT				x	
Pella Windows & Doors	Draper	UT				x	
Penguin Insulation, LLC	Layton	UT	x				
Philco Installation	West Jordan	UT				x	
Pick's Insulation	Magna	UT	x	x	x		
Powell's Pro	Sandy	UT				x	
Premier Building Supply	American Fork	UT	x				
Property Medics	Bluffdale	UT	x				
Renewal by Andersen of Salt Lake	Salt Lake City	UT				x	
Residential Glassworks	North Salt Lake City	UT				x	
RLA & Sons, LLC.	Draper	UT	x				
Russell & Company, LLC	South Jordan	UT	x		x		
Same Day Heating and Air	Salt Lake City	UT					x
Service Experts Heating & Air Conditioning	Ogden	UT	x				
Service Experts of Salt Lake City	Midvale	UT					x
Service Experts of Utah - Provo	Midvale	UT					x

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Insulation-Attic	Insulation-Floor	Insulation-Wall	Windows	No Redemptions in 2017
Squires Construction	Centerville	UT					x
Sunroc Building Materials	Lindon	UT	x				
Superior Home Improvement	South Salt Lake	UT	x		x	x	
Synergy Windows	Sandy	UT				x	
Tate's Construction Contracting Inc	West Valley City	UT				x	
Thermal Solutions LLC	Springville	UT	x				
Tonks Insulation	Washington	UT					x
U.N.I. Exteriors	Draper	UT				x	
USI Cardalls LLC	Logan	UT	x		x		
USI Cardalls LLC - North Salt Lake City	North Salt Lake City	UT	x				
Utah Wall Foam	Ogden	UT					x
Valley Glass Inc (Layton)	Layton	UT				x	
Valley Glass Inc.	Ogden	UT				x	
White Leaf Enterprises Inc	North Ogden	UT				x	
Wholesale Windows and Door, Inc.	Orem	UT				x	
Window World of Utah - Spanish Fork	Spanish Fork	UT				x	
Wittes Fine Finish Work	Layton	UT				x	

Table 5: 2017 Participating Utah Manufactured Homes Trade Allies

Trade Ally Name (Trade ally may be located outside of the territory)	City	State	Manufactured Homes Duct Sealing	No redemptions in 2017
Home Energy Experts	Centerville	UT	x	

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 5

*watt*smart Business Vendor Network

wattsmart® Business Vendor Network

The following is a list of contractors, distributors, manufacturers and other vendors participating in Rocky Mountain Power's wattsmart® Business Vendor Network displayed in random order (unless sorted by the user) based on the search criteria selected. This listing is provided solely as a convenience to our customers. Rocky Mountain Power does not warrant or guarantee the work performed by these participating vendors. You are solely responsible for any contract with a participating vendor and the performance of any vendor you have chosen.

Search Criteria:

State(s)	[Utah]
Program(s)	[Commercial]
Specialties	[Appliances, Building envelope, Compressed air, Controls, Farm and dairy, Food service, HVAC - evaporative, HVAC - unitary, HVAC check-up, HVAC instant incentives, Irrigation, Lighting, Lighting instant incentives, Motors and VFDs, Office equipment, Other Specialty]
Service Address	
Business Name	

Search Results: 103 record(s) found

Company name	Contact information	Specialty	Projects completed	Distance (miles)
Commercial Lighting Supply, Inc. Address: PO Box 65675 Salt Lake City, UT 84165-0675 Website: http://www.commerciallightinginc.com	Phone: 801-262-0888 Name: Mark Barton Email: mark@commerciallightinginc.com	Lighting, Lighting instant incentives	96	
DiVi Energy, LLC Address: 4275 N Thanksgiving Way, Ste 111 Lehi, UT 84043 Website: http://divienergy.com	Phone: 801-361-7920 Name: Scott Thompson Email: scott@fixmyenergy.com	Lighting	40	
Advanced Lighting, Inc. - Utah Address: 3099 south 1030 west Salt Lake City, UT 84119 Website: http://www.advlight.com	Phone: 801-972-9530 Name: Brad Kossin Email: brad@advlight.com	Lighting	42	
LMS Address: 663 West 4330 South Salt Lake City, UT 84123 Website: http://www.lmslighting.com	Phone: 801-281-0400 Name: Chris Munford Email: cmunford@lmslighting.com	Lighting	88	

wattsmart® Business Vendor Network

Trane Address: 2817 South 1030 West Salt Lake City , UT 84119 Website: http://www.trane.com	Phone: 801-415-2032 Name: Mario Maestas Email: mmaestas@trane.com	Building envelope, Compressed air, Controls, HVAC - evaporative, HVAC - unitary, Motors and VFDs, Other Specialty	
TEC Electric Company Address: 755 West 200 South Logan, UT 84321 Website: http://www.tec-electric.com	Phone: 435-753-0920 Name: Chris Thomson Email: chris@tec-electric.com	HVAC - unitary, Lighting, Lighting instant incentives, Motors and VFDs	2
First Service Mechanical Address: 5200 Green Pine drive Murray, UT 84123 Website: http://www.fsmhvac.com	Phone: 801-968-4220 Name: Thad Torres Email: thad@fsmhvac.com	Controls, Food service, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	
VBFA Address: 330 South 300 E Salt Lake City, UT 84111 Website: HTTP://www.vbfa.com	Phone: Name: Ryan Van Voast Email: rvanvoast@vbfa.com	Controls, HVAC - unitary, Lighting, Other Specialty	
JSR Services, LLC. Address: 475 East Fort Union Blvd Midvale, UT 84047 Website: http://www.jsrservices.com	Phone: 801-748-1764 Name: Skyler Rohbock Email: sky@jsrservices.com	Building envelope	3
Royal Wholesale Electric - Ogden Address: 1406 W 3300 S Ogden, UT 84401 Website:	Phone: 385-405-7200 Name: Karre Leishman Email: karre@royalogden.com	Lighting, Lighting instant incentives	7
Bright Star Property Services Address: 214 S Cole Rd Boise, ID 83709 Website: http://www.brightstarps.com/	Phone: 208-922-6460 Name: Jennifer Jennifer Gamble Email: JenniferS@BrightStarPS.com	Lighting	1
Codale - Orem Address: 362 South Commerce Loop Orem, UT 84058 Website:	Phone: 801-724-3000 Name: Troy Gomm Email: troyg@codale.com	Lighting, Lighting instant incentives	
Advanced Energy Lighting Technology Address: 146 N. Old Highway 91 Suite 4 Hurricane,, UT 84737 Website: http://www.brightlightguys.com/	Phone: 877-254-2358 Name: Rick Christensen Email: brightlightguys@gmail.com	Lighting, Lighting instant incentives	8
Platt Electric Supply - Logan Address: 720 W 200 N Logan, UT 84321 Website:	Phone: 801-597-0867 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	

wattsmart® Business Vendor Network

Clark's Quality Roofing, Inc. Address: 334 West Anderson Avenue Murray, UT 84107 Website: http://www.clarkroof.com	Phone: 801-266-3575 Name: Hilary Clark Email: hilaryc@clarkroof.com	Building envelope	3
Border States Electric - Salt Lake City Address: PO Box 57857 Salt Lake City, UT 84157 Website: https://www.borderstates.com/Home	Phone: 801-268-2555 Name: Cameron Housekeeper Email: CHouskeeper@borderstates.com	Controls, Lighting, Lighting instant incentives	7
Graybar Address: 24 1500 W Orem, UT 84058 Website: https://www.graybar.com/	Phone: 385-267-5187 Name: Isaac Jaten Email: isaac.jaten@graybar.com	Lighting, Lighting instant incentives, Other Specialty	
Comfort Systems USA Intermountain Address: 2035 Milestone Dr. Suite A Salt Lake City, UT 84104 Website: http://www.comfortsystemsutah.com	Phone: 801-907-6700 Name: Larry Montague Email: lmontague@csusai.com	Controls, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	
CED - Ogden Address: 2725 Wall Avenue Ogden, UT 84401 Website:	Phone: 801-621-6560 Name: Janessa Estrada Email: janessa@cedogden.com	Lighting	
Green Light National Address: 1001 S 400 E Orem, UT 84097 Website: https://greenlightnational.com	Phone: 801-722-8677 Name: John Murphy Email: johnm@greenlightnational.com	Controls, Lighting, Other Specialty	36
Millcreek Electric Address: 4042 Buck Hollow Lane Bluffdale, UT 84065 Website: http://www.millcreekelectric.com	Phone: 801-822-9920 Name: Nathan Tom Email: nathantom07@gmail.com	Lighting, Lighting instant incentives	
Central Electric Supply Address: 190 North 100 West Richfield, UT 84701 Website: http://www.centralelectricsupply.com	Phone: 435-896-8486 Name: Keith Waters Email: keith@centralelectricsupply.com	Lighting, Lighting instant incentives	23
Light Energy Development Address: 41 N Rio Grande, Suite 101 Salt Lake City, UT 84101 Website: http://www.ledllc.net	Phone: 801-456-3910 Name: Adam Oakley Email: adamo@ledllc.net	Building envelope, Controls, HVAC - evaporative, HVAC - unitary, Lighting, Motors and VFDs	9

wattsmart® Business Vendor Network

Platt Electric Supply - Ogden Address: 3015 S 1900 W West Haven, UT 84401 Website:	Phone: 801-597-0867 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	3
All American LED Address: 3234 E 4650 N Liberty, UT 84310 Website: http://www.All-AmericanLED.com	Phone: 801-920-7276 Name: Brett Layser Email: B.Layser@All-AmericanLED.com	Lighting	1
Saddleback Lighting Address: 1425 W Red Ledge Road Ste 101 Washington, UT 84780 Website:	Phone: Name: Carole Long Email: carole@saddlebacklighting.com	Lighting, Lighting instant incentives	5
Freedom Lighting Address: 3643 W 7825 S West Jordan, UT 84088 Website:	Phone: 801-859-7943 Name: Manny Ycaza Email: mannyycaza@yahoo.com	Lighting	
Bastion Technologies Address: 175 W 7065 S Midvale, UT 84047 Website: http://www.bastiontech.com	Phone: 800-328-6024 Name: Stephen Chou Email: stephen.c@bastiontech.com	Lighting	15
CED- Logan Address: 636 N. 600 W. Logan, UT 84321 Website: http://cedlogan.shopced.com	Phone: 435-752-8905 Name: Devin Migliori Email: devinm@cedlogan.com	Farm and dairy, Irrigation, Lighting, Lighting instant incentives	20
CAO Lighting Address: 4628 W Skyhawk Dr West Jordan, UT 84084 Website: http://www.caolighting.com	Phone: 801-256-9282 Name: Johnny Jiang Email: johnnyj@caolighting.com	Lighting	7
Titan LED Address: 850 East Covey Lane Phoenix, AZ 85024 Website: http://www.titanledusa.net	Phone: 623-552-7065 Name: Jay Cook Email: j.cook@titanled.net	Lighting	
Codale Electric Supply, Inc - Cedar City Address: 477 North 100 West Cedar City, UT 84720 Website: http://www.codale.com	Phone: 435-586-7681 Name: Cody Ille Email: codyi@codale.com	HVAC - unitary, Lighting, Lighting instant incentives, Motors and VFDs	6
Graybar Electric Company, Inc. Address: 2841 South 900 West Salt Lake City, UT 84119 Website: http://www.graybar.com/	Phone: 385-267-5187 Name: Isaac Jaten Email: isaac.jaten@graybar.com	Controls, Lighting, Lighting instant incentives	7

wattsmart® Business Vendor Network

Platt Electric Supply - Layton Address: 730 Marshall Way N Layton, UT 84041 Website:	Phone: 801-597-0867 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	1
Utah Yamas Controls Address: 13526 S. 110 W. Draper, UT 84020 Website: http://www.utahyamas.com	Phone: 801-990-1950 Name: Roy Stephenson Email: sales@utahyamas.com	Building envelope, Controls, HVAC - evaporative, HVAC - unitary, Lighting instant incentives, Motors and VFDs, Other Specialty	
Harris Lighting Products Address: 1405 west 800 north Preston, ID 83263 Website: http://www.haleymhamblin.wixsite.com/harrislp	Phone: 208-852-2890 Name: Chase Harris Email: chase@harrislightingproducts.com	Controls, Lighting	
Osram Address: 200 Ballardvale Street Wilmington, MA 01887 Website: http://www.osram.us/ls	Phone: 858-386-2849 Name: Nancy Burgin Email: nancy.burgin@osram.com	Controls, HVAC - evaporative, HVAC - unitary, Lighting, Motors and VFDs	
Elysium Energy Address: 14466 South Long Ridge Drive Herriman, UT 84096 Website: http://www.elysiumenergy.net	Phone: 801-440-6821 Name: Justin McMurtrey Email: justin@elysiumenergy.net	Lighting, Other Specialty	19
UNVC Address: 11350 E 18625 S #118 Mt. Pleasant, UT 84647 Website: http://www.unvc.net	Phone: 435-851-4162 Name: Gregory Cummings Email: gcummings@unvc.net	Building envelope, Compressed air, Controls, HVAC - evaporative, HVAC - unitary, Motors and VFDs	1
ESL Vision Address: 1136 south 3600 West Salt Lake City, UT 84104 Website: http://www.eslvision.com	Phone: 801-866-3095 Name: Karen Young Email: karen.young@eslvision.com	Lighting	1
Relevant Solutions Address: 3186 Washington Street Salt Lake City, UT 84115 Website: http://www.relevantsolutions.com	Phone: 801-214-3317 Name: Alan Sweatfield Email: alan.sweatfield@relevantsolutions.com	Controls, Motors and VFDs	
Conserve-A-Watt Lighting Address: 2327 South Decker Lake Blvd West Valley City, UT 84119 Website: http://www.Cawlighting.com	Phone: 801-975-9363 Name: Toby Shaw Email: tobys@cawlighting.com	Lighting, Lighting instant incentives	11
Plusrite USA Address: 2000 S. Grove Ave. Bldg B Ontario, CA 91761 Website: http://www.mynaturaled.com	Phone: 909-930-6868 Name: Rick Childers Email: rick@plusriteusa.com	Controls, Lighting, Other Specialty	

wattsmart® Business Vendor Network

Platt Electric Supply - West Valley City Address: 1730 S 4650 W Ste A Salt Lake City, UT 84104 Website:	Phone: 801-597-0867 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	1
Gunthers Address: 81 S 700 E American Fork, UT 84003 Website: http://www.gunthers.com	Phone: 801-756-9683 Name: Nathan Silvey Email: nsilvey@gunthers.com	HVAC - unitary, HVAC check-up, Motors and VFDs	
Salmon Electrical Contractors Address: 1778 W. 1180 S. Woods Cross, UT 84087 Website: http://www.salmonelectric.com/	Phone: 801-292-3444 Name: Dave Grandstaff Email: dave@salmonelectric.com	Lighting	1
SuperGreen Solutions Address: 2682 S. Highland Dr. Ste 103 SALT LAKE CITY, UT 84106 Website: http://www.supergreensolutions.com/salt-lake-city-ut	Phone: 801-953-1096 Name: Franco Pedraza Email: info.slc@supergreensolutions.com	Controls, Lighting, Lighting instant incentives, Other Specialty	40
Optica Lighting Address: 1772 Ross Dr Ogden, UT 84403 Website: http://www.opticalighting.com	Phone: 801-510-6314 Name: Mike Walsh Email: mike@opticalighting.com	Lighting	8
Grainger Address: 2775 S 900 W Salt Lake City, UT 84119 Website: https://www.grainger.com/	Phone: 847-548-4702 Name: Brad Meadows Email: brad.meadows@grainger.com	Lighting	
Midgley-Huber, Inc. Address: 2465 S. Progress Drive Salt Lake City, UT 84119 Website: http://www.midgley-huber.com	Phone: 801-972-5011 Name: Robert Kershaw Email: rob@midgley-huber.com	HVAC - evaporative, HVAC - unitary, Motors and VFDs	
CR Lighting & Electric, Inc. Address: 380 N. King St. Layton, UT 84041 Website: http://www.crlighting.net	Phone: 801-544-1533 Name: Dan Solomon Email: Dan@crlighting.net	Lighting	1
Central Electric Address: po box 17897 murray, UT 84107 Website: http://www.central-electric.com	Phone: 801-467-5479 Name: Michael Jones Email: service@central-electric.com	Controls, Lighting	3

wattsmart® Business Vendor Network

Platt Electric Supply - Sandy Address: 8720 S. Sandy Pkwy Sandy, UT 84070 Website:	Phone: 801-597-0867 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	8
Utah LED Address: 2551 East 4510 South Holladay, UT 84117 Website: https://www.utahled.com	Phone: 801-860-9984 Name: Shane Hofhine Email: utahledlighting@gmail.com	Lighting	5
Schooley Electric Address: 676 W 8th Ave Midvale , UT 84047 Website: http://www.schooleyelectricinc.com	Phone: 801-641-3395 Name: Josh Ray Email: Josh@schooleyelec.com	Lighting	2
QED Address: 7095 SOUTH 700 WEST MIDVALE, UT 84047 Website: https://www.qedelectric.com/	Phone: 801-233-5472 Name: JOE WICE Email: JWICE@QEDELECTRIC.COM	Lighting	
Encentiv Energy, LLC Address: 1501 Ardmore Blvd. Pittsburgh, PA 15221 Website: http://www.encentivenergy.com	Phone: 412-723-1516 Name: Steve Bolibruck Email: sbolibruck@encentivenergy.com	Building envelope, Controls, HVAC - evaporative, HVAC - unitary, Lighting, Motors and VFDs	1
Duncan Electric Supply Address: 580 South 1100 West West Bountiful, UT 84087 Website:	Phone: 801-295-5548 Name: Chris Duncan Email: cduncan@duncanelec.com	Controls, Lighting	
Platt Electric Supply - Salt Lake City Address: 840 West 2600 South Salt Lake City, UT 84119 Website:	Phone: 801-974-5773 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	4
Positive Power Address: 2013 Painter Lane Ogden, UT 84401 Website: http://positivepwr.com	Phone: 801-732-0680 Name: Brent Kirk Email: brent@positivepwr.com	Lighting	
Hogan Electric Inc. Address: 4035 South Main Salt Lake City, UT 84107 Website: http://www.hoganelectric.com	Phone: 801-261-8300 Name: Dave Hogan Email: dave@hoganelectric.com	Lighting, Motors and VFDs	1
Batteries Plus Bulbs of West Valley Address: 2731 S 5600 W Ste. D West Valley City, UT 84120 Website: http://www.batteriesplus.com	Phone: 801-965-6000 Name: Brent Mullins Email: sales909@batteriesplus.net	Lighting, Lighting instant incentives	

wattsmart® Business Vendor Network

Platt Electric Supply - Lindon Address: 7 S 1550 W #300 Lindon, UT 84042 Website:	Phone: 801-597-0867 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	
Petroleum Equipment Co Address: 1174 So. 300 W Salt Lake City, UT 84101 Website: http://www.petro-equip.net	Phone: 801-487-8276 Name: Landon Lewis Email: landon@petro-equip.net	Lighting	3
Perfect Vision Lighting Address: 1312 North Commerce Dr. A306 Saratoga Springs, UT 84045 Website:	Phone: 801-509-1235 Name: Steve Nedeau Email: nedeau89@hotmail.com	Lighting	22
Whitehead Electric Address: 247 31st Street Ogden, UT 84401 Website:	Phone: 801-394-1657 Name: Jim Strank Email: jstrank@whitehead-electric.net	Building envelope, Controls, Lighting, Motors and VFDs	3
Codale - Price Address: 50 East 1300 South Price, UT 84501 Website:	Phone: 435-636-2900 Name: Jerace Glover Email: jeraceg@codale.com	Lighting, Lighting instant incentives	
Quantum Lighting Group Address: 4074 S. 300 W. Salt Lake City, UT 84107 Website: http://www.quantumltg.com	Phone: 801-506-1022 Name: Jared Done Email: jsdone@quantumltg.com	Lighting	4
Transformative Wave Address: 1000 Central Avenue South Kent, WA 98032 Website: http://www.transformativewave.com	Phone: 253-867-2333 Name: Joe Schmutzler Email: joe.s@twavetech.com	Controls, HVAC - unitary, Motors and VFDs	
Lennox Industries Inc. Address: 1008 W 2780 S Salt Lake City, UT 84119 Website: http://www.lennoxcommercial.com	Phone: 801-973-8889 Name: Jeff Barrett Email: jeff.barrett@lennoxind.com	HVAC - unitary	4
Brilliant Lighting Center Address: 1964 N 400 E North Ogden, UT 84414 Website: http://www.brilliantlightingcenter.com	Phone: 435-327-1020 Name: Mark Miller Email: mcm605@gmail.com	Lighting, Lighting instant incentives	4
Platt Electric Supply - Tooele Address: 1183 N 80 E Tooele, UT 84074 Website:	Phone: 801-597-0867 Name: Joey Golden Email: joey.golden@platt.com	Lighting, Lighting instant incentives	

wattsmart® Business Vendor Network

BidEnergy Inc. Address: 1628 JFK Blvd, Suite 2100 Philadelphia, PA 19103 Website: http://bidenergy.com/	Phone: 215-732-4480 Name: Tim Mayo Email: tim.mayo@bidenergy.com	Appliances, Building envelope, Controls, Food service, HVAC - evaporative, HVAC - unitary, Lighting, Motors and VFDs, Office equipment	17
CED - Salt Lake City Address: 1819 South 900 West Salt Lake City, UT 84104 Website: http://www.cedcareers.com/	Phone: 801-486-3501 Name: Duane Bernards Email: duane@cedslc.com	Lighting, Lighting instant incentives	11
HC Design Address: 614 Ferguson Avenue, Ste. 1 Bozeman, MT 59718 Website: http://www.h-cdesign.com	Phone: 406-522-7700 Name: Michael Miles Email: michael@h-cdesign.com	Food service	
Codale - Ogden Address: 3083 South 2025 West Ogden, UT 84401 Website:	Phone: 801-624-6100 Name: Marshall Tolley Email: marshallt@codale.com	Lighting, Lighting instant incentives	3
Royal Wholesale Electric - Logan Address: 917 W 600 N Ste 101 Logan, UT 84321 Website: http://www.royallogan.com	Phone: 435-752-7692 Name: Dave Curtis Email: dave@royallogan.com	HVAC - unitary, Lighting	1
Codale - Salt Lake City Address: 5225 West 2400 South Salt Lake City, UT 84120 Website:	Phone: 801-975-5525 Name: Eric Wanner Email: EricW@codale.com	Lighting, Lighting instant incentives	50
Mechanical Service & Systems Address: 1055 South 700 West Salt Lake City, UT 84104 Website: http://www.mss84.com	Phone: 801-255-9333 Name: Steve Holbrook Email: sholbrook@mss84.com	HVAC - unitary, HVAC check-up, Motors and VFDs	3
Thomson Electric Sales Address: PO BOX 3790 Logan, UT 84323 Website: http://thomsonelectricsupply.com	Phone: 435-752-2252 Name: Brent Lundstrom Email: brent@thomsonelectricsupply.com	Controls, Lighting	1
Lighting Manufacturer Represenative Address: 5263 South Commerce Drive Suite 201 Murray, UT 84107 Website: http://www.dmatlc.com	Phone: 801-870-3040 Name: Gabriel Gabriel Arzate Email: gabe@dmatlc.com	Controls, Lighting	4
Utah Engineering Address: 145 W. 2950 S. Salt Lake City, UT 84115 Website: http://www.utahengineering.com	Phone: 801-466-3583 Name: Nathan Sackett Email: nsackett@ue-ac.com	Controls, Food service, HVAC - evaporative, HVAC - unitary, HVAC check-up, HVAC instant incentives, Motors and VFDs	4

wattsmart® Business Vendor Network

Comfort Solutions Address: 1470 Wall Ave Ogden, UT 84404 Website: http://www.comfortsolutionsutah.com	Phone: 801-393-2206 Name: Adam Yearsley Email: adam@comfortsolutionsutah.com	HVAC - unitary, HVAC instant incentives	
ESP+ Address: 9580 S 500 W Sandy, UT 84070 Website:	Phone: 801-566-0600 Name: Joe Ferguson Email: joef@espplus.net	Lighting	80
Codale - St George Address: 4561 S River Road St George, UT 84790 Website:	Phone: 435-628-6333 Name: Scott Kappas Email: scottk@codale.com	Lighting, Lighting instant incentives	
Spectrum Engineers, Inc Address: 324 S. State Street, Suite 400 Salt Lake City, UT 84111 Website: http://www.spectrum-engineers.com	Phone: 801-328-5151 Name: Jody Good Email: jmg@spectrum-engineers.com	Lighting	1
NGL Supply Address: 3555 s. 700 W. Salt Lake City, UT 84119 Website: http://www.nglscorp.com	Phone: 801-357-9848 Name: Daniel Tucker Email: dtucker@nglscorp.com	Lighting	1
Meyer Lighting & Supply LLC Address: 1192 Draper Parkway #212 Draper, UT 84020 Website: http://meyerlightingutah.com/	Phone: 801-523-3980 Name: Ray Price Email: meyerlighting@gmail.com	Lighting, Lighting instant incentives	18
RSD - Salt Lake City Address: 2953 S 300 W salt lake city, UT 84115 Website: http://www.rsd.net	Phone: 801-485-5000 Name: Dustin Mitchell Email: dmitchell@rsd.net	Controls, HVAC - evaporative, HVAC - unitary, HVAC instant incentives, Motors and VFDs	
Runnin G Electric Address: 2394s 4000w Taylor, UT 84401 Website:	Phone: 801-628-6791 Name: Matt Goins Email: runnin_g@msn.com	Lighting	
Elite Energy Solutions Address: 162 S 1900 W Suite 100 Lindon, UT 84042 Website: http://www.eliteenergysolutions.com	Phone: 801-640-9779 Name: Chet Stevens Email: cstevens@elitees.net	Building envelope	42
Royal Wholesale Electric - Salt Lake City Address: 3100 S 900 W South Salt Lake City, UT 84119 Website:	Phone: 801-973-6000 Name: Dusty Siddoway Email: dusty@royalslc.com	Lighting, Lighting instant incentives	4

wattsmart® Business Vendor Network

Automated Mechanical Address: 1574 West 2650 South Ogden, UT 84010 Website: http://www.automatedmechanical.com	Phone: 801-525-9500 Name: Thomas Mudge Email: tmudge@automatedmechanical.com	Controls, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	10
Codale - Logan Address: 1031 West 200 South Logan Logan, UT 84321 Website:	Phone: 435-713-8200 Name: Kelly Spackman Email: kellys@codale.com	Lighting, Lighting instant incentives	
Home Energy Solutions Address: 1110 W 650 N Suite C Centerville, UT 84014 Website:	Phone: 801-230-8453 Name: Brad VanderMeyden Email: b.vandermeyden@gmail.com	Building envelope, Lighting, Other Specialty	4
BriteSwitch, LLC Address: 195 Nassau St, Ste 13 Princeton, NJ 08542 Website: http://www.briteswitch.com	Phone: 609-945-5349 Name: Laura Oliver Email: laura.oliver@briteswitch.com	Controls, Lighting	2
Royal Wholesale Electric - Cedar City Address: 429 No. 2150 West #2 Cedar City, UT 84721 Website:	Phone: 435-865-6400 Name: Jim Murdock Email: jmurdock@royalcedarcity.com	HVAC - unitary, Lighting, Lighting instant incentives, Motors and VFDs	6
Holbrook Service Address: 1580 S. Pioneer Rd. Salt Lake City, UT 84104 Website: http://www.holbrookservice.com	Phone: 801-359-3769 Name: Patrick Stratford Email: pstratford@holbrookservice.com	Controls, HVAC - evaporative, HVAC - unitary, HVAC check-up, Motors and VFDs	2
EME Mechanical Address: 2496 S West Temple Salt Lake City, UT 84115 Website: http://www.emeutah.com	Phone: 801-467-6699 Name: Peter Judge Email: pete@emeutah.com	HVAC - evaporative, HVAC - unitary	1
Green Planet Company Address: 63 East 11400 South #257 Sandy, UT 84070 Website: http://www.greenplanetcompany.com	Phone: 801-980-1518 Name: Chris Parker Email: chris@greenplanetcompany.com	Controls, Lighting, Other Specialty	59
Royal Wholesale Electric - Springville Address: 2057 West 700 South Ste#100 Springville, UT 84663 Website: http://www.royalutah.com/	Phone: 801-224-5555 Name: Justin Morris Email: Justin@royalut.com	Lighting	1

wattsmart® Business Vendor Network

CED - Vernal Address: 397 s 1000 e Vernal, UT 84078 Website:	Phone: 435-789-9070 Name: Jon Workman Email: jworkman@cedvernal.com	Lighting	1
Codale - Vernal Address: 535 South 1070 East Vernal, UT 84078 Website:	Phone: 435-247-1900 Name: Jason Lewis Email: jasonl@codale.com	Lighting, Lighting instant incentives	

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Appendix 6
Utah Program Evaluation Recommendations and Responses

Utah 2017 Program Evaluations

Program Evaluation Recommendations and Company Responses

Evaluation reports provide detailed information on the process and impact evaluations performed on each program. The reports summarize the methodology used to calculate the evaluated savings, provide recommendations for the Company to consider for improving the process or impact of the program and survey customer satisfaction.

The table below lists the programs, the program years that were evaluated during 2017 and the third party evaluator who completed the evaluation. Program evaluations are available for review at www.pacificorp.com/es/dsm/utah.html

Program Evaluations

Program	Years Evaluated	Evaluator	Progress Status
Home Energy Savings	2015 - 2016	Cadmus	Completed
Low Income Weatherization	2013 - 2015	Opinion Dynamics	Completed
*watt*smart Business	2014 - 2015	Cadmus	Completed

In each report published, Table 2 summarizes the third party evaluator's recommendations and the Company's response. *Refrigerator Recycling recommendations are not provided due to cancellation of the program.

Table1 – Home Energy Savings Evaluation Recommendations

Home Energy Savings Evaluation Recommendations	Rocky Mountain Power Action Plan
Require the wattsmart kit program administrators to collect kit participant phone numbers and e-mail addresses for kit program survey data collection.	Customer e-mail addresses and phone numbers are now mandatory online field entries for customers applying for kits.
For Upstream lighting point-of-sale merchandizing data, track dates and locations for the program's merchandising and product placements. Providing model numbers, store locations, dates, and display types (e.g., end caps, pallet displays) allows more precise estimates of program-generated sales lift.	Improved tracking activities for product placement are in place for the program year 2018 and beyond.
Review 2017 non-lighting application processing times to determine if the overall trend in application processing times improve. Continue training for HVAC and building shell contractors to help mitigate issues with the attic insulation applications by reviewing the criteria required for a complete application.	Tracking processes for application processing timelines are in place. Improvements have been made and the program continues to track timeline trends for further improvement.

Table 2 – Low Income Weatherization Recommendations

Low Income Evaluation Recommendations	Rocky Mountain Power Action Plan
Update unit energy savings (UES) values for individual measures for this program based on the values provided in Appendix A.	Revisions to the unit energy savings values were updated in DSMC as of 1/1/18 for furnace fans, refrigerators and duct sealing/insulation.
The ex-post impact evaluation relied on many high-level engineering assumptions to estimate impacts because participant- or program-specific data were not collected. For example, information on results of refrigerator testing; capacity of equipment serviced by furnace fan, programmable thermostat, and insulation measures; and type of heating and cooling equipment in participant homes were not available. We recommend collecting and providing these data to the evaluator moving forward to improve the accuracy of UES savings estimates.	Rocky Mountain Power believes that collecting data specifics from our partnering agencies on this small program would be over burdensome. However, the Company will review it with the agency.
Rocky Mountain Power should continue to use the same Program implementer moving forward.	The contract/partnership will remain in place with the Utah Housing and Community Development office.
Though not a formal part of the Program, informal education may lead customers to save energy beyond the savings from the installed weatherization measures and should continue.	Rocky Mountain Power intends to preserve energy education funding in the program tariff.
Examine the existing quality assurance procedures associated with the Program. Rocky Mountain Power could provide customers with a 1-800 contact number to call if they find issues with the weatherization services received.	Rocky Mountain Power's program manager will discuss this recommendation with the Utah Housing and Community Development program manager.
Develop goals to shorten wait times for customers to receive services.	Rocky Mountain Power's program manager will discuss this recommendation with the Utah Housing and Community Development program manager.
Consider branding the agency staff who conduct the audits and installation services by wearing shirts that note the Program's affiliation with Rocky Mountain Power.	Rocky Mountain Power's program manager will discuss this recommendation with internal legal staff and agency staff.

Table 3 – *watt*smart Business Evaluation Recommendations

***watt*smart Business Evaluation Recommendations**	**Rocky Mountain Power Action Plan**
Reduce the cool roof measure deemed savings amount from the current assumption of 0.33 kWh per year per square foot from the California Database for Energy Efficiency Resources (DEER) to the Oak Ridge National Laboratory (ORNL) Commercial Roof Savings Calculator.	The Company will evaluate this recommendation, the sources sited, and the cost effectiveness ramifications of making a change to this measure within the wattsmart program.
Increase the deemed savings for irrigation hardware. Use the Regional Technical Forum's (RTF's) Irrigation Hardware calculator to evaluate the energy savings.	The Company will evaluate this recommendation, the sources sited, and the cost effectiveness ramifications of making a change to this measure within the wattsmart program.
Consider adding an HVAC interactive effect factor to indoor lighting savings based on a weighted average of the heating and cooling systems.	The Company will evaluate this recommendation, the sources sited, and the cost effectiveness ramifications of making a change to this measure within the wattsmart program.
Increase the deemed savings amount for HVAC VFD fan and pump motor projects.	The Company will evaluate this recommendation, the sources sited, and the cost effectiveness ramifications of making a change to this measure within the wattsmart program.
Consider additional training to participating motor service centers regarding the need to provide a more accurate estimate for when the motor will be installed, as opposed to always entering six months from time of service.	The Company will address this through discussions with participating motor vendors and begin a tracking mechanism to continually evaluate installation dates. If average re-installation dates are found to occur beyond a year the Company will reevaluate the claimed measure savings.
Overall Program Management: To further increase customer satisfaction, the implementers should reinforce to the trade allies, contractors, and vendors the need to provide detailed and accurate cost, savings, and beneficially information to participants.	The Company holds trainings for contractors specifically addressing these data points several times a year. The Company will re-emphasize this training and put continued emphasis on one-on-one interaction with trade allies, contractors, vendors and distributors to ensure they are receiving the level of training they need to provide the most accurate data possible.
Program Data Interface: Assess the size of any data exchange inconsistencies and associated impacts, and identify the most appropriate solution.	The Company maintains strict controls for the accuracy of reporting project savings and payment of incentives. The Company will continue to assess potential data inaccuracies and will make adjustments, while maintaining proper controls over accurate data exchanges.
SBL: If RMP chooses to grow participation in the SBL delivery channel, consider methods for increasing direct contact from RMP or the implementer staff.	The Company has changed the Small Business Lighting program model to a new Small Business Direct program model with much higher touch for customers and increased engagement. A chat or instant message feature is not part of this model and will be evaluated based upon need.

***watt*smart Business Evaluation Recommendations**	**Rocky Mountain Power Action Plan**
Typical Upgrades and Custom Analysis: Provide clear and specific instructions about the application process and specifically what is required of the participant. Consider ways to reduce or streamline the data or supplemental invoices and documentation required for each field on the application.	The Company is currently in process of streamlining the application and membership process for all participating trade allies, and moving it to an online format. The Company will review and evaluate the customer facing program experience in the coming 24 months. Steps have taken to begin receiving customer feedback on program experience via real-time participant surveys. This data will guide continuous improvement for program design and potential streamline opportunities.
Nonparticipants and Partial Participants: If additional growth is desired in the program delivery channels, encourage and/or incent contractors, vendors, and distributors to increase outreach to their nonparticipant customers.	The Company will evaluate this recommendation should additional program growth be desired.
Nonparticipants and Partial Participants: If additional program growth is desired in any of the program delivery channels, consider performing a comprehensive marketing effectiveness assessment.	The Company will evaluate this recommendation should additional program growth be desired.

Appendix 7

Utah DSM Outreach and Communications Year 8 Report

January – December 2017

TABLE OF CONTENTS

Year 8 Report – January through December 2017…….. pp. 3-13

Exhibits

Exhibit A	2017 Energy Efficiency Residential Research Questionnaire
Exhibit B	National Energy Foundation Be wattsmart 2017 Report
Exhibit C	Creative and News Stories

Preface

On June 11, 2009, the Commission approved the Company's proposal to implement an outreach and communications campaign. The objective of the program is to promote energy efficiency and conservation through education and increase customer awareness of and participation in the Company's DSM programs. In approving the campaign, the Commission directed the Company to monitor program effectiveness on an annual basis and to report on such assessments to the Commission. This report presents an assessment of year 8 (calendar year 2017) of the DSM outreach and communications campaign, including an evaluation of the program in meeting its objectives and a summary of year 8 program activities.

Customer Survey Results

The Company has conducted customer research each year from 2010 to 2017 to determine the effectiveness of the outreach and communications campaign in increasing the awareness of and self-reported participation in DSM programs. The findings of this survey work are included below.

Research Methodology

MDC Research completed 433 residential surveys (150 telephone interviews and 283 web survey) in October 2017. This study was conducted using a mixed telephone and online survey methodology in order to trend data with previous studies (conducted by phone) and serve as a benchmark for future customer research initiatives (conducted online).

The overall objective of this research was to measure awareness and affinity for Rocky Mountain Power's energy conservation programs, particularly "being ***watt***smart." Additional objectives included: to measure awareness level of Rocky Mountain Power advertisements and communications; determine awareness of Rocky Mountain Power being a resource for energy efficiency; gauging association between ***watt***smart and Rocky Mountain Power; and discerning actions residential customers are taking to be ***watt***smart.

MSI National Benchmarking Database Study — 1,989 web surveys for residential and 513 web surveys for business were completed June/July 2017. In past years, this study was only conducted by telephone. The Company changed to web surveys to gather a larger random sampling of data. With this methodology change, comparing the results to previous years still has value, but essentially 2017 sets a new baseline. For example, with the change to web-based methodology, more data was collected than in previous years from small businesses with single locations and fewer than 20 employees.

Having more data provides deeper insights into the primary ways residential and small-to medium-sized business customers' perceptions and evaluations of Rocky Mountain Power's performance impacts customer satisfaction. These responses are analyzed to understand perceptions of special topics related to outage communications, web interactions, billing, communication, solar/renewables and energy efficiency. For the purpose of this report, we will look only at findings that pertain to energy efficiency.

Key Research Findings – Residential customers

Approximately three-quarters of residential customers say Rocky Mountain Power does a "good job" of having programs that help customers use energy efficiently and providing information on how to control their electricity costs. Positive ratings are similar to 2016 findings.

Advertising and communications recall

More than half of Rocky Mountain Power customers are somewhat or very familiar with "being *watt*smart". Of those familiar with "being ***watt***smart," 69% attribute the phrase to Rocky Mountain Power. Phone respondents aware of "being ***watt***smart" are significantly more likely to associate Rocky Mountain Power with the phrase than web survey respondents (77% vs. 65%) and familiarity has increased from the 2016 level.

Actions taken to conserve electricity

Two thirds of residential customers have taken some actions to conserve energy. Web respondents are significantly more likely than phone respondents to have taken action to save energy in the past year (71% Web vs. 50% phone) per MDC Research. MSI research findings in 2017, also reveal nearly two-thirds of Rocky Mountain Power customers (64%) report having taken action to reduce energy in the past year.

Reason for taking action

The main reasons for taking action to reduce energy use (among those who have taken action) is to save money (79%) and to help protect the environment (18%). MDC Research reports nearly identical findings as MSI with the top reason for conservation action is "to save money" (80%) and protect the environment is a secondary concern, mentioned by 18%.

Actions taken

Actions around lighting are the most common responses in both research studies. "Turning off lights more frequently" (79%) and "installing energy-efficient lighting" (75%) remained the top responses among those who reported taking action; increasing thermostat settings and installing a ceiling or whole house fan also saw a slight increase in response in 2017. *(MSI Research)*

MDC Research shows using energy-saving light bulbs is the top actions taken, followed by turning off lights and adjusting the thermostat.

Preferred information sources

Emails or electronic newsletter have surpassed bill inserts as the preferred way customers receive energy conservation information. Preference for the mobile app increased significantly in 2017, while the web site remained stable. *(MSI Research)*

Rocky Mountain Power is the most commonly mentioned first source for customers to turn to for energy-efficiency information. This is especially true among phone survey respondents. *(MDC Research)*

Television, social networking, the internet, and radio are the top sources for information on new and current events. Online respondents are more likely to seek information via social networking and the radio; phone respondents are more inclined to search for information on the internet. *(MDC Research)*

Key Research Findings – Commercial customers

Findings for 2017 are very similar to what commercial customers reported in 2016 with slight shifts that may be attributed to the change to online methodology and the larger sample size.

- In 2017, seven in ten (70%) Rocky Mountain Power commercial customers are aware of solutions to help them use energy efficiently. Findings compare with 2016 (72%).

- Nearly seven-in-ten (70%) of Rocky Mountain Power customers believe their utility is doing a good job of providing information on how to control electricity costs.

- More than six-in-ten (65%) of commercial customers say their utility helps their company by providing incentives to save money on their energy bills.

- Approximately eight-in-ten (83%) of Rocky Mountain Power customers feel their utility company does a "good job" of providing information about products and services that are of value to them and their organizations. This represents a steady improvement among customers compared to the last two years (81% in 2016 and 74% in 2015).

- Nearly eight in ten customers (78%) are satisfied with the selection of energy-saving and renewable options available to them.

Reason for taking action
Nearly half of Rocky Mountain Power customers (48%) have taken actions to save energy within the past year to reduce their usage. The main reason for taking action to reduce energy use (among those who have taken action) is to save money (80%) and to help protect the environment (16%).

Actions taken
Energy saving actions most commonly include installing efficient lighting (81 % up significantly from 2016 at 68%) or turning off lights more frequently (67%).

Preferred information sources
With the web methodology, four in ten commercial customers (42%) would most prefer to receive program and service information in an email or electronic newsletter; another 24% would prefer information with the monthly bill.

Conclusions

The awareness level for being *watt*smart has remained fairly consistent and customers feel their utility is doing a good job of providing information. Customers are also taking action and as in

years past, are more likely to conserve energy by using energy-saving lighting than any other method. Customers are driven to conserve energy both to save money and help protect the environment.

To leverage this finding, the Company developed a new creative campaign in 2017 to highlight the benefits to a customer's wallet and/or bottom line as well as the environment when they take actions to be wattsmart, "Being wattsmart is good for your wallet, and for Utah."

Campaign Activities

Communications, Outreach and Education

*watt*smart is an overarching energy efficiency campaign with the overall goal to engage customers in reducing their energy usage through behavioral changes, and pointing them to the programs and information to help them do it. "Rocky Mountain Power wants to help you save energy and money," remains the key message. In addition, we made a stronger connection between energy efficiency and benefits to the environment. "With simple wattsmart steps you can make a big difference for Utah and the environment. Both now and into the future."

The Company uses earned media, customer communications, education and outreach, advertising, and program specific marketing to communicate the value of energy efficiency, provide information regarding low-cost, no-cost energy efficiency measures and to educate customers on the availability of programs, services and incentives.

In 2017, the Rocky Mountain Power continued to tie the *watt*smart concept to messages about others who are being *watt*smart and the benefits they received with an emphasis on business customers while maintaining broad reach through traditional paid media and social media, community outreach, earned media outreach and digital (online) tools.

Earned media is managed by the Company's external communications department in cooperation with the regional business managers located in Utah. "Earned media" generally refers to favorable television, radio, newspaper or internet news coverage gained through press releases, media events, opinion pieces, story pitches or other communication with news editors and reporters. A list of the new creative and news releases is included in Exhibit C.

Customer Communications

Beyond paid media, the Company also used statement communications, email, website, social media, and news coverage. Tapping into all resources with consistent messaging has been the Company's approach and will continue to be refined. As part of the Company's regular communications to its customers, support materials and newsletters across all customer classes, and the Company's website, promote energy efficiency initiatives and case studies on a regular basis. The Company uses the following tactics consistently to communicate to customers.

Website:

- rockymountainpower.net/wattsmart (wattsmart.com)
- URLs link directly to the energy efficiency landing page. Once there, customers can self-select their state for specific programs and incentives.
- Home page messages promote seasonal *watt*smart /energy efficiency each month.

Social Media:

- Twitter feed promotes energy efficiency tips and *watt*smart programs multiple times per week.
- Facebook posts *watt*smart messages three to five times per week.

Newsletters

- *Voices* residential newsletter is sent via bill insert (and email to paperless billing customers) eight times a year; each issue includes energy efficiency tips and incentive program information.
- *Energy Insights* newsletter target businesses and community leaders and contains articles on commercial and industrial energy efficiency as well as represented case studies.

***watt*smart Campaign**

Paid Media

The overall paid media plan objective is to effectively reach its customers through a multi-media mix that extends both reach and frequency. The audiences for communications were prioritized as follows:

- *PRIMARY*: Small to mid-sized businesses
- *SECONDARY*: Residential households in the Company's service area

Table 1 outlines the value provided by each communication channel.

Table 1 – Communication Channels

Communication Channel	Value to Communication Portfolio	Placement
Television Media demo: Adults 25-54, Primary: Small/Mid-sized businesses. Secondary: residential (English and Spanish)	Due to the strength and reach of the Salt Lake City designated market area, television is the most effective media channel.	May – September 2017: 7,843,733 impressions.
Radio	Given the cost relative to television, radio builds on communications delivered via television while providing for increased frequency of messages.	May – September 2017: 6,963,569 impressions.
Newspaper	Supports broadcast messages and guarantees coverage of the Utah service territory.	July – August 2017: 1,151,880 impressions.

Communication Channel	Value to Communication Portfolio	Placement
Magazine	Extends reach to business customers statewide	January – December 2017: 809,517 impressions
Act wattsmart Video Contest – multi-media	Earned media placement was bolstered by paid media to promote the contest, encourage entries and announce the winners.	July – October 2017: Delivered 18M impressions
Social	Promoted posts on social support broadcast, print and digital media to increase overall awareness	April – October 2017: Delivered 788,109 impressions, 6.9K clicks and a CTR of 0.88%, which is on par with the national average.
Facebook	Provides awareness regarding energy efficiency tips and creates a centralized location to share information on how to be *watt*smart; to organically promote the Act wattsmart Video Contest and feature incentive programs and other seasonal information. Information posted at least three times a week.	As of December 2017 there were 23,124 Facebook followers for Rocky Mountain Power
Twitter (@RMP_Utah)	Awareness for case studies, energy efficiency tips and Act wattsmart Video Contest. Tweets posted on a weekly basis.	As of December 2017 there were 5,598 Twitter followers in Utah.
Digital Display	Supports the broadcast and print media while also increasing awareness for energy saving messaging. The campaign ran through Trade Desk Ad Network, on KSL, Salt Lake Tribune and KSTU, Google, YuMe, LinkedIn, Weatherbug and Hulu (streaming television).	Display advertising delivered 13.5M impressions with 19.5K clicks and a CTR of 0.14% which is 2.3 times the national average.
Search	Search engine advertising to help customers find information they saw in the advertising.	Search delivered 45,114 impressions, had an average position of 1.3, delivered a CTR of 8.23% (8.2 times the national average), and produced 1,035 conversions with a conversion rate of 27.89%
Out of Home	Supports the broadcast and print media while increasing awareness in the metro area.	5,731,215- impressions
Event and Sport Sponsorships	Reaches consumers at popular events and ties the *watt*smart messaging to positive activities.	13,617,988impressions

The total number of 2017 impressions for the *watt*smart campaign was 68,503,494.

Web links to the current portfolio of advertisements are included in Exhibit C of this report.

Public Outreach

The Company leveraged the messages through various public outreach initiatives in 2017. Table 2 summarizes the Company's efforts to educate the public on the importance of implementing energy efficiency practices.

Table 2 – Outreach Initiatives

Initiative	Description

Salt Lake Real	Ads occurred:
	• Preseason – February
	• Regular season - March – October
	
	Included in sponsorship – about 19,000 fans per game
	• Television (for all local Team-controlled broadcasts)
	  ○ In-game television broadcast :30 spot
	  ○ In-game television open and close billboard
	• Radio
	  ○ :30 pre-game spot
	  ○ :30 in-game spot
	• Online - rotating banner ad on RealSaltLake.com
	• Signage
	  ○ One minute LED Ribbon Board per home game; Runs in 15 second (:15) increments
	  Runs pre-game, in game and post-game

University of Utah	The Company continued to use the "save your energy for the game" video to play at all home football and men's basketball games when the team is announced. The sponsorship also includes LED signage at all Home Football, men's basketball and women's gymnastics meets. Football (7 home games – about 45,000 fans per game): • Open ceremony video board feature for football • Messaging on the south end zone LED board and the Pro-Ad LED board One pre-game and one post game radio spot for all football games. Basketball (17 home games – about 10,000+ fans per game): • Opening ceremony video board feature for Basketball • Messaging on baseline LED boards for men's basketball games One pre-game and one post game radio spot for all men's basketball games. Gymnastics (6 home meets – about 14,000 fans per meet).
Act wattsmart Video Contest	On July 18, 2017, the Company launched the statewide Act *watt*smart video contest at the Utah Film Center. Customers were encouraged to

Initiative	Description
	submit videos between March 18 and September 18, 2017. People's Choice voting was held from September 25 through September 29, 2017, with winners announced on October 6, 2017. A summary of the results: • 46 registrations • 35 customers entered videos into the contest • The videos received 1,116 votes • The videos received more than 35,800 views The contest delivered more than 18 million media impressions. Launch coverage included all market TV stations, three radio interviews and all major newspapers. Winner announcement coverage included two TV interviews, one radio interview and print coverage in major newspapers. Resulted in positive coverage using *watt*smart messages/tips in all earned media opportunities.
Education	The Company offers a "Be *watt*smart, Begin at Home" school education program through the National Energy Foundation ("NEF"). The program is designed to develop a culture of energy efficiency among teachers, students and families. The centerpiece is a series of one hour presentations with hands-on, large group activities for 5th grade students. Teachers are provided instructional materials for use in their classrooms, and students are sent home with a Home Energy Worksheet to explore energy use in their homes and encourage efficient behaviors. A summary of NEF's 2017 activities and accomplishments is provided in Exhibit B. Presentations are based on state education guidelines. In fall 2017, over 11,000 Utah students participated in the curriculum, which includes 122 schools taught by 448 teachers. Students received "Home Energy Worksheets" and were asked to audit their homes to receive LED night lights as incentives. Teachers were eligible to receive $50 mini-grants for their classrooms depending on how many students completed their worksheet.

<u>*watt*smart Business advocacy</u>

The *watt*smart Business advocacy program is designed to create more awareness of the benefits of being a *watt*smart Business. The advocacy program is intended to generate awareness, participation, and lasting partnerships in the *watt*smart Business program.

The Company partnered with the Salt Lake Chamber to provide energy efficiency and *watt*smart Business content for twice-monthly Utah Business Report radio segments presented weekdays on KSL. Content was created for social media posts about *watt*smart Business and relevant posts made by the Chamber were shared to Rocky Mountain Power followers.

Additional business advocacy outreach was conducted through the Company's involvement with the Utah Manufacturers' Association, at the Governor's Economic Development Summit, the Governor's Energy Development Summit, the Energy & Environment Summit and the Utah Green Business Awards event.

Program Specific Marketing

All energy efficiency program marketing and communications are under the *watt*smart umbrella to insure a seamless transition from changing customer behavior to the actions they could take by participating in specific programs. Separate marketing activities administered by and specific to the programs ran in conjunction with the *watt*smart campaign.

wattsmart Homes Program

Information on the *wattsmart Homes* program is communicated to customers, retailers and trade allies through a variety of channels. Using a strategic approach, the Company communicates select program measures during key selling seasons and uses opportunities like home shows to help increase customer awareness of energy efficiency incentives.

Smart thermostat promotions
In the summer, the Company promoted its wattsmart $50 smart thermostat incentive combined with a limited-time $50 instant discount from Nest through newspaper ads, Facebook ads, website content and social media posts.

Black Friday in the fall presented another opportunity to increase smart thermostat incentive redemptions through a promotion with Nest. Emails were sent to 409,000 customers on November 22 with an offer to get a Nest Thermostat E for a low price.

HVAC midstream incentives
The company developed a handout in the summer to provide information on its new, streamlined incentive process for central air conditioners and gas furnaces. The collateral encouraged customers to visit wattsmart.com or contact a participating distributor.

Home shows
wattsmart Homes program staff attended the Salt Lake Tribune's Home and Garden Festival March 10-12, 2017, at the South Towne Expo Center in Sandy, Utah. To help drive festival attendance, a digital newsletter article, social media posts and website promotions were used to increase awareness of the show. Total attendance at the spring show was approximately 45,326. More than 500 customers used Rocky Mountain Power's coupon or the online coupon code to get discounted admission to the show. Customers who visited the booth received information about energy efficiency upgrades, the Cool Keeper program and renewable energy choices.

Program staff also attended the Deseret News Home Show October 13-15, 2017, to help educate customers on energy efficiency, *watt*smart program incentives and other customer solutions. The company sent an email to 267,000 customers to encourage attendance along with an offer for a free LED light bulb. More than 1,000 LED bulbs were given away to customers at the booth. Total attendance at the fall home show was 23,619, and 330 customers used Rocky Mountain Power's online coupon to receive a discount on show admission.

Home Energy Reports

Home Energy Reports were mailed to approximately 275,000 customers quarterly in 2017. Many customers also received email reports with customized energy-saving tips.

Cool Keeper

Cool Keeper program outreach included the following during 2017:

- an email to Rocky Mountain Power employees to encourage participation;
- emails to customers who have moved into homes with existing Cool Keeper devices;
- emails to participating customers with link to an online survey; and
- letters mailed to participants with information about their annual Cool Keeper bill credit(s).

*watt*smart Business

During 2017, *watt*smart Business communications encouraged customers to inquire about incentives for lighting, HVAC, compressed air, irrigation and other energy efficiency measures.

The program was marketed with radio, newspaper, magazine, eblasts, digital display and digital paid search advertising throughout the reporting period. Radio and print ads featured case study examples from program participants which were repurposed in social media. Eblasts directed viewers to the Company's website, wattsmart.com. This was in addition to direct customer contact by Company project managers and regional business managers, trade ally partners, articles in Company newsletters, Chamber newsletter outreach and content on the Company website, on Facebook and Twitter.

Two businesses were award the "*watt*smart Business Partner of the Year" at regional events. This award recognizes businesses that excel in achieving load reduction through energy efficiency. News releases and photos were released for each award presented.

Targeted direct mail was sent to approximately 1,900 Utah irrigation customers in the spring and fall to encourage energy-saving retrofits. Emails to promote a new HVAC Check Up offer was sent to customers in summer. An invitation to attend an information webinar about a new optional finance tool was sent via email, in addition to general emails to promote available incentives.

During 2017, the program garnered 12,232,502 impressions. Breakdown of impressions by media type is shown in Table 3 below.

Table 3– *watt*smart Business Impressions by Media Type

Communications Channel	Impressions
Radio	7,324,800
Newspaper	1,606,570
Magazine	240,000
Digital display	1,735,920
Social	1,214,390
Search	66,334
Eblast	40,667
Irrigation direct mail	3,821

Outreach Campaign Budget Results

The 2017 budget for outreach activities was $1,400,000 as presented in Table 4 below. Expense activities are summarized by the channel of communication.

Table 4 – 2017 Budget, Actuals, and Variance

	Budget	Actuals	Variance
TV	$ 280,000	$ 280,302	$ 302
Radio	$ 120,000	$ 119,703	$ (297)
Print	$ 125,000	$ 123,259	$ (1,741)
Digital/Social	$ 125,000	$ 125,948	$ 948
Creative/Production/Planning	$ 200,000	$ 167,482	$(32,518)
General PR/Act wattsmart Video Contest	$ 130,000	$ 108,085	$ (21,915)
*watt*smart Events and Sponsorships	$ 220,000	$ 130,672	$ (89,328)
Be *watt*smart, Begin at Home School Education Program (NEF)	$ 175,000	$ 157,326	$ (17,674)
Research	$ 25,000	$ 11,820	$ (13,180)
Total	**$ 1,400,000**	**$ 1,224,597**	**$ (175,403)**

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Exhibit A

Energy Efficiency Questionnaire

Rocky Mountain Power
2017 Energy Efficiency Questionnaire – FINAL

Date:	30 September 2017
Universe:	General public, Rocky Mountain Power service areas Utah, Idaho and Wyoming
Sample size:	500 Rocky Mountain Power residential customers (250 phone, 250 web)
Screener:	Head of household, most likely to contact utility company
Objective:	Measure the public's awareness and affinity for energy conservation programs

---

Hello. I'm _____ with MDC Research, an independent research firm. I'm calling on behalf of Rocky Mountain Power. We are conducting a survey regarding their services and programs. May I speak to one of the heads of your household?

As needed: This survey usually takes about 10 minutes.
We are only interested in your opinions. We are not selling anything.

L1. RECORD STATE FROM SAMPLE

1	Idaho	(QUOTA: 50)
2	Utah	(QUOTA: 150)
3	Wyoming	(QUOTA: 50)

S0 Gender (DO NOT ASK. CODE FROM OBSERVATION)

1	Male	(QUOTA: 125)
2	Female	(QUOTA: 125)

We have a few questions to start to make sure we hear from a broad mix of Rocky Mountain Power customers.

Q1 [Screener 1] Is Rocky Mountain Power your electricity provider?

1 Yes
2 No (THANK & TERMINATE)
3 Refuse (DNR – THANK & TERMINATE)

Q2 [Screener 2] Are you a person in your household who is likely to make decisions about your household participating in services offered by Rocky Mountain Power?

1 Yes
2 No (THANK & TERMINATE)
3 Refuse (DNR – THANK & TERMINATE)

Q3 Do you own or rent your home?

1 Rent (QUOTA: 75)
2 Own/ buying (QUOTA: 175)
3 Other
4 Refuse (DNR)

Q4 What is your age category?

1 18 to 24 (QUOTA: 5)
2 25 to 34 (QUOTA: 60)
3 35 to 44 (QUOTA: 38)
4 45 to 54 (QUOTA: 48)
5 55 to 64 (QUOTA: 47)
6 65 or over (QUOTA: 52)
7 Refuse (DNR)

Q5 What is your HIGHEST LEVEL OF EDUCATION that you have had the opportunity to complete?

11 Less than High School (QUOTA: 31)
12 High School Degree (QUOTA: 62)
13 Some College (QUOTA: 91)
14 College Degree (QUOTA: 45)
15 Some Graduated Study (QUOTA: 10)
16 Post-Graduate Degree or Higher (QUOTA: 11)
98 Prefer not to say

Q6 During the past six months, from what electric or gas companies do you recall seeing, hearing or reading any form of advertisements or communications? [DO NOT READ LIST. RECORD MULTIPLE RESPONSES. CONTINUE TO PROBE WITH "ANY OTHERS" UNTIL RESPONDENT CAN'T THINK OF ANY MORE.]

11 Idaho Power
12 Dominion Energy (Questar Gas)
13 Northwest Natural
14 Pacific Gas & Electric/PG&E
15 Pacific Power/PPL
16 PacifiCorp
17 Portland General/PGE
18 Rocky Mountain Power/Utah Power
99 Other, Specify
88 None

Q7 During the past six months, do you recall seeing, hearing or reading any form of advertisements or communications from Rocky Mountain Power?

1 Yes
2 No →SKIP TO Q8A

Q8 What types of messages or topics do you remember from Rocky Mountain Power's advertisements or communications? [MULTIPLE MENTION – DO NOT READ]

11 Working to keep your power on
12 Electrical safety
13 Programs such as equal pay or customer guarantees
14 Energy efficiency programs
15 Using energy wisely
16 Planning for your future energy needs
17 Preparing for power outages
18 Renewable or alternative energy sources
19 System or infrastructure improvements
20 Billing or energy assistance
21 Being wattsmart
22 Blue Sky Renewable Energy
23 Solar energy generation
99 Other, Specify _____
97 Don't remember/Don't know

Q8A IF Q8 NOT 21: During the past six months, do you recall seeing, hearing or reading the phrase "being wattsmart?"

1 Yes
2 No
3 Refuse

Q9 In the past year, have you taken any actions or changed anything in your household to save energy?

1 Yes
2 No (SKIP TO Q12)
3 Refuse (DNR – SKIP TO Q12)

Q10 IF YES ON Q9: What actions have you taken in your home in order to save energy? (DO NOT READ - UNAIDED. PROBE. MARK ALL MENTIONED).

11 Add insulation to your attic, roof, or walls
12 Adjust thermostat
13 Generally conserve or use less energy
14 Install an energy-efficient air conditioner or furnace
15 Install energy-efficient appliances
16 Install energy-efficient doors or windows
17 Insulate or caulk around windows or doors
18 Insulate water heater, pipes, or air ducts
19 Tune up your furnace or water heater
20 Turn off lights when leaving a room
21 Unplug appliances when away from home
22 Use energy-saving light bulbs
99 Other (SPECIFY)
97 Don't know

Q11 IF YES ON Q9: What are the main reasons you took steps to conserve energy in your home? (UNAIDED. PROBE. MARK ALL MENTIONED)

11 To protect the environment
12 To reduce need for new energy infrastructure
13 To save money
14 Heard ads encouraging energy conservation
15 To make my home more comfortable
16 Needed to replace an old or broken appliance
17 To take advantage of a rebate or tax credit
99 Other (SPECIFY _____)
97 Don't know/ none

Q12 How important is it for utility companies to offer customers programs to help conserve energy?

1 Not at all important
2 Not very important
3 Somewhat important
4 Very important
7 Don't know (DNR)

Q13 What sources do you typically rely on for information about news and current events?

11 Billboard
12 Bill insert
13 Direct mail
14 Family, friends, co-workers
15 Magazine
16 Newspaper
17 Radio
18 Social networking (e.g., blogs, Facebook, Twitter)
19 Television
20 Trade publication
21 Website (Rocky Mountain Power)
22 Website (other than Rocky Mountain Power)
23 Email
99 Other, Specify _____
97 Don't remember/Don't know

Q14 What sources do you typically rely on for information about Rocky Mountain Power?

11 Billboard
12 Bill insert
13 Direct mail
14 Family, friends, co-workers
15 Magazine
16 Newspaper
17 Radio
18 Social networking (e.g., blogs, Facebook, Twitter)
19 Television
20 Trade publication
21 Website (Rocky Mountain Power)
22 Website (other than Rocky Mountain Power)
23 Email
99 Other, Specify _____
97 Don't remember/Don't know

Q15 How concerned do you think Rocky Mountain Power is about helping you save energy? Please use a 1-5 scale. One means *not at all concerned*. Five means *very concerned.*

1 Not at all concerned
2
3
4
5 Very concerned
97 Don't know (DNR)

Q16 Which one of the following would you most likely turn to first for energy-efficiency information? (READ LIST, RANDOMIZE ORDER.)

1 Rocky Mountain Power
2 Dominion Energy (Questar Gas)
3 Home improvement retailer
4 State Department of Energy
5 Federal government
99 Other, Specify _____
97 Don't know (DNR)

Q17 Now I'm going to ask some questions about your satisfaction with Rocky Mountain Power. First, using a 0-10 scale, where 0 means not at all satisfied, and 10 is completely satisfied, how satisfied are you overall with Rocky Mountain Power? You can use any number from 0-10.

99 RECORD RATING _____
97 Don't know/refused

Q18 Compared to a year ago, has your satisfaction with Rocky Mountain Power increased, stayed the same or decreased?

1 Decreased
2 Stayed the same
3 Increased
97 Don't know/refused

Q19 And why do you say your satisfaction has (INCREASED OR DECREASED FROM Q18)?

99 RECORD:_____

We are about done. We have just one more question to help us categorize your responses.

Q20 Which of the following best describes your annual household income? Please stop me when I mention the right category.

1 Less than $20,000 (QUOTA: 15)
2 $20,000 to $39,999 (QUOTA: 40)
3 $40,000 to $59,999 (QUOTA: 50)
4 $60,000 to $89,999 (QUOTA: 75)
5 $90,000 to $129,999 (QUOTA: 40)
6 $130,000 to $199,999 (QUOTA: 15)
7 $200,000 or more (QUOTA: 5)
97 Don’t know/ refuse (DNR) (QUOTA: 10)

That completes our survey. Thank you for taking the time to participate.

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Exhibit B

Be wattsmart, Begin at Home

Program Report

2017

NEF

BE *WATTS*MART, BEGIN AT HOME

UTAH

Program Report

Prepared for:

Michael S. Snow, Manager, Regulatory Projects

Barbara Modey, Customer and Community Communications

Rocky Mountain Power

201 South Main, Suite 2300

Salt Lake City, UT 84111

Prepared by:

Patti Clark

Program Manager

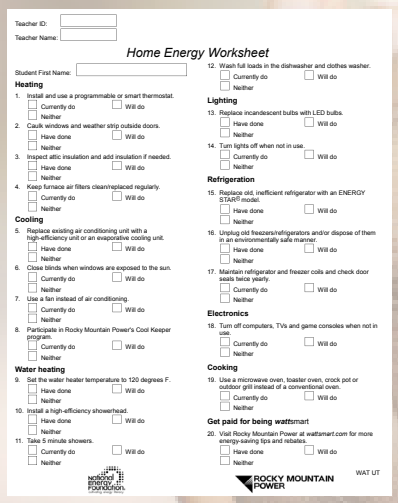
National Energy Foundation

4516 South 700 East, Suite 100

Salt Lake City, UT 84107

March 19, 2018

Savings



Teacher ID:

Teacher Name:

Home Energy Worksheet

Student First Name:

Heating

1. Install and use a programmable or smart thermostat.
   Currently do ☐ Will do ☐ Neither
2. Caulk windows and weather strip outside doors.
   Have done ☐ Will do ☐ Neither
3. Inspect attic insulation and add insulation if needed.
   Have done ☐ Will do ☐ Neither
4. Keep furnace air filters clean/replaced regularly.
   Currently do ☐ Will do ☐ Neither

Cooling

5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.
   Have done ☐ Will do ☐ Neither
6. Close blinds when windows are exposed to the sun.
   Currently do ☐ Will do ☐ Neither
7. Use a fan instead of air conditioning.
   Currently do ☐ Will do ☐ Neither
8. Participate in Rocky Mountain Power's Cool Keeper program.
   Currently do ☐ Will do ☐ Neither

Water heating

9. Set the water heater temperature to 120 degrees F.
   Have done ☐ Will do ☐ Neither
10. Install a high-efficiency showerhead.
    Have done ☐ Will do ☐ Neither
11. Take 5 minute showers.
    Currently do ☐ Will do ☐ Neither
12. Wash full loads in the dishwasher and clothes washer.
    Currently do ☐ Will do ☐ Neither

Lighting

13. Replace incandescent bulbs with LED bulbs.
    Have done ☐ Will do ☐ Neither
14. Turn lights off when not in use.
    Currently do ☐ Will do ☐ Neither

Refrigeration

15. Replace old, inefficient refrigerator with an ENERGY STAR® model.
    Have done ☐ Will do ☐ Neither
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.
    Have done ☐ Will do ☐ Neither
17. Maintain refrigerator and freezer coils and check door seals twice yearly.
    Currently do ☐ Will do ☐ Neither

Electronics

18. Turn off computers, TVs and game consoles when not in use.
    Currently do ☐ Will do ☐ Neither

Cooking

19. Use a microwave oven, toaster oven, crock pot or outdoor grill instead of a conventional oven.
    Currently do ☐ Will do ☐ Neither

Get paid for being *watt*smart

20. Visit Rocky Mountain Power at wattsmart.com for more energy-saving tips and rebates.
    Have done ☐ Will do ☐ Neither

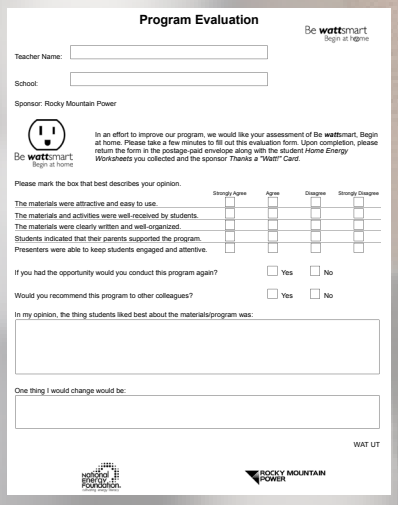
WAT UT

National Energy Foundation · ROCKY MOUNTAIN POWER

Home Energy Worksheets

– Returned: 8,807 –

– 77.66% –



Program Evaluation

Be *watt*smart Begin at home

Teacher Name:

School:

Sponsor: Rocky Mountain Power

Be *watt*smart Begin at home

In an effort to improve our program, we would like your assessment of Be *watt*smart, Begin at home. Please take a few minutes to fill out this evaluation form. Upon completion, please return the form in the postage-paid envelope along with the student *Home Energy Worksheets* you collected and the sponsor *Thanks a "Watt!" Card*.

Please mark the box that best describes your opinion.

	Strongly Agree	Agree	Disagree	Strongly Disagree
The materials were attractive and easy to use.	☐	☐	☐	☐
The materials and activities were well-received by students.	☐	☐	☐	☐
The materials were clearly written and well-organized.	☐	☐	☐	☐
Students indicated that their parents supported the program.	☐	☐	☐	☐
Presenters were able to keep students engaged and attentive.	☐	☐	☐	☐

If you had the opportunity would you conduct this program again? ☐ Yes ☐ No

Would you recommend this program to other colleagues? ☐ Yes ☐ No

In my opinion, the thing students liked best about the materials/program was:

One thing I would change would be:

WAT UT

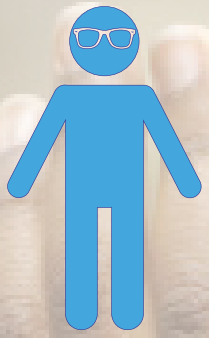
National Energy Foundation · ROCKY MOUNTAIN POWER

Teacher Packets

– Returned: 381 –

– 85.04% –

Participants

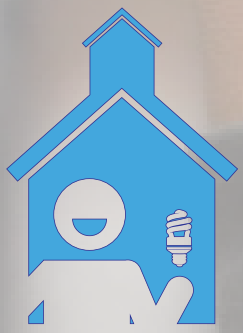


Students

– 11,347 –

Teachers

– 448 –



Schools

– 122 –

6 schools had 2 presentations
due to student numbers

Table of Contents

Program Overview 1

Program Description 1
Program Administration 1
Building Collaborations 1
Program Implementation 1
Program Registration 1
Be *watt*smart, Begin at home Presentation 2
Program Materials 2
Program Accomplishments – Fall 2017 2

Attachments 5

Fall 2017 Participating Schools 5
Program Promotions 9
Program Documents 10
Teacher Evaluation *52*
Teacher Evaluation Compilation 53
Home Energy Worksheet (English) 64
Home Energy Worksheet (Spanish) 65
Home Energy Worksheet Summary – Rocky Mountain Power 66
Wise Energy Behaviors in Rocky Mountain Power Utah Homes 67
Sampling of *Thanks a "WATT" Cards* 68

Program Overview

Program Description

Be *watt*smart, Begin at home, an energy efficiency education program, is a collaborative partnership between Rocky Mountain Power and the National Energy Foundation (NEF). This unique and interactive program teaches the importance of energy and natural resources and their impact on the environment. The objective is to expand and promote energy awareness through a school-based education program which encourages Utah students and teachers to change behaviors which will impact the energy consumption in their homes and community. Teachers are also provided teaching materials to support further classroom instruction on this valuable message.

Program Administration

Be *watt*smart, Begin at home is administered by NEF, a non-profit organization (established in 1976) dedicated to the development, dissemination and implementation of supplementary educational materials, programs and services relating primarily to energy, energy safety, the environment and natural resources. Our mission remains constant, to cultivate and promote an energy literate society. NEF is pleased to report on activities of the Be *watt*smart, Begin at home energy efficiency education program conducted during the 2017 – 2018 school year.

Anne Lowe, Vice President – Operations, oversees program organization. Gary Swan, Vice President – Development, oversees contract accounting. Janet Hatch, Program Director, is responsible for implementation of the scope of work and the program reporting. Patti Clark, Program Manager, oversees school enrollment and communication with teachers. Diane Baum, Program Scheduler, is responsible for scheduling presentations and teacher communication. A team of trained and seasoned presenters brought the interactive, hands-on program to Utah Schools.

Building Collaborations

The Utah State Office of Education's Core Curriculum for fifth grade correlate well to the content of Be *watt*smart, Begin at home. Teachers appreciated the collaborative efforts to align program components to their core curriculum. Curriculum correlations were provided to teacher participants in their *Teacher Materials Folder*.

Program Implementation

During the month of May 2017 the schools wait listed from the 2016 program were contacted and informed the registration for the 2017 program was available. All of the participating schools from the 2016 program were also emailed an invitation to register for 2017. In September 2017, a reminder email was sent to all priority unregistered 2016 participating schools. A promotional flier was sent to all qualified/unregistered teachers within the Rocky Mountain service territory.

Program Registration

Be *watt*smart, Begin at home was filled in September with 122 schools. Six of these schools had more than 160 students which required a second presentation and counted as two schools. The 2017 program currently has six schools on a wait list for 2018.

Registration for the program was online at wattsmart.com/begin. Each registered school was checked against the qualified school list before email and phone communication was made with teachers to determine optimum presentation dates and student numbers.

After registration was qualified, a series of email communications with teachers, were sent automatically by the program registration website. The website calculated *Home Energy Worksheet* returns as well as earned gift card levels and communicated this information to the participant. Later communications were customized through programming to be sent only to teachers needing a reminder to return their program documents.

Be *watt*smart, Begin at home Presentation

Be *watt*smart, Begin at home presentations were given during the period of September 18th through November 10th 2017. The presentation featured a custom Keynote slideshow that brought energy concepts to the forefront of Utah education. The presentation focused on important concepts, such as natural resources, electrical generation, the energy mix used by Rocky Mountain Power to generate electricity and tips for energy efficiency in the home.

The presentation provided interactive activities that involved and engaged the audience. Students participated in making a human electrical circuit, during which they learned key core curriculum concepts such as insulators and conductors of electricity and electrical generation. Student volunteers used props to demonstrate the process of electrical generation for their classmates. All students reviewed material learned with an "Energy Lingo" review activity at designated points throughout the presentation. To help students remember energy efficiency tips, participants watched Slim the Lineman energy efficiency video vignettes. At the end of each short video, students learned a rhyme about Slim's wise energy choice.

The last portion of the presentation communicated the importance of the program take-home pieces. These documents enabled households to participate in energy education along with students.

Program Materials

A *Parent Letter* was provided to explain the importance of Be *watt*smart, Begin at home. In addition, students took home a *Student Guide* and *Home Energy Worksheet* to share with their families. Students who returned their worksheet received an Energy Star© rated nightlight featuring the Rocky Mountain Power logo as a reward.

Educators were also given helpful energy educational materials. Each teacher participant was provided a custom Be *watt*smart, Begin at home folder. The folder contained a custom *Teacher Guide* with additional information and activities to supplement and continue energy education in the classroom. Also in the folder were two NEF instructional posters, *Energy Efficiency In Action* and *Electricity Serves Our Community.*

A program *Implementation Steps Flier* assisted teachers in carrying out the program. It also gave simple steps for successfully returning *Home Energy Worksheets*, the *Program Evaluation* and the sponsor *Thanks a "Watt" Card* in the postage paid envelope provided in the *Teacher Materials Folder*. A *Rewarding Results Flier* gave information concerning the Visa® gift card that teacher participants could receive for returning their student surveys. Educators received a $50 gift card for an 80% return, or a $25 gift card for a 50 – 79% return by the December 2, 2017 deadline.

Program Accomplishments – Fall 2017

- 128 Be *watt*smart, Begin at home presentations completed at 122 schools
- 6 schools waitlisted
- 11,347 students and families reached
- 448 Utah teachers reached
- 77.66% *Home Energy Worksheet* survey return
- $50 Visa® gift cards delivered to 356 Utah teachers
- $25 Visa® gift cards delivered to 22 Utah teachers

Program Attachments – Fall 2017

- Fall 2017 Participating Schools
- Program Promotions
- Program Documents
    - Keynote Presentation

    - *Teacher Implementation Steps Flier*
    - *Rewarding Results Flier*
    - *Student Guide*
    - *Teacher Guide*
    - Lingo Card
    - Utah Core Curriculum Correlations
    - *Parent Letter*
- *Teacher Evaluation*
- *Teacher Evaluation* Compilation
- *Home Energy Worksheets*
- *Home Energy Worksheet* Summary – Rocky Mountain Power
- Wise Energy Behaviors in Rocky Mountain Power Utah Homes
- Sampling of Thanks a "Watt" Cards

Attachments

Fall 2017 Participating Schools

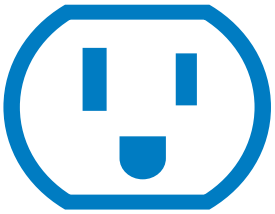
School Name	School Address	City	State	Zip
Altara Elementary	800 E 11000 S	Sandy	UT	84094
Arcadia Elementary	3461 W 4850 S	Taylorsville	UT	84129
Backman Elementary	601 N 1500 W	Salt Lake City	UT	84116
Birchcreek Elementary	2063 N. 1200 E.	Smithfield	UT	84341
Blackridge Elem (AB) (YR)	14131 S Rosecrest Road	Herriman	UT	84096
Blackridge Elem (CD) (YR)	14131 S Rosecrest Road	Herriman	UT	84096
Bluffdale Elementary	14323 S 2700 W	Bluffdale	UT	84065
Burch Creek Elementary	4300 Madison	Ogden	UT	84403
Butler Elementary	7000 S. 2700 E.	Cottonwood Heights	UT	84121
Butterfield Canyon Elementary	6860 Mary Leizan Ln	Herriman	UT	84096
Canyon Rim Academy	3005 South 2900 East	Salt Lake/ Millcreek	UT	84100
Cedar City South Elementary	499 W. 400 S.	Cedar City	UT	84720
Cedar Ridge Elementary	4501 W Cedar Hills Drive	Cedar Hills	UT	84062
Century Elementary	5820 North 4800 West	Bear River City	UT	84301
Channing Hall Charter School	13515 South 150 East	Draper	UT	84020
Cook Elementary	1175 S. 1350 W.	Syracuse	UT	84075
Copper Canyon Elementary	8917 Copperwood Dr.	West Jordan	UT	84081
Copper Hills Elementary	7635 West 3715 South	Magna	UT	84044
Cottonwood Elementary	5205 Holladay Blvd.	Holladay	UT	84117
Crescent Elementary	11100 South 230 East	Sandy	UT	84070
Crestview Elementary	2100 Lincoln Lane	Holladay City	UT	84124
Crestview Elementary--LAYTON	185 W Golden Ave	Layton	UT	84041
Daybreak Elementary	4544 W. Harvest Moon Drive	South Jordan	UT	84009
Douglas T. Orchard Elementary	6744 West 3800 South	West Valley City	UT	84128
Eagle View Elem.	301 North 5750 East	Roosevelt	UT	84066
Early Light Academy	11709 S. Vadania St.	South Jordan	UT	84095
East Elementary-Cedar City	255 E. College Ave.	Cedar City	UT	84720
Eastlake Elem --2/2 presentations	4389 W Isla Daybreak Rd	South Jordan	UT	84009
Eastlake Elem.1/2 presentations	4389 W Isla Daybreak Rd	South Jordan	UT	84009
Eastwood Elementary	3305 South Wasatch Blvd.	Salt Lake City	UT	84109
Elk Meadows	3448 W. 9800 South	South Jordan	UT	84095
Elk Run Elementary	3550 S Helen Drive	Magna	UT	84044
Enoch Elementary	4701 N. Wagon Wheel Dr.	Cedar City	UT	84721
Falcon Ridge	6111 W 7000 S	West Jordan	UT	84081

School Name	School Address	City	State	Zip
Farnsworth Elementary	3751 Sunnyvale Dr.	West Valley	UT	84120
Fox Hollow Elem (AB)(YR)	6020 W 8200 S	West Jordan	UT	84081
Fox Hollow Elem (CD) (YR)	6020 W 8200 S	West Jordan	UT	84081
Foxboro Elementary	587 N. Foxboro Drive	North Salt Lake	UT	84054
Freedom Elementary	10326 N 6800 W	Highland	UT	84003
Gateway Preparatory Academy	201 Thoroughbred Way	Enoch	UT	84721
Geneva Elementary	665 West 400 North	Orem	UT	84057
Granite Elementary	9760 S 3100 E	Sandy	UT	84092
Grantsville Elementary	50 South Park Street	Grantsville	UT	84029
Green Acres Elementary	640 East 1900 North	North Ogden	UT	84414
Gunnison Elementary	560 So 300 E.	Gunnison	UT	84634
Hawthorn Academy	9066 S. 2200 W.	West Jordan	UT	84088
Hawthorne	1675 South 600 East	Salt Lake City	UT	84105
Heritage Elem.	925 W 3200 S	Nibley	UT	84321
Highland Elementary	10865 N 6000 W	Highland	UT	84003
Highland Park Elementary	1738 E 2700 S	Salt Lake City	UT	84106
Hill Field Elementary	389 S. 1000 E	Clearfield	UT	84015
Hillside	4283 South 6000 West	West Valley	UT	84128
Hobble Creek Elementary	1145 East 1200 North	Mapleton	UT	84664
JC Fremont	4249 Atherton Dr.	Taylorsville	UT	84123
Jeremy Ranch Elementary	3050 Rasmussen Rd	Park City	UT	84098
Jim Bridger Elementary	5368 West Cyclamen Way	West Jordan	UT	84081
Jordan Ridge Elem AB (YR)	2636 W. 9800 S.	South Jordan	UT	84095
Jordan Ridge Elem CD (YR)	2636 W. 9800 S.	South Jordan	UT	84095
Lakeview Elementary	2025 West 5000 South	Roy	UT	84067
Legacy Elementary	28 E. 1340 N.	American Fork	UT	84003
Lincoln Academy	1582 W. 3300 N.	Pleasant Grove	UT	84062
Lincoln Elementary	550 East Canfield	Ogden	UT	84404
Lomond View	3644 North 900 West	Ogden	UT	84414
Lone Peak Elementary	11515 High Mesa Drive	Sandy	UT	84092
Magna Elementary	3100 South 8400 West	Magna	UT	84044
Mapleton	120 West Maple St.	Mapleton	UT	84664
Maria Montessori Academy	2505 N 200 E.	N. Ogden	UT	84414
Meadowbrook Elementary	700 N. 325 W.	Bountiful	UT	84010
Mill Creek Elementary	3761 1100 E.	Salt Lake City	UT	84106
Monroe Elementary	4450 W 3100 S	West Lake City	UT	84120
Monte Vista Elementary	11121 S. 2700 W.	South Jordan	UT	84095
Morningside	4170 South 3000 East	Holladay	UT	84124

School Name	School Address	City	State	Zip
Mountain Shadows Elementary	5255 W 7000 So	West Jordan	UT	84081
Mountainville Academy	195 South Main Street	Alpine	UT	84004
Mt. Mahogany Elementary	618 N 1300 W	Pleasant Grove	UT	84062
North Park--Roy	4046 2175 W St	Roy	UT	84067
North Park--Tremonton	50 East 700 North	Tremonton	UT	84337
Oquirrh Hills Elementary	5241 s. 4280 W	Kearns	UT	84118
Orchard Hills	168 East 610 South	Santaquin	UT	84655
Orem Elementary	450 W 400 S.	Orem	UT	84058
Overlake Elementary	2052 N 170 W	Tooele	UT	84074
Panguitch Elementary School	110 S 100 W	Panguitch	UT	84759
Park Lane Elementary	9955 South 2300 East	Sandy	UT	84092
Parkside Elementary	2262 North 1500 West	Clinton	UT	84015
Peruvian Park Elementary	8425 S 1545 E	Sandy	UT	84092
Pioneer Elementary	250 N. 1600 W.	Ogden	UT	84404
Plymouth Elementary	5220 S 1470 W	Taylorsville	UT	84123
Providence Hall 1/2 presentation	4795 West Patriot Ridge Dr.	Herriman	UT	84096
Providence Hall 2/2 presentation	4795 West Patriot Ridge Dr.	Herriman	UT	84096
Quest Academy	4862 W 4000 S	West Haven	UT	84401
Redeemer Lutheran School	1955 E. Stratford Ave	Salt Lake City	UT	84106
River Heights Elementary School	780 E 600 S	River Heights	UT	84321
Riverside Elementary	8737 S. 1220 W.	West Jordan	UT	84088
Rolling Meadows	2950 Whitehall Dr	Salt Lake City	UT	84119
Rose Creek Elementary	12812 So. 3600 W.	Riverton	UT	84065
Rose Springs Elementary	5349 N. Innsbrook Place	Stansbury Park	UT	84074
Rosecrest Elementary	2420 Fisher Lane	Salt Lake City	UT	84109
Roy elementary	2888 W. 5600 S	Roy	UT	84067
Sand Springs Elem CD (YR)	242 N 3200 W	Layton	UT	84041
Sand Springs Elementary AB (YR)	242 N 3200 W	Layton	UT	84041
Sandy Elementary	8725 S. 280 E.	Sandy	UT	84070
Scera Park	450 S. 400 E.	Orem	UT	84097
Silver Crest Elementary	12937 South Elementary Dr.	Herriman	UT	84096
South Jordan -AB Tracks	11205 S. Black Cherry Way	South Jordan	UT	84095
South Jordan CD Tracks	11205 S. Black Cherry Way	South Jordan	UT	84095
South Weber Elementary	1285 East Lester Street	South Weber	UT	84405
St Francis Xavier Catholic School	4501 West 5215 South	Kearns	UT	84118
Stansbury Elementary	3050 S. 2700 W.	West Valley City	UT	84119
Summit Academy	1285 E. 13200 S.	Draper	UT	84020
Summit Academy	1940 W. 14400 S.	Bluffdale	UT	84065

School Name	School Address	City	State	Zip
Summit Elementary	80 West Center Street	Smithfield	UT	84335
Summit Independence	15327 S. Noell Nelson Dr.	Bluffdale	UT	84065
Sunrise Elementary	1542 E. 11245 S.	Sandy	UT	84092
Sunset Elementary School	2014 North 250 West	Sunset	UT	84015
Syracuse Arts Academy - Antelope	2893 W. 1700 S.	Syracuse	UT	84075
Taylor Canyon	2130 Taylor Ave.	Ogden	UT	84401
Taylorsville Elem.	2010 West 4230 South	Taylorsville	UT	84119
Three Mile Creek Elementary	2625 South 1050 West	Perry	UT	84302
Timpanogos Academy	70 South 100 East	Lindon	UT	84042
Upland Terrace Elementary	3700 Sunnydale Drive	Salt Lake City	UT	84109
Vae View	1750 W 1600 N.	Layton	UT	84041
Valley View Elementary	2465 West 4500 South	Roy	UT	84067
Vineyard Elementary	620 E Holdaway Rd	Vineyard	UT	84058
Voyage Academy	1891 North 1500 West	Clinton	UT	84015
Washington Elementary	420 N 200 W	Salt Lake City	UT	84103
West Point Elementary	3788 W. 300 N.	West Point	UT	84015
West Valley Elementary	6049 West Brud Dr	West Valley City	UT	84128
Westbrook	3451 West 6200 South	Taylorsville	UT	84129
Westland Elementary	2925 West 7180 South	West Jordan	UT	84084
Westmore Elementary	1150 South Main Street	Orem	UT	84058
Windsor Elementary	1315 N Main St.	Orem	UT	84057
Woodrow Wilson	2567 South Main Street	South Jordan	UT	84115
Woods Cross elementary	745 W 1100 South	Woods Cross	UT	84087
Woodstock	6125 S 1300 East	Murray	UT	84121

Be *watt*smart
Begin at home



Be wattsmart, Begin at home is an energy education program sponsored by Rocky Mountain Power that is available to you in the fall of 2017. This program focuses on the Utah State Office of Education fifth-grade core curriculum while showing students and teachers how wise energy actions make a difference. Here is what local teachers have to say about the program:

> **"The students enjoyed this program and it fits perfectly with our unit on electricity."**

> **"The circuit demonstration taught important electrical concepts and engaged students."**

Please join us in this important effort. You may qualify to receive a **Visa® gift card of up to $50** depending upon participation.

What:	A 45 - 60 minute educational presentation with FREE wattsmart energy education posters, activities and student materials
When:	September 18 - November 10, 2017
Where:	Your school
Who:	Fifth-grade students and their teachers
How:	Enroll at your earliest convenience to ensure a spot at **wattsmart.com/begin** or email **diane.baum@nef1.org**

National Energy Foundation®
cultivating energy literacy

ROCKY MOUNTAIN POWER

wattsmart.com

Program Documents

Keynote Presentation

Be **watt**smart,
Begin at home

ROCKY MOUNTAIN POWER

What we will do today.

Learn about natural resources.

Learn how we make and use energy.

Learn how to use energy wisely by being **watt**smart.

Play energy LINGO.

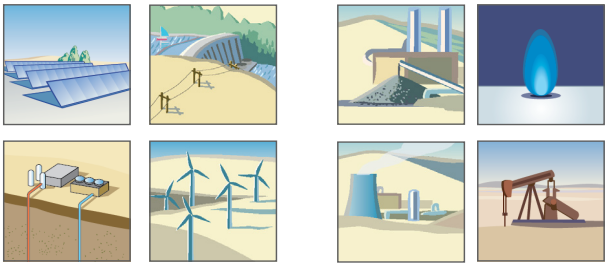
What is ENERGY?

ENERGY is the ability to do **WORK**.

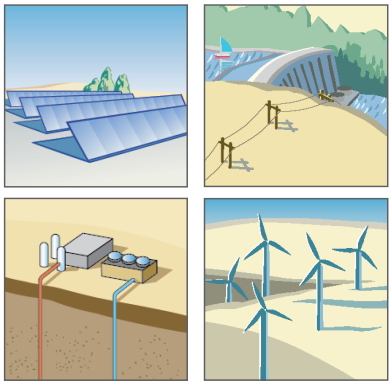
Natural resources

A **natural resource** is anything we use that comes from the earth or the sun.

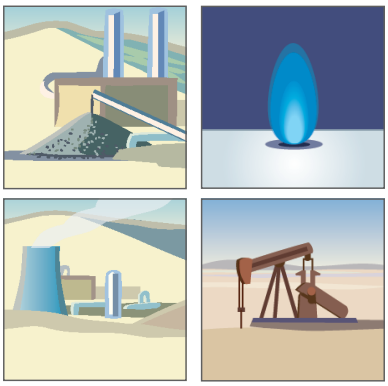
Renewable and nonrenewable resources



Renewable resources



Nonrenewable resources



Electricity

- The electricity we use is not a natural resource.
- It is made from natural resources.
- Since electricity is made from natural resources, it is called a **secondary energy source**.
- Power lines carry the electricity from where it is generated to where it is used.

Let's LINGO

Find the words on your LINGO board that match these definitions:

- The ability to do work. **Energy**
- A resource often found with oil. **Natural gas**
- A secondary energy source. **Electricity**
- Something useful from the earth or the sun. **Natural resource**

Rocky Mountain Power

Electric generation by energy source

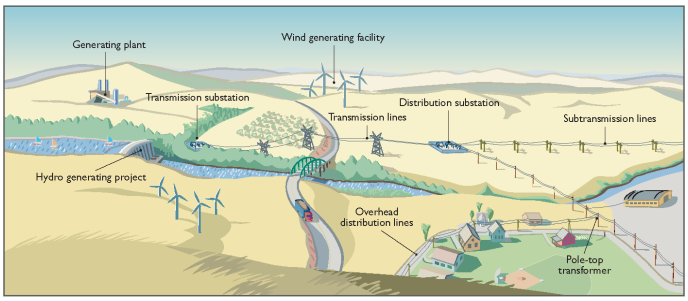
Coal 58.85%

Renewables 17.08%

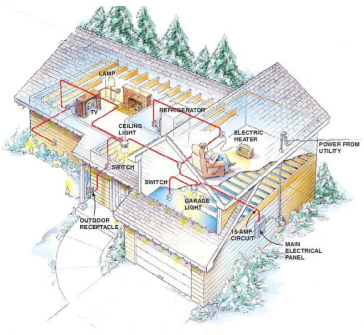
Natural gas 14.76%

Other sources 9.31%

Electric generation



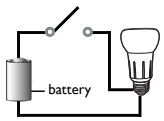
What is a circuit?



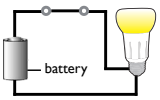
Let's make a circuit.

What things do we need to make an electrical circuit?

- An **energy source**, such as a battery.
- A **conductor** to carry electrical energy, such as wire.
- A **load** to use the energy, such as a light bulb.



Open circuit:
No electricity can flow



Closed circuit:
Electricity can flow

Energy efficiency

Energy efficiency

- Using less energy to accomplish the same amount of work.

Technology

- Install energy-efficient products, appliances and devices.

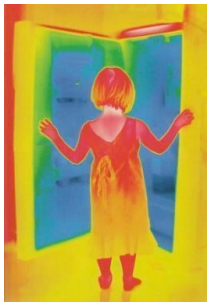
Behavior

- Use less energy through wise behaviors that conserve energy.

Know what you want before you open the refrigerator.

Refrigerators and freezers

What can you do to be ***watt***smart?



Decide what you want to eat quickly!

Use a fan to stay cool.

Home heating and cooling

What can you do to be ***watt***smart?

- Use a fan instead of an air conditioner.
- Install a smart or programmable thermostat.
- Change furnace filters.
- Insulate your home and seal air leaks.

Turn off the TV when you leave the room.

Electronics

What can you do to be ***watt***smart?

- Turn off TVs, computers and game consoles when not in use.
- Unplug the thug. Beware of **phantom loads**.

- Use advanced power strips to reduce phantom load.

Turn off the lights when you leave the room.

Lighting

What can you do to be ***watt***smart?

Turn off the lights when you leave a room.

Replace standard bulbs with **LED** (light-emitting diode) light bulbs.

Let daylight shine in.

Let's LINGO

Find the words on your LINGO board that match these definitions:

- Using less energy to accomplish the same amount of work. **Energy efficiency**
- An energy resource that is capable of being renewed or is replaceable. **Renewable**
- Fossil fuels – such as coal, natural gas and oil – are considered **Nonrenewable** resources.
- A resource used to produce gasoline. **Oil**

Water heating

What can you do to be ***watt***smart?

- Install a water-efficient showerhead.
- Take shorter showers.
- Turn off the water when brushing teeth.
- Set your **water heater** to 120°F.

Dishwashers and laundry

What can you do to be ***watt***smart?

- Run only when full.
- Use low energy settings.
- Clean the lint filter on your dryer.

Cooking

What can you do to be ***watt***smart?

- Use a microwave oven when possible.

- Use lids to shorten **cooking** time.

The 3 Rs

What can you do to be ***watt***smart?

- **Reduce**
  – use less of something.
- **Reuse**
  – use something again.
- **Recycle**
  – make something into another new thing.

Let's LINGO

Find the words on your LINGO board that match these definitions:

- A light that can last 25 times longer than an incandescent. **LED**
- Electricity consumed by an electronic device while it is turned off or in standby mode. **Phantom load**
- Using a toaster oven or microwave for **Cooking** is more energy-efficient than using the oven.
- Set this to 120°F for a comfortable shower. **Water heater**
- To use less of something. **Reduce**

What have we done today?

- **Learned** why energy is important.
- **Discussed** energy and where it comes from.

Engage

Review your **Be *watt*smart, Begin at home** booklet with your parent(s).

Complete the *Home Energy Worksheet* and return it to receive an energy-efficient nightlight.

Sign the *Thanks A "Watt" Card* and your teacher will mail it along with your worksheet and the teacher's *Program Evaluation*.

***YOU** can make a difference when you are **watt**smart!*

Visit **wattsmart.com** for more energy-saving ideas.

Be ***watt***smart
Begin at home

Teacher Program Implementation Steps

1. Verify that you have received each of the following:
   - *Teacher Materials Folder*
   - Your **Be wattsmart, Begin at home** *Student Booklet*
   - Your **Be wattsmart, Begin at home** *Teacher Guide*
   - *Program Evaluation*
   - Sponsor *Thank You Card*
   - Teacher Visa® gift card announcement
   - Self-addressed postage-paid return envelope
   - Instructional posters
   - *Home Energy Worksheets* for you and your students
   - **Be wattsmart, Begin at home** student booklets
   - Set of *Parent Letters*
   - *watt*smart nightlights (student incentive for returning the *Home Energy Worksheet*)

2. Distribute to each student a:
   - **Be wattsmart, Begin at home** student booklet
   - *Home Energy Worksheet*
   - *Parent Letter*
   - *watt*smart *Starter Kit Flier*

3. Reward each student who returns a completed *Home Energy Worksheet* with a wattsmart nightlight.

4. Complete the *Program Evaluation* form.

5. Have each student sign the *Thank You Card* to Rocky Mountain Power.

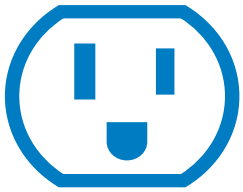
6. Mail in the self-addressed, postage-paid envelope:
   - Completed *Home Energy Worksheet*
   - The *Thank You Card*
   - The *Program Evaluation* form

To thank you for postmarking your envelope by December 1, 2017, you will receive a Visa® gift card for classroom use.
80% or greater return of registered students' *Home Energy Worksheets* **= $50**
50 – 79% return of registered students' *Home Energy Worksheets* **= $25**

For questions or additional information, please email Diane Baum at **diane.baum@nef1.org**.

ATTENTION TEACHERS!

Be **watt**smart
Begin at home



Help us out by mailing your student *Home Energy Worksheets* and receive a **$25 - $50** Visa® gift card for classroom use, depending upon participation:

80% or greater return of registered students' *Home Energy Worksheets* = $50
50 - 79% return of registered students' *Home Energy Worksheets* = $25

Postmark due date:
December 1, 2017

Offer open only to teachers participating in Be wattsmart, Begin at home. Certain restrictions may apply. Good while grant funding is in place. *Home Energy Worksheets* must be completed for eligibility. For more information, contact Diane Baum at diane.baum@nef1.org.

National Energy Foundation®
cultivating energy literacy

ROCKY MOUNTAIN POWER

wattsmart.com

Dear Parent(s):

The **Be *watt***smart, **Begin at home** program assists teachers and students to learn about energy, discuss important energy topics and engage in energy efficiency actions now. Your child has participated in a presentation addressing natural resources, energy basics and energy efficiency. Your participation in this program will help you be wattsmart, enhance energy efficiency in your home and help save money on your utility bills. Here are three simple ways that you can help:

- Review this **Be *watt***smart, **Begin at home** booklet with your child.
- Assist your child with completing the activities on Page 7.
- Have your child return the ***Home Energy Worksheet*** to his or her teacher.

Thank you for being wattsmart and for your participation!

What's inside?

This booklet is divided into three sections that will help you:

1. Learn about sources of energy, how they get to your home and why they are important in your life.
2. Discuss wattsmart energy efficiency tips that will help you use energy wisely and save money.
3. Engage in energy efficiency by determining how energy can be saved in your home through a simple audit activity and the *Home Energy Worksheet*.

About Rocky Mountain Power

Rocky Mountain Power is committed to the delivery of reliable electric service that's safe, low-cost and increasingly from clean, renewable resources. Serving more than 1 million customers in Utah, Idaho and Wyoming, the company is one of the lowest cost energy producers in the nation. Rocky Mountain Power is moving toward a sustainable energy future that includes increased use of solar, wind and other renewable resources; and provides customers with more choices to meet their energy needs.

About the National Energy Foundation

The National Energy Foundation (NEF) is a 501 (c)(3) nonprofit organization, founded in 1976. It is dedicated to increasing energy literacy through the development, distribution and implementation of educational programs and materials. These resources relate primarily to energy, natural resources, energy efficiency, energy safety and the environment. Concepts are taught through science, math, art, technology and writing. NEF recognizes the importance of educating individuals about energy so they can make informed decisions about energy issues and use.

What does it mean to be ***watt***smart?

- Being wattsmart is all about taking steps to save energy – which in turn can help you save money.
- Rocky Mountain Power's wattsmart programs and incentives can help customers become more energy efficient in their homes and businesses and that's good for their wallets and the environment.

The importance of energy:

Energy is the ability to do work or produce change. Virtually everything we do or use at work and home uses energy.

- Heating and cooling systems
- Computers
- Electronic equipment such as gaming and entertainment systems and TVs
- Charging electronic tablets, music players and cell phones
- Appliances
- Lights
- Manufacturing
- Food storage and preparation
- Security systems

Where does energy come from?

Our energy comes from natural resources. There are two general categories of natural resources – nonrenewable and renewable. A nonrenewable resource is not capable of being renewed, replaced or takes a very long time to replace. A renewable resource is capable of being renewed or replaced.

PRIMARY NATURAL RESOURCES are used to convert energy into electricity. They can be either nonrenewable or renewable.

Nonrenewable examples are:

Coal is the most abundant nonrenewable energy source in the world. There is an estimated 129 year supply remaining.

Oil can be both refined and unrefined. Refined oil is transformed into petroleum products and unrefined oil remains as crude oil.

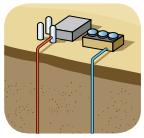
Natural Gas is usually captured alongside oil deposits and is a major source for electrical generation.

Uranium is the fuel most widely used by nuclear plants. Nuclear energy is the energy inside the nucleus (core) of the atom of uranium.

Renewable examples are:

Solar is energy from the sun.

Wind is energy from the wind captured by a group of wind turbines (generators).



Geothermal is energy derived from the heat of the earth.

Hydropower is energy from water that generates electricity.

SECONDARY ENERGY RESOURCES are created by using nonrenewable and renewable resources of energy.

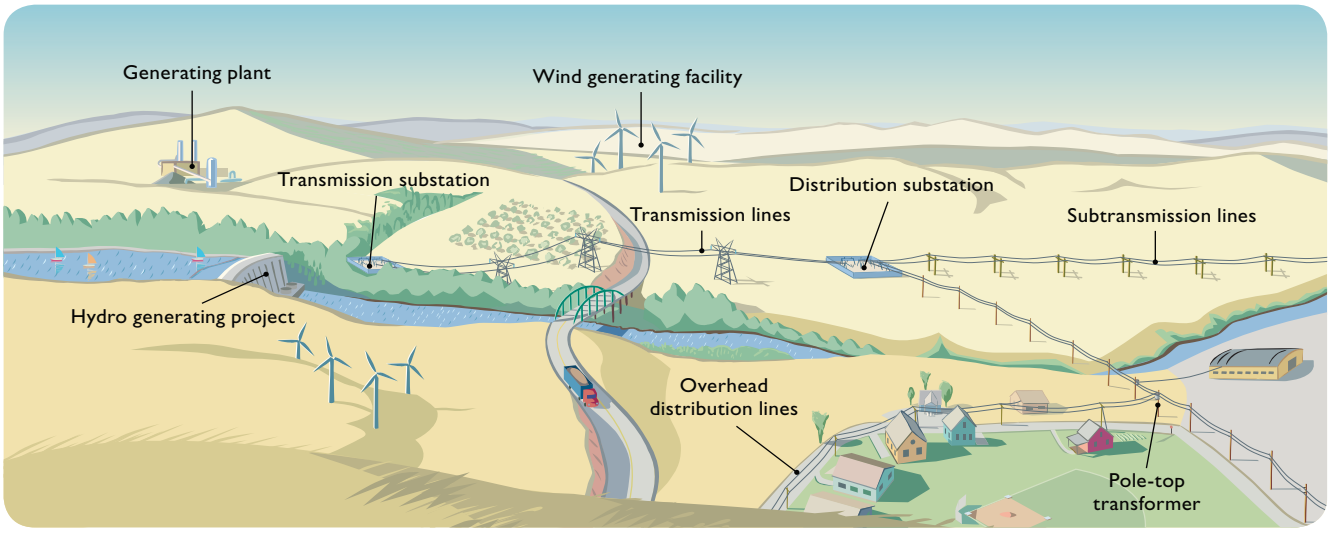
Electricity is the most abundant **secondary energy resource** used. It is the flow of electrical power or charge. It occurs in nature as lightning and static electricity. A generator uses energy resources to create mechanical energy that is then converted into electrical energy.

Energy efficiency

Energy efficiency is using less energy to accomplish the same amount of work – we call it being wattsmart. There are many technologies we can use today that decrease the amount of energy needed to do work. Good examples are ENERGY STAR® products and LED lighting.

You can save even more money if you start thinking about using energy wisely. Try turning off the lights when you leave the room, take shorter showers or turn off your electronics when you are not using them.

Using electricity



For more than 100 years, electricity has made our homes more comfortable and industries more productive. Today electricity is powering a world of electronics.

How is electricity generated? It begins with a fuel that heats water and turns it to steam. The steam drives the turbine that turns the generator motor to produce electricity.

How is electricity transmitted? Once the electricity is produced, the current flows from the generator to the power plant transformer where the voltage is increased to boost the flow of the electric current through the transmission lines. The transmission lines transport the electricity to Rocky Mountain Power's substations where the voltage is decreased. Power lines then carry the electricity from the substations to be used in our homes and businesses.

ELECTRICAL GENERATION

Energy resource	Rocky Mountain Power (2016 basic fuel mix)*	United States (U.S. EPA, 2013 data)
Coal	58.85%	39%
Natural gas	14.76%	27%
Renewables	17.08%	12%
Hydroelectric	5.58%	7%
Wind	8.97%	4%
Biomass	0.44%	1%
Geothermal	0.41%	--
Solar	1.68%	0%
Nuclear	0.00%	19%
Other/misc.	9.31%	3%
Total*	100%	100%

**This information is based on Federal Energy Regulatory Commission Form 1 data. The Rocky Mountain Power "basic fuel mix" is based on energy production and not resource capability, capacity or delivered energy. All or some of the renewable energy attributes associated with wind, solar, biomass, geothermal and qualifying hydro facilities in Rocky Mountain Power's basic fuel mix may be: (a) used in future years to comply with renewable portfolio standards or other regulatory requirements, (b) sold to third parties in the form of renewable energy credits and/or other environmental commodities or (c) excluded from energy purchased. Rocky Mountain Power's basic fuel mix includes owned resources and purchases from third parties.*

wattsmart tips to lower your energy use and help save money

Saving energy happens in two ways. First, you can use less energy through wise behaviors that conserve energy. Second, you can install energy-efficient products, appliances and devices that use less energy to accomplish the same task. Let's talk about the following areas of your home that have the largest potential to save energy.

Home heating and cooling

- Install a programmable thermostat or smart thermostat. Set your thermostat to 78°F or higher in the summer and 68°F or lower in the winter.
- Make sure your house is properly insulated. If you have less than 6 inches of insulation in your attic, you would benefit from adding more.
- You can save 10 percent or more on your energy bill by reducing the air leaks in your home with caulking and weather stripping.

- To help your furnace run more efficiently and cost-effectively, keep your air filters clean.
- For windows with direct sunlight, close your blinds in the summer to keep the heat out. Open them on winter days to let the warmth in.
- Small room fans are an energy-efficient alternative to air conditioning.
- Inspect and replace weather stripping and caulking in your home.
- For information about energy-saving programs and cash incentives, visit **wattsmart.com**.

Water and water heating

- Check your faucets for leaks that can cost you hundreds of dollars each year.
- Install a water-efficient showerhead and save as much as $145 a year.
- Set the water heater at 120°F.
- Install faucet aerators to decrease water use.

Lighting

- Let the sun shine in. Use daylight and turn off lights near windows when possible.

- Replace your incandescent bulbs with LEDs (light-emitting diodes) and save $5 to $8 per year per bulb. These bulbs use up to 80 percent less energy than incandescent bulbs and last much longer.
- Use lighting controls such as motion detectors and timers.
- Turn off lights when you leave the room.
- Always use the lowest wattage bulb that still gives you the light you need.
- Keep your light bulbs clean. It increases the amount of light from the bulb and reduces the need to turn on more lights.

Safety note: Burned out CFLs, which contain a small amount of mercury, should be disposed of properly. To locate a collection site in your area, or to learn what to do if a CFL breaks, visit **earth911.com**.

Electronics

- Turn off your computer and game consoles when not in use.
- Home electronics are made to turn on and off many times. Always turn them off to save energy.
- Electronics with the ENERGY STAR® label use as much as 60 percent less energy while providing the same performance.
- Beware of phantom loads which continue to draw electricity when they are plugged in but not in use. Examples are telephone chargers, electronic games and television sets.
- Use advanced power strips for household electronics. One button will turn off multiple appliances, which conserves electricity.

Refrigerators and freezers

- When looking to replace your old refrigerator, do so with an ENERGY STAR® model, which requires approximately 40 percent less energy than conventional models and provides energy savings without sacrificing the features you want.
- The coils in the back or bottom of your refrigerator and freezer should be kept as clean as possible.

Dishwashers

- Only run dishwashers when full and use the "air dry" or "no heat dry" settings.
- ENERGY STAR® dishwashers use at least 41 percent less energy than the federal minimum standard for energy consumption.

Laundry

- Buy a moisture-sensitive dryer that automatically shuts off when clothes are dry.
- Use a clothesline whenever possible.

Cooking

- Use a microwave oven, toaster oven or crock pot instead of a conventional oven.
- Use the right-sized pan for the stove top element.
- Cover pans with lids to keep heat from escaping.

Reduce

- Use less.
- Purchase products with little packaging.

Reuse

- Use something again.
- Reuse a box or a grocery bag.

Recycle

- Make something into another new item.
- Participate in the recycling programs in your community.

Parents, be wattsmart and watch the energy savings add up.

An individual with a combined electric and heating fuel bill of $2,500 per year could save 20 percent or $42/month by using these and other energy efficiency tips. That is like getting a pay raise without having to work harder or longer.

The cost of lighting your home

Take a walk around your home with your family to learn about your lighting.

1. Count the types of bulbs in each room and record in Table 1; then total each column.
2. Transfer the total for each type of lighting into Column A on Table 2.

TABLE 1

Location	Incandescent	CFL	LED
Bedroom 1			
Bedroom 2			
Kitchen			
Dining room			
Living room			
Hallway			
Laundry room			
Family room			
Front porch			
Other			
TOTAL			

3. In Table 2, multiply the numbers in Column A by the given amounts in Column B. Place the answers in Column C.
4. Add the numbers in Column C to get the total approximate cost of electricity for lighting your home.
5. Discover how much money you will save if all the bulbs in your home were CFLs or LEDs. Add the numbers in Column A to get the total number of bulbs in your home. Transfer the total to both rows in Table 3, Column E as indicated by the arrows.
6. Multiply the total number of CFLs by the annual cost of electricity for one CFL provided in Column F and put your answer in Column G.
7. In the last row of Table 3, multiply the total number of LEDs in Column E by the annual cost of electricity for one LED bulb provided in Column F and put your answer in Column G.

   How do the amounts in Column G compare with your current total cost for lighting in Column C above?

TABLE 2

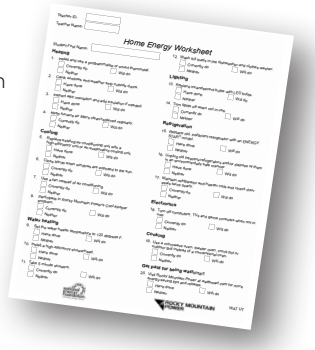
	A	B	C
	Number of bulbs from Table 1	Annual cost of electricity for one bulb	Annual cost of electricity for lighting
Incandescent		× $4.80	
CFL		× $1.08	
LED		× $0.60	
TOTAL			

TABLE 3

	E	F	G
All CFLs		× $1.08	Annual cost of electricity with only CFLs
All LEDs		× $0.60	Annual cost of electricity with only LEDs

Cost figures are for an individual bulb (60 Watt incandescent), the lumens equivalent CFL (13 Watts) and LED (7 Watts) each used for 2 hours each day for 30 days. EEI Typical Bills and Rates Report, Winter 2016 (12 months ending 2015).

Be ***watt***smart – it's up to you



Together with your parent(s), complete the separate *Home Energy Worksheet*. Return it to your classroom teacher and receive your wattsmart nightlight. You may find you are already practicing ways to be energy efficient but there is always room to do more.

Challenge yourself and your family to commit to practice energy efficiency by making wise energy choices and being wattsmart. You will not only help extend the life of our natural resources, but save money, too!

For other energy-saving ideas and incentives, visit **wattsmart.com**. Congratulations to you and your family for making a difference.

Be *watt*smart

Begin at home

National Energy Foundation
cultivating energy literacy

*watt*smart.com

ROCKY MOUNTAIN POWER

Be *watt*smart
Begin at home

TEACHER GUIDE

National Energy Foundation
cultivating energy literacy

ROCKY MOUNTAIN POWER

Welcome to Be ***watt***smart, Begin at home

This program teaches the importance of energy and assists students and their families in saving energy in their homes. For teachers, **Be *watt*smart, Begin at home** reinforces important electrical concepts from your curriculum.

This *Teacher Guide* was designed to supplement program instruction. A variety of tools have been provided to allow you to format **Be *watt*smart, Begin at home** to meet your instructional needs. These tools include:

- General guidelines and activity suggestions
- Classroom activities to further the impact of lessons
- Additional fun and interesting activities for students
- Activities containing STEM-correlated curriculum for your classroom

Table of Contents

STEM Correlations....2

Section One: Energy Efficiency

Energy Challenge....3
Conservation Cookie....4
Pass the Sack....5
Energy Tickets....6
The Search for Energy....8

Section Two: Resources You Can Use Efficiently

Energy Challenge....9
Where Do Fossil Fuels Come From?....10
Energy for Electricity....11
Electrical Generation Poster....13

Section Three: Be wattsmart, Begin at home

Energy Challenge....14
Insulation Tests....15
How Bright Is Your Light?....16
Energy in Math....17
Be wattsmart, Begin at home Poster....19

About Rocky Mountain Power

Rocky Mountain Power is committed to the delivery of reliable electric service that's safe, low-cost and increasingly from clean, renewable resources. Serving more than 1 million customers in Utah, Idaho and Wyoming, the company is one of the lowest cost energy producers in the nation.

About the National Energy Foundation

The National Energy Foundation (NEF) is a unique 501(c)(3) nonprofit educational organization dedicated to the development, dissemination and implementation of supplementary educational materials and programs. These resources for education relate primarily to energy, water, natural resources, science, math, technology, conservation, energy efficiency and the environment. NEF recognizes the importance and contribution of natural resources to our economy, to our national security, the environment and our quality of life.

STEM Correlations

STEM education is an approach to teaching and learning that integrates the content and skills of science, technology, engineering and mathematics. Some of the skills include: problem-solving, innovation, invention, inquiry, logical reasoning, critical thinking, technological literacy, communication tools, research tools, design and modeling, data analysis and probability, collaboration and real world connection. This chart correlates *Teacher Guid*e activities to STEM skills and behaviors.

	Science				**Technology**				**Engineering**					**Math**			
Activity	Science as Inquiry	Energy Sources, Forms and Transformations	Science and Technology	Personal and Social Perspectives	Productivity Tools	Communication Tools	Research Tools	Problem-solving and Decision-making Tools	Historical Perspective	Design and Modeling	Invention and Innovation	Test Design and Troubleshooting	Use and Maintain	Numbers and Operations	Measurement	Data Analysis and Probability	Connection to the Real World
Conservation Cookie	X			X										X	X	X	X
Pass the Sack	X	X		X													
Energy Ticket	X	X		X				X						X	X	X	X
The Search for Energy	X	X	X	X										X		X	X
Where Do Fossil Fuels Come From?	X	X	X					X						X	X		
Energy for Electricity	X	X	X	X			X										
Insulation Tests	X	X	X	X			X	X		X	X	X	X	X	X	X	X
How Bright Is Your Light?	X	X	X				X		X					X		X	X
Energy in Math														X		X	X

Section One:
Energy Efficiency

Objective: Identify and explain types of natural resources, conservation and energy efficiency.

Vocabulary:

Natural resource: A material source of wealth, such as timber, fresh water or a mineral deposit that occurs in a natural state and has economic value.

Renewable resource: A natural resource that is capable of being renewed or is replaceable such as energy from the sun or wind.

Nonrenewable resource: A natural resource that is not capable of being renewed, replaced or takes a very long time to replace, such as fossil fuels.

Fossil fuel: A combustible material created naturally beneath the earth's surface over a long period of time from the remains of plants and animals. Examples include coal, natural gas and oil.

Conservation: The protection, preservation, management, or restoration of natural resources such as forests, soil and water.

Energy efficiency: Using less energy to accomplish the same amount of work.

Classroom Activities:

- "Conservation Cookie"
- "Pass the Sack"
- "Energy Tickets"
- "The Search for Energy"

Energy Challenge

Discussion Idea: Embodied energy in a glass of milk.

Objective: Trace the energy and resources needed to make a common product.

Review the steps that it takes to produce a glass of milk and bring it to the consumer.

- Feeding and raising a cow
- Milking a cow
- Packaging
- Refrigeration
- Transportation of milk (dairy to warehouses to store to home)

Discuss with Your Class:

1. What natural resources go into making and transporting a glass of milk?
2. The energy used to make and transport a product is called embodied energy.
3. What embodied energy sources are involved in producing and transporting milk?
4. How can understanding embodied energy in our daily lives encourage us to be energy-efficient?

Conservation Cookie

Objective:
To demonstrate the results of conservation of a resource.

Pre-activity Discussion:
- What is conservation?
- Why is conservation so important?

Materials:
- Two cookies (or other food item) for each person
- One watch or clock with a second hand for timing
- Computer or graph paper to graph results

STEM Connection
Science
- Science as Inquiry
- Personal and Social Perspectives

Math
- Numbers and Operations
- Measurement
- Data Analysis and Probability
- Connection to the Real World

Procedure:
1. Tell students that this is the first of two rounds. In each round, they will be eating a cookie, which represents our natural resources. They are to stand at their desk and you say to eat the cookie as they normally would, then when the cookie has been completely swallowed, sit down. The activity will work better if you ask students NOT to put the entire cookie in their mouth at one time, to take at least two bites!
2. Give each student a cookie, with instructions not to eat it until you say. Start the watch and tell the students to eat the cookie as they would normally eat it. At 30 second intervals, count the number of students standing and record this data.
3. Individually or as a class, graph this data using a line graph.
4. Tell students they will now practice conservation with a second cookie. To represent conservation, students will only take a bite from their cookie when you say "BITE." Just as before, they will stand, take bites the same size they took last time, and sit after the entire cookie has been swallowed.
5. Pass out a second cookie to each student.
6. Start the watch and have everyone take a "BITE" and then wait 30 seconds. Record the number of students standing and again say "BITE." Repeat this procedure until almost everyone has finished his or her second cookie.
7. On the same graph used for the first cookie, add a second line graph for the conservation cookie.

Discussion:
- Compare the two graphs. If desired, have students calculate the slope of each graph from 0 to 30 seconds and from 30 seconds to 1 minute. How do the slopes vary over time and between graphs? What does a change in slope represent?
- Discuss the term conservation and its effects on our natural resources. Can we control how rapidly we use water or energy by conserving it? Water and energy are some of the most important things we use in our lives. If they are used up quickly, and all at once, we will not have enough left for the future.

Pass the Sack

Objective:
To demonstrate the difference between renewable and nonrenewable resources and the need for conservation of resources.

Materials:
- Two different kinds of candy or other objects students find desirable
- Sack to hold candy, such as a gallon size plastic bag

STEM Connection
Science
- Science as Inquiry
- Energy Sources, Forms and Transformations
- Personal and Social Perspectives

Procedure:
1. Count out enough candy so that there is one piece per student (some of each type of candy – perhaps less of one so it will run out faster). Put it in the sack or bag. Save the remaining candy. If you have a very polite class, count enough candy for half of the class. You want the candy to run out before everyone gets some!
2. Tell students you will be demonstrating how resources get used over time by playing "Pass the Sack." Show students the sack and tell them when they get the sack, they should take some energy and pass the sack to the person next to them.
3. Before passing the sack to the first student, review renewable and nonrenewable resources. Have students give examples of each as you hand the sack to a student.
4. While this discussion is taking place, allow students to pass around the bag of candy without any rules about how many pieces students may take. Occasionally, add four or five pieces of one of the types of candy you are using. (This will be your renewable resource.) The sack will be empty before it reaches all the students.
5. Ask students that did not get any candy how they might obtain energy from other students. What if each student represented a country? How do countries obtain resources? Trade? Barter (trade for goods)? Buy (trade for currency)? Invade and take (go to war)? What effect did the availability of candy have on relationships between students? What effect might the availability of natural resources have on the relationship among nations, provinces, states, people, standards of living and quality of life?
6. Explain how our resources are like the candy. Which type was nonrenewable? How could you tell? (No more was added to the bag once it was being passed around.) Which type was renewable? How could you tell? (It was added to the bag periodically.)
7. Point out that resources have limits just like the candy. Emphasize that many resources, such as fossil fuels, are nonrenewable and are being consumed faster than they are being replaced by nature. Discuss the fact that it would be more difficult for students to eat the candy if they had to search the room to find it instead of just taking it from the sack. Energy companies must seek resource deposits and obtain rights to drill or mine for them; they do not just magically appear. Point out that natural gas, coal and oil companies are looking harder for more resources as supplies dwindle.
8. Now plan to pass out the remaining candy. Should rules be established? Do oil, coal and natural gas companies have rules (regulations) that they must follow to find resources? Should there be rules and regulations on how much oil, coal and natural gas people use? How would students get resources if they could not leave their desks? How do the students' social decisions influence the availability of candy?

Energy Tickets

Objective:
See how energy decisions affect our standard of living and our quality of life. This will help students realize how important it is to use energy efficiently.

Materials Needed:
- Energy Tickets – 25 per student
- Box to collect tickets (toll box)

STEM Connection
Science
- Science as Inquiry
- Energy Sources, Forms and Transformations
- Personal and Social Perspectives

Technology
- Problem-solving and Decision-making Tools

Math
- Numbers and Operations
- Measurement
- Data Analysis and Probability
- Connection to the Real World

Procedure:
1. Before class begins, copy a page of tickets from the master on page 7 for each student. Alternatively, you may use preprinted tickets available from retail stores.
2. Introduce the game to the students by listing several places the students use energy in the school, for example, in the classroom: lights, computers and heaters.
3. Provide each student with 25 Energy Tickets, and instruct them to write their name on all of their Energy Tickets.
4. Every time a student uses energy, have them write how the Energy Ticket was used on the back and put the ticket in the toll box. If they use heated water, it will cost two tickets, because they are using both energy and water. It also costs two tickets if they waste energy unnecessarily. For example, leaving lights or a computer on when not in use wastes energy.
5. Keep a record of how many tickets the students have left each day.
6. Optional: look at how the tickets were used and create a graph of tickets used for different categories (sharpening pencils or using computers, for example) out of the tickets deposited in the box.

Discussion:
- What would happen if there was a real energy shortage in the community and families were issued a certain number of Energy Tickets?
- What if after they used them, all of their electricity and gas were shut off?
- What would they do to adjust their use of energy?
- What are other alternate sources of energy?

Language Arts Connection:
- Quick write – Describe one thing you could do to reduce your personal energy usage.
- Creative writing – Write a story about life after our nonrenewable energy sources are gone.

ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name
ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name
ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name
ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name
ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name	ENERGY TICKET This ticket allows one energy use. student name

The Search for Energy

Objective:
To learn the difference between renewable and nonrenewable resources.

Materials Needed:
- About 1/4 cup seed beads (solar energy)
- Colored beads in the following proportions: 84 percent black beads (about 250 beads) for coal; 16 percent red (about 50 beads) for uranium; 2 percent white (about 7 beads) for natural gas; 1 percent blue (about 4 beads) for oil. These proportions approximately reflect the nonrenewable energy reserves in the U.S.
- Optional: large bed sheet or tarp to place beads on for easy cleanup

STEM Connection
Science
- Science as Inquiry
- Energy Sources, Forms and Transformations
- Science and Technology
- Personal and Social Perspectives

Math
- Numbers and Operations
- Data Analysis and Probability
- Connection to the Real World

Procedure:
1. Divide the class into five equal groups. Each group will be a company going after a particular resource. The beads represent reserves of the various energy resources. Have students gather in a large circle around the sheet or other area where you will place the beads.
2. Scatter the large beads plus a spoonful of "solar" beads on the sheet so they are well spread out. Explain that this exercise shows how the amount of available resources changes over time. You may want to designate certain places as protected areas, where the resources are off limits to protect the environment.
3. Tell students you will do several trials and look to see how the types of available resources change after each trial. Tell each group that they will have 30 seconds to pick up as many beads possible of their color, then you will stop and look at how things are changing. It is NOT a race! After checking for understanding, start timing.
4. After 30 seconds, have the groups stop and count the beads they have gathered. Record the results in a data table. If some groups have collected all of their available resource, point out that the resource is now depleted and they are unemployed. You can allow the students to join another group. Collect the beads students picked up in the first trial.
5. Scatter another spoonful of solar energy, helping students realize that since solar is a renewable resource, there is the same amount of it each time you look, whereas the fossil fuels are being depleted. Repeat the search period so students can get more beads.
6. Stop after 30 seconds and have the group count and record the beads collected again. Note that there are fewer fossil fuels found in the second round. Students have to look harder to find what is left. The solar count is slowly but surely catching up with the fossil fuels. Repeat with additional trials as needed.
7. Create a multi-line graph of the number of beads collected each trial. This can be done by individual students or as a class. Note that the nonrenewable resources decrease until they are depleted but the solar increases steadily.

Discussion:
- Why does the solar line differ from the others? Why does it go up rather than down?
- How do improvements in technology affect the extraction of resources from the earth?
- How do improvements in technology affect our usage of renewable resources?
- In the real world, can we extract ALL of one resource? Why do some deposits go unused?

Section Two:
Resources You Can Use Efficiently

Objective:
To discuss and identify various resources students use every day.

Vocabulary:
Electricity: The flow of electric charge used as power.

Green energy: Electricity produced by renewable energy sources that are nonpolluting, or that pollute very little.

Natural gas: A fossil fuel that is a mixture of gases occurring in underground deposits.

Classroom Activities:
- "Where Do Fossil Fuels Come From?"
- "Energy for Electricity"
- "Electrical Generation Poster"

Energy Challenge

Discussion Idea:
What natural resources can you save by recycling?

Optional Activity:
1. Have students keep track of each paper product that they use during one day with tally marks.
2. Compare amounts of paper used by students in the class. Ask students if they were surprised by the amount of paper they used.
3. Based on their usage of paper in one day, have students estimate how much paper they would use in a week, a month and a year.
4. Discuss the difference between reducing, reusing and recycling.
   - Reduce – using less of something
   - Reuse – using something again
   - Recycle – making something into another new item
5. Brainstorm several ways that paper use can be reduced, that paper can be reused and how paper can be recycled in your community.
6. Tell students that recycling 1 ton of paper saves the energy equivalent of 1,024 gallons of gasoline. Recycling just four aluminum cans save enough energy to power a laptop for almost 21 hours.
   (EPA, 2017)

Where Do Fossil Fuels Come From?

Objective:
This activity investigates the production of natural gas and oil from ancient life. This activity models this process.

Materials per Student Group:
- A clear container to represent the ocean
- Sand or dirt
- Baking soda "plankton"
- Vinegar (20 percent) and water (80 percent) "ocean" mixture
- Cup or scoop
- Safety goggles

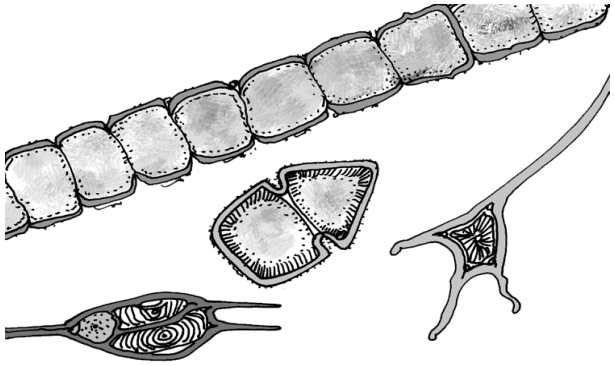
NOTE: You may do this as a demonstration, or have students do it in small groups.

STEM Connection
Science
- Science as Inquiry
- Energy Sources, Forms and Transformations
- Science and Technology

Technology
- Problem-solving and Decision-making Tools

Math
- Numbers and Operations
- Measurement

Procedure:
1. Explain to students that you will be showing them a model of how oil and natural gas form in the ocean. A very similar process takes place on land with plants to form coal.
2. Have students wear safety goggles to avoid splashing vinegar water in their eyes. It is harmless but uncomfortable.
3. Have students sprinkle a small amount of sand to cover the bottom of the container. The ocean floor is covered with sediments and the sand represents these sediments.
4. Next, have students sprinkle "plankton" over the sand, liberally covering the bottom of the container. This represents plankton (microscopic life plant and animal-like creatures called protists) that have died and settled to the bottom of the ocean.
5. Explain that over time, sediments are deposited on the ocean floor. Students should completely cover the plankton with sand. (You can gently push the sand around with your hands to simulate the pressure and weight the overlaying sediments have on the plankton.)
6. The ocean has water in it, so pour some of the vinegar/water ("ocean" mixture) into the container. Bubbles and foam begin to appear. You can see the bubbles bursting and can hear the gas being released to the air. Point out that this is a sign of a chemical change.



Discussion:
- Discuss with students that natural gas in the ocean is produced much in the same way as you have modeled, but that the process takes MANY years. In the ocean the plankton is buried under miles and miles of sediments which caused the weight of those sediments to "cook" the plankton under high temperature and pressure. The heat and pressure changes the plankton into oil and natural gas. Natural gas floats on top of the oil produced.
- Discuss how this model is different from real life. The gas produced in the experiment is carbon dioxide rather than natural gas, and since our container is open, the gas escapes into the air. In the ocean, there are usually impermeable layers that keep natural gas and oil trapped beneath the surface until we drill down and release it.

Energy for Electricity

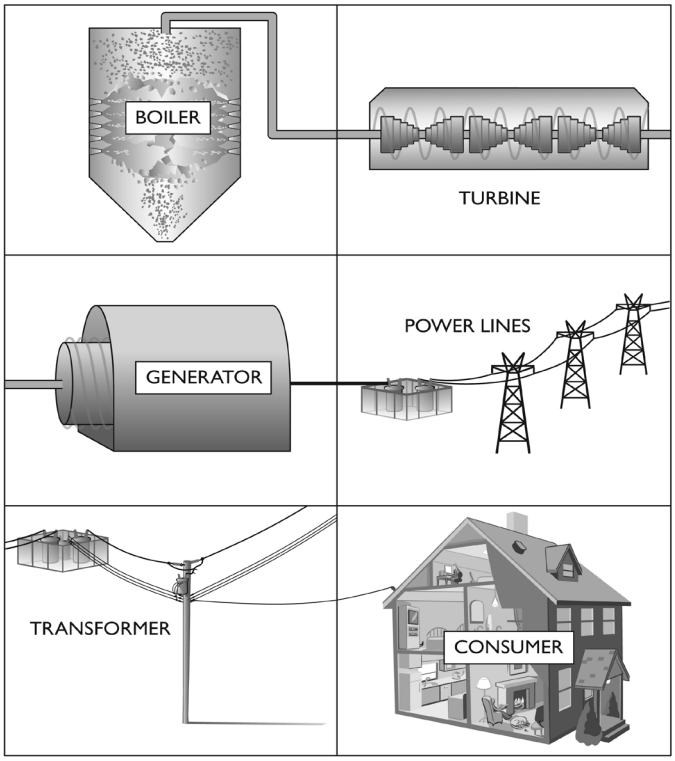
Objective:
Trace the flow of energy from a natural resource to electricity in our homes.

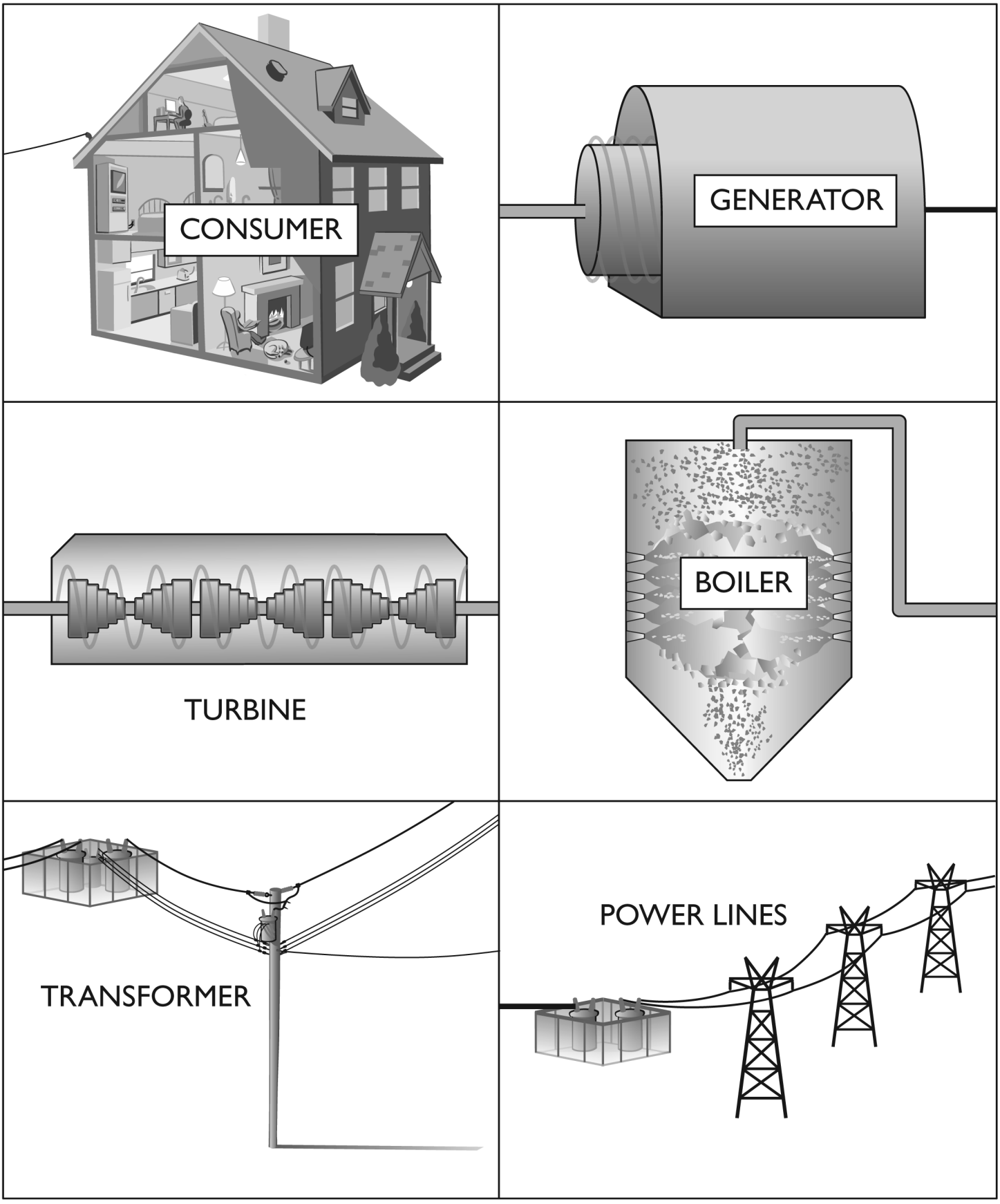
STEM Connection
Science
- Science as Inquiry
- Energy Sources, Forms and Transformations
- Science and Technology
- Personal and Social Perspectives

Technology
- Research Tools

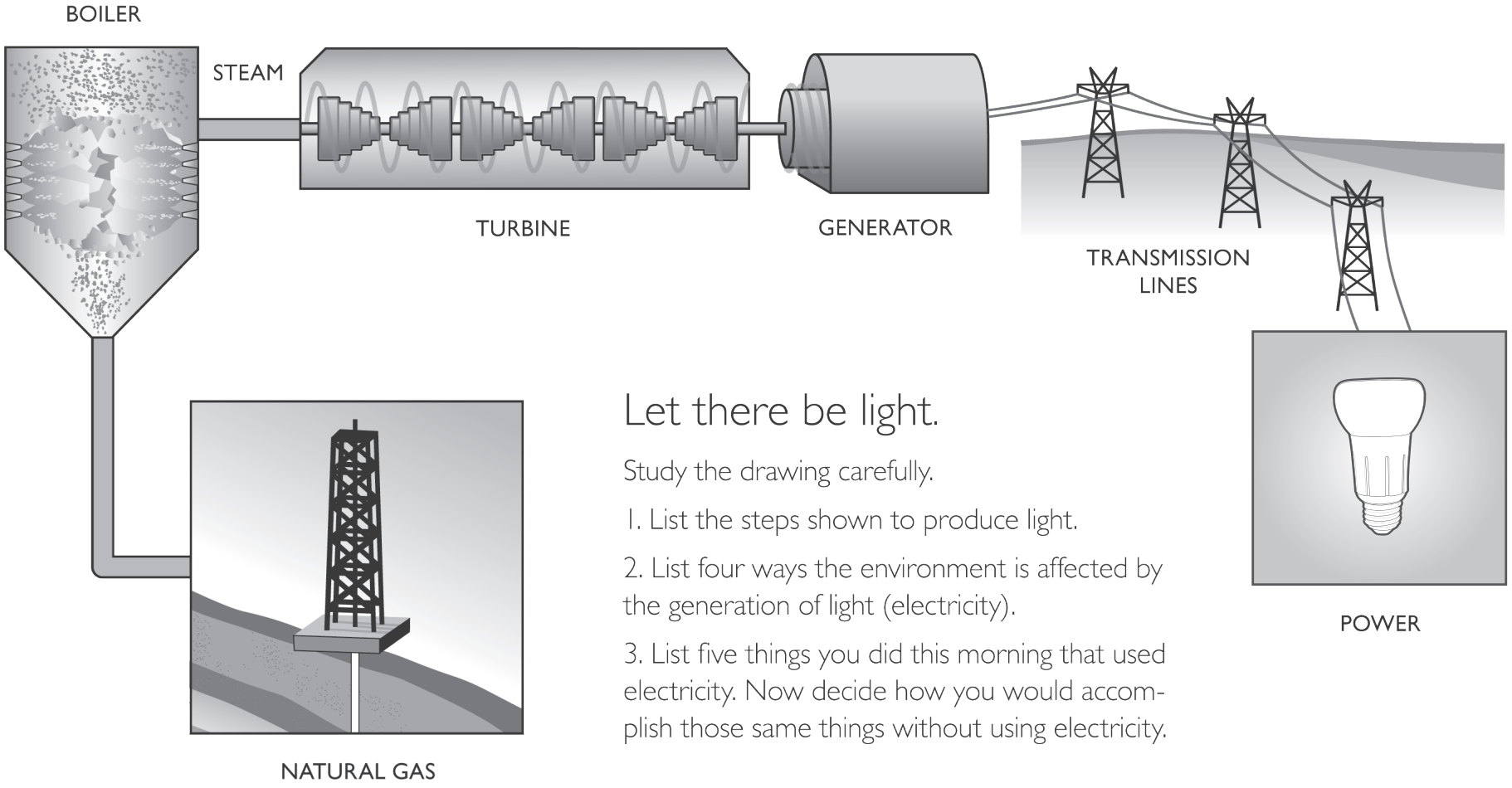
Procedure:
1. Ask students how their lives would be different without electricity. Where does electricity come from?
2. Pass out a copy of the "Electrical Generation Puzzle" found on the following page. Have students cut each part of the puzzle (transformer, turbine, generator, boiler, power lines and consumer) into separate pieces. Then, have them take a few minutes to put the puzzle pieces in order from the first to the last step of the process of electrical generation.
3. Go through each puzzle piece, explaining the process of each step:
   - Boiler – converts chemical energy from fuel (fossil fuels, biomass, hydrogen) to thermal energy, changing water to steam
   - Turbine – turned by steam, converting thermal energy to mechanical energy
   - Generator – turned by turbine, rotating coil of wire in a magnetic field, converts mechanical energy to electrical energy
   - Power lines – transmit electrical energy at several thousand Volts
   - Transformer – step-up transformers along the power lines increase voltage periodically; step-down transformers on poles or in yards reduce the voltage to a safe level for use
   - Consumer – converts electrical energy into many forms to run lighting and appliances

Completed puzzle for teacher reference





Electrical Generation



Let there be light.

Study the drawing carefully.

1. List the steps shown to produce light.

2. List four ways the environment is affected by the generation of light (electricity).

3. List five things you did this morning that used electricity. Now decide how you would accomplish those same things without using electricity.

Section Three:
Be ***watt***smart, Begin at home

Objective:
To apply the principles of energy efficiency at home by changing habits.

Vocabulary:
Shell: The floors, windows, doors, walls and roof of a building that form a barrier between the indoor and outdoor environment.

Convection: Heat transfer in a gas or liquid by currents that circulate from one region to another. Convection works because heated fluids or gases expand, and since they are less dense, rise through the cooler materials around them.

Conduction: Heat transfer in a solid or liquid without any motion or flow of matter in the material. Heat is transferred by the motion of molecules and electrons. Higher speed particles from the warmer areas collide with slower ones from the cooler areas, causing a transfer of energy to the slower particles.

Radiation: Heat transfer between objects via electromagnetic waves. Photons traveling at the speed of light transfer the heat energy, so the objects do not have to be in contact with each other for heat to be transferred. Radiation can travel through space.

Insulation: A barrier that minimizes the transfer of heat energy from one material to another by reducing the effects of conduction, convection and/or radiation.

Classroom Activities:
- "Insulation Tests"
- "How Bright Is Your Light?"
- "Energy in Math"
- "Be wattsmart, Begin at home Poster"

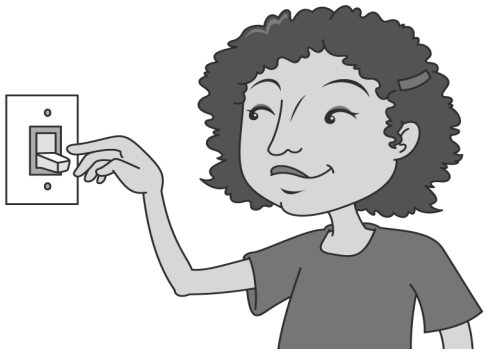
Energy Challenge

Discussion:
- What changes does your school need to make to save energy?

Optional Activity:
- Have students tour the school building to fill out the following checklist:

	Yes	No
1. Are outside doors weather stripped?	____	____
2. Are windows caulked to prevent air leaks?	____	____
3. Are lights turned off when no one needs them?	____	____
4. Is electrical equipment turned off when not in use?	____	____
5. Are faucets in bathrooms and kitchen areas free of leaks?	____	____

Discussion Idea:
- In which of the five areas does your school need the most improvement? How could students assist in making a change?



Insulation Tests

Objective:
To demonstrate the different types of materials that can be used for insulation.

Materials:
- Thermometer
- Graduated cylinder or measuring cup
- Large jug of water
- Large board or tray
- Baby food jars with lids (one for each material being tested)
- Insulation materials to test: gloves, socks of different materials, other types of clothing, plastic foam, paper, aluminum foil, leaves, etc.

STEM Connection
Science
- Science as Inquiry
- Energy Sources, Forms and Transformations
- Science and Technology
- Personal and Social Perspectives

Technology
- Research Tools
- Problem-solving and Decision-making Tools

Engineering
- Design and Modeling
- Invention and Innovation
- Test Design and Troubleshooting
- Use and Maintain

Math
- Numbers and Operations
- Measurement
- Data Analysis and Probability
- Connection to the Real World

Procedure:
1. On a piece of paper, list all of the materials being tested.
2. Using the jug of water, fill each jar with 120 mL (1/2 cup) of water.
3. Measure the temperature of the water in each jar to make sure they are the same, then put on the lids.
4. Wrap all but one of the jars with the materials being tested. Label the unwrapped jar "control."
5. Place each jar on the large board or tray.
6. Carry the board or tray outside and leave it there.
7. Create a data table to record the beginning and ending temperature of the water in each jar.
8. After a predetermined amount of time has passed, measure the new temperature of each jar and record the ending temperatures in the data table.
9. Calculate the change in temperature for each jar and add it to the data table. Graph the temperature change for each jar in a bar graph.

Discussion:
- What materials made the best/worst insulators?
- Could you use these to keep your home warm in the winter or cool in the summer?
- What materials are used in homes for insulation? (fiberglass, blown-in insulation, polyurethane foam, etc.)
- What do good insulating materials have in common? How does insulation work? (They have large pore spaces that block conduction of heat through surfaces.)

Language Arts Connection:
Quick write – Based on the information in your data table, give recommendations for insulating a tree house.

How Bright Is Your Light?

Objective:
To demonstrate which lighting sources are the most energy efficient.

Materials:
- Various light bulbs (incandescent, CFL and LED)
- Lamp or light socket
- Thermometer

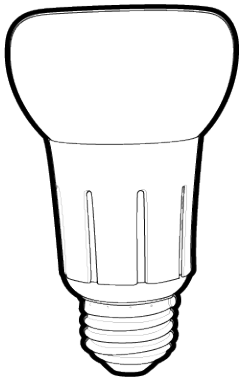
STEM Connection
Science
- Science as Inquiry
- Energy Sources, Forms and Transformations
- Science and Technology

Technology
- Research Tools

Engineering
- Historical Perspective

Math
- Numbers and Operations
- Data Analysis and Probability
- Connection to the Real World

Procedure:
1. Ask students what electrical item is used most often in any building and can also account for a lot of wasted energy (lights).
2. Put each light bulb in the lamp and leave it on for five minutes. Hold a thermometer at a distance from, not touching, the bulbs. Record the temperatures. Which bulb produces the most heat?



3. Not all light sources are created equal. Some are much more energy efficient than others. The least efficient light bulbs are incandescents. These bulbs were invented by Thomas Edison and have changed very little in the last 100 years. Incandescent bulbs get very hot when they are turned on because about 90 percent of the energy that goes into an incandescent bulb is given off as heat instead of light.

   By contrast, the compact fluorescent light, or CFL, uses 75 percent less energy because it gives off less heat. A CFL can last up to 10 times longer. LED bulbs are even more efficient, using 75 – 80 percent less energy than traditional incandescent bulbs and can last as much as 25 times longer.

Discussion:
- Does your family use energy-efficient CFLs or LEDs? How can heat from an incandescent bulb cause further energy waste during the summer?

Energy in Math

STEM Connection

Math

- Numbers and Operations
- Data Analysis and Probability
- Connection to the Real World

1. Jessie saved more energy than Michael. Michael saved more energy than Maggie. Maggie saved less energy than Jessie. Karen saved more energy than Jessie. List the kids' names in order of how much energy they saved, least to most:

   ☐ Jessie, Karen, Maggie, Michael
   ☐ Maggie, Michael, Jessie, Karen
   ☐ Michael, Jessie, Maggie, Karen
   ☐ Maggie, Karen, Michael, Jessie

2. The Maher family used 57,000 gallons of water a year, costing them $525 to heat it. Estimate how much money they would save in a year if they cut their hot water use by 30,820 gallons.

   ☐ $100
   ☐ $240
   ☐ $284
   ☐ $525

3. If each person in a house uses a 60 Watt bulb in their bedroom 4 hours a day, and there are three people living there, how many Watts will be used a day to light their room?

   ☐ 20 Watts
   ☐ 240 Watts
   ☐ 650 Watts
   ☐ 720 Watts

4. For every 10 degrees the water heater setting is turned down, you can save 6 percent of the energy used. If Charles turns his water heater down by 15 degrees, about what percent savings in energy will he save?

   ☐ 6%
   ☐ 9%
   ☐ 12%
   ☐ 15%

Energy in Math - Answer key

1. Jessie saved more energy than Michael. Michael saved more energy than Maggie. Maggie saved less energy than Jessie. Karen saved more energy than Jessie. List the kids' names in order of how much energy they saved, least to most:

   ☐ Jessie, Karen, Maggie, Michael
   ■ Maggie, Michael, Jessie, Karen
   ☐ Michael, Jessie, Maggie, Karen
   ☐ Maggie, Karen, Michael, Jessie

2. The Maher family used 57,000 gallons of water a year, costing them $525 to heat it. Estimate how much money they would save in a year if they cut their hot water use by 30,820 gallons.

   ☐ $100
   ☐ $240
   ■ $284
   ☐ $525

3. If each person in a house uses a 60 Watt bulb in their bedroom 4 hours a day, and there are three people living there, how many Watts will be used a day to light their room?

   ☐ 20 Watts
   ☐ 240 Watts
   ☐ 650 Watts
   ■ 720 Watts

4. For every 10 degrees the water heater setting is turned down, you can save 6 percent of the energy used. If Charles turns his water heater down by 15 degrees, about what percent savings in energy will he save?

   ☐ 6%
   ■ 9%
   ☐ 12%
   ☐ 15%

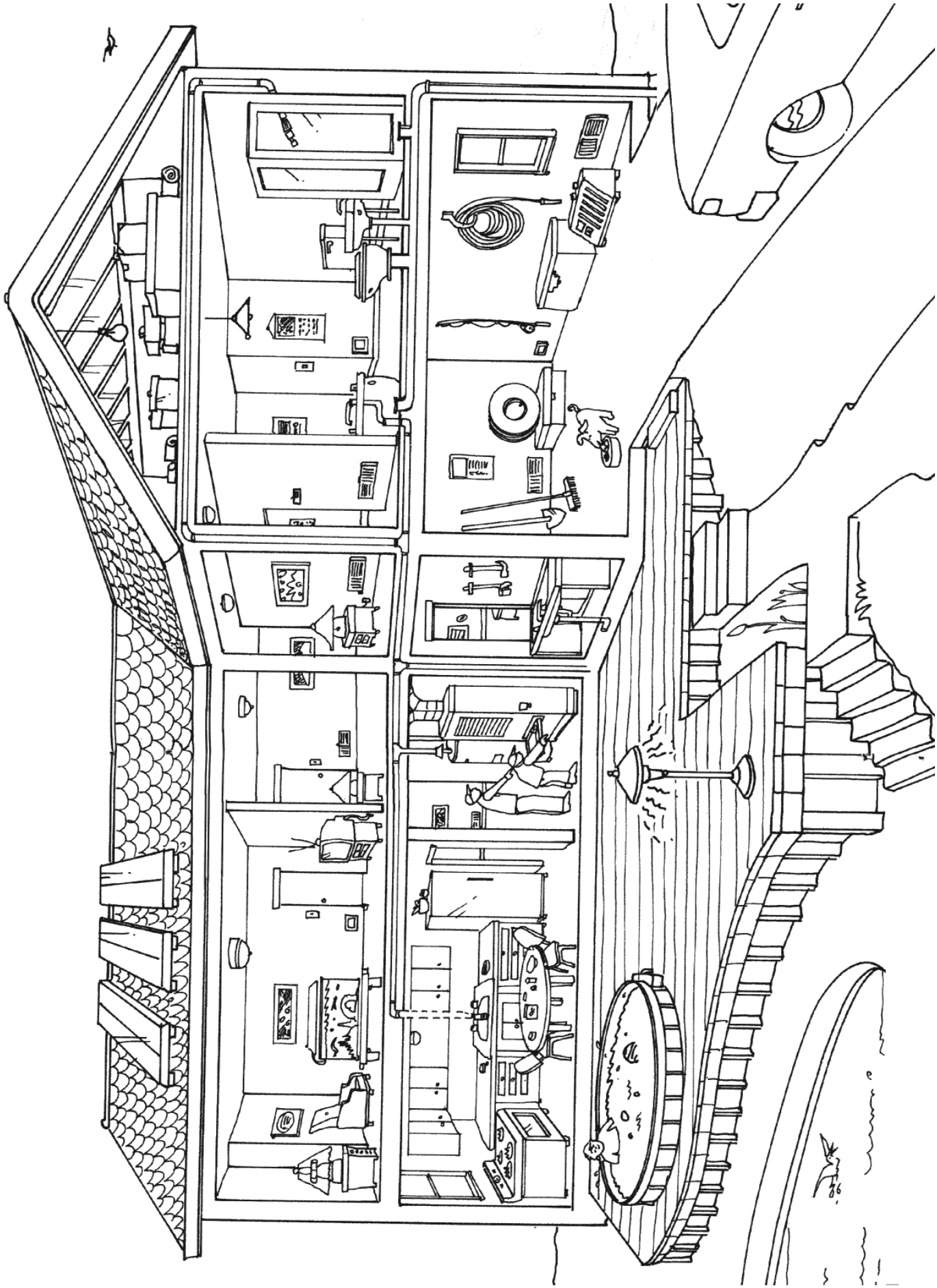
Be ***watt***smart, Begin at home Poster

Materials:
- House poster found on the following page
- Colored markers or pens

Instructions:
- Add or color the items below. You may want to do different items each day as you cover different topics: electricity, natural gas, water, etc.
- Add a bicycle.
- Add some recycling bins in the garage.
- Add some trees to shade the house.
- Add a ceiling or floor fan to the home for cooling.
- Put a blue star (for ENERGY STAR® products) on the refrigerator, television and furnace.
- Color the energy-efficient shower head.
- Color all items that use electricity, yellow.
- Color the thermostat brown.
- Color the furnace filter that is being changed orange.
- Draw a purple water drop next to all items in the house that use water.

Language Arts Connection:
Quick write – Write a brief description of the things your family has done to improve the energy efficiency of your home. Add items that you will encourage your family to do in the future.

Social Studies Connection:
- Choose one natural resource used for energy and create a T-chart or Venn diagram comparing the positive and negative effects of the use of this resource on the physical environment.
- The more efficient your home is, the smaller your carbon footprint. Your carbon footprint is the total amount of carbon dioxide (CO_2) and other greenhouse gases you generate annually. The lower your footprint, the better!



Be *watt*smart

Begin at home

National Energy Foundation
cultivating energy literacy

*watt*smart.com

ROCKY MOUNTAIN POWER

Lingo Card

L	I	N	G	O
Water Heater	Natural Gas	Natural Resource	Incandescent	Reduce
Reuse	Phantom Load	Oil	Coal	ENERGY STAR®
Renewable	Energy	Be ***watt***smart Begin at home	Turn It Off!	Uranium
Energy Efficiency	LED	Recycle	68 Degrees	Embodied Energy
Cooking	78 Degrees	Solar	Programmable or Smart Thermostat	Electricity

http://print-bingo.com

L	I	N	G	O
Reuse	Natural Gas	Phantom Load	LED	78 Degrees
Cooking	Electricity	Renewable	Recycle	68 Degrees
Natural Resource	Water Heater	Be ***watt***smart Begin at home	ENERGY STAR®	Nonrenewable
Embodied Energy	Coal	Energy Efficiency	Heating	Incandescent
Programmable or Smart Thermostat	Reduce	Oil	Solar	Uranium

http://print-bingo.com

L	I	N	G	O
Coal	Natural Gas	Solar	Turn It Off!	Renewable
Water Heater	Nonrenewable	Phantom Load	Electricity	Reuse
Energy	Oil	Be ***watt***smart Begin at home	68 Degrees	Cooking
Programmable or Smart Thermostat	Incandescent	Recycle	Uranium	Natural Resource
Reduce	78 Degrees	Embodied Energy	LED	Energy Efficiency

http://print-bingo.com

L	I	N	G	O
Natural Resource	Water Heater	Natural Gas	Programmable or Smart Thermostat	78 Degrees
Turn It Off!	Reduce	Oil	Embodied Energy	Cooking
Phantom Load	ENERGY STAR®	Be ***watt***smart Begin at home	Uranium	Recycle
Energy	LED	68 Degrees	Energy Efficiency	Heating
Electricity	Renewable	Incandescent	Reuse	Solar

http://print-bingo.com

Be ***watt***smart, Begin at home		**Teacher Guide Activities**							
Essential Academic Learning Requirements	**Utah 5th Grade Correlations**	Energy Challenge - Embodied Energy	Conservation Cookie	Pass the Sack	Energy Ticket	The Search for Energy	Energy Challenge- Recycling	Where do Fossil Fuels Come From?	Energy for Electricity
Science	**Topic**	p.3	p.4	p.5	p.6	p.8	p.9	p.10	p.11
Intended Learning Outcomes (ILO): 1 - 6	Scientific process, experimentation, measurements, observations, conclusions, communication, how science affects life	1a,b,d; 5a	1a,b,d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a	1a,b,d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a	1a,b,d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a	1a,b,d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a	1a,b,d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a	1a,b,d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a	1a,b,d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a
Standard 1: Chemical Change	Evidence of a chemical reaction, daily life example, compare to physical change							3c,d	
Standard 4: Electricity	**Objective 2:** Behavior of current electricity								
Earth Day Every Day	Classroom and community projects improve local environment	X	X	X	X	X	X		
Social Studies									
Standard 5: US Role as a World Power	**Objective 3:** Current world issue and how US can be part of the solution		3b	3b	3b	3b	3b		
Math (Common Core)									
Number and Operations in Base Ten	Operations with multi-digit whole number and with decimals to hundredths		5.G.A.2		5.G.A.2	5.G.A.2			
Language Arts (Common Core)									
Reading	Reading for information, speaking and listening	SL.5.1	SL.5.1	SL.5.1	SL.5.1	SL.5.1	SL.5.1	SL.5.1	SL.5.1
Writing	Writing for effective communication				W.4.3				W.4.3

Be ***watt***smart, Begin at home		Teacher Guide Activities					Student Activities		Posters	
Essential Academic Learning Requirements	**Utah 5th Grade Correlations**	Energy Challenge- Energy Efficient changes	Insulation Tests	How Bright Is Your Light?	Energy in Math	Be ***watt***smart, Begin at home Poster	Presentation Information	Student Booklet	*Energy Efficiency in Action Poster*	*Electricity Serves our Community Poster*
Science	**Topic**	p.14	p.15	p.16	p. 17	p. 19				
Intended Learning Outcomes (ILO): 1 - 6	Scientific process, experimentation, measurements, observations, conclusions, communication, how science affects life	1a,b,d; 5a	1a-d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a	1a-d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a	1a,b,d; 5a	1a,b,d; 5a	1a,d,f,h,i; 2a,c,e; 3a-c; 4b; 5a	1a,b,d,f,h,i; 2a,c,e;3a-c; 4a-c,e; 5a; 6c	1a,b,d; 2a,e; 3a,b; 4a-e; 5a	1a,b,d,f,h,i; 2a,c,e; 3a,b; 4a-c,e; 5a
Standard 1: Chemical Change	Evidence of a chemical reaction, daily life example, compare to physical change								2c, 3e	1a-b, d-e 2a-e
Standard 4: Electricity	**Objective 2:** Behavior of current electricity						2a,c-e			2a,c-e
Earth Day Every Day	Classroom and community projects improve local environment	X	X	X		X	X	X	X	X
Social Studies										
Standard 5: US Role as a World Power	**Objective 3:** Current world issue and how US can be part of the solution					3b	3b	3b	3b	
Math (Common Core)										
Number and Operations in Base Ten	Operations with multi-digit whole number and with decimals to hundredths	5.G.A.2	5.G.A.2	5.G.A.2	5.NBT.B.5			5.NBT.B.5		
Language Arts (Common Core)										
Reading	Reading for information, speaking and listening	SL.5.1	SL.5.1	SL.5.1			RI.5.6	RI.5.6	RI.5.7	RI.2.5
Writing	Writing for effective communication		W.4.3			W.4.3			W.5.1	

Be *watt*smart
Begin at home

Dear Parent(s),

Today your child participated in the **Be wattsmart, Begin at home** program sponsored by Rocky Mountain Power. In this engaging presentation, your child learned key concepts of his or her science curriculum as well as important ways to be more efficient with energy use at home.

As part of the **Be wattsmart, Begin at home** program, your child received a:

- **Be wattsmart, Begin at home** booklet
- *Home Energy Worksheet*

Please take a moment to read through this informative booklet with your child. Then, fill out the *Home Energy Worksheet* and return it to your child's teacher. To thank you, Rocky Mountain Power will provide your child with a wattsmart nightlight.

We appreciate your efforts to reinforce important **Be wattsmart, Begin at home** energy knowledge and efficiency actions in your home!

National Energy Foundation®
cultivating energy literacy

ROCKY MOUNTAIN POWER

wattsmart.com

Program Evaluation

Be *watt*smart
Begin at home

Teacher Name: _____

School: _____

Sponsor: Rocky Mountain Power

In an effort to improve our program, we would like your assessment of Be ***watt***smart, Begin at home. Please take a few minutes to fill out this evaluation form. Upon completion, please return the form in the postage-paid envelope along with the student *Home Energy Worksheets* you collected and the sponsor *Thanks a "Watt!" Card*.

Please mark the box that best describes your opinion.

	Strongly Agree	Agree	Disagree	Strongly Disagree
The materials were attractive and easy to use.	☐	☐	☐	☐
The materials and activities were well-received by students.	☐	☐	☐	☐
The materials were clearly written and well-organized.	☐	☐	☐	☐
Students indicated that their parents supported the program.	☐	☐	☐	☐
Presenters were able to keep students engaged and attentive.	☐	☐	☐	☐

If you had the opportunity would you conduct this program again? ☐ Yes ☐ No

Would you recommend this program to other colleagues? ☐ Yes ☐ No

In my opinion, the thing students liked best about the materials/program was:

One thing I would change would be:

WAT UT

National Energy Foundation
cultivating energy literacy

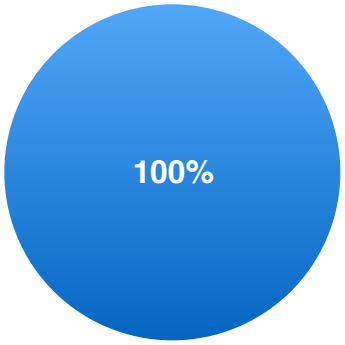
ROCKY MOUNTAIN POWER

*watt*smart **Rocky Mountain Power Utah program**

Program Evaluation Summary

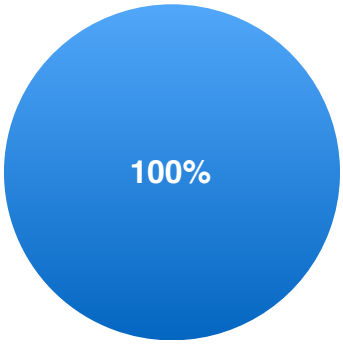
If you had the opportunity, would you conduct this program again?

	Yes	No
Mini-grant	313	0



Would you recommend this program to other colleagues?

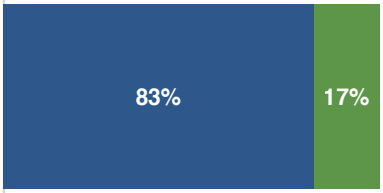
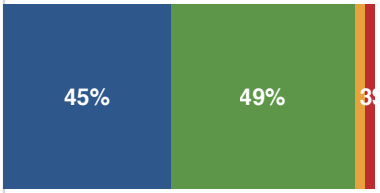
	Yes	No
Mini-grant	315	0



*watt*smart **Rocky Mountain Power Utah program**

Program Evaluation Summary

Educators' impressions of the program from 315 educators.

	Strongly Agree	Agree	Disagree	Strongly Disagree	
Materials were attractive and easy to use	260	54	0	1	
Materials/ activities were well received by students	242	72	0	1	
Materials were clearly written and well organized	269	45	0	1	
Students indicated that their parents supported the program	141	154	9	9	
Presenters were able to keep the students engaged and attentive	235	73	4	2	

In my opinion, the thing the students liked best about the materials/program was:
Anything hands on
Anything interactive helps keep my students engaged.
Being able to create a physical closed circuit. They also loved the videos and playing Lingo.
Being able to make the human circuit
Being able to move around and be part of the presentation
Being able to participate
Bingo cards and learning about the effects of the power has on the planet.
Bingo!
Circle of electricity
Closed and open circuits
Completing the human circuit with the light. Great program! We love it!
Conducting electricity experiment. Would love that for the electricity unit.
Demonstrations they could participate in.
Demos, powerpoint, let students participate
Discovering they were conductors of electricity.
Doing the experiment with light traveling.
Doing the home assignment and receiving night light.
Earning the night light seemed to get them the most excited.
Energy stick.
Every part of it!
Fast paced and engaging! They loved being "open circuits."
Fun LINGO game, presenters were energetic
Gaining a better understanding about different power sources and how they can help do their part to save resources.
Getting into groups and making "complete circuits" with the rod.
Getting the night light, having the teacher get $50 to spend on the class, Lingo
Getting the night light.
Getting up and participating- hands on. Bingo was good.
Getting up and participating.
Good presenters, nice power point.
Great examples given during the presentation.
Group activities
Hands on activities
Hands on activities
Hands on activities - students enjoy getting the night lights. They gain confidence in talking about these topics after the presentation.
Hands on activities (Lingo, hand actions, light stick).
Hands on interaction and engagement. Fun energy from the presenter
Hands on learning
Hands on stuff
Hands-on activities and games and visuals
Hands-on activities during presentation.
Hands-on activities.
Hands-on materials that were used.
How is encouraged child-parent discussions
How it connected to our science core on electricity
How they can help their families save money.
How to save energy (conserve) and save money. They mentioned electricity and demonstration you did
Human chain electricity, Lingo, night lights
Human circuit and the night light
I liked the electrical model in the demonstration. I love how we can get a classroom gift card for having the students take the survey. 100% took it. the night lights were awesome.
I love the students had opportunities to participate in the assembly. It gave them some good prior. Knowledge that they will find beneficial for our science unit
I love the way the program is presented. Students love the involvement and the hands on. How to save energy, lingo, types of resources.
I love this program very much. The presenters were great.
I loved how engaging the presenters were. They had actions and quick paced activities to keep the students focusing.
I loved that you incorporated the circuit activity. It fits right in with the 5th grade science curriculum!
I really like how to incorporate our core into saving energy
I think my students loved the presentation and the demonstrations that they got to do.

In my opinion, the thing the students liked best about the materials/program was:
I think the kids really like the videos, I also think they liked receiving the night lights. I know the kids who got to participate in making the circuit really enjoyed it.
I think the presentation was awesome! The kids were engaged the entire time and were able to get up and move around. It also fits nicely into the 5th grade science. (circuits and electricity)
I think the students really enjoy the hands on portion of the program when they get to participate.
I think they liked the lingo game. They were very excited to get the night light.
Interaction
Interaction game
Interactive activities
Interactive activities and hands on demonstration
Interactive and engaging
Interesting to students and good content at an appropriate level.
It directly helps us teach our core.
It is something that is relatable to them here at school and at home. Also, that it involves science!
It was so hands on this year
It was very pertinent to their lives. They could apply what they learned.
It's engaging and fun for the kids, plus very informative.
Learning about their neighborhoods!
Learning and then playing Bingo. Participation. Helping the presenters.
Learning more about electricity. They liked the experiments. I like how it made everyone think more about what electricity we use and how to be wattsmart.
Learning ways to save energy
Lets Lingo and night light
Lingo
Lingo
Lingo
Lingo
Lingo
Lingo
Lingo
LINGO
Lingo activity
Lingo and anything hands on! They also didn't mind the new dance!
Lingo and energy cards
LINGO and getting to get a night light.
LINGO and the activities they go to participate in. They love being the human circuit grid to light up the light.
Lingo game kept them involved. On their level-easy to understand. They loved the night light!
Lingo game, interactive questions
Lingo-kept them engaged throughout the presentation. Night lights-motivated students to bring form back.
Lingo, being called up to help with demonstration. Loved the lights!
Lingo, building a circuit
Lingo, Circuit, Energy stick
Lingo, student creating energy. Energy circles. Videos - Mr. Watt. Unplugged charger.
Lingo, student participation
Lingo, the videos, and the human circuit.
Lingo!
LINGO!
Love having the demonstrations connect to the core and what I am going to be teaching in the future!
Loved the circuit activity! Also the Begin at Home information booklet is full of useable information.
Loved the demonstrations. Learned much about using electricity safely.
Making a circuit and learning about how to be WATTsmart. They also liked the Lingo game.
Making the circuit with their bodies and playing LINGO.
Making the circuit, Lingo
Making the connection
Most students really enjoyed the demonstrations. They loved being able to use the energy stick.
My class enjoyed the presentation. They especially liked making the circuit that lit up the light. They also loved the night light. Great presenters.
My kids loved the energy sticks. Many of them are renting their housing so can't do a lot of energy savings.
My students enjoyed the human circuit that you made with them. They were also engaged with the lingo game.
My students enjoyed the presentation and were excited about the night lights.

In my opinion, the thing the students liked best about the materials/program was:
Night lights. Energy tubes
Participating in hands on activities.
Participating with the current electricity
Playing "LINGO" and the hands-on activities.
Playing Lingo!
Presented very well - loved how more of our core was put into it. Thanks! I want some of those energy wands! :)
Presenters were "funa and nice" I like the hands-on, visual demonstrations.
Professional, engaging fun, informative, great intro into the core curriculum for science, perfect amount of time. Thank you!
Realizing what they do has an impact and that their behavior can change and save energy
Seeing how teouching hands could activate the light and sound on the bar.
Seeing the demonstrations and engaging in activities in front of the group.
Student involvement activities
Student participation, conducting energy
Students love to participate and be more hands-on with the materials. Having the students stand in a circle and make a closed circuit was engaging for them.
Students loved acting as a circuit
Students loved the demonstrations and helping out. They also liked LINGO!
Students loved the hands-on activity during the presentation.
Students saw how electricity was produced and used in the real world. They also learned how important it is not to waste energy.
Super engaging and positive presenters
Talking about circuits
The "experiments" they were able to participate in.
The activities
The activities that demonstrated concepts.
The assembly was, overall, well received by my students. The materials I received were very well organized, and relatively easy to implement.
The best part is how organized and timely things run. Never a down moment. Also, the activities that kids get to participate in making a circuit, doing Lingo, etc. The powerpoint was engaging too.
The Bingo boards helped the students stay focused - it helped students look for key words and concepts
The bingo game
The circuit and LINGO
The circuit demonstration.
The complete circuit activity. It goes along well with our science curriculum
The completing the circuit activity.
The conductor hands on activity.
The demonstration of electricity being transmitted from student to student when the circuit was closed (all students touching)
The demonstration/experiments
The demonstrations of the current electricity
The demonstrations were popular with the students, Many of the students tried to be selected to help. Its' a good idea to involve many students because it keeps them on their toes, so to speak.
The demos were terrific the videos were funny
The electrical circuit activity.
The electrical rod. They liked all the hands on presentations.
The electricity tool which the presenters required students making a circle to do the connection, my students felt is so cool and fun!
The energetic and fun presenters
The energy stick
The energy stick demonstration
The Energy Stick demonstration was a hit! It was an excellent hands-on visual of how an electrical circuit works. Unforgettable!
The energy stick was a favorite activity.
The engaging bingo.
The engaging presentation. LINGO was fun and the presenters were very well prepared.
The examples of different types of energy.
The experiments
The families enjoyed the ticket game throughout the week because the kids changed behavior to "preserve" tickets. Kids with solar at home ended up with more and parents like increased awareness.

In my opinion, the thing the students liked best about the materials/program was:
The fast-paced and entertaining presenters
The flashing complete the circuit thing
The game and receiving a night light.
The game card during the presentation. It kept them attentive. Also when you formed the student circle with the electricity bar.
The game Lingo was fun for them, as well as the conductor stick.
The glowing stick and getting in groups to use it
The group activities and demonstrations
The group demos were GREAT when students were called to show them how electricity is made and what is a good conductor of electricity. The LINGO game was fun too.
The hands on activities
The hands on activities
The hands on activities
The hands on activities done at the front of the group
The hands on activities that went along with the program.
The hands on activities/demonstrations and Lings
The hands on activity. Bingo/going up to show flow of energy.
The hands on elements and the bingo game.
The hands on work. They seemed happy with most things.
The hands-on activities are engaging and the powerpoint information is presented in a fun way
The hands-on activities!
The hands-on demonstrations
The hands-on examples of how energy works. The enthusiasm of the presenters. The lingo cards and cute sayings they used
The hands-on student directed activities - especially making a complete circuit. Lingo was fun and the pictures/ powerpoint was great!
The Home Energy Worksheet is a great tool for finding ways to improve the way energy is being used at home. LOVE IT!
The human circuit and examples with the kids helping.
The human circuit with conductors and insulators
The incentive to bring back the parent survey
The interaction
The interactive lesson and Lingo
The interactive nature
The interactive parts of the program, especially the energy stick demo, are the best.
The interactive sections, videos
The interactiveness of the program
The kids loved the presentation - it went great with our electricity unit. It was very engaging and interactive.
The ladies were amazing and the students enjoyed listening
The like the LINGO game and being called on to come to the front of the room to demonstrate things. They also like the Power Point presentation.
The Lingo activity
The Lingo card game and the videos that were shown
The LINGO circuit using the students holding hands
The Lingo game
The LINGO game and the electricity activity with the light bar.
The LINGO game and the night lights.
The Lingo game and the videos of slim!
The Lingo game as well as the circuit the students made with the energy stick. Students also enjoying the night light incentive. the presenters did a great job.
The lingo game kept the students very occupied and entertained. Thanks for coming and teaching us.
The LINGO game! They liked the electrical "human" closed circuit.
The LINGO game.
The Lingo was by far the students favorite. The presenters were very friendly, knowledgable and fun.
The night light
The night lights
The opportunity to volunteer to handle/present materials.
The participation part. They loved lingo and they loved the circuit explanation.
The physical activities were the favorite of my students.
The powerpoint and the hands on activities that were provided. Well done!

In my opinion, the thing the students liked best about the materials/program was:
The presentation
The presentation
The presentation and being able to demonstrate the components of an electric circuit
The presentation and the home energy activity with parents
The presentation and the prize
The presentation held their attention.
The presentation was engaging
The presentation was fast paced and engaging. Material is relevant to students so they were listening closely.
The presentation was great - they enjoyed the human chain.
The presentation/ activity was so good! I felt this was the best by far! Our presenters were great. The students were excited with the night lights they received after returning the survey. They loved the game and stayed engaged!
The presentations
The presenters are great at managing rough classes. They move quickly form one thing to the next and activities are engaging.
The presenters were great with the kids. The sideshow was kid friendly. Lingo was a hit! The kids love the night lights!
The student definitely appreciate the hands on experiment with the electricity wand talking about conductors and insulators
The students always enjoy the hands-on activities (making the circuit). They also like the Lingo game. It keeps the students on task and involved. The survey is a great way to get students talking to their parents about energy efficiency. They, of course, love the night lights.
The students enjoyed the "Lingo" activity. They also liked the demonstration they were part of.
The students enjoyed the hands on activities
The students enjoyed the participation
The students enjoyed the presentation. It was fun for some of them to participate up front and all of the kids seemed to enjoy Lingo!
The students enjoyed the role play of how we generate electricity.
The students like the Bingo card game, the students like the interactive electricity games about circuits.
The students liked the interactive part of the presentation and the light bulbs.
The students love the bingo game and making the circuit.
The students loved interacting with the conductor to light up the bulbs.
The students loved the experiments, especially open/close circuit!
The students loved the hands on part and playing LINGO. They also loved when they were asked questions and could yell out the answer.
The students loved the little experiments you did with them!
The students loved the night lights.
The students loved the sound stick!
The students really liked the presentation. They were excited about filling in the at home sheet and getting their night light.
The students were engaged in the presentation. The Lingo game was a great way to check understanding. The students loved the electric tube that lit up to show a complete circuit. The night lights were a great reward for their survey.
The students were engaged in the program and it was a great review for students
The two demos - complete circuit and how electricity gets to your home.
The videos and the LINGO game!
The whole process moved at a great pace to keep students engaged. I think they loved the electricity stick activity.
The years presentation was very high energy and focused! These ladies act better and better every year.
They enjoyed playing with the energy sticks. I really liked that the presenters touched on the 5th grade core.
They enjoyed the hands-on part. The visuals were also engaging.
They enjoyed the presentation and interactive activity. They were excited to get a night light. Thank you!
They like the videos that show how to use energy more efficiently
They liked experimenting with current electricity. They enjoyed playing the bingo game, and it kept them engaged.
They liked how interactive the program was. They liked the "human circuit" and they were kept engaged with the Lingo cards. They were excited to get the light when they returned the survey.
They liked making the circuit with themselves and the rod.
They liked seeing the group of students and the device showing conductors of electricity
They liked the complete circuit activity where the item lit up. They really learned from this presentation and it definitely goes with what is taught in 5th grade.
They liked the LINGO game during the presentation. They were also super excited to get the night light.
They love the hands-on demonstrations and Lingo
They love the interactive electricity activities

In my opinion, the thing the students liked best about the materials/program was:

They love the night lights and the interactions of the presentation.
They love the night lights that are energy efficient.
They love the nightlights! Thank you for all you do! They love the interaction.
They loved being able to engage in the hands on activities.
They loved being conductors in the circuit example. It was exciting and taught great content.
They loved creating a human circuit, they loved the night light
They loved Lingo. That was a great way to keep their education.
They loved receiving the light after bringing back their papers.
They loved the bingo game. They were excited to bring back their papers and get a night light.
They loved the circuit activity and when they could anwser questions
They loved the electricity stick! It was great! The presenters were fun and so nice.
They loved the energy stick activity and the videos. Anything to get them active and moving around is wonderful!
They loved the energy stick.
They loved the energy sticks
They loved the engaging presenters and variety of activities - especially the human circuit. Thank you for tying your presentation so nicely into the 5th grade core standards!
They loved the hands on activity where they made a circuit by holding hands
They loved the hands-on activities-especially when they get into a circle and turn on the lights of the tube thing.
They loved the light they received as well as the information packet.
They loved the Lingo
They loved the Lingo game and when other students participated up front with the presenters.
They loved the night light, and enjoyed playing the review "bingo" game.
They loved the physical movement activity that clearly showed the process of how we get energy. Bingo was a great addition as well.
They loved the presentation
They loved using the energy stick to show the open and closed circuit. We loved the program!
They really enjoyed the hands on activities brought into the presentation
They were really excited to take the materials home. They really like the night lights.
Valuable information about electricity that ties to our curriculum.
Video clips in presentation, playing lingo
Volunteer opportunities for demonstrations - engaging speakers
Wonderful! We love it! Will continue to ask every year!
Working with their parents to evaluate their situation

In the future, one thing I would change would be:

A little more student involvement/relatable examples to the kids.
A little shorter program would have been more suitable for some of our kids =. they were getting a bit antsy
A more engaging powerpoint or something of the like.
A shortened presentation and brighter night lights.
Allow students to do more small activities. the Bingo cards didn't keep their attention. Most were drawing rather than listening.
Any other way to get all kids involved would be great!
Break the group into smaller groups and allow them to participate in the demonstrations.
Breaks between presentation
Buy presenters a shirt that says, "Can I get a Watt, Watt?" (available on Amazon) :)
Clearer expectations of there to put the students LINGO cards/pencils when they weren't using them.
Could come 2 days perhaps. It is really hard to do 5 classes, 150 kids in one classroom is hard!
Could we possibly create a circuit with all students at the end.
Do 1/2 the grade then the other 1/2
Do it in smaller groups so more students get to participate at the front
Do it to smaller groups.
Even more with insulators, conductors and circuits as that is exactly what we teach and are tested on.
Everything was great. Thank you!
Get more kids up a moving. I noticed a lot of kids who were starting to get antsy and stopped paying attention.
Getting parents to return the home energy worksheet was the most difficult.
Give a small prize (like a piece of candy) to the bingo winners.
Give just a bit more time when doing the Lingo boards, our "slower" students felt frustrated and rushed.
Give options for times to sign up, so we can coordinate with our teaching timeline.
Great job! Thanks
Have couple new words for Lingo
Have kids build human circuit.
Have more current electricity energy sticks available so students aren't waiting.
Have more rods available so that more than one group can experience it at the same time.
Have some kind of small prize for the LINGO winners. The students felt a little cheated.
Have students bring chairs so they are more comfortable
Have the surveys already copied with one side english and the other side spanish.
Having more demonstrations
Having more ways to participate throughout the entire presentation will help them stay engaged the entire time.
I didn't realize I had a spanish copy to send home until I pulled out my teacher forms.
I got some pushback from a parent on the home survey. :(
I loved it all! It was well balanced.
I loved it all.
I might have the wonderful instructors come in January.
I thought it engaged the students very well!
I wish there were a better place than the gym to have the assembly. But that is not on you.
I would add more pictures to the presentation.
I would add signs around the students neck as you reviewed the chain from natural gas, heating it up, etc. The actions were there but the names for what was happening in the gas to power demo.
I would like to see more about the five types of energy.
I would love the presenters to be a little more engaging so the students would be more excited to participate and listen.
If possible more demonstrations
If the presenters had some strategies to bring the kids back after a noisy time (clap, clap, fold; clapping patterns; a sound signal; a call-back; etc.) it would make ti easier to move on.
It is a little bit long- maybe shorten it a little.
It was great!
It was great!
It would be great if you had an animated short showing how students help save energy or maybe a skit the students do in front of the class.
It would be very helpful if the home energy worksheets came ready with english on one side and spanish on the other.
Just the way it was!
Keep those fun presenters
Labe Thank You card- Took us a minute to figure what the thank you card was for. Other than that we loved your program thank you so much for allowing us this opportunity.

In the future, one thing I would change would be:

Length of presentation, it was a little long.
Length, just slightly shorter (maybe have teachers show a video explaining same things in class).
Let the students stand and stretch occasionally.
Lingo - they always think they get an actual prize
Maybe a few more activities with the presentation - they really loved them
Maybe allow more students to try it out.
Maybe do 2 sessions. 100 kids is a lot to keep engaged/on task.
Maybe have a lab experiment after the group presentation.
Maybe have a place for a parent signature on the Home Energy Worksheet.
Maybe make the presentation a little more concise. Also, I had two parents who would not complete the survey. I'm not sure if anything can be changed to help that, I just wanted to fill you in.
Maybe not so rushed. Some concepts don't stick because the pace is so fast
Maybe show a video with the presentation.
Maybe tell the kids up front if they're the first to get a Lingo, not to expect a "prize." A couple of kids came back to me anxious because they wanted you to know they had a Lingo. I think they thought they thought there was a prize.
More hands on activities about what is shown on the screen.
More hands on activities for more students to follow up visit after they have done things at home.
More hands on activities if possible!
More hands-on
More hands-on experiences to engage the students.
More interaction and activities
More interactive parts to the presentation.
More moving activities.
More on how electricity is produced and how it gets to their homes.
More opportunities for students to get up and move.
More time, Lingo prize.
Next time, I would give something other than night lights. My kids weren't interested.
Not to send the Lingo cards in advance to the teachers, instead let the presenters bring them.
Nothing
Nothing I can think of
Nothing, it was GREAT! Thank you!
Nothing!
Nothing! All is amazing!
Nothing. The program is great!
One hour is a long time for kids to sit and listen. Give them a group of partner task to allow them to talk a bit.
One more activity where they could move around
Perhaps one class at a time?
Perhaps shorten the program a bit or allow the students to stand silently halfway through the presentation. It's hard for them to sit a long time.
Possibly add videos so students see the concepts in action.
Possibly make the presentation more engaging to the students (have more student participation verses lecture)
Presenters need to be more clear with students about how they want them to answer questions.
Presenters using attention signals before starting each time.
Print surveys double sided English/Spanish. Presenters talked over students. They need to give better attention signals and make sure students are listening.
Provide their Home Energy Worksheet in Spanish on the back of english so I don't have to make copies
Smaller group size of participation
Smaller groups would be better for the kids. The presenters were good and they'd have been able to get their message to the students even better if the students were presented to in classes instead of the whole grade.
Smaller groups, we had nearly 100 kids, the students were engaged but I think smaller would be better
Some sort of something for a Lingo like a sticker or something about conservation
Students may like a small prize for getting lingo
Teaching 5th graders classes individually in stead of as a while 5th grade group
Thank you!
That everyone turns in their survey. There was not a Thank You card included.
The card seems to be a distraction during the assembly. Maybe arrange with aisle down middle to help kids see demos better, and teachers monitor behavior better.
The class said they would like more activities and less just watching.
The Lingo prize
The mascot is a little creepy

In the future, one thing I would change would be:

The movie could be louder.
The presenters were concerned about time and were rushing through even if students weren't listening
The quantity of students in the presentation. Smaller is better.
The students started to become a little restless-either a wiggle break or slightly shorter presentation may have helped. Otherwise, fantastic!
The students would like more participation and fun activities.
The supplies did not arrive on time due to UEA. Have presenters bring them or send 1-2 weeks earlier.
The videos, maybe an update?
This is my 5th time seeing the presentation. Keep doing what you're doing, it gets better every year!
Try to keep it to half hour if possible
Very honestly, there is not much, if anything, that I would change.
When we connected the circuit, I felt that the presenters were just talking to the kids making the circuits instead of the whole audience.
With the circuit light at the end let all students be involved, that wants to. The circuit will flow.

Teacher ID: ☐

Teacher Name: ☐

Home Energy Worksheet

Student First Name: ☐

Heating

1. Install and use a programmable or smart thermostat.
   ☐ Currently do ☐ Will do ☐ Neither
2. Caulk windows and weather strip outside doors.
   ☐ Have done ☐ Will do ☐ Neither
3. Inspect attic insulation and add insulation if needed.
   ☐ Have done ☐ Will do ☐ Neither
4. Keep furnace air filters clean/replaced regularly.
   ☐ Currently do ☐ Will do ☐ Neither

Cooling

5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.
   ☐ Have done ☐ Will do ☐ Neither
6. Close blinds when windows are exposed to the sun.
   ☐ Currently do ☐ Will do ☐ Neither
7. Use a fan instead of air conditioning.
   ☐ Currently do ☐ Will do ☐ Neither
8. Participate in Rocky Mountain Power's Cool Keeper program.
   ☐ Currently do ☐ Will do ☐ Neither

Water heating

9. Set the water heater temperature to 120 degrees F.
   ☐ Have done ☐ Will do ☐ Neither
10. Install a high-efficiency showerhead.
    ☐ Have done ☐ Will do ☐ Neither
11. Take 5 minute showers.
    ☐ Currently do ☐ Will do ☐ Neither
12. Wash full loads in the dishwasher and clothes washer.
    ☐ Currently do ☐ Will do ☐ Neither

Lighting

13. Replace incandescent bulbs with LED bulbs.
    ☐ Have done ☐ Will do ☐ Neither
14. Turn lights off when not in use.
    ☐ Currently do ☐ Will do ☐ Neither

Refrigeration

15. Replace old, inefficient refrigerator with an ENERGY STAR® model.
    ☐ Have done ☐ Will do ☐ Neither
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.
    ☐ Have done ☐ Will do ☐ Neither
17. Maintain refrigerator and freezer coils and check door seals twice yearly.
    ☐ Currently do ☐ Will do ☐ Neither

Electronics

18. Turn off computers, TVs and game consoles when not in use.
    ☐ Currently do ☐ Will do ☐ Neither

Cooking

19. Use a microwave oven, toaster oven, crock pot or outdoor grill instead of a conventional oven.
    ☐ Currently do ☐ Will do ☐ Neither

Get paid for being *watt*smart

20. Visit Rocky Mountain Power at *wattsmart.com* for more energy-saving tips and rebates.
    ☐ Have done ☐ Will do ☐ Neither

National Energy Foundation
cultivating energy literacy

ROCKY MOUNTAIN POWER

WAT UT

Home Energy Worksheet (Spanish)

Nombre del Profesor(a): _____

Ser ***watt***smart
Empieza en casa

Verificación de la Energía Doméstica

Nombre del Estudiante: _____

Calefacción

1. Instalar y usar un termostato programable.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno
2. Calafatear ventanas e instalar burletes en el exterior de las puertas.
   ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
3. Inspeccionar el aislamiento del ático y agregar aislamiento si es necesario.
   ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
4. Mantener los filtros de aire de la calefacción limpios/ reemplezarlos regularmente.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno

Enfriamiento

5. Reemplazar la unidad de aire acondicionado existente por una unidad de alta eficiencia o un enfriador evaporativo.
   ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
6. Cerrar las persianas cuando las ventanas estén expuestas al sol.
   ☐ Lo hago ☐Lo haré ☐ Ninguno
7. Usar un ventilador en lugar del aire acondicionado.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno
8. Participar en el programa "Cool Keeper" de Rocky Mountain Power.
   ☐ Lo hago ☐ Lo haré ☐ Ninguno

Calentadores de agua

9. Programar el calentador de agua a 120 grados F.
   ☐ Lo he hecho ☐ Lo haré ☐Ninguno
10. Instalar una cabezal de ducha de alta eficiencia.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
11. Tomar duchas de 5 minutos.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno
12. Lavar cargas llenas en los lavaplatos y las lavadoras de ropa.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Iluminación

13. Reemplazar los focos incandescentes con focos CFL o LED.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
14. Apagar las luces cuando no estén en uso.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Refrigeración

15. Reemplazar refrigerador antiguo e ineficiente con modelo de ENERGY STAR®.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
16. Desenchufar viejos refrigeradores/congeladores y/o desecharlos de una manera ambientalmente segura.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno
17. Mantener la bobina del refrigerador y del congelador e inspeccionar el sello de las puertas de dos veces al año.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Electrónicos

18. Apagar computadoras, televisores y consolas de juegos cuando no estén en uso.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Cocinar

19. Usar un horno microonda, un horno eléctrico, un olla de cocimiento lento o un parrilla de aire libre en lugar del horno convencional.
    ☐ Lo hago ☐ Lo haré ☐ Ninguno

Reciba paga siendo *watts*mart

20. Visite Rocky Mountain Power en *wattsmart.com* para obtener más consejos y rebajas de ahorro de energía.
    ☐ Lo he hecho ☐ Lo haré ☐ Ninguno

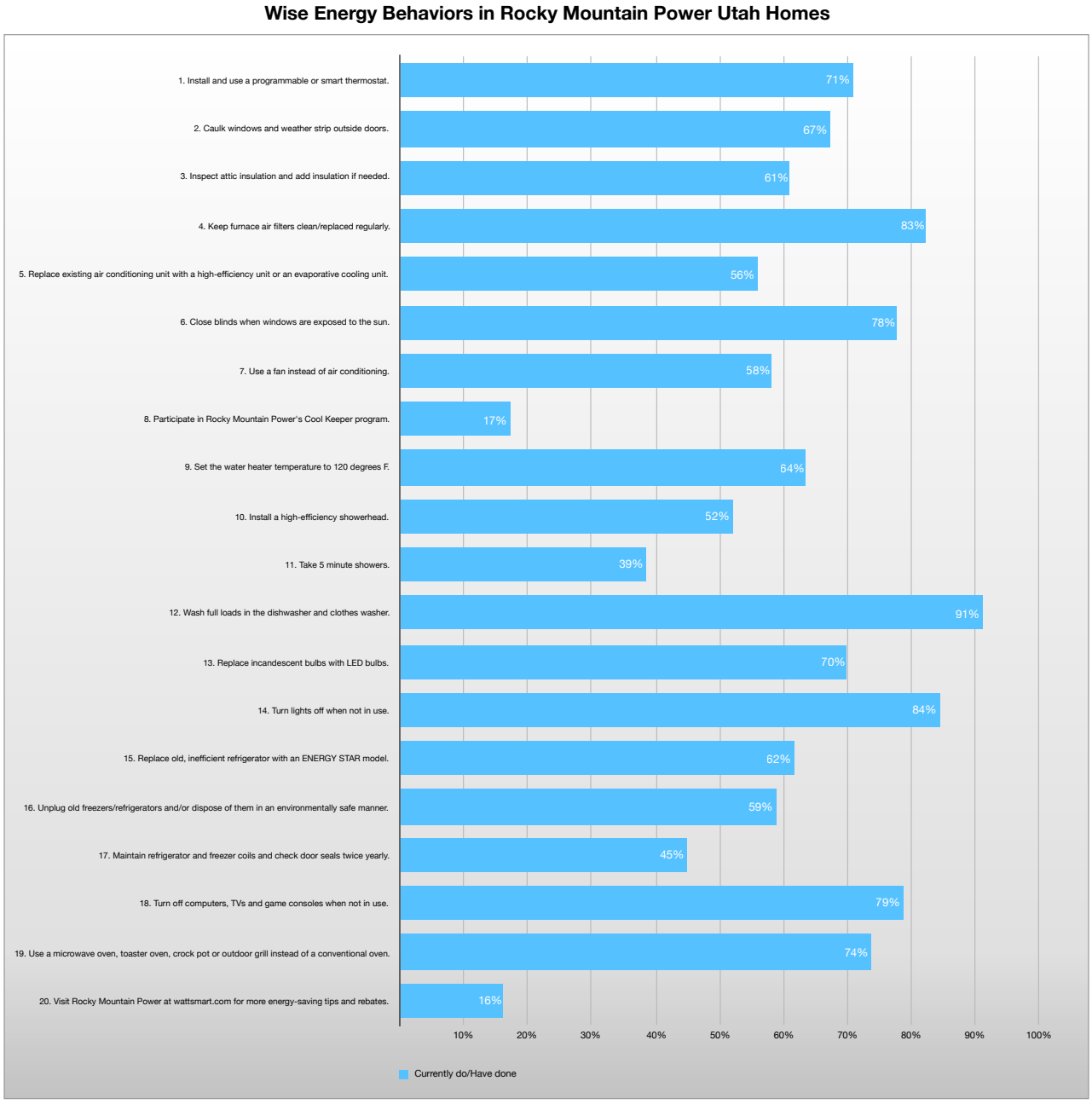
National Energy Foundation®
cultivating energy literacy

ROCKY MOUNTAIN POWER
Hagamos brillar las soluciones.

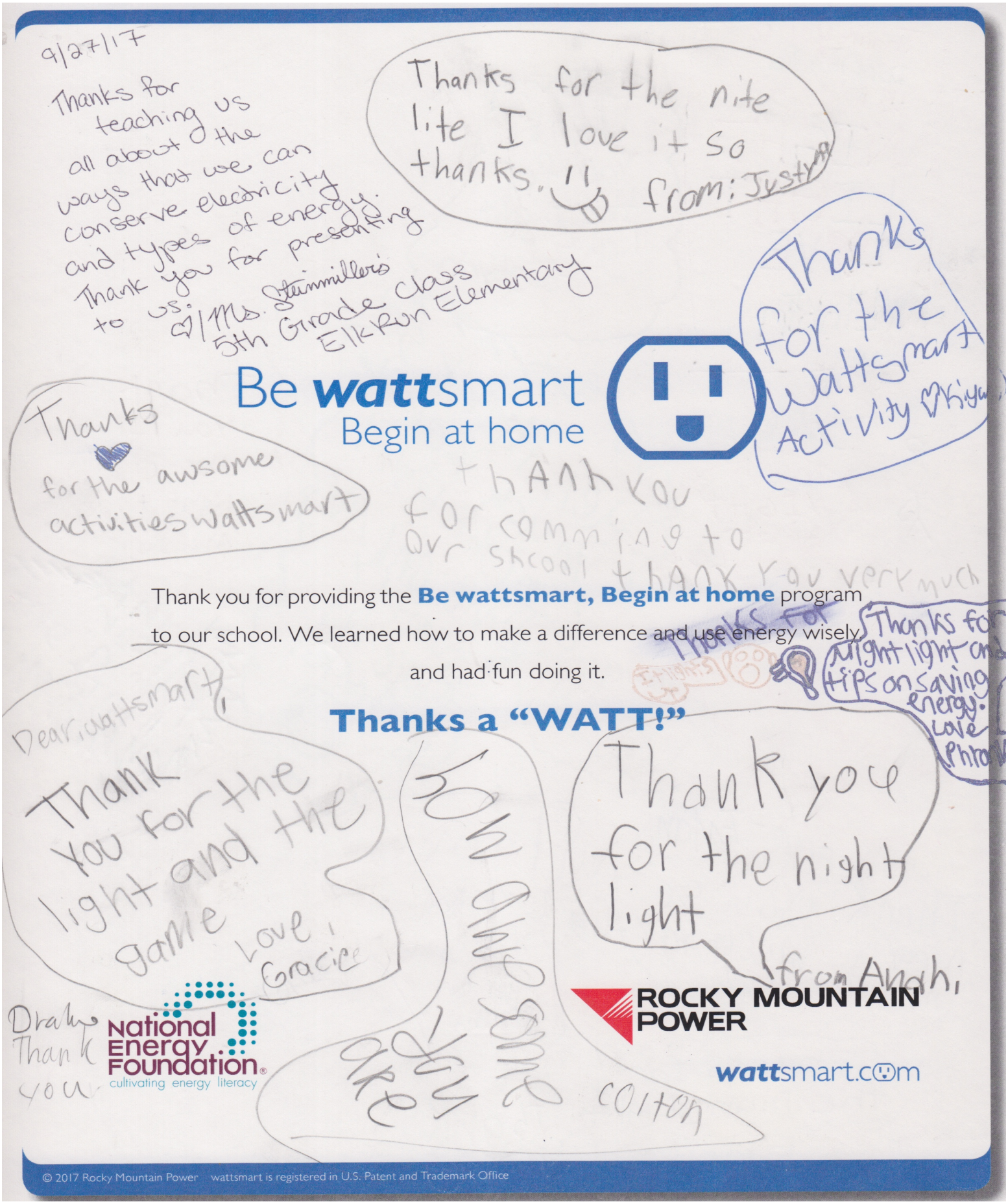
Home Energy Worksheet Summary – Rocky Mountain Power

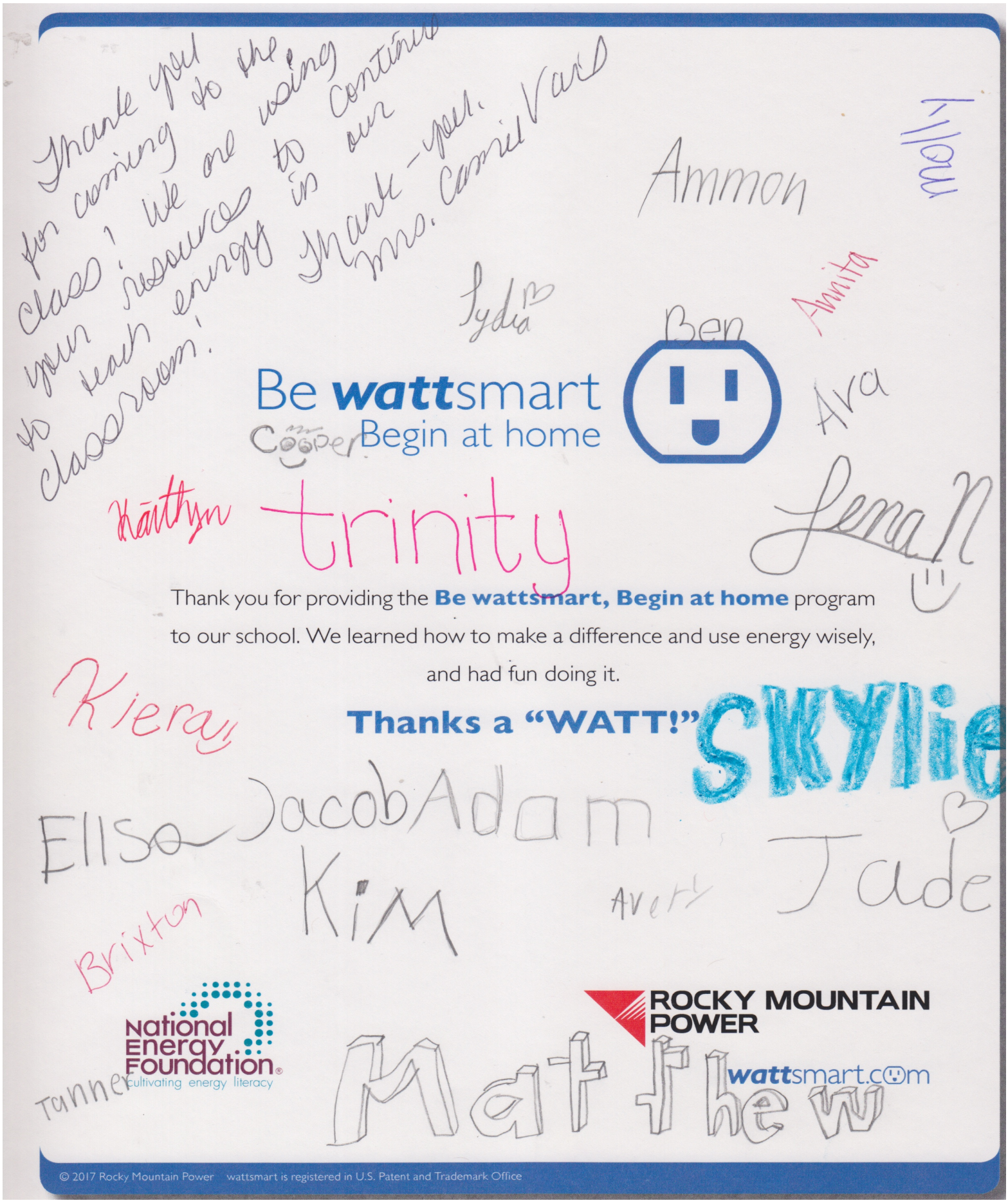
Energy Efficient Activity	Currently do/Have done	Will do	Neither
1. Install and use a programmable or smart thermostat.	71%	13%	16%
2. Caulk windows and weather strip outside doors.	67%	19%	14%
3. Inspect attic insulation and add insulation if needed.	61%	18%	21%
4. Keep furnace air filters clean/replaced regularly.	83%	13%	5%
5. Replace existing air conditioning unit with a high-efficiency unit or an evaporative cooling unit.	56%	17%	27%
6. Close blinds when windows are exposed to the sun.	78%	12%	11%
7. Use a fan instead of air conditioning.	58%	16%	26%
8. Participate in Rocky Mountain Power's Cool Keeper program.	17%	25%	57%
9. Set the water heater temperature to 120 degrees F.	64%	20%	16%
10. Install a high-efficiency showerhead.	52%	20%	28%
11. Take 5 minute showers.	39%	28%	34%
12. Wash full loads in the dishwasher and clothes washer.	91%	5%	4%
13. Replace incandescent bulbs with LED bulbs.	70%	20%	10%
14. Turn lights off when not in use.	84%	13%	2%
15. Replace old, inefficient refrigerator with an ENERGY STAR model.	62%	17%	22%
16. Unplug old freezers/refrigerators and/or dispose of them in an environmentally safe manner.	59%	17%	24%
17. Maintain refrigerator and freezer coils and check door seals twice yearly.	45%	38%	17%
18. Turn off computers, TVs and game consoles when not in use.	79%	15%	6%
19. Use a microwave oven, toaster oven, crock pot or outdoor grill instead of a conventional oven.	74%	13%	13%
20. Visit Rocky Mountain Power at wattsmart.com for more energy-saving tips and rebates.	16%	58%	26%

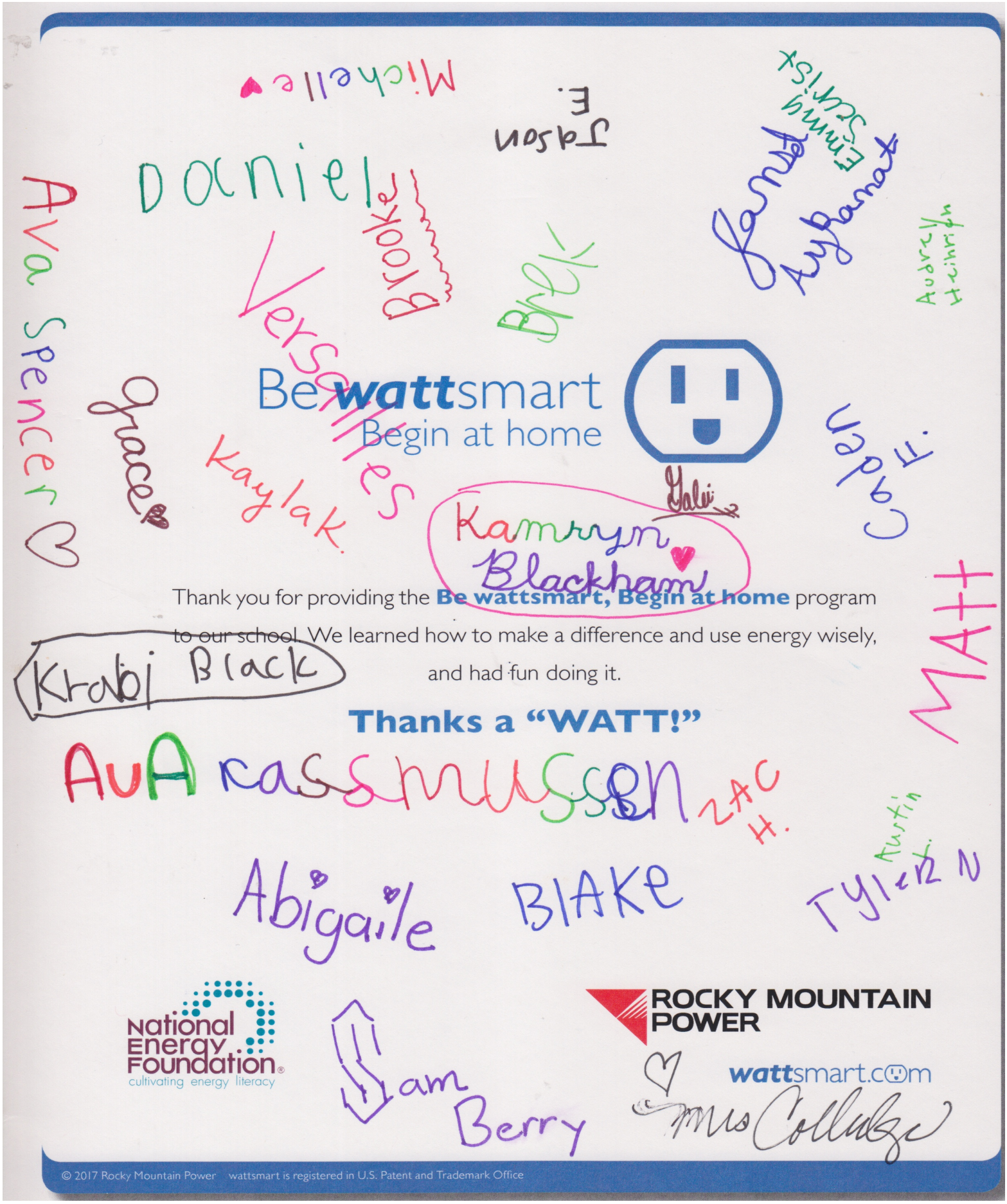
Wise Energy Behaviors in Rocky Mountain Power Utah Homes

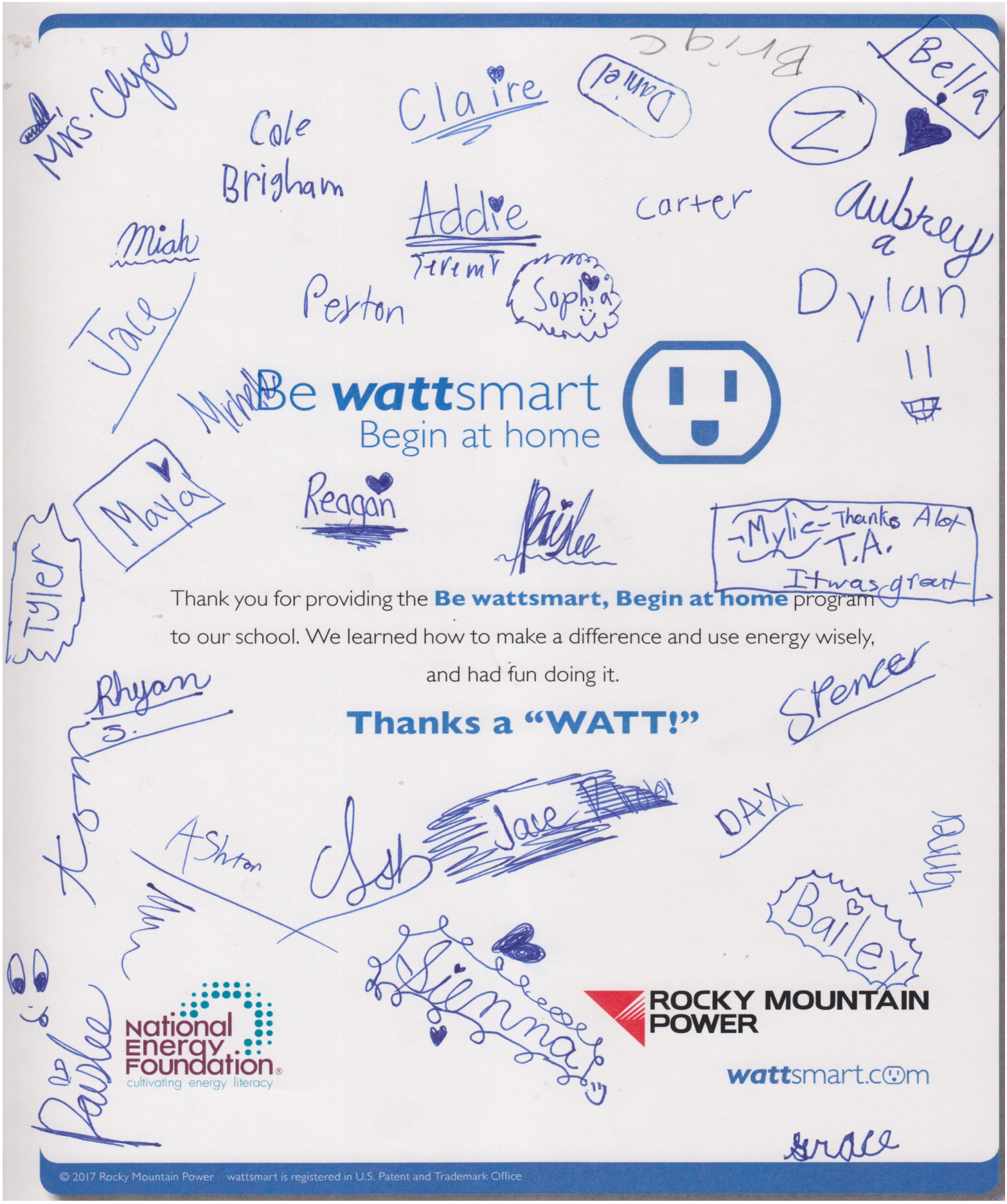


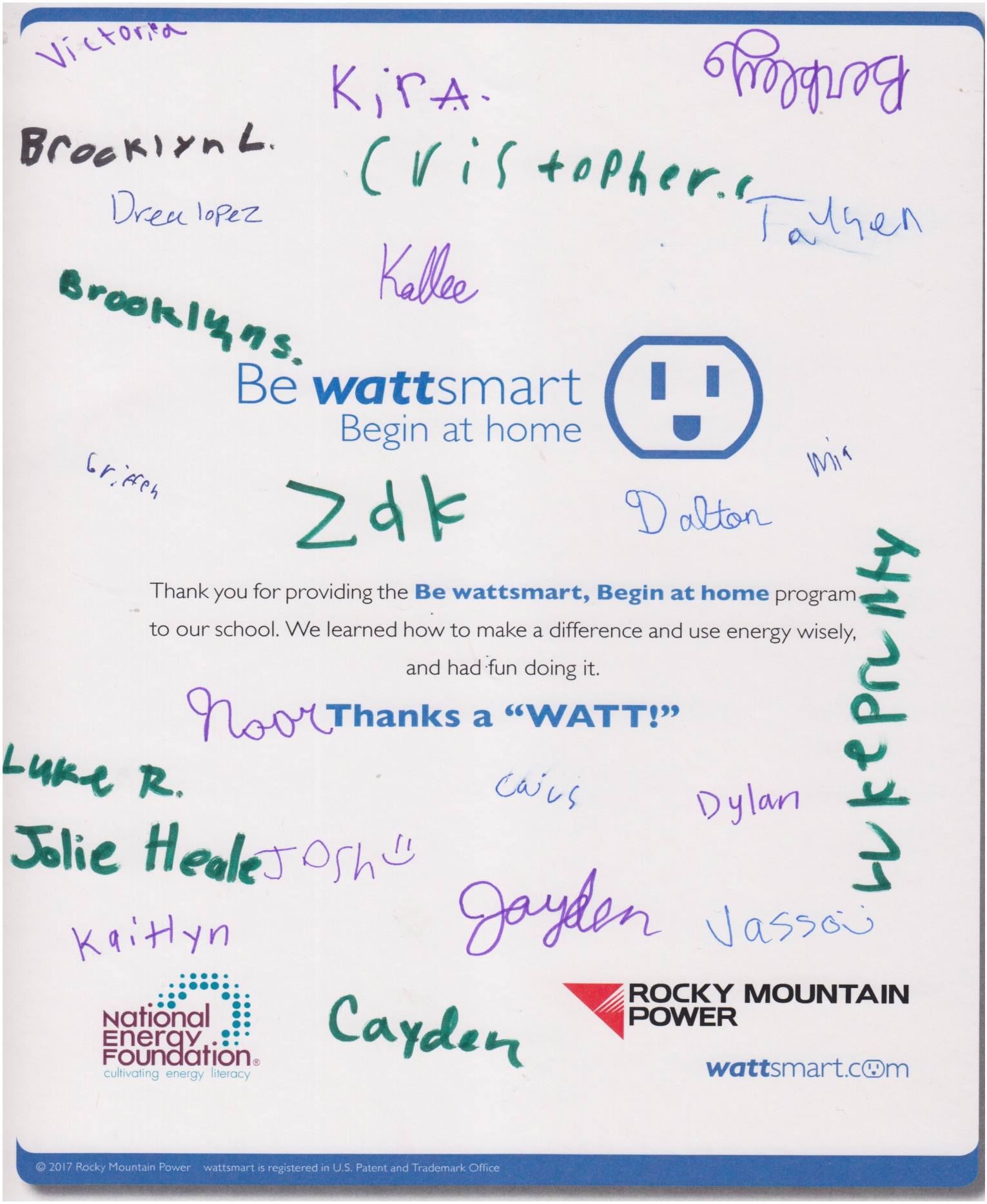
Sampling of *Thanks a "WATT" Cards*




Thank you for coming to the class! We are using your resource to continue to teach energy in our classroom!
Thank-you.
Mrs. Carrillo
Ammon
Molly
Lydia
Ben
Anita
Be wattsmart
Begin at home
Ava
Cooper
Kaitlyn
trinity
Jena N
Thank you for providing the Be wattsmart, Begin at home program to our school. We learned how to make a difference and use energy wisely, and had fun doing it.
Thanks a "WATT!"
Kiera
Skylie
Elisa
Jacob
Adam
Kim
Avery
Jade
Brixton
National Energy Foundation
cultivating energy literacy
ROCKY MOUNTAIN POWER
wattsmart.com
Tanner
Matthew
© 2017 Rocky Mountain Power wattsmart is registered in U.S. Patent and Trademark Office




Be wattsmart
Begin at home
Thank you for providing the Be wattsmart, Begin at home program to our school. We learned how to make a difference and use energy wisely, and had fun doing it.
Thanks a "WATT!"
National Energy Foundation
cultivating energy literacy
ROCKY MOUNTAIN POWER
wattsmart.com
© 2017 Rocky Mountain Power wattsmart is registered in U.S. Patent and Trademark Office



ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Exhibit C

Creative and News Releases

wattsmart TV

- Good for Utah – Summer 78-degrees
- Maverik :30
- Houweling's Tomatoes :30

wattsmart radio

- Good for Utah :60
- Good for Utah : 30
- Maverik :60
- Houweling's Tomatoes :60
- Houweling's Tomatoes :30
- Small Business Direct – Vernal :30
- Arena rising – interior lighting
- Arena renovation – building control system
- Arena renovation – upgrading cooling system
- Arena renovation – Teaming up with Rocky Mountain Power
- Traffic radio – script

wattsmart Print

- Thank you ad – color | b/w
- Partners in Innovation large | small
- Maverik color | b/w
- Houweling's Tomatoes
- Small Business Direct – Vernal
- Small Business Direct - Tooele
- Incentives for irrigation projects
- NEST promo with rebates
- Ceiling fan
- *Deseret News* Kid's Earth Day

wattsmart Out-of-Home

- Arena rising outdoor signage

wattsmart Video – longer format for digital, social, web

- Houweling's Tomatoes :60
- Arena rising – Larry H. Miller Group of Companies
- Small Business Direct Install

Digital & Facebook

- Good for Utah Facebook & YouTube
- Ceiling fan – cooling Facebook
- Ceiling fan – cooling digital
- Home Energy Reports - cooling Facebook
- Smart Thermostat - cooling Facebook
- Smart Thermostat – cooling digital
- Nest Thermostat – summer promotion Facebook

- Weather triggered Ceiling Fan digital
- Houweling's Tomatoes digital
- Maverik Facebook
- Maverik YouTube
- Maverik Digital mobile
- Maverik Digital static
- Small Business Direct – link to video
- Small Business Direct – Vernal
- Small Business Direct – Tooele

Direct mail

- Cool Keeper letter
- Midstream lighting direct mail
- Irrigation letter and application – Spring
- Irrigation letter and application – Fall

Email

- Nest smart thermostat Black Friday eblast
- Thank you for being wattsmart
- Grocery & convenience store eblast
- HVAC Digital Check Up desktop | mobile
- HVAC Digital Check Up – follow up desktop | mobile
- HBC Finance Webinar evite

Collateral

- wattsmart Homes HVAC Incentives
- wattsmart Business Brochure
- wattsmart Business Overview
- wattsmart Business LED instant incentives
- HBC Finance Overview
- Partners in Innovation brochure
- HVAC Check Up Overview
- HVAC Instant Incentives Overview
- Heating and Cooling Instant Incentives
- Small Business Direct Window Sticker
- Customer Solutions Brochure
- Incentives for Oil and Gas Overview
- wattsmart Communities brochure
- wattsmart Communties program guide

Act wattsmart Video Contest

- Promotional video
- Flyer
- Poster
- Press kit
- Radio traffic announcement script
- Bill insert
- Facebook
- KSTU-SL Tribune digital takeover

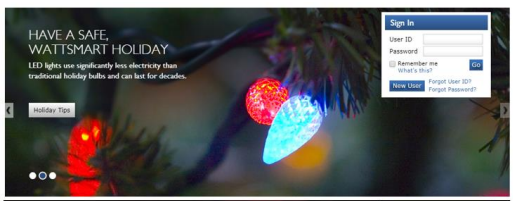
REAL Salt Lake

- Animated LED banner
- TV
- Radio
- Digital banner

University of Utah sponsorship

- Football radio
- Basketball video
- Basketball radio
- Animated LED banner

Sample Web Features



Imagery on wattsmart.com:

Newsletters/Bill Inserts

Voices Newsletters

- January 2017 – Tomatoes grow from a big idea; Power up, bills down
- March 2017 – Time for spring savings
- April 2017 – Insulate and save
- May 2017 – Save on evaporative coolers
- July 2017 – Find your kind of cool
- September 2017 – Online tools power energy savings
- October 2017 – Smart savings, supreme control
- November 2017 – This way to a wattsmart winter

Bill Inserts

- Act wattsmart Video Contest bill insert

Energy Insights Newsletters

- Spring issue – Houweling's Tomatoes Case study
- Spring full issue

News Releases

- Rocky Mountain Power Works to Help Customers Manage High Winter bills
- Vernal Small Businesses Need to Act Now for Incentives to Save Energy and Money
- Layton Small Businesses Need to Act Now for Incentives to Save Energy and Money
- Don't Lose Money on the Biggest Myths in Saving Energy
- Utah Associated Food Stores Honored for Saving Energy and Money
- Six Tips to Beat the Sizzling Heat
- You Have the Power to Save Energy During the Summer Heat
- Jordan Valley Water Conservancy District Honored for Saving Energy and Money
- WANTED: Energy Saving Stars for a Chance to Win $10,000 in Home Upgrades
- The Grand America Hotel Saving Big on Energy
- Planning a Labor Day Getaway? Rocky Mountain Power Shares Energy Saving Tips to Put Your Home in Vacation-Mode
- Rocky Mountain Power Announces Winners of Act Wattsmart Video Contest
- Energy Saving Tips to Manager your Winter Power Bill

Photos from 2017 Fall Deseret News Home & Garden Show

Facebook post

Rocky Mountain Power added 4 new photos.
October 17, 2017 ·

Thanks to everyone who came out to see us at the Deseret News Home Show! More than 1,000 visitors to our booth received LED lightbulbs and 3 lucky winners went home with new smart thermostats. Lots of interest in our Subscriber Solar program too!

Like Comment

Mark Eldredge, Shay Lee Bubert, Stacey Davis and 6 others like this.