



2021 Integrated Resource Plan (IRP) Conservation Potential Assessment January 21, 2020 Workshop





Background

PacifiCorp's Conservation Potential Assessment (CPA) supports the Company's regulatory filing and other demand-side management (DSM) planning efforts and initiatives.

The two primary research objectives for the 2021 CPA are:

- **IRP:** long-term forecast of future demand response (DR) and energy efficiency (EE) technical achievable potential for dynamic optimization in the IRP
- **Program Planning:** insights into the near-term market for DSM
 - e.g., existing measures to prioritize and new measures to consider

PacifiCorp has hired a third-party consultant, AEG, to develop comprehensive analytical models that are customized to PacifiCorp's market in each jurisdiction (excluding EE in Oregon).

- Energy Trust of Oregon will be conducting a similar analysis for EE in Oregon

2021 CPA Stakeholder Feedback



The table below summarizes feedback received through the Public Input Process on the 2021 CPA Work Plan. Additional details are provided at the end of this deck.

General Feedback	Current Scope?	Budget Impacts?	Status
Include Renewable Fuel Power and Combined Heat and Power	No	None	PG Study
Request that stakeholders be provided additional time to review and comment	Yes	None	Incorporated
Request that working Excel spreadsheets be provided for review	Yes	None	Incorporated
Demand Response Feedback	Current Scope?	Budget Impacts?	Status
Go beyond capacity, include frequency regulation and contingency reserves	PAC Dependent	TBD	Under Consideration
Incorporate full range of “GS” benefits into DR levelized costs	PAC Dependent	TBD	Under Consideration
Assess daily load shifting to integrate renewables	PAC Dependent	Moderate	Under Consideration
Do not assign the full cost of enabling technologies to the DR levelized cost	Yes	None	Incorporated
Account for cost-savings interactions between EE and DR resources	TBD	TBD	Clarification Requested
DR should not be limited by P&R interactive effects	Yes	None	Incorporated
Energy Efficiency Feedback	Current Scope?	Budget Impacts?	Status
Develop Low, Medium, and High cases for Technical Achievable Potential	No	High	Under Consideration
Account for costs that may decline over the forecast period	Partial	Low – None	Under Development
Provide adoption rate assumptions for review in a transparent manner	Yes	None	Incorporated
Provide corrections made to treat resource interactions transparently	TBD	TBD	Clarification Requested
Compare measure-level LCOEs & costs to historical CPAs and programs	Partial	Moderate	Programs & Major Measures



Conservation Potential Assessment Overview





Definitions – Resource Classes

For the 2021 CPA and IRP, PacifiCorp has classified DSM based on the types of measures represented, rather than resource firmness (e.g., 1 being firmer, 3 being less firm)

Demand Response (DR): Resources from fully dispatchable or scheduled firm capacity product offerings/programs such as a load control

- Previously Class 1 DSM

Energy Efficiency (EE): Resources from non-dispatchable, firm energy and capacity product offerings/programs such as energy efficiency and incremental savings from home energy reports

- Previously Class 2 DSM

Pricing and Rates (P&R): Resources from price-responsive energy and capacity product offerings/programs such as pricing response or load shifting

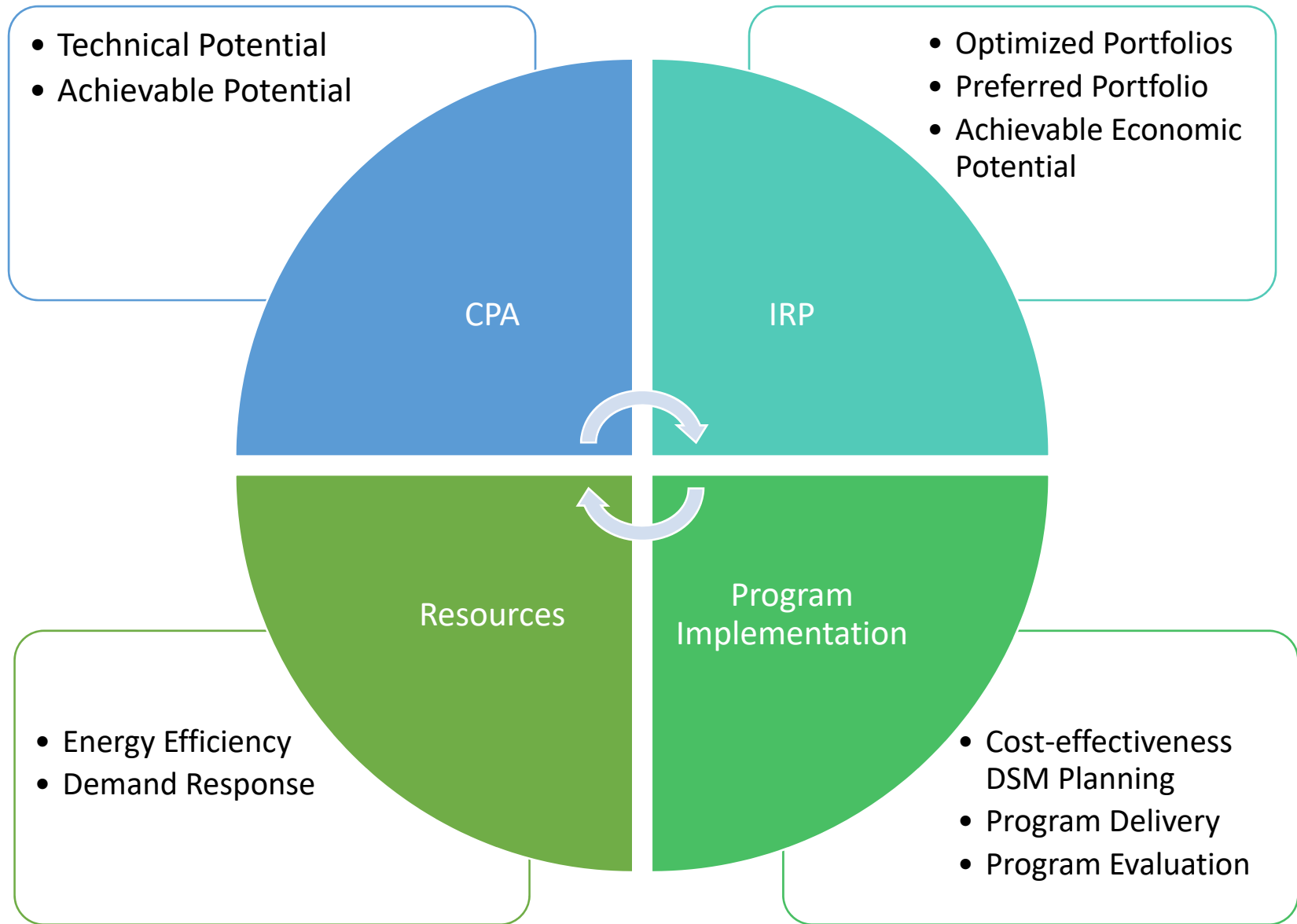
- Previously Class 3 DSM

Outside CPA Modeling Process

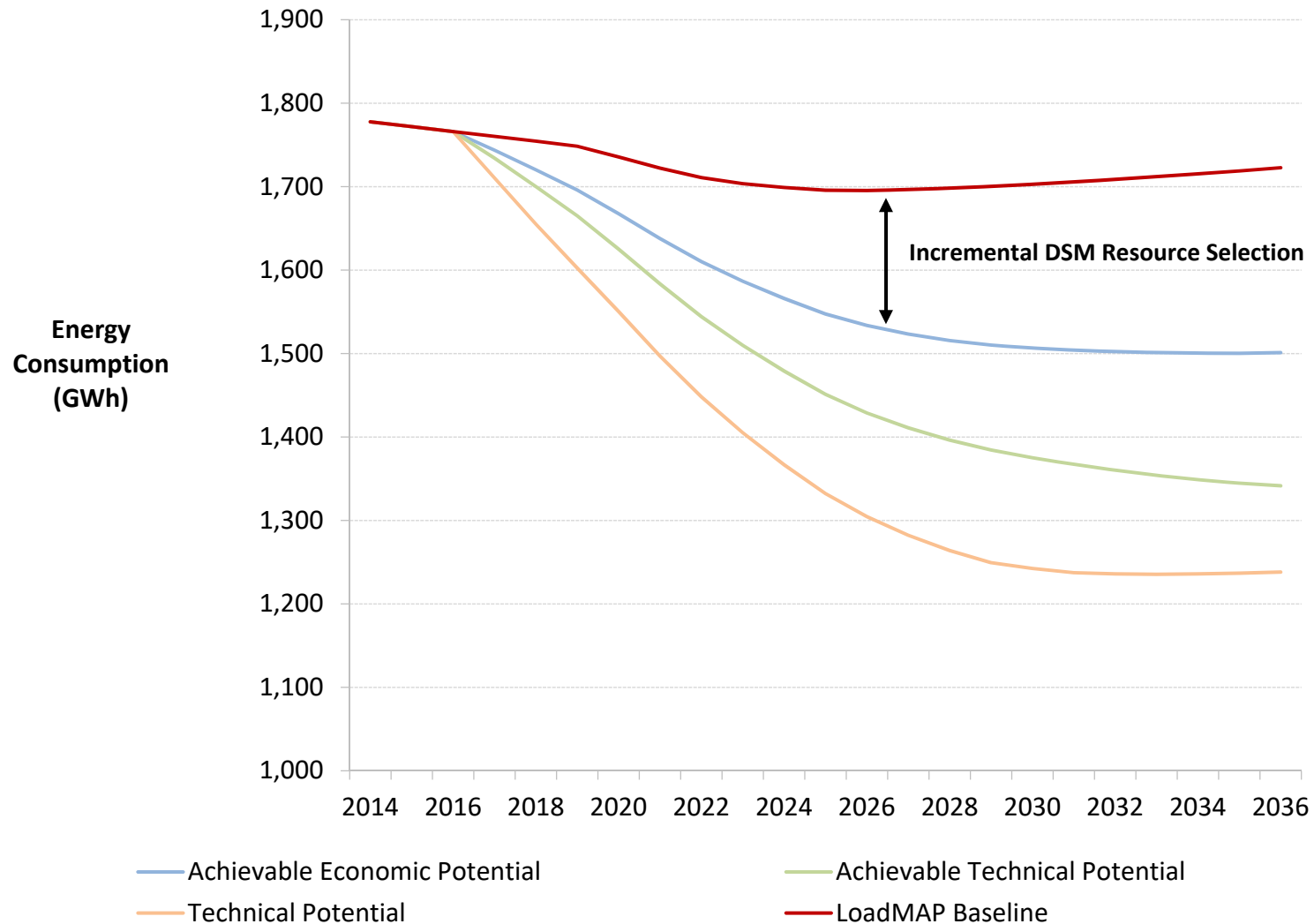
Education and Information: Non-incented behavioral-based savings achieved through broad energy education and communication efforts

- Previously Class 4 DSM

DSM Development Process for the IRP



Example Energy Consumption And Potential Projections



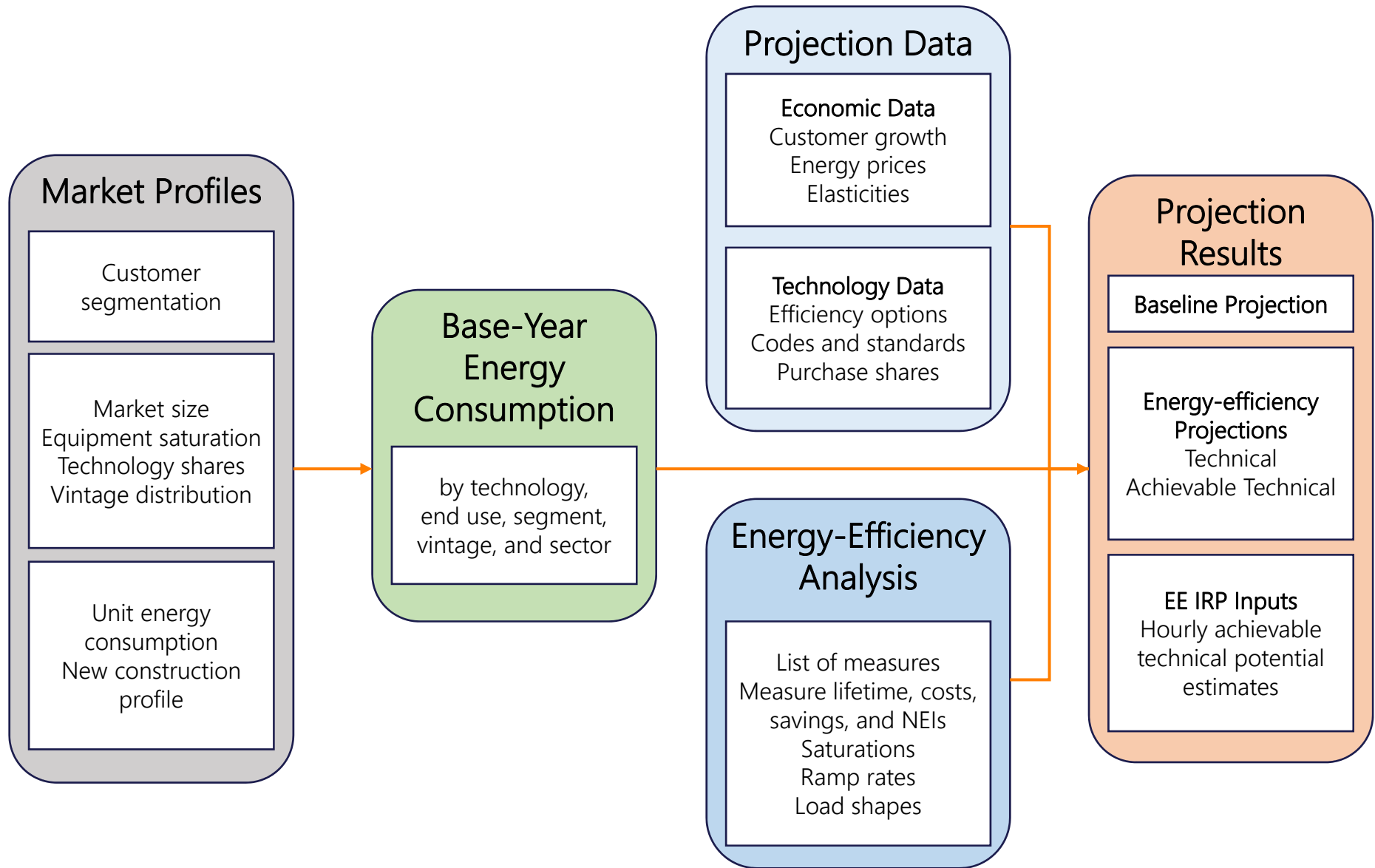
Areas of Coordination between Energy Trust and PacifiCorp



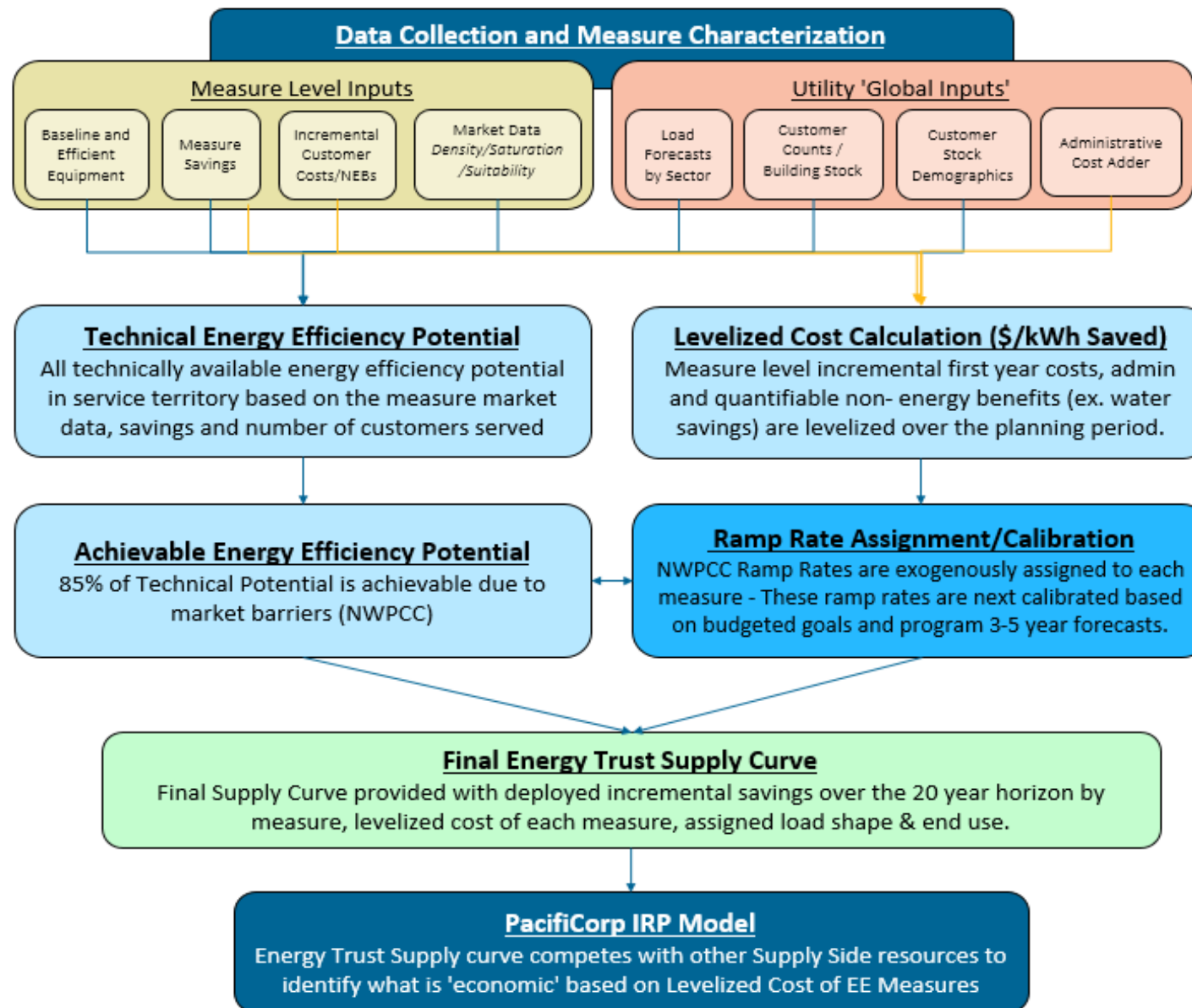
Element	Coordination Description
Measure Lists	Measure lists will be shared between the organizations to ensure alignment of conventional measures
Measure Level Data	The organizations will share data inputs if one organization is missing data for a measure
Emerging Technologies	The two organizations will coordinate on emerging technology measures and research to align as best as possible on these technologies
Load Profiles	More extensive review of the differences between the two sets load profile used by the organizations – note that a high-level review found minor differences in the last CPA development



CPA Methodology (Except OR)



Energy Trust of Oregon Methodology



Oregon Potential Methodology Comparison to Other States



- The overarching data inputs and sources between Energy Trust and the other states is generally the same
- The methodologies result in the same types of potential, but take slightly different paths to get there
 - AEG model builds a customer segment usage profile based on the same types of inputs as Energy Trust and estimates potential by looking energy efficient options for that profile
 - Energy Trust builds up potential from the measure level and uses a ‘density’ to account for the customer segment profiles.
- Additional information can be provided on Energy Trust Methodology

Accounting for Differences Between States



The DSM analysis is customized for each of PacifiCorp's six states. Some examples include:

- Local market conditions (customer composition, weather, home and building characteristics, etc.)
- State building codes and appliance standards
- Measure baselines (frozen efficiency vs. market)
- Measure sources and assumptions
- Cost-effectiveness tests (pTRC, TRC, UCT)
- Participation rate methodology (ramp rates)
- Northwest Power Council methodologies in OR and WA

Throughout the 2021 CPA, and within the final report, we will provide additional documentation surrounding these, and other, differences.



Key Changes and Updates for the 2021 CPA



Oregon Potential Methodology Comparison to Other States



Updated
Approach

A number of key methodology changes and updates are present in the “Draft Final” Work Plan distributed in December 2019.

- Many of these are **highlighted in BLUE** throughout this slide deck

Some key updates include:

- Utilizing updated **demand response analysis methodologies**
 - Consistent with LBNL’s 2025 California Demand Response Potential Study
 - “Shift”, “Shimmy”, and “Shed”
- Expanding the list of measure **sources further outside the Northwest**
- Incorporating **additional emerging technology options**
 - Feedback on the forthcoming measure list is appreciated
- Tailoring participation rates (ramp rates) for **each PacifiCorp jurisdiction**

Program Characterization DR and P&R



Updated
Approach

Incremental to the 2019 CPA, the 2021 CPA will look to further characterize ancillary benefits and will model DR events outside the system coincident peak.

PacifiCorp is considering incorporating promising new offerings and refined applications of existing ones, including:

- Nonresidential lighting DLC
- Grocery store refrigeration DLC
- CTA-2045 connected water heaters
- Customer-sited energy storage



Measure Hierarchy



Similar to the 2019 CPA, a “Measure Hierarchy” for source data will be developed.

For the 2021 CPA, the study will develop a **unique source hierarchy for each state**

- Prioritize TRMs from neighboring states and utilities
- Consider TRMs from the Midwest and Northeast

Each source from other jurisdictions will be vetted for appropriateness prior to inclusion (e.g., temperature, humidity, baseline conditions, etc.)

Source Hierarchy	Utah	Wyoming	Idaho	Washington	California
Primary	RTF with Adjustments [†] , National Sources, ^{††} Idaho Power TRM, Xcel Energy Colorado DSM Plan, Other Regularly Updated TRMs ^{†††}		RTF, 2021 Power Plan		DEER and non-DEER Workpapers
Secondary			National Sources, ^{††} Idaho Power TRM, Other Regularly Updated TRMs ^{†††}		RTF with Adjustments [†]
Other					National Sources, ^{††} Other Regularly Updated TRMs ^{†††}



Emerging Technologies

Updated
Approach

A review of emerging technology will be conducted as part of the 2021 CPA

- Conducted a thorough review of emerging technologies, using data from E3T, NEEA, BPA, NREL, U.S. DOE, and pilot/R&D programs throughout the nation

Measures will be screened for:

- Technical maturity (e.g., R&D, pilot, or regional implementation)
- Applicability (e.g., small niche, one segment, one sector)
- Data availability (e.g., manufacturer claims, independent publications, pilot data)

Measures put on the “watch” list during the last study will be reviewed as part of this study

Results of this analysis will be shared alongside the measure list.



Estimating EE Achievability

Updated
Approach

For the 2021 CPA, [achievability assumptions will be revisited](#)

- Previously based on Seventh Power Plan ramp rates
- AEG will [consider approaches specific to each jurisdiction](#)

Will consider the following data points:

1. Recent-year PacifiCorp measure and program accomplishments
2. Benchmark accomplishments of comparable utilities in the Northwest and Mountain regions, as well as throughout the country
3. [Primary market research into achievability and “take rates” conducted by AEG in the Mountain region](#)
4. [Draft 2021 Plan ramp rates if available by April 1, 2020](#)
5. Seventh Plan ramp rates, if necessary



Market Characterization and Baseline Development





Market Segmentation - Example

The first step in the CPA analysis is to characterize the market, answering the question *“How do PacifiCorp’s customers use energy today?”*

AEG begins by analyzing PacifiCorp to segment the market by:

- **State** (CA, ID, OR*, UT, WA, and WY)
- **Sector** (Residential, Commercial, Industrial, Irrigation, Street Lighting)
- **Segment** (Many segments)

Utah Residential Segmentation

Segment	Households	Consumption (MWh)	Intensity (kWh/HH)
Single Family	571,668	5,655,105	9,892
Multifamily	169,447	917,087	5,412
Manufactured Home	18,891	132,885	7,034
Total Utah	760,006	6,705,077	8,822

PacifiCorp Customers and Sales

PacifiCorp Customer Account Data

- Residential: Dwelling Code
- Nonresidential: SIC Code

*AEG develops Oregon segmentation for DR and P&R purposes only

Market Profiles - Example



After segmenting the market, AEG allocates consumption and peak load to individual technologies present

- *UEC: Unit Energy Consumption*
- *Usage = (Saturation*UEC)*(# homes)*

Baseline Study Data

- Residential: PacifiCorp Customer Decisions Survey
- C&I: NEEA CBSA and IFSA, AEG Energy Market Profiles (Pacific and Mountain)

Consumption Data

- HVAC: Calibrated energy simulations
- Non-HVAC: Engineering algorithms (TRMs and RTF workbooks) and the U.S. DOE's Annual Energy Outlook (AEO)

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (MWh)
Cooling	Central AC	76.2%	2,870	2,186	1,249,634
Cooling	Room AC	3.9%	1,285	50	28,665
Cooling	Air-Source Heat Pump	1.6%	3,018	47	27,048
Cooling	Geothermal Heat Pump	0.4%	2,657	11	6,375
Cooling	Evaporative AC	12.6%	647	81	46,555
Space Heating	Electric Room Heat	1.5%	13,422	201	114,685
Space Heating	Electric Furnace	6.2%	15,127	944	539,860
Space Heating	Air-Source Heat Pump	1.6%	8,329	131	74,646
Space Heating	Geothermal Heat Pump	0.4%	4,360	18	10,463
Space Heating	Secondary Heating	31.0%	392	122	69,461
Water Heating	Water Heater (<= 55 Gal)	8.8%	3,050	270	154,233
Water Heating	Water Heater (> 55 Gal)	0.7%	3,225	23	13,268
Interior Lighting	General Service Screw-in	100.0%	543	543	310,253
Interior Lighting	Linear Lighting	100.0%	79	79	44,931
Interior Lighting	Exempted Lighting	100.0%	208	208	118,920
Exterior Lighting	Screw-in	100.0%	301	301	172,079
Appliances	Clothes Washer	98.3%	77	76	43,343
Appliances	Clothes Dryer	76.0%	741	563	322,131
Appliances	Dishwasher	91.7%	120	110	62,991
Appliances	Refrigerator	99.9%	602	601	343,570
Appliances	Freezer	61.2%	515	315	180,149
Appliances	Second Refrigerator	42.8%	829	355	202,684
Appliances	Stove/Oven	68.6%	443	304	173,550
Appliances	Microwave	98.5%	124	123	70,077
Electronics	Personal Computers	80.9%	161	130	74,477
Electronics	Monitor	97.3%	61	60	34,177
Electronics	Laptops	267.4%	42	113	64,421
Electronics	TVs	230.3%	114	261	149,467
Electronics	Printer/Fax/Copier	80.9%	42	34	19,462
Electronics	Set-top Boxes/DVRs	267.2%	99	264	150,657
Electronics	Devices and Gadgets	100.0%	84	84	48,107
Miscellaneous	Electric Vehicles	0.4%	4,324	18	10,343
Miscellaneous	Pool Pump	2.5%	3,500	89	50,778
Miscellaneous	Pool Heater	1.0%	3,517	35	19,845
Miscellaneous	Hot Tub/Spa	6.0%	2,032	121	69,400
Miscellaneous	Furnace Fan	89.7%	205	184	105,253
Miscellaneous	Well pump	4.8%	561	27	15,419
Miscellaneous	Miscellaneous	100.0%	811	811	463,728
Total				9,892	5,655,105

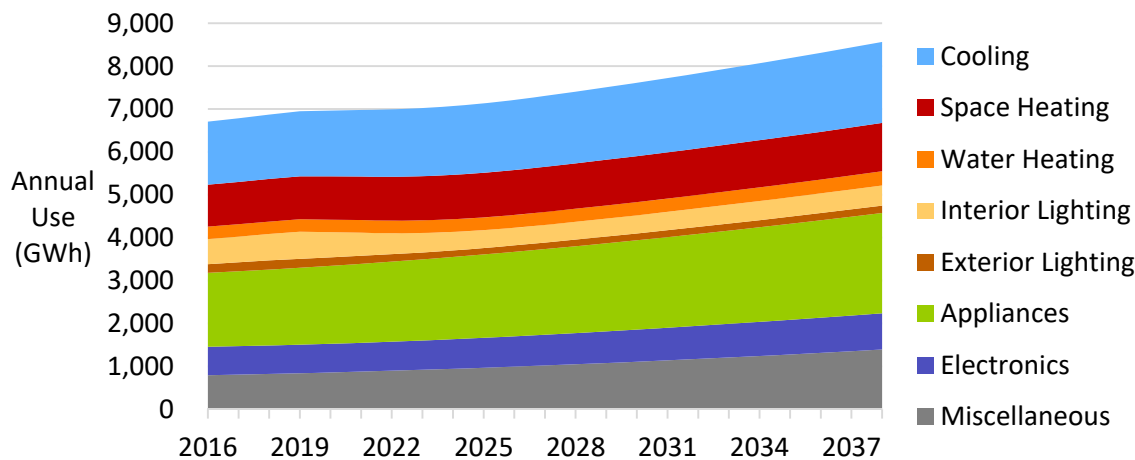


Baseline Projection - Example

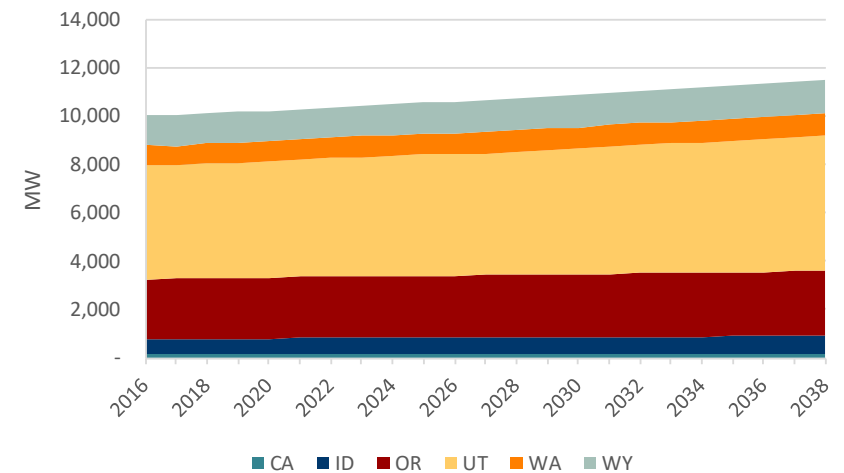
End-use projection of energy and demand, aligned as appropriate with PacifiCorp's approved Load Forecast

- **Frozen efficiency** for most measures (technology is fixed at present-day levels throughout forecast)
- **Codes and standards** applied when “on the books” at the federal and state levels
- **Market baseline** for some measures in relevant jurisdictions when naturally-occurring efficiency and market transformation are present (e.g., lighting in Washington)

Utah Residential Baseline Projection



Summer MW





Measure Characterization





Measure List



AEG, ETO and PacifiCorp are working to develop a list of DR, EE, and P&R measures and programs for consideration in the 2021 CPA.

- AEG will start with the list from the 2019 CPA and updating with new measures and sources, particularly from those listed on the next slide
- The Emerging Technology analysis will be refreshed (noted above)
- The list will encompass all three resource classes and will identify EE technologies and measures that can be controlled in demand response programs

	B	C	D	E	F	G
1	End Use	Technology	Label	Emerging	Revisions from Previous Study (if Applicable)	Measure Description
8	Cooling	Room AC	CEER 11.2		EER 11.2	Room air conditioners are designed to cool a single room or space. They incorporate a complete air-cooled refrigeration and air-handling system in an individual package. Room air conditioners come in several forms, including window, through-the-wall, and mini-split systems. Packaged terminal units are also included in this category for the residential sector. As of June 1, 2014, energy efficiency is rated according to the size and product class of the unit using the Combined Energy Efficiency Ratio (CEER).
9	Cooling	Room AC	CEER 12.0 (ENERGY STAR)		EER 12.1 (ENERGY STAR 2016)	
10	Cooling	Room AC	CEER 13.0		EER 13.0	
11	Cooling	Room AC	Evaporative Room AC			



Measure Characterization Energy Efficiency



Measures are applied to the Baseline Projection, yielding energy and peak savings. AEG catalogs many assumptions, including those listed below.

The 2021 CPA, will explore [early retirement options](#) for popular measures such as C&I lighting

- Data required for each measure:
 - Technical applicability
 - Current saturation
 - Unit energy savings: annual energy and peak demand
 - Costs: installation, O&M, and non-energy impacts
 - Lifetime
 - Baseline conditions
 - Appliance standards
 - Measure adoption rates

Measure and Program Characterization, DR and P&R



Updated
Approach

Demand response and pricing and rates programs are characterized differently from EE

- Potential does not exist without a mechanism to call events
- However many, if not all, of the same data points as EE are required to estimate potential
- The study will identify EE measures that can be leverage to provide DR and other ancillary grid services prior to developing DR programs

Sources considered include:

- PacifiCorp programs and pilots
- Programs and pilots successfully run by similar utilities in the US and broader if applicable
- Well-vetted potential studies such as LBNL's 2025 California Demand Response Potential Study

We will take a similar approach to modeling Pricing and Rates as the 2019 CPA



Potential Estimation





Definitions – Potential Levels

The CPA estimates two levels of potential for EE and DR and one for P&R

- **Technical Potential** is a theoretical construct that assumes all eligible customers adopt the most efficient technology or measure option regardless of cost
 - EE and DR only
- **Technical Achievable Potential (Market Potential)** constrains technical potential by applying market adoption rates for each measure and program.
 - Intended to represent market barriers to measure or program uptake and customer preference

IRP Modeling Process

- **Economic Achievable Potential** is based on the IRP's Preferred Portfolio. It is the subset of technical achievable potential within the levelized cost bundles selected by the IRP.



Potential Results, Energy Efficiency

The 2021 CPA will estimate Technical and Technical Achievable potential for EE measures in each state (excluding OR) and each sector

- Compared to the 2019 CPA, the 2021 CPA will shift the analysis forward two years, estimating potential from 2021 though 2040

Figure 3-1 Cumulative Class 2 Technical Achievable Potential by Sector

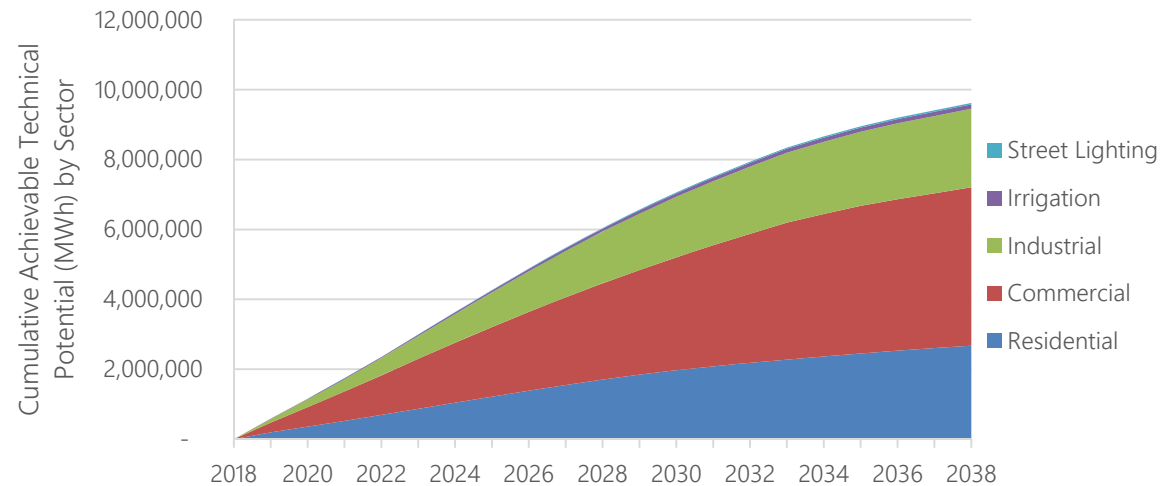


Table 3-1 Cumulative Class 2 DSM Potential by Sector in 2038

Sector	Baseline Loads (MWh)	Technical Potential (MWh)	Technical Achievable Potential (MWh)	Technical Potential (% of Baseline)	Technical Achievable Potential (% of Baseline)
Residential	13,594,729	3,353,613	2,674,197	24.7%	19.7%
Commercial	16,567,429	5,673,868	4,534,085	34.2%	27.4%
Industrial	17,342,377	2,822,528	2,244,656	16.3%	12.9%
Irrigation	1,270,654	144,441	122,775	11.4%	9.7%
Street Ltg.	105,029	52,961	43,491	50.4%	41.4%
Total	48,880,218	12,047,411	9,619,204	24.6%	19.7%



Potential Results, Demand Response



- Potential segmented by customer class and program
- Achievable fraction of customers developed by benchmarking with mature programs throughout the country
 - Existing PacifiCorp programs are identified separately
- AEG will use LoadMAP™, their end-use forecasting model to isolate controllable loads for new programs
 - (e.g., grocery store refrigeration load for new DLC measure)

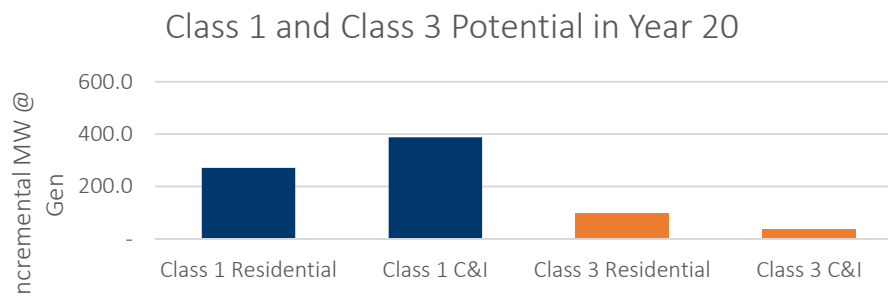


Table 2-1 Class 1 DSM Total and Incremental Market Potential by Option (Summer Peak MW)

Sector	Total Potential Impacts in 2038	Impacts from Existing Options	Incremental Potential Impacts in 2038
Residential DLC Central AC	156.4	102.0	54.4
Residential DLC Space Heating	-	-	-
Residential DLC Water Heating	33.6	-	33.6
Residential DLC Smart Thermostats	153.2	-	153.2
Residential DLC Smart Appliances	15.0	-	15.0
Residential DLC Room AC	6.5	-	6.5
Residential DLC EV Charging	6.7	-	6.7
Residential Ancillary Services	1.6	-	1.6
C&I DLC Central AC	18.2	-	18.2
C&I DLC Space Heating	-	-	-
C&I DLC Water Heating	5.2	-	5.2
C&I DLC Smart Thermostats	98.8	-	98.8
C&I Third Party Contracts	168.3	-	168.3
C&I Ancillary Services	30.0	-	30.0
C&I Ice Energy Storage	7.6	-	7.6
DLC Irrigation	228.9	169.7	59.2
Total All Sectors	930.2	271.7	658.5
Potential (% of Projected 2038 system peak)	8.1%	2.4%	5.7%



2021 CPA Work Plan Stakeholder Feedback Form Recap



Stakeholder Feedback Forms



- 2 stakeholder feedback forms submitted to date.
- Stakeholder feedback forms and responses can be located at www.pacificorp.com/energy/integrated-resource-plan/comments.html
- Depending on the type and complexity of the stakeholder feedback received responses may be provided in a variety of ways including, but not limited to, a written response, a follow-up conversation, or incorporation into subsequent public input meeting material.
- Stakeholder feedback is summarized on the following slides for reference.



General Feedback

Unless covered elsewhere, the CPA should include the:

- *“use of renewable-fuel power (RFP) generation or for conventional cogeneration (combined heat and power, or CHP)”*
- This is addressed within PacifiCorp’s Private Generation (PG) Study.
- Request that:
- *“stakeholders be provided with ample time to review and comment on all inputs, assumptions, and draft reports” and ... “all inputs, assumptions, and draft output tables (including report appendices) be provided to stakeholders as working Excel spreadsheets broken down by year”*
- AEG and PacifiCorp will be revising the format for the 2021 CPA report. This will include converting many of the data-rich appendices into an Excel spreadsheet format to facilitate review.
 - We appreciate any suggestions into how to best visualize and review the data.
 - Including a detailed annual breakdown of both Technical and Technical Achievable potential.



Comments on Grid Services

The CPA should:

- *“look at potential for DR to offer services such as frequency regulation and contingency reserves”*
- *“fully assess the potential of DR to provide a range of grid services over multiple timescales”*
- *“include the full range of grid benefits by providing multiple services” within “estimates of the levelized costs of DR”*
- *“assess the potential for DR to shift load on a daily basis to help with renewable energy integration and provide similar functionality as battery energy storage”*
- 2021 CPA treatment of these services is under further investigation. Although all of these are capable of being model in the CPA, we are in the process of procuring a new IRP model.
 - We will investigate the ability to how best quantify the benefits and integrate them into the IRP.
- EE measures which can provide these grid services will be identified as part of the measure list development process.

Additional DR Comments



Cost for DR programs:

- *“2021 CPA should not assign the full cost of DR enabling technologies to the levelized cost for DR” ... “the levelized costs of DR programs should be based on realistic program and equipment cost assumptions”*
- We will look to expand the application of the “bring your own” concept where feasible.
- At a minimum, this is relevant to Electric Vehicle Supply Equipment, Smart Appliances, and Grid-Interactive Water Heaters.

Cost savings due to resource class interactions:

- *“The CPA should consider the impacts of interactive effects between energy efficiency and DR in all states, including those that use the Utility Cost Test”*
- Additional Clarification Requested – which interactions are being referred to?
- In the 2019 CPA, participant costs were discounted by 25% in CA, OR, WA, and WY (TRC and modified TRC jurisdictions).
- For the 2021 CPA, we will investigate the treatment of cost proxies in all states.



DR/P&R Resource Interactions

DR and Pricing & Rates interactions:

- “request more information on the methodology used to treat interactive effects between DR and pricing and rates” ... “at a high-level it does not appear appropriate to limit DR potential based on P&R interactive effects”
- Since DR is considered a more “firm” resource than P&R, it is assumed to get the first opportunity to participate. The table below provides an example “Participation Hierarchy” that is used to “load” measures into the model.
- PacifiCorp will develop this relationship during the 2021 IRP, adjusting for additional grid services if/when modeled.



Customer Class	Residential	Small C&I	Medium C&I	Large C&I	Extra Large C&I	Irrigation & Water Pumping
DLC Central AC	x	x	x			
DLC Smart T-Stats	x	x				
DLC Water Heating	x	x	x			
DLC Space Heating / Room AC	x					
DLC Smart Appliances	x					
Irrigation Load Control						x
Curtailment Agreements				x	x	
Thermal Energy Storage			x	x	x	
Electric Vehicle Storage	x					
Time of Use	x	x	x	x	x	x
Critical Peak Pricing	x	x	x	x	x	x
TOU Demand Rate	x					
TOU EV- Demand Rate	x					



Energy Efficiency Technical Achievable Cases

Request that:

- *“AEG develops a Low, Medium, and High Case for Technically Achievable Potential”*
- *We currently conduct a high and low load sensitivity analysis.*
- *“cases could be developed by adjusting Market Adoption Rates and levelized cost assumptions, as costs for certain emerging and existing technologies are likely to decline over the CPA period”*
- This is already incorporated into LED cost and efficacy projections through 2030. We are currently developing a methodology to account for this more holistically for emerging technologies.
- Care must be taken since the IRP receives one levelized cost per bundle regardless of year and this may result in measures being selected in the Preferred Portfolio that are not cost-effective within programs.

Energy Efficiency High “Technical” Case



Request that:

- *“the High Case should be at or close to the full technical potential of energy efficiency in the CPA, given that the technical potential in the 2019 CPA was very conservative when compared with historical PacifiCorp DSM performance and DSM achievements in other jurisdictions”*
- Technical Potential within the CPA is informed by IRP methodology, consistent with the Northwest Power and Conservation Council’s “Frozen Efficiency” baseline
 - To remain consistent with IRP methodology, the CPA assumes that any efficiency realized in past years is embedded within the PacifiCorp Load Forecast and is not available for future selections.
 - For example, if 30% of homes have installed LED lighting through 2018, that 30% is excluded from CPA potential.
 - This also applies to existing behavioral savings (Home Energy Reports) as those are reflected in recent-year sales/consumption.
- Due to years of historical program performance, a significant amount of potential is already accounted for in the Load Forecast and not modeled within the CPA.

Additional Energy Efficiency Feedback



Request that:

- *“PacifiCorp provide assumptions around Market Adoption Rates to stakeholders in a transparent and easily understood manner”*
- *These assumptions will be provided during a future meeting for review.*
- *“PacifiCorp provide stakeholders with all corrections made to treat resource interactions in a transparent manner”*
- Additional Clarification Requested – does this refer to interactions between individual EE measures, EE and DR impacts, EE and DR co-benefits, or something else?

Comparison with Past Programs and CPAs



Request:

- *“an analysis as part of the CPA comparing measure-level levelized cost and supply assumptions from the 2019, 2017, and 2015 CPAs with historical measure-level cost and program achievements in each PacifiCorp jurisdiction”*
- AEG will be conducting a subset of this analysis as part of the 2021 CPA:
 - Comparison with historical programs will be performed at:
 - The measure level for “Major Measures” to be defined in February.
 - The program or measure-category for all other measures.
 - Comparison with prior CPAs will be made when possible, however changing baselines, periods of analysis, and available measures will limit the comparison in some situations to a higher level.



Additional Information and Next Steps



Additional Information and Next Steps



- Public Input Meeting and Workshop Presentation and Materials:
 - pacificorp.com/energy/integrated-resource-plan/public-input-process
- 2021 IRP Stakeholder Feedback Forms:
 - pacificorp.com/energy/integrated-resource-plan/comments
- IRP Email / Distribution List Contact Information:
 - IRP@PacifiCorp.com
- IRP Support and Studies – CPA Draft Documents
 - pacificorp.com/energy/integrated-resource-plan/support

Upcoming Public Input Meeting/Workshop Dates



- February 18, 2020 (conference call only) – CPA Workshop #2
- June 18-19, 2020 – Public Input Meeting
- July 22-23, 2020 – Public Input Meeting
- August 20-21, 2020 – Public Input Meeting
- September 17-18, 2020 – Public Input Meeting
- October 22, 2020 (conference call only) – Public Input Meeting
- November 5-6, 2020 – Public Input Meeting
- December 10-11, 2020 – Public Input Meeting
- January 14-15, 2021 – Public Input Meeting
- February 4-5, 2021 – Public Input Meeting
- March 4-5, 2021 – Public Input Meeting

**meeting dates are subject to change*