

PacifiCorp - Stakeholder Feedback Form

2019 Integrated Resource Plan

PacifiCorp (the Company) requests that stakeholders provide feedback to the Company upon the conclusion of each public input meeting and/or stakeholder conference calls, as scheduled. PacifiCorp values the input of its active and engaged stakeholder group, and stakeholder feedback is critical to the IRP public input process. PacifiCorp requests that stakeholders provide comments using this form, which will allow the Company to more easily review and summarize comments by topic and to readily identify specific recommendations, if any, being provided. Information collected will be used to better inform issues included in the 2019 IRP, including, but not limited to the process, assumptions, and analysis. In order to maintain open communication and provide the broader Stakeholder community with useful information, the Company will generally post all appropriate feedback on the IRP website unless you request otherwise, below.

Date of Submittal 5/24/2019

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Public Meeting Date comments address: 2/21/2019

Check here if not related to specific meeting List

additional organization attendees at cited meeting: Hunter Holman and Sarah Wright, Utah Clean Energy

***IRP Topic(s) and/or Agenda Items:** List the specific topics that are being addressed in your comments.
Modeling higher DSM scenarios/sensitivities

Check here if any of the following information being submitted is copyrighted or confidential.

Check here if you do website. **not** want your Stakeholder feedback and accompanying materials posted to the IRP

***Respondent Comment:** Please provide your feedback for each IRP topic listed above.

During the February 21, 2019 public input phone meeting several parties recommended that PacifiCorp include alternative scenarios and/or sensitivities in the 2019 IRP that include higher levels of demand-side management acquisition. During the meeting, Utah Clean Energy (UCE) was directed to submit a feedback form with a specific recommendation. On April 3rd, we submitted a feedback form making requests as directed by PacifiCorp. PacifiCorp's response didn't not satisfy our request and referenced an appendix that didn't provide the information we requested. Therefore, this feedback form is being submitted in response and has two parts.

Data Support: If applicable, provide any documents, hyper-links, etc. in support of comments. (i.e. gas forecast is too high - this forecast from EIA is more appropriate). If electronic attachments are provided with your comments, please list those attachment names here.

Page 219 of 2013 IRP, Table 8.1 Portfolio Comparison, Risk-adjusted PVRR, which shows that C15 (the high DSM scenarios) had the lowest risk-adjusted PVRR and was ranked 1st and 2nd in the Energy Gateway 1 and 2 cases respectively.

Page 248, 2013 IRP Action Plan, "Acquire 1,425 – 1,876 gigawatt hours (GWh) of cost-effective Class 2 energy efficiency resources by the end of 2015 and 2,034 – 3,180 GWh by the end of 2017."

* Required fields

Recommendations: Provide any additional recommendations if not included above - specificity is greatly appreciated.

Response on Requests Submitted in April 3, 2019 Stakeholder Feedback Form

Part 1 of request:

Question 1. In our April 3rd feedback form, we requested that “PacifiCorp model an additional higher DSM sensitivity for purposes of comparison against other DSM scenarios in the 2019 IRP. Specifically, we request that PacifiCorp model a DSM sensitivity that equates to at least 1.5% of forecasted retail sales by year, similar to high DSM sensitivity modeling undertaken in below the range achieved by leading utilities in the U.S.”

PacifiCorp Response:

Question 1.

"The 2015 Conservation Potential Assessment (CPA) included analysis accelerating demand-side management (DSM) in the Integrated Resource Plan (IRP) to 1.5% of retail sales, which resulted in DSM being 20% more expensive on average. PacifiCorp’s findings and methodology for accelerated DSM can be found in the PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Volume 2, page 6-5 located at: www.pacificorp.com/es/dsm/dpssm.html.

In the 2019 IRP cycle, PacifiCorp does not intend to repeat the 2015 analysis of accelerating DSM to 1.5% of retail sales, but PacifiCorp is planning to study a portfolio with energy efficiency bundled by capacity. Additionally, PacifiCorp is studying a low load sensitivity that starts at a 1.7% reduction in retail sales in 2019 escalating up to a 3.3% reduction by the end of the study period in 2038.

UCE’s follow-up response:

In 2013 PacifiCorp (the Company) included an accelerated DSM scenario and found that the risk-adjusted PVRR was favorable. According to the Company, the high DSM scenario modeled (C-15) had “the highest risk adjusted net PVRR ranking among candidate portfolios across different CO2 price scenarios.” This demonstrated that accelerated acquisition of DSM had notable risk-reduction benefits. (Table 8.1 Portfolio Comparison, Risk-adjusted PVRR, pg 219 of 2013 IRP, which shows that C15 had the lowest risk-adjusted PVRR and was ranked 1st and 2nd in the Energy Gateway 1 and 2 cases respectively.)

The Company acknowledged that accelerated DSM performed well on a risk-adjusted cost basis, but due to uncertainties around incentive and administrative costs, the accelerated DSM scenario wasn’t selected (pg 10, 2013 IRP). Instead, due to the “potential benefits of accelerated DSM” the Company sought to achieve additional levels of DSM in the near term as part of the 2013 IRP Action Plan. (pg 248, 2013 IRP - “Acquire 1,425 – 1,876 gigawatt hours (GWh) of cost-effective Class 2 energy efficiency resources by the end of 2015 and 2,034 – 3,180 GWh by the end of 2017.”) The Company’s decision to pursue DSM more aggressively as part of its 2013 Action Plan would not have happened had the Company not run the high DSM sensitivity analysis.

Question 2. Further, as Utah Clean Energy has noted in numerous comments, the actual cost of DSM may be lower than the cost assumed in the Conservation Potential Assessment and the IRP. By keeping the cost of DSM constant and just increasing the ramp rates of DSM in the IRP process, parties can evaluate how accelerated procurement of cost-effective DSM impacts the portfolio and the risk-adjusted PVRR. (Hence our request for information about DSM costs in Part 2 of our request.)

* Required fields

PacifiCorp Response:

Question 2.

In order to maintain consistency with previous studies and the Northwest Power and Conservation Council's Seventh Plan ("Seventh Plan") methodology, PacifiCorp's third-party consultant, Applied Energy Group (AEG), prescribes ramp rates to measures in accordance with the Seventh Plan's supply curve workbooks. That includes measures assigned to medium and slow ramp rates as well as many faster ramp rates. However, AEG has also accelerated all lost opportunity measures by three years (starting in year-4 of the Seventh Plan), reflecting the fact that PacifiCorp's DSM programs are more mature than the Seventh Plan assumes in the first year of the ramp rates. For example, the Seventh Plan prescribes the LO20Fast ramp rate for nonresidential lighting fixture replacements, which is the second fastest rate available. After reviewing Rocky Mountain Power recent-year accomplishments, this rate was accelerated to LO50Fast in Utah, the fastest available rate.

Given the timeframe of this request, PacifiCorp is unable to adjust the ramp rates for this IRP; however, PacifiCorp will work with stakeholders in the development of the next CPA. Please see PacifiCorp's response to Question 2 below for more details.

Question 3. Again, we request that the Company model a higher DSM sensitivity as part of the 2019 IRP process. By requesting this sensitivity, we are not advocating that our proposed higher DSM sensitivity be necessarily included in the preferred portfolio; rather we're requesting this sensitivity analysis be conducted so the possible additional risk-reduction benefits can be assessed and can inform the 2019 Action Plan. If the Company has concerns about running a sensitivity equal to 1.5% of retail sales UCE would be supportive of a sensitivity analysis that models a level of electricity savings equal to 1.25% of retail sales.

PacifiCorp Response:

Question 3.

PacifiCorp's third party consultant, AEG, has already accelerated DSM utilizing the Northwest Power and Conservation Council's Seventh Plan ramp rates. For example, all lost opportunity measures are accelerated by three years (starting in year-4 of the Seventh Plan), reflecting the fact that PacifiCorp's DSM programs are more mature than the Seventh Plan assumes in the first year of the ramp rates. Modeling a higher DSM bundle at this time would not be appropriate as the DSM potential has already been accelerated.

The table below re-creates *Table 3-2 Cumulative Class 2 DSM Potential by State in 2038* from Volume 2 of the 2019 CPA report for 2028, representing the first ten years of the study. During this timeframe, Technical Achievable potential for most states is within the 1.25% - 1.50% range as percent of baseline load. Potential in Idaho and Wyoming are lower due to their unique segmentation – large irrigation and industrial loads respectively. Even though lost-opportunity measures tend to save more in later years, nearly 63% of the Technical Achievable potential occurs in the first ten years. Additionally, almost 70% of the retrofit potential (4,104,907 megawatt hour (MWh) through 2028) occurs during the first ten years.

Cumulative Class 2 DSM Potential by State in **2028**

Territory	State	Baseline Loads (MWh)	Technical Potential (MWh)	Technical Achievable Potential (MWh)	Technical Potential (% of Baseline)	Technical Achievable Potential (% of Baseline)
Pacific Power	California	807,675	192,845	137,980	23.9 %	17.1%
	Washington	4,735,530	995,848	729,595	21.0%	15.4%
	Subtotal	5,543,205	1,188,693	867,575	21.4%	15.7%
Rocky Mountain Power	Idaho	2,526,137	429,472	315,099	17.0%	12.5%
	Utah	25,573,391	5,011,173	3,792,700	19.6%	14.8%
	Wyoming	10,226,909	1,399,341	1,067,880	13.7%	10.4%
	Subtotal	38,326,437	6,839,986	5,175,679	17.8%	13.5%
Total		43,869,643	8,028,679	6,043,254	18.3%	13.8%

Part 2 of request:

We reviewed your response to our request to use a “levelized cost of DSM (\$/kWh) that is based on a three-year weighted average of actual PacifiCorp DSM program costs from 2016, 2017, and 2018” in an additional high DSM sensitivity analysis.

PacifiCorp Response:

PacifiCorp has calculated the levelized cost of DSM as part of the 2019 CPA methodology, using PacifiCorp actual program data for utility spending. This methodology is part of Volume 4, Appendix G of the Draft 2019 CPA located on the 2019 IRP website at: www.pacificorp.com/es/dsm.html.

UCE’s follow-up response:

Appendix G reports the percentage spent by PacifiCorp on DSM administrative costs in the states that it serves and also reports the variation of first-year gross DSM costs between large/urban and small/rural areas. It is unclear how Appendix G is responsive to our question, and how the average costs from actual DSM program were utilized in the 2019 IRP planning process.

Question 3a. Please describe how you have incorporated actual utility DSM costs from 2016, 2017, and 2018 into the CPA , and therefore the 2019 IRP model, for Class 2 DSM. If this information is included in an appendix of the CPA, please provide a written explanation describing how the costs were utilized in addition to any references provided in the relevant appendix.

PacifiCorp Response:

Question 3a.

The CPA incorporates the actual costs to administer the program (non-incentive costs), which include portfolio costs, engineering costs, utility administration costs, program development costs, and program delivery costs. The analysis

* Required fields

incorporated actual costs from 2014 through 2016. Due to the timing of the development of PacifiCorp’s 2017 Annual Reports, results from that year were not able to be incorporated into the analysis.

The administrative cost analysis did not include a review of program incentives or measure incremental costs. Instead, PacifiCorp’s third party consultant, AEG, conducted a full measure review for all states to ensure that measure costs, which incentives are represented as a percentage of the measure cost, were updated for the CPA. As a standard assumption, incentives for most measures are set at 70% of the incremental measure cost. However, incentives for nonresidential lighting programs in all states were reduced to 50% of incremental cost, reflecting recent trends in utility programs. The updated measure costs and incentives were used to develop the supply curves for the 2019 IRP. The table below lists the source of the cost used in the IRP for energy efficiency measure and the corresponding state.

State	IRP Supply Curve Costs Assumption	State-level Cost-effectiveness Test
California	Incremental Measure Cost	TRC (primary), UTC
Oregon	Incremental Measure Cost	TRC
Washington	Incremental Measure Cost	PTRC
Idaho	Incentives	UCT (primary), TRC
Utah	Incentives	UCT
Wyoming	Incremental Measure Cost	TRC

Question 3b. Please provide the costs for Class 2 DSM used in the 2019 CPA on a levelized cost basis (\$/kWh) by state broken out by the following sectors: residential and commercial/industrial.

PacifiCorp Response:

Question 3b.

Please find levelized costs in dollars per MWh for the residential and combined commercial and industrial sectors for all states and cost bundles in the Supplemental Response at the end of this document. Note that these are presented without the IRP Energy Efficiency Credits applied, which were presented on August 30, 2018 in the 2019 IRP’s public input meeting presentation available at www.pacificorp.com/es/irp/pip.

Supplemental Response – Question 2b:

2019 CPA Levelized Costs for Residential Measures by State and Bundle BEFORE IRP Cost Adjustments

Sector	Bundle	2019 IRP - Residential Levelized Bundle Price BEFORE Adjustments (\$/MWh)				
		CA	ID	UT	WA	WY
Residential	<= 10	(69.98)	4.31	2.80	(58.63)	(60.20)
Residential	10 - 20	18.27	15.79	13.90	16.39	14.74
Residential	20 - 30	23.03	28.25	23.84	26.37	26.40
Residential	30 – 40	38.39	34.84	35.41	33.98	36.34
Residential	40 – 50	46.37	44.96	45.42	42.58	42.88

* Required fields

Sector	Bundle	2019 IRP - Residential Levelized Bundle Price BEFORE Adjustments (\$/MWh)				
		CA	ID	UT	WA	WY
Residential	50 - 60	54.25	54.49	56.61	54.60	55.86
Residential	60 – 70	64.73	63.53	65.14	62.10	61.48
Residential	70 – 80	74.66	76.84	75.14	75.62	77.53
Residential	80 – 90	86.44	85.23	84.02	86.88	82.94
Residential	90 – 100	93.03	91.90	92.00	99.66	97.13
Residential	100 – 110	104.75	105.09	106.33	101.85	106.01
Residential	110 – 120	118.25	115.99	116.92	115.29	116.45
Residential	120 – 130	123.07	126.08	126.25	121.62	123.58
Residential	130 – 140	136.37	138.67	134.79	135.75	136.66
Residential	140 – 150	143.84	143.85	143.75	145.04	141.92
Residential	150 - 160	159.10	157.44	156.17	154.12	151.61
Residential	160 – 170	168.15	164.70	166.24	160.96	165.86
Residential	170 – 180	175.33	175.57	176.65	177.25	177.64
Residential	180 – 190	185.45	182.35	184.06	184.08	184.26
Residential	190 – 200	199.40	198.31	193.74	193.91	196.03
Residential	200 – 250	234.30	209.71	221.33	224.46	236.79
Residential	250 – 300	282.00	284.56	267.04	275.91	263.58
Residential	300 – 400	329.46	356.67	325.85	325.55	337.60
Residential	400 – 500	428.75	465.28	437.38	433.84	437.34
Residential	500 – 750	627.12	683.74	609.86	579.51	581.96
Residential	750 – 1,000	926.10	850.49	809.42	877.21	901.98
Residential	> 1,000	2,736.64	2,671.87	4,085.10	2,381.37	2,299.14

2019 CPA Levelized Costs for Residential Measures by State and Bundle BEFORE IRP Cost Adjustments

Sector	Bundle	2019 IRP – C&I Levelized Bundle Price BEFORE Adjustments (\$/MWh)				
		CA	ID	UT	WA	WY
Residential	<= 10	(44.81)	2.29	1.08	(45.81)	(32.00)
Residential	10 - 20	15.53	14.47	15.58	16.09	15.37
Residential	20 - 30	24.38	23.78	25.90	24.81	25.73
Residential	30 – 40	33.77	34.32	35.78	33.54	35.82
Residential	40 – 50	43.87	43.98	43.78	44.53	44.63
Residential	50 - 60	55.74	54.76	53.19	54.87	55.03
Residential	60 – 70	65.66	63.95	65.63	64.23	65.68
Residential	70 – 80	76.85	75.98	75.31	73.64	73.83
Residential	80 – 90	82.09	85.33	84.76	85.89	85.34
Residential	90 – 100	94.61	95.38	95.43	94.98	95.00
Residential	100 – 110	105.15	105.14	104.60	105.43	107.59
Residential	110 – 120	114.10	113.36	113.08	116.01	115.63
Residential	120 – 130	124.92	127.37	124.83	125.01	125.34
Residential	130 – 140	135.46	133.99	134.07	135.30	136.57
Residential	140 – 150	145.26	145.22	144.36	144.56	144.97

* Required fields

Sector	Bundle	2019 IRP – C&I Levelized Bundle Price BEFORE Adjustments (\$/MWh)				
		CA	ID	UT	WA	WY
Residential	150 - 160	154.56	154.75	153.58	155.63	152.60
Residential	160 – 170	163.68	165.57	164.96	165.66	165.19
Residential	170 – 180	174.47	174.91	173.22	177.17	174.16
Residential	180 – 190	187.46	184.52	185.32	184.57	186.78
Residential	190 – 200	193.92	195.21	196.39	195.15	195.64
Residential	200 – 250	229.04	221.07	227.85	215.86	226.04
Residential	250 – 300	271.35	276.47	275.15	270.93	274.82
Residential	300 – 400	348.41	352.44	345.83	339.75	355.35
Residential	400 – 500	439.75	435.08	440.12	459.03	437.22
Residential	500 – 750	597.86	594.77	638.63	619.82	584.46
Residential	750 – 1,000	850.90	840.22	921.31	893.56	890.98
Residential	> 1,000	4,516.62	3,820.65	3,892.85	4,645.71	4,493.15

Please submit your completed Stakeholder Feedback Form via email to IRP@Pacifcorp.com

Thank you for participating.

* Required fields