



e-FILING REPORT COVER SHEET

COMPANY NAME: PacifiCorp d/b/a Pacific Power

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? No Yes If yes, submit a redacted public version (or a cover letter) by email. Submit the confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

Select report type: RE (Electric) RG (Gas) RW (Water) RT (Telecommunications)
 RO (Other, for example, industry safety information)

Did you previously file a similar report? No Yes, report docket number: RE 181

Report is required by: OAR 860-030-011

Statute

Order

Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)

Other

(For example, federal regulations, or requested by Staff)

Is this report associated with a specific docket/case? No Yes, docket number: UM 1893

List Key Words for this report. We use these to improve search results.

OAR 860-030-0011, 2020 Energy Efficiency Avoided Cost Report

Send the completed Cover Sheet and the Report in an email addressed to PUC.FilingCenter@state.or.us

Send confidential information, voluminous reports, or energy utility Results of Operations Reports to PUC Filing Center, PO Box 1088, Salem, OR 97308-1088 or by delivery service to 201 High Street SE Suite 100, Salem, OR 97301.



825 NE Multnomah, Suite 2000
Portland, Oregon 97232

October 15, 2020

VIA ELECTRONIC FILING


Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE, Suite 100
Salem, OR 97301-3398

RE: RE 181—PacifiCorp's 2020 Energy Efficiency Avoid Cost Report

In accordance with Oregon Administrative Rule 860-030-011(1), PacifiCorp d/b/a Pacific Power encloses for filing its 2020 Energy Efficiency Avoided Cost Report.

If you have questions about this filing, please contact Cathie Allen, Regulatory Affairs Manager, at (503) 813-5934.

Sincerely,



Etta Lockey
Vice President, Regulation

Energy Efficiency Avoided Cost Submission Template - Electric

Utility Name: **PacifiCorp**

Submission Date: **10/15/2020**

Instructions and Definitions

<> Please fill out this workbook completely and per the instructions and submit via electronic filing to docket UM 1893. Submissions are due October 15 of each year.

<> Inputs will be reviewed and approved by the OPUC before being sent to the Energy Trust of Oregon for use in Avoided Cost development

<> **Provide as much detail as possible when sourcing** data inputs, including the link to the source (if available), page number and table or graph number

This will increase the efficiency of this process and require less iteration during the OPUC review period

Required pages 1,2,3,4 refer to data presented in the most recently acknowledged IRP, IRP Update, or General Rate Case unless otherwise noted.

1) Global Inputs - IRP

<> Most components of the avoided costs are input into this tab including inflation/discount rates, line losses, risk reduction values, T&D deferral values, and generation deferral values

<> Identify the winter & summer peak periods for Transmission and Distribution. The Generation LOLP Map will be utilized for generation peak definitions.

<> If necessary, Energy Trust will work with each utility about sector definitions for T&D for which values to provide for Res, Com, and Ind

<> **Ensure that the dollar years of the data inputs match the source** - Energy Trust will inflate to the proper year

<> Please provide the values in the most recently acknowledged IRP

2) Forward Market Prices - IRP

<> Provide forward market price forecast by month for both high load hours and low load hours

<> Please provide the dollar amount of these prices that is associated with carbon costs (or %). If it is a dollar value, this is a subset of the total prices provided - The total forward market prices should be the FULL price, including carbon

<> **Indicate if the forecast is in nominal or real dollars (and what dollar year if real)**

<> Please provide the values in the most recently acknowledged IRP

3) LOLP - IRP

<> Input a 12x24 Loss of Load Probability heat map per the example in the worksheet

<> These will be potentially utilized in future iterations of avoided cost updates pending outcome of UM1893

<> Include heat maps for all days, weekdays only, and weekends only

<> Please provide the values in the most recently acknowledged IRP

4) RPS Compliance - IRP

<> Input RPS compliance costs by year

<> Please provide the values in the most recently acknowledged IRP

1a, 2a, 3a, 4a) Alternative Submissions

<> Use these worksheets to provide alternative values to the most recently acknowledged IRP values

<> Provide a rationale for submitting the alternative values in the box provided at the top of each alternative worksheet

<> If a second set of alternative values is submitted, simply copy the alt tabs necessary and rename to 1b, alt 2 in the tab name

Global Assumptions Inputs				SOURCING				
				Provide as much detail as possible with sourcing including a link. Ensure that dollar years listed here are the same as the source.				
Avoided Cost Element	Units	Value	Dollar Year	Source	Source Page #	Table # (if applicable)	Source Link or File Name	Source Notes
Inflation Rate	Percent	2.28%	N/A	PacifiCorp 2019 IRP	Vol. 1: pg. 179		https://www.pacifiCorp.com/content/dam/pacifiCorp/documents/en/pacifiCorp/energy/integrated-resource-plan/2019_IRP_Volume_1.pdf	Sep. 2018 forecast
Real Discount Rate	Percent	4.54%	N/A	PacifiCorp 2019 IRP	Vol. 1: pg. 179		https://www.pacifiCorp.com/content/dam/pacifiCorp/documents/en/pacifiCorp/energy/integrated-resource-plan/2019_IRP_Volume_1.pdf	Calculated from inflation and nominal discount rates
Regional Act Credit	Percent	10.00%	N/A					
Transmission Loss Factor	Percent	3.50%	N/A	PacifiCorp's most recent class-level line losses are from its 2018 Loss Study published in 2020.				
Distribution Loss Factor, Commercial	Percent	3.69%	N/A	2018 Loss Study, incremental to transmission losses. Reflects proportion of the class interconnected at each voltage level.				
Distribution Loss Factor, Industrial	Percent	3.20%	N/A	2018 Loss Study, incremental to transmission losses. Reflects proportion of the class interconnected at each voltage level.				
Distribution Loss Factor, Residential	Percent	4.46%	N/A	2018 Loss Study, incremental to transmission losses. Reflects proportion of the class interconnected at each voltage level.				
Risk Reduction Value	\$/MWh	\$4.02	2018	PacifiCorp 2019 IRP	Vol. 1: pg. 164		https://www.pacifiCorp.com/content/dam/pacifiCorp/documents/en/pacifiCorp/energy/integrated-resource-plan/2019_IRP_Volume_1.pdf	Nominal-levelized value from 2019 IRP is converted to real-levelized input. Risk reduction value for EE selections calculated using IRP models. The difference in present-value revenue requirement (PVR) between stochastic studies and deterministic studies with and without energy efficiency, divided by the net present value of the energy efficiency savings (MWh) yields the \$/MWh assumed value of stochastic risk reduction.
Transmission Deferral Credit	\$/kW-yr	\$4.16	2018	PacifiCorp 2019 IRP	Vol. 1: pg. 165	Table 6.8	https://www.pacifiCorp.com/content/dam/pacifiCorp/documents/en/pacifiCorp/energy/integrated-resource-plan/2019_IRP_Volume_1.pdf	Transmission capacity cost accounts for the cost, capacity, and carrying charges associated with planned transmission capacity increase projects.
Seasonal Capacity Split - Summer	Percent	48.46%	N/A	Analysis for 7/18/2019 RVOS Compliance Filing in UM-1910				
Seasonal Capacity Split - Winter	Percent	51.54%	N/A	Analysis for 7/18/2019 RVOS Compliance Filing in UM-1910				
Summer Peak Period Definition	Month/Day/Hour	Trans. 12x24 profile	N/A	Analysis for 7/18/2019 RVOS Compliance Filing in UM-1910				Day is intended to be weekday or weekend
Winter Peak Period Definition	Month/Day/Hour	Trans. 12x24 profile	N/A	Analysis for 7/18/2019 RVOS Compliance Filing in UM-1910				Day is intended to be weekday or weekend
Deficiency start year	Year	2018	N/A	2019 IRP Assumption: T&D EE credit applied from first year of study				
Distribution Deferral Credit	\$/kW-yr	\$9.20	2018	PacifiCorp 2019 IRP	Vol. 1: pg. 165	Table 6.8	https://www.pacifiCorp.com/content/dam/pacifiCorp/documents/en/pacifiCorp/energy/integrated-resource-plan/2019_IRP_Volume_1.pdf	Distribution capacity cost accounts for the cost, capacity, and carrying charges associated with planned distribution capacity increase projects, as well as current distribution utilization. Details were provided in the August 30-31, 2018 public input meeting, slide 32.
Seasonal Capacity Split - Summer	Percent	57.29%	N/A	Analysis for 7/18/2019 RVOS Compliance Filing in UM-1910				
Seasonal Capacity Split - Winter	Percent	42.71%	N/A	Analysis for 7/18/2019 RVOS Compliance Filing in UM-1910				
Summer Peak Period Definition	Month/Day/Hour	Dist. 12x24 profile	N/A	Analysis for 7/18/2019 RVOS Compliance Filing in UM-1910				Day is intended to be weekday or weekend
Winter Peak Period Definition	Month/Day/Hour	Dist. 12x24 profile	N/A	Analysis for 7/18/2019 RVOS Compliance Filing in UM-1910				Day is intended to be weekday or weekend
Deficiency start year	Year	2018	N/A	2019 IRP Assumption: T&D EE credit applied from first year of study				
Generation Capacity Credit	\$/kW-yr	\$83.76	2018	Simple Cycle Combustion Turbine, Frame F, 6500', Naughton Brownfield. 2019 IRP Supply Side Table, Table 6.2 on page 138	Vol. 1: pg. 138	6.2	https://www.pacifiCorp.com/content/dam/pacifiCorp/documents/en/pacifiCorp/energy/integrated-resource-plan/2019_IRP_Volume_1.pdf	
Seasonal Capacity Split - Summer	Percent	92.0%	N/A	2019 IRP LOLP Data, June - September events. Results are discussed in 2019 IRP Volume II, Appendix N.			http://www.pacifiCorp.com/content/dam/pacifiCorp/doc/Energy_Sources/Integrate_d_Resource_Plan/2017_IRP/2017_IRP_Vol_II/2017_IRP_Final.pdf	
Seasonal Capacity Split - Winter	Percent	8.0%	N/A	2019 IRP LOLP Data, October - May events				
Deficiency start year	Year	2026	N/A	From Standard QF AC effective 2020 08 26 (update following 2019 IRP acknowledgment), pg. 6.		6	https://www.pacificpower.net/content/dam/pacific_power/doc/About_Us/Rates_Regulation/Oregon/Approved_Tariffs/PURP_A_Power_Source_Agreement/Standard_Avoided_Cost_Rates_Avoided_Cost_Purchases_From_Eligible_Qualifying_Facilities.pdf	
RPS Compliance Cost	\$/MWh	see annual table	N/A					
Avoided RPS Compliance Obligation	%	see annual table	N/A					

6.92%

Forward Price Inputs

Real or Nominal?	Nominal
Dollar Year:	n/a
Carbon Prices Additive?	Embedded in Market Prices
Carbon Value Units (\$/MWH)	\$/Ton
Source and Pg #:	Sept. 2018 Medium Gas/Medium CO2 electricity market prices used in 2019 IRP. 2019 IRP Vol I, p. 180-182.
Source Link or File Name:	2019 IRP public data disk: \Assumptions + Inputs\Price Curve\MedGas_2025MCO2.10.09.18.xlsx
Source Notes:	Data for 2041+ escalated at inflation

NOTES:

Please provide notes as to how this value relates to forward market prices. It can be expressed as a percentage of forward market prices, a set \$/MWh, or \$/ton. **Please identify the units in the box to the left**

PacificCorp's 2019 IRP does not include a carbon emissions rate or cost on top of the market price for electricity.

Year	Date	HLH Total (\$/MWh)	LLH Total (\$/MWh)	HLH Carbon Cost (OR % of HLH Price that accounts for Carbon?)	LLH Carbon Cost (OR % of LLH Price that accounts for Carbon?)
2021	1/1/2021	31.40	25.25	-	-
2021	2/1/2021	27.14	23.62	-	-
2021	3/1/2021	23.52	20.29	-	-
2021	4/1/2021	21.23	14.58	-	-
2021	5/1/2021	20.39	12.43	-	-
2021	6/1/2021	20.50	12.10	-	-
2021	7/1/2021	43.51	24.66	-	-
2021	8/1/2021	47.72	29.30	-	-
2021	9/1/2021	43.40	28.22	-	-
2021	10/1/2021	24.02	22.98	-	-
2021	11/1/2021	27.87	24.55	-	-
2021	12/1/2021	30.93	26.45	-	-
2022	1/1/2022	34.22	27.69	-	-
2022	2/1/2022	31.81	27.30	-	-
2022	3/1/2022	28.49	23.70	-	-
2022	4/1/2022	26.80	21.04	-	-
2022	5/1/2022	24.88	17.63	-	-
2022	6/1/2022	23.35	14.20	-	-
2022	7/1/2022	44.92	27.49	-	-
2022	8/1/2022	49.94	32.36	-	-
2022	9/1/2022	45.74	32.49	-	-
2022	10/1/2022	29.44	26.76	-	-
2022	11/1/2022	32.00	27.94	-	-
2022	12/1/2022	33.68	29.68	-	-
2023	1/1/2023	36.82	29.76	-	-
2023	2/1/2023	36.44	30.48	-	-
2023	3/1/2023	33.08	26.80	-	-
2023	4/1/2023	32.57	29.76	-	-
2023	5/1/2023	29.18	22.83	-	-
2023	6/1/2023	26.37	17.26	-	-
2023	7/1/2023	46.58	29.82	-	-
2023	8/1/2023	51.92	34.76	-	-
2023	9/1/2023	47.76	34.01	-	-
2023	10/1/2023	34.98	30.53	-	-
2023	11/1/2023	36.32	32.50	-	-
2023	12/1/2023	38.31	32.96	-	-
2024	1/1/2024	41.90	33.70	-	-
2024	2/1/2024	41.08	32.78	-	-
2024	3/1/2024	35.47	29.58	-	-
2024	4/1/2024	34.49	28.79	-	-
2024	5/1/2024	31.37	25.85	-	-
2024	6/1/2024	30.27	19.28	-	-
2024	7/1/2024	51.29	32.90	-	-
2024	8/1/2024	59.01	39.94	-	-
2024	9/1/2024	57.81	40.58	-	-
2024	10/1/2024	42.76	35.54	-	-
2024	11/1/2024	38.08	31.23	-	-
2024	12/1/2024	42.72	34.40	-	-
2025	1/1/2025	45.26	41.83	9.93	9.93

NOTE: Dates continue on spreadsheet through 2070

RPS Compliance Inputs IRP

Real or Nominal?	Nominal
Dollar Year:	
Source and Pg #:	2019 IRP Vol. 1, pg. 253
Source Link or File Name:	https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2019_IRP_Volume_1.pdf
Source Notes:	Oregon RPS compliance is achieved through 2038 with the addition of new renewable resources and transmission in the 2019 IRP preferred portfolio. The 2019 IRP Preferred Portfolio does not include any renewable resources added for the purpose of RPS compliance. The cost-effective renewables in the portfolio are lower cost than non-RPS alternatives.

	RPS Compliance Cost (\$/MWh)	Avoided RPS Compliance Obligation (%)
2021	0	20%
2022	0	20%
2023	0	20%
2024	0	20%
2025	0	27%
2026	0	27%
2027	0	27%
2028	0	27%
2029	0	27%
2030	0	35%
2031	0	35%
2032	0	35%
2033	0	35%
2034	0	35%
2035	0	45%
2036	0	45%
2037	0	45%
2038	0	45%
2039		45%
2040		50%
2041		50%
2042		50%
2043		50%
2044		50%
2045		50%
2046		50%
2047		50%
2048		50%
2049		50%
2050		50%

	2019 IRP Med CO2	2019 IRP EE Risk Reduction Credit		Inflation
		Calculated by IRP models	Levelized values by year	
\$/ST	PAC Nom			
		\$4.74	\$4.02	100%
2018		\$4.74	\$4.11	102%
2019		\$4.74	\$4.20	105%
2020		\$4.74	\$4.30	107%
2021		\$4.74	\$4.39	109%
2022		\$4.74	\$4.49	112%
2023		\$4.74	\$4.60	114%
2024		\$4.74	\$4.70	117%
2025	9.93	\$4.74	\$4.81	120%
2026	11.15	\$4.74	\$4.92	122%
2027	12.54	\$4.74	\$5.03	125%
2028	14.09	\$4.74	\$5.15	128%
2029	15.85	\$4.74	\$5.26	131%
2030	17.83	\$4.74	\$5.38	134%
2031	20.06	\$4.74	\$5.51	137%
2032	22.58	\$4.74	\$5.63	140%
2033	25.41	\$4.74	\$5.76	143%
2034	28.59	\$4.74	\$5.89	147%
2035	32.14	\$4.74	\$6.02	150%
2036	36.13	\$4.74	\$6.16	153%
2037	40.66			
2038	45.76			
2039	51.49			
2040	57.94			
Nominal levelized 2017-2036		\$4.74	\$4.74	118%

Distribution 12x24 Weighting

		Dist. 12x24 profile																								
		Hour																								
Season	Monthly Weight	Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Winter	21%	1	0%	0%	0%	0%	0%	0%	6%	12%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Winter	7%	2	0%	0%	0%	0%	0%	0%	2%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Winter	0%	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	0%	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	0%	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	5%	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	37%	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	8%	10%	10%	7%	0%	0%	0%	0%	
Summer	15%	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	4%	4%	3%	0%	0%	0%	0%	
Summer	0%	9	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	0%	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Winter	3%	11	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Winter	13%	12	0%	0%	0%	0%	0%	0%	4%	7%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

Transmission 12x24 Weighting

		Trans. 12x24 profile																								
		Hour																								
Season	Monthly Weighting	Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Winter	25%	1	0%	0%	0%	0%	0%	0%	0%	9%	10%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Winter	8%	2	0%	0%	0%	0%	0%	0%	0%	6%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Winter	0%	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	0%	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	0%	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	1%	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	37%	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	7%	11%	12%	4%	0%	0%	0%	0%	0%	
Summer	11%	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	5%	4%	1%	0%	0%	0%	0%	0%	
Summer	0%	9	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Summer	0%	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Winter	3%	11	0%	0%	0%	0%	0%	0%	0%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Winter	15%	12	0%	0%	0%	0%	0%	0%	0%	3%	4%	1%	0%	0%	0%	0%	0%	0%	2%	3%	2%	0%	0%	0%	0%	