



e-FILING REPORT COVER SHEET

COMPANY NAME: Portland General Electric Company

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-182

Report is required by: OAR 860-030-0011

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.

Energy Efficiency Avoided Cost Submission

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.



Portland General Electric
121 SW Salmon Street · Portland, Ore. 97204

March 18, 2024

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

RE: UM 1893 – PGE’s Supplemental Energy Efficiency Avoided Cost Submission

Portland General Electric Company (PGE) submits this supplemental compliance filing under RE 182 pursuant to Oregon Administrative Rule (OAR) 860-030-0011. Please see the attached pages for PGE’s energy efficiency avoided cost submission.

PGE is submitting this supplemental filing, providing the interim avoided energy cost element in the workbook template. For the interim avoided energy cost PGE is using the avoided energy price value for a renewable Solar Qualified Facility. The renewable energy price is filed via Docket No. UM 1728, PGE’s avoided cost filing. The solar energy value is based on the following: proxy wind plant, minus the capacity value of that wind resource, minus the integration value of solar. The wind Effective Load Carrying Capability (ELCC) and capacity factor is a necessary input to calculate the capacity value of the wind resource. PGE needed these inputs for the requested interim avoided energy cost its updated standard rates for qualifying facilities that PGE is filing concurrently in Docket UM 1728 on March 18, 2024.

All previous values submitted in the workbook template on March 1, 2024 remain unchanged.

Please direct any questions or comments regarding this filing to Chris Pleasant at (503) 464-2555.

Please direct all formal correspondence and requests to the following email address pge.opuc.filings@pgn.com.

Sincerely,

\s\ Robert Macfarlane

Robert Macfarlane
Manager, Pricing & Tariffs

Enclosure
cc: Peter Kernan, OPUC

Energy Efficiency Avoided Cost Submission Template - Electric	
Utility Name:	PGE
Submission Date:	1-Mar-24
Instructions and Definitions	
<p><> Please fill out this workbook completely and per the instructions and submit via electronic filing to docket UM 1893. Submissions are due March 1, 2024</p> <p><> Inputs will be reviewed and approved by the OPUC before being sent to the Energy Trust of Oregon for use in Avoided Cost development</p> <p><> 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</p> <p style="padding-left: 40px;"><i>This will increase the efficiency of this process and require less iteration during the OPUC review period</i></p> <p><i>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</i></p>	
1) Global Inputs - IRP	
<p><> 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</p> <p><> Identify the winter & summer peak periods for Transmission and Distribution. The Generation LOLP Map will be utilized for generation peak definitions.</p> <p><> 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</p> <p><> Ensure that the dollar years of the data inputs match the source - Energy Trust will inflate to the proper year</p> <p><> Please provide the values in the most recently acknowledged IRP</p>	
2) Forward Market Prices - IRP	
<p><> Provide forward market price forecast by month for both high load hours and low load hours</p> <p><> 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</p> <p><> Indicate if the forecast is in nominal or real dollars (and what dollar year if real)</p> <p><> Please provide the values in the most recently acknowledged IRP</p>	
3) Forecast of Avoided Energy Costs - IRP	
<p><> Provide an avoided energy cost forecast by month for both high load hours and low load hours. Please also use the alternative data submission tab to provide data in a native format if that is preferred by the Company</p> <p><> Please provide the dollar amount of these costs that is associated with carbon costs (or %). If it is a dollar value, this is a subset of the total prices provided - The total avoided energy cost should be the FULL costs, including carbon</p> <p><> Indicate if the forecast is in nominal or real dollars (and what dollar year if real)</p> <p><> Please provide values found in analysis for the most recently acknowledged IRP</p> <p><> If the Company would like to propose alternative data for the avoided energy cost, please do so in the alternative tab. This includes, but is not limited to, if the Company would like to model a forward market price that includes quantity- and carbon-constraints</p>	
4) LOLP - IRP	
<p><> Input a 12x24 Loss of Load Probability heat map per the example in the worksheet</p> <p><> These will be potentially utilized in future iterations of avoided cost updates pending outcome of UM1893</p> <p><> Include heat maps for all days, weekdays only, and weekends only</p> <p><> Please provide the values in the most recently acknowledged IRP</p>	
5) RPS Compliance - IRP	
<p><> Input RPS compliance costs by year</p> <p><> Please provide the values in the most recently acknowledged IRP</p>	
1a, 2a, 3a, 4a, 5a) Alternative Submissions	
<p><> Use these worksheets to provide alternative values to the most recently acknowledged IRP values</p> <p><> Provide a rationale for submitting the alternative values in the box provided at the top of each alternative worksheet</p> <p><> 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</p>	

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	2.10%	N/A	2023 IRP - Appendix H Table 127				
Real Discount Rate	Percent	4.0%	N/A	Table 127. 2023 IRP long-term financial assumptions				=(1+Weighted after tax discount rate)/(1+inflation rate) - 1
Regional Act Credit	Percent	10.00%	N/A					
Transmission Loss Factor (Summer)	Percent	2.09%	N/A	BPA Open Access Transmission Tariff, Effective Date: October 1, 2023	137		https://www.bpa.gov/-/media/Aep/transmission/open-access-transmission-tariff/bpa-open-access-transmission-tariff-20231001.pdf	Real Power Loss factor for one segment of BPA transmission. This factor is for the losses external to PGE's system for avoided energy purchases, generation capacity, and risk value. This factor does not apply to the PGE Transmission in the Transmission Deferral Credit.
Transmission Loss Factor (Winter)	Percent	2.04%	N/A	BPA Open Access Transmission Tariff, Effective Date: October 1, 2023	137		https://www.bpa.gov/-/media/Aep/transmission/open-access-transmission-tariff/bpa-open-access-transmission-tariff-20231001.pdf	Real Power Loss factor for one segment of BPA transmission. This factor is for the losses external to PGE's system for avoided energy purchases, generation capacity, and risk value. This factor does not apply to the PGE Transmission in the Transmission Deferral Credit.
Distribution Loss Factor, Commercial	Percent	4.02%	N/A	2022 GRC (UE 394) Line Loss Study			Workpaper "LineLoss2022G	Internal loss factor for Commercial loads based on weighted average of primary and secondary losses from the 2015 GRC Line Loss Study.
Distribution Loss Factor, Industrial	Percent	1.96%	N/A	2022 GRC (UE 394) Line Loss Study	1		"2022 GRC loss report.pdf"	Internal loss factor from study for loads with subtransmission delivery voltage.
Distribution Loss Factor, Residential	Percent	4.20%	N/A	2022 GRC (UE 394) Line Loss Study	1		"2022 GRC loss report.pdf"	Internal loss factor for loads with secondary delivery voltage.
Risk Reduction Value	\$/MWh	\$3.00	2020	2019 IRP (not updated in 2023 IRP)			Workpaper "EE_RiskCalc_2019IRP	Risk reduction value calculated from 2019 IRP values.

Transmission Deferral Credit	\$/kW-yr	\$87.34		2024 GRC (UE 416) Transmission Marginal Costy Study			Workpaper "Ratesread_2024 GRC.xlsx	2024 GRC, most recently approved GRC filing. TransmissionDeferralCredit = (TransmissionRevReq/MarginalSystemPeak Growth)
Seasonal Capacity Split - Summer	Percent	50.00%	N/A	Per previous assumption.			Per previous assumption.	PGE analysis of month-hour average net system load
Seasonal Capacity Split - Winter	Percent	50.00%	N/A	Per previous assumption.			Per previous assumption.	PGE analysis of month-hour average net system load
Summer Peak Period Definition	Month/Day/Hour		N/A					Day is intended to be weekday or weekend
Winter Peak Period Definition	Month/Day/Hour		N/A					Day is intended to be weekday or weekend
Deficiency start year	Year	2026	N/A	2023 IRP				
Distribution Deferral Credit	\$/kW-yr	\$17.21					Workpaper "Ratesread_2024 GRC.xlsx	2024 GRC, most recently approved GRC filing. DistributionDeferralCredit = (SubtransmissionMarginalCostRevenues/SubtransmissionRateclassPeak)+(SubstationMarginalCostRevenues/SubstationRateclassPeak) Subtransmission MCOS - \$1.33/kW-year Substation MCOS - \$15.88/kW-year
Seasonal Capacity Split - Summer	Percent	50.00%	N/A	Per previous assumption.			Per previous assumption.	PGE analysis of month-hour average net system load
Seasonal Capacity Split - Winter	Percent	50.00%	N/A	Per previous assumption.			Per previous assumption.	PGE analysis of month-hour average net system load
Summer Peak Period Definition	Month/Day/Hour		N/A					Day is intended to be weekday or weekend
Winter Peak Period Definition	Month/Day/Hour		N/A					Day is intended to be weekday or weekend
Deficiency start year	Year	2026	N/A	2023 IRP				
Generation Capacity Credit	\$/kW-yr	\$228	2023	2023 IRP Update - New Resource Economics				2023 IRP - 2026 Update net cost of capacity.
Seasonal Capacity Split - Summer	Percent	50.00%	N/A	Per previous assumption.				This is the seasonal capacity split used by Staff in the December 2018 process. PGE may calculate an alternative seasonal capacity split for future filings, but did not for this filing.
Seasonal Capacity Split - Winter	Percent	50.00%	N/A	Per previous assumption.				This is the seasonal capacity split used by Staff in the December 2018 process. PGE may calculate an alternative seasonal capacity split for future filings, but did not for this filing.
Deficiency start year	Year	2026	N/A	2023 IRP				
RPS Compliance Cost	\$/MWh	\$ -	2020	2023 IRP		Page 293		IHB 2021 requires a larger renewable buildout than required by RPS. Thus, the RPS requirement is no longer binding. Thus, there is no avoided cost related to RPS compliance cost. With the introduction of HB2021, this value can be removed from avoided cost calculations.
Avoided RPS Compliance Obligation	%	0.00%	N/A					

Forward Price Inputs

Real or Nominal?	Nominal
Dollar Year:	2023
Carbon Prices Additive?	Embedded in Market Prices
Carbon Value Units (\$/MWh or \$/Ton)	\$/MWh
Source and Pg #:	Annual energy prices - LC 80 PGE's Response to OPUC DR 076 Attachment A Carbon data - Carbon data - "PGE_Internal_UseOnly_ELE_AECO_Carbon_2023IRPrevised_2021H2_033122TC_052322.xlsx"
Source Link or File Name:	LC 80_OPUC DR 076-Attach A.xlsx
Source Notes:	PNW Wholesale Electricity Prices, Nominal \$/MWh

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**

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?)	ANNUAL		ANNUAL
						Wholesale Market Energy HLH Total (\$/MWh)	Wholesale Market Energy LLH Total (\$/MWh)	Carbon emissions price (nominal CEC \$ per metric ton)
2022	1/1/2022	See annual values in column J.	See annual values in column K.	See annual values in column L.	See annual values in column L.	2022		
2022	2/1/2022					2023	\$ 45.99	42.949
2022	3/1/2022					2024	\$ 36.29	33.716
2022	4/1/2022					2025	\$ 33.62	31.016
2022	5/1/2022					2026	\$ 34.69	32.090
2022	6/1/2022					2027	\$ 31.66	29.334
2022	7/1/2022					2028	\$ 30.33	28.185
2022	8/1/2022					2029	\$ 29.64	28.025
2022	9/1/2022					2030	\$ 29.45	28.497
2022	10/1/2022					2031	\$ 29.54	28.427
2022	11/1/2022					2032	\$ 29.06	28.405
2022	12/1/2022					2033	\$ 29.48	29.661
2023	1/1/2023					2034	\$ 29.03	29.489
2023	2/1/2023					2035	\$ 30.08	30.406
2023	3/1/2023					2036	\$ 28.38	29.749
2023	4/1/2023					2037	\$ 29.68	30.542
2023	5/1/2023					2038	\$ 28.84	30.813
2023	6/1/2023					2039	\$ 29.31	31.075
2023	7/1/2023					2040	\$ 29.68	31.580
2023	8/1/2023					2041	\$ 31.31	32.915
2023	9/1/2023					2042	\$ 32.21	33.613
2023	10/1/2023					2043	\$ 32.34	34.618

Alternative Submissions	Rationale for alternative submission: <i>Provide an overall rationale for providing alternative values - use the 'Source Notes/Rationale' column to provide more detailed rational for individual inputs.</i>
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Global Assumptions Inputs				SOURCING				
				<i>Provide as much detail as possible with sourcing including a link. Ensure that dollar years listed here are the same as the source.</i>				
Avoided Cost Element	Units	Value	Dollar Year	Source	Source Page #	Table # (if applicable)	Source Link or File Name	Source Notes
Inflation Rate	Percent		N/A					
Real Discount Rate	Percent		N/A					
Regional Act Credit	Percent	10.00%	N/A					
Transmission Loss Factor	Percent		N/A					
Distribution Loss Factor, Commercial	Percent		N/A					
Distribution Loss Factor, Industrial	Percent		N/A					
Distribution Loss Factor, Residential	Percent		N/A					
Risk Reduction Value	\$/MWh							
Transmission Deferral Credit	\$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Summer Peak Period Definition	Month/Day/Hour		N/A					<i>Day is intended to be weekday or weekend</i>
Winter Peak Period Definition	Month/Day/Hour		N/A					<i>Day is intended to be weekday or weekend</i>
Deficiency start year	Year		N/A					
Distribution Deferral Credit	\$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Summer Peak Period Definition	Month/Day/Hour		N/A					<i>Day is intended to be weekday or weekend</i>
Winter Peak Period Definition	Month/Day/Hour		N/A					<i>Day is intended to be weekday or weekend</i>
Deficiency start year	Year		N/A					
Generation Capacity Credit	\$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Deficiency start year	Year		N/A					
RPS Compliance Cost	\$/MWh							
Avoided RPS Compliance Obligation	%		N/A					

Avoided Energy Cost Inputs

Real or Nominal?	Nominal
Dollar Year:	
Carbon Prices Additive?	
Carbon Value Units (\$/MWh)	\$/MWh
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

NOTES:
 Please provide notes as to how this value relates to avoided energy cost. It can be expressed as a percentage of

Year	Date	Monthly	Monthly	Monthly	Monthly
		Avoided Energy Cost HLH Total (\$/MWh)	Avoided Energy Cost LLH Total (\$/MWh)	HLH	LLH
2024	1/1/2024	-	-	HLH	LLH
2024	2/1/2024	-	-	Carbon	Carbon
2024	3/1/2024	-	-	Cost	Cost
2024	4/1/2024	-	-	(OR % of HLH Price	(OR % of LLH Price
2024	5/1/2024	54.76	38.93	that	that
2024	6/1/2024	70.07	40.97	accounts	accounts
2024	7/1/2024	147.15	62.41	for	for
2024	8/1/2024	205.35	81.81	Carbon?)	Carbon?)
2024	9/1/2024	155.32	70.58		
2024	10/1/2024	79.77	65.48		
2024	11/1/2024	95.08	76.71		
2024	12/1/2024	136.94	106.31		
2025	1/1/2025	140.45	110.32		
2025	2/1/2025	118.77	96.35		
2025	3/1/2025	82.74	63.14		
2025	4/1/2025	64.10	62.03		
2025	5/1/2025	53.53	39.65		
2025	6/1/2025	55.61	34.85		
2025	7/1/2025	140.61	65.38		
2025	8/1/2025	181.74	87.65		
2025	9/1/2025	146.77	75.17		
2025	10/1/2025	89.26	74.17		
2025	11/1/2025	99.63	82.46		
2025	12/1/2025	116.76	101.43		
2026	1/1/2026	22.95	17.52		
2026	2/1/2026	19.04	15.01		
2026	3/1/2026	12.56	9.03		
2026	4/1/2026	9.20	8.83		
2026	5/1/2026	7.30	4.80		

Loss of Load Probability Heat Map Input

NOTE: This is utilized for generation deferrals only.

Source and page #: 2023 IRP Updated Analysis

Source Link or File Name: 2026_LOLPHeatmap_.xlsx

Source Notes: Attached are the 12x24 LOLP heatmaps requested for 2026, both combined and broken apart for weekend and weekday

WEEKDAYS & WEEKENDS

Count	31	28	31	30	31	30	31	31	30	31	30	31
Hr Ending	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.04%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.06%
2	0.03%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.04%
3	0.02%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.04%
4	0.03%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%
5	0.03%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.06%
6	0.06%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%	0.00%	0.01%	0.13%
7	0.39%	0.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%	0.00%	0.13%	0.97%
8	0.67%	0.20%	0.00%	0.00%	0.00%	0.02%	0.00%	0.01%	0.00%	0.00%	0.21%	1.46%
9	0.71%	0.17%	0.00%	0.00%	0.00%	0.03%	0.00%	0.03%	0.00%	0.00%	0.22%	1.53%
10	0.66%	0.15%	0.00%	0.00%	0.00%	0.04%	0.01%	0.06%	0.00%	0.00%	0.20%	1.45%
11	0.68%	0.15%	0.00%	0.00%	0.00%	0.05%	0.06%	0.16%	0.00%	0.00%	0.20%	1.46%
12	0.67%	0.15%	0.00%	0.00%	0.00%	0.07%	0.21%	0.46%	0.01%	0.00%	0.22%	1.46%
13	0.66%	0.14%	0.00%	0.00%	0.00%	0.09%	0.52%	0.87%	0.01%	0.00%	0.21%	1.43%
14	0.64%	0.13%	0.00%	0.00%	0.00%	0.14%	0.83%	1.40%	0.04%	0.00%	0.20%	1.34%
15	0.66%	0.14%	0.00%	0.00%	0.00%	0.18%	1.09%	1.95%	0.09%	0.00%	0.22%	1.42%
16	0.82%	0.17%	0.00%	0.00%	0.00%	0.20%	1.23%	2.49%	0.19%	0.00%	0.37%	2.00%
17	0.94%	0.21%	0.00%	0.00%	0.00%	0.23%	1.40%	2.97%	0.25%	0.00%	0.45%	2.24%
18	1.00%	0.24%	0.00%	0.00%	0.00%	0.23%	1.39%	3.17%	0.30%	0.00%	0.46%	2.35%
19	1.02%	0.26%	0.00%	0.00%	0.00%	0.27%	1.62%	4.54%	0.49%	0.00%	0.48%	2.44%
20	1.06%	0.28%	0.01%	0.00%	0.00%	0.35%	2.20%	5.19%	0.52%	0.00%	0.55%	2.54%
21	1.08%	0.30%	0.00%	0.00%	0.00%	0.33%	1.97%	4.58%	0.43%	0.00%	0.58%	2.59%
22	1.01%	0.26%	0.00%	0.00%	0.00%	0.17%	0.47%	1.63%	0.12%	0.00%	0.53%	2.42%
23	0.27%	0.08%	0.00%	0.00%	0.00%	0.08%	0.03%	0.35%	0.01%	0.00%	0.17%	0.45%
24	0.09%	0.03%	0.00%	0.00%	0.00%	0.02%	0.00%	0.04%	0.00%	0.00%	0.02%	0.12%

100%

WEEKDAYS ONLY

Count	31	28	31	30	31	30	31	31	30	31	30	31
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.03%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%
2	0.02%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.04%
3	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.04%
4	0.02%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%
5	0.03%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%
6	0.05%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%	0.00%	0.01%	0.13%
7	0.39%	0.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%	0.00%	0.14%	0.99%
8	0.68%	0.21%	0.00%	0.00%	0.00%	0.02%	0.00%	0.01%	0.00%	0.00%	0.23%	1.50%
9	0.72%	0.17%	0.00%	0.00%	0.00%	0.03%	0.00%	0.03%	0.00%	0.00%	0.24%	1.56%
10	0.66%	0.15%	0.00%	0.00%	0.00%	0.04%	0.01%	0.07%	0.00%	0.00%	0.21%	1.48%
11	0.68%	0.15%	0.00%	0.00%	0.00%	0.05%	0.06%	0.17%	0.00%	0.00%	0.21%	1.48%
12	0.66%	0.15%	0.00%	0.00%	0.00%	0.06%	0.22%	0.50%	0.01%	0.00%	0.23%	1.47%
13	0.65%	0.14%	0.00%	0.00%	0.00%	0.07%	0.56%	0.93%	0.02%	0.00%	0.22%	1.43%
14	0.63%	0.14%	0.00%	0.00%	0.00%	0.11%	0.89%	1.49%	0.04%	0.00%	0.21%	1.35%
15	0.65%	0.15%	0.00%	0.00%	0.00%	0.14%	1.15%	2.07%	0.10%	0.00%	0.23%	1.44%
16	0.81%	0.18%	0.00%	0.00%	0.00%	0.15%	1.28%	2.60%	0.20%	0.00%	0.39%	1.97%
17	0.93%	0.21%	0.00%	0.00%	0.00%	0.17%	1.45%	3.10%	0.26%	0.00%	0.47%	2.19%
18	0.98%	0.24%	0.00%	0.00%	0.00%	0.17%	1.42%	3.25%	0.30%	0.00%	0.48%	2.29%
19	1.00%	0.26%	0.00%	0.00%	0.00%	0.19%	1.62%	4.47%	0.49%	0.00%	0.50%	2.38%
20	1.04%	0.28%	0.01%	0.00%	0.00%	0.26%	2.13%	5.04%	0.52%	0.00%	0.57%	2.47%
21	1.07%	0.31%	0.00%	0.00%	0.00%	0.25%	1.98%	4.59%	0.44%	0.00%	0.60%	2.55%
22	1.00%	0.27%	0.00%	0.00%	0.00%	0.09%	0.48%	1.71%	0.13%	0.00%	0.55%	2.36%
23	0.26%	0.08%	0.00%	0.00%	0.00%	0.01%	0.03%	0.37%	0.01%	0.00%	0.18%	0.42%
24	0.07%	0.02%	0.00%	0.00%	0.00%	0.01%	0.00%	0.04%	0.00%	0.00%	0.02%	0.10%

92.6%

WEEKENDS ONLY

Count	31	28	31	30	31	30	31	31	30	31	30	31
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.22%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.19%
2	0.17%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.11%
3	0.08%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.04%
4	0.12%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.08%
5	0.09%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.12%
6	0.17%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.14%
7	0.40%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.70%
8	0.54%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.04%	1.05%
9	0.66%	0.09%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.04%	1.15%
10	0.70%	0.09%	0.00%	0.00%	0.00%	0.03%	0.00%	0.00%	0.00%	0.00%	0.06%	1.12%
11	0.72%	0.12%	0.00%	0.00%	0.00%	0.06%	0.01%	0.02%	0.00%	0.00%	0.06%	1.20%
12	0.75%	0.11%	0.00%	0.00%	0.00%	0.20%	0.03%	0.02%	0.00%	0.00%	0.04%	1.38%
13	0.78%	0.07%	0.00%	0.00%	0.00%	0.28%	0.04%	0.09%	0.00%	0.00%	0.03%	1.40%
14	0.77%	0.07%	0.00%	0.00%	0.00%	0.48%	0.16%	0.20%	0.00%	0.00%	0.06%	1.13%
15	0.78%	0.09%	0.00%	0.00%	0.00%	0.75%	0.36%	0.56%	0.01%	0.00%	0.07%	1.21%
16	0.92%	0.11%	0.00%	0.00%	0.00%	0.83%	0.60%	1.03%	0.06%	0.00%	0.12%	2.39%
17	1.10%	0.16%	0.00%	0.00%	0.00%	0.95%	0.78%	1.36%	0.09%	0.00%	0.19%	2.79%
18	1.26%	0.18%	0.00%	0.00%	0.00%	1.09%	1.02%	2.15%	0.24%	0.00%	0.20%	3.10%
19	1.27%	0.23%	0.00%	0.00%	0.00%	1.22%	1.70%	5.48%	0.58%	0.00%	0.24%	3.17%
20	1.32%	0.26%	0.00%	0.00%	0.00%	1.48%	3.03%	7.18%	0.57%	0.00%	0.28%	3.37%
21	1.30%	0.27%	0.00%	0.00%	0.00%	1.33%	1.85%	4.56%	0.23%	0.00%	0.24%	3.16%
22	1.13%	0.20%	0.00%	0.00%	0.00%	1.17%	0.30%	0.57%	0.03%	0.00%	0.22%	3.11%
23	0.47%	0.07%	0.00%	0.00%	0.00%	0.95%	0.00%	0.04%	0.00%	0.00%	0.03%	0.81%
24	0.31%	0.11%	0.00%	0.00%	0.00%	0.20%	0.00%	0.03%	0.00%	0.00%	0.03%	0.38%

7.4%

RPS Compliance Inputs IRP

Real or Nominal?	Real
Dollar Year:	2023
Source and Pg #:	2023 CEP/IRP, Chapter 10, pg. 249-250. Figures 75 & 76
Source Link or File Name:	https://edocs.puc.state.or.us/efdocs/HAA/lc80haa8431.pdf
Source Notes:	2023 CEP/IRP, there is no incremental cost of PNW wind resources net of capacity and energy value

	RPS Compliance Cost (\$/MWh)	Avoided RPS Compliance Obligation (%)
2022	\$ -	20.00%
2023	\$ -	20.00%
2024	\$ -	20.00%
2025	\$ -	27.00%
2026	\$ -	27.00%
2027	\$ -	27.00%
2028	\$ -	27.00%
2029	\$ -	27.00%
2030	\$ -	35.00%
2031	\$ -	35.00%
2032	\$ -	35.00%
2033	\$ -	35.00%
2034	\$ -	35.00%
2035	\$ -	45.00%
2036	\$ -	45.00%
2037	\$ -	45.00%
2038	\$ -	45.00%
2039	\$ -	45.00%
2040	\$ -	50.00%
2041	\$ -	50.00%
2042	\$ -	50.00%
2043	\$ -	50.00%
2044	\$ -	50.00%
2045	\$ -	50.00%
2046	\$ -	50.00%
2047	\$ -	50.00%
2048	\$ -	50.00%
2049	\$ -	50.00%
2050	\$ -	50.00%

Alternative Submissions	Rationale for alternative submission: <i>Provide an overall rationale for providing alternative values in this box</i>
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Forward Price Inputs

Real or Nominal?
Dollar Year:
Carbon Prices Additive?
Carbon Value Units (\$/MWh or \$/Ton)
Source and Pg #:
Source Link or File Name:
Source Notes:

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**

Year	Date	HLH Total (\$/MWh)	LLH Total (\$/MWh)	HLH Carbon Cost (\$/MWh) (OR % of HLH Price that accounts for Carbon?)	LLH Carbon Cost (\$/MWh) (OR % of LLH Price that accounts for Carbon?)
2022	1/1/2022				
2022	2/1/2022				
2022	3/1/2022				
2022	4/1/2022				
2022	5/1/2022				
2022	6/1/2022				
2022	7/1/2022				
2022	8/1/2022				
2022	9/1/2022				
2022	10/1/2022				
2022	11/1/2022				
2022	12/1/2022				
2023	1/1/2023				
2023	2/1/2023				
2023	3/1/2023				
2023	4/1/2023				
2023	5/1/2023				
2023	6/1/2023				
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2023	9/1/2023				
2023	10/1/2023				
2023	11/1/2023				
2023	12/1/2023				
2024	1/1/2024				
2024	2/1/2024				

2024	3/1/2024
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2060	3/1/2060
2060	4/1/2060
2060	5/1/2060
2060	6/1/2060
2060	7/1/2060
2060	8/1/2060
2060	9/1/2060
2060	10/1/2060
2060	11/1/2060
2060	12/1/2060
2061	1/1/2061
2061	2/1/2061
2061	3/1/2061
2061	4/1/2061
2061	5/1/2061
2061	6/1/2061
2061	7/1/2061
2061	8/1/2061
2061	9/1/2061
2061	10/1/2061
2061	11/1/2061
2061	12/1/2061
2062	1/1/2062
2062	2/1/2062
2062	3/1/2062
2062	4/1/2062
2062	5/1/2062
2062	6/1/2062
2062	7/1/2062
2062	8/1/2062
2062	9/1/2062
2062	10/1/2062
2062	11/1/2062
2062	12/1/2062
2063	1/1/2063
2063	2/1/2063
2063	3/1/2063
2063	4/1/2063

2063	5/1/2063
2063	6/1/2063
2063	7/1/2063
2063	8/1/2063
2063	9/1/2063
2063	10/1/2063
2063	11/1/2063
2063	12/1/2063
2064	1/1/2064
2064	2/1/2064
2064	3/1/2064
2064	4/1/2064
2064	5/1/2064
2064	6/1/2064
2064	7/1/2064
2064	8/1/2064
2064	9/1/2064
2064	10/1/2064
2064	11/1/2064
2064	12/1/2064
2065	1/1/2065
2065	2/1/2065
2065	3/1/2065
2065	4/1/2065
2065	5/1/2065
2065	6/1/2065
2065	7/1/2065
2065	8/1/2065
2065	9/1/2065
2065	10/1/2065
2065	11/1/2065
2065	12/1/2065
2066	1/1/2066
2066	2/1/2066
2066	3/1/2066
2066	4/1/2066
2066	5/1/2066
2066	6/1/2066
2066	7/1/2066
2066	8/1/2066
2066	9/1/2066
2066	10/1/2066
2066	11/1/2066
2066	12/1/2066
2067	1/1/2067
2067	2/1/2067
2067	3/1/2067

2067	4/1/2067
2067	5/1/2067
2067	6/1/2067
2067	7/1/2067
2067	8/1/2067
2067	9/1/2067
2067	10/1/2067
2067	11/1/2067
2067	12/1/2067
2068	1/1/2068
2068	2/1/2068
2068	3/1/2068
2068	4/1/2068
2068	5/1/2068
2068	6/1/2068
2068	7/1/2068
2068	8/1/2068
2068	9/1/2068
2068	10/1/2068
2068	11/1/2068
2068	12/1/2068
2069	1/1/2069
2069	2/1/2069
2069	3/1/2069
2069	4/1/2069
2069	5/1/2069
2069	6/1/2069
2069	7/1/2069
2069	8/1/2069
2069	9/1/2069
2069	10/1/2069
2069	11/1/2069
2069	12/1/2069
2070	1/1/2070
2070	2/1/2070
2070	3/1/2070
2070	4/1/2070
2070	5/1/2070
2070	6/1/2070
2070	7/1/2070
2070	8/1/2070
2070	9/1/2070
2070	10/1/2070
2070	11/1/2070
2070	12/1/2070

Alternative Submissions	Rationale for alternative submission: <i>Provide an overall rationale for providing alternative values in this box</i>
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Avoided Energy Cost Inputs

Real or Nominal?	
Dollar Year:	
Carbon Prices Additive?	
Carbon Value Units (\$/MWh or \$/Ton)	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

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**

Year	Date	Monthly	Monthly	Monthly	Monthly
		Avoided Energy Cost HLH Total (\$/MWh)	Avoided Energy Cost 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?)
2022	1/1/2022				
2022	2/1/2022				
2022	3/1/2022				
2022	4/1/2022				
2022	5/1/2022				
2022	6/1/2022				
2022	7/1/2022				
2022	8/1/2022				
2022	9/1/2022				
2022	10/1/2022				
2022	11/1/2022				
2022	12/1/2022				
2023	1/1/2023				
2023	2/1/2023				
2023	3/1/2023				
2023	4/1/2023				
2023	5/1/2023				
2023	6/1/2023				
2023	7/1/2023				
2023	8/1/2023				
2023	9/1/2023				
2023	10/1/2023				
2023	11/1/2023				
2023	12/1/2023				
2024	1/1/2024				
2024	2/1/2024				
2024	3/1/2024				
2024	4/1/2024				
2024	5/1/2024				
2024	6/1/2024				
2024	7/1/2024				
2024	8/1/2024				
2024	9/1/2024				
2024	10/1/2024				
2024	11/1/2024				
2024	12/1/2024				

Alternative Submissions	Rationale for alternative submission: <i>Provide an overall rationale for providing alternative values in this box</i>
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RPS Compliance Inputs IRP

Real or Nominal?	
Dollar Year:	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

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