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Erin E. Apperson
Assistant General Counsel

February 5, 2021

Public Utility Commission of Oregon
Attention: Filing Center
P.O. Box 1088
Salem, OR 97308-1088

Re: LC 73 – Portland General Electric Company’s 2019 IRP Update – Supplemental Filing

Dear Filing Center:

Enclosed for filing today in the above-referenced docket is Portland General Electric Company's 2019 IRP Update Supplemental Filing.

Thank you in advance for your assistance.

Sincerely,

A handwritten signature in blue ink, appearing to read "Erin Apperson", with a long horizontal flourish extending to the right.

Erin E. Apperson
Assistant General Counsel

EEA: al

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
DOCKET NO. LC 73**

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY

2019 Integrated Resource Plan.

**PORTLAND GENERAL ELECTRIC
COMPANY'S**

SUPPLEMENTAL FILING

In accordance with the administrative law judge's (ALJ) February 1, 2021 Memorandum, Portland General Electric Company (PGE) submits this supplemental filing. This filing includes information about the items from the 2019 IRP Update that will be included in PGE's May 1 filing, as well as the estimated impact of these updates to the avoided cost prices solely based on the 2019 IRP Update.

Dated this 5th day of February, 2021.

Respectfully submitted,



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LC 73 PORTLAND GENERAL ELECTRIC COMPANY'S
2019 IRP UPDATE

Supplemental Filing – FEBRUARY 2021

1. 2019 IRP Update Inputs to the May 1, 2021 Avoided Cost Filing

PGE has requested that the Commission acknowledge the 2019 IRP Update so that the updated inputs may be incorporated into the May 1 avoided cost update filing, consistent with OAR 860-029-0085(4)(D). Incorporating updated information from PGE's IRP Update in its avoided cost calculation will result in more accurate avoided cost prices and adhere to the customer-indifference standard.

In this supplemental filing, PGE provides information about the items from the IRP Update that will be included in the May 1 avoided cost filing, including: (1) updated effective load carrying capability (ELCC) values; (2) updated simple-cycle combustion turbine net energy value; (3) updated interconnection costs; and (4) updated combined-cycle combustion turbine annual generation and starts. This supplemental filing also includes an estimate of how these specific changes impact current avoided cost prices.

Note that the May 1 filing will also incorporate the required annual updates to natural gas prices, on- and off-peak electricity market prices, and changes to Production Tax Credits (PTCs).¹ The natural gas and electricity prices incorporated in the May 1 filing will be based on then-current market curves, not on the IRP Update, and are therefore not yet determined. The updated PTC information is included in the IRP Update (see Section 2.4.2), but it does not impact avoided cost prices because the May and December 2020 changes to PTC eligibility fall outside of the years used to calculate avoided costs. The PTC is a factor that may be updated in the May 1 filing without IRP acknowledgement.²

1.1. Updated ELCC Values

The updated ELCC values that will be included in the May 1 filing are discussed in Section 5.3 of the IRP Update and provided in tabular format in Appendix D. The information was also shared with participants during Roundtable 20-7 on November 18, 2020. The values reflect a more up-to-date view of the portfolio as discussed in Section 3.3 of the IRP Update, including PGE's green energy affinity rider (GEAR) initial offering and executed QF contracts.

Table 1 below provides a specific comparison of the values in the current avoided cost workbook³ to those from the IRP Update.

¹ OAR 860-029-0085(4).

² OAR 860-029-0085(4)(C).

³ See: Docket No. UM 1728 – PGE Updates to Schedule 201, Order No. 20-171 at 1. Prices Effective on May 20, 2020.

Table 1. Marginal ELCC Values

Resource	Current Avoided Cost	2019 IRP Update
Gorge Wind	28.6%	25.0%
Solar	15.8%	5.5%
SCCT	99.7%	95.5%

As discussed on page 48 of the IRP Update, the decline in the marginal ELCC value for solar is primarily due to approximately 200 MW of additional solar resource in the Baseline Portfolio since the analysis for the 2019 IRP.

The avoided cost worksheets contain a levelized cost of capacity calculation. In the May 1 filing, this calculation will be updated to account for the SCCT ELCC value, which aligns with IRP Update Sections 5.3 and 5.4.

1.2. Updated Simple-cycle Combustion Turbine Net Energy Value

The May 1 filing will include an updated simple-cycle combustion turbine (SCCT) net energy value resulting from updates to inputs as described in Section 4 of the IRP Update, the resulting updated forecasts of electricity prices and corresponding SCCT dispatch. The decrease in net energy value is driven primarily by lower forecasted electricity prices relative to the last IRP and corresponding resource dispatch. The value is provided in Appendix F of the IRP Update. **Table 2** shows the value in the current avoided cost workbook and the updated value.

Table 2. SCCT Net Energy Revenue, \$/kW-yr, 2020\$

	Current Avoided Cost	2019 IRP Update
Net Energy Revenue	0.49	0.39

1.3. Updated Interconnection Cost

As shared during Roundtable 20-7, the resource costs in the IRP Update were updated to reflect the interconnection costs already included in the current avoided cost pricing.⁴ There were also minor updates to more accurately capture actual inflation from 2013-2018 and the assumptions for the 10-year Treasury Note interest rates. These are discussed in Section 5.1 of the IRP Update, and the consumer price index and interest rate tables are provided in Appendix F. These updates have a minimal impact on avoided cost rates.

1.4. Updated Combined-cycle Combustion Turbine Annual Generation and Starts

The May 1 filing will include updated values for the CCCT annual starts and generation based on the dispatch from the IRP Update modeling. This only impacts non-renewable avoided cost prices. **Table 3** provides the values from the current avoided cost workbook and the updated values.

⁴ See: Docket UM 1728, PGE's Corrected Application to Update Schedule 201 Qualifying Facility Information (filed April 24, 2020), (incorporating interconnection costs for the proxy resource in avoided cost calculations because interconnection costs were not included in the overnight capital cost estimates for the 2019 IRP).

Table 3. CCCT Annual Starts and Generation

Year	Current Avoided Cost Starts	2019 IRP Update Starts	Current Avoided Cost MWh	2019 IRP Update MWh
2021	1	3	4,145,920	4,126,399
2022	6	13	4,038,650	3,407,949
2023	6	22	4,071,873	3,313,638
2024	8	15	4,018,119	3,263,926
2025	6	17	4,087,148	3,175,612
2026	11	19	3,923,606	3,136,757
2027	13	19	3,936,812	3,058,519
2028	15	21	3,902,587	3,199,057
2029	13	23	3,934,846	3,258,921
2030	17	19	3,794,664	3,258,413
2031	13	24	3,902,151	3,373,548
2032	15	22	3,851,538	3,311,742
2033	7	25	4,047,181	3,328,775
2034	14	20	3,895,479	3,309,401
2035	11	20	3,935,407	3,417,767
2036	17	19	3,821,849	3,312,976
2037	16	25	3,856,205	3,376,099
2038	28	23	3,696,695	3,258,569
2039	22	33	3,718,745	3,266,665
2040	28	22	3,685,248	3,222,860
2041	23	24	3,702,363	3,261,914
2042	22	26	3,622,318	3,183,691
2043	24	26	3,683,692	3,266,131
2044	27	23	3,681,951	3,165,408
2045	24	28	3,686,326	3,206,541
2046	25	23	3,557,308	3,195,711
2047	20	23	3,713,106	3,286,135
2048	22	18	3,675,181	3,252,973
2049	20	22	3,732,480	3,234,236
2050	22	28	3,697,703	3,252,394

1.5. Initial Estimated Avoided Cost Impact Based Only on IRP Update

Table 4 provides an initial estimate of the approximate change to the levelized avoided cost payments (2024 COD, 15-year term) from the IRP Update inputs as compared to the current rates.⁵ As discussed above, these estimates do not include the impacts from other inputs to the May 1 filing including updated market prices for natural gas and on- and off-peak electricity prices. The updated natural gas prices and on- and off-peak electricity market prices will be based on then-current market curves, not the IRP Update, and are not yet determined. Therefore, the estimated changes to avoided cost pricing shown here are for informational purposes only and do not reflect the actual change in prices that will be included in the May 1 filing. It should be noted that the market prices for natural gas and on- and off-peak electricity that will be included in the May 1 filing could materially impact the estimated changes identified below.

Table 4. Initial Estimated Change to Avoided Cost Pricing from 2019 IRP Update

Resource	Standard	Renewable
Base Load	2%	2%
Wind	-2%	0%
Solar	-17%	-9%

2. Inputs Unchanged in the IRP Update

Some key inputs to avoided cost prices were not changed in the IRP Update. One such input is the supply-side resource costs. PGE notes that while the IRP Update did not include an update to supply-side resource costs, draft information in development for the 2022 IRP indicates price declines for wind and solar relative to the 2019 IRP. However, these costs were not revised in the IRP Update, and, consistent with the IRP Update, the May 1 avoided cost update will not include changes to the supply-side resource costs.

As another example, PGE did not change the financial parameters in the IRP Update. As described in Section 5.2 of the IRP Update, PGE did not update these parameters to avoid having the short-term economic outlook overly influence long-term forecasts of the financial environment. Therefore, the May 1 avoided cost update will not include lower projected interest and inflation rates. Had PGE updated either or both inputs, its projected avoided cost prices would be lower. PGE notes this to underscore that it is not updating select inputs to its IRP Update, but rather available inputs with known and measurable changes.

⁵ These are only initial estimates, and the inputs are subject to Commission acknowledgment of the IRP Update.