



April 8, 2024

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

RE: UM 1728 Supplemental Application to Update Schedule 201 Qualifying Facility Information

Pursuant to Oregon Administrative Rule (OAR) 860-029-0085 and Oregon Revised Statute (ORS) 758.525, Portland General Electric Company (PGE) submits this supplemental filing to revise its Schedule 201, Qualifying Facility Avoided Cost Power Purchase Information for Qualifying Facilities (QFs) 10 MW or Less, Sheet Nos. 201-1 through 201-31.

PGE initially filed the Schedule 201, QF Avoided Cost Power Purchase Information on March 18, 2024. PGE submitted a Supplemental filing on March 25, 2024, to provide a corrected Schedule 201. The Schedule 201 provided in PGE’s initial filing contained the capacity contributions and Resource Sufficiency and Deficiency Periods from PGE’s 2019 IRP Update and not the values from the recently acknowledged 2023 IRP. PGE corrected this oversight and provided the updated values in Schedule 201.

PGE is submitting this Supplemental filing to update the Effective Load Carrying Capability (ELCC) values. The ELCC values provided in PGE’s initial filing did not appropriately model the Grant Public Utility District contract extension which increased PGE’s share of the output from Priest Rapids and Wanapum hydro projects. The contract extension was discussed in in the LC 80 Round 2 comments PGE filed on November 21, 2023 and was included in PGE’s IRP acknowledgement by the Commission on January 25, 2024. PGE produced updated ELCC’s with this addition and the change resulted in updated nonrenewable and renewable avoided cost prices.

The following table summarizes the changes in ELCC’s from PGE’s initial filing compared to the supplemental filing.

	Initial Filing 3/18	Supplemental Filing	Difference
Wind ELCC	24%	20%	-4%
Solar ELCC	33%	38%	+5%
Solar + Storage ELCC	42%	43%	+1%

The changes in ELCC's result in higher avoided cost prices for nonrenewable and renewable avoided costs. All other inputs from PGE's initial filing on March 18, 2024, remain unchanged.

Additionally, PGE has updated the requested effective date from April 17, 2024 to May 15, 2024 for Schedule 201 based on Staff's April 5, 2024 Procedural Update.

PGE is submitting the following updated avoided cost filing documents.

- Updated Schedule 201 avoided cost prices.
- Updated avoided cost workpapers provided in excel files.
- Updated Attachment A provides an updated description of standard avoided costs. The confidential Attachment A is subject to Protective Order No. 17-321.
- Updated Attachment B provides a description of renewable avoided costs.
- Updated Attachment C provides a comparison of inputs to those used in PGE's current avoided costs.

Please direct any questions 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

Enclosures
cc: Service List – UM 1728

**SCHEDULE 201
QUALIFYING FACILITY 10 MW or LESS
AVOIDED COST POWER PURCHASE INFORMATION**

PURPOSE

To provide information about Standard Avoided Costs and Renewable Avoided Costs, Standard Power Purchase Agreements (PPA) and Negotiated PPAs, power purchase prices and price options for power delivered by a Qualifying Facility (QF) to the Company with nameplate capacity rating of 10,000 kW (10MW) or less.

AVAILABLE

To owners of QFs making sales of electricity to the Company in the State of Oregon (Seller).

APPLICABLE

For power purchased from small power production or cogeneration facilities that are QFs as defined in 18 Code of Federal Regulations (CFR) Section 292, that meet the eligibility requirements described herein and where the energy is delivered to the Company's system and made available for Company purchase pursuant to a Standard PPA.

ESTABLISHING CREDITWORTHINESS

The Seller must establish creditworthiness prior to service under this schedule. For a Standard PPA, a Seller may establish creditworthiness with a written acknowledgment that it is current on all existing debt obligations and that it was not a debtor in a bankruptcy proceeding within the preceding 24 months. If the Seller is not able to establish creditworthiness, the Seller must provide security deemed sufficient by the Company as set forth in the Standard PPA.

POWER PURCHASE INFORMATION

A Seller may call the Power Production Coordinator at (503) 464-8000 to obtain more information about being a Seller or how to apply for service under this schedule.

PPA

In accordance with terms set forth in this schedule and the Commission's Rules as applicable, the Company will purchase any Energy in excess of station service (power necessary to produce generation) and amounts attributable to conversion losses, which are made available from the Seller.

A Seller must execute a PPA with the Company prior to delivery of power to the Company. The agreement will have a term of up to 20 years as selected by the QF and memorialized in the PPA.

A QF with a nameplate capacity rating of 10 MW or less as defined herein may elect the option of a Standard PPA.

SCHEDULE 201 (Continued)

PPA (Continued)

Nameplate Capacity Rating means the maximum installed instantaneous power production capacity of the completed Facility, expressed in MW (AC) and measured at the point of interconnection, when operated in compliance with the generation interconnection agreement and consistent with the recommended power factor and operating parameters provided by the manufacturer of the generator, inverters, and energy storage devices, where relevant.

Any Seller may elect to negotiate a PPA with the Company. Such negotiation will comply with the requirements of the Federal Energy Regulatory Commission (FERC), and the Commission including the guidelines in Order No. 07-360, and Schedule 202. Negotiations for power purchase pricing will be based on either the filed Standard Avoided Costs or Renewable Avoided Costs in effect at that time.

STANDARD PPA (Nameplate capacity rating of 10 MW or less)

A Seller choosing a Standard PPA will complete all informational and price option selection requirements in the applicable Standard PPA and submit the executed Agreement to the Company prior to service under this schedule. The Standard PPA is available at www.portlandgeneral.com. The available Standard PPAs are:

- Standard In-System Non-Variable Power Purchase Agreement
- Standard Off-System Non-Variable Power Purchase Agreement
- Standard In-System Variable Power Purchase Agreement
- Standard Off-System Variable Power Purchase Agreement
- Standard Renewable In-System Non-Variable Power Purchase Agreement
- Standard Renewable Off-System Non-Variable Power Purchase Agreement
- Standard Renewable In-System Variable Power Purchase Agreement
- Standard Renewable Off-System Variable Power Purchase Agreement

The Standard PPAs applicable to variable resources are available only to QFs utilizing wind, solar, solar-plus-storage, or run of river hydro as the primary motive force.

GUIDELINES FOR 10 MW OR LESS FACILITIES ELECTING STANDARD PPA

To execute the Standard PPA the Seller must complete all of the general project information requested in the applicable Standard PPA.

When all information required in the Standard PPA has been received in writing from the Seller, the Company will respond within 15 business days with a draft Standard PPA.

The Seller may request in writing that the Company prepare a final draft Standard PPA. The Company will respond to this request within 15 business days. In connection with such request, the QF must provide the Company with any additional or clarified project information that the Company reasonably determines to be necessary for the preparation of a final draft Standard PPA.

SCHEDULE 201 (Continued)**GUIDELINES FOR 10 MW OR LESS FACILITIES ELECTING STANDARD PPA (Continued)**

When both parties are in full agreement as to all terms and conditions of the draft Standard PPA, the Company will prepare and forward to the Seller a final executable version of the agreement within 15 business days. Following the Company's execution, an executed copy will be returned to the Seller. Prices and other terms and conditions in the PPA will not be final and binding until the Standard PPA has been executed by both parties.

OFF-SYSTEM PPA

A Seller with a facility that interconnects with an electric system other than the Company's electric system may enter into a PPA with the Company after following the applicable Standard or Negotiated PPA guidelines and making the arrangements necessary for transmission of power to the Company's system.

ELIGIBILITY FOR INTERIM SOLAR-PLUS-STORAGE STANDARD PRICES

In addition to the other requirements in this Schedule, the following eligibility requirements apply to QFs seeking the interim solar-plus-storage standard avoided cost rate:

As set forth in Commission Order No. 23-179, once QFs with a total aggregate nameplate capacity rating of 50 MW have entered contracts or otherwise obtained a legally enforceable obligation to receive the interim standard solar-plus-storage rate, the interim rate will cease to be available until the Commission completes a review of the interim rate and orders otherwise, except for QFs with a nameplate capacity rating of 100 kW or less which are not subject to this 50 MW cap.

The storage component must be charged only by the on-site solar generation component and be collocated with the solar generation behind the point of interconnection.

The storage component must be no less than 25 percent and no greater than 100 percent of the capacity of the solar generation, and the battery must be no less than two hours and no more than four hours in duration.

Dispatch of the solar-plus-storage resource will be controlled by the QF.

BASIS FOR POWER PURCHASE PRICE**AVOIDED COST SUMMARY**

The power purchase prices are based on either the Company's Standard Avoided Costs or Renewable Avoided Costs in effect at the time the agreement is executed. Avoided Costs are defined in 18 CFR 292.101(6) as "the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source."

SCHEDULE 201 (Continued)

BASIS FOR POWER PURCHASE PRICE (Continued)

AVOIDED COST SUMMARY (Continued)

Monthly On-Peak prices are included in both the Standard Avoided Costs as listed in Tables 1a, 2a, 3a, and 4a and Renewable Avoided Costs as listed in Tables 5a, 6a, 7a, and 8a. Monthly Off-Peak prices are included in both the Standard Avoided Costs as listed in Tables 1b, 2b, 3b, and 4b and Renewable Avoided Costs as listed in Tables 5b, 6b, and 7b and 8b.

ON-PEAK PERIOD

The On-Peak period is 6:00 a.m. until 10:00 p.m., Monday through Saturday.

OFF-PEAK PERIOD

The Off-Peak period is 10:00 p.m. until 6:00 a.m., Monday through Saturday, and all day on Sunday.

SOLAR-PLUS-STORAGE PREMIUM PEAK PERIOD

The Premium Peak period is the following hours Monday through Saturday:

Daylight savings months, March – October: 6:00 PM to 10:00 PM

Winter months, November – February: 5:00 AM to 7:00 AM and 7:00 PM to 9:00 PM

PGE may request Commission approval to update the Premium Peak hours for new and existing solar- plus- storage contracts following Commission acknowledgement of an Integrated Resource Plan (IRP) or IRP Update.

In the event that U.S. Congress changes or eliminates Daylight Savings Time, PGE may request to adjust this schedule.

SOLAR-PLUS-STORAGE OFF-PEAK PERIOD

The Off-Peak period for solar-plus-storage QFs is Monday through Saturday all hours other than Premium Peak hours, and all day on Sunday.

SCHEDULE 201 (Continued)**BASIS FOR POWER PURCHASE PRICE (Continued)**
AVOIDED COST SUMMARY (Continued)

Standard Avoided Costs are based on forward market price estimates through the Resource Sufficiency Period, the period of time during which the Company's Standard Avoided Costs are associated with incremental purchases of Energy and capacity from the market. For the Resource Deficiency Period, the Standard Avoided Costs reflect the fully allocated costs of a natural gas fueled combined cycle combustion turbine (CCCT) including fuel and capital costs. The CCCT Avoided Costs are based on the variable cost of Energy plus capitalized Energy costs at a 94.01% capacity factor based on a natural gas price forecast, with prices modified for shrinkage and transportation costs.

Renewable Avoided Costs are based on forward market price estimates through the Renewable Resource Sufficiency Period, the period of time during which the Company's Renewable Avoided Costs are associated with incremental purchases of energy and capacity from the market. For the Renewable Resource Deficiency Period, the Renewable Avoided Costs reflect the fully allocated costs of a wind plant including capital costs.

PRICING FOR STANDARD PPA

Pricing represents the purchase price per MWh the Company will pay for electricity delivered to a Point of Delivery (POD) within the Company's service territory pursuant to a Standard PPA up to the nameplate rating of the QF in any hour.

ELIGIBILITY REQUIREMENTS TO RECEIVE THE STANDARD FIXED PRICE OPTION OR THE RENEWABLE FIXED PRICE OPTION

The Standard PPA pricing will be based on either the Standard or Renewable Avoided Costs in effect at the time the agreement is executed. A QF will be eligible to receive either the Standard Fixed Price Option or the Renewable Fixed Price Option described below only if the nameplate capacity rating of the QF does not exceed 3 MW for solar and solar-plus-storage QF projects or 10 MW for all other types of QF projects. A QF that does not meet these eligibility requirements must negotiate prices pursuant to the terms of Schedule 202. Solar and solar-plus-storage QF projects with nameplate capacity rating that exceed 3 MW but do not exceed 10 MW are eligible for a Standard PPA containing negotiated prices under Schedule 202. Eligibility for the Standard Fixed Price Option or the Renewable Fixed Price Option may also be affected by the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Fixed Price Option or the Renewable Fixed Price Option Under the Standard PPA stated below.

Except for As-Available Energy, the Company will pay the Seller either the On-Peak Standard Avoided Cost pursuant to Tables 1a, 2a, 3a or, 4a or the On-Peak Renewable Avoided Costs pursuant to Tables 5a, 6a, 7a or 8a for Net Output delivered in the On-Peak Period. Except for As-Available Energy, the Company will pay the Seller either the Off-Peak Standard Avoided Cost pursuant to Tables 1b, 2b, 3b, or 4b or the Off-Peak Renewable Avoided Costs pursuant to Tables 5b, 6b, 6b or 7b for Net Output delivered in the Off-Peak Period. The Company will pay the Seller the As-Available Rate for all As-Available Energy delivered during the PPA Term.

SCHEDULE 201 (Continued)PRICING OPTIONS FOR STANDARD PPA (Continued)
Standard Fixed Price Option (Continued)**1) Standard Fixed Price Option**

The Standard Fixed Price Option is based on Standard Avoided Costs including forecasted natural gas prices. It is available to all QFs that meet the eligibility requirements identified above.

This option is available for a maximum term of 15 years. Prices will be as established at the time the Standard PPA is executed and will be equal to the Standard Avoided Costs in Tables 1a and 1b, 2a and 2b, 3a and 3b, or 4a and 4b depending on the type of QF, effective at execution. QFs using any resource type other than wind, solar, and solar-plus-storage are assumed to be Base Load QFs.

Prices paid to the Seller under the Standard Fixed Price Option include adjustments for the capacity contribution of the QF resource type relative to that of the avoided proxy resource. Both the Base Load QF resources (Tables 1a and 1b) and the avoided proxy resource, the basis used to determine Standard Avoided Costs for the Standard Fixed Price Option, are assumed to have a capacity contribution to peak of 100%. The capacity contribution for Wind QF resources (Tables 2a and 2b) is assumed to be 20%. The capacity contribution for Solar QF resources (Tables 3a and 3b) is assumed to be 38%.

For the Interim Solar-Plus-Storage Non-Renewable Avoided Costs (Tables 4a and 4b), capacity compensation will be based on an assumed capacity contribution of 43%, and the solar-plus-storage QF will be paid a volumetric rate (\$/MWh) for delivery during the Premium Peak hours during the Resource Deficiency Period.

Prices paid to the Seller under the Standard Fixed Price Option for Wind QFs (Tables 2a and 2b) include a reduction for the wind integration costs in Table 9. However, if the Wind QF is outside of PGE's Balancing Authority Area as contemplated in the Commission's Order No. 14-058, the Seller is paid the wind integration charges in Table 9, in addition to the prices listed in Tables 2a and 2b, for a net-zero effect.

Prices paid to the Seller under the Standard Fixed Price Option for Solar and Solar-Plus-Storage QFs (Tables 3a and 3b and 4a and 4b) include a reduction for the solar integration costs in Table 9. However, if the Solar QF is outside of PGE's Balancing Authority Area as contemplated in the Commission's Order No. 14-058, the Seller is paid the solar integration charges in Table 9, in addition to the prices listed in Tables 3a and 3b and 4a and 4b, for a net-zero effect.

Sellers with terms exceeding 15 years from the commercial operation date will receive pricing equal to the Mid-C Index Price for all years up to five in excess of the initial 15 years after the commercial operation date selected by the Seller and memorialized in the PPA.

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Standard Fixed Price Option (Continued)

TABLE 1a												
Avoided Costs												
Fixed Price Option for Base Load QF												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	252.49	89.64	73.30	70.75	57.48	72.79	149.87	208.07	158.04	82.49	97.81	139.67
2025	143.23	121.55	85.52	66.89	56.31	58.39	143.39	184.52	149.55	92.04	102.42	119.54
2026	66.27	65.80	62.96	60.33	59.62	59.95	60.59	60.60	60.60	61.38	63.94	66.09
2027	67.93	67.59	63.97	60.86	60.11	60.39	61.00	61.04	61.12	61.88	64.31	66.43
2028	68.33	67.97	64.73	61.62	60.85	61.06	61.60	61.61	61.56	62.34	65.12	67.29
2029	66.97	66.52	64.88	63.75	63.62	63.60	64.02	64.34	64.61	65.07	65.76	66.09
2030	67.49	67.53	66.08	65.22	65.32	65.19	65.48	65.33	65.66	66.05	67.34	67.97
2031	69.11	69.10	66.36	65.74	65.59	65.47	66.00	66.10	66.06	66.37	68.44	69.30
2032	69.64	70.09	67.93	66.64	66.55	66.80	67.83	67.94	68.49	69.30	70.85	71.51
2033	73.03	72.47	72.05	71.00	70.71	70.93	71.20	71.19	72.08	72.51	73.56	74.84
2034	77.45	75.78	74.60	73.22	73.17	72.87	72.90	73.42	73.26	74.01	74.75	76.15
2035	78.28	77.38	74.78	73.61	73.52	73.57	73.71	73.82	74.01	74.70	76.32	77.98
2036	80.23	78.85	75.66	74.11	73.98	74.34	74.25	74.34	74.51	76.20	76.43	78.14
2037	80.65	78.97	74.72	73.61	73.24	73.01	73.14	73.71	73.87	75.19	75.30	77.47
2038	80.39	80.32	75.49	74.00	74.16	73.65	74.61	74.30	74.89	76.23	74.02	75.78
2039	80.21	79.44	77.78	75.57	75.43	75.28	75.29	75.54	75.90	75.86	75.92	77.58
2040	81.78	83.02	80.08	78.06	77.94	78.04	77.75	77.93	78.57	79.12	77.94	80.19
2041	86.18	85.59	81.83	79.79	79.36	79.19	80.32	81.08	81.76	80.11	82.40	84.53
2042	87.96	90.12	85.59	83.27	83.13	82.96	83.91	84.03	84.24	82.76	84.11	88.10
2043	89.97	93.21	87.15	85.16	85.02	84.98	86.10	86.22	86.44	85.36	86.08	89.48
2044	93.28	99.34	92.47	90.20	90.07	90.03	92.98	93.27	93.51	89.66	91.22	93.75
2045	98.48	105.57	99.57	97.08	96.96	97.04	98.34	98.86	99.13	94.82	98.53	101.08
2046	106.17	109.84	103.22	100.79	100.67	100.69	102.67	103.06	103.35	99.79	101.55	104.36
2047	109.69	113.90	108.04	105.48	105.36	105.41	106.82	107.26	107.57	104.59	107.08	110.00
2048	116.07	119.93	113.71	110.96	110.85	110.78	112.03	112.47	112.80	111.06	111.49	114.60
2049	120.75	125.60	118.05	115.53	115.44	115.39	116.56	117.64	118.00	115.76	117.34	120.19

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Standard Fixed Price Option (Continued)

TABLE 1b												
Avoided Costs												
Fixed Price Option for Base Load QF												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	197.46	72.28	63.60	61.56	41.65	43.70	65.14	84.53	73.30	68.20	79.43	109.04
2025	113.10	99.13	65.92	64.81	42.43	37.63	68.16	90.43	77.95	76.95	85.24	104.21
2026	25.64	25.17	22.33	19.70	18.99	19.31	19.96	19.97	19.97	20.75	23.31	25.46
2027	26.43	26.09	22.47	19.37	18.61	18.90	19.51	19.54	19.62	20.38	22.81	24.93
2028	25.95	25.59	22.35	19.24	18.47	18.68	19.22	19.23	19.18	19.96	22.74	24.91
2029	23.68	23.23	21.59	20.46	20.33	20.32	20.73	21.05	21.32	21.78	22.47	22.80
2030	23.28	23.32	21.87	21.01	21.11	20.98	21.27	21.12	21.45	21.84	23.12	23.76
2031	23.95	23.95	21.21	20.58	20.44	20.32	20.84	20.95	20.90	21.22	23.29	24.14
2032	23.82	24.27	22.11	20.81	20.72	20.98	22.00	22.11	22.67	23.48	25.03	25.69
2033	25.92	25.36	24.95	23.90	23.61	23.83	24.10	24.08	24.98	25.41	26.45	27.73
2034	29.18	27.52	26.34	24.96	24.91	24.61	24.64	25.16	25.00	25.75	26.49	27.89
2035	29.14	28.25	25.65	24.48	24.39	24.44	24.58	24.69	24.88	25.57	27.19	28.85
2036	30.21	28.83	25.64	24.09	23.96	24.32	24.23	24.32	24.49	26.18	26.41	28.12
2037	29.40	27.72	23.47	22.36	21.99	21.76	21.89	22.46	22.62	23.94	24.05	26.22
2038	28.04	27.97	23.14	21.65	21.82	21.30	22.27	21.96	22.54	23.89	21.68	23.44
2039	26.75	25.98	24.32	22.11	21.97	21.82	21.83	22.08	22.44	22.40	22.46	24.12
2040	27.18	28.42	25.48	23.46	23.34	23.44	23.15	23.33	23.97	24.52	23.34	25.59
2041	30.41	29.82	26.06	24.02	23.59	23.42	24.56	25.32	25.99	24.34	26.63	28.77
2042	31.00	33.17	28.64	26.32	26.18	26.00	26.96	27.07	27.28	25.80	27.15	31.14
2043	31.80	35.04	28.98	26.99	26.85	26.80	27.93	28.05	28.27	27.19	27.91	31.31
2044	34.06	40.12	33.25	30.98	30.85	30.81	33.76	34.05	34.29	30.43	32.00	34.53
2045	37.61	44.69	38.69	36.21	36.09	36.16	37.46	37.99	38.25	33.95	37.66	40.20
2046	44.19	47.86	41.25	38.81	38.70	38.72	40.70	41.09	41.37	37.81	39.58	42.38
2047	46.40	50.61	44.74	42.18	42.07	42.11	43.52	43.96	44.27	41.30	43.78	46.70
2048	51.64	55.49	49.27	46.52	46.41	46.34	47.60	48.03	48.37	46.62	47.05	50.16
2049	54.72	59.58	52.03	49.50	49.42	49.37	50.54	51.62	51.98	49.73	51.31	54.17

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Standard Fixed Price Option (Continued)

TABLE 2a												
Avoided Costs												
Fixed Price Option for Wind QF												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	55.01	70.33	147.41	205.61	155.58	80.03	95.34	137.20
2025	140.72	119.03	83.00	64.37	53.79	55.88	140.87	182.01	147.04	89.52	99.90	117.02
2026	39.53	39.06	36.22	33.59	32.88	33.20	33.84	33.86	33.86	34.64	37.19	39.35
2027	40.62	40.27	36.66	33.55	32.79	33.08	33.69	33.73	33.80	34.56	37.00	39.12
2028	40.43	40.07	36.84	33.73	32.96	33.16	33.71	33.71	33.67	34.45	37.23	39.39
2029	38.48	38.03	36.39	35.26	35.13	35.11	35.53	35.84	36.12	36.58	37.27	37.60
2030	37.28	37.33	35.88	35.02	35.12	34.99	35.27	35.13	35.46	35.85	37.13	37.77
2031	38.26	38.26	35.51	34.89	34.74	34.63	35.15	35.25	35.21	35.52	37.59	38.45
2032	38.31	38.76	36.60	35.31	35.22	35.47	36.49	36.60	37.16	37.97	39.52	40.18
2033	40.85	40.29	39.87	38.82	38.53	38.75	39.02	39.01	39.91	40.33	41.38	42.66
2034	44.49	42.82	41.65	40.27	40.21	39.92	39.95	40.46	40.31	41.06	41.79	43.20
2035	44.71	43.82	41.22	40.05	39.95	40.01	40.14	40.26	40.45	41.14	42.76	44.42
2036	46.04	44.67	41.48	39.92	39.79	40.15	40.06	40.15	40.33	42.01	42.25	43.96
2037	45.64	43.96	39.70	38.60	38.23	38.00	38.13	38.70	38.85	40.18	40.29	42.46
2038	44.63	44.56	39.73	38.24	38.40	37.89	38.85	38.54	39.13	40.47	38.26	40.02
2039	43.69	42.92	41.26	39.05	38.91	38.76	38.77	39.02	39.38	39.34	39.40	41.06
2040	44.48	45.72	42.78	40.76	40.64	40.73	40.45	40.63	41.27	41.82	40.64	42.88
2041	48.08	47.49	43.73	41.69	41.26	41.09	42.23	42.99	43.66	42.01	44.30	46.43
2042	49.05	51.21	46.68	44.37	44.22	44.05	45.00	45.12	45.33	43.85	45.20	49.19
2043	50.23	53.47	47.41	45.42	45.28	45.24	46.36	46.48	46.70	45.62	46.34	49.74
2044	52.81	58.87	51.99	49.73	49.60	49.55	52.50	52.80	53.04	49.18	50.74	53.28
2045	56.91	64.00	58.00	55.51	55.39	55.47	56.77	57.29	57.56	53.25	56.96	59.51
2046	63.83	67.50	60.88	58.45	58.33	58.35	60.34	60.72	61.01	57.45	59.21	62.02
2047	66.45	70.66	64.80	62.23	62.12	62.17	63.58	64.02	64.32	61.35	63.84	66.76
2048	72.03	75.89	69.67	66.92	66.81	66.74	67.99	68.43	68.76	67.02	67.45	70.55
2049	75.64	80.50	72.95	70.42	70.34	70.29	71.46	72.54	72.90	70.65	72.23	75.09

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Standard Fixed Price Option (Continued)

TABLE 2b												
Avoided Costs												
Fixed Price Option for Wind QF												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	39.19	41.23	62.67	82.07	70.84	65.73	76.97	106.57
2025	110.58	96.62	63.40	62.29	39.92	35.11	65.65	87.92	75.43	74.44	82.72	101.69
2026	23.07	22.60	19.76	17.13	16.42	16.74	17.39	17.40	17.40	18.18	20.74	22.89
2027	23.81	23.46	19.85	16.74	15.98	16.27	16.88	16.92	16.99	17.75	20.19	22.31
2028	23.26	22.91	19.67	16.56	15.79	16.00	16.54	16.54	16.50	17.28	20.06	22.22
2029	20.94	20.50	18.85	17.73	17.59	17.58	17.99	18.31	18.59	19.04	19.73	20.06
2030	19.38	19.42	17.97	17.11	17.21	17.08	17.37	17.22	17.55	17.94	19.22	19.86
2031	19.97	19.97	17.22	16.60	16.45	16.34	16.86	16.96	16.92	17.23	19.30	20.16
2032	19.75	20.20	18.04	16.74	16.65	16.91	17.93	18.04	18.60	19.41	20.96	21.62
2033	21.77	21.21	20.80	19.74	19.45	19.67	19.94	19.93	20.83	21.26	22.30	23.58
2034	24.94	23.27	22.10	20.72	20.66	20.37	20.40	20.91	20.76	21.51	22.24	23.65
2035	24.81	23.91	21.32	20.14	20.05	20.11	20.24	20.35	20.55	21.24	22.86	24.52
2036	25.78	24.41	21.22	19.66	19.53	19.89	19.80	19.89	20.06	21.75	21.99	23.69
2037	24.88	23.20	18.95	17.84	17.47	17.24	17.37	17.94	18.09	19.42	19.53	21.70
2038	23.43	23.36	18.53	17.04	17.20	16.69	17.65	17.34	17.93	19.27	17.06	18.82
2039	22.04	21.27	19.61	17.40	17.25	17.11	17.12	17.36	17.72	17.68	17.74	19.40
2040	22.36	23.60	20.66	18.64	18.52	18.62	18.34	18.51	19.16	19.70	18.53	20.77
2041	25.49	24.91	21.14	19.10	18.67	18.50	19.64	20.40	21.08	19.42	21.71	23.85
2042	25.98	28.14	23.61	21.30	21.15	20.98	21.93	22.05	22.26	20.78	22.13	26.12
2043	26.66	29.91	23.85	21.86	21.72	21.67	22.80	22.92	23.14	22.06	22.78	26.18
2044	28.82	34.88	28.01	25.74	25.61	25.57	28.51	28.81	29.05	25.19	26.75	29.29
2045	32.26	39.34	33.34	30.85	30.73	30.81	32.11	32.63	32.90	28.60	32.30	34.85
2046	38.73	42.40	35.78	33.35	33.23	33.25	35.23	35.62	35.91	32.35	34.11	36.92
2047	40.81	45.02	39.16	36.60	36.48	36.53	37.94	38.38	38.69	35.71	38.20	41.12
2048	45.93	49.79	43.56	40.82	40.71	40.64	41.89	42.33	42.66	40.92	41.35	44.45
2049	48.90	53.76	46.20	43.68	43.60	43.54	44.72	45.79	46.15	43.91	45.49	48.35

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Standard Fixed Price Option (Continued)

TABLE 3a												
Avoided Costs												
Fixed Price Option for Solar QF												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	54.76	70.07	147.15	205.35	155.32	79.77	95.08	136.94
2025	140.45	118.77	82.74	64.10	53.53	55.61	140.61	181.74	146.77	89.26	99.63	116.76
2026	59.44	58.98	56.13	53.50	52.79	53.12	53.76	53.77	53.77	54.55	57.11	59.27
2027	60.96	60.61	57.00	53.89	53.13	53.42	54.03	54.07	54.14	54.90	57.34	59.46
2028	61.21	60.85	57.61	54.50	53.73	53.94	54.48	54.49	54.44	55.22	58.00	60.17
2029	59.69	59.25	57.61	56.48	56.34	56.33	56.74	57.06	57.34	57.80	58.49	58.81
2030	59.85	59.89	58.44	57.58	57.68	57.56	57.84	57.69	58.02	58.41	59.70	60.33
2031	61.31	61.30	58.56	57.94	57.79	57.67	58.19	58.30	58.25	58.57	60.64	61.49
2032	61.70	62.16	59.99	58.70	58.61	58.86	59.89	60.00	60.55	61.36	62.92	63.57
2033	64.89	64.33	63.91	62.86	62.57	62.79	63.06	63.05	63.95	64.37	65.42	66.70
2034	69.12	67.45	66.28	64.90	64.84	64.55	64.58	65.09	64.94	65.69	66.42	67.83
2035	69.79	68.89	66.29	65.12	65.03	65.09	65.22	65.33	65.53	66.21	67.83	69.49
2036	71.57	70.20	67.01	65.46	65.32	65.68	65.60	65.68	65.86	67.55	67.78	69.49
2037	71.80	70.12	65.86	64.75	64.39	64.16	64.29	64.86	65.01	66.34	66.45	68.62
2038	71.34	71.27	66.44	64.95	65.12	64.60	65.57	65.26	65.84	67.19	64.98	66.74
2039	70.98	70.21	68.55	66.34	66.19	66.05	66.06	66.30	66.66	66.62	66.68	68.34
2040	72.35	73.58	70.64	68.62	68.50	68.60	68.32	68.49	69.14	69.68	68.51	70.75
2041	76.54	75.96	72.19	70.15	69.72	69.55	70.69	71.45	72.13	70.47	72.76	74.90
2042	78.12	80.28	75.75	73.43	73.29	73.12	74.07	74.19	74.39	72.92	74.27	78.26
2043	79.92	83.16	77.10	75.11	74.97	74.92	76.05	76.17	76.39	75.31	76.03	79.43
2044	83.04	89.09	82.22	79.96	79.82	79.78	82.73	83.02	83.27	79.41	80.97	83.51
2045	87.98	95.07	89.06	86.58	86.46	86.53	87.83	88.36	88.62	84.32	88.03	90.57
2046	95.46	99.13	92.51	90.08	89.96	89.99	91.97	92.35	92.64	89.08	90.84	93.65
2047	98.76	102.96	97.10	94.54	94.43	94.47	95.88	96.32	96.63	93.66	96.14	99.06
2048	104.93	108.78	102.56	99.81	99.70	99.63	100.89	101.32	101.66	99.91	100.34	103.45
2049	109.34	114.20	106.64	104.12	104.04	103.98	105.16	106.23	106.59	104.35	105.93	108.79

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Standard Fixed Price Option (Continued)

TABLE 3b												
Avoided Costs												
Fixed Price Option for Solar QF												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	38.93	40.97	62.41	81.81	70.58	65.48	76.71	106.31
2025	110.32	96.35	63.14	62.03	39.65	34.85	65.38	87.65	75.17	74.17	82.46	101.43
2026	22.80	22.33	19.49	16.86	16.15	16.47	17.12	17.13	17.13	17.91	20.47	22.62
2027	23.53	23.19	19.57	16.47	15.71	16.00	16.60	16.64	16.72	17.48	19.91	22.03
2028	22.98	22.63	19.39	16.28	15.51	15.72	16.26	16.26	16.22	17.00	19.78	21.94
2029	20.66	20.21	18.57	17.44	17.30	17.29	17.70	18.02	18.30	18.76	19.45	19.77
2030	19.98	20.02	18.57	17.71	17.81	17.68	17.97	17.82	18.15	18.54	19.82	20.46
2031	20.58	20.58	17.84	17.21	17.06	16.95	17.47	17.58	17.53	17.85	19.92	20.77
2032	20.38	20.83	18.66	17.37	17.28	17.53	18.56	18.67	19.23	20.04	21.59	22.25
2033	22.41	21.85	21.44	20.38	20.09	20.31	20.58	20.57	21.47	21.89	22.94	24.22
2034	25.59	23.93	22.75	21.37	21.31	21.02	21.05	21.56	21.41	22.16	22.90	24.30
2035	25.48	24.58	21.98	20.81	20.72	20.77	20.91	21.02	21.22	21.90	23.52	25.18
2036	26.46	25.09	21.90	20.34	20.21	20.57	20.48	20.57	20.75	22.43	22.67	24.38
2037	25.58	23.90	19.64	18.53	18.17	17.94	18.07	18.63	18.79	20.12	20.23	22.39
2038	24.14	24.07	19.24	17.75	17.91	17.40	18.36	18.05	18.64	19.98	17.77	19.53
2039	22.76	21.99	20.33	18.12	17.98	17.83	17.84	18.09	18.45	18.41	18.47	20.13
2040	23.10	24.34	21.40	19.38	19.26	19.36	19.08	19.25	19.90	20.44	19.27	21.51
2041	26.25	25.66	21.90	19.86	19.43	19.26	20.40	21.16	21.83	20.18	22.47	24.60
2042	26.75	28.91	24.39	22.07	21.93	21.75	22.71	22.82	23.03	21.55	22.90	26.89
2043	27.45	30.70	24.64	22.65	22.51	22.46	23.59	23.71	23.93	22.85	23.57	26.97
2044	29.63	35.68	28.81	26.55	26.41	26.37	29.32	29.61	29.86	26.00	27.56	30.10
2045	33.08	40.17	34.16	31.68	31.56	31.64	32.93	33.46	33.72	29.42	33.13	35.67
2046	39.57	43.24	36.62	34.19	34.07	34.09	36.07	36.46	36.75	33.19	34.95	37.76
2047	41.67	45.88	40.02	37.46	37.34	37.39	38.80	39.24	39.55	36.57	39.06	41.98
2048	46.81	50.66	44.44	41.69	41.58	41.52	42.77	43.20	43.54	41.80	42.23	45.33
2049	49.80	54.65	47.10	44.58	44.49	44.44	45.61	46.69	47.05	44.80	46.39	49.24

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Standard Fixed Price Option (Continued)

TABLE 4a												
Avoided Costs												
Fixed Price Option for Interim Solar + Storage QF												
Premium-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	54.76	70.07	147.15	205.35	155.32	79.77	95.08	136.94
2025	140.45	118.77	82.74	64.10	53.53	55.61	140.61	181.74	146.77	89.26	99.63	116.76
2026	94.91	94.45	91.60	88.97	88.26	88.59	89.23	89.24	89.24	90.02	92.58	94.74
2027	97.19	96.84	93.22	90.12	89.36	89.65	90.26	90.29	90.37	91.13	93.57	95.68
2028	98.21	97.85	94.61	91.50	90.73	90.94	91.48	91.49	91.44	92.22	95.00	97.17
2029	97.73	97.28	95.64	94.51	94.38	94.37	94.78	95.10	95.37	95.83	96.52	96.85
2030	98.44	98.49	97.04	96.18	96.27	96.15	96.43	96.29	96.62	97.01	98.29	98.93
2031	100.72	100.72	97.98	97.35	97.21	97.09	97.61	97.72	97.67	97.99	100.06	100.91
2032	102.23	102.68	100.52	99.22	99.13	99.38	100.41	100.52	101.08	101.89	103.44	104.10
2033	106.01	105.45	105.03	103.98	103.69	103.91	104.18	104.17	105.06	105.49	106.54	107.82
2034	111.25	109.58	108.41	107.03	106.97	106.68	106.71	107.22	107.07	107.81	108.55	109.96
2035	112.68	111.78	109.18	108.01	107.92	107.98	108.11	108.22	108.42	109.11	110.73	112.39
2036	115.52	114.15	110.96	109.41	109.27	109.63	109.55	109.63	109.81	111.50	111.73	113.44
2037	116.54	114.86	110.60	109.49	109.13	108.90	109.03	109.60	109.75	111.08	111.19	113.36
2038	117.04	116.97	112.14	110.65	110.81	110.30	111.26	110.95	111.54	112.88	110.67	112.43
2039	117.65	116.88	115.21	113.01	112.86	112.72	112.73	112.97	113.33	113.29	113.35	115.01
2040	120.32	121.56	118.62	116.60	116.48	116.58	116.30	116.47	117.12	117.66	116.49	118.73
2041	125.23	124.64	120.87	118.83	118.40	118.23	119.37	120.13	120.81	119.15	121.45	123.58
2042	127.84	130.00	125.47	123.16	123.01	122.84	123.79	123.91	124.12	122.64	123.99	127.98
2043	130.70	133.94	127.88	125.89	125.75	125.71	126.83	126.95	127.17	126.09	126.81	130.21
2044	135.07	141.13	134.26	131.99	131.86	131.82	134.77	135.06	135.30	131.44	133.01	135.54
2045	141.12	148.21	142.20	139.72	139.60	139.68	140.98	141.50	141.76	137.46	141.17	143.71
2046	149.56	153.23	146.61	144.18	144.06	144.09	146.07	146.45	146.74	143.18	144.94	147.75
2047	154.01	158.22	152.36	149.79	149.68	149.73	151.14	151.58	151.88	148.91	151.40	154.32
2048	161.55	165.40	159.18	156.43	156.32	156.25	157.51	157.94	158.28	156.53	156.96	160.07
2049	166.98	171.83	164.28	161.76	161.67	161.62	162.79	163.87	164.23	161.99	163.57	166.43

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Standard Fixed Price Option (Continued)

TABLE 4b												
Avoided Costs												
Fixed Price Option for Interim Solar + Storage QF												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	38.93	40.97	62.41	81.81	70.58	65.48	76.71	106.31
2025	110.32	96.35	63.14	62.03	39.65	34.85	65.38	87.65	75.17	74.17	82.46	101.43
2026	22.80	22.33	19.49	16.86	16.15	16.47	17.12	17.13	17.13	17.91	20.47	22.62
2027	23.53	23.19	19.57	16.47	15.71	16.00	16.60	16.64	16.72	17.48	19.91	22.03
2028	22.98	22.63	19.39	16.28	15.51	15.72	16.26	16.26	16.22	17.00	19.78	21.94
2029	20.66	20.21	18.57	17.44	17.30	17.29	17.70	18.02	18.30	18.76	19.45	19.77
2030	19.98	20.02	18.57	17.71	17.81	17.68	17.97	17.82	18.15	18.54	19.82	20.46
2031	20.58	20.58	17.84	17.21	17.06	16.95	17.47	17.58	17.53	17.85	19.92	20.77
2032	20.38	20.83	18.66	17.37	17.28	17.53	18.56	18.67	19.23	20.04	21.59	22.25
2033	22.41	21.85	21.44	20.38	20.09	20.31	20.58	20.57	21.47	21.89	22.94	24.22
2034	25.59	23.93	22.75	21.37	21.31	21.02	21.05	21.56	21.41	22.16	22.90	24.30
2035	25.48	24.58	21.98	20.81	20.72	20.77	20.91	21.02	21.22	21.90	23.52	25.18
2036	26.46	25.09	21.90	20.34	20.21	20.57	20.48	20.57	20.75	22.43	22.67	24.38
2037	25.58	23.90	19.64	18.53	18.17	17.94	18.07	18.63	18.79	20.12	20.23	22.39
2038	24.14	24.07	19.24	17.75	17.91	17.40	18.36	18.05	18.64	19.98	17.77	19.53
2039	22.76	21.99	20.33	18.12	17.98	17.83	17.84	18.09	18.45	18.41	18.47	20.13
2040	23.10	24.34	21.40	19.38	19.26	19.36	19.08	19.25	19.90	20.44	19.27	21.51
2041	26.25	25.66	21.90	19.86	19.43	19.26	20.40	21.16	21.83	20.18	22.47	24.60
2042	26.75	28.91	24.39	22.07	21.93	21.75	22.71	22.82	23.03	21.55	22.90	26.89
2043	27.45	30.70	24.64	22.65	22.51	22.46	23.59	23.71	23.93	22.85	23.57	26.97
2044	29.63	35.68	28.81	26.55	26.41	26.37	29.32	29.61	29.86	26.00	27.56	30.10
2045	33.08	40.17	34.16	31.68	31.56	31.64	32.93	33.46	33.72	29.42	33.13	35.67
2046	39.57	43.24	36.62	34.19	34.07	34.09	36.07	36.46	36.75	33.19	34.95	37.76
2047	41.67	45.88	40.02	37.46	37.34	37.39	38.80	39.24	39.55	36.57	39.06	41.98
2048	46.81	50.66	44.44	41.69	41.58	41.52	42.77	43.20	43.54	41.80	42.23	45.33
2049	49.80	54.65	47.10	44.58	44.49	44.44	45.61	46.69	47.05	44.80	46.39	49.24

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)

2) Renewable Fixed Price Option

The Renewable Fixed Price Option is based on Renewable Avoided Costs. It is available only to Renewable QFs that generate electricity from a renewable energy source that may be used by the Company to comply with the Oregon Renewable Portfolio Standard as set forth in ORS 469A.005 to 469A.210 and that satisfy the eligibility requirements identified above.

This option is available for a maximum term of 15 years. Prices will be as established at the time the Standard PPA is executed and will be equal to the Renewable Avoided Costs in Tables 5a and 5b, 6a and 6b, 7a and 7b, or 8a and 8b depending on the type of QF, effective at execution. QFs using any resource type other than wind, solar, and solar-plus-storage are assumed to be Base Load QFs.

Sellers will retain all Environmental Attributes generated by the facility during the Renewable Resource Sufficiency Period. A Renewable QF choosing the Renewable Fixed Price Option must cede all RPS Attributes generated by the facility to the Company from the start of the Renewable Resource Deficiency Period through the remainder of the PPA term.

Prices paid to the Seller under the Renewable Fixed Price Option include adjustments for the capacity contribution of the QF resource type relative to that of the avoided proxy resource. Both Wind QF resources (Tables 6a and 6b) and the avoided proxy resource, the basis used to determine Renewable Avoided Costs for the Renewable Fixed Price Option, are assumed to have a capacity contribution to peak of 20%. The capacity contribution for Solar QF resources (Tables 7a and 7b) is assumed to be 38%. The capacity contribution for Base Load QF resources (Tables 5a and 5b) is assumed to be 100%.

For the Interim Solar-Plus-Storage Renewable Avoided Costs, capacity compensation will be based on an assumed capacity contribution of 43%, and the solar-plus storage QF will be paid a volumetric rate (\$/MWh) for delivery during the Premium Peak hours during the Renewable Resource Deficiency Period.

The Renewable Avoided Costs during the Renewable Resource Deficiency Period reflect an increase for avoided wind integration costs, shown in Table 9.

Prices paid to the Seller under the Renewable Fixed Price Option for Wind QFs (Tables 6a and 6b) include a reduction for the wind integration costs in Table 9, which cancels out wind integration costs included in the Renewable Avoided Costs during the Renewable Resource Deficiency Period. However, if the Wind QF is outside of PGE's Balancing Authority Area as contemplated in the Commission's Order No. 14-058, the Seller is paid the wind integration charges in Table 9, in addition to the prices listed in Tables 6a and 6b.

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
Renewable Fixed Price Option (Continued)

Prices paid to the Seller under the Renewable Fixed Price Option for Solar and Solar-Plus-Storage QFs (Tables 7a and 7b and 8a and 8b) include a reduction for the Solar integration costs in Table 9. However, if the Solar QF is outside of PGE’s Balancing Authority Area as contemplated in the Commission’s Order No. 14-058, the Seller is paid the solar integration charges in Table 9, in addition to the prices listed in Tables 7a and 7b and 8a and 8b.

Sellers with terms exceeding 15 years from the commercial operation date will receive pricing equal to the Mid-C Index Price for all years up to five in excess of the initial 15 years following the commercial operation date selected by the Seller and memorialized in the PPA.

TABLE 5a												
Renewable Avoided Costs												
Renewable Fixed Price Option for Base Load QF												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	252.49	89.64	73.30	70.75	57.48	72.79	149.87	208.07	158.04	82.49	97.81	139.67
2025	143.23	121.55	85.52	66.89	56.31	58.39	143.39	184.52	149.55	92.04	102.42	119.54
2026	69.77	65.36	58.03	54.24	52.09	52.51	69.80	78.17	71.06	59.36	61.47	64.95
2027	71.26	66.75	59.27	55.40	53.20	53.63	71.29	79.84	72.57	60.62	62.78	66.34
2028	72.70	68.11	60.48	56.54	54.30	54.74	72.73	81.44	74.03	61.86	64.06	67.68
2029	74.33	69.63	61.82	57.78	55.49	55.94	74.37	83.28	75.70	63.24	65.49	69.20
2030	75.92	71.12	63.14	59.02	56.68	57.14	75.95	85.06	77.32	64.59	66.88	70.67
2031	77.54	72.64	64.49	60.28	57.89	58.36	77.57	86.87	78.97	65.96	68.31	72.18
2032	78.81	73.82	65.52	61.23	58.79	59.27	78.85	88.32	80.26	67.02	69.41	73.35
2033	80.88	75.77	67.27	62.88	60.38	60.87	80.92	90.62	82.37	68.81	71.26	75.29
2034	82.76	77.54	68.86	64.37	61.82	62.33	82.80	92.71	84.28	70.43	72.93	77.05
2035	84.37	79.03	70.17	65.59	62.99	63.50	84.41	94.53	85.92	71.77	74.33	78.54
2036	85.91	80.48	71.45	66.78	64.13	64.65	85.95	96.26	87.49	73.08	75.68	79.97
2037	88.01	82.44	73.20	68.41	65.70	66.24	88.05	98.60	89.63	74.87	77.53	81.93
2038	89.88	84.20	74.76	69.87	67.10	67.65	89.93	100.71	91.54	76.47	79.19	83.68
2039	91.80	86.00	76.35	71.36	68.53	69.09	91.84	102.85	93.49	78.10	80.88	85.46
2040	93.65	87.74	77.92	72.84	69.95	70.52	93.70	104.91	95.38	79.70	82.52	87.19
2041	95.76	89.71	79.64	74.44	71.49	72.07	95.80	107.29	97.53	81.47	84.36	89.15
2042	97.80	91.62	81.34	76.03	73.01	73.61	97.85	109.58	99.61	83.20	86.16	91.05
2043	99.89	93.57	83.08	77.65	74.57	75.18	99.94	111.92	101.73	84.98	88.00	92.99
2044	101.72	95.28	84.59	79.07	75.93	76.55	101.76	113.96	103.59	86.53	89.61	94.69
2045	104.39	97.80	86.86	81.19	77.98	78.61	104.44	116.94	106.31	88.84	91.99	97.19
2046	106.42	99.69	88.51	82.73	79.45	80.09	106.47	119.23	108.38	90.53	93.75	99.07
2047	108.69	101.82	90.40	84.49	81.14	81.80	108.74	121.78	110.69	92.46	95.75	101.18
2048	110.68	103.68	92.05	86.03	82.62	83.29	110.73	124.00	112.72	94.15	97.50	103.03
2049	113.38	106.21	94.30	88.14	84.64	85.33	113.43	127.03	115.47	96.45	99.88	105.54

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Renewable Fixed Price Option (Continued)

TABLE 5b												
Renewable Avoided Costs												
Renewable Fixed Price Option for Base Load QF												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	197.46	72.28	63.60	61.56	41.65	43.70	65.14	84.53	73.30	68.20	79.43	109.04
2025	113.10	99.13	65.92	64.81	42.43	37.63	68.16	90.43	77.95	76.95	85.24	104.21
2026	23.01	20.17	13.41	13.19	8.63	7.66	13.87	18.40	15.86	15.66	17.34	21.20
2027	23.50	20.60	13.70	13.47	8.82	7.82	14.16	18.79	16.20	15.99	17.71	21.65
2028	23.94	20.98	13.95	13.72	8.98	7.96	14.43	19.14	16.50	16.29	18.04	22.05
2029	24.51	21.49	14.29	14.05	9.20	8.16	14.77	19.60	16.90	16.68	18.47	22.59
2030	25.04	21.95	14.59	14.35	9.39	8.33	15.09	20.02	17.26	17.04	18.87	23.07
2031	25.57	22.41	14.90	14.65	9.59	8.51	15.41	20.45	17.62	17.40	19.27	23.56
2032	26.05	22.83	15.18	14.93	9.77	8.67	15.70	20.83	17.95	17.72	19.63	24.00
2033	26.67	23.38	15.55	15.29	10.01	8.87	16.08	21.33	18.38	18.15	20.10	24.58
2034	27.24	23.88	15.88	15.61	10.22	9.06	16.42	21.78	18.78	18.54	20.53	25.10
2035	27.82	24.39	16.22	15.94	10.44	9.26	16.77	22.25	19.18	18.93	20.97	25.64
2036	28.34	24.84	16.52	16.24	10.63	9.43	17.08	22.66	19.53	19.28	21.36	26.11
2037	29.02	25.44	16.92	16.63	10.89	9.66	17.49	23.21	20.00	19.75	21.87	26.74
2038	29.64	25.98	17.28	16.99	11.12	9.86	17.87	23.70	20.43	20.17	22.34	27.31
2039	30.28	26.54	17.65	17.35	11.36	10.07	18.25	24.21	20.87	20.60	22.82	27.90
2040	30.84	27.03	17.97	17.67	11.57	10.26	18.58	24.66	21.25	20.98	23.24	28.41
2041	31.58	27.68	18.41	18.10	11.85	10.51	19.03	25.25	21.77	21.49	23.80	29.10
2042	32.25	28.27	18.80	18.48	12.10	10.73	19.44	25.79	22.23	21.95	24.31	29.72
2043	32.94	28.87	19.20	18.88	12.36	10.96	19.85	26.34	22.70	22.41	24.83	30.35
2044	33.55	29.41	19.56	19.23	12.59	11.16	20.22	26.83	23.12	22.83	25.29	30.92
2045	34.36	30.12	20.03	19.69	12.89	11.43	20.71	27.48	23.68	23.38	25.90	31.66
2046	35.10	30.76	20.46	20.11	13.17	11.68	21.15	28.06	24.19	23.88	26.45	32.34
2047	35.84	31.42	20.89	20.54	13.45	11.93	21.60	28.66	24.70	24.39	27.01	33.03
2048	36.51	32.00	21.28	20.92	13.70	12.15	22.00	29.19	25.16	24.84	27.51	33.64
2049	37.39	32.77	21.79	21.43	14.03	12.44	22.53	29.90	25.77	25.44	28.18	34.45

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Renewable Fixed Price Option (Continued)

TABLE 6a												
Renewable Avoided Costs												
Renewable Fixed Price Option for Wind QF												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	55.01	70.33	147.41	205.61	155.58	80.03	95.34	137.20
2025	140.72	119.03	83.00	64.37	53.79	55.88	140.87	182.01	147.04	89.52	99.90	117.02
2026	43.03	38.62	31.29	27.50	25.34	25.77	43.06	51.43	44.31	32.61	34.72	38.21
2027	43.95	39.44	31.95	28.08	25.88	26.32	43.98	52.53	45.26	33.31	35.46	39.02
2028	44.80	40.21	32.59	28.64	26.40	26.84	44.83	53.54	46.14	33.97	36.16	39.79
2029	45.84	41.14	33.33	29.29	27.00	27.45	45.88	54.79	47.21	34.74	36.99	40.71
2030	45.72	40.92	32.94	28.81	26.47	26.93	45.75	54.86	47.11	34.38	36.68	40.47
2031	46.69	41.79	33.64	29.43	27.04	27.51	46.73	56.03	48.12	35.12	37.46	41.33
2032	47.48	42.48	34.19	29.90	27.46	27.94	47.51	56.99	48.93	35.69	38.08	42.02
2033	48.70	43.59	35.09	30.70	28.20	28.69	48.74	58.44	50.19	36.63	39.08	43.12
2034	49.81	44.58	35.90	31.42	28.87	29.37	49.84	59.75	51.33	37.47	39.97	44.10
2035	50.80	45.47	36.61	32.02	29.42	29.93	50.84	60.96	52.36	38.21	40.76	44.98
2036	51.72	46.29	37.26	32.59	29.94	30.47	51.76	62.07	53.31	38.90	41.50	45.79
2037	52.99	47.43	38.18	33.40	30.69	31.22	53.04	63.59	54.62	39.86	42.52	46.91
2038	54.13	48.44	39.00	34.11	31.34	31.89	54.17	64.95	55.78	40.71	43.43	47.92
2039	55.28	49.48	39.83	34.84	32.01	32.57	55.32	66.33	56.97	41.58	44.35	48.94
2040	56.35	50.44	40.62	35.54	32.65	33.22	56.40	67.61	58.08	42.39	45.22	49.89
2041	57.66	51.61	41.55	36.35	33.39	33.97	57.71	69.19	59.43	43.37	46.27	51.05
2042	58.89	52.71	42.43	37.12	34.10	34.70	58.94	70.67	60.70	44.29	47.25	52.14
2043	60.15	53.83	43.34	37.91	34.83	35.44	60.20	72.18	61.99	45.24	48.26	53.25
2044	61.24	54.81	44.12	38.59	35.45	36.07	61.29	73.49	63.11	46.05	49.13	54.21
2045	62.82	56.23	45.29	39.63	36.41	37.05	62.87	75.37	64.74	47.27	50.42	55.62
2046	64.08	57.35	46.17	40.39	37.11	37.75	64.13	76.89	66.04	48.20	51.42	56.73
2047	65.45	58.58	47.16	41.25	37.90	38.56	65.50	78.53	67.45	49.22	52.51	57.94
2048	66.64	59.64	48.00	41.99	38.58	39.25	66.69	79.96	68.68	50.11	53.46	58.99
2049	68.27	61.10	49.19	43.03	39.53	40.22	68.32	81.92	70.36	51.35	54.78	60.44

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
Renewable Fixed Price Option (Continued)

TABLE 6b												
Renewable Avoided Costs												
Renewable Fixed Price Option for Wind QF												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	39.19	41.23	62.67	82.07	70.84	65.73	76.97	106.57
2025	110.58	96.62	63.40	62.29	39.92	35.11	65.65	87.92	75.43	74.44	82.72	101.69
2026	20.44	17.60	10.84	10.62	6.06	5.09	11.30	15.83	13.29	13.09	14.77	18.63
2027	20.88	17.97	11.07	10.84	6.19	5.19	11.54	16.17	13.57	13.37	15.09	19.03
2028	21.26	18.30	11.27	11.04	6.30	5.28	11.75	16.46	13.82	13.61	15.36	19.37
2029	21.78	18.75	11.55	11.31	6.46	5.42	12.04	16.86	14.16	13.94	15.74	19.85
2030	21.14	18.05	10.69	10.45	5.49	4.43	11.19	16.12	13.36	13.14	14.97	19.17
2031	21.59	18.43	10.92	10.67	5.61	4.52	11.43	16.46	13.64	13.42	15.29	19.58
2032	21.98	18.76	11.11	10.86	5.70	4.60	11.63	16.76	13.88	13.65	15.56	19.93
2033	22.52	19.23	11.39	11.13	5.85	4.72	11.92	17.17	14.23	13.99	15.95	20.42
2034	23.00	19.64	11.64	11.37	5.98	4.82	12.18	17.54	14.53	14.29	16.29	20.86
2035	23.49	20.05	11.88	11.61	6.10	4.92	12.43	17.91	14.84	14.60	16.64	21.30
2036	23.91	20.41	12.09	11.81	6.21	5.00	12.65	18.23	15.11	14.86	16.93	21.69
2037	24.50	20.92	12.40	12.11	6.37	5.14	12.97	18.69	15.48	15.23	17.35	22.22
2038	25.03	21.37	12.66	12.37	6.50	5.24	13.25	19.08	15.81	15.55	17.72	22.70
2039	25.56	21.82	12.93	12.63	6.64	5.36	13.53	19.49	16.15	15.88	18.10	23.18
2040	26.02	22.21	13.16	12.85	6.75	5.44	13.77	19.84	16.44	16.16	18.42	23.60
2041	26.66	22.76	13.49	13.18	6.93	5.59	14.11	20.33	16.85	16.57	18.88	24.18
2042	27.23	23.25	13.78	13.46	7.08	5.71	14.41	20.77	17.21	16.92	19.28	24.69
2043	27.81	23.74	14.07	13.75	7.23	5.83	14.72	21.21	17.57	17.28	19.70	25.22
2044	28.31	24.17	14.32	13.99	7.35	5.92	14.98	21.59	17.88	17.59	20.05	25.67
2045	29.01	24.77	14.68	14.34	7.54	6.08	15.36	22.12	18.33	18.03	20.54	26.31
2046	29.63	25.30	14.99	14.64	7.70	6.21	15.68	22.60	18.72	18.41	20.98	26.87
2047	30.26	25.83	15.31	14.96	7.86	6.34	16.02	23.08	19.12	18.81	21.43	27.44
2048	30.81	26.30	15.58	15.22	7.99	6.44	16.30	23.49	19.46	19.14	21.81	27.94
2049	31.57	26.95	15.97	15.60	8.20	6.62	16.71	24.07	19.94	19.62	22.35	28.63

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
Renewable Fixed Price Option (Continued)

TABLE 7a												
Renewable Avoided Costs												
Renewable Fixed Price Option for Solar QF												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	54.76	70.07	147.15	205.35	155.32	79.77	95.08	136.94
2025	140.45	118.77	82.74	64.10	53.53	55.61	140.61	181.74	146.77	89.26	99.63	116.76
2026	62.94	58.53	51.20	47.41	45.26	45.68	62.98	71.34	64.23	52.53	54.64	58.12
2027	64.29	59.78	52.29	48.42	46.23	46.66	64.32	72.87	65.60	53.65	55.81	59.36
2028	65.58	60.99	53.36	49.42	47.18	47.62	65.61	74.31	66.91	54.74	56.94	60.56
2029	67.06	62.36	54.55	50.51	48.22	48.67	67.09	76.01	68.43	55.96	58.21	61.92
2030	68.28	63.48	55.50	51.38	49.04	49.50	68.32	77.42	69.68	56.95	59.24	63.04
2031	69.74	64.83	56.69	52.47	50.08	50.55	69.77	79.07	71.17	58.16	60.51	64.38
2032	70.87	65.88	57.58	53.29	50.85	51.33	70.91	80.38	72.33	59.08	61.47	65.41
2033	72.74	67.63	59.13	54.74	52.24	52.73	72.78	82.48	74.23	60.67	63.12	67.16
2034	74.43	69.21	60.53	56.04	53.50	54.00	74.47	84.38	75.96	62.10	64.60	68.73
2035	75.88	70.55	61.68	57.10	54.50	55.01	75.92	86.04	77.44	63.29	65.84	70.05
2036	77.26	71.82	62.79	58.13	55.48	56.00	77.30	87.60	78.84	64.43	67.03	71.32
2037	79.15	73.59	64.34	59.56	56.85	57.38	79.19	89.75	80.77	66.01	68.68	73.07
2038	80.84	75.16	65.71	60.83	58.06	58.60	80.88	91.66	82.50	67.42	70.14	74.63
2039	82.57	76.76	67.12	62.13	59.30	59.85	82.61	93.62	84.26	68.86	71.64	76.22
2040	84.22	78.31	68.48	63.40	60.52	61.09	84.26	95.48	85.94	70.26	73.09	77.76
2041	86.13	80.07	70.01	64.81	61.85	62.44	86.17	97.65	87.89	71.83	74.73	79.51
2042	87.96	81.78	71.50	66.19	63.17	63.77	88.01	99.74	89.77	73.36	76.32	81.21
2043	89.84	83.52	73.03	67.60	64.52	65.13	89.89	101.87	91.68	74.93	77.95	82.94
2044	91.47	85.04	74.35	68.82	65.68	66.30	91.52	103.72	93.34	76.28	79.36	84.44
2045	93.89	87.30	76.35	70.69	67.48	68.11	93.94	106.43	95.81	78.33	81.49	86.69
2046	95.71	88.98	77.80	72.02	68.74	69.39	95.76	108.53	97.67	79.83	83.05	88.36
2047	97.75	90.88	79.46	73.56	70.21	70.87	97.80	110.84	99.76	81.53	84.82	90.25
2048	99.53	92.53	80.90	74.88	71.47	72.14	99.58	112.86	101.57	83.00	86.35	91.88
2049	101.97	94.80	82.89	76.73	73.23	73.92	102.02	115.62	104.06	85.04	88.48	94.14

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
Renewable Fixed Price Option (Continued)

TABLE 7b												
Renewable Avoided Costs												
Renewable Fixed Price Option for Solar QF												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	0.00	0.00	0.00	0.00	38.93	40.97	62.41	81.81	70.58	65.48	76.71	106.31
2025	110.32	96.35	63.14	62.03	39.65	34.85	65.38	87.65	75.17	74.17	82.46	101.43
2026	20.17	17.33	10.57	10.35	5.79	4.82	11.03	15.56	13.02	12.82	14.50	18.36
2027	20.60	17.70	10.80	10.57	5.92	4.92	11.26	15.89	13.30	13.09	14.81	18.75
2028	20.97	18.02	10.99	10.75	6.02	5.00	11.46	16.18	13.53	13.32	15.08	19.09
2029	21.49	18.46	11.26	11.02	6.17	5.13	11.75	16.58	13.87	13.65	15.45	19.56
2030	21.74	18.65	11.29	11.05	6.09	5.03	11.79	16.72	13.96	13.74	15.57	19.77
2031	22.20	19.04	11.53	11.28	6.22	5.14	12.04	17.08	14.25	14.03	15.90	20.19
2032	22.60	19.39	11.74	11.48	6.33	5.22	12.25	17.38	14.51	14.28	16.19	20.56
2033	23.16	19.86	12.03	11.77	6.49	5.36	12.56	17.81	14.87	14.63	16.59	21.06
2034	23.65	20.29	12.29	12.02	6.63	5.47	12.83	18.19	15.18	14.95	16.94	21.51
2035	24.16	20.72	12.55	12.28	6.77	5.59	13.10	18.58	15.51	15.26	17.30	21.97
2036	24.59	21.09	12.77	12.49	6.89	5.68	13.33	18.91	15.79	15.54	17.61	22.37
2037	25.20	21.61	13.09	12.81	7.06	5.83	13.67	19.38	16.18	15.92	18.05	22.92
2038	25.74	22.08	13.37	13.08	7.21	5.96	13.96	19.79	16.52	16.26	18.43	23.41
2039	26.28	22.55	13.66	13.36	7.37	6.08	14.26	20.22	16.88	16.61	18.83	23.90
2040	26.76	22.95	13.90	13.60	7.49	6.18	14.51	20.58	17.18	16.91	19.16	24.34
2041	27.42	23.52	14.24	13.93	7.69	6.34	14.87	21.09	17.60	17.33	19.64	24.94
2042	28.00	24.02	14.55	14.23	7.85	6.48	15.19	21.54	17.98	17.69	20.06	25.47
2043	28.60	24.53	14.86	14.54	8.02	6.62	15.51	22.00	18.36	18.07	20.48	26.01
2044	29.12	24.98	15.12	14.79	8.15	6.73	15.79	22.39	18.69	18.40	20.85	26.48
2045	29.83	25.59	15.50	15.16	8.36	6.90	16.18	22.95	19.15	18.85	21.37	27.13
2046	30.47	26.14	15.83	15.49	8.54	7.05	16.53	23.44	19.56	19.25	21.82	27.71
2047	31.12	26.69	16.17	15.82	8.72	7.20	16.88	23.94	19.98	19.66	22.29	28.30
2048	31.68	27.18	16.45	16.10	8.87	7.32	17.18	24.37	20.34	20.02	22.69	28.81
2049	32.46	27.85	16.86	16.50	9.10	7.51	17.61	24.97	20.84	20.51	23.25	29.52

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 Renewable Fixed Price Option (Continued)

TABLE 8a												
Renewable Avoided Costs												
Renewable Fixed Price Option for Solar + Storage QF												
Premium-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	252.49	89.64	73.30	70.75	57.48	72.79	149.87	208.07	158.04	82.49	97.81	139.67
2025	143.23	121.55	85.52	66.89	56.31	58.39	143.39	184.52	149.55	92.04	102.42	119.54
2026	88.82	88.82	88.82	88.82	88.82	88.82	88.82	88.82	88.82	88.82	88.82	88.82
2027	90.72	90.72	90.72	90.72	90.72	90.72	90.72	90.72	90.72	90.72	90.72	90.72
2028	92.60	92.60	92.60	92.60	92.60	92.60	92.60	92.60	92.60	92.60	92.60	92.60
2029	94.88	94.88	94.88	94.88	94.88	94.88	94.88	94.88	94.88	94.88	94.88	94.88
2030	96.44	96.44	96.44	96.44	96.44	96.44	96.44	96.44	96.44	96.44	96.44	96.44
2031	98.50	98.50	98.50	98.50	98.50	98.50	98.50	98.50	98.50	98.50	98.50	98.50
2032	100.54	100.54	100.54	100.54	100.54	100.54	100.54	100.54	100.54	100.54	100.54	100.54
2033	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74
2034	105.21	105.21	105.21	105.21	105.21	105.21	105.21	105.21	105.21	105.21	105.21	105.21
2035	107.17	107.17	107.17	107.17	107.17	107.17	107.17	107.17	107.17	107.17	107.17	107.17
2036	109.40	109.40	109.40	109.40	109.40	109.40	109.40	109.40	109.40	109.40	109.40	109.40
2037	111.80	111.80	111.80	111.80	111.80	111.80	111.80	111.80	111.80	111.80	111.80	111.80
2038	114.18	114.18	114.18	114.18	114.18	114.18	114.18	114.18	114.18	114.18	114.18	114.18
2039	116.62	116.62	116.62	116.62	116.62	116.62	116.62	116.62	116.62	116.62	116.62	116.62
2040	119.34	119.34	119.34	119.34	119.34	119.34	119.34	119.34	119.34	119.34	119.34	119.34
2041	121.65	121.65	121.65	121.65	121.65	121.65	121.65	121.65	121.65	121.65	121.65	121.65
2042	124.24	124.24	124.24	124.24	124.24	124.24	124.24	124.24	124.24	124.24	124.24	124.24
2043	126.89	126.89	126.89	126.89	126.89	126.89	126.89	126.89	126.89	126.89	126.89	126.89
2044	129.52	129.52	129.52	129.52	129.52	129.52	129.52	129.52	129.52	129.52	129.52	129.52
2045	132.71	132.71	132.71	132.71	132.71	132.71	132.71	132.71	132.71	132.71	132.71	132.71
2046	135.19	135.19	135.19	135.19	135.19	135.19	135.19	135.19	135.19	135.19	135.19	135.19
2047	138.07	138.07	138.07	138.07	138.07	138.07	138.07	138.07	138.07	138.07	138.07	138.07
2048	140.93	140.93	140.93	140.93	140.93	140.93	140.93	140.93	140.93	140.93	140.93	140.93
2049	144.02	144.02	144.02	144.02	144.02	144.02	144.02	144.02	144.02	144.02	144.02	144.02

SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
Renewable Fixed Price Option (Continued)

TABLE 8b												
Renewable Avoided Costs												
Renewable Fixed Price Option for Solar + Storage QF												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	252.49	89.64	73.30	70.75	57.48	72.79	149.87	208.07	158.04	82.49	97.81	139.67
2025	143.23	121.55	85.52	66.89	56.31	58.39	143.39	184.52	149.55	92.04	102.42	119.54
2026	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71
2027	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07
2028	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38
2029	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80
2030	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97
2031	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36
2032	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69
2033	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15
2034	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56
2035	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97
2036	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33
2037	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83
2038	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28
2039	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73
2040	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12
2041	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67
2042	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15
2043	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65
2044	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07
2045	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67
2046	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19
2047	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73
2048	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19
2049	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84

SCHEDULE 201 (Continued)

WIND AND SOLAR INTEGRATION

TABLE 9		
Integration Costs		
Year	Wind	Solar
2024	2.46	2.72
2025	2.52	2.78
2026	2.57	2.84
2027	2.62	2.90
2028	2.68	2.96
2029	2.74	3.03
2030	3.90	3.30
2031	3.98	3.37
2032	4.07	3.44
2033	4.15	3.52
2034	4.24	3.59
2035	4.33	3.67
2036	4.43	3.75
2037	4.52	3.83
2038	4.62	3.91
2039	4.72	3.99
2040	4.82	4.08
2041	4.92	4.16
2042	5.02	4.25
2043	5.13	4.34
2044	5.24	4.43
2045	5.35	4.53
2046	5.47	4.63
2047	5.58	4.72
2048	5.70	4.83
2049	5.82	4.93

3. As-Available Rate

The As-Available Rate is based on the Avoided Energy Cost for surplus energy at the time of delivery. The As-Available Rate is equal to the Avoided Energy Cost. The Company will purchase As-Available Energy at the As-Available Rate.

SCHEDULE 201 (Continued)**MONTHLY SERVICE CHARGE**

Each separately metered QF will be charged a Monthly Service Charge as set forth in Schedule 300 pursuant to Docket No. UE 416 effective January 1, 2024.

INSURANCE REQUIREMENTS

The following insurance requirements are applicable to Sellers with a Standard PPA:

- 1) QFs with nameplate capacity ratings greater than 200 kW are required to secure and maintain a prudent amount of general liability insurance. The Seller must certify to the Company that it is maintaining general liability insurance coverage for each QF at prudent amounts. A prudent amount will be deemed to mean liability insurance coverage for both bodily injury and property damage liability in the amount of not less than \$1,000,000 each occurrence combined single limit, which limits may be required to be increased or decreased by the Company as the Company determines in its reasonable judgment, that economic conditions or claims experience may warrant.
- 2) Such insurance will include an endorsement naming the Company as an additional insured insofar as liability arising out of operations under this schedule and a provision that such liability policies will not be canceled or their limits reduced without 30 days' written notice to the Company. The Seller will furnish the Company with certificates of insurance together with the endorsements required herein. The Company will have the right to inspect the original policies of such insurance.
- 3) QFs with a design capacity of 200 kW or less are encouraged to pursue liability insurance on their own. The Oregon Public Utility Commission in Order No. 05-584 determined that it is inappropriate to require QFs that have a design capacity of 200 kW or less to obtain general liability insurance.

TRANSMISSION AGREEMENTS

If the QF is located outside the Company's service territory, the Seller is responsible for the transmission of power at its cost to the Company's service territory.

INTERCONNECTION REQUIREMENTS

Except as otherwise provided in a generation Interconnection Agreement between the Company and Seller, if the QF is located within the Company's service territory, switching equipment capable of isolating the QF from the Company's system will be accessible to the Company at all times. At the Company's option, the Company may operate the switching equipment described above if, in the sole opinion of the Company, continued operation of the QF in connection with the utility's system may create or contribute to a system emergency.

[THIS SHEET UPDATED AND EFFECTIVE JANUARY 1, 2024]

**Effective for service
on and after May 15, 2024**

SCHEDULE 201 (Continued)**INTERCONNECTION REQUIREMENTS (Continued)**

The QF owner interconnecting with the Company's distribution system must comply with all requirements for interconnection as established pursuant to Commission rule, in the Company's Rules and Regulations (Rule C) or the Company's Interconnection Procedures contained in its FERC Open Access Transmission Tariff (OATT), as applicable. The Seller will bear full responsibility for the installation and safe operation of the interconnection facilities.

DEFINITION OF A SMALL COGENERATION FACILITY OR SMALL POWER PRODUCTION FACILITY ELIGIBLE TO RECEIVE THE STANDARD FIXED PRICE OPTION OR THE RENEWABLE FIXED PRICE OPTION UNDER THE STANDARD PPA

A QF will be eligible to receive the Standard Fixed Price Option or the Renewable Fixed Price Option (as appropriate) under the Standard PPA if the nameplate capacity rating of the QF, together with any other electric generating facility using the same motive force, owned or controlled by the Same Person(s) or Affiliated Person(s), and located at the Same Site, does not exceed 3 MW for solar and solar-plus-storage QF projects or 10 MW for all other types of QF projects. Solar and solar-plus-storage QF projects with nameplate capacity rating (as calculated in this paragraph) that exceed 3 MW but do not exceed 10 MW are eligible for a Standard PPA containing negotiated prices under Schedule 202. A Community-Based or Family-Owned QF is exempt from these restrictions.

Definition of Community-Based

- a. A community project (or a community sponsored project) must have a recognized and established organization located within the county of the project or within 50 miles of the project that has a genuine role in helping the project be developed and must have some not insignificant continuing role with or interest in the project after it is completed and placed in service.
- b. After excluding the passive investor whose ownership interests are primarily related to green tag values and tax benefits as the primary ownership benefit, the equity (ownership) interests in a community sponsored project must be owned in substantial percentage (80 percent or more) by the following persons (individuals and entities): (i) the sponsoring organization, or its controlled affiliates; (ii) members of the sponsoring organization (if it is a membership organization) or owners of the sponsorship organization (if it is privately owned); (iii) persons who live in the county in which the project is located or who live a county adjoining the county in which the project is located; or (iv) units of local government, charities, or other established nonprofit organizations active either in the county in which the project is located or active in a county adjoining the county in which the project is located.

SCHEDULE 201 (Continued)

DEFINITION OF A SMALL COGENERATION FACILITY OR SMALL POWER PRODUCTION FACILITY ELIGIBLE TO RECEIVE THE STANDARD FIXED PRICE OPTION OR THE RENEWABLE FIXED PRICE OPTION UNDER THE STANDARD PPA (Continued)

Definition of Family-Owned

After excluding the ownership interest of the passive investor whose ownership interests are primarily related to green tag values and tax benefits as the primary ownership benefit, five or fewer individuals own 50 percent or more of the equity of the project entity, or fifteen or fewer individuals own 90 percent or more of the project entity. A “look through” rule applies to closely held entities that hold the project entity, so that equity held by LLCs, trusts, estates, corporations, partnerships or other similar entities is considered held by the equity owners of the look through entity. An individual is a natural person. In counting to five or fifteen, spouses or children of an equity owner of the project owner who also have an equity interest are aggregated and counted as a single individual.

Definition of Person(s) or Affiliated Person(s)

As used above, the term “Same Person(s)” or “Affiliated Person(s)” means a natural person or persons or any legal entity or entities sharing common ownership, management or acting jointly or in concert with or exercising influence over the policies or actions of another person or entity. However, two facilities will not be held to be owned or controlled by the Same Person(s) or Affiliated Person(s) solely because they are developed by a single entity.

Furthermore, two facilities will not be held to be owned or controlled by the Same Person(s) or Affiliated Person(s) if such common person or persons is a “passive investor” whose ownership interest in the QF is primarily related to utilizing production tax credits, green tag values and MACRS depreciation as the primary ownership benefit and the facilities at issue are independent family-owned or community-based projects. A unit of Oregon local government may also be a “passive investor” in a community-based project if the local governmental unit demonstrates that it will not have an equity ownership interest in or exercise any control over the management of the QF and that its only interest is a share of the cash flow from the QF, which share will not exceed 20%. The 20% cash flow share limit may only be exceeded for good cause shown and only with the prior approval of the Commission.

Definition of Same Site

For purposes of the foregoing, generating facilities are considered to be located at the same site as the QF for which qualification for standard pricing or negotiated pricing under the Standard PPA is sought if they are located within a five-mile radius of any generating facilities or equipment providing fuel or motive force associated with the QF for which qualification for standard pricing or negotiated pricing under the Standard PPA is sought.

SCHEDULE 201 (Continued)

DEFINITION OF A SMALL COGENERATION FACILITY OR SMALL POWER PRODUCTION FACILITY ELIGIBLE TO RECEIVE THE STANDARD FIXED PRICE OPTION OR THE RENEWABLE FIXED PRICE OPTION UNDER THE STANDARD PPA (Continued)

Definition of Shared Interconnection and Infrastructure

QFs otherwise meeting the above-described separate ownership test and thereby qualified for entitlement to standard pricing or negotiated pricing under the Standard PPA will not be disqualified by utilizing an interconnection or other infrastructure not providing motive force or fuel that is shared with other QFs qualifying for standard pricing or negotiated pricing under the Standard PPA so long as the use of the shared interconnection complies with the interconnecting utility's safety and reliability standards, interconnection agreement requirements and Prudent Electrical Practices as that term is defined in the interconnecting utility's approved Standard PPA.

OTHER DEFINITIONS**As-Available Energy**

As-Available Energy means 1) all Net Output delivered to PGE if Seller elected the As-Available Rate option within a Standard PPA, or 2) (a) all Net Output delivered prior to the Commercial Operation Date; (b) all Net Output deliveries greater than Maximum Net Output in any Contract Year as defined under the Standard PPA year; and (c) for deliveries above the nameplate capacity rating in any hour.

Deliveries pursuant to an Off-System PPA that are above the nameplate capacity rating in any hour solely for the purpose of accommodating hourly scheduling in whole megawatts by a third-party transmission provider will not be subject to the As-Available Rate.

Mid-C Index Price

As used in this schedule, the daily Mid-C Index Price shall be the applicable day-ahead Intercontinental Exchange ("ICE") Mid-C Physical Peak (bilateral) or Mid-C Physical Off-Peak (bilateral) indices representative of the OTC market for WSPP Schedule-C physical Firm Energy transactions at the Mid-C trading hub. Product details for the Mid-C Physical Peak (bilateral) or Mid-C Physical Off-Peak (bilateral) are found on the following website: <https://www.theice.com/products/OTC/Physical-Energy/Electricity>. In the event ICE no longer publishes this index, PGE and the Seller agree to select an alternative successor index representative of the Mid-C trading hub.

SCHEDULE 201 (Continued)

OTHER DEFINITIONS (Continued)

Avoided Energy Cost:

The Avoided Energy Cost means eighty-two and four tenths percent (82.4%) of the monthly arithmetic average of each day's ICE Mid-C Physical Peak (bilateral) and Mid-C Physical Off-Peak (bilateral) average index prices. Each day's index prices will reflect the relative proportions of peak hours and off-peak hours in the month as follows:

$$.824 * \left(\sum_{x=1}^n \{(\text{ICE Mid-C Physical Peak (bilateral) Avg}_x * \text{applicable peak index hours for day}) + (\text{ICE Mid-C Physical Off-Peak (bilateral) Avg}_x * \text{applicable off-peak index hours for day})\} / (n*24) \right)$$

where n = number of days in the month

Definition of RPS Attributes

As used in this schedule, RPS Attributes means all attributes related to the Net Output generated by the Facility that are required in order to provide PGE with "qualifying electricity," as that term is defined in Oregon's Renewable Portfolio Standard Act, Ore. Rev. Stat. 469A.010, in effect at the time of execution of this Agreement. RPS Attributes do not include Environmental Attributes that are greenhouse gas offsets from methane capture not associated with the generation of electricity and not needed to ensure that there are zero net emissions associated with the generation of electricity.

Definition of Environmental Attributes

As used in this schedule, Environmental Attributes shall mean any and all claims, credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical, or other substance to the air, soil or water. Environmental Attributes include but are not limited to: (1) any avoided emissions of pollutants to the air, soil, or water such as (subject to the foregoing) sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), and other pollutants; and (2) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change to contribute to the actual or potential threat of altering the Earth's climate by trapping heat in the atmosphere.

Definition of Resource Sufficiency Period

This is the period from the current year through 2025.

Definition of Resource Deficiency Period

This is the period from 2026.

SCHEDULE 201 (Continued)

OTHER DEFINITIONS (Continued)

Definition of Renewable Resource Sufficiency Period

This is the period from the current year through 2025.

Definition of Renewable Resource Deficiency Period

This is the period from 2026.

DISPUTE RESOLUTION

Upon request, the QF will provide the purchasing utility with documentation verifying the ownership, management and financial structure of the QF in reasonably sufficient detail to allow the utility to make an initial determination of whether or not the QF meets the above-described criteria for entitlement to standard pricing or negotiated pricing under the Standard PPA.

The QF may present disputes to the Commission for resolution using the following process:

The QF may file a complaint asking the Commission to adjudicate disputes regarding the formation of the standard contract. The QF may not file such a complaint during any 15-day period in which the utility has the obligation to respond, but must wait until the 15-day period has passed.

The utility may respond to the complaint within ten days of service.

The Commission will limit its review to the issues identified in the complaint and response, and utilize a process similar to the arbitration process adopted to facilitate the execution of interconnection agreements among telecommunications carriers. See OAR 860, Division 016. The administrative law judge will not act as an arbitrator.

SPECIAL CONDITIONS

1. Delivery of energy by Seller will be at a voltage, phase, frequency, and power factor as specified by the Company.
2. If the Seller also receives retail Electricity Service from the Company at the same location, any payments under this schedule will be credited to the Seller's retail Electricity Service bill. At the option of the Customer, any net credit over \$10.00 will be paid by check to the Customer.
3. Unless required by state or federal law, if the 1978 Public Utility Regulatory Policies Act (PURPA) is repealed, PPAs entered into pursuant to this schedule will not terminate prior to the Standard or Negotiated PPA's termination date.

SCHEDULE 201 (Concluded)

TERM OF AGREEMENT

Not less than one year and not to exceed 20 years from the commercial operation date selected by the Seller and memorialized in the PPA.

UM 1728

Supplemental Application to Update Schedule 201
Avoided Cost Power Purchase Information

Attachment A
Description of Non-Renewable Avoided Costs

Tables S.9a and S.9b are confidential and have been redacted

PORTLAND GENERAL ELECTRIC COMPANY
NON-RENEWABLE AVOIDED COST STUDY
2024 ANNUAL UPDATE

Introduction

This avoided cost update is consistent with PGE's 2023 Integrated Resource Plan (IRP). The Commission directs electric utilities to make an avoided cost filing within 30 days of IRP acknowledgement.

Integrated Resource Plan

The Commission acknowledged PGE's 2023 IRP at its January 25, 2024 special public meeting. The 2023 IRP forms the basis of most of the inputs in this avoided cost study.

Below is a summary of the changes:

Deficiency/Sufficiency Periods

The Deficiency/Sufficiency periods have been updated based on the 2023 IRP. The current Deficiency/Sufficiency periods are stated below:

- Resource Sufficiency Period is the period from the current year through 2025.
- Resource Deficiency Period is the period beginning in 2026.

Gas Price Projections

Natural gas prices are based on PGE's forward AECO price curves from January 31, 2024 for January 2024 through December 2028. For 2029-2050, prices are based on the same methodology as the acknowledged 2023 IRP with the most recent long-term forecast from Wood Mackenzie (2023 H2). The 2029 prices are based on a linear interpolation from PGE's curves to the long-term forecast. For 2030 through 2050, prices align with the AECO prices from the 2023 H2 Wood Mackenzie forecast. Prices after 2051 are escalated with inflation.

The nominal average annual northwest burnertip natural gas price is forecasted to trend from \$2.50/MMBtu in 2025 to \$6.56/MMBtu in 2048.

The variable gas transportation costs are based on 2023 AUT variable transportation costs and loss rates.

The nominal average variable gas transportation cost is forecasted to trend from \$0.05/MMBtu in 2025 to \$0.19/MMBtu in 2048.

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Electricity Market Projections

The forward trading curves are based on market prices for electricity delivered to PGE's system. The forward trading curves adjusted for delivery are used to price avoided costs during the resource sufficiency period. For January 2024 through December 2025 the market prices are based on PGE's forward Mid-Columbia trading curve from January 31, 2024.

The current Schedule 201 prices, wheeling costs are based on 2023 BPA rates consistent with the 2023 IRP, adjusted for inflation.

Avoided Cost Pricing Estimates

Tables 1 through 3 and 10 through 13(following) summarize the results for PGE's fixed price option. Tables 1a, 1b, 2a, 2b, 3a, and 3b¹ are estimates of monthly on- and off-peak avoided costs for energy over 20 years beginning in April 2024. Tables 10a, 10b, 11a, 11b, 12a, 12b, 13a and 13b are estimates of monthly on- and off-peak avoided costs for capacity for over 20 years beginning in January 2026. The pricing is comprised of the energy plus the capacity costs (discussed below).²

The sufficiency period prices (expressed in \$/MWh or mills/kWh) for the years 2024 through 2025, are based on the forward electricity prices adjusted for delivery as discussed above.

The deficiency period prices begin in 2026. The on-peak prices represent both capacity and energy costs, while off-peak prices represent energy costs only. The on-peak price includes the following costs of a CCCT: fuel, variable operation and maintenance (O&M), capacity, and other fixed costs. The off-peak price includes fuel, variable O&M, and other fixed costs. The "other fixed costs" represent the energy portion of the fixed costs of a CCCT. Other fixed costs are calculated by taking the fixed costs of a CCCT minus the real levelized capital carrying cost and fixed O&M of a 4-Hour Battery. The result (other fixed costs) represents the energy portion of the fixed costs of a CCCT. On-peak periods are from 6 a.m. through 10 p.m. Mondays through Saturdays. The off-peak hours are from 10 p.m. until 6 a.m. Mondays through Saturdays and all twenty-four hours on Sunday. For the interim Solar plus Storage rate the four daily premium peak hours are daylight savings months (March–October): 6:00 PM – 10:00 PM and winter months (November–February): 5:00 AM – 7:00 AM and 7:00 PM – 9:00 PM³ Table 4 provides integration costs avoided. Tables 4 and 5 show the projected on- and off-peak resource sufficiency period forward market prices.

⁴ Table 1: Base Load QF; Table 2: Wind QF; Table 3: Solar QF, Table 4 Interim Solar plus Storage.

² Avoided Cost Components section.

³ Schedule 201, Sheet 201-3.

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Avoided Cost Components

Energy:

Tables 6 through 9 in the work papers show the other fixed costs, variable O&M, fuel costs, gas forecast avoided cost components (with and without transportation), and capacity.

Table 6 contains the energy portion of a CCCT, calculated using fixed costs of a CCCT minus the real levelized capital carrying cost and fixed O&M of a 4-Hour Battery.

Table 7 shows the variable O&M associated with the CCCT and Table 8 shows the projected fuel costs.

Table 9a and 9b contains the forecasted gas prices in \$/MMBtu.

Tables 4, 6, 7 and 8 can be summed to equal the total on-peak avoided costs in Table 1a. Tables 5, 6, 7 and 8 can be summed to equal the total off-peak avoided costs in Table 1b.

Capacity:

The on- and off-peak 4-Hour Battery -related capacity component costs are shown in Tables 10a and 10b, 11a and 11b, 12a and 12b, 13a and 13b. Tables 10b, 11b, 12b and 13b are blank since no capacity value is calculated for the off-peak period. The capacity values are applicable only to on-peak hours.

Non-Renewable Energy Tables

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Portland General Electric Avoided Cost Study On-Peak Energy, Base Load													
Table S.1a												Nominal \$/MWh	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	252.49	89.64	73.30	70.75	57.48	72.79	149.87	208.07	158.04	82.49	97.81	139.67	
2025	143.23	121.55	85.52	66.89	56.31	58.39	143.39	184.52	149.55	92.04	102.42	119.54	110.41
2026	25.64	25.17	22.33	19.70	18.99	19.31	19.96	19.97	19.97	20.75	23.31	25.46	21.70
2027	26.43	26.09	22.47	19.37	18.61	18.90	19.51	19.54	19.62	20.38	22.81	24.93	21.53
2028	25.95	25.59	22.35	19.24	18.47	18.68	19.22	19.23	19.18	19.96	22.74	24.91	21.27
2029	23.68	23.23	21.59	20.46	20.33	20.32	20.73	21.05	21.32	21.78	22.47	22.80	21.64
2030	23.28	23.32	21.87	21.01	21.11	20.98	21.27	21.12	21.45	21.84	23.12	23.76	22.00
2031	23.95	23.95	21.21	20.58	20.44	20.32	20.84	20.95	20.90	21.22	23.29	24.14	21.81
2032	23.82	24.27	22.11	20.81	20.72	20.98	22.00	22.11	22.67	23.48	25.03	25.69	22.81
2033	25.92	25.36	24.95	23.90	23.61	23.83	24.10	24.08	24.98	25.41	26.45	27.73	25.03
2034	29.18	27.52	26.34	24.96	24.91	24.61	24.64	25.16	25.00	25.75	26.49	27.89	26.03
2035	29.14	28.25	25.65	24.48	24.39	24.44	24.58	24.69	24.88	25.57	27.19	28.85	26.00
2036	30.21	28.83	25.64	24.09	23.96	24.32	24.23	24.42	24.49	26.18	26.41	28.12	25.90
2037	29.40	27.72	23.47	22.36	21.99	21.76	21.89	22.46	22.62	23.94	24.05	26.22	23.98
2038	28.04	27.97	23.14	21.65	21.82	21.30	22.27	21.96	22.54	23.89	21.68	23.44	23.28
2039	26.75	25.98	24.32	22.11	21.97	21.82	21.83	22.08	22.44	22.40	22.46	24.12	23.18
2040	27.18	28.42	25.48	23.46	23.34	23.44	23.15	23.33	23.97	24.52	23.34	25.59	24.59
2041	30.41	29.82	26.06	24.02	23.59	23.42	24.56	25.32	25.99	24.34	26.63	28.77	26.06
2042	31.00	33.17	28.64	26.32	26.18	26.00	26.96	27.07	27.28	25.80	27.15	31.14	28.04
2043	31.80	35.04	28.98	26.99	26.85	26.80	27.93	28.05	28.27	27.19	27.91	31.31	28.90
2044	34.06	40.12	33.25	30.98	30.85	30.81	33.76	34.05	34.29	30.43	32.00	34.53	33.24
2045	37.61	44.69	38.69	36.21	36.09	36.16	37.46	37.99	38.25	33.95	37.66	40.20	37.87
2046	44.19	47.86	41.25	38.81	38.70	38.72	40.70	41.09	41.37	37.81	39.58	42.38	40.99
2047	46.40	50.61	44.74	42.18	42.07	42.11	43.52	43.96	44.27	41.30	43.78	46.70	44.26
2048	51.64	55.49	49.27	46.52	46.41	46.34	47.60	48.03	48.37	46.62	47.05	50.16	48.61
2049	54.72	59.58	52.03	49.50	49.42	49.37	50.54	51.62	51.98	49.73	51.31	54.17	51.95

Portland General Electric Avoided Cost Study Off-Peak Energy, Base Load													
Table S.1b												Nominal \$/MWh	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	197.46	72.28	63.60	61.56	41.65	43.70	65.14	84.53	73.30	68.20	79.43	109.04	
2025	113.10	99.13	65.92	64.81	42.43	37.63	68.16	90.43	77.95	76.95	85.24	104.21	76.99
2026	25.64	25.17	22.33	19.70	18.99	19.31	19.96	19.97	19.97	20.75	23.31	25.46	21.69
2027	26.43	26.09	22.47	19.37	18.61	18.90	19.51	19.54	19.62	20.38	22.81	24.93	21.53
2028	25.95	25.59	22.35	19.24	18.47	18.68	19.22	19.23	19.18	19.96	22.74	24.91	21.30
2029	23.68	23.23	21.59	20.46	20.33	20.32	20.73	21.05	21.32	21.78	22.47	22.80	21.64
2030	23.28	23.32	21.87	21.01	21.11	20.98	21.27	21.12	21.45	21.84	23.12	23.76	22.01
2031	23.95	23.95	21.21	20.58	20.44	20.32	20.84	20.95	20.90	21.22	23.29	24.14	21.80
2032	23.82	24.27	22.11	20.81	20.72	20.98	22.00	22.11	22.67	23.48	25.03	25.69	22.80
2033	25.92	25.36	24.95	23.90	23.61	23.83	24.10	24.08	24.98	25.41	26.45	27.73	25.02
2034	29.18	27.52	26.34	24.96	24.91	24.61	24.64	25.16	25.00	25.75	26.49	27.89	26.04
2035	29.14	28.25	25.65	24.48	24.39	24.44	24.58	24.69	24.88	25.57	27.19	28.85	26.00
2036	30.21	28.83	25.64	24.09	23.96	24.32	24.23	24.42	24.49	26.18	26.41	28.12	25.88
2037	29.40	27.72	23.47	22.36	21.99	21.76	21.89	22.46	22.62	23.94	24.05	26.22	23.96
2038	28.04	27.97	23.14	21.65	21.82	21.30	22.27	21.96	22.54	23.89	21.68	23.44	23.30
2039	26.75	25.98	24.32	22.11	21.97	21.82	21.83	22.08	22.44	22.40	22.46	24.12	23.18
2040	27.18	28.42	25.48	23.46	23.34	23.44	23.15	23.33	23.97	24.52	23.34	25.59	24.59
2041	30.41	29.82	26.06	24.02	23.59	23.42	24.56	25.32	25.99	24.34	26.63	28.77	26.06
2042	31.00	33.17	28.64	26.32	26.18	26.00	26.96	27.07	27.28	25.80	27.15	31.14	28.02
2043	31.80	35.04	28.98	26.99	26.85	26.80	27.93	28.05	28.27	27.19	27.91	31.31	28.88
2044	34.06	40.12	33.25	30.98	30.85	30.81	33.76	34.05	34.29	30.43	32.00	34.53	33.22
2045	37.61	44.69	38.69	36.21	36.09	36.16	37.46	37.99	38.25	33.95	37.66	40.20	37.86
2046	44.19	47.86	41.25	38.81	38.70	38.72	40.70	41.09	41.37	37.81	39.58	42.38	41.00
2047	46.40	50.61	44.74	42.18	42.07	42.11	43.52	43.96	44.27	41.30	43.78	46.70	44.28
2048	51.64	55.49	49.27	46.52	46.41	46.34	47.60	48.03	48.37	46.62	47.05	50.16	48.59
2049	54.72	59.58	52.03	49.50	49.42	49.37	50.54	51.62	51.98	49.73	51.31	54.17	51.95

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Portland General Electric													
Avoided Cost Study													
On-Peak Energy, Wind													
												Nominal \$/MWh	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024					55.01	70.33	147.41	205.61	155.58	80.03	95.34	137.20	79.21
2025	140.72	119.03	83.00	64.37	53.79	55.88	140.87	182.01	147.04	89.52	99.90	117.02	107.89
2026	23.07	22.60	19.76	17.13	16.42	16.74	17.39	17.40	17.40	18.18	20.74	22.89	19.13
2027	23.81	23.46	19.85	16.74	15.98	16.27	16.88	16.92	16.99	17.75	20.19	22.31	18.91
2028	23.26	22.91	19.67	16.56	15.79	16.00	16.54	16.54	16.50	17.28	20.06	22.22	18.59
2029	20.94	20.50	18.85	17.73	17.59	17.58	17.99	18.31	18.59	19.04	19.73	20.06	18.91
2030	19.38	19.42	17.97	17.11	17.21	17.08	17.37	17.22	17.55	17.94	19.22	19.86	18.10
2031	19.97	19.97	17.22	16.60	16.45	16.34	16.86	16.96	16.92	17.23	19.30	20.16	17.82
2032	19.75	20.20	18.04	16.74	16.65	16.91	17.93	18.04	18.60	19.41	20.96	21.62	18.74
2033	21.77	21.21	20.80	19.74	19.45	19.67	19.94	19.93	20.83	21.26	22.30	23.58	20.88
2034	24.94	23.27	22.10	20.72	20.66	20.37	20.40	20.91	20.76	21.51	22.24	23.65	21.78
2035	24.81	23.91	21.32	20.14	20.05	20.11	20.24	20.35	20.55	21.24	22.86	24.52	21.67
2036	25.78	24.41	21.22	19.66	19.53	19.89	19.80	19.89	20.06	21.75	21.99	23.69	21.48
2037	24.88	23.20	18.95	17.84	17.47	17.24	17.37	17.94	18.09	19.42	19.53	21.70	19.46
2038	23.43	23.36	18.53	17.04	17.20	16.69	17.65	17.34	17.93	19.27	17.06	18.82	18.66
2039	22.04	21.27	19.61	17.40	17.25	17.11	17.12	17.36	17.72	17.68	17.74	19.40	18.46
2040	22.36	23.60	20.66	18.64	18.52	18.62	18.34	18.51	19.16	19.70	18.53	20.77	19.77
2041	25.49	24.91	21.14	19.10	18.67	18.50	19.64	20.40	21.08	19.42	21.71	23.85	21.14
2042	25.98	28.14	23.61	21.30	21.15	20.98	21.93	22.05	22.26	20.78	22.13	26.12	23.01
2043	26.66	29.91	23.85	21.86	21.72	21.67	22.80	22.92	23.14	22.06	22.78	26.18	23.77
2044	28.82	34.88	28.01	25.74	25.61	25.57	28.51	28.81	29.05	25.19	26.75	29.29	28.00
2045	32.26	39.34	33.34	30.85	30.73	30.81	32.11	32.63	32.90	28.60	32.30	34.85	32.52
2046	38.73	42.40	35.78	33.35	33.23	33.25	35.23	35.62	35.91	32.35	34.11	36.92	35.53
2047	40.81	45.02	39.16	36.60	36.48	36.53	37.94	38.38	38.69	35.71	38.20	41.12	38.67
2048	45.93	49.79	43.56	40.82	40.71	40.64	41.89	42.33	42.66	40.92	41.35	44.45	42.91
2049	48.90	53.76	46.20	43.68	43.60	43.54	44.72	45.79	46.15	43.91	45.49	48.35	46.13
Portland General Electric													
Avoided Cost Study													
Off-Peak Energy, Wind													
												Nominal \$/MWh	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024					39.19	41.23	62.67	82.07	70.84	65.73	76.97	106.57	45.77
2025	110.58	96.62	63.40	62.29	39.92	35.11	65.65	87.92	75.43	74.44	82.72	101.69	74.47
2026	23.07	22.60	19.76	17.13	16.42	16.74	17.39	17.40	17.40	18.18	20.74	22.89	19.12
2027	23.81	23.46	19.85	16.74	15.98	16.27	16.88	16.92	16.99	17.75	20.19	22.31	18.91
2028	23.26	22.91	19.67	16.56	15.79	16.00	16.54	16.54	16.50	17.28	20.06	22.22	18.62
2029	20.94	20.50	18.85	17.73	17.59	17.58	17.99	18.31	18.59	19.04	19.73	20.06	18.90
2030	19.38	19.42	17.97	17.11	17.21	17.08	17.37	17.22	17.55	17.94	19.22	19.86	18.11
2031	19.97	19.97	17.22	16.60	16.45	16.34	16.86	16.96	16.92	17.23	19.30	20.16	17.82
2032	19.75	20.20	18.04	16.74	16.65	16.91	17.93	18.04	18.60	19.41	20.96	21.62	18.73
2033	21.77	21.21	20.80	19.74	19.45	19.67	19.94	19.93	20.83	21.26	22.30	23.58	20.87
2034	24.94	23.27	22.10	20.72	20.66	20.37	20.40	20.91	20.76	21.51	22.24	23.65	21.80
2035	24.81	23.91	21.32	20.14	20.05	20.11	20.24	20.35	20.55	21.24	22.86	24.52	21.66
2036	25.78	24.41	21.22	19.66	19.53	19.89	19.80	19.89	20.06	21.75	21.99	23.69	21.46
2037	24.88	23.20	18.95	17.84	17.47	17.24	17.37	17.94	18.09	19.42	19.53	21.70	19.44
2038	23.43	23.36	18.53	17.04	17.20	16.69	17.65	17.34	17.93	19.27	17.06	18.82	18.69
2039	22.04	21.27	19.61	17.40	17.25	17.11	17.12	17.36	17.72	17.68	17.74	19.40	18.47
2040	22.36	23.60	20.66	18.64	18.52	18.62	18.34	18.51	19.16	19.70	18.53	20.77	19.78
2041	25.49	24.91	21.14	19.10	18.67	18.50	19.64	20.40	21.08	19.42	21.71	23.85	21.14
2042	25.98	28.14	23.61	21.30	21.15	20.98	21.93	22.05	22.26	20.78	22.13	26.12	23.00
2043	26.66	29.91	23.85	21.86	21.72	21.67	22.80	22.92	23.14	22.06	22.78	26.18	23.75
2044	28.82	34.88	28.01	25.74	25.61	25.57	28.51	28.81	29.05	25.19	26.75	29.29	27.98
2045	32.26	39.34	33.34	30.85	30.73	30.81	32.11	32.63	32.90	28.60	32.30	34.85	32.51
2046	38.73	42.40	35.78	33.35	33.23	33.25	35.23	35.62	35.91	32.35	34.11	36.92	35.54
2047	40.81	45.02	39.16	36.60	36.48	36.53	37.94	38.38	38.69	35.71	38.20	41.12	38.69
2048	45.93	49.79	43.56	40.82	40.71	40.64	41.89	42.33	42.66	40.92	41.35	44.45	42.89
2049	48.90	53.76	46.20	43.68	43.60	43.54	44.72	45.79	46.15	43.91	45.49	48.35	46.13

PGE's 2024 NON_RENEWABLE AVOIDED COST ANNUAL UPDATE
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Portland General Electric													
Avoided Cost Study													
On-Peak Energy, Solar													
Table S.3a													Nominal \$/MWh
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024					54.76	70.07	147.15	205.35	155.32	79.77	95.08	136.94	
2025	140.45	118.77	82.74	64.10	53.53	55.61	140.61	181.74	146.77	89.26	99.63	116.76	107.63
2026	22.80	22.33	19.49	16.86	16.15	16.47	17.12	17.13	17.13	17.91	20.47	22.62	18.86
2027	23.53	23.19	19.57	16.47	15.71	16.00	16.60	16.64	16.72	17.48	19.91	22.03	18.63
2028	22.98	22.63	19.39	16.28	15.51	15.72	16.26	16.26	16.22	17.00	19.78	21.94	18.31
2029	20.66	20.21	18.57	17.44	17.30	17.29	17.70	18.02	18.30	18.76	19.45	19.77	18.62
2030	19.98	20.02	18.57	17.71	17.81	17.68	17.97	17.82	18.15	18.54	19.82	20.46	18.70
2031	20.58	20.58	17.84	17.21	17.06	16.95	17.47	17.58	17.53	17.85	19.92	20.77	18.44
2032	20.38	20.83	18.66	17.37	17.28	17.53	18.56	18.67	19.23	20.04	21.59	22.25	19.37
2033	22.41	21.85	21.44	20.38	20.09	20.31	20.58	20.57	21.47	21.89	22.94	24.22	21.52
2034	25.59	23.93	22.75	21.37	21.31	21.02	21.05	21.56	21.41	22.16	22.90	24.30	22.44
2035	25.48	24.58	21.98	20.81	20.72	20.77	20.91	21.02	21.22	21.90	23.52	25.18	22.33
2036	26.46	25.09	21.90	20.34	20.21	20.57	20.48	20.57	20.75	22.43	22.67	24.38	22.16
2037	25.58	23.90	19.64	18.53	18.17	17.94	18.07	18.63	18.79	20.12	20.23	22.39	20.16
2038	24.14	24.07	19.24	17.75	17.91	17.40	18.36	18.05	18.64	19.98	17.77	19.53	19.37
2039	22.76	21.99	20.33	18.12	17.98	17.83	17.84	18.09	18.45	18.41	18.47	20.13	19.19
2040	23.10	24.34	21.40	19.38	19.26	19.36	19.08	19.25	19.90	20.44	19.27	21.51	20.51
2041	26.25	25.66	21.90	19.86	19.43	19.26	20.40	21.16	21.83	20.18	22.47	24.60	21.89
2042	26.75	28.91	24.39	22.07	21.93	21.75	22.71	22.82	23.03	21.55	22.90	26.89	23.79
2043	27.45	30.70	24.64	22.65	22.51	22.46	23.59	23.71	23.93	22.85	23.57	26.97	24.56
2044	29.63	35.68	28.81	26.55	26.41	26.37	29.32	29.61	29.86	26.00	27.56	30.10	28.81
2045	33.08	40.17	34.16	31.68	31.56	31.64	32.93	33.46	33.72	29.42	33.13	35.67	33.34
2046	39.57	43.24	36.62	34.19	34.07	34.09	36.07	36.46	36.75	33.19	34.95	37.76	36.37
2047	41.67	45.88	40.02	37.46	37.34	37.39	38.80	39.24	39.55	36.57	39.06	41.98	39.53
2048	46.81	50.66	44.44	41.69	41.58	41.52	42.77	43.20	43.54	41.80	42.23	45.33	43.79
2049	49.80	54.65	47.10	44.58	44.49	44.44	45.61	46.69	47.05	44.80	46.39	49.24	47.02
Portland General Electric													
Avoided Cost Study													
Off-Peak Energy, Solar													
Table S.3b													Nominal \$/MWh
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024					38.93	40.97	62.41	81.81	70.58	65.48	76.71	106.31	
2025	110.32	96.35	63.14	62.03	39.65	34.85	65.38	87.65	75.17	74.17	82.46	101.43	74.21
2026	22.80	22.33	19.49	16.86	16.15	16.47	17.12	17.13	17.13	17.91	20.47	22.62	18.85
2027	23.53	23.19	19.57	16.47	15.71	16.00	16.60	16.64	16.72	17.48	19.91	22.03	18.63
2028	22.98	22.63	19.39	16.28	15.51	15.72	16.26	16.26	16.22	17.00	19.78	21.94	18.33
2029	20.66	20.21	18.57	17.44	17.30	17.29	17.70	18.02	18.30	18.76	19.45	19.77	18.61
2030	19.98	20.02	18.57	17.71	17.81	17.68	17.97	17.82	18.15	18.54	19.82	20.46	18.71
2031	20.58	20.58	17.84	17.21	17.06	16.95	17.47	17.58	17.53	17.85	19.92	20.77	18.43
2032	20.38	20.83	18.66	17.37	17.28	17.53	18.56	18.67	19.23	20.04	21.59	22.25	19.35
2033	22.41	21.85	21.44	20.38	20.09	20.31	20.58	20.57	21.47	21.89	22.94	24.22	21.51
2034	25.59	23.93	22.75	21.37	21.31	21.02	21.05	21.56	21.41	22.16	22.90	24.30	22.45
2035	25.48	24.58	21.98	20.81	20.72	20.77	20.91	21.02	21.22	21.90	23.52	25.18	22.33
2036	26.46	25.09	21.90	20.34	20.21	20.57	20.48	20.57	20.75	22.43	22.67	24.38	22.14
2037	25.58	23.90	19.64	18.53	18.17	17.94	18.07	18.63	18.79	20.12	20.23	22.39	20.14
2038	24.14	24.07	19.24	17.75	17.91	17.40	18.36	18.05	18.64	19.98	17.77	19.53	19.40
2039	22.76	21.99	20.33	18.12	17.98	17.83	17.84	18.09	18.45	18.41	18.47	20.13	19.19
2040	23.10	24.34	21.40	19.38	19.26	19.36	19.08	19.25	19.90	20.44	19.27	21.51	20.52
2041	26.25	25.66	21.90	19.86	19.43	19.26	20.40	21.16	21.83	20.18	22.47	24.60	21.90
2042	26.75	28.91	24.39	22.07	21.93	21.75	22.71	22.82	23.03	21.55	22.90	26.89	23.77
2043	27.45	30.70	24.64	22.65	22.51	22.46	23.59	23.71	23.93	22.85	23.57	26.97	24.54
2044	29.63	35.68	28.81	26.55	26.41	26.37	29.32	29.61	29.86	26.00	27.56	30.10	28.79
2045	33.08	40.17	34.16	31.68	31.56	31.64	32.93	33.46	33.72	29.42	33.13	35.67	33.33
2046	39.57	43.24	36.62	34.19	34.07	34.09	36.07	36.46	36.75	33.19	34.95	37.76	36.38
2047	41.67	45.88	40.02	37.46	37.34	37.39	38.80	39.24	39.55	36.57	39.06	41.98	39.55
2048	46.81	50.66	44.44	41.69	41.58	41.52	42.77	43.20	43.54	41.80	42.23	45.33	43.77
2049	49.80	54.65	47.10	44.58	44.49	44.44	45.61	46.69	47.05	44.80	46.39	49.24	47.02

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Portland General Electric													
Avoided Cost Study													
Forecasted Gas Price - GPf (\$/MMBtu - including transportation)													
Table S.9b												Nominal \$/MMBtu	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	-	-	-	-	-	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-	-	-	-	-	-
2026													2.80
2027													2.77
2028													2.72
2029													2.76
2030													2.81
2031													2.77
2032													2.91
2033													3.23
2034													3.37
2035													3.35
2036													3.32
2037													3.03
2038													2.91
2039													2.88
2040													3.08
2041													3.29
2042													3.57
2043													3.69
2044													4.32
2045													5.00
2046	5.46												
2047	5.93												
2048	6.56												
2049	7.05												

Standard Capacity Tables

UM 1728

Supplemental Application to Update Schedule 201
Avoided Cost Power Purchase Information

Attachment B
Description of Renewable Avoided Costs

PORTLAND GENERAL ELECTRIC COMPANY RENEWABLE AVOIDED COST STUDY 2024 ANNUAL UPDATE

Introduction

This avoided cost update is consistent with PGE's 2023 Integrated Resource Plan (IRP). The Commission directs electric utilities to make an avoided cost filing within 30 days of IRP acknowledgement.

Integrated Resource Plan

The Commission acknowledged PGE's 2023 IRP at its January 25, 2024 special public meeting. The 2023 IRP forms the basis of most of the inputs in this avoided cost study.

Below is a summary of the changes:

Deficiency/Sufficiency Periods

The Deficiency/Sufficiency periods have been updated based on the 2023 IRP. The current Deficiency/Sufficiency periods are stated below for reference purposes:

- Resource Sufficiency Period is the period from the current year through 2025.
- Resource Deficiency Period is the period beginning in 2026.

Electricity Market Projections

The forward trading curves are based on market prices for electricity delivered to PGE's system. The forward trading curves adjusted for delivery are used to price avoided costs during a resource sufficiency period. For January 2024 through December 2025, the market prices are based on PGE's forward trading curve from January 31, 2024.

The current Schedule 201 prices, wheeling costs are based on 2023 BPA rates consistent with the 2023 IRP, adjusted for inflation.

Production Tax Credits

There are no changes since PGE's last avoided cost update in May 2023.

Summary of Avoided Cost Estimates

Tables R.1 through R.3 and R.10 (following) summarize PGE avoided cost prices. Tables R.1a, R.1b, R.2a, R.2b, R.3a, R.3b and R 10¹ are estimates of monthly on- and off-peak renewable avoided costs for over twenty years beginning in January 2024. The renewable resource sufficiency period prices (expressed in \$/MWh or mills/kWh) for the years 2024

¹R1: Base Load QF; R2: Wind QF; R3: Solar QF, R10 Interim Solar plus Storage QF.

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through 2025 are based on the forward electricity curves adjusted for delivery as discussed above.

Renewable avoided cost prices beginning January 2026 are represented by the fully allocated costs of a renewable wind resource based on PGE's acknowledged 2023 IRP² with applicable adjustments for capacity value. The energy portion of the on- and off-peak prices are shaped using the on- and off-peak monthly shape factors based on the 2025 market prices. On-peak periods are from 6 a.m. through 10 p.m. Mondays through Saturdays.³ The off-peak hours are from 10 p.m. until 6 a.m. Mondays through Saturdays and all twenty-four hours on Sunday. For the interim Solar plus Storage rate the four daily premium peak hours are daylight savings months (March–October): 6:00 PM – 10:00 PM and winter months (November–February): 5:00 AM – 7:00 AM and 7:00 PM – 9:00 PM.⁴ Table R.4 provides the wind integration costs. Tables R.5 and R.6 show the on- and off-peak resource sufficiency rates.

Avoided Cost Components

Energy:

Tables R.7, R.8 and R.9 are the basis for energy during the deficiency period. Table R.8 shows the full value of a wind resource (as flat \$/MWh). Table 7 isolates the value of wind capacity using a 4-hour battery as the capacity proxy resource. Tables R.9 shows the full value of a wind resource less wind capacity value (Table 8 less Table 7 equates to Table 9).

To arrive at final renewable energy pricing, the full value of a wind resource less the capacity value of wind is shaped via monthly shape factors as described above.

Capacity:

Table R10a and b, R.1a and b, R.12a and b and R.13a and b isolate the capacity portion of avoided cost prices for Base Load, Wind, and Solar QFs (both on- and off-peak) using a 4-hour battery as the capacity proxy resource.

² Acknowledged at the OPUC January 25, 2024 Public Meeting.

³ Schedule 201, Sheet 201-3.

⁴ *Id.*

Renewable Energy Tables

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Portland General Electric Renewable Avoided Cost Study On-Peak Energy, Base Load													Nominal \$/MWh
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	252.49	89.64	73.30	70.75	57.48	72.79	149.87	208.07	158.04	82.49	97.81	139.67	
2025	143.23	121.55	85.52	66.89	56.31	58.39	143.39	184.52	149.55	92.04	102.42	119.54	110.41
2026	29.14	24.73	17.40	13.61	11.46	11.88	29.17	37.54	30.43	18.72	20.84	24.32	22.46
2027	29.76	25.26	17.77	13.90	11.70	12.13	29.80	38.34	31.08	19.12	21.28	24.84	22.91
2028	30.31	25.72	18.10	14.16	11.92	12.36	30.35	39.05	31.65	19.48	21.68	25.30	23.36
2029	31.05	26.35	18.54	14.50	12.21	12.66	31.08	39.99	32.42	19.95	22.20	25.91	23.90
2030	31.71	26.91	18.93	14.81	12.47	12.93	31.74	40.85	33.11	20.37	22.67	26.46	24.45
2031	32.38	27.48	19.33	15.12	12.73	13.20	32.42	41.72	33.81	20.81	23.16	27.03	24.96
2032	32.98	27.99	19.69	15.40	12.97	13.45	33.02	42.49	34.44	21.20	23.58	27.53	25.42
2033	33.78	28.67	20.17	15.77	13.28	13.77	33.82	43.52	35.27	21.71	24.15	28.19	26.04
2034	34.50	29.28	20.60	16.11	13.56	14.07	34.54	44.45	36.02	22.17	24.67	28.79	26.58
2035	35.24	29.90	21.04	16.45	13.85	14.37	35.28	45.39	36.79	22.64	25.20	29.41	27.12
2036	35.89	30.46	21.43	16.76	14.11	14.63	35.93	46.24	37.47	23.06	25.66	29.95	27.67
2037	36.76	31.19	21.95	17.16	14.45	14.98	36.80	47.35	38.38	23.62	26.28	30.68	28.33
2038	37.54	31.86	22.41	17.53	14.76	15.30	37.58	48.36	39.20	24.12	26.84	31.33	28.90
2039	38.34	32.54	22.89	17.90	15.07	15.63	38.38	49.39	40.03	24.64	27.42	32.00	29.55
2040	39.05	33.14	23.32	18.24	15.35	15.92	39.10	50.31	40.78	25.09	27.92	32.59	30.04
2041	39.99	33.94	23.88	18.68	15.72	16.30	40.04	51.52	41.76	25.70	28.60	33.38	30.85
2042	40.85	34.66	24.39	19.07	16.06	16.65	40.89	52.62	42.65	26.25	29.21	34.09	31.49
2043	41.72	35.40	24.91	19.48	16.40	17.01	41.77	53.75	43.56	26.81	29.83	34.82	32.16
2044	42.49	36.06	25.37	19.84	16.71	17.32	42.54	54.74	44.37	27.30	30.38	35.46	32.76
2045	43.52	36.93	25.98	20.32	17.11	17.74	43.57	56.06	45.44	27.96	31.12	36.32	33.52
2046	44.45	37.72	26.54	20.76	17.47	18.12	44.50	57.26	46.41	28.56	31.78	37.09	34.21
2047	45.39	38.52	27.10	21.20	17.85	18.51	45.45	58.48	47.40	29.17	32.46	37.89	35.01
2048	46.24	39.24	27.61	21.59	18.18	18.85	46.29	59.57	48.28	29.71	33.06	38.59	35.65
2049	47.35	40.18	28.27	22.11	18.62	19.30	47.40	61.00	49.44	30.43	33.86	39.52	36.45
Capacity Removed, Aurora Shaping													
Portland General Electric Renewable Avoided Cost Study Off-Peak Energy, Base Load													Nominal \$/MWh
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	197.46	72.28	63.60	61.56	41.65	43.70	65.14	84.53	73.30	68.20	79.43	109.04	
2025	113.10	99.13	65.92	64.81	42.43	37.63	68.16	90.43	77.95	76.95	85.24	104.21	76.99
2026	23.01	20.17	13.41	13.19	8.63	7.66	13.87	18.40	15.86	15.66	17.34	21.20	15.67
2027	23.50	20.60	13.70	13.47	8.82	7.82	14.16	18.79	16.20	15.99	17.71	21.65	16.04
2028	23.94	20.98	13.95	13.72	8.98	7.96	14.43	19.14	16.50	16.29	18.04	22.05	16.37
2029	24.51	21.49	14.29	14.05	9.20	8.16	14.77	19.60	16.90	16.68	18.47	22.59	16.72
2030	25.04	21.95	14.59	14.35	9.39	8.33	15.09	20.02	17.26	17.04	18.87	23.07	17.05
2031	25.57	22.41	14.90	14.65	9.59	8.51	15.41	20.45	17.62	17.40	19.27	23.56	17.41
2032	26.05	22.83	15.18	14.93	9.77	8.67	15.70	20.83	17.95	17.72	19.63	24.00	17.75
2033	26.67	23.38	15.55	15.29	10.01	8.87	16.08	21.33	18.38	18.15	20.10	24.58	18.18
2034	27.24	23.88	15.88	15.61	10.22	9.06	16.42	21.78	18.78	18.54	20.53	25.10	18.62
2035	27.82	24.39	16.22	15.94	10.44	9.26	16.77	22.25	19.18	18.93	20.97	25.64	18.98
2036	28.34	24.84	16.52	16.24	10.63	9.43	17.08	22.66	19.53	19.28	21.36	26.11	19.30
2037	29.02	25.44	16.92	16.63	10.89	9.66	17.49	23.21	20.00	19.75	21.87	26.74	19.76
2038	29.64	25.98	17.28	16.99	11.12	9.86	17.87	23.70	20.43	20.17	22.34	27.31	20.23
2039	30.28	26.54	17.65	17.35	11.36	10.07	18.25	24.21	20.87	20.60	22.82	27.90	20.63
2040	30.84	27.03	17.97	17.67	11.57	10.26	18.58	24.66	21.25	20.98	23.24	28.41	21.09
2041	31.58	27.68	18.41	18.10	11.85	10.51	19.03	25.25	21.77	21.49	23.80	29.10	21.51
2042	32.25	28.27	18.80	18.48	12.10	10.73	19.44	25.79	22.23	21.95	24.31	29.72	21.96
2043	32.94	28.87	19.20	18.88	12.36	10.96	19.85	26.34	22.70	22.41	24.83	30.35	22.43
2044	33.55	29.41	19.56	19.23	12.59	11.16	20.22	26.83	23.12	22.83	25.29	30.92	22.88
2045	34.36	30.12	20.03	19.69	12.89	11.43	20.71	27.48	23.68	23.38	25.90	31.66	23.48
2046	35.10	30.76	20.46	20.11	13.17	11.68	21.15	28.06	24.19	23.88	26.45	32.34	23.94
2047	35.84	31.42	20.89	20.54	13.45	11.93	21.60	28.66	24.70	24.39	27.01	33.03	24.41
2048	36.51	32.00	21.28	20.92	13.70	12.15	22.00	29.19	25.16	24.84	27.51	33.64	24.87
2049	37.39	32.77	21.79	21.43	14.03	12.44	22.53	29.90	25.77	25.44	28.18	34.45	25.51
Capacity Removed, Aurora Shaping													

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Portland General Electric Renewable Avoided Cost Study On-Peak Energy, Wind													
Table R.2a													Nominal \$/MWh
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	0.00	0.00	0.00	0.00	55.01	70.33	147.41	205.61	155.58	80.03	95.34	137.20	
2025	140.72	119.03	83.00	64.37	53.79	55.88	140.87	182.01	147.04	89.52	99.90	117.02	107.89
2026	26.57	22.16	14.83	11.04	8.89	9.31	26.60	34.97	27.86	16.15	18.27	21.75	19.89
2027	27.14	22.63	15.14	11.27	9.08	9.51	27.17	35.72	28.45	16.50	18.66	22.21	20.29
2028	27.63	23.04	15.42	11.47	9.24	9.68	27.67	36.37	28.97	16.80	18.99	22.62	20.68
2029	28.31	23.61	15.80	11.76	9.47	9.92	28.34	37.26	29.68	17.21	19.46	23.17	21.16
2030	27.81	23.01	15.03	10.91	8.57	9.03	27.84	36.95	29.21	16.47	18.77	22.56	20.55
2031	28.40	23.50	15.35	11.14	8.75	9.22	28.44	37.74	29.83	16.83	19.17	23.04	20.98
2032	28.92	23.92	15.63	11.33	8.90	9.38	28.95	38.42	30.37	17.13	19.52	23.46	21.36
2033	29.63	24.51	16.01	11.62	9.13	9.62	29.66	39.36	31.12	17.55	20.00	24.04	21.88
2034	30.26	25.03	16.36	11.87	9.32	9.82	30.30	40.20	31.78	17.93	20.43	24.55	22.33
2035	30.90	25.57	16.70	12.12	9.52	10.03	30.94	41.06	32.46	18.31	20.86	25.07	22.79
2036	31.46	26.03	17.00	12.33	9.68	10.20	31.50	41.81	33.05	18.64	21.24	25.53	23.25
2037	32.24	26.67	17.42	12.64	9.93	10.46	32.28	42.83	33.86	19.10	21.76	26.16	23.81
2038	32.92	27.24	17.80	12.91	10.14	10.69	32.96	43.75	34.58	19.51	22.23	26.71	24.28
2039	33.63	27.82	18.18	13.19	10.36	10.91	33.67	44.68	35.32	19.92	22.70	27.28	24.84
2040	34.24	28.32	18.50	13.42	10.54	11.10	34.28	45.49	35.96	20.28	23.11	27.78	25.23
2041	35.08	29.02	18.96	13.76	10.80	11.39	35.12	46.60	36.84	20.78	23.68	28.46	25.93
2042	35.82	29.64	19.36	14.05	11.03	11.63	35.87	47.60	37.63	21.22	24.18	29.07	26.46
2043	36.59	30.27	19.78	14.35	11.27	11.88	36.63	48.61	38.43	21.68	24.70	29.69	27.03
2044	37.25	30.82	20.13	14.60	11.46	12.08	37.30	49.50	39.13	22.06	25.14	30.22	27.52
2045	38.17	31.58	20.63	14.97	11.76	12.39	38.21	50.71	40.09	22.61	25.76	30.97	28.17
2046	38.98	32.25	21.07	15.29	12.01	12.65	39.03	51.79	40.94	23.09	26.31	31.63	28.75
2047	39.81	32.94	21.52	15.61	12.26	12.92	39.86	52.90	41.81	23.59	26.88	32.30	29.43
2048	40.53	33.53	21.90	15.89	12.47	13.15	40.59	53.86	42.57	24.01	27.36	32.89	29.95
2049	41.53	34.36	22.45	16.29	12.79	13.48	41.58	55.18	43.62	24.60	28.03	33.70	30.63
<i>Capacity Removed, Aurora Shaping, Integration Removed</i>													
Portland General Electric Renewable Avoided Cost Study Off-Peak Energy, Wind													
Table R.2b													Nominal \$/MWh
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	0.00	0.00	0.00	0.00	39.19	41.23	62.67	82.07	70.84	65.73	76.97	106.57	
2025	110.58	96.62	63.40	62.29	39.92	35.11	65.65	87.92	75.43	74.44	82.72	101.69	74.47
2026	20.44	17.60	10.84	10.62	6.06	5.09	11.30	15.83	13.29	13.09	14.77	18.63	13.10
2027	20.88	17.97	11.07	10.84	6.19	5.19	11.54	16.17	13.57	13.37	15.09	19.03	13.41
2028	21.26	18.30	11.27	11.04	6.30	5.28	11.75	16.46	13.82	13.61	15.36	19.37	13.69
2029	21.78	18.75	11.55	11.31	6.46	5.42	12.04	16.86	14.16	13.94	15.74	19.85	13.98
2030	21.14	18.05	10.69	10.45	5.49	4.43	11.19	16.12	13.36	13.14	14.97	19.17	13.15
2031	21.59	18.43	10.92	10.67	5.61	4.52	11.43	16.46	13.64	13.42	15.29	19.58	13.42
2032	21.98	18.76	11.11	10.86	5.70	4.60	11.63	16.76	13.88	13.65	15.56	19.93	13.68
2033	22.52	19.23	11.39	11.13	5.85	4.72	11.92	17.17	14.23	13.99	15.95	20.42	14.02
2034	23.00	19.64	11.64	11.37	5.98	4.82	12.18	17.54	14.53	14.29	16.29	20.86	14.37
2035	23.49	20.05	11.88	11.61	6.10	4.92	12.43	17.91	14.84	14.60	16.64	21.30	14.64
2036	23.91	20.41	12.09	11.81	6.21	5.00	12.65	18.23	15.11	14.86	16.93	21.69	14.88
2037	24.50	20.92	12.40	12.11	6.37	5.14	12.97	18.69	15.48	15.23	17.35	22.22	15.24
2038	25.03	21.37	12.66	12.37	6.50	5.24	13.25	19.08	15.81	15.55	17.72	22.70	15.61
2039	25.56	21.82	12.93	12.63	6.64	5.36	13.53	19.49	16.15	15.88	18.10	23.18	15.92
2040	26.02	22.21	13.16	12.85	6.75	5.44	13.77	19.84	16.44	16.16	18.42	23.60	16.27
2041	26.66	22.76	13.49	13.18	6.93	5.59	14.11	20.33	16.85	16.57	18.88	24.18	16.59
2042	27.23	23.25	13.78	13.46	7.08	5.71	14.41	20.77	17.21	16.92	19.28	24.69	16.93
2043	27.81	23.74	14.07	13.75	7.23	5.83	14.72	21.21	17.57	17.28	19.70	25.22	17.30
2044	28.31	24.17	14.32	13.99	7.35	5.92	14.98	21.59	17.88	17.59	20.05	25.67	17.64
2045	29.01	24.77	14.68	14.34	7.54	6.08	15.36	22.12	18.33	18.03	20.54	26.31	18.13
2046	29.63	25.30	14.99	14.64	7.70	6.21	15.68	22.60	18.72	18.41	20.98	26.87	18.47
2047	30.26	25.83	15.31	14.96	7.86	6.34	16.02	23.08	19.12	18.81	21.43	27.44	18.83
2048	30.81	26.30	15.58	15.22	7.99	6.44	16.30	23.49	19.46	19.14	21.81	27.94	19.17
2049	31.57	26.95	15.97	15.60	8.20	6.62	16.71	24.07	19.94	19.62	22.35	28.63	19.69
<i>Capacity Removed, Aurora Shaping, Integration Removed</i>													

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Portland General Electric Renewable Avoided Cost Study On-Peak Energy, Solar													
Table R.3a													Nominal \$/MWh
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	0.00	0.00	0.00	0.00	54.76	70.07	147.15	205.35	155.32	79.77	95.08	136.94	
2025	140.45	118.77	82.74	64.10	53.53	55.61	140.61	181.74	146.77	89.26	99.63	116.76	107.63
2026	26.30	21.89	14.56	10.77	8.62	9.04	26.33	34.70	27.59	15.88	18.00	21.48	19.62
2027	26.86	22.36	14.87	11.00	8.80	9.23	26.89	35.44	28.17	16.22	18.38	21.94	20.01
2028	27.35	22.76	15.14	11.19	8.96	9.40	27.39	36.09	28.69	16.52	18.71	22.34	20.40
2029	28.02	23.32	15.51	11.47	9.18	9.63	28.05	36.97	29.39	16.92	19.17	22.88	20.87
2030	28.41	23.61	15.63	11.51	9.17	9.63	28.44	37.55	29.81	17.07	19.37	23.16	21.15
2031	29.01	24.11	15.96	11.75	9.36	9.83	29.05	38.35	30.44	17.44	19.79	23.66	21.59
2032	29.54	24.55	16.25	11.96	9.53	10.00	29.58	39.05	31.00	17.75	20.14	24.09	21.98
2033	30.26	25.15	16.65	12.26	9.76	10.26	30.30	40.00	31.76	18.19	20.64	24.68	22.52
2034	30.91	25.69	17.01	12.52	9.97	10.47	30.95	40.86	32.43	18.58	21.08	25.20	22.99
2035	31.57	26.24	17.37	12.79	10.19	10.70	31.61	41.73	33.12	18.98	21.53	25.74	23.46
2036	32.15	26.71	17.68	13.01	10.36	10.89	32.18	42.49	33.73	19.32	21.92	26.21	23.93
2037	32.93	27.37	18.12	13.34	10.62	11.16	32.97	43.53	34.55	19.79	22.46	26.85	24.51
2038	33.63	27.95	18.51	13.62	10.85	11.40	33.68	44.46	35.29	20.22	22.94	27.42	24.99
2039	34.35	28.55	18.90	13.91	11.08	11.64	34.39	45.40	36.04	20.65	23.42	28.01	25.56
2040	34.98	29.06	19.24	14.16	11.28	11.84	35.02	46.23	36.70	21.02	23.85	28.52	25.97
2041	35.83	29.78	19.72	14.51	11.56	12.14	35.88	47.36	37.60	21.54	24.43	29.22	26.68
2042	36.60	30.41	20.14	14.82	11.81	12.40	36.64	48.37	38.40	22.00	24.96	29.84	27.24
2043	37.38	31.06	20.57	15.14	12.06	12.67	37.42	49.40	39.22	22.47	25.49	30.48	27.82
2044	38.06	31.63	20.94	15.41	12.27	12.89	38.11	50.31	39.93	22.87	25.95	31.03	28.33
2045	38.99	32.40	21.45	15.79	12.58	13.21	39.04	51.53	40.91	23.43	26.59	31.79	28.99
2046	39.82	33.09	21.91	16.13	12.85	13.49	39.87	52.63	41.78	23.93	27.15	32.47	29.59
2047	40.67	33.80	22.38	16.47	13.12	13.78	40.72	53.76	42.67	24.45	27.73	33.16	30.29
2048	41.41	34.41	22.78	16.77	13.35	14.02	41.46	54.74	43.45	24.89	28.24	33.76	30.83
2049	42.42	35.26	23.34	17.18	13.69	14.38	42.48	56.07	44.51	25.50	28.93	34.59	31.52
<i>Capacity Removed, Aurora Shaping, Integration Removed</i>													
Portland General Electric Renewable Avoided Cost Study Off-Peak Energy, Solar													
Table R.3b													Nominal \$/MWh
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	0.00	0.00	0.00	0.00	38.93	40.97	62.41	81.81	70.58	65.48	76.71	106.31	
2025	110.32	96.35	63.14	62.03	39.65	34.85	65.38	87.65	75.17	74.17	82.46	101.43	74.21
2026	20.17	17.33	10.57	10.35	5.79	4.82	11.03	15.56	13.02	12.82	14.50	18.36	12.83
2027	20.60	17.70	10.80	10.57	5.92	4.92	11.26	15.89	13.30	13.09	14.81	18.75	13.14
2028	20.97	18.02	10.99	10.75	6.02	5.00	11.46	16.18	13.53	13.32	15.08	19.09	13.41
2029	21.49	18.46	11.26	11.02	6.17	5.13	11.75	16.58	13.87	13.65	15.45	19.56	13.69
2030	21.74	18.65	11.29	11.05	6.09	5.03	11.79	16.72	13.96	13.74	15.57	19.77	13.75
2031	22.20	19.04	11.53	11.28	6.22	5.14	12.04	17.08	14.25	14.03	15.90	20.19	14.04
2032	22.60	19.39	11.74	11.48	6.33	5.22	12.25	17.38	14.51	14.28	16.19	20.56	14.31
2033	23.16	19.86	12.03	11.77	6.49	5.36	12.56	17.81	14.87	14.63	16.59	21.06	14.66
2034	23.65	20.29	12.29	12.02	6.63	5.47	12.83	18.19	15.18	14.95	16.94	21.51	15.03
2035	24.16	20.72	12.55	12.28	6.77	5.59	13.10	18.58	15.51	15.26	17.30	21.97	15.31
2036	24.59	21.09	12.77	12.49	6.89	5.68	13.33	18.91	15.79	15.54	17.61	22.37	15.56
2037	25.20	21.61	13.09	12.81	7.06	5.83	13.67	19.38	16.18	15.92	18.05	22.92	15.94
2038	25.74	22.08	13.37	13.08	7.21	5.96	13.96	19.79	16.52	16.26	18.43	23.41	16.32
2039	26.28	22.55	13.66	13.36	7.37	6.08	14.26	20.22	16.88	16.61	18.83	23.90	16.64
2040	26.76	22.95	13.90	13.60	7.49	6.18	14.51	20.58	17.18	16.91	19.16	24.34	17.01
2041	27.42	23.52	14.24	13.93	7.69	6.34	14.87	21.09	17.60	17.33	19.64	24.94	17.34
2042	28.00	24.02	14.55	14.23	7.85	6.48	15.19	21.54	17.98	17.69	20.06	25.47	17.71
2043	28.60	24.53	14.86	14.54	8.02	6.62	15.51	22.00	18.36	18.07	20.48	26.01	18.09
2044	29.12	24.98	15.12	14.79	8.15	6.73	15.79	22.39	18.69	18.40	20.85	26.48	18.45
2045	29.83	25.59	15.50	15.16	8.36	6.90	16.18	22.95	19.15	18.85	21.37	27.13	18.95
2046	30.47	26.14	15.83	15.49	8.54	7.05	16.53	23.44	19.56	19.25	21.82	27.71	19.31
2047	31.12	26.69	16.17	15.82	8.72	7.20	16.88	23.94	19.98	19.66	22.29	28.30	19.68
2048	31.68	27.18	16.45	16.10	8.87	7.32	17.18	24.37	20.34	20.02	22.69	28.81	20.05
2049	32.46	27.85	16.86	16.50	9.10	7.51	17.61	24.97	20.84	20.51	23.25	29.52	20.59
<i>Capacity Removed, Aurora Shaping, Integration Removed</i>													

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Portland General Electric Renewable Avoided Cost Study Flat Energy, Solar + Storage													
Table R.10	Nominal \$/MWh												Annual
	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
2024	252.49	89.64	73.30	70.75	57.48	72.79	149.87	208.07	158.04	82.49	97.81	139.67	
2025	143.23	121.55	85.52	66.89	56.31	58.39	143.39	184.52	149.55	92.04	102.42	119.54	110.41
2026	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71	16.71
2027	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07	17.07
2028	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38	17.38
2029	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80
2030	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97	17.97
2031	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36
2032	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69	18.69
2033	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15	19.15
2034	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56	19.56
2035	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97	19.97
2036	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33
2037	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83
2038	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28	21.28
2039	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73	21.73
2040	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12	22.12
2041	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67	22.67
2042	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15	23.15
2043	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65	23.65
2044	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07
2045	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67	24.67
2046	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19
2047	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73
2048	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19	26.19
2049	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84	26.84
Capacity Removed, No Shaping, Integration Removed													

Renewable Capacity Tables

UM 1728

Supplemental Application to Update Schedule 201
Avoided Cost Power Purchase Information

Attachment C
Filing Inputs

Worksheet Tab: Plant Capital Cost Inputs					
	4/8/24 Filing			4/28/23 Filing	
	Value	Units	\$ Year Source	Value	\$ Year
Simple Cycle Combustion Thermal Plant Equipment (1x0 GE 7HA.02)					
Clean Capacity	233	MW	2023 IRP - Supply-Side Resource Study - 2022	356	
Degraded Capacity	227	MW	2023 IRP - Table 35 - 2026 COD SCCT and CCCT	347	
Overnight capital cost	159,897	(\$000s)	2022 calculation. 2023 IRP revenue requirement model	181,044	2018
CO2 offset	3,056	(\$000s)	2017 2023 IRP revenue requirement model	3,674	2017
Economic life	38	yrs.	no change	38	
Tax life	15	yrs.	no change	15	
Decommissioning cost	1,605	(\$000s)	2022 2023 IRP revenue requirement model	1,533	2018
In-service date	2026		check order for reference to in-service date	2025	
Start construction date	2024			2023	
EPC period	22	months	2023 IRP - Supply-Side Resource Study - 2022	20	
Capacity contribution	95.9%	%	2023 IRP Update. Table 169. Summary of SCCT operatio	95.5%	
Interconnection Facilities	12,664	(\$000s)	2013 2023 IRP revenue requirement model	6,160	2013
Interconnection Facilities	16,564	(\$000s)	2023 Calculation	6,639	2018
Network Upgrades	4,932	(\$000s)	2013 2023 IRP revenue requirement model	3,556	2013
Network Upgrades	6,450	(\$000s)	2023 Calculation	3,833	2018
Interconnection and Network Upgrades	23,015	(\$000s)	2023 Calculation	10,473	2018
Combined Cycle Combustion Thermal Plant Equipment (1x1 GE 7HA.02)					
Clean Capacity	418	MW	2023 IRP - Supply-Side Resource Study - 2022	517	
Degraded Capacity	407	MW	2023 IRP - Table 172. Summary of CCCT operational cha	503	
Overnight capital cost	506,261	(\$000s)	2022 calculation. Table 35. 2026 COD SCCT and CCCT	459,128	2018
CO2 offset	10,710	(\$000s)	2017 2023 IRP revenue requirement model	9,277	2017
Economic life	38	yrs.	no change	38	
Tax life	20		no change	20	
Decommissioning cost	2,915	(\$000s)	2022 2023 IRP revenue requirement model	2,450	2018
In-service date	2026			2025	
Start construction date	2024			2022	
EPC period	22	months	2023 IRP - Supply-Side Resource Study - 2022	30	
Interconnection Facilities	5,618	(\$000s)	2013 2023 IRP revenue requirement model	8,313	2013
Interconnection Facilities	7,348	(\$000s)	2023 Calculation	8,961	2018
Network Upgrades	4,932	(\$000s)	2013 2023 IRP revenue requirement model	3,556	2013
Network Upgrades	6,450	(\$000s)	2023 Calculation	3,833	2018
Interconnection and Network Upgrades	13,798	(\$000s)	2023 Calculation	12,794	2018

Wind Equipment (Gorge wind):						
Capacity	300	MW		2023 IRP - Table 28. 2026 COD onshore wind	245	
Turbines	87	turbines		2023 IRP - page 585	68	
Overnight capital cost	405,226	(\$000s)	2022	2023 IRP revenue requirement model	369,222	2018
Annual capital reinvestment		\$s/MW				
PTC application	100%				100%	
Economic life	30			no change	30	
Tax life	5			no change	5	
Decommissioning cost	9,984	(\$000s)	2022	2023 IRP revenue requirement model	8,428	2018
In-service date	2026				2025	
Start construction date	2024				2027	
EPC period	21	months		2023 IRP revenue requirement model	27	
Plant retirement						
Capacity contribution	20.0%	%		Tuned ELCC values UM1728	25.0%	
Interconnection Facilities	16,779	(\$000s)	2013	2023 IRP revenue requirement model	15,061	2013
Interconnection Facilities	21,947	(\$000s)	2023	Calculation	16,234	2018
Network Upgrades	4,932	(\$000s)	2013	2023 IRP revenue requirement model	3,556	2013
Network Upgrades	6,450	(\$000s)	2023	Calculation	3,833	2018
Interconnection and Network Upgrades	28,397	(\$000s)	2023	Calculation	20,067	2018
4 Hour Lithium-Ion Battery						
Clean Capacity	50	MW		2023 IRP revenue requirement model		
Degraded Capacity	50	MW				
Overnight capital cost	50,880	(\$000s)	2022	2023 IRP revenue requirement model		
CO2 offset	-	(\$000s)	0	Eliminated with battery		
Economic life	20	yrs.		2023 IRP revenue requirement model		
Tax life	7	yrs.		2023 IRP revenue requirement model		
Final Year Decom Cost	590	(\$000s)		2023 IRP revenue requirement model		
Decommissioning cost	363	(\$000s)	2022	2023 IRP revenue requirement model		
In-service date	2026					
Start construction date	2024			2023 IRP revenue requirement model		
EPC period	18	months		2023 IRP revenue requirement model		
Capacity contribution	43%	%		Tuned ELCC values UM1728		
Interconnection and Network Upgrades	6,121	(\$000s)	2022			

Workbook Tab: Plant Operating Parameters							
			4/8/24 Filing		4/28/23 Filing		
	Value	Units	\$ Year	Source	Value	\$ Year	
Simple Cycle Combustion Thermal Plant Equipment (1x0 GE 7HA.02)							
Heat Rate (avg over life)	10,042	Btu/kWh	2023	2023 IRP - Table 35 - 2026 COD SCCT and CCCT	9,298		
Fixed O&M	7.92	\$/kW-yr	2022	2023 IRP - Supply-Side Resource Study - 2022	2.10	2018	
Variable O&M	0.68	\$/MWh	2022	2023 IRP - Supply-Side Resource Study - 2022	9.69	2018	
Insurance	0.17	\$/100 project cost	2024	2023 IRP - Supply-Side Resource Study - 2022	0.17	2023	
Materials inventory	2.49	\$/kW degraded	2019	2023 IRP - Supply-Side Resource Study - 2022	4.90	2018	
Net Energy Value	56.82	\$/kW-yr	2026	2023 IRP Update AURORA model	0.39	2020	
Flexibility value	4.82	\$/kW-yr	2020	2019 IRP table 6-5 (Gas resources were not included for	4.82	2020	
Contingency reserves (%)	-	%					
Spinning reserves	-	\$/MWh					
Supplemental reserves	-	\$/MWh					
Contingency reserves cost	-	\$/MWh					
Availability factor	-	%					
Ancillary services cost	-						
Combined Cycle Combustion Thermal Plant Equipment (1x1 GE 7HA.02)							
Heat Rate (avg over life)	6,561	Btu/kWh	2,023	2023 IRP - Table 172. Summary of CCCT operational cha	6,362		
Fixed O&M	15.95	\$/kW-yr	2022	2023 IRP - Supply-Side Resource Study - 2022	6.57	2018	
Variable O&M	2.88	\$/MWh	2022	2023 IRP - Supply-Side Resource Study - 2022	0.72	2018	
Insurance	0.17	\$/100 project cost	2024	2023 IRP - Supply-Side Resource Study - 2022	0.17	2022	
Materials inventory	2.49	\$/kW degraded	2019	2023 IRP - Supply-Side Resource Study - 2022	2.49	2018	
Availability factor	94.01%	%		2023 IRP - Supply-Side Resource Study - 2022	94.01%		
Contingency reserves (%)	-	%					
Spinning reserves	-	\$/MWh					
Supplemental reserves	-	\$/MWh					
Contingency reserves cost	-	\$/MWh					
Schedule outage rate	3.88%	%	2023	2023 IRP - Table 172. Summary of CCCT operational characteristics			
Gorge Wind							
Fixed O&M	25.25	\$/kW-yr	2022	2023 IRP - Supply-Side Resource Study - 2022	37.00	2018	
Capacity factor (flat)	44.40%			2023 IRP - Table 28. 2026 COD onshore wind	40.80%		
Capacity factor (peak)	46.42%			CFs_SolarWind.xlsx	39.97%		
Annual output	1,166,832	MWh					
Land royalties	1.92	\$/MWh	2022	2023 IRP - Supply-Side Resource Study - 2022	1.70	2018	
Insurance	0.08	\$/100 project cost	2024		0.08	0	
Capacity contribution	20.00%			Tuned ELCC values UM1728	25.00%		
Spinning reserves	-	%					
Contingency reserves cost	-						

4 Hour Lithium-Ion Battery				
Fixed O&M	24.86	\$/kW-yr	2022	2023 IRP revenue requirement model (2026 COD)
Variable O&M	-	\$/MWh		2023 IRP revenue requirement model
Insurance	0.15	\$/100 project cost	2024	2023 IRP revenue requirement model
Energy Value	8.98	\$/kW-yr	2023	New resource economics workbook - Tab: Aurora_2023IRP (2026COD)
Flexibility value	9.77	\$/kW-yr	2023	Table 47. Flexibility value (\$/kW-yr.) of new resources in 2026
Solar				
Capacity factor (peak)	39.61%			CFs_SolarWind.xlsx 36.87%
Capacity contribution	38.00%			Tuned ELCC values UM1728 8.50%
BPA line loss	2.05%			https://www.bpa.gov/-/media/Aep/transmission/ope 1.90%
Workbook Tab: Financial and Tax Parameters				
			3/18/24 Filing	4/28/23 Filing
	Value		Source	Value
Federal Tax Rate	21.00%		2023 IRP revenue requirement model	
State Tax Rate	8.23%		2023 IRP revenue requirement model	
Composite Income Tax Rate	27.50%		2023 IRP - Appendix H Table 127	27.35%
Debt Portion of Capitalization	50.00%		2023 IRP - Appendix H Table 127	50.00%
Common Stock Portion of Capitalization	50.00%		2023 IRP - Appendix H Table 127	50.00%
Property Tax Rate	1.50%		2023 IRP revenue requirement model	1.45%
Inflation Rate	2.13%		2023 IRP - Appendix H Table 127	2.05%
Common Return	9.50%		2023 IRP - Appendix H Table 127	9.50%
Debt Return	3.91%		2023 IRP - Appendix H Table 127	4.94%
Pre-Tax Nominal Cost of Capital	6.71%		calculation	4.75%
Equity portion	70.84%		calculation	65.79%
After-Tax Nominal Cost of Capital	6.17%		calculation	6.54%
After-Tax Real Cost of Capital	3.95%		calculation	4.41%

CERTIFICATE OF SERVICE

I hereby certify that I have this day caused **Portland General Electric Company's** **CONFIDENTIAL Attachment A and Work Papers** to be served by electronic mail to those parties whose e-mail addresses appear on the attached service list for OPUC Docket UM 1728.

Dated at Portland, Oregon, this 8st day of April, 2024.

/s/ Robert Macfarlane

Robert Macfarlane
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