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I. Introduction

1	Q.	Please state your names and positions with Portland General Electric (PGE).
2	A.	My name is Craig Armstrong. I am a Project Manager for PGE.
3		My name is Greg Batzler. I am a Regulatory Consultant for PGE.
4		Our qualifications appear in Section VII of this testimony.
5	Q.	What is the purpose of your testimony?
6	A.	The purpose of our testimony is to request recovery of the revenue requirement associated
7		with the Wheatridge Renewable Energy Facility (Wheatridge), a qualifying renewable
8		resource project, through PGE's Schedule 122, pursuant to Oregon Revised Statutes (ORS)
9		757.210 and 469A.120(3). Specifically, we are requesting recovery of the fixed costs,
10		operation and maintenance (O&M) costs, income taxes, property taxes, and other fees and
11		costs associated with the wind-related portions of Wheatridge, including any Schedule 125
12		eligible net variable power costs (NVPC) prior to 2021.
13	Q.	What period of time does this request cover?
14	A.	For the purposes of setting Schedule 122 prices, PGE requests the Public Utility Commission
15		of Oregon (OPUC or Commission) authorize tariffs to collect the annualized amount
16		beginning with the in-service date of Wheatridge. The wind related portions of Wheatridge
17		are contractually obligated to be in service by December 31, 2020. As such, our filed estimate
18		is based on this in-service date. As we approach the later part of 2020, and to the extent the
19		in-service date changes, the effective date of the tariffs to recover the incremental impact of
20		Wheatridge will change accordingly. Additionally, any forecasted NVPC associated with
21		Wheatridge prior to January 1, 2021, will be updated and the full annualized amount will be
22		included within Schedule 122 prices consistent with the in-service date of the project. Then,

1		beginning January 1, 2021, any change between the forecasted 2020 NVPC for Wheatridge
2		and the 2021 forecasted NVPC for Wheatridge will be reflected through PGE's Schedule 125
3		and removed from Schedule 122.
4	Q.	Please briefly describe the Wheatridge Renewable Energy Facility.
5	A.	The Wheatridge Renewable Energy Facility is a 300 MW wind generation facility, a 50 MW
6		solar facility, and a 30 MW 4-hour duration energy storage facility located in Morrow County,
7		Oregon. 100 MW of the wind generation facility will be owned by PGE and subject to a
8		build-transfer-agreement while the remaining project output will be sold to PGE under two
9		PPAs.
10	Q.	Please summarize PGE's requested revenue requirement in this filing.
11	A.	PGE is requesting approximately \$26.5 million of incremental revenue requirement for
12		Wheatridge, prior to the inclusion of REC monetization benefits. This includes a high-level
13		calculation of 2020 NVPC benefits, using the December 31, 2020 in-service date. While the
14		current estimate of 2020 NVPC benefits are <i>de minimis</i> , a high-level forecast of the potential
15		2021 NVPC impact of Wheatridge, including PTCs, is approximately \$13.0 million.
16		Additionally, the 2021 estimate of potential REC monetization benefits is approximately
17		. Table 1 below, summarizes PGE's 2020 revenue requirement for Wheatridge.
18		We have also included the Wheatridge 2020 revenue requirement as PGE Exhibit 101.

Revenue Requirement Summary	
(\$000s)	
	2020
<u>Rev Req Category</u>	Forecast
Sales to Consumers	\$26,493
Production O&M	4,006
Transmission O&M	51
A&G	360
Depreciation	5,750
Misc Expenses	171
Franchise Fees	670
Other Taxes	865
Income Taxes	2,855
Operating Income*	\$11,762
Return on Equity	9.5%
* May not sum due to rounding	

Table 1

Q. Is PGE requesting to include any 2021 forecasted NVPC benefits or REC monetization

2 benefits within this request?

A. No. While we have provided a rough estimate of 2021 NVPC benefits, they will ultimately 3

be included within PGE's 2021 annual power cost update, which we expect to file on April 1, 4

5 2020. Additionally, any REC monetization benefits will be returned to customers through a

separate filing. 6

1

Q. What Rate of Return (ROR) is PGE using for this filing? 7

8 A. PGE is using the currently authorized ROR of approximately 7.30%, which is comprised of a

Return on Equity of 9.50% and Cost of Debt of 5.10% (Commission Order No. 18-464). 9

Q. How is the remainder of your testimony organized? 10

- A. After this introductory section, we have six sections: 11
- Section II: Integrated Resource Planning (IRP) and Request for Proposals (RFP) 12 • Processes; 13
- Section III: Wheatridge Facility and Technology; 14 ٠
- Section IV: Wheatridge Project Costs and Revenue Requirement; 15 ٠
- Section V: Renewable Energy Certificate (REC) Monetization Proposal; 16

- Section VI: Wheatridge Timeline and Milestones; and
 - Section VII: Qualifications.

1

2

II. IRP and RFP Processes

A. IRP Process and Identification of Energy Need

Q. Did PGE identify a need for a renewable resource in its 2016 IRP?

A. Yes. PGE's 2016 IRP identified a benefit to customers in taking early action on physical 2 renewable portfolio standard (RPS) compliant resources in order to meet PGE's increasing 3 RPS requirement for 2025 and beyond. Through a robust analysis, PGE determined that the 4 advantage of taking early action on physical compliance to secure federal production tax 5 credits was in the best interests of customers. At the Commission's direction through 6 Commission Order No. 17-386, PGE then engaged with OPUC Staff and IRP stakeholders to 7 8 determine a revised renewable action plan. That engagement determined that approximately 100 average megawatts (MWa) in the near term was consistent with a renewable resources 9 procurement plan that balanced near-term and long-term considerations. 10

11 Q. Did the Commission acknowledge PGE's 2016 IRP Revised Renewable Action Plan?

A. Yes. The Commission acknowledged the 2016 IRP Revised Renewable Action Plan in Order
 No. 18-044 on February 2, 2018.

Q. Is the development of Wheatridge consistent with the Commission acknowledged 2016 IRP Revised Renewable Action Plan?

A. Yes. When all phases of Wheatridge are complete, the project will combine 300 MW of wind
 generation with 50 MW of solar generation and 30 MW (120 MWh) of battery storage. PGE
 expects that, when fully online, the entire Wheatridge project will generate 117.6 MWa
 annually, which is aligned with PGE's revised renewable action plan need of approximately

100 MWa.¹ Furthermore, the development of all Wheatridge phases continues to be on
 budget, on scope, and on time. We discuss the development of Wheatridge in Section VI.

Q. Please describe the REC commitment PGE made regarding the 2018 renewable RFP.

Included within the revised renewable action plan acknowledged through Commission Order 4 A. No. 18-044, PGE committed to return to customers the value associated with RECs produced 5 by Wheatridge prior to 2025. While PGE did not have a specific proposal for returning this 6 value at the time of acknowledgment, the options discussed included selling RECs through a 7 reverse-RFP, selling RECs to retail subscribers of renewable portfolio options programs, and 8 evaluating the future alternative policy compliance value. The Wheatridge RECs are not 9 immediately needed for RPS compliance purposes, therefore, selling them will result in a 10 credit to PGE's broader cost-of-service customer base, reducing near-term costs. 11

Q. Does PGE propose a method for monetizing the RECs produced from Wheatridge prior

13 to 2025 in this proceeding?

A. Yes. After a review of potential methods for Wheatridge REC monetization through 2024,
 PGE believes that selling these RECs to customers who voluntarily participate in PGE's
 Renewable Portfolio Option programs² will provide the most value to cost-of-service
 customers. We will discuss this proposal in detail within Section V.

¹ Acknowledged through Commission Order No. 18-044.

² The Renewable Portfolio Option program was authorized through Chapter 865, Section 4, Oregon Laws 1999 (SB 1149): <u>https://www.oregonlegislature.gov/bills_laws/lawsstatutes/1999orLaw0865.html</u> PGE's renewable portfolio options are set forth in its tariff Schedules 7 and 32.

1	Q.	Will Wheatridge RECs be used in the future for RPS compliance purposes?
2	A.	Yes. As stated in PGE's November 9, 2017 Addendum to the 2016 IRP, which proposed to
3		conduct an RFP for approximately 100 MWa of RPS-eligible resources, procurement of an
4		RPS-eligible resource supports PGE's long-range procurement strategy for meeting the RPS. ³
		B. Request for Proposals Process and Selection of Resource
5	Q.	When did PGE issue an RFP for RPS compliant resources?
6	A.	We began our RFP process at the beginning of 2018. After a robust process with OPUC Staff
7		and intervenors, and Commission approval, PGE issued its final RFP on May 22, 2018.
8	Q.	Was an Independent Evaluator (IE) selected to oversee the RFP?
9	A.	Yes. Pursuant to Competitive Bidding Guideline (5), ⁴ Bates White served as the IE for the
10		RFP. The IE reported directly to the Commission and its work was directed by OPUC Staff.
11		The IE independently scored all bids, submitted closing reports to the Commission after PGE
12		identified the final short list, and participated in the final negotiations with the selected
13		counterparties.
14	Q.	How did PGE evaluate the renewable energy resource bids?
15	A.	Following the design of the 2018 RFP approved by the Commission, PGE assigned each bid
16		a price (600 points possible) and non-price (400 points possible) score according to the criteria
17		and scoring methodology described in PGE's approved final RFP. Included within this design
18		and consistent with the 2016 IRP Addendum recommendation, ⁵ PGE included a cost-

19

containment screen designed to prevent the procurement of renewable resources to meet future

³ November 2017 Addendum to PGE's 2016 Integrated Resource Plan, page 4.

⁴ The competitive bidding guidelines have since been adopted as competitive bidding rules, with rules regarding the engagement of an IE now contained within OAR 860-089-0200.

⁵ The Commission acknowledged the Addendum in Order No. 18-044.

- RPS compliance needs if the resource's forecasted energy and capacity value was exceeded 1 by the project's forecasted cost. 2
- **O.** How did PGE determine the price scores? 3

A. PGE prepared financial models for all submitted bids. These models calculated a lifecycle 4 economic value for each bid. The final price score was based on the ratio of the bid's (1) total 5 real levelized costs to (2) the real levelized benefits of expected energy value, capacity value, 6 and flexibility value over the same term, and was consistent with analysis performed in PGE's 7 acknowledged 2016 IRP. 8

Q. How did PGE determine the non-price scores? 9

A. Many project specific risks and benefits cannot be captured or quantified by evaluating 10 resource price or resource portfolio cost benefit. For these risks and benefits, PGE evaluated 11 and assigned a non-price score for specific project development criteria (e.g., permit status, 12 site control, cost certainty), physical characteristics, performance certainty, and credit factors 13 pursuant to the matrix and scoring criteria published and approved in the final RFP. 14

15

Q. How many bids were received in response to PGE's offering?

A. PGE received bids from eight counterparties, who together offered 26 distinct proposals, 16 including a Benchmark bid with three associated proposals. The process, designed in 17 conformance with the Competitive Bidding Guidelines,⁶ required the Benchmark bid to be 18 received and evaluated prior to PGE's receipt of all other bids. Following the receipt and 19 20 scoring of all offers, PGE identified an initial short list containing 11 bids that included diverse 21 commercial structures and resource technologies representing 438 MWa of total energy

⁶ As mentioned previously the competitive bidding guidelines have sense been adopted as competitive bidding rules, as outlined in Oregon Administrative Rules Chapter 860, Division 089.

generation, with 320 MWa of non-benchmark resources. PGE identified the initial short list 1 after performing individual offer analysis and assigning both price and non-price scores. 2

O. How were the final project capacity factors determined for each bid? 3

A. Consistent with the Competitive Bidding Guidelines,⁷ PGE retained an independent 4 renewable energy expert, Vaisala, to provide an independent analysis and opinion on the 5 energy estimates for the 11 initial short-listed bids submitted to PGE. Vaisala provided reports 6 on each energy estimate, each of which outlined adjustments related to the gross energy 7 estimate, the gross to net conversion process, the uncertainty evaluation, and the combination 8 of the three. In its reports, Vaisala proposed adjusted net capacity factors (NCF) to each of 9 the bidders' original resource evaluations. PGE incorporated these adjusted NCFs into the 10 price scoring model for all initial short-listed bids. 11

12

Q. How was the final short list developed?

A. In addition to the combination of price and non-price scores used to determine the initial short 13 list, PGE requested and received best and final offers, performed additional due diligence to 14 confirm conformance with the 2018 RFP requirements, and updated scores to identify PGE's 15 final short list. Finally, PGE performed a portfolio analysis to inform the development of the 16 final short list. This analysis, in addition to the price and non-price scores, allowed PGE to 17 create a final short list that identified the RPS qualifying resources representing the least-cost 18 and least-risk options for our customers and the company. 19

20 Q. How many bids made the final short list?

A. All initial short list bids that were found to be compliant with the 2018 RFP eligibility 21 requirements were placed on PGE's final short list. Bid non-price scoring was refreshed based 22

⁷ See Order No. 06-446.

1		on the additional information received by PGE during final project due diligence. This
2		process resulted in PGE's final short list including three bids, plus three bid variants. The
3		final short list included 249 MWa (690 MW) of bids, 213 MWa (590 MW) of which were
4		under PPAs.
5	Q.	Did the IE file a final report?
6	A.	Yes. The IE concluded in its final report filed on October 2, 2018 that the selected bids were
7		the top offers that were able to meet all RFP qualification criteria. Additionally, the IE
8		confirmed the selected bids were all reasonably priced and that the RFP aligned with PGE's
9		IRP process.
10	Q.	Did PGE include a cost related to production tax credit (PTC) carry-forwards in its
11		scoring methodology?
12	A.	Yes. As discussed in the IE's final report, ⁸ the PTC value was reduced for PGE-owned units
13		because PGE's near-term projected taxable income is not large enough to fully utilize the PTC
14		benefit as it is earned. As such, PGE presumed within the bid scoring that any PTCs earned
15		would be carried forward as a deferred tax asset and used in the 2027-2030 time frame. The
16		additional carrying cost for this asset was counted against any PGE-owned offer.

⁸ See Bates White Final Report, Page 13, filed October 3, 2018 in Docket No. UM 1934.

III. Wheatridge Renewable Energy Facility

A. Technology

Q. Please describe the Wheatridge Renewable Energy Facility.

The Wheatridge Renewable Energy Facility is a 300 MW wind generation facility, a 50 MW 2 A. solar facility, and a 30 MW 4-hour duration energy storage facility located in Morrow County, 3 Oregon. 100 MW of the wind generation facility will be owned by PGE and constructed 4 5 pursuant to a build-transfer-agreement, while the remaining project output will be sold to PGE under two PPAs. Wheatridge will connect to the existing Bonneville Power Administration 6 (BPA) Morrow Flat Substation (Morrow Flat) located east of the City of Boardman, via a new 7 23-mile generation tie line constructed and owned by Umatilla Electric Cooperative, Inc. 8 (UEC). The combined 300 MW wind facility is expected to consist of 120 wind turbines, 9 including all necessary equipment to connect to the shared facility substation known as 10 Blueridge, being constructed at the same time. 11

More specifically, it is anticipated that the PGE ownership portion of Wheatridge will consist of 40 General Electric (GE) wind turbine generators and the PPA portion of the wind facility will consist of 80 GE wind turbine generators. Shared infrastructure will include an O&M building, necessary site infrastructure (e.g., roads, etc.) and high voltage equipment for interconnecting the facility to the generation tie line.

Q. Who is responsible for the construction and operation of Wheatridge?

A. Subsidiaries of NextEra Energy, LLC (NEE) will build and operate the entire facility and will
 own 200 MW of the wind facility, along with the solar and battery components. Additional
 key parties will include an Engineering, Procurement, and Construction (EPC) contractor
 hired by NEE along with the independent engineer, Sargent and Lundy, who was mutually

1	agreed upon by PGE and NEE. As NEE is ultimately responsible for the success of the
2	project, we will most commonly refer to NEE when describing the overall project.

3 Q. How will Wheatridge interconnect and deliver energy to PGE's customers?

A. Wheatridge will deliver energy to customers under multiple transmission service agreements
granting NEE 300 MW of long-term firm transmission from Morrow Flat. The firm
transmission rights will be transferred to PGE once commercial operation has been achieved.
The figure below shows the work required to interconnect Wheatridge to Morrow Flat. NEE
will construct a 230 kV switchyard, known as the Blueridge Substation. UEC will construct
and own a 23-mile transmission line, to integrate Wheatridge into Morrow Flat.

Figure 1: Wheatridge Interconnection



10 Q. Is Wheatridge in the BPA balancing authority area?

A. Yes. As such, the full output of the facility is subject to BPA Variable Energy Resources
 Balancing Services, as modeled within the RFP. However, PGE is working with NEE and
 BPA to pseudo-tie⁹ the project output from the 100 MW of the wind generation facility that
 will be owned by PGE. This will allow PGE to move its portion of Wheatridge into PGE's
 balancing area (i.e., self-integration), resulting in a savings to customers.

⁹ A pseudo-tie is a time-varying energy transfer that is updated in real-time allowing the generator of a Balancing Authority (BA) to physically reside outside the contiguous boundaries of the BA.

B. Owned Wind Resources

1	Q.	Please describe the primary agreements that comprise PGE's 100 MW ownership share
2		of Wheatridge.
3	A.	PGE's ownership share is governed by three primary agreements; the Build-Transfer
4		Agreement (BTA), the EPC Agreement, and the O&M Agreement. While there are a number
5		of additional secondary agreements, which further define the roles and obligations of the
6		multiple parties, we will focus on discussing the three primary agreements listed above.
7	Q.	Please describe the BTA.
8	A.	The Build-Transfer Agreement provides for PGE to purchase an undivided interest in 100
9		MW of the turbines and supporting infrastructure at or near Commercial Operation Date
10		(COD). The BTA is a fixed price contract to reduce the risk to PGE's customers of schedule
11		delays and construction cost overruns and includes protections if NEE is unable to achieve
12		commercial operations in time to qualify for the 100% PTC deadline of December 31, 2020.
13		Of note, the BTA also includes a wake impact agreement, which protects PGE's portion of
14		Wheatridge from the wake impacts of neighboring wind farm projects developed by NEE.
15	Q.	Please briefly describe the EPC agreement.
16	A.	The EPC agreement defines the contractor responsibilities and work to be performed with
17		respect to PGE's ownership portion of Wheatridge, including engineering design
18		requirements, equipment and materials requirements, and construction responsibilities. PGE

becomes a signatory to the agreement upon Wheatridge achieving commercial operation,

20 when the facility transfers to PGE through the BTA.

19

1 Q. What is included within the O&M agreement?

The O&M agreement is a 30-year fixed fee agreement that covers both the day-to-day onsite 2 A. operations along with the maintenance of the entire 100 MW facility, including all capital 3 replacements, except for failure of the main power transformer and failures due to design 4 defect. The agreement is inclusive of all project facilities including the turbines, collector 5 system and substation. The O&M agreement leverages NEE's operational wind expertise, 6 while greatly reducing the overhead involved with hiring and managing plant personnel. 7 Additionally, the O&M agreement eliminates the need to secure a separate long-term service 8 9 agreement.

10 Q. How are PGE and NEE coordinating construction oversight of Wheatridge?

A. NEE and PGE have mutually engaged Sargent and Lundy as the independent engineer.
 Sargent and Lundy's scope of work is to certify the facility is constructed in accordance with
 the agreements and agreed upon technical specifications. Sargent and Lundy is also charged
 with resolving any technical disputes between PGE and NEE.

15 Q. Is there any warranty with GE for the turbines?

16 A. Yes. There is a two-year warranty for the turbines.

17 Q. Are there any other warranties in place?

A. Yes. In addition to the protections secured within the O&M agreement, there are warranty provisions in the EPC Agreement that ensure the work will be free from defect and that the facility performs its intended function. NEE is required to meet project substantial completion (i.e., commercial operation date or COD) by December 31, 2020 and is subject to liquidated damages for failure to meet this date. The contractor warranty period commences on the Substantial Completion Date and continues for two years. In addition, NEE is required to

maintain insurance coverage including commercial general liability, business automobile
 liability, and excess or umbrella liability insurance.

3 Q. What plant performance guarantees has PGE secured?

A. Before PGE accepts the plant as substantially complete, Sargent and Lundy, as the
independent engineer, must provide certification that the project meets all contractual
requirements and that 100% of the capacity of the turbines are made available. There is also
a required 72-hour performance run test to demonstrate that the facility operates satisfactorily
and safely. Additionally, GE provides both a power curve and a sound level guarantee for the
turbines.

C. Power Purchase Agreement

Q. Please describe the PPA terms between PGE and NEE for Wheatridge.

NextEra's 200 MW share of the wind facility, the 50 MW solar facility, and the 30 MW 4-hr 11 A. 12 battery storage facility make up the balance of the Wheatridge Renewable Energy Facility. The sale of the output from NextEra's facilities are governed by two PPAs; one for wind and 13 another for the solar and battery storage. The wind PPA has a 30-year contract term beginning 14 upon commercial operation of the wind facilities, which is currently projected in the fourth 15 quarter of 2020. The solar component of the solar and storage PPA has a 30-year contract 16 term and the storage component has a 20-year contract term, both beginning upon commercial 17 operation, scheduled on December 31, 2021. All prices are non-escalating over the term of 18 the contract and are for specified energy delivered to Morrow Flat. The total project output 19 20 is a bundled product (energy and associated REC), as such, the project output can be used to meet Oregon RPS obligations. 21

IV. Wheatridge Project Costs and Revenue Requirement

1 Q. Is the project within budget and on schedule?

2 A. Yes. The project is currently within budget and on schedule.

Q. How did you estimate the operating costs and revenue requirement for Wheatridge?

A. We estimated the operating costs on an annualized basis, reflecting costs for a full year of 4 operations. The forecasted 2021 dispatch benefits will be included within PGE's initial 2021 5 Schedule 125 filing and updated according to the schedule established within that proceeding. 6 Included within the revenue requirement for Schedule 122 will be annualized forecasted 7 dispatch benefits of Wheatridge for 2020. As the current 2020 NVPC benefit forecast is for 8 a single day of 2020 (i.e., December 31), it is *de minimis* and not currently included. However, 9 we will be updating the 2020 NVPC forecast for Wheatridge during this proceeding in order 10 to align it with the actual online date of the facility and will include a full annualized benefit 11 amount as a reduction to 2020 prices. 12

13 Q. What are the forecast costs associated with Wheatridge?

14 A. PGE's forecast for Wheatridge consists of the following major categories:

- Gross plant in-service totals approximately \$157.4 million, including allowance for
 funds used during construction (AFDC) and property taxes. Our estimate for the total
 capital cost (including AFDC and property taxes) of Wheatridge is equal to the total
 project cost of the RFP bid.
- Production O&M expenses total approximately \$4.0 million on an annualized basis.
 This amount is largely made up of the fixed fee O&M contract with NEE, as described
 in Section III, above, along with the addition of one incremental full-time equivalent

employee (FTE), required to manage PGE's day to day responsibilities of overseeing 1 2 Wheatridge. Insurance and Administrative & General expenses total approximately \$0.4 million. 3 ٠ The first full year of property and payroll taxes for Wheatridge amount to 4 ٠ approximately \$0.9 million. This is pursuant to the March 2019 Oregon Strategic 5 Investment Program (SIP) agreement between the Wheatridge Wind Energy LLC and 6 Morrow County. 7 Annualized first year depreciation expenses total approximately \$5.8 million, based on 8 • the Commission approved depreciation study from Docket UM 1809, Order No. 17-9 365. 10 Accumulated depreciation and accumulated deferred taxes total approximately (\$5.8 11 million) and \$8.9 million respectively. 12 Q. What is the revenue requirement impact of Wheatridge? 13 A. The 2020 revenue requirement for Wheatridge is approximately \$26.5 million prior to the 14 inclusion of NVPC benefits, which are expected to significantly reduce the overall net impact. 15 Q. When is PGE requesting prices to recover Wheatridge costs to be effective? 16 A. As stated above, we are requesting prices effective with the in-service date of Wheatridge. 17 The annualized fixed costs of Wheatridge will be largely unaffected by the in-service date and 18 thus immaterial. Additionally, the full amount of NVPC forecast benefits consistent with the 19 in-service date of Wheatridge will be included as an offset to prices. 20

V. Wheatridge Renewable Energy Certificates

1	Q.	Does PGE expect to use near-term RECs associated with Wheatridge generation for
2		purposes other than RPS compliance?
3	A.	Yes. As part of PGE's 2016 IRP acknowledged Action Plan and PGE's 2018 Renewable
4		RFP design, PGE has committed to monetizing the RECs generated from Wheatridge for the
5		benefit of customers prior to 2025.
6	Q.	Why did PGE propose to monetize the RECs prior to 2025?
7	A.	As part of PGE's RPS compliance glidepath strategy, discussed within the 2016 IRP, PGE
8		recognized that procuring a renewable resource prior to the expiration of available federal tax
9		credits, reduces future RPS compliance costs while contributing to near-term energy and
10		capacity needs. To further reduce the near-term costs for customers, PGE proposed to
11		monetize the RECs prior to year 2025 for the benefit of customers.
12	Q.	What options did PGE propose as potential paths for monetizing Wheatridge RECs?
13	A.	While PGE did not have a specific proposal for returning the value to customers at the time
14		of IRP and RFP acknowledgement, the available options included the following: 1) a sale of
15		the RECs in the wholesale market through a reverse-RFP, 2) a sale of the RECs to PGE's
16		retail subscribers of renewable portfolio option programs, or 3) the evaluation of future
17		alternative policy compliance value.
18	Q.	What option does PGE consider to be the most beneficial for customers?
19	A.	Selling the RECs to residential and small commercial retail customers of PGE's Schedule 7
20		and Schedule 32 renewable portfolio options program is most beneficial for customers. The
21		use of Wheatridge RECs for this program will increase the quality of RECs purchased by
22		residential customers without increasing the program price otherwise paid and, when

compared to the alternative, generate commensurate near-term value to customers paying for
 the costs of Wheatridge.

Q. Did PGE consider using RECs to lower carbon policy compliance costs?

A. Yes. However, as Oregon has yet to enact any form of cap and trade policy, PGE does not
recommend retaining RECs for the purposes of speculative cap and trade compliance.
Additionally, it is currently uncertain what role RECs will play in any type of carbon policy
or legislation, should one be enacted in the near future.

8 Q. Did PGE consider selling the RECs in the wholesale market place?

A. Yes. PGE has considered returning value to customers through wholesale sales of RECs using 9 a reverse-RFP structure as there is no central REC market available. Estimating the prevailing 10 price of RECs in future periods for the contemplated volume is difficult due to the illiquidity 11 of the unbundled REC market, both in size and product quality. PGE estimates bids to buy 12 priced between per REC sold for 2020 vintages depending on size, quality, 13 technology, and location.¹⁰ Additionally, 14 15 16 . In addition, a likely outcome of selling the 17 Wheatridge RECs in the wholesale market is that a REC broker would buy them and then, in 18 turn, sell the RECs back to PGE when PGE issues its RFP for the renewable portfolio options 19 program. 20

¹⁰ This amount is based on current REC brokerage quotes.

1

¹¹ See Considerations for Designing Portfolio Options, as adopted by the Portfolio Advisory Committee – March 5, 2001.

¹² See Commission Order No. 03-208, Appendix A, page 11: "many customers prefer to support facilities that deliver power to their electric system and believe that they obtain more benefits from renewable energy produced closer to their homes and businesses."

¹³ Ibid.

outside of the PNW region. In contrast to RECs from existing Green-E certified projects outside of the region, Wheatridge RECs will not only be Green-E certified but will be generated in Oregon, from a facility whose need was partially predicated on the recognition that the environmental attributes would be sold to a willing counterparty – satisfying PGE customers' preference for additionality.

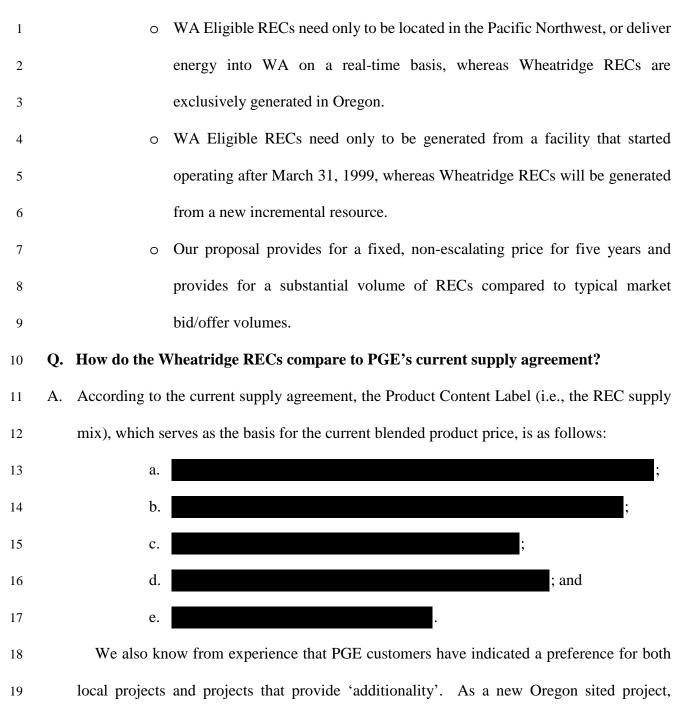
Q. At what amount does PGE propose to price the Wheatridge RECs sold into the renewable portfolio option program?

A. PGE intends to price the Wheatridge RECs sold to the Schedule 7 and Schedule 32 renewable
portfolio option program customers at project's commercial operation date through and including December 31, 2024, to the extent
the program has sufficient REC demand.

12 Q. Please describe how PGE arrived at the value used for pricing the Wheatridge RECs.

- A. The price PGE arrived at is based on broker quote information, with certain adjustments for risk, tenor, locality, and other factors. PGE also factored in current program costs and the continued ability to offer a quality product without increasing the overall program price to customers. In short, PGE calculated a sale value for Wheatridge RECs as follows:
- PGE spoke with REC brokers to identify current market values of both Green-E RECs
 located in Wyoming (WY), Utah (UT), and Montana (MT) and Washington (WA)
 Eligible Green-E certified RECs. From this price discovery, PGE received 2020 WA
 Eligible Green-E certified RECs bid (for purchase) at and offered (for
 sale) at a such, the broker indicated that a is fair value for WA
 Eligible REC.
 - From this amount we account for the following:

23



20 Wheatridge satisfies both preferences.

Q. Does PGE's renewable portfolio option program have enough demand to purchase all the near-term RECs generated by Wheatridge?

A. Yes. While we cannot be sure of what program demand will be into the future, PGE's
forecasted REC demand for renewable portfolio option residential and small business
customers in 2021 is approximately 2,000,000 MWh. Wheatridge's forecasted REC
generation in 2021 is projected to be approximately 900,000. Wheatridge's forecasted REC
generation grows to approximately 1,000,000 in 2022 as the solar resource comes online.

Q. Will the sale of Wheatridge RECs to PGE's renewable portfolio options program raise program prices?

A. No. PGE strives to keep the price of its voluntary renewable options as low as possible, a 10 priority that is captured by its recent national ranking: PGE's Green Source product was the 11 second least expensive green pricing option per kWh in the nation in 2018. However, as the 12 Wheatridge RECs would only meet approximately half of the program demand, PGE cannot 13 say with certainty that the sourcing of additional RECs for the program will not affect program 14 costs into the future. If the market for RECs becomes significantly more expensive than the 15 program's current supply, program management would be required to consider an increased 16 program price in relation to the increased market cost outside of the fixed term cost proposed 17 for Wheatridge RECs. 18

Q. One of PGE's renewable portfolio options programs is a renewable solar option. Is PGE proposing the Wheatridge RECs for the customers who participate in that option?

A. PGE is currently contracted to buy RECs from the Steel Bridge Solar facility in Willamina,
 OR to supply is Green Future Solar product through calendar year 2022. Given this existing
 supply contract and participating customer expectations, Wheatridge RECs will not be used

1		towards Green Future Solar until at least January 1, 2023. As of this time, PGE has made no
2		decisions about the supply for Green Future Solar after January 1, 2023.
3	Q.	The Commission's rules require procurement of the renewable supply resources for the
4		voluntary renewable energy product to be through a Commission approved bidding
5		process or other Commission approved means. ¹⁴ How is PGE proposing to meet that?
6	A.	If the Commission approves the sale of Wheatridge RECs to the voluntary renewables
7		program participants, then the rule is satisfied.
8	Q.	Does PGE plan to inform the Commission's Portfolio Options Committee (POC) of its
9		proposal to buy Wheatridge RECs?
10	A.	Yes. PGE does plan to seek input from the POC prior to the purchase of Wheatridge RECs
11		for renewable portfolio options program subscribers.
12	Q.	How does PGE propose transferring the REC value to PGE customers?
13	A.	Pursuant to the REC sales conditions outlined in Commission Orders Nos. 07-083 and 09-
14		396, PGE will engage in annual forward sales of unbundled RECs to renewable portfolio
15		options program and record gains within the property sales balancing account. PGE would
16		then request future amortization of the proceeds within a separate filing. PGE forecasts that
17		the sale of Wheatridge RECs to renewable portfolio options program customers will reduce
18		the year-one cost impacts of the facility to all PGE customers, by approximately

¹⁴ See OAR 860-038-0220 (6): "Each electric company must acquire the renewable supply resources necessary to provide the renewable energy resources product through a Commission-approved bidding process or other Commission-approved means."

Q. Is PGE requesting approval of the sale of the Wheatridge RECs to the voluntary renewable program participants, in this filing?

- 3 A. Yes. Subject to the guidance resulting from the POC review process described above, PGE
- 4 is requesting approval to offer generated Wheatridge RECs, through 2024, for sale to the
- 5 renewable portfolio options program.

VI. Wheatridge Timeline and Milestones

Q. Does the agreement with NEE contain a substantial completion deadline for
 Wheatridge?

- 3 A. Yes. The substantial completion deadline is December 31, 2020. NEE will be liable for
- 4 liquidated damages if the work is not completed by the substantial completion date.

5 Q. How far along is construction at this time?

- 6 A. The planning of Wheatridge is proceeding on schedule, with construction scheduled to
- 7 commence January 2020.

8 Q. What are the project milestones associated with Wheatridge?

9 A. Table 3 below lists the estimated construction and testing milestones.

Table 3 Wheatridge Milestones		
Milestone	Actual/Scheduled Completion	
Start of Construction	January 2020	
Wind Turbine Mechanical Completion	June 2020	
Substation Commissioning	September 2020	
Final Wind Farm Commissioning	Fourth Quarter of 2020	
Commercial Operation	Fourth Quarter of 2020	

10 Q. When is PGE requesting Wheatridge be included in customer prices?

- 11 A. We request that prices recovering Wheatridge's net revenue requirement become effective
- 12 shortly after a PGE officer has provided an attestation that Wheatridge has been placed in
- 13 service during the latter part of 2020. PGE will update our cost estimates before that time.

VII. Qualifications

1 **Q.** Mr. Armstrong, please describe your qualifications.

A. I received my Bachelor of Sciences degree in Aerospace Engineering from the Georgia 2 Institute of Technology in 2001. I have been employed at PGE since 2013, acting as the 3 project engineer and project manager on various generation, substation, and distribution 4 capital projects. Prior to PGE, I worked for Siemens Energy as a Service Project Manager 5 performing service and upgrades to both gas and steam turbine power plants. 6

Q. Mr. Batzler, please describe your qualifications. 7

A. I received a Bachelor of Arts degree in Radio and Television from San Francisco State 8 University in 1997 and a Master of Business Administration degree from Marylhurst 9 University in 2011. I have been employed at PGE since 2006, working in various departments 10 including Meter Reading and Human Resources. I have worked in the Rates and Regulatory 11 Affairs department since 2012. 12 **Q.** Does this conclude your testimony?

13

14 A. Yes.

List of Exhibits

PGE Exhibit Description

101 2020 Wheatridge Revenue Requirement

PGE Exhibit 101 2020 Wheatridge Results Dollars in (000s)

	2020
Operating Revenues	
Sales to Consumers (Rev. Req.) Sales for Resale	26,493
Other Operating Revenues	-
Total Operating Revenues	26,493
Operation & Maintenance	
Net Variable Power Cost	-
Operations O&M	4,057
Support O&M	532
Total Operation & Maintenance	4,588
Depreciation & Amortization	5,750
Other Taxes / Franchise Fee	1,538
Income Taxes	2,855
Total Oper. Expenses & Taxes	14,731
Utility Operating Income	11,762
Rate of Return	7.300%
Return on Equity	9.500%
* 2020 Rates per approved UE 335	
Rate Base	
Plant in Service	157,434
Accumulated Depreciation	(5,750)
Accumulated Def. Income Taxes	8,878
Accumulated Def. Inv. Tax Credit	-
Net Utility Plant	160,562
Misc Deferred Debits	-
Operating Materials & Fuel	-
Misc. Deferred Credits	-
Working Cash	564
Total Rate Base	161,126
Income Tax Calculations	
Book Revenues	26,493
Book Expenses	11,876
Interest Rate Base @ Weighted Cost of Debt	4,109
Production Deduction	-
Permanent Sch M Differences	(72)
Temporary Sch M Differences	51,206
State Taxable Income	(40,626)
State Income Tax	(3,079)
Federal Taxable Income	(37,546)
Fed Income Tax	(7,885)
Deferred Taxes	13,820
Excess ADIT Reversal (ARAM)	-
Federal Tax Credits	-
Total Income Tax	2,855

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I. Introduction

1	Q.	. Please state your name and position with Portland General Electric ("PGE").	
2	A.	My name is Andrew Speer. I am a Regulatory Consultant for PGE.	
3		My qualifications are included at the end of this testimony.	
4	Q.	What is the purpose of your testimony?	
5	A.	The purpose of my testimony is to discuss the proposed changes requested for Schedule 122,	
6		Renewable Resource Automatic Adjustment Cause (RAC), which will accommodate the	
7		timing of a renewable resource on-online date and the filing date for a RAC.	

II. Schedule 122 Modifications

- 1 Q. Are you proposing any changes to the Schedule 122 tariff?
- 2 A. Yes.

3 **Q.** What is the purpose of the tariff changes?

A. The purpose of the change is two-fold. The first change addresses filing dates and timing 4 differences associated with Schedule 122 and Schedule 125 – Annual Power Cost Update 5 (AUT). Updating Schedule 122 fixes a timing issue regarding the on-line date of a resource 6 and the timing and alignment for when the RAC is filed and subsequently when PGE files an 7 8 AUT to recover the net variable power costs (NVPC) for a resource or contract via Schedule 125. Second, the Commission decision in UM 1909 via Order No. 18-423 creates a timing 9 issue given that the Commission no longer allows the deferral of capital costs. As such, the 10 11 tariff edits allow for the inclusion of Schedule 122 qualifying costs into prices contemporaneous with the actual online date of the facility or facilities, eliminating the need 12 to defer any costs for later inclusion. 13

14 Q. Please identify the issues with the current Schedule 122 language?

A. The current Schedule 122 tariff language sets out the timing requirements for filing the RAC;
however, the tariff language posed an issue regarding the timing for the AUT and was not
clear on the timing for when a RAC filing would occur, following a resource going into
operation. The current language also assumes all costs can be deferred if the timing of a
project does not align with a January 1 price change.

20 Q. Do any of the proposed changes impact RAC pricing methodology or impact how PGE

- 21 recovers RAC related costs?
- A. No. The edits included do not propose any changes to pricing methodology.

Q. How will PGE provide benefits to net variable power costs if the RAC does not align with the AUT?

- 3 A. The net variable power cost benefits will be included in the RAC until such time as they can
- 4 be included in the next AUT.
- 5 Q. Have you included any exhibits to your testimony?
- A. Yes. PGE Exhibit 201 contains the Schedule 122 proposed reline edits as discussed above
 with updated prices.
- 8 Q. Does this conclude your testimony?
- 9 A. Yes.

III. Qualification

1 Q. Mr. Speer, please describe your qualifications.

A. I received my Bachelor and Master of Science degrees in Economics from Portland State
University in 2007 and 2009. I have been employed at PGE since 2018, working as a
Regulatory Consultant in the Rates and Regulatory Affairs department. Prior to joining PGE,
I worked as a senior rates analyst at NW Natural, working on cost of service and rate design;
and prior to that, I worked at the Bonneville Power Administration, working as an economist
in the Residential Exchange Program, enterprise risk management, and long-term energy sales
and purchases workgroups.

List of Exhibits

PGE Exhibit Description

201 Schedule 122 – Renewable Resources Automatic Adjustment Clause Tariff

SCHEDULE 122 RENEWABLE RESOURCES AUTOMATIC ADJUSTMENT CLAUSE

PURPOSE

This Schedule recovers the revenue requirements of qualifying Company-owned or contracted new renewable energy resource and energy storage projects associated with renewable energy resources (including associated transmission) not otherwise included in rates. Additional new renewable and energy storage projects associated with renewable energy resources may be incorporated into this schedule as they are placed in service. This adjustment schedule is implemented as an automatic adjustment clause as provided for under ORS 757.210 and Section 13 of the Oregon Renewable Energy Act (OREA).

AVAILABLE

In all territory served by the Company.

APPLICABLE

To all bills for Electricity Service except Schedules 76, 485, 489, 490, 491, 492, 495 and 576. This schedule is not applicable to direct access customers after December 31, 2010.

ADJUSTMENT RATE

The Adjustment Rate, applicable for service on and after the effective date of this schedule are:

Adjustment Rate	
0. <u>169</u> 000	¢ per kWh
0. <u>128</u> 000	¢ per kWh
0. <u>153</u> 000	¢ per kWh
0. <u>141</u> 000	¢ per kWh
0. <u>186</u> 000	¢ per kWh
0. <u>185</u> 000	¢ per kWh
0. <u>138</u> 000	¢ per kWh
0. <u>135</u> 000	¢ per kWh
0. <u>131</u> 000	¢ per kWh
0. <u>153</u> 000	¢ per kWh
0. <u>149</u> 000	¢ per kWh
0. <u>145</u> 000	¢ per kWh
	0.169000 0.128000 0.153000 0.141000 0.186000 0.185000 0.138000 0.135000 0.131000 0.153000 0.149000

SCHEDULE 122 (Continued)

ADJUSTMENT RATE (Continued)

	<u>Schedule</u>	Schedule Adjustment Rate	
89			
	Secondary	0. <u>138</u> 000	¢ per kWh
	Primary	0. <u>135</u> 000	¢ per kWh
	Subtransmission	0. <u>131</u> 000	¢ per kWh
90		0. <u>129</u> 000	¢ per kWh
91		0. <u>128</u> 000	¢ per kWh
92		0. <u>134</u> 000	¢ per kWh
95		0. <u>128</u> 000	¢ per kWh

ANNUAL REVENUE REQUIREMENTS

The Annual Revenue Requirements of a qualifying project will include the fixed costs of the renewable or energy storage resource and associated transmission (including return on and return of the capital costs), operation and maintenance costs, income taxes, property taxes, and other fees and costs that are applicable to the renewable or energy storage resource or associated transmission. Until the dispatch benefits are included in the Annual Power Cost Update Schedule 125, the net revenue requirements of each project (fixed costs less market value of the energy produced by the renewable or energy storage resource plus any power costs such as fuel, integration and wheeling costs) will be deferred and incorporated the following January 1 intoincluded in the Schedule 122 rates. This balancing account will accrue interest at the Commission-authorized rate for deferred accounts. Each year_following the resource's on-line date by April 1, the Company will file an update to the revenue requirements of resources included in this schedule to recognize projected changes for the following calendar year. If the timing of an AUT doesn't align with the resource, the net variable power cost impacts associated with the resource will be included in the AUT at the next opportunity.

DEFERRAL MECHANISMBALANCING ACCOUNT

For each calendar year that the Company anticipates that a new renewable or energy storage resource will commence operation, the Company may file a deferral request the earlier of the resource online date or April 1. The deferral amount will be for the fixed revenue requirements of the resource less net dispatch benefits. For purposes of determining dispatch benefits, the forward curves used to set rates for the year under the Annual Power Cost Update will be used. The deferral will be amortized over the next calendar year in Schedule 122 unless otherwise approved by the Oregon Public Utility Commission (OPUC). The balancing account will accrue interest at the Commission-authorized rate for deferred accounts, and <u>The</u> amortization of the deferred amount will not be subject to the provisions of ORS 757.259(5).

SCHEDULE 122 (Continued)

TIME AND MANNER OF FILING

For each calendar year that the Company is required to update the Annual Revenue Requirements or proposes to include a new resource under this schedule, the Company will file by no later than April 1, the following:

- 1. Revised rates under this schedule and a transmittal letter that summarizes the proposed revenue requirements and charges for both the new resource(s) and the updated revenue requirements and charges for applicable resources previously approved for recovery under this schedule. In addition, the filing will include revised income taxes and associated ratios to calculate "taxes authorized to be collected in rates" under ORS 757.268.
- 2. Within the Company's Annual Power Cost Update (Schedule 125) filing, the Company will include for the following year the expected generation of resources included in this schedule and the power costs of these resources.
- 3. Work papers that support the calculation of revenue requirements for all applicable resources and demonstrate how the proposed prices are calculated.

By December 1<u>At least 30 days ahead of the effective date of the price change in this schedule</u>, the Company will file the updated rates that are in compliance with the Commission's findings in the proceeding reviewing the April 1 filing Company's initial filing.

SPECIAL CONDITIONS

- 1. Costs recovered through this schedule will be allocated to each schedule using the applicable schedule's forecasted energy on the basis of an equal percent of generation revenue applied on a cents per kWh basis to each applicable rate schedule.
- 2. Each renewable resource project (and associated transmission) included in this adjustment schedule must be separately identified and be a new resource defined as "renewable" in the OREA.
- 3. The costs for projects included under this schedule will be updated annually as provided above, and will continue to be recovered under Schedule 122 until such time as the costs are included in base rates or the project is no longer in service.
- 4. The in-service date for the new renewable or energy storage resource project or each separately identifiable project segment will be verified by an attestation from the Company stating that the specific renewable or energy storage resource project, or project segment, has met requirements for being commercially operational and is in service.

SCHEDULE 122 (Concluded)

SPECIAL CONDITIONS (Continued)

- 5. If the actual costs of an eligible resource cannot be verified by the final round of testimony in the proceeding reviewing the <u>April 1</u>-filing, the Company will include in its <u>December 1</u>-compliance filing an update to reflect then-current actual resource costs, or forecasted costs where appropriate. If the updated costs are lower than the projected costs in the record of the proceeding, the update will contain sufficient information to support a reduction in the proposed adjustment charges before the January 1 effective date. If updated costs are higher than the projected costs in the record or if actual costs cannot be verified until after <u>December 1</u>the compliance filing, the Company may file for deferred accounting under the OREA to allow an opportunity for recovery of the cost differences between the projected costs in the record and the prudently incurred actual costs. For purposes of Schedule 126 (Annual Power Cost Variance Mechanism), actual NVPC will be adjusted to remove the impact of any power produced by a new renewable or energy storage resource qualifying for treatment under this schedule but not otherwise included in rates. The following adjustments will be made:
 - a) Actual NVPC will be increased by the value of any renewable or energy storage resource energy. The value of such energy will be determined by employing the forward curves used to set rates for the year under the Annual Power Cost Update. Actual NVPC will be reduced by applicable fuel costs and supply integration costs for the resource.
 - b) Actual NVPC will also be increased or decreased as appropriate for any other credits or charges specifically identifiable with the new renewable or energy storage resource.
- 6. For Schedule 122 filings made on and after April 2009, the Commission may condition approval of a proposed change in Schedule 122 charges on PGE making a filing under ORS 757.210 within six months after the Commission order approving the proposed change. Through this filing, the Company will roll into the generation component of its rates all of the costs, or a portion thereof identified by the Commission, that are being collected through the then existing Schedule 122 charges. The Commission's order for conditional approval must be based upon: (1) a finding that the costs, or a portion thereof, specified by the Commission have been collected through Schedule 122 for a reasonable period of years, as determined by the Commission; or (2) for good cause, as determined by the Commission.