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June 9, 2020

Via Electronic Filing

Public Utility Commission of Oregon
Attn: Filing Center
201 High St. SE, Suite 100
Salem OR 97301

Re: In the Matter of PORTLAND GENERAL ELECTRIC COMPANY,
Renewable Resource Automatic Adjustment Clause (Schedule 122)
Docket No. UE 370; and
In the Matter of PORTLAND GENERAL ELECTRIC COMPANY,
Renewable Resource Automatic Adjustment Clause (Schedule 122)
(BPSC Energy Storage Microgrid and ARC Energy Storage)
Docket No. UE 372 (Consolidated)

Dear Filing Center:

Please find enclosed the redacted version of the Cross-Examination Exhibits of the Alliance of Western Energy Consumers in the above-referenced dockets.

Please note that AWEC's cross-exam exhibits contain protected information that is being handled in accordance with Order No. 19-416. The confidential portions of AWEC's exhibits have been encrypted with 7-zip software and are being transmitted electronically to the Commission and qualified persons, consistent with the Commission's Order No. 20-088.

Thank you for your assistance. If you have any questions, please do not hesitate to call.

Sincerely,

/s/ Jesse O. Gorsuch
Jesse O. Gorsuch

Enclosures

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served the **Confidential Cross-Examination Exhibits of the Alliance of Western Energy Consumers** upon the parties shown below via electronic mail, consistent with Commission Order No. 20-088.

Dated at Portland, Oregon, this 9th day of June, 2020.

Sincerely,

/s/ Jesse O. Gorsuch
Jesse O. Gorsuch

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June 08, 2020

TO: Jesse O. Gorsuch
Alliance of Western Energy Consumers'

FROM: Jaki Ferchland
Manager, Revenue Requirement

PORTLAND GENERAL ELECTRIC
UE 370
PGE Response to AWEC Data Request No. 030
Dated June 4, 2020

Request:

Referring to PGE/300 at 2:9-14:

- a. Please identify the number of years PGE will receive the identified transmission credit from BPA.
- b. Did PGE include the BPA transmission credit or any other transmission credit when modeling the net benefits of Wheatridge? If so, please identify where in Confidential Attachment A to AWEC DR 019 these benefits were modeled.

Response:

- a. PGE's current forecast of transmission credits received from Bonneville Power Administration (BPA), related to necessary BPA work in order to interconnect Wheatridge, is approximately [REDACTED]. This amounts to approximately 3.5 months of BPA's current point-to-point rate for 300 MWs. The actual credit will be based on the actual BPA costs.
- b. PGE did include transmission credits within the price score model, as provided in PGE's response to AWEC Data Request No. 019, confidential Attachment 019-A. These amounts can be seen in cells T602 and U602 of the tab titled "Assump." Please note these credit amounts [REDACTED] were forecast based on estimates from BPA and were scored as such given the best available information at the time. Since this time, BPA has updated and reduced its cost estimates for transmission customer funded interconnection upgrades associated with the interconnection of the wind, resulting in a reduction to the credit amount used in net variable power costs. The interconnection costs for the addition of the solar + storage in 2021 are still uncertain and could result in additional transmission credits that may equate to what was assumed in the RFP in value but with differences in timing. Regardless of the final costs and creditable amount, there will not be a commensurate change in the solar + storage PPA price since the agreement was executed between PGE and the counterparty prior to final costs being determined.

June 08, 2020

TO: Jesse O. Gorsuch
Alliance of Western Energy Consumers'

FROM: Jaki Ferchland
Manager, Revenue Requirement

PORTLAND GENERAL ELECTRIC
UE 370
PGE Response to AWEC Data Request No. 031
Dated June 4, 2020

Request:

Please provide the 2021 net revenue requirement for the owned and PPA portions of Wheatridge wind (combined), including impacts from the partial stipulation filed in this docket

Response:

Please note that Wheatridge is scheduled to come online prior to 2021, thus PGE will be tracking in Wheatridge consistent with the online date of the resource and based on an annualized revenue requirement. For 2020, all forecasted net variable power cost (NVPC) amounts, for both the owned and PPA portions will be included in Schedule 122. Beginning January 1, 2021, the NVPC forecast amounts related to both the owned and PPA portions of Wheatridge will be reflected within Schedule 125. Additionally, pursuant to the Stipulation filed at the Commission on May 19, 2020, PGE will file a "RAC Update" to incorporate any "holdback" amounts and trailing costs associated with Wheatridge. As such, Attachment 031-A provides two annualized revenue requirement forecasts:

1. 2020 annualized revenue requirement forecast that assumes:
 - a. Wheatridge reaches COD according to its currently scheduled online date of October 2, 2020,
 - b. No holdback or trailing costs are yet included, and
 - c. Annualized NVPC forecast for 2020 associated with both the owned and PPA portions and including full amount of transmission credits.
2. 2021 annualized revenue requirement forecast that assumes:
 - a. Wheatridge is in-service prior to January 1, 2021,
 - b. All holdback and trailing cost amounts have been included, and
 - c. 2021 Wheatridge NVPC forecasted impact as assumed in PGE's April 1, 2020 filing for the 2021 AUT (Docket No. UE 377). Please note that this is for display purposes only as, mentioned above, all NVPC impacts for 2021 will be reflected in Schedule 125 prices and not in Schedule 122.

UE 370

Attachment 031-A

Provided in Electronic Format only

Protected Information Subject to Protective Order No. 19-416

2020 and 2021 Wheatridge Forecasted Annualized Revenue
Requirement

Pages 3 – 8 of Cross-Exam Exhibit AWEC/301 contain Protected Information Subject to General Protective Order and have been redacted in their entirety.

June 08, 2020

TO: Jesse O. Gorsuch
Alliance of Western Energy Consumers'

FROM: Jaki Ferchland
Manager, Revenue Requirement

PORTLAND GENERAL ELECTRIC
UE 370
PGE Response to AWEC Data Request No. 032
Dated June 4, 2020

Request:

Please provide the final request for proposals that resulted in the selection of Wheatridge in the form that it was issued to the market.

Response:

Attachment 032-A provides the final 2018 Renewables RFP specifications issued to market, pursuant to Commission Order No. 18-171.

UE 370

Attachment 032-A

Provided in Electronic Format only

2018 Renewables RFP Specifications

Portland General Electric Company

REQUEST FOR PROPOSALS – FINAL

Renewable Energy Resources

May 22, 2018



Table of Contents

1	Purpose and Scope	4
1.1	Resource Targets	4
1.2	About PGE.....	5
1.3	Independent Evaluator.....	6
1.4	Staffing Principles	6
2	RFP Schedule.....	7
3	Guidelines for Submitting Proposals.....	9
3.1	Registration on PGE’s RFP Website.....	9
3.2	Procedural and Commercial Questions	9
3.3	Submitting Bids	9
3.4	Bid Fee.....	10
3.5	Submitting a Confidentiality and Non-Disclosure Agreement	10
3.6	Validity of Price and Offer	11
3.7	Bid Evaluation Criteria.....	11
3.8	Reservation of Rights.....	11
3.9	Document Retention	12
4	Requested Power Products.....	13
4.1	Renewable Electric Energy Products Requested.....	13
4.2	Scheduling Requirements	14
4.3	Delivery Point and Transmission.....	14
5	Contract Terms and Conditions	16
5.1	Energy Purchase Agreement	16
5.2	Ownership Position in a Renewable Energy Resource	16
6	Bid Pre-Qualifications	18
6.1	General.....	18
6.1.1	Minimum Bid Quantity	18
6.1.2	Minimum Bid Term	18
6.1.3	Qualifying Product	18
6.1.4	Credit and Bidder Qualifications	18
6.1.5	PURPA Status	19
6.1.6	Transmission.....	20
6.1.7	Resource Delivery	20
6.1.8	Resource Availability.....	20
6.1.9	Other Bidder Pre-qualification	21
6.2	For New Projects	21
6.2.1	Site Control	21
6.2.2	Financing.....	21
6.2.3	Technology.....	21
6.2.4	Equipment and Construction Costs.....	22
6.2.5	Tax Credit Eligibility.....	22
6.2.6	Interconnection.....	22
7	Bid Evaluation Process.....	23
7.1	Reviewing, Ranking and Selecting Bids.....	23
7.2	Bidder Feedback	24

8	Criteria Used for Scoring Qualified Bids.....	25
8.1	Determination of the Offer Cost.....	25
8.2	Determination of the Energy Value.....	26
8.3	Determination of Capacity Benefits.....	26
8.4	Determination of Flexibility Benefits.....	26
8.5	Adjustments to Prices Submitted by Bidders.....	27
8.6	Detailed Offer Price Scoring.....	29
8.7	Offer Price Screen.....	29
8.8	Non-Price Factors.....	30
8.8.1	Project Development Criteria.....	30
8.8.2	Project Physical Characteristics.....	30
8.8.3	Project Performance Certainty.....	31
8.8.4	Credit Evaluation.....	31
9	Final Short List Determination.....	32
10	Post-Bid Negotiations.....	36
11	Appendix A - Power Purchase Agreement.....	37
12	Appendix B - Asset Purchase Agreement.....	38
13	Appendix C - Engineering Procurement and Construction Agreement.....	39
14	Appendix D - Parent Guaranty.....	40
15	Appendix E - Credit Requirement Guidance.....	41
16	Appendix F - Confidentiality Agreement.....	42
17	Appendix G – PGE Technical Specifications.....	43
18	Appendix H – Scoring Procedures.....	44
19	Appendix I – Required Bid Information.....	45
20	Appendix J – Benchmark Bid Information.....	46

Tables

Table 1: Summary of Requested Renewable Energy Products.....	13
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Figures

Figure 1. PGE Service Territory.....	6
Figure 2. Resource Selection Process.....	23

1 Purpose and Scope

Portland General Electric Company (PGE), an investor-owned electric utility in Oregon, is soliciting bids through this Request for Proposals (RFP) for the renewable electric energy products described in section 1.1 below.

The timing of the RFP is intended to enable resources to capture for customers the value of federal renewable electricity tax credits including the Production Tax Credit (PTC) and Investment Tax Credit (ITC). PGE will consider proposals from a diverse range of renewable energy resources that comply with Oregon's Renewable Portfolio Standard (RPS).

This competitive RFP is being conducted in accordance with the OPUC Competitive Bidding Guidelines set forth in Appendix A of OPUC Order 06-446, dated August 10, 2006, as modified by OPUC Order 14-149, dated April 30, 2014 (Docket UM-1182) (Competitive Bidding Guidelines).

1.1 Resource Targets

PGE is seeking to acquire approximately 100 average megawatts (MWh)¹ of long-term renewable energy supply, bundled with the associated renewable energy credits (RECs). Renewable resources must meet the requirements of Oregon's RPS, as defined in Oregon Revised Statutes (ORS) Section 469A. PGE will consider proposals based on different commercial structures and commercially viable resource technologies. Acceptable bids for renewable resources include power purchase agreements (PPA), as well as a range of ownership structures, including PPAs with purchase options or obligations, sales of existing assets, acquisition of project development assets and rights, joint ownership, and build-own-transfer agreements. PGE intends to submit a benchmark proposal for the renewable RFP. PGE will evaluate and select renewable energy supplies consistent with the criteria and methodology contained herein.

Notwithstanding the above preferred target, PGE reserves the right to vary from this target² energy quantity based on evaluation of price and risk factors of received bids.

¹ An average megawatt is a unit of energy equal to 8,760 MWh during a common year.

² Including not procuring any energy through this RFP process.

1.2 About PGE

Headquartered in Portland, Oregon, PGE serves approximately 863,000 retail customers within a 4,000 square mile service territory (see Figure 1).

- Service territory population 1.9 million, about 46% of the state's population.
- Serves 51 cities, the largest being Portland and Salem.
- 28,000 miles of transmission and distribution lines.
- Net plant-in-service, \$9.9 billion.
- Forecast average annual demand in 2021, approximately 2,450 MWa.
- Peak load in 2016, 3,726 MW.
- Generation assets including seven hydro generation facilities, five gas-fired thermal plants, the Biglow Canyon and Tucannon River wind farms, majority ownership of one coal-fired thermal plant, and joint ownership in two units of another coal plant facility. PGE also holds long-term contracts for energy from the Mid-Columbia hydroelectric projects on the Columbia River, two wind farms, and regularly enters into short and mid-term wholesale power supply contracts.



Figure 1. PGE Service Territory

For more information, see PGE's Internet site: www.portlandgeneral.com.

1.3 Independent Evaluator

The Oregon Public Utility Commission has selected Bates White as an independent, third-party evaluator (IE), to help ensure the RFP is conducted in accordance with the OPUC Competitive Bidding Guidelines and that all bids are evaluated consistently and impartially. The IE will report to the OPUC. Bates White will:

- Consult with PGE during PGE's preparation of the RFP and submit its assessment of the final draft RFP to the OPUC when PGE files for RFP approval.
- Review final scoring and evaluation criteria that are consistent with the OPUC Competitive Bidding Guidelines and review of "mock bids" to test the integrity of the evaluation models.
- Will confer with OPUC staff in accordance with the Competitive Bidding Guidelines.
- Oversee the RFP process to ensure it is administered fairly.
- Will evaluate and score PGE's Benchmark Resource bid.
- Independently score all, or a sample, of the bids to determine whether the selections for the initial and final short-lists are consistent with the bid evaluation criteria.
- Compare the results of the IE's scoring with PGE's scoring and work with PGE to reconcile and resolve scoring differences, if any.
- Request additional modeling sensitivities, as necessary.
- Prepare a Closing Report for the OPUC after PGE has selected the final short-list.
- In its Closing Report, provide its assessment of all aspects of the solicitation process and the IE's involvement, including detailed bid scoring and evaluation results, to PGE, non-bidding parties and the OPUC subject to the terms of the Protective Order.

1.4 Staffing Principles

Portland General Electric Company (PGE) has put in place certain measures, including separation of functions and restrictions on information sharing, that

1. Are designed to provide a comparable and unbiased evaluation of all third party bids and any PGE Benchmark Resource consistent with the OPUC Competitive Bidding Guidelines for major resources.
2. Staff the RFP Team and the Benchmark Resource Team with the appropriate levels of expertise and technical knowledge.
3. Make efficient use of the limited number of PGE employees qualified to assist with power supply resource development, evaluation and procurement.

In addition, as a transmission provider, PGE complies with the Standards of Conduct adopted by the Federal Energy Regulatory Commission (FERC) which govern interactions between PGE's Transmission Function Employees (TFEs) and PGE's Marketing Function Employees (MFEs) and requires these employees to function independently of each other. Also, employees who are neither MFEs nor TFEs cannot share transmission information with MFEs under FERC's "no-conduit rule."

PGE's senior leadership team will continue to provide oversight and guidance, but will not directly participate in either the development of the Benchmark Resource or the RFP.

The Benchmark Resource is described in Appendix J.

2 RFP Schedule

The schedule listed below may be revised throughout the RFP process:

- Friday March 2nd 2018 — Pre-issuance stakeholder and bidder RFP workshop.
- Friday March 9th 2018 — PGE submits final draft Renewable RFP to OPUC for approval.
- Friday March 23rd 2018 — IE submits assessment of the final draft renewable RFP to OPUC.
- Wednesday May 16th 2018 – OPUC Special Public Meeting to Approve Renewable RFP.
- Tuesday May 22nd 2018 — PGE issues Final RFP.
- Tuesday May 22nd 2018 – Post-issuance bidder conference.
- Friday June 8st 2018 – Benchmark bid due.
- Wednesday June 14th 2018 – Benchmark bid scored and sealed.
- Friday June 15th 2018 — RFP proposals from Bidders due.
- Monday August 6th 2018 - Initial short list identified.
- Friday August 10th 2018 – Best and final price update.
- Tuesday October 2nd 2018* — PGE submits request for acknowledgment of short list to OPUC.

- Tuesday October 2nd 2018* — IE issues final closing report to OPUC.
- Tuesday October 30th 2018* – OPUC considers PGE’s request for acknowledgment of short list
- Monday December 31, 2018* – Final contracts with winning Bidders, PGE issues notice to proceed (as applicable).

** These dates are subject to change depending on the quantity and complexity of bids received. However, given the time-sensitive nature of this RFP, PGE will use best efforts in working with Bidders, stakeholders, the IE and the OPUC to achieve the milestones in this timeline.*

3 Guidelines for Submitting Proposals

This section describes the guidelines that parties submitting bids under this RFP (Bidders) must follow when submitting proposals.

3.1 Registration on PGE's RFP Website

PGE's RFP website, hosted by the IE, is the platform for communication and bid materials exchanges between Bidders and PGE. All prospective Bidders, stakeholders, and other interested parties may register on PGE's RFP website at www.PortlandGeneralRFP2018.com. The website is secure and password protected so that confidential information can be posted on and exchanged via the site.

Other features of the site include:

- The ability to download all public RFP documents, including copies of this document and all related contracts, term sheets and appendices.
- An announcement board for posting of information for the public and Bidders.
- The capability for Bidders to anonymously post questions and comments that can be seen by all users.
- Confidential bid folders for each bid, for the retention and exchange of bid-specific data.
- Confidential evaluation folders for bid evaluation and retention of data for use during regulatory proceedings.

3.2 Procedural and Commercial Questions

All correspondence regarding procedural questions, bid submissions and questions related to product characteristics, terms and conditions should be submitted to PGE's RFP website at www.PortlandGeneralRFP2018.com. PGE, in consultation with the IE, as appropriate, will post answers to questions from Bidders, stakeholders, and other interested parties on the site.

3.3 Submitting Bids

Bidders may submit one or more bids responding to the requested renewable energy product (see the Requested Power Products section below). All bids must be submitted online using the bid form that PGE will provide on the RFP website, www.PortlandGeneralRFP2018.com, no later than 12:00 p.m. Pacific Time on June 15, 2018. The bid form will require Bidders to submit information in support of their bids, including but not limited to project description, transaction type and price, project development criteria and developer experience, interconnection and scheduling services, tax benefits, permitting,

project resource characteristics, operating costs, credit and financial, etc. Bidders may edit their online bid form until the bid submission deadline. At 12:00 p.m. Pacific Time on June 15, 2018, bid forms will be closed to edits, and will be considered to be final submissions.

PGE's Benchmark Bid must also be submitted online no later than 12:00 p.m. Pacific Time on June 8 2018.

All bids on the initial short list will be invited to provide best and final price updates no later than August 10, 2018. Best and final price updates will only be accepted if offer's total price is reduced relative to initial offer.

3.4 Bid Fee

To help defray the costs of the IE and encourage high quality proposals and qualified Bidders, each Bidder in this RFP must pay a non-refundable bid fee of \$10,000. A bid may consist of one base proposal in addition to two alternatives for the same bid fee. The alternatives may consist of a different bid size, contract term, in-service date, and/or pricing structure for the same resource at the same location.

A proposal for a different resource at a different site will be considered a separate proposal and will be subject to a separate bid fee.

Fees are to be remitted via electronic funds transfer to PGE. For purposes of assessing bid fees, the IE, in consultation with PGE, shall confirm whether a Bidder's submission constitutes one or more proposals based on the criteria described above.

3.5 Submitting a Confidentiality and Non-Disclosure Agreement

The Confidentiality and Non-Disclosure Agreement is available for completion at www.PortlandGeneralRFP2018.com (and is included as Appendix F to this RFP). Bidders are required to complete and sign the confidentiality agreement prior to the bid submission deadline (12:00 PM on June 15, 2018). The confidentiality agreement is to be submitted to PGE through the IE website. Due to the need to ensure uniform treatment of all confidential information, PGE will not accept changes to the Confidentiality and Non-Disclosure Agreement.

PGE will treat any proprietary and confidential information contained in a bid, in a manner consistent with the terms of the Confidentiality and Nondisclosure Agreement and any Protective Orders issued by the OPUC, provided that such information is clearly identified by the Bidder on each confidential page as "Confidential" or "Confidential Information." Each Bidder must execute and deliver a copy of the Confidentiality and Nondisclosure Agreement, as soon as possible, but no later than the time of the submission of its bid or bids. Confidentiality and Non-Disclosure Agreements received prior to June 8st 2018 will be countersigned and returned to bidder before June 15th 2018. *It is the*

Bidder's responsibility to indicate clearly in its proposal what materials and what pages it deems to be "confidential" and subject to the Confidentiality and Nondisclosure Agreement.

3.6 Validity of Price and Offer

By submitting a bid, the Bidder acknowledges and agrees that the terms of its proposal shall remain irrevocable for the earlier of 200 days after the bid responses are due or when PGE issues a written release of the bid at or before the time the initial³ or final, as applicable, short list is issued.

3.7 Bid Evaluation Criteria

Bids will be assessed by PGE and the IE on the project's economic competitiveness, project specific commercial and performance risks, and portfolio economic risk. All bids will be evaluated within an individual offer analysis to assign a bid price and non-price score. Consistent with prior practice, PGE's price score comprises 60 percent of our evaluation criteria, reflecting PGE's desire and commitment to obtain the best possible value for our customers. Non-price factors comprise the other 40 percent and reflect commercial and performance risks in addition to operational attributes of the bid proposals. Additional description of the bid evaluation criteria is provided in Section 8 of this document "Criteria Used for Scoring Qualified Bids."

3.8 Reservation of Rights

This RFP is not, and shall not be construed to be, an offer by PGE. PGE is not bound to enter into negotiations or execute an agreement with, or purchase any products from, any Bidder as a result of this RFP. No rights shall be vested in any Bidder, individual or entity by virtue of its preparation to participate in, or its participation in, this RFP. No binding commitment shall arise on the part of PGE to any Bidder under this RFP until and unless the parties execute definitive agreements that become effective in accordance with their terms.

Each Bidder shall be solely responsible for all costs it incurs in preparing to participate in, participating in, or responding to this RFP.

The bids received will be evaluated and selected based on the information supplied by each Bidder pursuant to this RFP. PGE reserves the right to modify or withdraw from this RFP process, or modify the schedule and any provisions contained herein, for any reason. PGE also reserves the right, consistent with the Competitive Bidding Guidelines, to make purchase commitments at any time to suppliers not participating in this RFP process.

³ Bids that are not on the initial short list will be considered released for purposes of this section.

PGE reserves to itself:

- The selection of final short-listed bids and the awarding of contracts, if any, in the exercise of its sole discretion.
- The right to short-list projects with energy amounts in excess of its target to ensure sufficient back-up proposals are available should other bidders materially depart from their bids during the negotiation phase. PGE anticipates short-listing a minimum of approximately 150% of its targeted energy amounts, and a minimum of 150 MWa of non-benchmark resources⁴.
- The right to reject any and all bids, and any portion of a specific bid for any reason.
- The right to waive any immaterial non-conformity in any bid received.
- The right to award a contract to a Bidder based on a combination of price and non-price factors, a quantitative and qualitative assessment of portfolio fit, and post-bid negotiations.

3.9 Document Retention

All bids and exhibits supplied to PGE during the RFP process will become the property of PGE. PGE will retain all bid materials supplied to it and pertinent information generated internally by it in connection with the RFP process in accordance with PGE's document retention policies.

⁴ Ability to short-list a minimum of 150 MWa of non-benchmark resources will be dependent upon a sufficient number of bids passing PGE's offer-price screen detailed in section 8.7.

4 Requested Power Products

PGE requests proposals for renewable energy products, as described in this RFP.

Renewable resources must meet the requirements of Oregon’s RPS, as defined in ORS 469A. In addition, renewable bids must include all environmental attributes, including Renewable Energy Certificates (RECs). Bidders will be responsible for ensuring RECs from projects are bundled as defined in ORS 469A.005. Bidders will also be responsible for ensuring that RECs are established through Western Renewable Energy Generation Information System (WREGIS) consistent with OAR 330-160-0020.

PGE is targeting approximately 100 MWa of renewable energy resources in this RFP. However, PGE reserves the right to vary from the target based on evaluation of price and risk factors of received bids.⁵ PGE has expedited the RFP to enable capture of federal renewable tax credits including the PTC and ITC given the planned decline for each. Preference will be given to RFP resources and bids that offer the ability to maximize cost savings to customers.

Table 1: Summary of Requested Renewable Energy Products

Product	Capacity	Online/Contract Start Date		Term
	Minimum	<u>Preferred</u> - No later than	No later than	Minimum
Power Purchase Agreement	10 MW	Dec 31, 2020	Dec 31, 2021	20 years
Ownership	10 MW	Dec 31, 2020	Dec 31, 2021	NA

4.1 Renewable Electric Energy Products Requested

Physical Energy Purchase – PGE will consider proposals for the long-term purchase of renewable energy from an existing or to-be-constructed renewable facility, with energy to be delivered to PGE. The minimum bid capacity under this RFP is 10 MW, and the minimum term duration is twenty years.

Ownership Position in a Renewable Energy Resource – PGE will consider acquiring ownership positions in renewable energy resources. Ownership proposals may include (but are not limited to) the sale of existing plants, acquisition of project development rights, joint ownership, and build-own-transfer agreements.

⁵ Including not procuring any energy resources through this RFP process.

PGE will also consider hybrid structures that include both an ownership component and a PPA (e.g. the sale of a phase or portion of a project with an off-take agreement for the balance or a PPA with purchase option or obligation).

4.2 Scheduling Requirements

Renewable energy sold to PGE via a long-term power purchase agreement must be delivered firm for at least each 15-minute scheduling interval. Alternate proposals delivered firm for periods longer than 15minutes (i.e. hourly, day ahead, etc.) will also be considered, if proposed. For the purposes of this RFP, delivered firm energy means the only excuse for failure to deliver or receive is force majeure, as defined in the purchase agreement. Firm energy includes reserves and ancillary services to ensure that energy schedules are certain and delivered intact throughout the scheduling interval.

4.3 Delivery Point and Transmission

PGE is electrically connected to both Bonneville Power Administration (BPA) and PacifiCorp West. However, at this time and for the purposes of this RFP, the PacifiCorp West interface has been determined to have insufficient available capacity and is unavailable. For Bidders with projects outside of PGE's Balancing Authority Area (BAA), it is the Bidders' responsibility to provide as part of the bid submittal a reasonable and achievable plan to obtain annual long-term firm transmission from the resource to the delivery point prior to project Commercial Operation Date (COD).

Bidders relying on BPA for Transmission Service are required, at minimum, to have a schedule that allows transmission service commitments by December 31, 2018. For bidders relying on the TSR Study and Expansion Process (TSEP)⁶ or Individual Study Process, transmission service commitments will be deemed demonstrated by completion of phase four (Record of Decision issued) or completion of the facilities study respectively. Associated BPA upgrades required to receive long-term firm service must support the project COD. Bidders may rely upon up to three years of conditional firm bridge service that converts to long-term firm upon completion of required upgrades. Long-Term Firm transmission rights must match the duration of the contract term or include rollover rights. PGE's evaluation process will determine if there are additional costs or risks to deliver the resource to PGE load.

Bidders proposing to interconnect a resource within PGE's Balancing Authority Area will need to include all incremental costs to deliver, or sink, energy from the resource to PGE's load. Bidders can determine these costs by requesting Network Resource Interconnection Service and Network Integration Transmission Service under PGE's Open Access Transmission Tariff (OATT) from PGE's Transmission and Reliability Services Department (T&RS) or Bidders can request Energy Resource Interconnection Service and Point-to-Point Transmission Service under PGE's OATT from T&RS. Either

⁶ Transmission Service Request Study and Expansion Process

process will enable T&RS to study whether any system upgrades are needed to accommodate transmission service for the bid. Questions concerning the various types of Interconnection and Transmission Service available under PGE's OATT should be directed to T&RS.

Bidders relying on PGE-T transmission are required to have completed Facilities Studies for Transmission Service and subsequent Construction Agreements.

If, after identifying the initial short list, PGE determines that a Bidder's proposed transmission plan cannot demonstrate firm delivery to an acceptable delivery point, the proposal may be rejected. Long-Term Firm delivery capability or other demonstrable transmission rights to enable delivery to PGE's load, are subject to negotiation and confirmation prior to execution of any contracts in connection with this RFP.

For the purposes of scoring bids in this RFP, for resources outside PGE's BAA, acceptable delivery point is:

- BPAT.PGE

When requesting transmission service from BPA, the BPAT.PGE Point of Delivery is associated with the following substations or "sinks":

- PGE Contiguous
 - Pearl 230 kV (Sherwood)
 - McLoughlin 230 kV
 - Keeler 230 kV (St. Marys)
 - Rivergate 230 kV
- Bethel 230 kV
- Troutdale 230 kV (Blue Lake)

5 Contract Terms and Conditions

5.1 Energy Purchase Agreement

The contract template for power purchases is included in Appendix A – Wholesale Renewable Power Purchase Agreement (“Form PPA”). Bidders must review the Form PPA included in this RFP, and are required to include any proposed revisions to contract terms by providing a mark up to the PPA Form. Bidders are required to identify, through comments, exceptions to any term or condition. Additionally, Bidders are **required to propose alternative** terms and conditions in redline format to the highlighted terms and conditions in the Form PPA. Should proposed revisions to highlighted terms and conditions increase PGE’s exposure to risks related to project schedule, performance or cost then PGE will adjust the Bid’s non-price score consistent with Appendix H.⁷ PGE will evaluate all proposed revisions, but is under no obligation to accept any revisions or adopt any changes. Changes, if any, to the terms and conditions of the term sheet and the Form PPA will be discussed with Bidders on the final short list.

The Form PPA invites bidders to offer a purchase option for the facility. If Bidders elect to propose an end of term or during term option for PGE to purchase the facility, or an option for PGE to extend the term of the PPA, it should include such proposed option in its mark-up of the agreement. Proposed purchase options and/or term extensions will be evaluated in PGE’s price scoring assessment and non-price scoring assessment consistent with Appendix H.

PGE recognizes that alternative firm energy sale structures may be available and Bidders proposing such alternatives must offer revisions to the Form PPA and also propose a new term sheet.

Specifically, to allow for direct compensation for transmission costs, bidders are invited to propose power purchase agreements with both capacity and variable charges. Capacity charges may be escalated according to tariffed rate changes, however for non-dispatchable resources capacity charges are not to exceed the costs of all tariffed transmission costs.

5.2 Ownership Position in a Renewable Energy Resource

PGE invites Bidders to submit proposals for various types of asset sale and ownership transfer or service agreements. The contract templates are included in Appendix B and C – Asset Purchase Agreement (“Form APA”) and Engineering

⁷ Consistent with OPUC Order 18-171, proposed redlines to the Form PPA’s ‘Specified Amounts’ and ‘Specified Energy’ (Sections 1.1.118 and 1.1.119 respectively) that revise the time-period over which contract price is determined (Section 2.3.2) will not be assessed non-price scoring adjustments.

Procurement and Construction Agreement (“Form EPC”). Bidders are required to identify, through comments, exceptions to any term or condition in the form contracts. Additionally, bidders are **required to propose alternative terms** and conditions in redline format to the highlighted terms and conditions in the Form APA and Form EPC. Should proposed revisions to highlighted terms and conditions increase PGE’s exposure to risks related to project schedule, performance or cost then PGE will adjust the Bid’s non-price score consistent with Appendix H.

PGE recognizes that alternative ownership structures may be available and Bidders proposing such alternatives must offer revisions to the Form APA and EPC and also propose a new term sheet. Changes to terms and conditions and/or new terms and conditions will be discussed with Bidders selected for final short list negotiations. PGE may make adjustments to the listed evaluation procedures for Bids proposing alternate ownership structures.

Ownership proposals may include (but are not limited to) sales of existing assets, acquisition of project development rights, build-own-transfer (BOT) agreements or joint ownership. We will also consider hybrid structures that include both an ownership component and a power purchase agreement (e.g. the sale of a phase or portion of a project with an off-take agreement for the balance or a PPA with purchase option or obligation).

Lastly, bids for new, utility ownership resources are expected to be procured and constructed in accordance with PGE’s established technical requirements. Appendix G details PGE’s technical requirements for the purchase of new wind and solar facilities in addition to general specification applicable to all new generation technologies. Bidders submitting ownership bids must review the technical specifications to ensure that the bid and associated price reflects PGE’s identified requirements. Should a Bidder wish to offer a product different than that suggested by the technical specifications, the Bidder is required to identify through a template exception log which specifications the Bidder takes exception to and identify a cost estimate necessary to align the Bid with the technical specifications. PGE will consider whether the proposed exception is acceptable before applying any owner’s cost adjustment necessary to align the Bid with the technical specifications.

6 Bid Pre-Qualifications

To be considered for evaluation, all proposals must meet the requirements specified below.

6.1 General

The following general pre-qualifications apply to all bids to be evaluated in this RFP.

6.1.1 Minimum Bid Quantity

The minimum bid amount is 10 MW. PGE has specified a low minimum bid size to encourage the submission of a variety of renewable bid technologies in this RFP. Renewable projects 10 MW or under may be eligible for PGE's Schedule 201 Qualifying Facilities Standard Contract Power Purchase Agreement. PGE welcomes Qualifying Facilities of 10 MW or more in this RFP. Additional information about Schedule 201 contracts can be found here:

<https://www.portlandgeneral.com/business/power-choices-pricing/renewable-power/install-solar-wind-more/sell-power-to-pge>

6.1.2 Minimum Bid Term

The minimum bid term is twenty years. The resource must be delivered to PGE no later than December 31, 2021. PGE prefers resources delivered to PGE after December 31 2019 and on or before December 31, 2020.

6.1.3 Qualifying Product

Bids must sell to PGE output from or title to an identified renewable resource. Renewable resources must meet the requirements of Oregon's RPS, as defined in ORS 469A. In addition, renewable bids must include all environmental attributes, including Renewable Energy Certificates (RECs). Bidders will be responsible for ensuring RECs from projects are bundled as defined in ORS 469A.005. The Bidder will also be responsible for ensuring that RECs are established through Western Renewable Energy Generation Information System (WREGIS) consistent with OAR 330-160-0020.

6.1.4 Credit and Bidder Qualifications

To be eligible for the final short-list consideration a Bidder must demonstrate an ability to secure necessary pre-COD performance assurances in the form of a letter of credit from a qualified institution. This demonstration can be in the form of a letter of credit commitment letter. Furthermore, a Bidder offering a utility owned resource will also be

required to secure a guarantee if the Bidder is not investment grade. Appendix D includes PGE's Guarantee Form. To be considered investment grade, Bidder's or Bidder's credit support provider's (if any) long-term, senior unsecured debt, that is not supported by third-party credit enhancement, must be rated by one or more of the following agencies as follows: BBB- or higher by Standard & Poor's and Fitch, BBB (low) by DBRS, or Baa3 or higher by Moody's Investor Services, Inc. If the Bidder or Bidder's credit support provider is rated by more than one agency, PGE will consider the lowest rating.

All transactions are contingent upon the Bidder meeting and maintaining the credit requirements established by PGE's Credit Risk Management Department. PGE's Risk Management credit requirements provide PGE reasonable assurance that PGE will be able to readily recover its actual damages in the event of default by the Bidder. Final collateral requirements will be determined prior to execution of an agreement.

Bidders proposing an Asset Purchase Agreement and/or an Engineering and Procurement Contract will have pre-COD performance assurance requirements of \$100/kW collateral. Engineering and Procurement Contracts (or similar arrangements) will, in addition, have payment and performance bonds. Power Purchase Agreement bids will be required to include \$200/kW pre-COD collateral and \$100/kW of post-COD collateral. A payment and performance bond is not required for an APA-only bid. Additional detail on the PGE's Credit Requirements, including necessary documentation of guarantor commitments can be found in Appendix E.

6.1.5 PURPA Status

Bidders with projects that are QFs under FERC rules are welcomed to bid such projects into this RFP under the terms and conditions of this RFP, but not as QFs. Bidders with projects that have an executed contract with PGE under Schedule 202 may also participate, but PGE makes no commitment as to whether it will be willing to mutually terminate an existing Schedule 202 contract. PGE will make that determination on a case-by-case basis in the best interest of our customers. Importantly, agreements entered into with any counterparty as a result of PGE's competitive solicitation will be consistent with the pricing and Form Contract term and conditions provided at time of bidding and reviewed through post-bid negotiations. For the avoidance of doubt, Bidders will not be awarded contracts with standard avoided cost pricing or standard contract terms and conditions.

6.1.6 Transmission

For those resources located outside PGE's BAA, Bidders must provide a reasonable, achievable plan for acquiring long-term firm transmission service to deliver to an acceptable delivery point prior to project COD.

Bidders interconnecting directly to PGE should meet the requirements in Section 4.3 above.

PGE will not entertain Bids that propose assignment of PGE's transmission rights to deliver to an acceptable delivery point. PGE will not entertain a Benchmark bid that proposes assignment of PGE's transmission rights to deliver to an acceptable delivery point.

6.1.7 Resource Delivery

For those resources located outside PGE's BAA, resource output must be delivered firm for at least each 15-minute scheduling interval. Alternate proposals to deliver firm for periods longer than 15 minutes (i.e. hourly, day ahead, etc.) will also be considered. For the purposes of this RFP, delivered firm energy means the only excuse for failure to deliver or receive is force majeure, as defined in the purchase agreement. Firm energy includes reserves and ancillary services to ensure that energy schedules are certain and delivered intact throughout the scheduling interval.

6.1.8 Resource Availability

Bidders must include evidence substantiating the Bid's forecasted energy deliveries. Wind, solar and hydro bids must include at least three years of forecasted facility level generation consistent with a contemporaneous period of historical wind, irradiance or stream flow observations. Bidders must also provide average, expected generation for each month-hour (presented in a 12x24 table). The historical and average energy output estimates must be produced by a qualified independent third-party or consistent with an included energy assessment.

Geothermal Bids must have completed and included the resource's feasibility report based on a year or more of test data from full diameter production wells.

Biomass Bids must demonstrate physical and commercial access to fuel supplies and fuel transportation for the term of the contract proposed in the bid. PGE will not accept Bids for biomass or biogas projects that pass fuel obligations to PGE.

6.1.9 Other Bidder Pre-qualification

As applicable, the Bidder must provide documentation, satisfactory to PGE, that it is authorized under the law to sell power, and able to schedule power and operate under industry standards established by the Federal Energy Regulatory Commission (FERC), Western Electricity Coordinating Council (WECC), and the North American Energy Reliability Council (NERC), or other applicable regulatory body or government agency.

6.2 For New Projects

The following new project pre-qualifications apply to Bids for projects not yet constructed.

6.2.1 Site Control

Bidders must support the Bid by demonstrating dependable site control. At the time of bid submission, Bidders must possess title to the site, have executed a lease agreement, or executed an option agreement applicable to a minimum of 80% of the project site. Prior to placement on PGE's final short list, Bidders will be required to demonstrate site control for 100% of the project site.

6.2.2 Financing

As applicable, Bidders must provide a reasonable plan to obtain project financing. Those Bidders who are unable to internally or balance sheet finance the proposed project (supported by appropriate financial statements) must provide evidence of a good faith commitment from a financial institution or lender prior to placement on PGE's final short list.

6.2.3 Technology

Proposals shall use utility-scale, commercially viable generation technology currently deployed in the western United States. PGE will only consider Bids that use widely deployed generating technologies with proven records of reliability. For new, utility-ownership resources the major equipment as defined in Appendix H and Appendix G must be supplied by one of the identified preferred vendors.

PGE will not accept generation technology shown to have serial defects. Serial defects are considered to be a design or manufacturing problem that has affected 10% or more of the installed models. Generation technology must comply with all current applicable Codes and Standards for a USA-based resource.

Bidders may contact the IE in the event that they are uncertain whether their choice of specific generation technology is acceptable to PGE. Such

requests need to be received by the IE no later than May 15 2018.⁸ PGE will review any such information as to their suitability for meeting our renewable energy requirements. PGE and the IE will respond to such requests within two weeks of receipt.

6.2.4 Equipment and Construction Costs

To be eligible to bid, Bidders must include a quote, commitment, or documentation of purchase from a wind turbine, photovoltaic panel, or steam turbine manufacturer. For utility-ownership projects, bids must also include EPC quotes to construct the facility. For utility-ownership projects the bid price estimate must be consistent with the equipment supplier and EPC contractor (or BOT agreement) documentation.

6.2.5 Tax Credit Eligibility

Offers that intend to utilize PTC federal tax credits will need to demonstrate the project's eligibility for the specified credit. PGE requires a narrative and plan describing the timeline to achieve the associated federal tax benefit. In addition, PGE requires a tax opinion from a qualified tax expert to further substantiate the Bidder's plan to generate PTCs. Offers that intend to utilize ITC federal tax credits must demonstrate a reasonable plan to obtain the credits.

6.2.6 Interconnection

All Bidders must have executed a System Impact Study Agreement prior to bid submittal in order to be evaluated in the RFP. Should bidders not have completed an interconnection agreement with the transmission provider at time of short listing, PGE will remain flexible by requiring Bidders to have instead completed an Interconnection Facilities Study.⁹ Bidder's unable to provide Facilities Study reports before time of Final Short list will be deemed unready for construction and will be disqualified from the evaluation.

⁸ The IE can be contacted through the RFP website. The notification should identify the manufacturer and model the Bidder intends to include in a bid and include preliminary design studies – completed in sufficient detail to identify all major equipment and components.

⁹ As described in Attachment L of BPA's Open Access Transmission Tariff, the Interconnection Facilities Study "specify and estimate the cost of the equipment, engineering, procurement and construction work needed to implement the conclusions of the Interconnection System Impact Study in accordance with Good Utility Practice to physically and electrically connect the Interconnection Facility to the Transmission System." Available at:

https://www.bpa.gov/transmission/Doing%20Business/Tariff/Documents/attachment_1.pdf

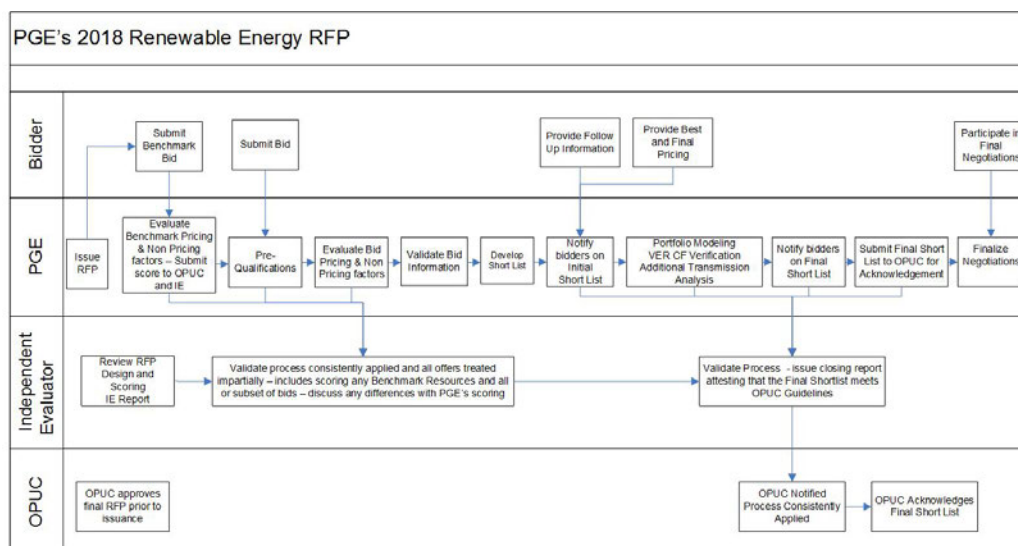
7 Bid Evaluation Process

This section describes PGE’s process for evaluating Bids received in response to this RFP. For details about our scoring criteria, see the sections, “Bid Pre-Qualifications,” and “Criteria Used for Scoring Qualified Bids.”

7.1 Reviewing, Ranking and Selecting Bids

In selecting the RFP short list, PGE will use a first-price, sealed-bid format. Under this format, Bidders may not update pricing during the scoring and evaluation period, except for the ‘best and final offers’ described in Section 3.3. PGE’s evaluation of offers will be based on prices submitted within Bidders’ delivered bids, in conjunction with specified non-price criteria to select PGE’s initial short list. As stated in more detail in Section 5 and below, certain differences from PGE’s proposed contract terms and conditions may be addressed during post-bid negotiations. The scoring process is illustrated in Figure 2, below.

Figure 2. Resource Selection Process



Bids will be evaluated using a three-step process.

- *Assessment of Pre-Qualifications* – First, PGE will screen bids according to pre-established qualifying criteria described in Section Six and enumerated in Appendix M.

- *Individual Offer Analysis* – Next, PGE will score all Bids that meet the pre-qualification standards. Individual Overall scores will be comprised of price and non-price factors.
- *Short-list Analysis* – Bids selected for the initial short list will be given the opportunity to provide best and final pricing. Resources selected for the initial short list will be included in PGE’s portfolio analysis. Portfolio analysis will evaluate how short-listed resources affect overall system costs and risks when combined with other resources to meet PGE’s resource target. Short listed resources will also be subjected to additional capacity factor and energy assessments review, owner’s cost analysis, accounting treatment analysis, and final short list stage pre-qualification assessment, each as applicable.

PGE reserves the right to request additional information regarding any Bids submitted.

7.2 Bidder Feedback

Upon request, PGE will offer feedback to unsuccessful Bidders on the competitiveness of their proposals. PGE will make available this feedback after executing all agreements with successful Bidders, or after announcing the termination of the solicitation. PGE will not disclose any third-party confidential information through this voluntary feedback process. PGE will identify the relative performance of their Bid by identifying a Bid’s quartile performance in price, non-price and total score. Furthermore, as appropriate, PGE will identify all minimum thresholds the Bid did not achieve.

8 Criteria Used for Scoring Qualified Bids

This section summarizes the criteria PGE will use to evaluate Bids submitted in response to the RFP.

Price represents a significant portion of the overall score. The price score will be calculated as the ratio of the bid's projected total cost per MWh to forecast market value using real-levelized or annuity methods (per Guideline 9a. of the Competitive Bidding Guidelines). The price scoring will incorporate benefits related to the expected energy value, capacity value and flexibility value associated with the offers.

Many project specific risks and benefits cannot be captured or quantified by evaluating resource price or resource portfolio cost benefit. For those projects, PGE evaluates and assigns a non-price score for specific development criteria, physical characteristics, performance certainty, and credit factors consistent with the detailed non-price scoring rubric included in Appendix H.

8.1 Determination of the Offer Cost

An offer's cost reflects the total cost, fixed and variable, associated with the project's delivery of energy and forecasted economic dispatch.

An offer's fixed costs include all revenue requirement components including, for resources to be owned by PGE: total depreciation, salvage, return, income taxes, deferred income taxes, property taxes, fixed O&M, wheeling charges, and ancillary services. For resources contracted for by PGE, an offer's fixed cost includes all forecasted fixed payments, capacity charges, ancillary services, if appropriate, and PGE system upgrade costs, if applicable.

An offer's variable costs include for resources to be owned by PGE: all fuel costs, variable O&M, emissions costs, start-up costs. For resources contracted for by PGE, an offer's variable cost includes all energy payments, additional variable O&M costs, emission costs passed onto the buyer, and start up charges, if applicable. The magnitude of an offer's variable costs will be determined by the offer's simulated dispatch against forecasted market prices using PGE's IRP economic dispatch AURORA software.

To evaluate Bids containing different product characteristics on a comparable basis, prices submitted by the Bidder may be subject to adjustment to ensure Bids are evaluated on a comparable basis.

An offer's total cost for the duration of the offer's term is expressed on a present value basis and included in the numerator of the offer's price scoring ratio.

8.2 Determination of the Energy Value

An offer's energy value reflects the value of energy generated throughout the offer's economic life or term. Energy value for the duration of the offer's term is expressed on a present-value basis and included in the denominator of an offer's cost to benefit price score ratio. The energy value will be based on the offer's simulated dispatch and the projected revenue associated with PGE's hourly market price forecast. The market price forecast is developed as follows:

- The hourly spot electricity price forecast is developed using a fundamental market simulation in AURORA, the principles of which are described in Chapter 10 of PGE's 2016 IRP. Electricity prices are simulated for the period 2018–2050.
- AURORA will use natural gas price inputs consistent with PGE's 2016 IRP Update reference case methodology forecast.

8.3 Determination of Capacity Benefits

An offer's capacity benefit reflects PGE's need to acquire new, physical capacity resources due to the offer's estimated system capacity value. PGE is facing a capacity deficit, and requires capacity products, to otherwise displace the need to contract with or construct new peaking generating facilities. The capacity benefit will be included in the denominator of the offers cost to benefit price score ratio.

An offer's capacity benefit will be calculated as the product of the offer's capacity value and the avoided capacity cost. The product's capacity value will be calculated annually using the Renewable Energy Capacity Planning (RECAP) model. RECAP is described in Chapter 5 of the 2016 IRP. The model has been updated to accurately reflect the assumptions included in PGE's 2016 IRP Update filed in March 2018. The offer's capacity value will be expressed as the quantity of avoided simple-cycle combustion turbine (SCCT) needed to meet PGE's long-term capacity targets. The avoided capacity cost will be based on a per kilowatt, real-levelized cost (net of wholesale revenues) of a simple-cycle combustion turbine (SCCT). The assumed costs and performance of the SCCT are consistent with 2016 IRP capital costs and performance metrics (described in Chapter 7) operated under the updated reference case gas and wholesale power prices. The product of the offer's annual capacity value and levelized avoided capacity cost constitute the offers annual capacity benefit. Capacity benefit for the duration of the offer's term is expressed on a present value basis and included in the denominator of the price score ratio.

8.4 Determination of Flexibility Benefits

The flexibility value associated with an offer reflects any additional value that the offer may bring to PGE's generation portfolio due to its ability to ramp, respond to

forecast errors, and/or provide ancillary services that is not captured by its energy value. For example, a resource that can provide ancillary services at a lower cost than PGE's current resource fleet is recognized for the associated reduced cost of existing PGE resources. PGE approximates flexibility benefits using the Resource Optimization Model (ROM), which the Company relied on in the 2016 IRP to quantify flexibility value associated with energy storage systems and the costs due to flexibility challenges (i.e., integration costs) associated with variable renewable resources. An offer's flexibility benefit is calculated using a methodology further explained in Appendix E. The flexibility benefit for the duration of the offer's term is expressed on a present value basis and is included in the denominator of the offer's cost to benefit price score ratio.

8.5 Adjustments to Prices Submitted by Bidders

Price represents a significant portion of the overall score. To evaluate offers containing different product characteristics on a comparable basis, prices submitted by the Bidder will be subject to adjustment for the following considerations:

Delivery Point – Applicable transmission service costs will be applied in order to capture the incremental cost of delivering energy to PGE. These costs include wheeling, losses, and required ancillary services as prescribed in applicable tariffs, as well as any incremental costs for transmission or distribution system improvements necessary to deliver the energy to PGE.

However, for Bids where the Bidder has secured and is paying for point-to-point transmission services for delivery from the generation facility to an acceptable delivery point and the offer contains all applicable service costs identified above, no other transmission costs for those point-to-point services will be applied.

Interconnection – Applicable interconnection costs will be applied in order to capture the identified interconnection upgrade costs identified in a System Impact Study and updated following completion of an Interconnection Facility Study.

However, for Bids where the Bidder has secured an interconnection agreement and included the appropriate interconnection costs into the Bid price, no other interconnection costs will be applied.

PGE line loss – All bids, regardless of their point of interconnection, will be applied a generic line loss consistent with PGE's OATT Schedule 11.

Ancillary Services – If ancillary services are not included in product pricing, Bids will, at a minimum, be adjusted to account for ancillary services (where applicable) to meet control area operations and transmission provider requirements.

Bidders shall provide a comprehensive list of all ancillary services they are planning to provide in delivering the power product to the delivery point. To the extent that any of these required ancillary services are not being supplied by the Bidder, PGE will, for scoring purposes, adjust the price provided by the Bidder to reflect the cost of acquiring additional ancillary services required. As such, all off-system utility owned resources will be assigned tariffed service costs to deliver to PGE's system using 15-minute schedules. Price adjustments will be consistent with tariffed rates or PGE study results consistent with IRP methodology.

Owner's Costs –

During PGE's initial offer analysis, PGE will assign generic owner's costs to all utility-ownership resources. These costs reflect estimated PGE project management, execution, oversight, and integration costs, as applicable.

Operations and Maintenance-

Utility-ownership Bids are required to detail expected operations and maintenance costs and provide quotes or contracts for long-term maintenance agreements, if available. If the long-term maintenance agreement costs are not provided PGE will compare Bidder supplied O&M costs to the estimated generic O&M costs for like resource in the most recently published IRP. Should Bidder's expected costs significantly differ from the generic estimates, Bidders will be asked to further substantiate their O&M costs. Should PGE find Bidder evidence inadequate, PGE will instead apply generic O&M costs from the most recently published IRP.

Performance Assurances -

PGE retains the right to adjust the Bid price to include performance assurance costs should the Bidder take exception to and redline pre and post COD performance assurances identified in PGE's Form Contracts.

Tax Credit Carrying Costs –

For those resources eligible for federal tax credits and bid a utility-ownership proposal, PGE will evaluate PGE's customer costs associated with PGE's utilization of the incremental tax credits. PGE intends to pass the revenue requirement benefit of the tax credits to customers on an as-generated basis for PTCs and over the life of the asset – due to normalization rules – for ITCs. To the extent that PGE cannot utilize a tax credit on its federal return in the same year it is credited to customers, PGE will incur a carrying cost. The ongoing carrying

cost of forecasted incremental tax credit carrying costs will be assigned to the applicable Bids.

8.6 Detailed Offer Price Scoring

Following the quantification of offer costs and benefits, including any necessary offer price adjustments described above, each offer's component cost and benefits will be converted to a cost to benefit price score ratio. Real-levelized offer costs, divided by the equivalent real-levelized benefits value (incorporating energy, capacity, and flexibility benefits) will be the basis for the offer's price ratio. The 600 points associated with the price scoring section will be allocated on a scaled basis, with the lowest price ratio offer receiving 600 Points.

8.7 Offer Price Screen

Consistent with PGE's 2016 IRP Addendum, PGE requires all Bids to pass a cost-containment screen in order to be considered for the short list. The cost containment screen requires Bids to be cost-effective under Reference Case conditions considering only the resource's forecasted energy and capacity values.

PGE's cost-containment screen compares the levelized cost of a renewable resource to the levelized energy, capacity and flexibility value of the renewable resource. To measure levelized costs, PGE will annuitize the present value revenue requirement of the proposed resource. To measure levelized value, PGE will first calculate the energy value of the proposed resource using resource specific generation profiles. Because each resource occupies a unique location with a different generating technology, each resource will be assigned a specific energy value in each year of operation using the hourly forecasted energy price under Reference Case conditions. The resource's levelized energy value reflects the annuitized present value of the resource's generated energy. Each resource will also have a calculated capacity value that reflects the product of the resource's capacity contribution, as calculated using the RECAP methodology, and the avoided costs associated with a generic capacity resource. The levelized capacity value reflects the annuitized present value of the resource's avoided generic capacity costs. Each resource will also have a calculated flexibility value that reflects the product of the resource's flexible range and estimated flexibility benefit calculated using ROM and further detailed in Appendix H. The resource's levelized flexibility value reflects the annuitized present value of the resource's annual flexible value. PGE's RFP price screen is consistent with the acknowledged 2016 IRP Addendum and ensures that the levelized energy, capacity and flexibility value of near-term renewable additions exceed the levelized cost of the associated resource.

The cost-containment screen will be unique for each resource evaluated by PGE. The screen will elevate resources that provide more value to PGE customers due to the resource's geographic diversity. For this reason it is possible that a lower priced resource does not pass the economic screen, while a higher priced resource passes the economic screen due to increased resource value (e.g., higher capacity contribution or more valuable energy production profile).

8.8 Non-Price Factors

8.8.1 Project Development Criteria

This category scores the likelihood that a project supporting a Bid will be placed in commercial service. The evaluation criteria for this category generally address construction and development risks associated with the completion of projects that are not yet in commercial operation, and which are necessary to support Bids. Plants that are already operating or are sufficiently advanced in construction may be deemed to earn the maximum possible score in this category.

For projects that are less advanced, some of the characteristics we will consider in our scoring are:

- Status of required permits, licenses and environmental studies.
- Project team experience.
- Method and status of project financing.
- Site Control.
- Cost certainty.
 - Status of equipment quotes.
 - Sale or PPA price structure.
- Project life and extension options. Bids that allow PGE to extend the life of a resource beyond the initial term, or Bids allowing for PGE to continue facility operation, provide opportunities for PGE to lower long term energy supply costs and risks.

8.8.2 Project Physical Characteristics

This category captures the physical characteristic risks of the Bid products. The evaluation criteria for this category generally address physical and operational risks associated with the production and delivery of power to PGE. Some of the characteristics that we will consider in our scoring are:

- Delivery points (as discussed above), includes interconnection, transmission, and curtailment.

- Remedial action schemes (RAS) – projects that PGE is able to use as a credit for its obligation to support AC intertie RAS will receive additional points.
- Engineering reliability characteristics.
- Resource fuel availability confidence.

8.8.3 Project Performance Certainty

This category scores how well the Bid product matches PGE's system operating needs. The evaluation criteria for this category generally address price risk, performance and supply portfolio concentration risks, along with the benefits of operational flexibility. Some of the characteristics that we will consider in our scoring are:

- Quality of power.
 - Firmness of energy.
 - Scheduling period commitment.
- Contract/resource start date
- Performance guarantees and compensation for failure to achieve them.
- Deviations from product term sheet.

8.8.4 Credit Evaluation

This category scores the creditworthiness of the Bidder. We will take into account the following credit considerations in our scoring:

- Debt and equity ratings.
- Financial ratio analysis.
- Bond risk.
- Tangible net worth.
- Corporate structure.

9 Final Short List Determination

For the short list, PGE intends to include Bids representing a minimum of 150% of the renewable energy requested in this RFP, and at a minimum, 150% non-Benchmark bid, subject to receipt of a sufficient quantity and quality of Bids. Once the short list has been developed pursuant to the scoring criteria outlined above, PGE will refine bid evaluations in the following areas to determine the final short list:

Scoring Sensitivity Analysis – PGE will incorporate a price/non-price sensitivity analysis into its short list evaluation to demonstrate the reasonableness of the proposed scoring weighting of 60 price/40 non-price. PGE will study how the ranking of its short list would be affected by 70/30 and 50/50 price, non-price weighting sensitivities.

Review of Capacity Factor Assumptions – PGE will contract with an independent third party expert to review capacity factor assumptions for intermittent resources.

Security for Performance Requirements – PGE will perform a detailed credit risk evaluation of all Bidders on the short list, and will refine performance assurance requirements during this stage. However, performance assurance will only be required at the execution of a definitive agreement with a successful Bidder.

Permitting Requirements - Bidders must prepare a detailed plan that lists all required site-specific permits and have a plan or schedule for obtaining all permits and licenses. PGE will assess the probability of successfully completing the permitting process as part of its evaluation. If at any point it is determined that a project cannot obtain the required permits as designed, PGE reserves the right to reject the Bid. A complete list of the permitting timing guidelines can be found in Appendix H.

Portfolio Analysis – PGE will also take overall system costs and risks into account in its selection of final short list Bids. Portfolio modeling will provide PGE with additional information regarding the cost and risk profile of all offers considered. Portfolio analysis methods, consistent with the 2016 IRP, will demonstrate how resources perform together, on a cost and risk basis, due to their specific size, term, portfolio capacity value, and portfolio flexibility value.

Portfolio analysis begins with the assembly of portfolios evaluating many different unique combinations of resources. The candidate portfolios will be developed through multiple techniques including 1) portfolio size optimization, 2) portfolio net-cost optimization, 3) cost-screened resource permutations, and 4) additional analyst selected portfolios (if necessary).

Each portfolio will include sufficient resources to meet the targeted renewable volume in each year. The unique portfolio capacity value for each portfolio will be calculated using the IRP's RECAP methodology. The portfolio capacity calculation will recognize the resources' capacity diversity included in each portfolio. Any portfolio whose forecasted energy volume does not meet the targeted renewable volume will also include a specified fill resource ('fill'). Including a fill resource ensures the portfolio incorporates the total cost necessary to meet the long-term renewable target. The specified fill resource will be sized to fulfill the energy target in each year of the analysis.

Portfolio analysis will test combinations of resources across multiple futures. The futures will evaluate portfolio exposure to multiple scenarios of gas prices, hydro scenarios and carbon costs. For each portfolio, the relevant resources' variable costs and energy benefits will be calculated in AURORA under multiple economic and hydro futures. The variable net income for each resource will be reported annually for all futures.

A unique portfolio flexibility value will be calculated using the portfolio flexibility tool. The portfolio flexibility calculation will recognize the flexibility diversity included in each portfolio.

For each portfolio, the portfolio flexibility value and the relevant resources' net incomes will be subtracted from the relevant resources' fixed costs to calculate the portfolio's total net cost for each future.

For each portfolio, the total present value net cost for years 2018 through 2050 under each future will be calculated to estimate the cost impact of the additions on the PGE system. This expected cost impact will be measured as the total portfolio net present value of revenue requirement (NPVRR) under reference case conditions. Portfolio risk will be evaluated using the standard deviation of future results. Portfolios will be ranked according to a blended cost and risk metric - based upon 50% on reference case expected cost and 50% based upon the standard deviation of portfolio costs. In addition, portfolio risk will be characterized using additional IRP risk metrics including severity, variability, and durability as described in the 2016 IRP Chapter 11.

Portfolio results will be stress tested under multiple energy targets and planning horizons. Specifically, PGE will test a 2018 through 2040 planning horizon sensitivity in addition to a 2018 through 2050 base planning horizon.

Portfolio analysis performance will be based on the inclusion of specific offers across multiple top-performing portfolios. Those resources that appear most frequently in top-performing portfolios are those that best reduce portfolio cost and economic risks. However, non-price factors are not evaluated or considered in portfolio analysis.

Accounting – The accounting and tax implications of PPA’s or asset acquisitions can be complex and the financial statement impacts may vary based on the facts and circumstances of each contract. For example, PPA contracts are commonly accounted for as operating or capital leases (or finance lease)¹⁰, capital tax leases¹¹, or variable interest entities (VIE)¹². PGE will not accept proposals that would be subject to VIE treatment, and PGE may require Bidders to make certain representations that all supporting information necessary for PGE to make this determination has been provided by the Bidder.

In order for PGE to properly evaluate and select Bids, PGE will require Bidders to supply adequate information necessary to analyze appropriate accounting treatment and its effects on PGE’s financial statements. Examples of such information may include: identification of the asset for which the contract is dependent upon, percentage of output to be obtained by PGE from the asset, pricing (fixed vs. variable), decision-making surrounding design of the asset, length of term of PPA (including proposed extensions), useful life of the asset with supporting documentation, fair market value of the underlying asset, projected cash flows through the life of the underlying asset, executory costs, non-executory costs, tax attributes (e.g. investment tax credits, production tax credits, etc.), minimum production guarantees, debt associated with the underlying asset, financial data contained in the Bidder’s financial statements, among others.

Costs Associated with Direct and Imputed Debt - If the contract is deemed to be an operating or capital (finance) lease, PGE would be required to capitalize on its balance sheet an asset equal to the present value of the non-executory minimum lease payments (or fair market value of the asset, whichever is lower) with a corresponding lease obligation liability. This is referred to as direct debt.

If the contract is deemed to be an executory contract and no amounts are recorded on PGE’s balance sheet, credit rating agencies will impute an amount of

¹⁰ As defined by Accounting Standards Codification (ASC) 840 and 842.

¹¹ As defined by IRS Code Section 7701(e).

¹² As defined by ASC 810.

debt associated with the underlying PPA using a pre-determined methodology. This amount of imputed debt would be incorporated into the determination of credit ratings for PGE. This is referred to as imputed debt.

PGE may take into consideration the impacts of direct and imputed debt into its evaluation and selection process.

10 Post-Bid Negotiations

PGE's goal is to conduct an efficient post-bid negotiation process. PGE will initiate negotiations with a short list of Bidders whose proposals rank highest in the evaluation process and whose proposed transactions, PGE believes in its sole discretion, offer value to PGE's energy supply portfolio for customers, and have a reasonable likelihood of being executed and performed.

The number of Bidders with whom negotiations will be held will depend upon the Bids received, the size or quantity of the highest ranked Bids as compared to our resource needs, the results of the scoring process, ability to access federal tax benefits and other factors described more fully in the sections "Bid Evaluation Process", "Criteria Used for Scoring Qualified Bids", and "Final Short List Determination." Selection for the final short-list and initiation of negotiations do not constitute a winning Bid.

PGE shall have no obligation to enter into a definitive agreement with any Bidder to this RFP and, at its sole discretion, may terminate negotiations with any Bidder at any time without liability or obligation to any Bidder. Whether or not, and until, negotiations with Bidders produce final and fully executed contracts satisfactory to PGE for its resource targets under the RFP, PGE reserves the right to pursue any and all other resource options available to it.