PGE 2023 All Source RFP

PGE 2023 All Source RFP User Manual

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PGE 2023 All Source RFP

Product Information

Specifications

- Product Name: 2023 All-Source RFP Scoring and Modeling Methodology
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Product Usage Instructions

Overall Analysis Process
The analysis process involves key steps such as minimum bidder requirements screen, scoring methodology, initial shortlist, best and final offer request, final shortlist eligibility screening, portfolio analysis, and final shortlist.

Minimum Bidder Requirements Screen
This step ensures that bidders meet all minimum requirements. If a bidder fails to meet a requirement, there is a cure period provided for them to submit evidence of compliance.

Minimum Bidder Requirements:

- **Entity Requirement:** Bidders must be authorized to sell power and operate according to industry standards set by regulatory bodies.
- **Financing Requirement:** Bidders must have a reasonable plan for project financing and provide evidence of financial commitment if unable to finance internally.
- **Technology Eligibility:** Resource technologies must be proven and comply with industry standards.

Scoring Methodology
The scoring methodology determines how bidders are evaluated based on criteria such as price, technology

eligibility, and compliance with regulatory standards.

Price Scoring:
Bidders are scored based on their proposed pricing for the project.

Initial Shortlist
This stage involves creating an initial shortlist of bidders who meet the requirements and score well based on the evaluation criteria.

Best and Final Offer Request & Final Shortlist Eligibility Screening
Bidders on the shortlist are invited to submit their best and final offers, and undergo final screening to ensure eligibility for selection.

Portfolio Analysis
An analysis of the bidders' portfolios is conducted to assess the overall fit and compatibility with the project requirements.

Final Shortlist
The final shortlist comprises bidders who have successfully met all requirements, scored well, and passed the eligibility screening.

FAQ

- **Q: What happens if a bidder fails to meet a minimum requirement?**
  A: PGE provides a cure period during which the bidder can provide evidence of compliance with the requirement.
- **Q: How are bidders scored?**
  A: Bidders are scored based on criteria such as price, technology eligibility, and compliance with regulatory standards.

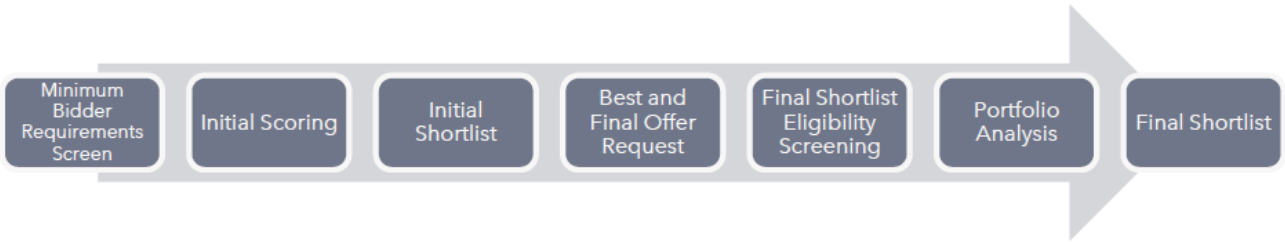
Appendix N
Scoring and Modeling Methodology 2023 All-Source RFP

Scoring Methodology

Overall Analysis Process

- PGE's evaluation and scoring process is designed to account for the unique attributes of several resource types and determine the resource portfolio that offers the best combination of cost and risk for PGE customers. PGE intends to use combined Clean Energy Plan and Integrated Resource Plan (CEP/IRP) models with select modifications to evaluate proposed resources and to work closely with the IE to validate that the evaluation criteria, methods, models, and other processes have been applied consistently and appropriately to all bids. Any modifications to PGE's CEP/IRP models are discussed in detail in the analysis sections below.
- The following diagram illustrates the anticipated key steps in the analysis process, and the discussion below provides additional detail on the required modeling and scoring within each step.

Figure 1: 2023 All-Source RFP Analysis Process



Minimum Bidder Requirements Screen

- PGE intends to employ a performance screen as the first step in the RFP evaluation process to assess bid conformance with the minimum bidder requirements for this solicitation.
- Bids that do not meet all of the minimum bidder requirements will not be considered for the initial shortlist and will not receive a price score. If a bid is found to be non-conforming, PGE will document why bids did not pass the minimum bidder requirements and will provide information to the bidder. PGE may also provide such highly confidential information upon request to Commission staff and docket participants that have signed a modified protective order. A description of the various elements of the minimum bidder requirements is included in Table 1 below.
- For bidders that fail to meet one or more minimum requirements during any part of the requirements screen, PGE will provide a cure period during which the bidder can provide evidence of how they've met the requirement.

Table 1: Minimum Bidder Requirements

Minimum Bidder Requirements	
Entity Requirement	As applicable, Bidders must be authorized under the law to sell power and be abl e to schedule power and operate according to industry standards established by t he Federal Energy Regulatory Commission (FERC), Western Electricity Coordinating Council (WECC), and the North American Energy Reliability Council (NERC), and/or other applicable regulatory body or government agency.
Financing Requirement	As applicable, Bidders must provide a reasonable plan to obtain project financing. Bidders who are unable to internally or balance sheet finance the prop osed resource (supported by appropriate financial statements) must provide evid ence of a good faith commitment from a financial institution or lender prior to plac ement on PGE's final shortlist.
Technology Eligibility	• Resource core technologies must be commercially proven and deployed at lar ge scale within the North American utility industry. Renewable resources must be RPS eligible. Dispatchable resources must be non-emitting technologies th at can dispatch when called upon. • For solar renewable energy resources, Bidders are responsible for ensuring a nd demonstrating that solar panels associated with any bid are not sourced fro m listed entities on the Department of Commerce – Bureau of Industry and Se curity's Entity List to ensure that projects do not include polysilicon produced with forced labor. • For energy storage facilities, Bidders must provide a list of major US installatio ns of this the storage technology proposed. Storage medium, chemistry, and p ower conversion systems of such listed these installations must be of like kind to what is being proposed. Such installations must be in proven commercial op eration, beyond R&D demonstrations.
Resource Online Date	Projects bidding in to the 2023 RFP must be online by 12/31/2027. PGE has ma de an exception for long construction lead time technologies, which PGE is d efining as resources with a standard construction cycle[1] of greater than four year s (such as pumped hydro resources). PGE may consider these long lead-time re sources if they

1 Construction lead time based on typical construction activities and does not include delays due to supply chain constraint

	• propose a unique value to customers.[2] PGE is prepared to accept bids for long construction lead time resources, as long as all components of those resources come online by 12/31/2029, the end of the 2023 CEP/IRP action plan window. • PGE will consider multi-phase projects, as long as all phases come online by 12/31/2027.
Qualifying Product	• PGE shall be the off taker for all output from the resource or portion of the resource bid into this RFP. Resources must include all power attributes associated with the resource, including associated renewable energy credits, environmental attributes, energy benefits, and capacity benefits. • Bidder is responsible for ensuring RECs generated by the resource are established in WREGIS.
Nameplate Requirement	Renewable resources must be large enough to qualify for contracting under PGE's Schedule 202 for qualifying facilities.[3] Solar resources must be larger than 3 MW and all other facilities must be larger than 10 MW.
Term Length	For bids including a power purchase agreement, PGE requires a 15-year minimum term and a 30-year maximum term for those agreements.
Site Control	• Bidders must demonstrate dependable site control, for both the location of the resource and any gen-tie path that is required. At the time of bid submission, Bidders must possess at least one of the following for the resource and any generation tie path: ◦ title to the site ◦ an executed lease agreement ◦ an executed easement ◦ an executed option agreement applicable to a minimum of 80% of the project site • The site control documents must reflect the resource type.
Permitting[4]	Bids must meet the permitting requirements set forth in Exhibit A, which lists environmental permits and surveys commonly required for construction and operation of an energy project.

2 PGE will also consider other long lead-time technologies that satisfy PGE's eligibility requirements, have been commercially proven, and can be shown to require additional construction time beyond what is possible by 12/31/2027.
3 This requirement is consistent with OAR 860-089-0250(4).

	• For each permit and survey, the chart illustrates when the permit must be obtained, or survey must be completed – by bid, final shortlist, or construction – for different technologies. “By bid” requirements necessitate that the resource receives the permit from the authorizing agency or the survey has been completed by the time of bid submission. “By final shortlist” requirements necessitate that the resource receives the permit from the authorizing agency prior to the Commission’s acknowledgement of PGE’s final shortlist. “By construction” requirements necessitate that the resource receives the permit from the authorizing agency before construction begins. • In the event a specific permit is not required at all or during this RFP process for the resource(s) that are bid into this RFP, the Bidder may provide a narrative explanation on the bid form regarding why it is not applicable.[5]
Acceptable Delivery Points	• PGE will accept delivery within PGE’s balancing authority area and at BPAT.PGE. PGE will not accept delivery at Pelton Round Butte or at PacifiCorp West. • 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 [6]

- 5 PGE will allow Bidders to submit a narrative explanation if they are unable to meet the permitting matrix timeline included in this RFP. PGE views the permits and associated timelines as key to reducing risk and retains the discretion – to be discussed with the IE – to determine whether the explanation provided has sufficient merit to allow the bid to proceed.
- 6 At this time, the Bethel 230 kV POD has been determined to have insufficient available capacity and is unavailable for new transmission service requests. However, Bidders that have already been granted long-term service at this POD may use this POD.

	· Troutdale 230 kV (Blue Lake)
Interconnection	• Bids must meet the following interconnection requirements: ◦ An active generation interconnection request in the transmission provider's interconnection queue. ◦ A completed system impact study by the transmission provider. ◦ If interconnection involves a 3rd party other than the transmission provider, the bid must also include an interconnection request to the 3rd party and all associated studies. ◦ Resources located on PGE's system must be studied as Network Resource Interconnection Service. ◦ Resources located off-system may be studied as Energy Resource Interconnection Service or Network Resource Interconnection Service. • 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 in its bid. Bidders may 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 may request Energy Resource Interconnection Service and Point-to-Point Transmission Service under PGE's OATT from T&RS. Either 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.
Transmission Requirements [7]	Bids including renewable resources must have an achievable plan to meet the following transmission requirements: **Eligible transmission service products include:** long-term firm transmission service;

7 PGE appreciates that timelines for obtaining such transmission can be strenuous and lengthy and invites bidders to include clear and executable paths to procuring transmission service (including study process milestones and reference to public study results for similar projects). Any clear and executable plan must meet the transmission product and quantity requirements specified in this section.

	• long-term conditional firm bridge, number of hours; or • long-term conditional firm reassessment, number of hours. Conditional Firm Number of Hours and Conditional Firm System Conditions products are both deemed to be conforming in this solicitation. Bid must include one of the eligible transmission service products described above that is equivalent to at least 75% of the resource's interconnection limit. The eligible transmission service must originate at the POR/POI and provide delivery to one of the acceptable points of delivery, defined above, prior to the resources commercial operation date. Bids relying on BPA for transmission service are required to have either: • 1) previously granted eligible transmission service, or 2) an eligible and active OASIS status Transmission Service Request (TSR) participating in the 2022 or prior BPA TSR Study and Expansion Process. Bidders participating in the ongoing 2023 process may submit a narrative if they believe their project is uniquely situated to receive service that complies with the commercial online date and transmission product requirements of this RFP. • Long-term transmission rights must match the duration of the contract term or include rollover rights.[8] • PGE's evaluation process will determine if there are additional costs or risks to deliver the resource to PGE load. • If a bid includes a TSR that utilizes Newpoint as the POR, the TSR must reference the specific Generation Interconnection Request number for the resource in the bid. • Bids including dispatchable resources must have an achievable plan to meet the following transmission requirements: ◦ Bid must include long term firm transmission rights for 100% of the resource's interconnection limit. The long-term firm transmission service must originate at the resource POR/POI and provide delivery to one of the acceptable points of delivery, defined above, prior to resource commercial operation date.

8 PGE acknowledges that timelines for obtaining such transmission can be strenuous and lengthy and invites Bidders to include a narrative describing clear and executable paths to procuring transmission service (including study process milestones and reference to public study results for similar projects). Any plan must meet the transmission product and quantity requirements specified in this section.

	• Bid relying on BPA for transmission service are required to have either previously granted eligible transmission service or have an eligible and active OASIS status TSR participating in the 2022 or prior BPA TSR Study and Expansion Process. Bidders participating in the ongoing 2023 process may submit a narrative if they believe their project is uniquely situated to receive service that complies with the commercial online date and transmission product requirements of this RFP. • Long-term 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. If a Bid includes a TSR that utilizes Newpoint as the POR, the TSR must reference the specific Generation Interconnection Request number for the resource in the bid.
Integration	For resources located outside of PGE's Balancing Authority Area, Bidder will procure, and PGE will reimburse Bidder for all integration services from an entity, mutually agreed upon by the parties, required to ensure delivery of energy as scheduled to the Delivery Point. Integration services include, but are not limited to, generation imbalance, variable energy resource balancing service and any EIM costs associated with interconnection. Integration services do not include ancillary service costs associated with the transmission provider's provision of firm transmission service.
Labor Requirement	• Union labor must be utilized for construction activities related to the resource and must include a Project Labor Agreement requirement in any related executed Engineering, Procurement and Construction Agreements, applicable to all parties. • Additionally, bidders must meet the requirements set forth in ORS 757.306 for projects built in Oregon. For projects built both inside and outside of the state, all labor requirements established for the highest level of tax credit for the ITC and PTC must be met. • The bidder must require that all parties involved in the construction of the resource have policies in place that are designed to prevent workplace harassment and discrimination as well as policies in place that are designed to promote workplace diversity, equity and inclusion of communities who have been traditionally underrepresented in the renewable energy sector including, but not limited to, women, veterans and Black, Indigenous and People of Color • Additionally, entities or subcontractors that are subject to any of the following are ineligible for contract:

	• Any entity that has been debarred by, or whose principal officer is debarred by , a municipal, state, or federal government. • Any entity listed by the Commissioner of the Bureau of Labor and Industries u nder ORS 279C.860 as ineligible to receive a contract or subcontract for public works. • Any entity whose violation of PGE's Responsible Contractor policy has resulte d in a contract default in the past 3 years.
Accepted equipment manuf acturers for utility owned	For structures that contemplate resource ownership, all major equipment manufa cturers must be PGE preferred vendors. A list of PGE's preferred vendors is supp lied in Appendix M, PGE's technical specifications.
Service agreement r equirements for utility owner ship structures	For structures that contemplate resource ownership, bids must include quoted ve ndor costs for long-term service agreements (LTSA) for a minimum of five (5) yea rs. For battery-energy storage resources, LTSAs must include commitments to m aintain the capacity performance through augmentation or alternative mechanisms.
Usable Energy Storage Bid ding	Bidders are required to bid energy storage resources on a contract capacity basis and must account separately for minimum and maximum system state of charge. PGE will only accept bids that express cost and performance on a usable state of charge basis that allows PGE to dispatch the resource from a 0%-100% state of charge without commercial or performance consequence.

Scoring Methodology

Consistent with OAR 860-089-0400(2), all bids that pass PGE's minimum bidder requirements will be scored and ranked based on price factors. Price scores will be based on prices submitted by Bidders, the forecasted performance of the resource, and the associated real-levelized cost and benefit of the bid.

Price Scoring

PGE's price scoring will utilize models and methodologies consistent with the 2023 CEP/IRP. Revenue requirement modeling will determine the bid cost. Aurora will be used to calculate energy values. Sequoia will be used to determine the capacity value. Results from GridPath will provide flexibility value assessments. Some of these models required modifications for RFP evaluation purposes; those modifications are further detailed in each section below.

Bid Cost Determination

- A bid's cost reflects the total cost, fixed and variable, associated with the resource's delivery of energy, capacity, and ancillary services at its forecast economic dispatch. PGE will utilize a revenue requirement model in Excel over the economic life of the asset to calculate the total offer cost, expressed on a present- value basis. A real levelized net present value is the value that when escalated at the annual inflation rate, has the same net present value as the original total offer cost. The model will consider the unique fixed and variable costs associated with each resource.
- For bids that contemplate a power purchase agreement (PPA), a bid's fixed cost will include (if applicable) all forecast fixed payments, capacity charges, wheeling costs, integration costs, ancillary services, and PGE system upgrade costs. Variable costs for PPAs will include all energy payments, additional variable operating

and maintenance (O&M) costs, line losses, emission costs passed onto the buyer, and start-up charges, if applicable. PGE will determine the magnitude of a bid's variable costs by the bid's simulated dispatch against forecast market prices developed using the Aurora modeling, forecasting, and analysis software.

- For bids that contemplate a utility ownership structure, a bid's fixed costs will include total depreciation, salvage, return, income taxes, deferred income taxes, property taxes, fixed O&M costs, wheeling charges, long-term service agreements and ancillary services less any tax credit benefits. A bid's variable costs will include all fuel costs, variable O&M costs, emissions costs, and start-up costs, less any tax credit benefit and net of the transferability discount (described in more detail below).
- For bids that contemplate a utility ownership structure for solar technology and that are eligible for the ITC, these bids will be candidates for Portland Renewable Resource LLC after the final shortlist is identified. This would require a conversion of the BTA or APA price to a PPA price. Bidders may provide a forecasted PPA for comparison to the ultimately converted PPA price (which will be developed by the PGE RFP Team). This forecasted PPA will provide a data point for the evaluation process.
- Transferability discount – The Inflation Reduction Act allows the transferability, or sale, of ITCs and PTCs. PGE expects to take advantage of this opportunity and will sell future generated energy tax credits. The sale of credits will come with a discount (i.e., sale of $1 of credits will return less than $1). PGE will incorporate an estimated discount on tax credit benefits in the analysis of resources with utility ownership structures. The discount used by PGE for the purpose of price scoring will be the transfer discount rate approved in docket UP 424, Order 23-459.
- To evaluate bids containing different resource characteristics on a comparable basis, prices submitted by the Bidder may be subject to adjustments, and adjustments may also be required throughout the evaluation process. Bidders who are able to provide their actual reserve rate costs must do so at the time of bid and will include supporting documentation.
- For bidders unable to provide an actual reserve rate cost, PGE will assess those bids at the BPA reserves rate. Unless actual reserve rates and supporting documentation are provided, Renewable resources will be assessed BPA's variable energy resource balancing services, and dispatchable resources will be assessed dispatchable energy resource balancing services.
- Examples of other adjustments include applying applicable interconnection costs captured in interconnection facilities studies, adjusting for ancillary service rate changes, and altering assumed project costs based on redlines to technical specifications.

Energy Value Determination

A resource's energy value reflects the value of energy generated throughout the resource's economic life or term. To calculate the energy value, PGE will forecast resource production and utilize the reference case market price forecast from the 2023 CEP/IRP, inclusive of available natural gas price forecast updates. The production value will be based on Bidder provided generation information. In the instance of storage and dispatchable resources, PGE will simulate resource dispatch using the Aurora production cost simulation tools deployed in the CEP/IRP. Energy value for the duration of the resource's life or term is expressed on a present-value basis, levelized using annuity methods, and included in the resource's total levelized value. To evaluate energy value risks, PGE will conduct energy value sensitivities using multiple price curves within portfolio analysis.

Capacity Value Determination

- PGE is facing an upcoming capacity deficit in 2026 and requires capacity products to otherwise displace the need to contract with or construct new generating facilities. Individual resource capacity values will be calculated as the product of the bid's capacity contribution and the avoided capacity cost. PGE's avoided

capacity cost will utilize the real-levelized cost, net of wholesale revenues and flexibility value, adjusted for effective load carrying capability (ELCC) of a four-hour battery as depicted in the 2023 CEP/IRP. For additional perspective, PGE will also use the average cost of dispatchable capacity from bids in this RFP as a proxy for avoided capacity cost as a portfolio sensitivity.

- To determine the relative prioritization of capacity products by year, PGE will – as part of the portfolio development process – test portfolios with 2023 RFP resources against a generic capacity fill. This will allow PGE to illustrate the relative cost and benefit of acquiring nearer-term resources vs. resources later in the COD window.
- Individual capacity contributions will be calculated using Sequoia. Sequoia is a loss-of-load probability model that assesses both capacity need and capacity contribution of potential incremental resources. The model uses a Monte Carlo module to construct thousands of plausible weeks of load and resource conditions. It then evaluates these weeks independently in a dispatch module that optimizes the generation from dispatchable resources across all hours of the week to minimize the reliability objective function. For the CEP/IRP, a resource-adequate system must average 2.4 hours of lost load or fewer per season (2.4 LOLH), an interpretation of one outage every 10 years. Sequoia has an Excel interface with a Python and General Algebraic Modeling System (GAMS) back end. It also requires a license to the Gurobi solver to achieve adequate performance. Further details on Sequoia were included in Appendix H.3 of the 2023 CEP/IRP.
- As discussed above, PGE will evaluate multiple transmission products as part of this RFP. Depending on the product selected, PGE will adjust the capacity value of the resource to account for the product's reliability, which is described in more detail in the chart below.

Table 3: Impacts to Capacity Value Based on Transmission Products

Impacts to Capacity Value Based on Transmission Products	
Long-Term Firm	• When determining capacity contribution, the maximum resource output will be li mited to the quantity of long-term firm rights (no less than 75% of interconnectio n limit). • No capacity value will be attributed to the portion of the resource's interconnecti on limit that is relying on short-term firm, if any.

Conditional Firm Bridge	• When determining capacity contribution, the maximum resource output will be limited by the amount of conditional firm bridge rights (no less than 75% of interconnection limit). • For the purposes of capacity contribution calculations, generation delivered by conditional firm bridge number of hours will be assumed to be curtailed. Specifically, resources on conditional firm bridge will also have their output curtailed for 50% of annual curtailment hours as identified and reserved for use by BPA. The model will assume that these curtailments happen during PGE's approximate times of highest need. Upon the forecasted completion of transmission upgrades necessary to convert conditional firm bridge service into long-term firm service, a resource's forecasted curtailment conditions will be removed. If BPA's cluster study results are not available to indicate the maximum number of curtailed hours, PGE will use the average assessed hours from the previous study. • Due to the lack of certainty around potential System Conditions curtailment, no capacity value will be attributed to the portion of the resource's interconnection limit that is relying on System Conditions service. • As an optional alternative, PGE will allow System Conditions bidders to propose a maximum contractual curtailment amount within their offer to PGE to account for the unknown risk associated with future transmission curtailment. This amount – if offered – should identify the maximum number of hours per year that would be allowed for curtailment, and the proposed remedy to PGE if the project is curtailed due to transmission system conditions at a volume that exceeds the yearly allowance. • For bidders that elect to propose a build transfer agreement or asset purchase agreement structure, PGE will accept a maximum curtailment proposal that is backed by an insurance product that would provide remedy in the case of curtailments that exceed the proposed contractual limit. • Any System Conditions proposals to create a contractual protection for PGE customers will be subject to review by the IE and negotiation as part of the contracting process. • No capacity value will be attributed to the portion of the resource's interconnection limit that is relying on short-term firm, if any.

Conditional Firm Reassessment	· Due to the unpredictable long-term nature of this product as discussed in the transmission section above, PGE will not attribute any capacity value to bids relying on conditional firm reassessment.

Flexibility Value Determination

- Flexibility value was included in the 2023 CEP/IRP to estimate the value a resource brings to PGE's portfolio by responding to forecast errors, enabling fast ramping, and meeting reserve requirements. PGE estimated these

values using Blue Marble Analytics' GridPath model. GridPath is a multi-stage optimal commitment and dispatch model that minimizes total system operating costs subject to various system- and generator-level operational constraints. The enforced constraints include generator dispatch requirements and limits such as minimum up- and down-times, minimum loading levels, ramp rate limits, etc., as well as system-level hourly market availability and reserve requirements, e.g., spinning reserves, regulation, load following, etc.9

- For resource flexibility values in the 2023 All-Source RFP, PGE will rely on flexibility values from GridPath as detailed in the 2023 CEP/IRP. These values will be adjusted based on the size of each resource evaluated. Below are the flexibility values for 100 MW resources included in the 2023 CEP/IRP.

Table 4: Flexibility Value from the 2023 CEP/IRP

Flexibility Value (2026$/kW-yr)	
2-hour Battery	$8.35
4-hour Battery	$9.77
6-hour Battery	$10.68
8-hour Battery	$11.78
10-hour Pumped Storage	$11.47

Offer Price Value-to-Cost Evaluation
PGE will evaluate all renewable resource bids against a value-to-cost binary metric. The value-to-cost metric evaluates whether a resource's costs are exceeded by a resource's forecasted value under Reference Case conditions considering only the resource's forecasted energy, capacity, and flexibility values. Bids will be considered to have a 'True' value-to-cost metric if the resource's forecasted levelized benefit exceeds their forecasted levelized cost. The formula below illustrates how the metric will be assessed for renewable resource bids.

Renewable Resources' Value-to-Cost Binary Metric is True if:
Levelized Resource Cost < Levelized Energy Value + Levelized Capacity Value + Levelized Flexibility Value

- The value-to-cost evaluation will be unique for each resource evaluated by PGE and will assess a higher score for resources that provide more value to PGE customers due to the resource's generation profile. For this reason, it is possible that a lower-priced resource will not pass the economic evaluation while a higher-priced resource will pass the economic evaluation due to increased resource value, such as by providing higher capacity contribution or more valuable energy production.
- This metric may inform future regulatory reporting but will not impact points allocated to projects as part of the scoring process.

9 For a more detailed description of GridPath, please consult External Study IV. Flexibility Study in PGE's 2023 CEP/IRP at page 675.

Allocation of Price Score Points
Once the cost of each bid is determined it will be netted against the levelized energy, capacity, and flexibility value associated with the bid. This net cost will be expressed in real levelized $/MWh for renewable bids and real levelized $/kW-mo for dispatchable bids. Each bid's component cost and benefits will be converted into a cost-to-benefit price score ratio. Price scoring points will be allocated on a scaled basis, with 1,000 points allocated to the best price ratio. The allocation system is illustrated by the example below.

Table 5: Price Score Point Allocation Example

Price Score Point Allocation Example					
A	**B**	**C**	**D**	**E**	**F**
	Total Cost	Total Value	Ratio of Cost to Benefit	Lowest Ratio	Points
			B/C	Min(D)	1,000*(E/D)
Bid 1	40	50	0.8	0.73	913
Bid 2	35	48	0.73	0.73	1,000
Bid 3	15	20	0.75	0.73	973
Figures are fictitious and for example purposes only					

Initial Shortlist

Projects that meet the minimum bid criteria outlined in Section 2 of this document and perform well on price factors will be placed on the initial shortlist, which identifies that the bid warrants further consideration by PGE. Initial shortlist candidates will be notified by PGE.

Best and Final Offer Request & Final Shortlist Eligibility Screening

Initial shortlist candidates will be contacted by PGE and requested to provide their best and final offer. PGE will also ask that they redline technical specifications (if they have not already done so) and provide updates on pricing, provide actual reserves rate costs, permitting processes, interconnections studies, and the cluster study process. This new information will be evaluated to ensure the bid meets the eligibility requirements for the final shortlist, and all relevant updates will be incorporated into the portfolio analysis. A description of the additional elements for final shortlist eligibility are included in Table 6 below.

Table 6: Final Shortlist Eligibility Screening

Final Shortlist Eligibility Screening	
Credit	• Bidders must meet PGE's credit eligibility thresholds prior to Commission's ac knowledgement of PGE's final shortlist. • For investment grade Bidders, their long-term, senior unsecured debt must be rated BBB- or higher by Standard & Poor's and Fitch, BBB (low) or higher by DBRS, or Baa3 or higher by Moody's Investor Services, Inc. • For non-investment grade Bidders, they must demonstrate that a qualified inst itution will secure the Bidder's performance obligations through a letter of credit or guaranty, in a form acceptable to PGE. • Additional detail on PGE's credit requirements is included in Appendix K.
Site Control	Bidders will be required to demonstrate site control for 100% of the project site.
Interconnection	To qualify for the final shortlist, a bid must have a facilities study agreement with t he transmission provider.
Reasonable adherence to P GE technical specifications f or utility ownership structure s	For structures that contemplate resource ownership, concurrent with supplying th e best and final offer, the Bidder must supply redlines to the relevant PGE technic al specifications.

Portfolio Analysis

- Consistent with the methodology in PGE's 2023 CEP/IRP, PGE will utilize ROSE-E for portfolio analysis for this RFP. ROSE-E is a portfolio analysis tool that generates optimal portfolios according to a specified objective. In doing so, ROSE-E creates various cost and risk metrics that enable comparison across portfolios. For this RFP, ROSE-E will forecast the long-term economic performance of bids, both in isolation as well as when combined, allowing a comprehensive evaluation of bids that ensures the final shortlist is in the best long-term interests of customers. ROSE-E was extensively described and vetted in LC 73; for a full description of updates and improvements to the model that have been made since then, please refer to PGE's 2023 CEP/IRP.10 While the core of ROSE-E remains in this RFP, several important changes have been made to the model to answer questions relevant to this RFP.
- ROSE-E's capacity expansion will be set to meet the carbon reduction targets established in Oregon House Bill (HB) 2021. In an CEP/IRP setting, ROSE-E ensures the system remains capacity adequate and in compliance with policy mandates by determining the optimal size and timing of additions from a list of proxy resources available to PGE.11 Off-system proxy resources were subject to transmission constraints, so in order to provide sufficient resources to meet capacity needs, two generic on-system resources (Generic capacity and Generic VER) were made available for selection.12 In this RFP, energy additions beyond the bid resources will be limited to the generic renewable resource and capacity additions will be limited to the generic capacity resource. Doing so allows ROSE-E to evaluate individual bids and combinations of bids in the context of PGE's pathway to meet HB 2021's targets. However, this analysis will produce only a cursory view of the resource additions necessary to comply with HB 2021.The 2023 CEP/IRP provides additional context regarding the most optimal resource expansion pathway for PGE.
- In this analysis, ROSE-E will only use the main objective function (minimizing long-term costs).13 The benefits from each bid (energy and flexibility) and costs (variable and fixed) will be direct inputs into the model, along

with the key financial parameters, price forecasts, and resource generation. The capacity value brought by each bid will be reflected in reductions in capacity need, calculated in PGE's capacity model Sequoia. With these, PGE will calculate the traditional scoring metrics used in the 2023 CEP/IRP. PGE is also committed to work with Commission staff to determine the most informative approach to examine a low wholesale market price sensitivity and will share all sensitivity analyses with the IE for their review.

10 See 2023 CEP/IRP, Appendix H.4 ROSE-E at 529, available here: **https://edocs.puc.state.or.us/efdocs/HAA/lc80haa8431.pdf**
11 Proxy resources used in the 2023 CEP/IRP included onshore wind, offshore wind, solar, battery storage, solar plus storage, pumped storage, hydrogen, DERs, and transmission expansion resource options.
12 For more information on portfolio modeling in the 2023 CEP/IRP, see Chapter 11 Portfolio Analysis, available at: **https://edocs.puc.state.or.us/efdocs/HAA/lc80haa8431.pdf** .
13 The other two objective functions (minimize short-term cost, minimize short-term reference cost) were only used for comparing alternative optimization choices in the 2023 CEP/IRP.

- Once PGE determines the portfolio values for various combinations of bids that are examined in ROSE-E, PGE will convert the traditional metrics into a portfolio price score.
- PGE will perform portfolio analysis for a population of designed portfolios to identify the expected portfolio cost across multiple economic futures. Comparing the costs of these portfolios across multiple economic futures will allow PGE to calculate the traditional portfolio scoring metrics including cost, variability, and severity as are described in Section 11.2 of the 2023 CEP/IRP. All top performing portfolios will receive a price score based upon 50% of the portfolio's expected cost and 50% on the standard deviation of forecasted costs across all futures. Each portfolio's price and risk performance will be converted into a portfolio price score allocated on a scaled basis with 1,000 points allocated to the lowest price and risk results. Upon completing this analysis, PGE will share its results with the IE and Commission staff for further discussion.

Final Shortlist

Upon completion of the portfolio analysis, PGE will use the price score of conforming bids to determine the best combination of cost and risk for PGE customers. These results will be used to determine PGE's final shortlist, which PGE will use to commence negotiations and will recommend for regulatory acknowledgment. Once the final shortlist is filed, PGE will engage in negotiations with those selected Bidders. Bates White, the selected IE, will issue its closing report two weeks after PGE has filed the final shortlist of bids.

Exhibit A: Required Permits

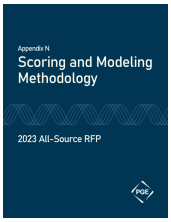
Permits/Studies	**Required By**						
	Wind	**Solar**	**Geothermal**	**Hydro / Pumped Storage**	**Energy Storage (Batteries)**	**Biomass**	**Hydrogen/ Other**
State permit (e.g., site certificate)	Final Shortlist	Final Shortlist	Final Shortlist	Final Shortlist	Final Shortlist	Final Shortlist	Final Shortlist
Local land use permit (e.g., conditional use permit)	Final Shortlist	Final Shortlist	Final Shortlist	Final Shortlist	Final Shortlist	Final Shortlist	Final Shortlist
FERC License (or final EIS from FERC)	n/a	n/a	n/a	Bid	n/a	n/a	n/a

Federal siting permit (e.g., NEPA Record of Decision for construction*) **This does not include NEPA for an Eagle T ak e Permit*	Final S hortlist	Final S hortlist	Final S hortlist	Final S hortlist	Final S hortlist	Final S hortlist	Final S hortlist
Air quality permit (e.g., ACDP, etc.)	n/a	n/a	n/a	n/a	n/a	Final S hortlist	n/a
FCC permit	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction
FAA permits	CP	CP	CP	CP	CP	CP	CP
Airspace and Obstacle Evaluation Analysis	Bid	n/a	n/a	n/a	n/a	n/a	n/a
Water rights	n/a	n/a	Bid	Bid	n/a	Bid	Bid
Wastewater discharge permit (e.g., NPDES, WPCF, etc.)	n/a	Final S hortlist	Final S hortlist	n/a	n/a	Final S hortlist	Final S hortlist
Construction Permits (e.g., NPDES-1200C, building permit, site development permit, et c.)	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction
Removal Fill Permits (wetland and in-water work, e.g., State, Army Corps)	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction	Constr uction
Eagle surveys and take estimates: provide available survey data, a well justified prelim inary take estimate, and a detailed schedul e for completing surveys and final take esti mate per USFWS-approved protocols	Bid	Bid	Bid	Bid	Bid	Bid	Bid
Federal ESA surveys: provide comprehensi ve project-wide survey results (this does no t include any final pre-construction follow-u p surveys, such as may be required in a sit e certificate or other project authorization, f or the purpose of micro-siting and defining boundaries of and avoiding active occupied habitat in a given construction year)	Bid	Bid	Bid	Bid	Bid	Bid	Bid

State/local sensitive species surveys: provide comprehensive project- wide survey results (this does not include any final pre-construction follow-up surveys, such as may be required in a site certificate or other project authorization, for the purpose of micro-siting and defining boundaries of and avoiding active occupied habitat in a given construction year)	Bid	Bid	Bid	Bid	Bid	Bid	Bid
Cultural resource surveys started (at a minimum, contracted with a cultural resources consultant)	Bid	Bid	Bid	Bid	Bid	Bid	Bid
Tribal coordination initiated (started consultation with area tribes to discuss Traditional Use Studies, Traditional Cultural Properties, and other relevant studies)	Bid	Bid	Bid	Bid	Bid	Bid	Bid
Demonstrate a realistic timeline for procuring any additional permits, licenses, or assessments required to start construction	Bid	Bid	Bid	Bid	Bid	Bid	Bid
Is there any organized opposition to the project? If yes, in Column 3 provide an overview of the opposition that has occurred to date and measures taken to address it.	–	–	–	–	–	–	–

Key:
Bid – Must be obtained by bid submittal date
Final Shortlist – Must be obtained by bid Final Shortlist date
Construction – Must be obtained by start of construction
CP – Must be approved as a condition precedent in the definitive agree me
n/a – Not applicable

Documents / Resources

	PGE 2023 All Source RFP [pdf] User Manual 2023 All Source RFP, 2023, All Source RFP, Source RFP, RFP

References

- **User Manual**