BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

LC 66

In the Matter of PORTLAND GENERAL ELECTRIC COMPANY, Addendum to 2016 Integrated Resource Plan	Staff Comments

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Introduction

Staff finds that Portland General Electric's (PGE or Company) Revised Renewable Action Plan is an improvement over what the Company had originally filed and is responsive to many of the Commissioner's concerns expressed in Order No. 17-386. This memo will provide a brief overview to the PGE's revised renewable Action Item, the results of Staff's analysis, and a recommendation for acknowledgement with conditions.

Applicable Rule or Law

The Integrated Resource Planning (IRP) Guidelines and Commission rules require a utility to file an IRP with a planning horizon of at least 20 years within two years of its previous IRP acknowledgment order, or as otherwise directed by the Commission.[1] The primary outcome of the process is the selection of a "portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers."[2] After selecting the least cost/least risk portfolio, the utility develops a proposed "Action Plan" of resource activities to undertake over the next two to four years to implement the plan.[3]

The Commission reviews the utility's IRP for compliance with the procedural and substantive requirements laid out in the IRP Guidelines and generally acknowledges the resource activities in the Action Plan if they are reasonable based on the information available at the time.[4] However, the Commission may also decline to acknowledge specific Action Plan items if it questions whether the utility's proposed resource decision presents the least cost and risk option for its customers.[5] Moreover, the Commission's decision to acknowledge or not acknowledge an action item does not constitute ratemaking. The question of whether a specific investment made by a utility in its planning process was prudent will be examined in the subsequent rate proceeding.[6]

In Order No. 17-386, the Commission acknowledged all but one of the action items proposed by PGE in its 2016 IRP—the action item to issue a RFP for 175 MW of New Renewable Energy Resources. The Commission concluded:

> *We recognize that incrementally adding renewable energy resources over time may be a reasonable operational and cost-risk mitigating strategy to achieve this major system transformation. We also believe that near-term action to address long-term renewable energy obligations may be appropriate, provided that more attention is paid to balancing short- and long-term tradeoffs and to mitigating long-term risks. Based on the information and analysis provided in this docket, we conclude that PGE did not sufficiently*

[1] Order No. 07-002 (Guidelines 1(c) and 3(a)) and OAR 860-027-0400.
[2] Order No. 07-002 at 1-2.
[3] Order No. 14-415 at 3; 17-384 at 3.
[4] Order No. 17-386 at 4.
[5] Order No. 07-002 at 1.
[6] Order No. 17-386 at 4 (noting that acknowledgment, or non-acknowledgment, of an IRP is a relevant but not exclusive consideration in the Commission's subsequent examination of whether the utility's resource investment is prudent and should be recovered from customers.).

demonstrate that the long-term cost savings it identified from near-term action were adequately balanced with the short-term rate impacts and long-term risks.[7]

However, the Commission encouraged PGE to work with Staff and other parties to prepare and submit a revised Action Plan for renewable resource acquisition that addressed the Commission's concerns.[8] The Commission further explained that PGE's renewable resource strategy should have considered how renewable resources could contribute most cost-competitively to near-term capacity and energy needs, the role that PURPA qualifying facility additions will play in RPS compliance, and the proper sizing of resource investments to balance near-term opportunities to minimize future compliance costs with preservation of optionality through retaining RPS headroom to fill with future technological advances and opportunities.[9]

Overview of PGE's Revised Renewable Action Item Proposal

PGE filed a Revised Renewable Action Plan (Action Item) after holding two stakeholder workshops, making a presentation to the Commission, and hosting several meetings with stakeholders.[10, 11] PGE seeks Commission acknowledgment of its Action Item, which includes a request for proposal (RFP) for new renewable energy resources up to approximately 100 MWa.[12]

PGE's Action Item attempts to demonstrate how the proposed RFP will select resources that more appropriately meet the Company's near-term energy and capacity need, while also capturing the full value of the federal Production Tax Credits. The proposed acquisition size of 100 MWa is 75 MWa less than what PGE proposed in its 2016 IRP. PGE's believes that this smaller acquisition size, with additional design components, addresses several of the Commission's prior concerns by more explicitly balancing trade-offs associated with costs and risks, maintaining optionality as part of a long-term RPS strategy, and better responding to the addition of renewable Qualifying Facilities (QFs) under the Public Utility Regulatory Policies Act (PURPA).

Two key additions to PGE's Action Item include (1) a cost-containment screen and (2) a commitment to return the value of associated renewable energy credits (RECs) to customers.[13] The cost-containment screen acts as preliminary price threshold. It is designed to ensure that any procured resources have forecasted customer value in excess of customer costs.[14] It is also meant to assist PGE in identifying high value resources that provide diversity to PGE's energy portfolio.[15] Essentially, the cost-containment screen functions as a supplement to PGE's existing RFP price and non-price process by assessing the cost-effectiveness of a resource under reference case conditions, using only the resource's forecasted energy and capacity values. If a resource passes this cost-containment screen, it then advances to be scored under PGE's normal RFP scoring process. PGE claims that the cost-containment screen helps to

[7] Order No. 17-386 at 2-3.
[8] Order No. 17-386 at 1, 16.
[9] Order No. 17-386 at 15.
[10] *See* LC 66, PGE Revised Addendum to 2016 IRP (Nov. 9, 2017).
[11] *See* OPUC Public Meeting for PGE presentation to Commission on development of revised renewable action item (Oct. 10, 2017).
[12] *See* LC 66, PGE Revised Addendum to 2016 IRP at 10 (Nov. 9, 2017).
[13] *Id.* at 11.
[14] *Id.* at 12.
[15] *Id.*

address the Commission's concerns regarding better balancing of the short-term rate impacts associated with acquiring new renewables in the near-term for a long-term obligation.

PGE's proposed commitment to return the value of associated RECs to customers is meant to further reduce the costs associated with the near-term acquisition of renewables.[16] PGE offers three possible mechanisms to return the value of any associated RECs to customers:

- REC sales in the wholesale market;
- Retail REC sales to voluntary subscribers of a green tariff;
- Utilizing the RECs for an alternative policy compliance value, such as future carbon-related policy obligations.[17]

PGE proposes that a separate docket be opened in the future to determine the best mechanism to adequately capture REC value for customers, including those values associated with infinite-life RECs generated prior to 2025.[18]

Finally, PGE's Action Item included extensive analysis of the sizing and timing options for renewables procurement relative to an overall RPS physical compliance strategy. PGE presented multiple "glide paths" to demonstrate how long-term RPS compliance could be achieved under various scenarios.

Basis for Recommending Acknowledgment of PGE's Action Item

IRP Principles

The Action Item proposed in PGE's 2016 IRP Addendum is part of the Company's 2016 IRP filing. As such, Staff's analysis and recommendations regarding this proposal rest upon the same least-cost, least-risk principles that guided Staff's final recommendations in July of 2017 and that the Commission reiterated in its acknowledgement order:

> *Our IRP guidelines and policies continue to provide the necessary framework to address these new challenges. The focus remains on determining a utility resource need, and then evaluating potential utility actions to meet that need in a least-cost and least-risk manner. In reviewing an Action Plan, we will continue to look to see how individual action items fit into a comprehensive integrated strategy for meeting customer needs and whether the risks are appropriately shared between ratepayers and shareholders.*[19]

In evaluating this Action Item, Staff sought to determine PGE's current RPS, capacity and energy needs, and whether the proposed 100 MWa procurement would meet those needs in a least-cost, least-risk manner. In addition, Staff sought to determine how the proposal fit into an overall strategy or plan. Finally, Staff analyzed how the Action Item sought to balance and/or mitigate risks borne by ratepayers as part of this near-term action for a long-term obligation.

Applicable Guidance from the Commission

Additionally, the Commission's LC 66 order provided Staff with further direction and guidance on how to assess the merits of the Company's Action Item. Specifically, Staff considered whether the proposal:

[16] *Id.* at 15.
[17] *Id.*
[18] *Id.* at 14.
[19] *See* LC 66, Order No. 17-386 at 14 (Oct. 9, 2017).

- Harmonized operational and regulatory needs in a least-cost, least-risk manner to incorporate a significant amount of new resources and adapt to a fundamentally different resource portfolio over a relatively short-period of time;
- Consider tradeoffs between long-term cost savings and the risk-mitigation benefits of retaining and maintaining optionality;
- Evolve the characterization of need and the assessment of risk and uncertainty;
- Demonstrate that projected long-term economic benefits are balanced with short-term impacts and long-term risks;
- Establish a clear imperative to act in the near-term;
- Better adjust proposed, new renewable resource sizing based on PURPA QF contracts and requests for contracts; and
- Attempt to mitigate short-term rate impacts.[20]

Staff's Analysis of the Revised Renewable Action Item

Overall, Staff found PGE's Action Item to be reasonable, and found that it addresses many of the issues raised by the Commission in Order No. 17-386. Using the criteria listed above, Staff organized its analysis into the following three categories: Capacity, Energy and RPS Needs; Sizing and Timing; and Risks and Balancing Interests.

Capacity, Energy and RPS Needs

The Action Item seeks to balance three needs for PGE: capacity, energy, and Renewable Portfolio Standard (RPS). In LC 66, the Commission acknowledged PGE's 2021 capacity need and later determined that PGE's RPS need could be moved forward to 2025 from 2029.

At the beginning of the IRP process, PGE's initial capacity need was 819 MW. It was eventually reduced down to 561 MW. PGE's 2021 capacity need was recently revised down again to 461 MW.

Initially, PGE's preferred method to meet its 2021 capacity need was with one to two natural gas plants. In its LC 66 order, the Commission directed PGE to attempt to meet its acknowledged capacity need first through bilateral negotiations for short- to medium-term products, such as regional hydro resources, prior to issuing an RFP for new capacity resources.

The contracts PGE is currently negotiating could meet all of PGE's 2021 capacity need. The extent to which they do meet PGE's 2021 capacity need will not be known by the time the Commission is scheduled to acknowledge this Action Item. Nonetheless, PGE's proposed cost-containment screen does provide some assurance that when evaluating bids, the value of capacity and energy provided by projects will be assessed based on PGE's need for capacity and energy. For example, in response to Staff's IR #142, PGE explained:

> "[B]ids or portfolios will not be credited for the value of capacity contributed beyond the Company's capacity need in a given year. Should bilateral negotiations be executed by the time of RFP bid evaluation, PGE will update its capacity adequacy assumptions to reflect the impact of the bilateral offers on the residual capacity need."

[20] *See* LC 66, Order No. 17-386 at 13-16 (Oct. 9, 2017)

Further, PGE provided some analysis delineating the capacity contribution of potential renewable resources at the reduced size proposed in the Action Item. Using IRP tools, PGE demonstrated how example resources at 100 MWa made appropriate contributions to PGE's 2021 capacity need.

However, Staff notes that PGE's capacity contribution estimates for solar may be too low. As explained by PGE, this is likely due to assumptions on QF development. PGE assumes that 100 percent of contracted QFs will reach operation. The vast majority of contract QFs are solar projects; thus, if they all are constructed, then the cumulative capacity contribution for solar as a percent of total solar capacity declines.

Staff appreciates PGE's analysis considering a 50 percent QF success rate but is concerned that the capacity contribution of solar was not adjusted as well to reflect less cumulative solar on PGE's system for this scenario. Staff is relatively certain that less than 100 percent of contracted QF projects will ultimately be developed. In making this 100 percent development assumption for existing and proposed solar QF contracts, PGE's modeling may significantly underestimate the capacity contribution of new solar to its system. Staff recognizes the impossible challenge of accurately predicting the ultimate success rate of contracted QF development. However PGE should work with the most up-to-date information and develop percentage estimates for use in the modeling used by the cost containment screen and the RFP process itself, as this is likely to be more accurate.

Because the new 30+ year, natural gas plant(s) were taken off the table due to the negotiations for bilateral capacity contracts, Staff notes that these contracts will not fulfill all of PGE's energy needs. In the Company's 2016 IRP, PGE's proposed natural gas plant(s) were modeled to provide both capacity and energy. So while the bilateral negotiations short- to medium-term products will likely alleviate some or all of PGE's near-term capacity need, these products do not necessarily address PGE's energy needs.

According to PGE, the Company's energy needs in 2021 will be 75 MWa and grow to 263 MWa. The bilateral contracts will have a limited impact on these energy needs. PGE explains that new renewables can help fill PGE's future energy need. The Action Item's cost containment screen complements the competitive bidding process to help ensure that the renewable RFP finalists make an energy contribution that aligns with PGE's needs.

PGE's capacity and energy needs emerge in 2021 with the closure of the Boardman coal facility, which is the same year by which Action Item resources must be on-line. In short, Staff finds that PGE's proposed Action Item as structured could contribute toward meeting a portion of the Company's revised capacity and energy need in a least-cost and least-risk manner as compared to PGE's 175 MWa renewable proposal in LC 66.

Staff underscores that while the timing of the PGE's energy and capacity needs (in 2021) is clearly established, until the bilateral capacity negotiations are completed, the extent of PGE's unfilled energy and capacity needs remain unclear. And while PGE has presented a plausible case for an energy need, analysis describing that need in detail, including when and how it emerges, has not been provided with this filing. In short, Staff recommends that PGE be required to provide the Commission, Staff and stakeholders with an updated capacity and energy need analysis immediately prior to starting (and at key junctures) of the RFP process, so that the reasonableness of acquisitions can be determined.

With regard to RPS need, PGE's work on its Action Item included several "glide paths." The purpose of modeling the glide paths was to demonstrate multiple approaches to acquiring renewable resources to meet PGE's 2040 RPS need and to quantitatively and visually assess the reasonableness of meeting the Company's need by acquiring renewable resources in the near-term.

Staff appreciates PGE's work to review options for staged procurement consistent with Commission Order No. 17-386. PGE designed its glide path analysis to preserve optionality and has presented a reasonable, moderated approach to exploring customer impacts when varying the pace of acquisition of new, renewable resources to meet 2040 requirements. Staff agrees with PGE that the glide path it has developed is not a plan as contemplated in the Commission's order, but Staff believes it can serve as the foundation of a plan to be developed in PGE's next IRP. Staff would note that the glide paths presented did not include key variables to consider such QF impacts and the use of unbundled REC's. Any future work utilizing glide paths should contain these variables.

Finally, questions remain regarding PGE's assumptions about the performance of Gorge Wind and Montana Wind. In PGE's Action Item, Montana wind is presented as a "clear winner," with associated values significantly better than PGE's estimates for solar energy and other wind resources. Therefore, if the Action Item is acknowledged by the Commission, PGE should address the following in the RFP process:

- Should PGE aggressively pursue Montana wind resources? Included in this pursuit would be creative and proactive approaches to securing sufficient transmission, which Staff understands is the major barrier to the development of Montana wind resources.
- Why does additional Columbia Gorge wind support PGE's system needs? Staff understands geographic diversity to be a major component in renewable energy capacity factors. The Company's wind resources are already concentrated in the Gorge.

Suggested Conditions related to Capacity, Energy and RPS Needs

Staff concludes that PGE meets the Commission's direction Order No. 17-386 to consider addressing near-term capacity and energy needs and for planning to address RPS compliance needs that are closer in time. However, Staff proposes that the following conditions be required with Commission acknowledgement of the Action Item:

1. PGE should conduct an analysis of its capacity, energy, and RPS needs immediately prior to launching the renewables RFP and at key junctures in the RFP process to ensure that the size and benefits of any new renewables are commensurate with PGE's remaining needs.
2. PGE's RFP process should propose solutions that estimate QF contract realization at a percentage less than 100 percent, for use in RECAP or any appropriate modeling.
3. PGE should develop a comprehensive renewable plan with stakeholder input, based on its glide path work to date, as part of its next IRP.
4. PGE should consider Staff's Montana and Columbia Gorge wind questions as part of the RFP process. If PGE finds it appropriate to seriously consider a targeted pursuit of Montana wind resources, Staff recommends that PGE convene the stakeholders that have argued for Montana wind as a resource to discuss how such a resource might be acquired, the barriers to its acquisition, and potential actions that could be taken by the Company, the Commission, or the

state to resolve barriers and ensure that a Montana wind resource could be delivered to PGE's system in a cost-effective manner.

Sizing & Timing

PGE selected 100 MWa for the size of its renewables acquisition proposal in this Action Item in response to concerns raised about:

- Near-term impacts to rates;
- Preserving optionality in the face of long-term uncertainty; and
- How the acquisition reflects of an overall plan or strategy to meet future RPS needs.

Based on responses to Staff IR requests, PGE's approach for selecting the 100 MWa size proposed in this Action Item is reasonable and responsive to Commissioner and stakeholder concerns. PGE's proposed size of 100 MWa is a compromise between two cost impact scenarios: constant annual cost impacts to revenue requirements and cost impacts that grow at the Company's discount rate. The 100 MWa represents a compromise between these two positions and limits the near-term rate impacts

PGE then conducted a scenario analysis utilizing the glide paths and the 100 MWa of new renewables. The near-term acquisition of 100 MWa with a COD of 2021 and subsequent REC realization in 2025 was compared to acquiring 175 MWa of new renewables at various timing intervals found in the IRP. In this sense, the glide path analysis was used as a secondary screen to the sizing analysis and helped to determine how well the proposed 100 MWa maintained PGE's optionality. Based on the analysis presented by PGE, Staff finds that 100 MWa maintains the Company's optionality in the face of long-term uncertainties, including zero load growth. The glide path analysis helped to justify PGE's preferred level of acquisition in this revised renewable action item while demonstrating that it still afforded PGE options for different levels of resource acquisitions in the future. PGE's approach is reasonable given the fact that a longer-term plan is not yet developed, nor could feasibly be developed in short time frame.

With that said, PGE notes that QF development plays a major role in the volume and timing of PGE's capacity and energy needs. However, it is not clear from PGE's analysis how QFs or the acquisition of unbundled REC's will continue to play into PGE's ongoing RPS needs. Staff believes PGE's future planning should consider the role that QF's and unbundled RECs can play in meeting all needs, including RPS compliance needs.

Risks & Balancing Interests

Staff understands Order No. 17-386 as requiring PGE to balance risk and costs between ratepayers and shareholders. In its Action Item, PGE does not propose any risk or cost sharing mechanism between ratepayers and shareholders. The cost-screening mechanism developed by PGE and discussed in this memo does not serve to spread or balance risk. However, Staff does not perceived this to be an issue given that the PGE's Action Item is different than its prior renewable action item in that it is now designed to meet a near-term capacity and energy need.

PTC and Tax Legislation

Pending tax legislation could dramatically impact the economics of new wind resources. This is a significant risk, and any changes to economic assumptions, such as adjustments to the PTC or corporate tax rate could significantly impact the value of any renewable project. Staff recommends that PGE re-run

the economic analysis of the proposed resources should the PTC, corporate tax rate or any related tax rate change prior to or during the RFP process

Cost-Containment

Staff appreciates that PGE's proposed cost containment procedures may serve to lower cost risks for customers. However, Staff does want to ensure that the cost containment screen not constrain the portfolio development process, which is typically completed in the last stage of PGE's resource selection effort. Accordingly, Staff recommends that consideration and approval of the cost containment be deferred to the RFP development process, during which PGE can work with Staff and stakeholders to explain the screen and ensure that it will support the selection of the lowest cost, highest value resource. In particular, Staff would anticipate working with the IE as part of this review process.

REC Sales

In Order No. 17-386, the Commission encouraged PGE to balance risk and costs between ratepayers and shareholders. PGE proposed to generate revenue from REC sales as a potential tool for lowering costs and risks to customers associated with the "early" portion of its Action Item, i.e., the acquisition of RECs. In Staff's analysis and even in PGE's presentations the potential REC sales do not significantly mitigate cost risks. At a price of $1.50 per REC on 305 MW installation (~107 MWa) installed for $1,590 per kilowatt, the value of the REC sales would offset less than 1 percent of the total project cost after PTCs. That noted, while REC sales are unlikely to produce extensive revenue to mitigate cost risks they would serve to more closely tie the 100 MWa of renewables to the pure capacity and energy needs of the Company in 2021. Staff agrees with the Company that a docket should be opened to determine the specific mechanism for delivering value from incremental RECs to customers. The docket scope should include the monitoring, tracking and reporting pf REC sales, prices, and overall value to customers relative to the investment as REC held by the Company are most likely considered ratepayer property.

Conclusion

PGE's Action Item meets the IRP principles of least-cost and least-risk planning and also address several of the concerns and issues raised by the Commission in Order No. 17-386. Staff recommends acknowledgement of PGE's Action Item, subject to the following conditions:

1. PGE should work with the most up-to-date information and develop percentage estimates for use in the modeling used by the cost containment screen and the RFP process itself. Prior to issuing an RFP for renewable resources, PGE should recalculate and share with the Commission its capacity, energy, and RPS needs based on the latest information from PURPA QF contracts and requests for contracts, acquiring 20 percent of PGE's RPS needs through unbundled RECs annually, the Bilateral Negotiations for short- to medium-term regional resources, and the latest federal tax changes. This should include an examination of the capacity contributions in various QF contract realization scenarios, with a less than 100 percent realization rate recommendation to be utilized in portfolio modeling as part of the RFP.
2. PGE use its glide-path analysis to form the foundation of a longer-term renewable energy resource acquisition plan, to be developed in its next IRP and incorporated and updated in all subsequent IRPs and RPIPs. Any future work utilizing glide paths should contain QF data and unbundled RECs variables.
3. PGE should consider Staff's Montana and Columbia Gorge wind questions as part of the RFP process. If PGE finds it appropriate to seriously consider a targeted pursuit of Montana wind resources, Staff recommends that PGE convene the stakeholders that have argued for Montana

wind as a resource to discuss how such a resource might be acquired, the barriers to its acquisition, and potential actions that could be taken by the Company, the Commission, or the state to resolve barriers and ensure that a Montana wind resource could be delivered to PGE's system in a cost-effective manner.

4. PGE include in its RFP a full description of the cost containment mechanism, including the actual energy and capacity values that will be used in the Reference Case conditions.
5. PGE should open a docket to determine the specific mechanism for delivering value from incremental REC's to customers.

This concludes Staff's Final Comments.

Dated at Salem, Oregon, this 1st of December, 2017.

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