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January 25, 2022

Via Electronic Filing

Public Utility Commission of Oregon
Attention: Filing Center
P.O. Box 1088
Salem, OR 97308-1088

Re: ***In the Matter of Public Utility Commission of Oregon General Capacity Investigation*, Docket No. UM 2011 - PGE's Modeling Results**

To Oregon Public Utility Commission Staff and Stakeholders,

Enclosed are PGE's modeling results for UM 2011, submitted pursuant to the protective order. In accordance with the agreement reached at the December 6, 2021, workshop, PGE is providing the information memorialized in the December 10, 2021, Joint Utilities' Updated Proposal and outlined below:

The Joint Utilities have agreed to provide the following:

- Loss of Load Probability (LOLP) based on its most recent IRP beginning in 2024 and for every four years thereafter until 2040. Each utility will provide two LOLP results for each year—one based on modeling that includes the incremental resource additions included in each utility's IRP preferred portfolio and one that reflects the resource assumptions in paragraph 3(f) and (g) of Staff's proposed Best Practices (i.e., the LOLP results will reflect resource retirements and no uncommitted incremental resource additions).
- Each utility will provide a reliability-based analysis comparable to Effective Load Carrying Capacity (ELCC) results for a wind resource and a solar resource for 2024. The ELCC results will be based on resource characteristics used in each utility's most recent IRP.
- Each utility will provide ELCC results for a solar resource in 2032, based on resource characteristics used in each utility's most recent IRP.
- Each utility will provide ELCC results for a solar resource in 2040, based on resource characteristics used in each utility's most recent IRP.
- Each utility will provide the base case inputs used for the LOLP and ELCC studies, subject to appropriate protections for confidential information. In particular, each utility will provide a generation profile for the proxy resource (i.e., the new wind or solar resource) and the generation profiles for existing resources, subject to appropriate protections for confidential information.

- The Joint Utilities will provide a step-by-step explanation of how to determine a resource's capacity contribution based on the LOLP results.

PGE appreciates the opportunity to explore the 8760 LOLP methodology for assessing resource capacity contributions. When PGE began this exploration, it did so with the expectation that the methodology could estimate resource capacity contributions in a more efficient manner than running ELCC studies. However, through this exercise, PGE found that the 8760 LOLP methodology is not a substitute for ELCC. It overlooks key elements of an in-depth capacity contribution study, including:

a) The 8760 LOLP method does not have diminishing returns due to resource saturation. For example, it assigns the same capacity contribution value to 1 MW of resource as it does to 1,000 MW of resource (in percentage terms). This misses the diminishing marginal return that occurs when adding more of the same resource to the system.

b) The LOLP method does not capture the unique interactions between historical weather patterns and resource generation. This may value the resource inappropriately by missing temperature and generation correlations that are included in ELCC model.

c) The LOLP method does not capture resource interactions. This could be problematic in a system that has large amounts of energy-limited resources.

Consistent with company statements throughout the UM 2011 docket, PGE remains uncomfortable assigning resource capacity contribution estimates (using either 8760 LOLP or ELCC methodologies) in outer years. Given continually changing policies and technology costs, the accuracy of an updated IRP decreases substantially as an IRP's vintage increases. PGE recreates or updates its IRP regularly to adjust to this shifting policy and cost picture. Inclusive of these updates are improved estimates of resources capacity contribution. PGE advises against departure from established IRP methodology in this manner.

Attachment A contains the results of the modeling, as well as a tab that contains a step-by-step explanation of how to determine the capacity contribution based on the LOLP results in addition to a template that parties may use to calculate the capacity contribution. Attachment A is confidential and subject to General Protective Order 22-004.

PGE thanks the Commission for allowing time to explore this methodological pathway. This information will help to further inform future discussions in UM 2011 and PGE values the opportunity to provide illustrative data.

Sincerely,

\s\ Robert Macfarlane

Robert Macfarlane
Manager, Pricing & Tariffs