BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 2011

In the Matter of Public Utility Commission of Oregon, General Capacity Investigation.	**PORTLAND GENERAL ELECTRIC COMPANY'S COMMENTS ON STAFF'S ANNOUNCEMENT PROPOSAL FOR CONCLUSION OF DOCKET UM 2011**

INTRODUCTION

Portland General Electric Company (PGE) submits these comments in docket UM 2011 in response to the Public Utility Commission of Oregon (Commission or OPUC) Staff's September 23, 2022, *Announcement Proposal for Conclusion of UM 2011*. PGE appreciates the time Staff and stakeholders have spent investigating this important issue and creating a list of best practices, and PGE supports Staff's effort to bring this long-running docket to a conclusion.

In these comments, PGE:

- Seeks confirmation regarding the applications to which Staff's suggested best practices do and do not apply;
- Explains that use of Staff's methodology is not practical in certain contexts, such as the IRP, and therefore, if the best practices were to apply to the IRP, PGE would likely take advantage of the flexibility included in Staff's proposal and continue to use the methodology built into the Sequoia adequacy model; and
- Disagrees with Staff's proposal to perform capacity contribution studies for years beyond the first year of major resource need.

I. APPLICATION OF BEST PRACTICES

STAFF TEXT:[1]

> These policies and procedure are applicable when calculating the capacity contribution of a supply or demand side resource, generally whenever a specific resource type and not a portfolio of resources is being considered (incremental vs portfolio capacity analysis). This currently includes regulatory purposes such as

[1] Staff's text is included for reference purposes and excludes footnotes and figures.

> administrative pricing, cost effectiveness and customer program design, resource adequacy analysis, planning, and procurement.

PGE seeks to confirm that Staff intends their suggested best practices would not apply to the integrated resource plan (IRP), request for proposal (RFP) process, or distribution system planning (DSP) workstreams since those processes usually result with a portfolio of resources being selected. Additional clarity from Staff regarding what processes, and where in the processes, Staff's best practices are directed to would be helpful as PGE works to incorporate the best practices.

In addition, PGE requests that the Commission confirm that adoption of the best practices in docket UM 2011 does not predetermine the outcome of the upcoming investigation into PURPA avoided cost pricing in docket UM 2000, and that parties are free to advocate for PURPA avoided cost methodologies that differ from the best practices. As the utilities have explained throughout this docket, parties may wish to explore novel approaches to PURPA avoided cost pricing in docket UM 2000, and even if the current framework is maintained, the Commission should not adopt specific capacity contribution or valuation guidance applicable to PURPA until all interested parties have had an opportunity to address the proposal and to provide evidence and legal argument. Moreover, adopting aspects of the PURPA capacity pricing methodology in isolation, rather than considering PURPA avoided cost prices holistically, runs the risk of requiring customers to pay more than the utility's avoided cost for QF generation.

II. MODEL DETERMINATION

STAFF TEXT:

> The most accurate and preferred methodology to calculate the capacity contribution of all types of supply-, and demand-side resources (including hybrid resources') is Effective Load Carrying Capability (ELCC).
>
> In the event that calculating ELCCs for many resources for many years is not practical from a utility workload perspective, a utility may use an alternate method to estimate resource capacity contribution. One such "qualifying" alternate method is developing normalized 8760 LOLP values for each year of the study period. In an overlay capacity-contribution approach using the 8760 LOLP value matrix, the capacity contribution of a variable resource must be derived taking into account both the distribution of its output across available actual or synthetic weather and the resource adequacy power reliability standard such as overlaying each of the eight years of variable generation and selecting a capacity value that can reasonably be relied upon for planning purposes.

PGE agrees that ELCC is the preferred methodology for capacity contribution calculations. As discussed in more depth below in section III, Tuning, PGE runs ELCCs slightly differently than the method suggested by Staff. Therefore, for efficiency, PGE expects to take advantage of the flexibility built into the best practices regarding the exact steps used for ELCC calculation.

III. TUNING

STAFF TEXT:

> ELCC is calculated by the following steps: 1) calculating system reliability, 2) adding or subtracting perfect capacity or perfect load to achieve the target reliability metric, 3) adding the desired resource to the resource portfolio, and then 4) removing perfect capacity until the target reliability is restored.

PGE calculates ELCCs differently than the steps suggested by Staff. In some contexts, such as the IRP, the steps suggested by Staff would not be practical from a utility workload perspective. Therefore, PGE expects that it would continue to use its current method, with some adjustments, for efficiency. PGE understands that Staff's proposal gives PGE the flexibility to use an alternative method to estimate resource capacity contribution.[2]

When calculating ELCC values, PGE runs the Sequoia model (the Company's adequacy model) in the following steps:

1. The model runs once to establish a baseline system capacity need.
2. The model runs again with a new resource added.
3. The difference in capacity need from the base system to the system with the resource added determines how much capacity the resource contributes. For example, if the capacity need were 100 MW in the baseline system, and 60 MW with a new resource added, the resource is providing 40 MW of capacity (100 - 60).

The method used by PGE is an efficient capacity contribution calculation method as it has fewer iterations than the method proposed by Staff (which requires successive levels of perfect capacity to be removed from the model in its final step). PGE's method is the same method used by the Northwest Power & Conservation Council's 7th Power Plan to determine resource capacity contribution and is similar to the method used by the Council in the 2021 Power Plan.

PGE runs over 100 ELCC values for the IRP portfolio model, and these values are recalculated with every model change. Being required to run iterative ELCC studies, as suggested by Staff, would slow PGE's ability to produce ELCC values, and in turn would likely lead to a lower number

[2] Staff Capacity Value Best Practices (Sept. 23, 2022) ("In the event that calculating ELCCs for many resources for many years is not practical from a utility workload perspective, a utility may use an alternate method to estimate resource capacity contribution.").

of resources studied. Therefore, PGE expects that it would continue to run ELCC studies using its current methodology. Moreover, Staff has not articulated specific benefits in its approach versus PGE's approach that would justify switching, given the difference in workload between the two methods.

As mentioned above, PGE seeks to confirm its understanding that Staff's proposal does not apply to IRPs. If the proposal were to apply to IRP portfolio analysis (where over 100 ELCC values are calculated), PGE would likely have to reduce the number of resources studied due to time considerations. Additionally, starting with an adequate system may pose challenges for analyzing the capacity contribution of large resource additions that occur in the IRP preferred portfolio (the model may run out of adequacy problems to solve).

If this recommendation applies to areas where a single point ELCC estimate is needed, PGE could work to incorporate Staff's guidance on model tuning (starting the analysis with an adequate/near adequate model) while retaining the efficiency of the current PGE approach. This would be done by adding resources/perfect capacity to the model until close to adequate, and then running the model using the PGE approach.

IV. BASELINE RESOURCE ASSUMPTIONS

STAFF TEXT:

Capacity contribution modelling should include reasonable estimates of the distribution of output for variable generation resources using actual weather data where available.

a. Modeling the output of resources should:

i. Use no less than eight years of the most recent output data for the resource. Where eight years of actual data is not available, the utility should use synthetic data that reasonably represents future actual data with respect to mean and variance. Synthetic data sources should be reasonably transparent and understood by stakeholders. The synthetic data observation values should be matched with utility load levels with respect to year, month, and hour.

ii. Include adjustments to historic weather and generation data, as appropriate, to reflect potential impacts of climate change. For these adjustments, the utility must also separately identify the climate change related impact on the distribution of the resource output.

b. Variable resources should have at a minimum:

i. Monthly generation forecasts and variability;

ii. Hourly generation forecasts and variability; and

iii. Analysis of the relationship of resource output variability during peak load hours.

c. The ELCC computations should reflect best estimates of resource additions and retirements at of the time of the study.

d. Resource additions should be made to the utility's supply-side resources to reflect the utilities most recently acknowledged preferred portfolio updated to reflect any actual RFP procurement which operates under the required statutory constraints in a safe and reliable manner while limiting excess costs and unwarranted investment. Further additions outside of the preferred portfolio should include:

i. Non-PURPA resources that are contractually committed, including voluntary customer supported supply-side resources;

ii. PURPA projects that are contractually committed to come on-line and reasonably expected to produce power; and,

iii. Customer owned or supported resources, outside the direct control of the utility with respect to timing of installation, that are reasonably expected to result in either reduced loads or an increase in total supply dedicated to meet loads.

e. The utilities should continue to use their full IRP models to compute the present value revenue requirement of different proposed resource procurement decisions when able.

PGE already uses hourly synthetic NREL data for proxy resource ELCC calculations with more than eight years of data. PGE is limiting resource and load profile data to the most current 30 years available in the 2023 IRP in part to reflect climate change, and will continue to investigate using climate model data for future planning work.

V. TEMPORAL GRANULARITY

STAFF TEXT:

Annual values for resource capacity contributions should be derived using results from last-in ELCCs for each resource class. (Throughout this straw proposal "ELCC" refers to "last-in/incremental ELCC.") At a minimum, the IRP index of proxy resources must include at least four ELCC modelling year resource capacity contribution values. Unless otherwise warranted, the first ELCC modelling year shall be the first year where a major resource need is identified, and the last ELCC modelling year shall be the last year of the study period. The other two modelling years shall be selected by the utility, after considering input from Staff and

> stakeholders. Years of the study period not directly modelled shall have the ELCC annual capacity contribution values derived through interpolation using a reasonable method given the findings of the ELCC modelling analysis.

PGE disagrees with Staff's proposal to perform ELCC calculations beyond the first year of major resource need. Outside of the action plan window, which is typically two to four years after the IRP is published, there is uncertainty regarding the resource portfolio. This uncertainty grows over time, especially with power system decarbonization and the potential for large-scale end-use electrification. As a result, each future IRP will have a (potentially substantially) different portfolio for 2043 than the 2023 IRP, continuing until 2043 falls into the action plan window. Therefore, an ELCC value calculated for year 2043, or other years beyond the action plan window, is not very helpful as it will change with each new preferred portfolio. Analyzing ELCC values outside of the first year of resource need and beyond the IRP Action Plan will yield speculative results that are not usable for pricing purposes. Although the utilities have raised these concerns throughout Phase III of this docket, Staff has not explained why its proposal for increased temporal granularity is beneficial, nor has Staff explained how any value provided by its recommendation outweighs the burden that will be imposed by conducting extra ELCC studies.[3]

VI. & VII. INTERACTIVE EFFECTS

STAFF TEXT:

> Utilities should periodically perform analysis that determines if there is a correlation of weather/utility load data and renewable resource generation data. If such a correlation exists, then it should be included in the capacity contribution ELCC modelling.
>
> Duration of energy storage and demand response should be modeled to capture the effects of multiday weather events.

PGE agrees with this recommendation. PGE has done this analysis, and PGE's Sequoia model already captures these effects. Specifically, Sequoia uses load bins to create a level of correlation between resource generation and load. Sequoia also models capacity adequacy on a weekly (168 hour) timestep which captures the effect of multiday weather events (provided those events are less than 168 hours in length).

[3] PGE plans to perform an annual ELCC for the first tranche of resources as outlined by the Commission in its order acknowledging the 2019 IRP Update ("we adopt Staff's recommendation for PGE to compute ELCC values by year and present the findings with its next IRP.") *See* Order No. 21-129 at 4. This analysis is informational and not for pricing purposes.

VIII. ITEMS ADDRESSED IN USE-CASE CIRCUMSTANCES

STAFF TEXT: Generally, Staff's best practices relate to the appropriate calculation of a resource's capacity contribution (MW), but do not address capacity value ($/MW) or compensation. Staff continues to find merit in the principles presented in previous iterations of its best practices on the items listed below but looks forward to further discussion. Specific assumptions related to use -case applications may include:

a. Target reliability metric

b. Marginal resource characteristics and quantity (i.e., expectations for proxy marginal resource selection and differentiation)

c. Sufficiency/deficiency determination (i.e., whether and how to utilize in pricing)

d. Capacity compensation framework and methodological dependencies (e.g., use of 8760 LOLP for 8760 pricing)

e. Transparency and update process

PGE understands that Staff proposes to address the issues listed above in other dockets, and PGE agrees this is appropriate. PGE reiterates that the Commission should not adopt guidelines regarding capacity contribution that would apply to PURPA matters until the Commission has fully considered such proposal, and the resulting compensation, in the appropriate PURPA proceeding.

IX. AVOIDED RESOURCE DEFINITION

STAFF TEXT:

> The avoided resource should be informed by the feasibility and cost of alternative utility resource options under policy and market realities, including such issues as climate policy, transmission availability and interconnection queues. The avoided capacity resource should be the most cost effective form of capacity that can be used to serve Oregon load under those principles. Determination of the avoided resource should use ELCC modeling to weight the potential resources on a $/MW of capacity provided scale to identify the appropriate avoided resources unless legal or other considerations warrant the use of an alternative method.

PGE again notes that the avoided resource for PURPA purposes should be determined in docket UM 2000. In addition, PGE would appreciate clarification from Staff regarding what is intended by the last sentence, "Determination of the avoided resources…."