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October 20, 2021

VIA ELECTRONIC FILING

Attention: Filing Center
Public Utility Commission of Oregon
201 High Street SE, Suite 100
P.O. Box 1088
Salem, Oregon 97308-1088

Re: Docket UM 2011 – *Public Utility Commission of Oregon, General Capacity Investigation.*

Attention Filing Center:

Attached for filing in the above-captioned docket are the Joint Utilities' Comments on Staff's Best Practices Guidelines.

Please contact this office with any questions.

Sincerely,

Alisha Till

Alisha Till
Paralegal

Attachment

BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

UM 2011

In the Matter of PUBLIC UTILITY COMMISSION OF OREGON, General Capacity Investigation.	**JOINT UTILITIES' COMMENTS ON STAFF'S BEST PRACTICES GUIDELINES**

Portland General Electric Company (PGE), PacifiCorp dba Pacific Power (PacifiCorp), and Idaho Power Company (Idaho Power) (together, the Joint Utilities) respectfully submit these comments on Staff's "Capacity Value Best Practices" (hereinafter, the Proposed Best Practices) that was circulated to the parties on September 30, 2021.

Staff's Proposed Best Practices are a significant improvement over the straw proposals that were previously circulated on June 8 and July 13, 2021. Most importantly, Staff has included flexibility that allows the Joint Utilities to use alternative methodologies, rather than the rigidly defined and problematic Effective Load Carrying Capability (ELCC) approach recommended by Energy + Environmental Economics (E3) in its Whitepaper, filed on December 15, 2020. The Joint Utilities welcome this exception because it is responsive to their previously raised concerns. And given that serious concerns regarding Staff's ELCC approach remain unresolved, the Joint Utilities anticipate using alternative methodologies if the Proposed Best Practices remain unchanged.

The Joint Utilities generally agree with Staff's overall goal—to establish general best practices for estimating resource capacity contributions. However, all production cost modeling and modeling electric system operations must balance numerous competing objectives and some of Staff's requirements are overly prescriptive and fail to allow for a balance of data inputs that

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reasonably reflect all the desired objectives. In addition, given the nature of this investigation, Staff's proposal has not been tested using actual data and evidence to show that it produces reasonable results when applied to specific applications, such as qualifying facility (QF) avoided costs under the Public Utility Regulatory Policies Act of 1978 (PURPA). Adopting overly prescriptive and untested requirements in isolation from each utility's rigorous integrated resource planning (IRP) process could trigger unintended and unreasonable results when put into practice.

Instead of detailed and prescriptive requirements, the Joint Utilities continue to recommend that the Public Utility Commission of Oregon (Commission) adopt high-level guidance that allows flexibility to respond to rapidly evolving industry best practice and to utilize alternative methodologies if they are reasonable.

I. DISCUSSION

A. The Joint Utilities appreciate the flexibility included in the Proposed Best Practices and anticipate using alternative methods to estimate capacity contributions.

Consistent with Staff's initial ELCC modeling standards straw proposal circulated on June 8, 2021, paragraph 2 of Staff's Proposed Best Practices states the "capacity contribution of all types of supply-, and demand-side resources must be determined using the resource type's (including hybrid resources') Effective Load Carrying Capability (ELCC)." Paragraph 2 then outlines how the ELCC is calculated: "ELCC is calculated by the following steps: 1) calculating system reliability, 2) adding the desired resource to the resource portfolio, and then 3) removing perfect capacity until the original level of reliability is restored." Unlike its straw proposal, Staff

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now includes an exception that allows for alternative methodologies to estimate resource capacity contribution, subject to certain additional requirements.[1]

Over the course of this docket, the Joint Utilities have emphasized that Staff's proposal embodied in paragraph 2 is unworkable because it is overly burdensome. And further, Staff has adopted E3's narrow definition of ELCC without support.[2] These concerns remain unresolved.

As drafted, paragraph 2 would require a series of stochastic production cost model runs with many iterations for every resource configuration and multiple study years.[3] Because the precise level of perfect capacity is an input to the calculation but not known, studies must be repeated until the results achieve a desired level of accuracy. This represents potentially dozens of studies and weeks of model run time. For example, PGE's latest IRP included 12 proxy renewable and storage resources, and the ELCC methodology based on a single test year created 12 estimated ELCC curves. Generating four annual values would create 48 ELCC curves without also considering Staff's additional requirements regarding generic resource classes.

In addition to being onerous to produce, the results using Staff's preferred approach would not be transparent. For example, the resulting resource-specific capacity contribution value would not provide details about the timing of the capacity need or the relative benefits of generation and

[1] For reference, paragraph 11 states, in part: "In the event that calculating ELCCs for many resources for several years is not practical from a utility workload perspective, a utility may use an alternative method to estimate resource capacity contribution. One such "qualifying" alternative method is developing 8760 LOLP values for each year of the study period consistent with the requirements set forth in paragraphs 3 and 4 on study assumptions. 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 . . .").

[2] *See, e.g.*, PacifiCorp Comments on Staff's Effective Load Carrying Capability (ELCC) Straw Proposal (July 9, 2021); PGE Comments to Staff's straw proposal ELCC modeling standard (July 9, 2021). The Joint Utilities have supported determining capacity contribution based on the *techniques reflected in the ELCC methodology* but have steadfastly opposed Staff's characterization of the methodology that Staff envisions the utilities performing. *See* Joint Utilities' Reply Comments at 6 (Apr. 26, 2021).

[3] Although Staff's proposal reduced the number of study years that would be required, the burden associated with complying with Staff's proposal remains significant.

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storage in a hybrid resource. Employing Staff's narrowly defined ELCC methodology would also place the utility in a position of providing credit for capacity even when there is no capacity need, as discussed in more detail below. The rigidity of Staff's methodology, reflected in both paragraph 2 and in the study assumptions in paragraphs 3 and 4, would also constrain the utilities' ability to innovate and improve capacity contribution methodologies, which is an area where there has been considerable progress in recent years.

Staff also concedes that its proposed methodology will produce positive capacity contribution results under all circumstances, even if the utility has sufficient existing resources to meet its reliability planning targets.[4] Designing a methodology that produces a positive capacity value under all circumstances is unreasonable and fundamentally at odds with prudent utility resource planning, which seeks additional capacity resources only when needed.

Given the level of effort, inflexibility, and lack of transparency inherent in the requirements set forth in paragraph 2, the Joint Utilities intend to determine their estimated capacity contributions using alternative methodologies, as contemplated by paragraph 11. Because the Joint Utilities foresee using alternative methodologies, they offer two proposed modifications to the Proposed Best Practices to better reflect how the utilities will implement Staff's proposed capacity valuation methodology.

First, the Joint Utilities recommend that Staff modify paragraph 2. PGE proposed alternative language in its July 9, 2021, comments and reiterated its proposal in its August 2, 2021, comments. PGE recommended, and the Joint Utilities support, rewriting paragraph 2 as follows:

> The preferred method for estimating the capacity contribution of supply-side and demand-side resources is the Effective Load Carrying Capability (ELCC) methodology or similar probabilistic methods that estimate capacity performance based upon simulated reliability metrics. For the purposes of estimating incremental

[4] Proposed Best Practices at n. 3.

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> resource capacity contributions, the marginal capacity contribution methods should be identified (ex. "Last-in ELCC"). Utilities are invited to use alternative methodologies following demonstration of good cause to the Commission.

Adoption of the Joint Utilities' proposed language would obviate the need for paragraph 11 because it would specifically allow reasonable alternative methodologies, subject to the utility demonstrating good cause to the Commission. For example, PacifiCorp's July 9, 2021, comments outlined a reasonable alternative to Staff's preferred methodology that would provide comparable results based on its IRP's preferred portfolio, with the advantage of more transparency and accessibility. PacifiCorp's alternative methodology would also obviate the need for many of the study assumptions in paragraph 3 because 20 years of data will be readily available and can be applied to any resource configuration without additional model runs. Given the superiority of alternative methodologies, the Joint Utilities' proposal for paragraph 2 would better reflect best practices and should be included.

Second, and in the alternative, the Joint Utilities propose amending paragraph 11 to clarify: (1) that it does not apply only if the preferred methodology is too burdensome; (2) that an alternative methodology need not necessarily use consistent study assumptions as those described in paragraphs 3 and 4:

> ~~In the event that calculating ELCC for many resources for several years is not practical from a utility workload perspective,~~ A utility may use an alternative method to estimate resource capacity contribution. One such "qualifying" alternative method is developing 8760 LOLP values for each year of the study period ~~consistent with the requirements set forth in paragraphs 3 and 4 on study assumptions. 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~~. In the event the utility uses an alternate method

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to determine the capacity contribution of a resource, the utility shall prepare a written explanation that includes:
a. An explanation as to why the utility did not use the ELCC modelling approach;
b. A detailed description of the alternative method;
c. A discussion of how the utility's alternative method reflects best practices ~~and conforms to the modelling objectives and directions contained in paragraphs 3 through 6~~; and
d. Whether the utility expects it will be practical to use the ELCC method in the future.

These edits provide broader flexibility for the use of alternative methodologies for any reason provided the utility demonstrates the reasonableness of its alternative. These edits recognize that the burdensomeness of Staff's preferred approach was only one reason that the Joint Utilities objected to its use. The substantive requirements and assumptions were also problematic and justify providing an opportunity to use reasonable alternative methodologies. Moreover, the Joint Utilities recommend striking the reference to the study assumptions in paragraphs 3 and 4 because those assumptions remain unreasonable, as discussed in the following section.

B. Staff's proposed study assumptions are overly prescriptive and unreasonable.

Industry best practices for estimating resource capacity contributions are constantly evolving as additional data and computational methodologies become available. Staff's Proposed Best Practices include overly prescriptive study assumptions in paragraphs 3 and 4 that will stifle innovation and lock-in a framework that may prove obsolete within a few years. In addition to being too rigid, Staff's proposed study assumptions also depart from well-established principles of utility resource planning.

1. Staff's proposal to ignore new resources would produce meaningless capacity contribution results (paragraph 3(g)).

Paragraph 3(g) excludes non-committed resources from the capacity contribution studies. Implementing this proposal would require the Joint Utilities to evaluate a portfolio that becomes grossly unreliable over time as load increases, resources retire, and contracts expire. For example,

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the load-and-resource balance in PacifiCorp's 2021 IRP shows that PacifiCorp has a capacity deficit in all years of the planning horizon—starting at 1,071 MW in 2021 and then rising over time to over to 6,600 MW by 2040.[5] The resource portfolio used to determine a resource's capacity contribution must have sufficient resources to make it reliable, which is why the study must include the incremental resources from the IRP's preferred portfolio. Any portfolio that does not provide adequate reliability is irrelevant for purposes of determining an individual resource's capacity contribution. Indeed, the first step in Staff's recommended ELCC calculation is to calculate system reliability. That cannot occur in any meaningful way if the system is unreliable due to lack of resources.

Moreover, a resource's capacity contribution is portfolio-dependent, and recent least-cost, least-risk outcomes indicate that the greatest benefits are achieved using a mix of resource types including wind, solar, and storage. Ignoring the composition of the least-cost, least-risk portfolio (by excluding the expected build out of the most beneficial uncommitted resources) will fail to provide an accurate representation of an individual resource's capacity contribution. This is particularly true for the last-in methodology where the timing and order of incremental resource additions can potentially impact the capacity contribution of the resource being studied.

2. Determining multiple capacity contribution values over the 20-year planning horizon is unreasonable (paragraph 3(e)).

The Joint Utilities currently determine resource capacity contributions in their IRPs using a single test year. Staff recommends each utility calculate at least four annual estimates of capacity contribution for every resource type and then extrapolate annual values for 20 years. Staff has not explained how the value provided by its recommendation outweighs the significant burden that

[5] *See* PacifiCorp's 2021 Integrated Resource Plan, Vol. I, Table 6.12.

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will be imposed. The Commission should not adopt such an onerous requirement in isolation and without the benefit of evidence.

Instead, the Joint Utilities recommend that each utility discuss in its IRP public process the number of years for which capacity contribution estimates will be developed. This is consistent with the approach taken in PGE's 2019 IRP Update, where Staff recommended, PGE agreed, and the Commission ordered that capacity contribution estimates be developed for years beyond the test year in PGE's subsequent IRP. Rather than prejudging the usefulness of annual estimates here, the Joint Utilities favor considering and evaluating the number of test years within the context of the IRP process, understanding that the IRP itself will neither rely on the methodology addressed here nor include capacity contribution results.[6]

Consistent with the foregoing, the Joint Utilities recommend that paragraph 3(e) be amended to read:

> Capacity contribution estimates should be developed for each generic resource class. The capacity contribution values should be based on one or multiple test year(s) or test year period(s). The test year(s) or test-year period(s) will be identified and updated for each utility IRP. Capacity contribution estimates should be updated in each IRP and IRP Update as appropriate.

3. The Proposed Best Practices should clarify that the number of resource classes should be determined in each utility's IRP (paragraph 3(b) and (c)).

Staff recommends that each utility develop a capacity contribution estimate for certain defined resource classes and includes a provision that allows for additional resource classes to be included in the future. Staff does not, however, identify the resource classes. Mindful of the burden associated with estimating capacity contributions, the Joint Utilities recommend that each utility identify the appropriate number of generic resource classes for which capacity contribution

[6] *See* Proposed Best Practices, paragraph 14 (proposing that utilities report capacity valuation results post-IRP).

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estimates are required in its IRP, based on consideration of factors such as technology, plant design, geography for generating sources, and duration and efficiency for energy storage.

4. Staff's proposed use of eight years of data, including synthetic data is arbitrary and unreasonable (paragraph 4(a) and (b)).

For both existing and new resources, Staff recommends using eight years of actual data, if available, supplemented with synthetic data from third-party vendors if there are not eight years of actual data available. Staff's blanket requirement for the use of eight years of data—including synthetic data as necessary—is arbitrary and fails to strike the correct balance of data quality versus quantity given the range of assumptions that are incorporated in synthetic modeled generation profiles.

Staff has presented no evidence that using eight years of combined historical and synthetic data produces a superior capacity contribution estimate, particularly given the potential costs that will be incurred to obtain synthetic data from third-party vendors. The most accurate estimate of expected annual output (i.e., the "mean" in paragraph 4(a)(i)) comes from detailed modeling of the proposed site and equipment, which is generally performed by the project developer (or their consultant) and incorporates onsite meteorological data. Generic historical or synthetic data sources do not have the same level of detail and refinement. Moreover, if site-specific information is unavailable, the Joint Utilities generally have sufficient historical data that is superior to using a combination of historical data and synthetic data.

Staff's methodology should prioritize data quality, instead of mandating a specific quantity, and should allow flexibility for methodologies to change and improve as data sources evolve. Public data sets developed by the National Aeronautics and Space Administration and the National Renewable Energy Laboratory can provide a good estimate of the "variance" in an individual location, and if the data is available for a specified period that overlaps with the data for the utility's

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load or other existing generation, expected relationships between a proposed resource and load or existing generation can be defined and incorporated in modeling. But the details of how that should be achieved are continually under development, both as a result of evolving methodologies and the increasing availability of actual data. Emphasizing data quality and allowing data methodologies to evolve are particularly important given Staff's desire to incorporate the impacts of climate change.

Staff also requests that the utilities adjust historic weather and generation data, as appropriate, to account for climate change. Separately, in paragraph 6, Staff recommends that the utilities' modeling account for the impact of multi-day weather events in the duration of energy storage and demand response. It is unclear what specific analysis Staff envisions and whether these two requirements are duplicative or distinct.

C. Separately analyzing the correlation between weather and utility load data is unnecessary (paragraph 5).

Staff recommends that with each IRP filing, utilities should include analysis that determines if there is a correlation of weather/utility load data and renewable resource generation data. Further, if such a correlation exists, then it should be included in the capacity contribution ELCC modelling. The Joint Utilities agree that the potential correlation of weather and utility load data needs to be embedded in the capacity contribution calculations, but there is no reason to require additional duplicative analysis.

D. Resource degradation must be accounted for when estimating capacity contribution (paragraph 10(a)).

Staff recommends that each resource's capacity value will be calculated based on the annual capacity contribution values and that the capacity contribution in terms of megawatts will not be discounted over time. It is unclear what Staff intends with this requirement, but to the extent

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Staff is recommending that the modeling ignore, for example, solar generation degradation over time, Staff's recommendation is unreasonable.

E. Energy and capacity benefits must be aligned when estimating capacity value (paragraph 9(b)).

In paragraph 9(b) Staff recommends that the capacity value account for any "dispatch benefits unrelated to providing capacity." It is important that energy and capacity benefits be aligned. To the extent compensation for energy is based on market prices, rather than the generally lower system marginal costs from a production cost model, the netted dispatch benefits of the least-cost capacity resource should also be valued based on market prices rather than marginal costs.

F. The Proposed Best Practices must be amended to clarify that they are not mandatory for any specific application.

Staff's cover letter that accompanied the Proposed Best Practices states, "Staff proposes to recommend that the Commission adopt the Best Practices as guidelines that utilities are expected to adhere to across various use cases." But, according to Staff, "To the extent the Commission adopts the Best Practices as a mandatory method to value capacity, i.e., for PURPA avoided cost prices, *the Commission would do so in a different docket, i.e., UM 2000*."[7] The Joint Utilities agree that before adopting Staff's proposal for use in any specific application—particularly PURPA avoided cost pricing—the Commission must make that determination in a separate docket where Staff's proposal can be rigorously tested using actual data.

Consistent with Staff's apparent position that the Proposed Best Practices should not become mandatory as a result of this investigation, the Proposed Best Practices must be amended. Paragraph 1 states:

> These policies and procedure are applicable when assigning a capacity value to a supply or demand side resource, outside of an Integrated Resource Plan portfolio analysis, Request for Proposals

[7] Emphasis added.

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> under Division 89, or Resource Adequacy program(s). This currently includes the following regulatory purposes: PURPA Resource avoided capacity cost determinations, energy efficiency cost effectiveness, demand response cost effectiveness, storage pilot cost effectiveness, resource value of solar determinations, and voluntary green tariff development and procurement.

This paragraph appears to make the Proposed Best Practices "applicable" to PURPA avoided cost pricing determinations, which is directly contrary to Staff's statement in the cover letter that the Proposed Best Practices will not apply to PURPA avoided cost pricing determinations unless and until the Commission makes that determination in an appropriate PURPA-specific docket, like docket UM 2000.

Staff should also clarify the relationship between the Proposed Best Practices and the IRP. Paragraph 1 states that the Proposed Best Practices do not apply to IRPs. But elsewhere, the document refers to an "IRP index," although it is unclear what that is. In addition, paragraph 5 describes climate-change-related modeling that will be included in each utility's IRP, even though the Proposed Best Practices are not supposed to apply to IRPs according to paragraph 1.

G. Staff's capacity valuation methodology would violate PURPA if applied to avoided cost pricing.

If Staff's methodology for determining a capacity value is to be applied in calculating PURPA avoided cost pricing, it is contrary to the fundamental customer-indifference requirement. Staff acknowledges that its proposal would result in a positive capacity value for a new resource even if a utility is resource sufficient and has no need for additional capacity to meet system reliability targets.[8] To the extent this would produce a capacity payment to a QF without regard for utility need, it violates PURPA. Long-standing FERC precedent is clear—if the utility has no

[8] Proposed Best Practices at n. 3. Although Staff claims that the ELCC will produce positive values in all circumstances, even strictly applying the ELCC can result in a resource having a zero capacity contribution once there is no additional "perfect capacity" that can be removed.

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need for additional capacity, the avoided cost of capacity is zero.[9] The Ninth Circuit recently affirmed that a "QF would not be entitled to capacity costs unless it actually displaced the utility's need for additional capacity."[10] By creating positive capacity values (and therefore capacity payments) without regard for whether the QF allows the utility to avoid capacity costs, Staff's proposal is fundamentally inconsistent with PURPA and cannot be used to determine PURPA avoided cost prices.[11]

Moreover, Staff's proposal to increase the capacity value over a ramp-in period is arbitrary and lacks an evidentiary basis. Therefore, while the arbitrary ramp-in period may be acceptable in the abstract, it cannot form the basis for avoided cost pricing without evidence that it reasonably reflects the capacity costs a utility would *actually avoid* as a result of a QF transaction.

Finally, the Joint Utilities reiterate that when establishing avoided cost prices, the capacity component cannot be viewed in isolation. PURPA mandates that customers pay no more than a utility's avoided costs. A methodology that separately determines the avoided cost of capacity and the avoided cost of energy without considering the holistic results runs the risk of forcing customers to pay more for QF generation than they would otherwise.

II. CONCLUSION

The Joint Utilities appreciate Staff's flexibility to allow alternative methodologies for estimating resource capacity contributions, as Staff's primary recommendation remains unduly burdensome and unreasonable. The proposed modifications discussed above will ensure that the ability to use alternative methodologies is not unreasonably hindered by overly prescriptive study

[9] *See Qualifying Facility Rates and Requirements Implementation Issues Under the Public Utility Regulatory Policies Act of 1978*, 172 FERC ¶ 61,041 at P 424 (2020).
[10] *Californians for Renewable Energy v. Cal. PUC*, 922 F.3d 929, 938 (9th Cir. 2019); *id.* at 939 ("PURPA requires utilities to compensate QFs for capacity costs *only when purchasing energy from the QF allows the utility to forgo spending its own money on capacity*.") (emphasis added).
[11] *Id.* at 937 ("FERC interpreted PURPA to require an examination of the costs that a utility is *actually avoiding*.") (emphasis in original).

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assumptions and will better ensure that each utility's estimated resource capacity contributions are workable, reasonable, and compliant with applicable legal requirements when taken together with the proposal for calculating capacity contribution.

DATED: October 20, 2021.

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/s/ Adam Lowney

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