BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 2011

In the Matter of UM 2011 General Capacity Investigation	NOTICE OF COMMISSION WORKSHOP AND AGENDA

As indicated in the September 30, 2021 Staff Letter, the Public Utility Commission of Oregon will hold a Commission workshop via webinar. This notice contains the Zoom meeting information and an agenda for our discussion.

DATE: November 4, 2021

TIME: 2:00 p.m.

PARTICIPATION: Zoom Meeting
https://opuc-state-or-us.zoom.us/j/81283111568?pwd=eTQzNWFtUEZiMERCM2dzNWExcVNVUT09

Call-in: 971-1247-1195
Meeting ID: 812 8311 1568
Passcode: 4935639798

AGENDA:

- **Welcome and Background (Staff)**
- **Perspectives on the Staff Capacity Value Best Practices proposal and docket schedule.** For each of the items below, Staff will provide a brief overview of Staff's recommendation and then invite stakeholder perspectives. Commissioners are encouraged to ask questions and share their thoughts during the Staff and stakeholder discussion of each issue from the *attached* Issues Matrix. Staff will conclude each agenda item with an opportunity for additional Commission discussion/feedback.

  Issues from the *attached* Issues Matrix and Staff's proposed process and schedule:

  I. **Utility Deliverables** (paragraphs 2, 3, and 11 of Staff's capacity value best practices)
  II. **Applicability** (paragraph 1 of Staff's capacity value best practices)
  III. **Supply-side resources to include** (paragraph 3, part f and g of Staff's capacity value best practices)
  IV. **Resource deficiency period** (paragraph 8 of Staff's capacity value best practices)
  V. **Other issues** (opportunity to discuss topics not addressed above)
  VI. **Staff's proposed process and schedule** (September 30, 2021 Staff letter)

- **Closing Commission thoughts/comments**

If you have questions, please contact Max St. Brown at max.st.brown@puc.oregon.gov

UM 2011 – General Capacity Investigation
November 4, 2021 Commissioner Workshop

Issue matrix: list of issues and recommendations for Commissioner Workshop discussion, with excerpts from Staff and stakeholders.

Positions ↓ / Issues →	I. Utility deliverables	II. Applicability	III. Supply-side resources to include	IV. Resource deficiency period	V. Other Issues raised by stakeholders	
Staff	See paragraphs 2, 3 and 11 below	See paragraph 1 below	See paragraph 3, part f and g below and Appendix	See paragraph 8 below		
Joint Utilities	"each utility discuss in its IRP public process the number of years for which capacity contribution estimates will be developed"	"The Proposed Best Practices must be amended to clarify that they are not mandatory for any specific application"	"the study must include the incremental resources from the IRP's preferred portfolio"	[lacking] "evidence that it reasonably reflects the capacity costs a utility would *actually avoid* as a result of a QF transaction"		
OSSIA	"an 8760 set of LOLP values would allow projects that include storage to alter their output profile in order to maximize their LOLP weighted average capacity factor"	"there is no reason why such best practices should not apply in the broadest scope possible"		"recommend adopting a uniform three-year ramp-up period for all three utilities."		
Renewable Northwest	Add additional ELCC resource classes based on "technical configurations and designs"	"establish Best Practices for use across all other applications, including resource planning and				

		greenhouse gas reduction efforts"				
REC				"Alternatively, the Coalition recommends that they be valued based on the marginal contribution measured when they first committed to serve, and not when they renewed their utility contract."	← "strongly recommends eliminating the sufficiency-deficiency demarcation. At minimum, … for existing resources." (March 8, 2021)	
NWEC	"it may be appropriate to discuss resource class "buckets" or reference facilities to help standardize analysis [across utilities"	Consider applying to IRPs, RFPs and resource adequacy.				
NewSun Energy	"how much capacity a resource provides should… reflect both the geographic diversity and the interannual production.[7] It should not be based on a single facility or a single year." (March 8, 2021)					
Obsidian Renewables			"If it is prudent to pay shareholders for capacity acquisitions in advance of need, then it is prudent to pay third party suppliers on the			

			same time horizon." (March 8, 2021)			

UM 2011
Staff Capacity Value Best Practices – Updated Draft
September 30, 2021

1. 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 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.

Requirements for modeling standards

2. Except as discussed in paragraph (11) below, 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). "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."[1,2]
3. Annual values for resource capacity contributions shall be derived using results from last-in ELCCs for each resource class. (Throughout this straw proposal "ELCC" refers to "last-in/marginal ELCC.")[3, 4, 5]
    a. The yearly capacity contribution values for each resource class should match the life of the resource or twenty years, whichever is less. [6]

[1] E3's December 15, 2020 Principles of Capacity Valuation Report at 2.
[2] Staff assumes that this computation method causes resources to have ELCC > 0% in resource sufficiency periods.
[3] For example, see E3's December 15, 2020 Principles of Capacity Valuation Report at 18: year one ELCC of 25% and year two ELCC of 44.4%.
[4] Stakeholders have argued that non-dispatchable resources are modeled to serve less baseload demand then they might actually serve when a single snapshot year of analysis is used.
[5] A "resource" type can be distinguished by different types of the same resource or different locations and includes hybrid resources. See (3)(b).
[6] As a condition of LC 73 IRP Update Order No. 21-129 PGE is to compute ELCC values by year for its next IRP. Staff anticipates that the quantity of hours with potential loss of load increases as there are fewer supply-side resource over time.

b. Each defined resource (which includes hybrid) class should capture a meaningful and distinct set of characteristics such as plant design, age, and geography for renewable resources and duration and efficiency for energy storage. [7]
c. At the request of Staff or a stakeholder(s) and for a demonstrated purpose the utility should add a new resource class unless the utility can demonstrate that that new ELCC value is expected to be within 5 percent of an existing ELCC value.[8]
d. As inputs are available, the utility will compute ELCC yearly capacity contribution values for energy efficiency and demand side management programs.
e. At a minimum, the IRP index described above must include at least four ELCC modelling year resource capacity contribution values. Unless otherwise warranted, the first ELCC modelling year shall be the designated year of 100 percent ramp-in of the study period (see paragraph 8 below), 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.
f. The ELCC computations should reflect best estimates of resource retirements as of the time of the study.
g. Resource additions should not be included in the utility's supply-side resources unless they are:
    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.
h. 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. Yearly ELCC values should be used for procurement decisions that are not evaluated using IRP-like modelling and analysis.

4. For any application of ELCC or alternate analysis, the modelling must include reasonable estimates of the distribution of output for variable generation resources using actual weather data where available.
    a. Modeling the output of existing resources must:
        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 must use synthetic data that reasonably represents future actual data with respect to mean and variance. Synthetic data sources must be independently generated from third party vendors. The synthetic data observation values should be matched with utility load levels with respect to year, month, and hour.

[7] This requirement is reproduced from E3's December 15, 2020 Principles of Capacity Valuation Report.
[8] For example, Staff expects that a hybrid resource with storage equal to 50 percent of the renewable resource nameplate will need a new resource class because its ELCC value will be sufficiently different than with storage equal to 25 percent of the renewable resource nameplate.

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. Modeling the output of new resources must:
   i. Use a data source based on no less than eight years of the most recent weather-related data. Where eight years of actual data is not available, the utility must use synthetic data from an independent third-party source that reasonably represents future actual data with respect to mean and variance.
   ii. Include adjustments to historic weather and projected generation data if appropriate to reflect the potential impacts of climate change. For these adjustments, the utility must also identify the impact of the climate change on the distribution of the resource output.

c. Variable resources must 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.

d. The utility must provide, concurrent with its ELCC reporting, 8760 hourly LOLP values for each year of the study period.

5. 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. If such a correlation exists, then it should be included in the capacity contribution ELCC modelling.
6. Duration of energy storage and demand response should be modeled to capture the effects of multi-day weather events.

Requirements for calculating the value of capacity contribution

7. When assigning a dollar value to the capacity contribution of supply- or demand-side resources (including hybrid resources), the price will be determined using the resource type's ELCC (or alternate approach) multiplied by the relevant cost of capacity.
8. For the purpose of determining capacity value, a ramp-in period must be used as follows:
   a. For PGE and PAC, the value of capacity for a non-utility resource shall increase in increments over the first three years of operation: 0 in year 1, 1/3 in year 2, 2/3 in year 3, and 100 percent in year four with all percentages being applied to the fourth year capacity value.[9]
   b. For IPCo, the value of capacity for a non-utility resource shall increase in increments over the first five years of operation.
   c. If in any year the ramp-in capacity contribution value is less than the estimated capacity contribution value of that resource absent ramping in that year, then the ramp-in value for that resource shall not replace the capacity contribution value for that resource for that year.

[9] Payment for capacity is outside the scope of this docket and is addressed in AR 631 and potentially UM 2000.

d. The percentages and ramp rate should be reviewed no less than once every three years. Beginning in 2026, the number of ramp years can be reconsidered if there are significant changes to the utility's acquisition rate of major resources. A major resource (or aggregate of resources) is that with a duration greater than five years and output greater than 80 MW.[10]
e. For new resources representing existing resources whose existing power purchase contract is expiring, no ramp-in is applicable and the value of capacity in what would have been ramp-in years equals year four capacity value.

9. The determination of the least cost capacity renewable or non-renewable resource must comply with the following standards:
    a. Be reasonably available;
    b. Reflect the least cost capacity resource in dollars per MW on a netting basis accounting for any dispatch benefits unrelated to providing capacity;
    c. Be able to operate and deliver to the utility's Oregon jurisdiction in compliance with state policy;
        i. If new transmission facilities would be required in order to deliver the output of the proxy capacity resource to the utility's Oregon jurisdiction, such costs should also be included.
    d. May be a different resource at different years of the study period; and,
    e. May reflect the results of competitive solicitations if such outcomes are reasonably expected to occur again and do not reflect one-time opportunities.
10. Resource capacity value will be calculated accounting for each of the yearly capacity contribution values.[11]
    a. The capacity contribution in terms of MW is not discounted over time.
    b. Costs are discounted consistent with standard IRP practices.
11. 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. In the event the utility uses an alternate method 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

[10] OAR 860-089-0100(1).

[11] For example see E3's December 15, 2020 Principles of Capacity Valuation Report at 18: year 1 ELCC of 25% multiplied by year 1 capacity price of $30/kW-year and year 2 ELCC of 44.4% multiplied by year 2 capacity price of $100/kW-year. This pattern of yearly ELCC values and yearly capacity costs would continue for year 3 and beyond.

d. Whether the utility expects it will be practical to use the ELCC method in the future.

The utility must retain the written explanation and submit it with any Commission filing incorporating its capacity contribution determination and make it available to the Commission and stakeholders upon request.

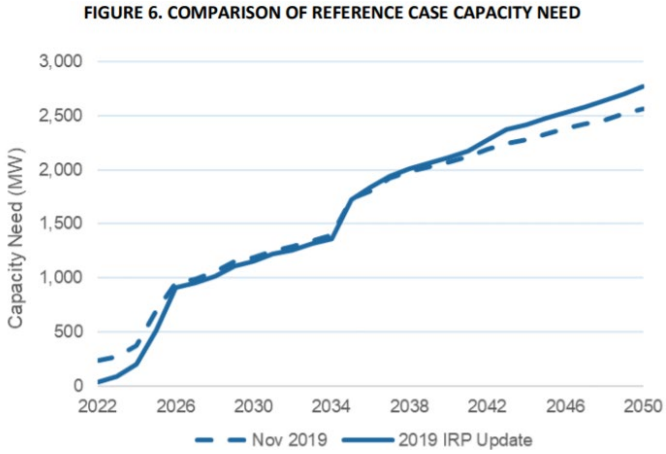
12. Any data used must be made available for verification including weather-related data from third party sources.

Administrative Provisions

13. All electric utilities shall file the initial report of estimates of resource capacity contribution and value of capacity consistent with these guidelines no later than July 1, 2022.
14. Subsequent to the initial report, the yearly capacity contribution values should be updated within 30 days following Commission acknowledgment of a utility's IRP and also at any time since the last report that the utility has entered into a contractual commitment to acquire new resources or qualifying power purchases, totaling in aggregate at least five percent of the then current load in terms of aMW or MW, respectively.

APPENDIX

Reproduction of PGE 2019 IRP Update Figure 6: Comparison of Reference Case Capacity Need
LC 73, PGE, January 29, 2021, page 35, available at: https://edocs.puc.state.or.us/efdocs/HAH/lc73hah13049.pdf



VI. Staff's proposed schedule

September 30, 2021 Staff letter

Proposed Schedule

The detailed schedule below outlines Staff's plan to conclude UM 2011:

UM 2011 Final Steps	
Commission Workshop to review Staff's updated proposal, discuss stakeholders' comments, and receive Commission feedback on Capacity Value Best Practices and proposal to adopt as policy guidance (guidelines) by order at a Public Meeting.	November 4, 2021 2:00 – 4:00pm
Workshop to identify agreed upon Best Practices and remaining Best Practices where a Commission decision is needed.	November 16, 2021, 1:30 – 5pm
Post Staff's Public Meeting memo so that Stakeholders can file comments in support or opposition.	December 1, 2021
Second workshop to organize remaining points of disagreement where the Commission will be asked to make a decision.	December 7, 2021, 1:30 – 5pm.
Public Meeting December 14, 2021: as a Staff memo item, adopt or modify Staff's Capacity Value Best Practices. Staff anticipates that this concludes the docket.	December 14, 2021