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Via Electronic Mail

August 3, 2021

Filing Center
Public Utility Commission of Oregon
201 High St. SE
Salem, OR 97301

Re: In the Matter of PUBLIC UTILITY COMMISSION OF OREGON, General Capacity Investigation
Docket No. UM 2011

Dear Filing Center:

Enclosed please find the Renewable Energy Coalition's (the "Coalition's") proposed revisions to Staff's straw proposal on the valuation of capacity in the above captioned docket. The comment bubbles in the document provide additional context on the proposed revisions and cross-reference to the Coalition's previously filed comments in this matter.

Respectfully submitted,

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Value of Capacity
July 15 UM 2011 Workshop

Redline comments of the Renewable Energy Coalition

August 3, 2021

Using E3's Principles of Capacity Valuation Report and stakeholders' filed comments and workshop discussions, Staff makes this preliminary straw proposal for calculating the value of capacity contribution when comparing resource options in an RFP or IRP and when calculating avoided costs for non-competitively procured, non-utility resources e.g., PURPA, Energy Efficiency cost-effectiveness, Demand Response cost effectiveness, RVOS, VRET~~, IRPs~~.

Requirements for calculating the value of capacity contribution

1. The value of capacity of all non-~~standard~~ rate based resources (including for hybrid resources) will be determined using the resource type's Effective Load Carrying Capability (ELCC) multiplied by the cost of capacity. There should be more than one "resource type" for solar (for example fixed vs single axis tracking, and Willamette Valley vs Eastern Oregon), and there may be more than one resource type for wind. Hybrid projects are likely to have very different characteristics from each other, increasing a need for multiple base types.
   ~~1.~~a. For new resources only, the value of capacity shall be incremented ~~and decremented during resource sufficiency periods~~ as follows:
      ~~a.~~i. For PGE, Idaho Power and PAC, the value of capacity for a non-utility resource shall increase in increments over the first three years after contract execution~~of operation~~: 0 in year 1, 1/3 in year 2 and 2/3 in year 3, and 100 percent in year four forward.[1]
      ~~a. For IPCo, the value of capacity shall ramp up by 1/10 for each of ten years.~~
      ii. 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 is one resource or aggregate of resources with a duration greater than five years and aggregate output greater than ~~100~~ 80 MW.[2]
2. The determination of the cost of capacity ~~resource~~ shall be based on the avoided cost of procuring that renewable or non-renewable capacity from the least cost capacity resource reasonably available, using the following considerations:
   a. The cost of the resource, in dollars per MW, when based on the sole consideration of providing capacity;
   b. Ability to operate and deliver to the utility's Oregon jurisdiction; and

[1] See the Appendix for an illustrative capacity value example.
[2] ~~UM 1182, In the Matter of Investigation into Competitive Bidding Process, Order No. 06-446, at 3.~~ OAR 860-089-0100(1).

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Commented [A1]: The Renewable Energy Coalition is not taking a position on the use of ELCC or any other technical methodology at this time. Please see the Coalition's reply comments filed April 26, 2021 at pages 2-3. However, it notes it has concerns with the use of ELCC, particularly as it has been implemented by the utilities to date.

Commented [A2]: The Renewable Energy Coalition recommends that existing resources receive the full value of capacity upon contract renewal. Please see the Coalition's comments filed March 8, 2021 at pages 12-13 and reply comments filed April 26, 2021 at pages 3-6.

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Commented [A3]: The Renewable Energy Coalition recommends that Staff re-evaluate the appropriate number of years for Idaho Power Company in light of the most recent IRP showing no resource need and the present RFP for acquisition as early as 2023. Idaho Power's sudden change from no capacity need to an immediate capacity need demonstrates that Idaho Power should be treated no differently than PGE and PacifiCorp.

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Commented [A4]: The Renewable Energy Coalition recommends that any ramp begin at contract execution and not at commercial operations. Please see the Coalition's comments filed March 8, 2021 at pages 11-12.

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c. The comparison to costs of other resources including the time period over which the resource can be built.

3. Resource capacity value will be calculated accounting for each of the ~~yearly~~ annual ELCC values for that resource type.[3]
    a. The capacity contribution in terms of MW is not discounted over time.
    b. For existing resources only, all yearly ELCC values shall be set equal to the highest yearly ELCC value in the existing resource's prior contract(s). If no yearly ELCC value exists, the ELCC values shall be set equal to an ELCC value determined based on the system conditions that existed at the time that the existing resource first committed, via contract or otherwise, to sell to the utility.
4. Any data used must be made available for verification.
5. The OPUC will hire a third party expert to audit and report on each utilities' ELCC modeling in each IRP to confirm common understanding and conformity to these standards. One or more workshops would be held. Suggestions for improvement would be encouraged.

Commented [A5]: The Renewable Energy Coalition recommends that the capacity contribution of existing resources be evaluated based on the actual capacity contribution they provide and not based on the needs of a system built around the existing resources. 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. Please see the Coalition's comments filed March 8, 2021 at 5-6 and reply comments filed April 26, 2021 at 3-6.

Other issues discussed by stakeholders that Staff choose not to include in Straw proposal:

1. Rate design for capacity payments
    a. Fixed versus per kWh payments
    b. On-peak and off-peak pricing periods

[3] 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.

Appendix

Illustrative capacity value example

Commented [A6]: The Renewable Energy Coalition understands this Appendix to provide an illustrative capacity value example based on Staff's straw proposal. The Coalition is not revising the example, but it maintains all of its suggestions above.

As described above in Staff's straw proposal, the capacity value is calculated as the ELCC multiplied by the cost of capacity and decremented during the first three years ramp-in for PGE and PAC. Staff proposes to use this calculation for all non-standard rate based resources including PURPA, Energy Efficiency, Demand Response, RVOS, and VRET. At our April 30, 2021 UM 2011 Workshop, Energy Trust presented the impact this calculation change would have on energy efficiency avoided costs.[4] Energy Trust found that decrementing during the first three years had the biggest impact on short lived energy efficiency measures and measures where avoided generation capacity deferral value is a big proportion of total avoided cost.

To prepare an illustrative example of the capacity value calculation, Staff worked with PURPA avoided cost rates because the yearly series of the cost of capacity data is readily available. This PURPA example is indicative of the other non-utility resources. From PAC's current avoided cost prices, the costs of capacity are:[5]

Table 1: PAC's avoided capacity cost

year	2026	2027	2028	2029	2030
avoided firm capacity costs $/kW-yr	$100	$102	$105	$107	$110

As an approximation, Staff trended these values backwards to 2024. For a resource coming online in 2024, the capacity value is row A multiplied by row B multiplied by row C in Table 2. For simplicity Staff used PAC's current wind capacity contribution as the ELCC in each year.

Table 2: calculated value of wind capacity for PAC with Staff's standard resource deficiency assumption

row	year	2024	2025	2026	2027	2028	2029	2030
A	avoided firm capacity costs $/kW-yr	*$ 93*	*$ 96*	$100	$102	$105	$107	$110
B	ELCC	54.5%	54.5%	54.5%	54.5%	54.5%	54.5%	54.5%
C	ramp-in	0	1/3	2/3	1	1	1	1
D	value of capacity	$ -	$ 17	$ 36	$ 56	$ 57	$ 58	$ 60

The capacity values in row D of Table 2 are in units of per kW per year of nameplate capacity. To make the results more familiar, Staff applied the calculation method to PAC's QF capacity adder input used for total capacity plus energy payments for a hypothetical QF. A direct comparison to the current capacity adder is impossible because for PURPA avoided costs, the capacity value is embedded into the market price during the resource sufficiency period, so Figure 1 instead displays total QF compensation per MW.

Figure 1 was made using the following inputs/assumptions:

- PAC's current standard avoided cost prices have a resource deficiency date of 2026.

[4] Note that: aligning with Staff's ELCC modeling standards straw proposal, Energy Trust's methodology is used instead of ELCC based on data availability.

[5] UM 1729, PAC's June 8, 2020 Supplemental filing, page 10.

- Assumes a 37.2 percent capacity factor for both on and off peak periods.
- Assumes QF contract signing in 2020, to match when the prices were approved, and 2024 online date.

Figure 1: Wind non-renewable annual QF avoided cost payments at hypothetical 37.2% capacity factor

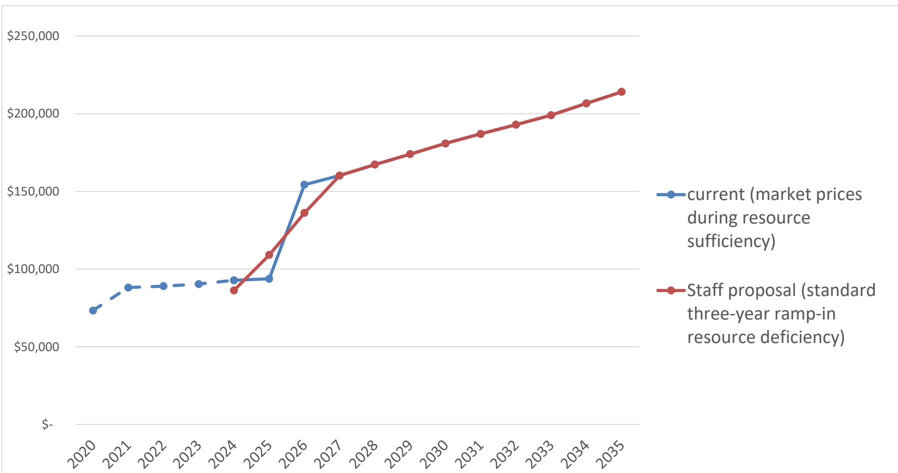

Table 3: 15 year nominal levelized price ($/MWh) at 6.92% discount rate

	Current, at hypothetical assumptions[6]	Staff proposal (standard three-year-ramp-in resource deficiency)
For 2024 online date, 2024 - 2038	$51.97	$51.72

[6] Note: differs from the actual current value because of Staff's simplifying assumption that the on-peak capacity factor equals the off-peak capacity factor.