

Comments of JSR Capital Inc. in WUTC Docket UE-210795 PSE CEIP

Introduction

On December 17, 2021, Puget Sound Energy, (PSE or Company) filed its Clean Energy Implementation Plan (CEIP) with the Washington Utilities and Transportation Commission (Commission) pursuant to WAC 480-100-640. PSE corrected and updated its redacted CEIP on February 1, 2022. PSE originally filed its Public Participation Plan in Docket UE-210297. As part of its CEIP, PSE updated its public participation commitments in Chapter Six and Appendix C.

PSE has done an excellent job in communicating various CEIP activities with stakeholders. PSE has conducted various webinars on ELCC, Customer Benefits Plans and on other topics, in addition to its substantial December 17, 2021 and February 1, 2022 CEIP filings and the related UE-210220 December 3, 2021 filing regarding ELCC.

Comments are submitted at the invitation of WUTC in docket UE-210795. JSR Capital Inc. ("JSR") is committed to renewable energy and invests in development stage projects in the region and offers its comments from this viewpoint.

Background

In PSE's CEIP Chapter 8, "Future Work and PSE Commitments", PSE states:

"PSE will incorporate the following in the Phase 2 evaluation of the 2021 All-Source RFP and 2022 Targeted DER RFP analysis: 1) Temperature data that reflects climate change into the load forecast consistent with the 2023 IRP progress report. 2) Updated effective load carrying capability (ELCCs) as part of PSE's update to our resource adequacy modeling consistent with the 2023 IRP progress report. 3) Updated resource needs and portfolio modeling consistent with the 2023 IRP Progress report. 4) Any updates to short-term market reliance as part of PSE's update to our resource adequacy modeling consistent with the 2023 IRP progress report. " [above section numbers added for reader clarity]

The above CEIP commitment is connected by reference to Chapter 4- "Next Steps" in PSE's December 3, 2021 "PSE Response to Public Comments on ELCC Calculations and Use" Order 1 in WUTC docket UE-210220:

"As discussed in Section 2 (above), E3 found that, "PSE's general approach to ELCC calculation is reasonable." E3 also proposed six recommendations for improvements. **PSE will make best efforts to complete as much of the recommended work as possible.** However, given that several of these recommendations will require a significant amount of time to gather the data, develop a process, update the model, and benchmark the results, not all of the recommendations can be completed for Phase 2 of the RFP and the 2023 Electric IRP progress report. Consistent with E3's assessment, recommendations requiring longer lead times will be evaluated for future IRP cycles. PSE is committing to completing the following recommended updates for Phase 2 of the RFP and the 2023 Electric IRP progress report: 1. PSE will run an additional sensitivity of a GENESYS model run assuming regional capacity additions such that the region meets a 5 percent LOLP standard. 2. PSE will run resource-specific ELCCs for Phase 2 of the All-Source RFP and update generic resource assumptions for the 2023 Electric IRP progress report using the most up-to-date information. 3. PSE will review its modeling code and assumptions to ensure that assumptions are being correctly applied for the NWPP reserve sharing

program. 4. PSE is currently developing a climate change update. This work will build on the Northwest Power and Conservation Council's climate change data, used in their recent resource adequacy work. Additionally, PSE will evaluate the magnitude and complexity of the following recommendations. Due to the tight timeline for Phase 2 of the RFP and the 2023 Electric IRP progress report, **some or all of these recommendations may need to be considered for future IRP cycles to allow adequate time for model preparation and quality review.** 5. PSE will follow-up with E3 to explore different ways to approach correlations between wind/load and solar/load. 6. PSE will evaluate the modeling work associated with isolating a summer and a winter peak need, and the corresponding ELCC values. 7. PSE will evaluate the modeling work to update the model to differentiate between on- system vs. off-system energy storage resources" [above bolding inserted for reader clarity]

Responder notes that all of the model results cited and submitted by PSE are redacted due to confidentiality concerns.

Comments

PSE has indicated that it will use "best efforts" to implement commentor's suggestions to the 2021 All-Source RFP Phase 2 analysis. From a legal standpoint, "best efforts" translates into using all means and financial resources within the full resources of the company. This is a very high-standard and we applaud PSE for this level of commitment to the issues. Provided that PSE focuses fairly on the important matters, it is not appropriate to ask PSE to do any more than the commitment that it has made to the process.

For clarity and in the interest of fairness and completeness, we would like to point out three issues that PSE referenced in its December 3, 2021 WUTC filing.

- a. PSE stated, "PSE will reassess ELCC using climate change weather data for Phase 2 of the RFP and for the 2023 Electric IRP progress report." PSE did not state it would update the "temperature sensitivity" for some solar resources in year 2031 that are more than 10 times greater in 2031 than in its base temperature case scenario for those very same resources. Solar + storage and stand-alone storage are at least 2 to 3 times larger than the base temperature case for the year 2031.
- b. PSE stated "Depending on the complexity to re-code the model for this methodology change, PSE will determine if the approach is reasonable for future IRP cycles. To incorporate this change PSE will isolate a summer and a winter peak need and provide the corresponding ELCC values." PSE did not state ELCC values will be differentiated between summer and winter.
- c. PSE stated, "Due to the tight timeline for Phase 2 of the RFP and the 2023 Electric IRP progress report, some or all of these recommendations may need to be considered for future IRP cycles to allow adequate time for model preparation and quality review. PSE will follow-up with E3 to explore different ways to approach correlations between wind/load and solar/load."

In reference to the above items, we note that the temperature sensitivity cases were incorporated into the Final 2021 PSE IRP from Appendix 7.3 on Page 60 of the “Review of Puget Sound Energy Effective Load Carrying Capability Methodology” dated October 2021 in Table 10 and should be accessible by PSE for its use in the Phase 2 evaluation. Responder filed comments are shown in the Appendix. Therefore, it is important to observe that considerable PSE work has gone into modeling this temperature sensitivity cases and it would be prudent for PSE to apply these models to the Phase 2 analysis. This implies that both the summer and independent winter ELCC values can be calculated, and the use of temperature adjusted loads and load shapes can be used by PSE in current Phase 2 modelling. As a further example, PSE has applied different ELCC values to summer and winter resources selected by PSE, Lund Hill Solar and Golden Hills Wind shown below.

Supplementally, PSE is in a position, using its best-efforts commitment, to correlate solar resource production and PSE summer and winter loads/load shapes over the multi-month period from December 3, 2021 to April 1, 2022 or later. Based on the stakeholder presentations in December, PSE demonstrated a strong understanding of the issues and produced multiple load revisions. Therefore, PSE appears to be well positioned to apply the comments to the RFP Phase 2 analysis.

Responder notes that PSE corrected a mistake in the IRP on page 30 for ancillary transmission costs for eastern wind resources that had used \$9.53/MWh versus \$0.27/MWh for BPA ancillary spinning reserves and other services. Commentor notes that that reduction along with the reduced escalation of fixed transmission changes should also apply to solar projects that use this same transmission path. PSE’s modeling indicated that these costs changes had a material impact and we note that this would also correspondingly have a material impact on ELCC values. We also believe that the overall conclusion of the CEIP will be to accelerate renewables in PSE’s generation mix, which we believe is a worthy activity, provided always that the correct modeling is performed. JSR would have preferred CEIP to include more updated ELCC values vs. using 2021 IRP and 2021 RFP values. We do believe it is not only prudent but also essential for the Phase 2 RFP selection that PSE makes the necessary modeling corrections cited above.

We also applaud PSE for its overall CEIP conclusion of accelerating renewables in its generation portfolio by committing to add 800 MW of new utility-scale renewables and 50 MW of new utility-scale storage by the end of 2025. To achieve these objectives on the time schedule indicated PSE will, by necessity, need to rely upon its 2021 All-Source RFP. For this reason, it is not only prudent, but also essential, that the correct modeling be performed by PSE and its consultants, including the updated ELCC values and the other necessary modeling corrections cited above.

Conclusions

We appreciate PSE’s awareness of these issues and the importance of the above matters to the adjudication of the resource acquisition submittals in this 2021 RFP. PSE’s commitment to the process and its undertaking to use best efforts is acknowledged and greatly appreciated. PSE has worked diligently on the CEIP process with its various stakeholders and we are thankful for all of its efforts.

We thank the Commissions for its consideration of our comments.

Respectfully Submitted March 2, 2022 by:

JSR Capital Inc.

By: James Ross

Its: President

Appendix

Table 10 on page 60 from the ELCC Final Study Report “Review of Puget Sound Energy Effective Load Carrying Capability Methodology” dated October 2021 (shown in the following page)

7.3 Temperature Data

Table 10. ELCC by Resource and by Sensitivity in PSE 2021 IRP²²

WIND AND SOLAR RESOURCES	Capacity (MW)	ELCC Year 2027		ELCC Year 2031	
		Base Scenario	Temp. Sensitivity	Base Scenario	Temp. Sensitivity
Existing Wind	823	9.6%	6.6%	11.2%	6.7%
Skookumchuck Wind	131	29.9%	17.6%	32.8%	9.2%
Lund Hill Solar	150	8.3%	30.3%	7.5%	54.3%
Golden Hills Wind	200	60.5%	49.3%	56.3%	39.3%
Generic MT East Wind1	350	41.4%	28.5%	45.8%	28.1%
Generic MT East Wind2	200	21.8%	13.1%	23.9%	17.7%
Generic MT Central Wind	200	30.1%	23.1%	31.3%	20.9%
Generic WY East Wind	400	40.0%	29.1%	41.1%	32.7%
Generic WY West Wind	400	27.6%	27.2%	29.4%	34.0%
Generic ID Wind	400	24.2%	25.6%	27.4%	28.0%
Generic Offshore Wind	100	48.4%	38.6%	46.6%	27.6%
Generic WA East Wind	100	17.8%	7.8%	15.4%	12.0%
Generic WY East Solar	400	6.3%	13.5%	5.4%	32.5%
Generic WY West Solar	400	6.0%	16.2%	5.8%	36.3%
Generic ID Solar	400	3.4%	16.0%	4.3%	47.3%
Generic WA East Solar	100	4.0%	21.6%	3.6%	45.6%
Generic WA West Solar – Utility-scale	100	1.2%	7.6%	1.8%	20.2%
Generic WA West Solar – DER Roof	100	1.6%	7.6%	2.4%	19.4%
Generic WA West Solar – DER Ground	100	1.2%	7.6%	1.8%	20.2%
BATTERY STORAGE					
Lithium-Ion, 2-hr, 82% RT efficiency	100	12.4%	34.2%	15.8%	36.0%
Lithium-Ion, 4-hr, 87% RT efficiency	100	24.8%	66.6%	29.8%	68.8%
Flow, 4-hr, 73% RT efficiency	100	22.2%	61.6%	27.4%	63.8%
Flow, 6-hr, 73% RT efficiency	100	29.8%	79.2%	35.6%	84.8%
Pumped Storage, 8-hr, 80% RT efficiency	100	37.2%	89.2%	43.8%	97.8%
SOLAR + BATTERY RESOURCE					
Generic WA Solar, lithium-ion, 25MW/50MWh, 82% RT efficiency	100	14.4%	22.0%	15.4%	56.6%
Generic WA Wind, lithium-ion, 25MW/50MWh, 82% RT efficiency	100	23.6%	26.0%	23.0%	17.8%
Generic MT East Wind, pumped storage, 8-hr, 80% RT efficiency	200	54.3%	73.0%	57.7%	64.0%

²² PSE Final 2021 IRP, pg 7-47.

Previous Key Comments for Reference, Docket UE-210220 amended for clarity:

“E3 in its description of the impact of temperature changes on ELCC offers Table 10 which contains the following representative values for ELCC:

Generator	2027 Base Case	2027 Temp. Case
Lund Hill Solar	8.3%	30.3%
Golden Hills Wind	60.5%	49.3%
WA Generic East Solar	4%	21.6%
WA Generic East Wind	17.8%	7.8%
Generator	2031 Base Case	2031 Temp. Case
Lund Hill Solar	7.5%	54.3%
Golden Hills Wind	56.3%	39.3%
WA Generic East Solar	3.6%	45.6%
WA Generic East Wind	15.4%	12.0%

Profoundly, the temperature cases highlight the large ELCC value changes by resource type due to climate change [and the sensitivity of these values to Temperature]. By PSE and [its Consultant] E3 omitting the results of peak summer conditions and using yearly average values only, the true benefit of different generating resources are obscured, meaning that critical portfolio decisions responsive to changing weather and hotter temperatures would be delayed. The more meaningful [and prudent] approach would be to use a unique ELCC value for summer and winter for different variable energy resources and use the temperature-[adjusted analyses] for portfolio selection [to better meet the peak load at the minimum cost to PSE ratepayers]. At a minimum, the ELCC values for the temperature cases (in Table 10) should replace the base case values in the revised PSE Phase 2 portfolio modeling to reflect a more reasonable expectation of temperatures over the next 20-40 years.”