

March 2, 2022

Amanda Maxwell
Executive Director and Secretary
Washington Utilities and Transportation Commission
621 Woodland Square Loop SE
Lacey, WA 98504-7250

Received
Records Management
03/02/22 16:05
State Of WASH.
UTIL. AND TRANSP.
COMMISSION

Re: Comments of Renewable Northwest regarding Puget Sound Energy’s Clean Energy Implementation Plan, Docket UE-210795

I. INTRODUCTION

Renewable Northwest thanks the Washington Utilities and Transportation Commission (“the Commission”) for this opportunity to comment in response to the Commission’s December 28, 2021, Notice of Opportunity to File Written Comments on Puget Sound Energy’s (“PSE” or “the Company”) 2021 Clean Energy Implementation Plan (“CEIP”) filed pursuant to WAC 480-100-640. PSE planned for this first CEIP alongside the ongoing rulemaking at the Commission and the Department of Commerce to implement CETA. We recognize that the uncertainty around the state agencies’ pending interpretation of the statute likely impacted the way PSE planned to show progress toward RCW 19.405.040(1) and .050(1) in its 2021 CEIP.

Though there will be a learning curve to the preparation and review of these plans, we maintain that the CEIP offers an opportunity for utilities to revise their portfolio model inputs to ensure interim and specific targets reflect the industry’s most current resource characteristics and cost assumptions. As such, we appreciate PSE’s work to incorporate stakeholder feedback and revise its portfolio model’s generic resource costs to reflect the National Renewable Energy Laboratory’s (“NREL”) 2021 Annual Technology Baseline (“ATB”) data. As discussed in these comments, the portfolio model’s reaction to this isolated data refresh is something we look forward to exploring in the public participation phase of PSE’s 2023 Electric Integrated Resource Plan (“IRP”) Progress Report.

Our main concern is not the sixty-three percent CETA-eligible energy target that this plan sets for year-end 2025, but the remaining thirty-seven percent of emitting generation that in part may include *new* CETA-ineligible capacity resources. We have raised concerns in comment submissions related to PSE’s 2021 IRP, 2021 All-Source Request for Proposals (“2021 RFP”),

and draft 2021 CEIP about the problematic design of PSE’s resource adequacy modeling and its methodology for estimating resource capacity contributions. Recognizing that the CEIP offers another opportunity to consider resources for a near-term need, we urge PSE in future CEIP cycles to explore how its modeling limitations may be inadvertently extending PSE’s burning of fossil fuels to meet reliability standards which, with more intentional modeling, could be met with a suite of CETA-compliant capacity resources.

Finally, as we discuss in more detail below, we recommend the Commission incorporate the following elements into its decision on PSE’s CEIP, namely: (1) reject those portions of the CEIP that address ELCC due to demonstrated methodological flaws; (2) approve the CEIP’s CETA-eligible energy interim target on the condition that PSE revisit the issue in its 2023 IRP update using improved capacity contribution methodology; and (3) direct the company to consider cost-effective CETA-eligible resource additions beyond the targets identified in the CEIP as the company continues its planning and procurement efforts. We appreciate the Commission’s consideration of these recommendations.

II. FEEDBACK

Renewable Northwest appreciates various revisions to PSE’s draft CEIP, including the increase from 59% to 63% renewable or nonemitting generation by the end of the first compliance period. We agree with PSE’s rationale that projecting clean energy procurements too far out in the planning horizon introduces an uncomfortable amount of cost uncertainty. Thankfully, this CETA compliance strategy is more aligned with PSE’s stakeholder calls for earlier decarbonization.¹ Furthermore, in our comments on PSE’s draft CEIP, we requested that the Company address the fragmented manner in which it had refreshed its generic resource cost assumptions out of the 2021 IRP.² We were happy to see in the final CEIP that PSE had incorporated the resource assumptions reflected in the National Renewable Energy Laboratory’s (“NREL”) 2021 Annual Technology Baseline (“ATB”), resulting in an abundance of economic Washington wind.

With that in mind, we focus our attention on components of PSE’s resource and capacity planning which may be limiting the Company’s ability to estimate the least-cost route to compliance with RCW 19.405.040 and .050. Recognizing that various related rulemakings overlapped with the creation of this 2021 CEIP, we understand that PSE had to work with the tools available to set its CEIP targets, which required a fair amount of manual resource diversification. Moving forward, however, we hope PSE will work to identify the resource

¹ PSE 2021 CEIP at 25.

² Nov. 12, 2021, Comments of Renewable Northwest re: PSE’s Draft 2021 Clean Energy Implementation Plan.

modeling inputs and functions limiting the Company’s ability to decarbonize its portfolio while maintaining adequacy standards.

Again, we appreciate the progress made by the Company over the course of the 2021 CEIP development period. Per WAC 480-100-645(2), the Commission must now “enter an order approving, rejecting, or approving with conditions the utility’s CEIP...at the conclusion of its review,” an order which may “recommend or require more stringent targets than those the utility proposes.”³ As such, we recommend that the Commission consider the following:

1. The Commission should reject the portions of PSE’s 2021 CEIP pertaining to effective load carrying capability (“ELCC”).

As noted in our previous comment submissions to PSE in the IRP, RFP, and CEIP processes, Renewable Northwest maintains that PSE’s consideration of resource adequacy and resource capacity contributions is flawed, resulting in extremely low ELCC values for battery and pumped-hydro storage resources. The Company is drastically reducing market availability in its Resource Adequacy Model (RAM), from 1,500 MW to 500 MW, based on a faulty analysis that does not account for regional capacity procurements or current data supporting sufficient Mid-Columbia market availability during particular hours and a minimal regional loss of load probability (“LOLP”).⁴ This and other considerations led consultant Energy and Environmental Economics (E3) to make a near-term recommendation that PSE revise its ELCC methodology to ensure storage resources are not disadvantaged in the Company’s capacity need modeling.⁵

Renewable Northwest has commented extensively on this subject, and our most technical dive into PSE’s ELCC methodology can be found in our October 22, 2021, Joint Party Comments in which we and the NW Energy Coalition responded to the Commission’s August 31, 2021, Notice of Opportunity to File Written Comments related to PSE’s Effective Load Carrying Capability Estimates and Use in the Company’s All-Source Request For Proposals Pursuant to WAC 480-107.⁶ In these comments we react to E3’s analysis and walk through the factors causing PSE’s extremely low ELCC values for storage resources, noting, “PSE’s modeling suggests there may be insufficient energy to charge storage resources even though PSE has not presented

³ WAC 480-100-645(2).

⁴ See, e.g., The Northwest Power and Conservation Council’s approved 2021 Northwest Power Plan which shows the region has enough capacity to support a reliable, adequate supply for 2025. Some of the supporting information can be found at https://www.nwcouncil.org/2021powerplan_adequacy-reserve-margins.

⁵ E3’s Review of Puget Sound Energy Effective Load Carrying Capability Methodology (Oct. 2021), available at https://www.pse.com/-/media/PDFs/001-Energy-Supply/003-Acquiring-Energy/PSE--ELCC-StudySept-202110072021FINAL.pdf?sc_lang=en&hash=AB72B5C439BDF50E3B931DCC4A11D40B.

⁶ Notice of Opportunity to File Written Comments related to Puget Sound Energy’s Effective Load Carrying Capability Estimates and Use in the Company’s All-Source Request for Proposals (Aug. 31, 2021), available at <https://apiproxy.utc.wa.gov/cases/GetDocument?docID=119&year=2021&docketNumber=210220>.

analysis to support this lack of available energy in low loss-of-load hours. In other words, the IRP’s modeling assumption does not appear to reflect expected system conditions. Rather, it creates artificial conditions where storage resources do not have enough energy to charge during off-peak hours, thereby reducing their capacity contribution and availability to dispatch when PSE’s needs are the highest.”⁷

PSE has committed to addressing its ELCC methodology in Phase 2 of the 2021 RFP and in its 2023 Electric IRP Progress Report: “PSE will conduct portfolio optimization modeling and due diligence on the proposals that make it to Phase 2, and we expect to establish a shortlist and commence contract negotiations in 2022. Phase 2 of the RFP will also include an updated load forecast, which incorporates climate change, as well as updated effective load carrying capabilities of resources. This work will be conducted as part of the 2023 IRP progress report.”⁸

However, because PSE’s flawed treatment of market availability and the capacity contributions of storage resources ultimately supported the Company’s 2021 CEIP interim and specific targets, we recommend that the Commission reject the portions of PSE’s CEIP pertaining to ELCC considerations.⁹ We also recommend that the Commission include in its order rejecting PSE’s ELCC values specific guidance on how the Company must address its ELCC methodology in Phase 2 of the 2021 RFP and in its 2023 Electric IRP Progress Report. We recommend that the order 1) directly reference E3’s key findings from its review of PSE’s ELCC methodology, 2) require that the Company make the necessary revisions to its ELCC methodology to accurately represent the capacity contributions of clean resources, 3) require that these revisions be incorporated in Phase 2 of the 2021 RFP and in its 2023 Electric IRP Progress Report, and 4) require the Company to conduct a sensitivity analysis in its 2023 Electric IRP Progress Report to understand how PSE’s participation in the Western Resource Adequacy Program (“WRAP”) will impact its near- and mid-term capacity needs.

2. The Commission should approve PSE’s CETA-eligible energy interim target with the condition that the Company address in its 2023 CEIP progress report whether and how its revised ELCC methodology impacted that target.

As noted, PSE’s undervaluing of the capacity contributions of clean resources does not support a resource agnostic or least-cost analysis for meeting future capacity needs. We have heard from PSE that various renewables-friendly changes to the model (e.g., revising generic resource costs

⁷ Oct. 22, 2021, Joint Party Comments, Docket UE-210220, attached to these comments as Exhibit A.

⁸ PSE 2021 CEIP at 122.

⁹ PSE notes in its 2021 CEIP at 19, that the peak capacity planning standard informing the CEIP was derived from PSE’s 2021 IRP (i.e. based on flawed assumptions flagged by third-party consultant E3).

to reflect NREL's latest ATB, and revising variable transmission costs from \$9.53/MWh to \$0.27/MWh)¹⁰ have the effect of making Washington wind economic in abundance, but on the flip side have the effect of bringing in new gas peaker plants to the portfolio just beyond this first compliance period. Therefore, PSE's undervaluing of clean capacity resources may result in CETA-noncompliant resources being procured to meet peak needs for a short time, ultimately becoming stranded assets as Washington reaches its 2030 and 2045 clean energy mandates.¹¹

We see improvements to PSE's ELCC methodology as the first step toward understanding how the Company can achieve a reliable CETA-compliant portfolio, but we are also concerned about the apparent inability of PSE's AURORA portfolio modeling tool to select a diverse suite of clean resources to meet energy and capacity needs. As PSE notes in the CEIP, the Company had to perform three model runs, manually adjusting the amounts of wind, solar, and storage to create a diversified portfolio.¹² Renewable Northwest also raised this issue during PSE's 2021 IRP development, as the AURORA model could not select a mix of storage resources but was limited to a technology-by-technology selection process.¹³ PSE has acknowledged this limitation. We recommend that before the next CEIP cycle and, ideally, during PSE's 2023 Electric IRP Progress Report planning period, the Company works with the developer of its portfolio modeling tool to create the necessary functionalities to model its system considering complex, modern technologies.

Acknowledging that these changes will take time and given the overlapping schedules of IRP and CEIP resource planning, we recommend that the Commission approve PSE's 2021 CEIP interim target of 63% CETA-compliant energy by the end of 2025, on the condition that the Company address in its 2023 CEIP Progress Report how its revised ELCC methodology – and perhaps other changes identified by the Commission during its review – impact this target.

III. OTHER CONSIDERATIONS

One technical question we presented to PSE that was never resolved addresses consistency related to the incorporation of data from NREL's 2021 ATB, which the Company presents in

¹⁰ PSE 2021 CEIP at 30.

¹¹ RCW 19.405.040(1) requires electric utilities to be greenhouse gas neutral by 2030, which will certainly affect the economics of any emitting resource that the model sees as least-cost in current modeling. RCW 19.405.050(1) requires electric utilities to serve 100% clean electricity, which will be a sharp cutoff date for any asset not meeting that standard unless penalties are incurred.

¹² PSE 2021 CEIP at 31.

¹³ May 6, 2021, Comments of Renewable Northwest, Docket UE-200304, *available at* <https://apiproxy.utc.wa.gov/cases/GetDocument?docID=1967&year=2020&docketNumber=200304>.

Appendix F – Detailed Costs by Program Area.¹⁴ For nearly all resources, PSE notes that the generic cost assumptions include a “\$2.5MM interconnection spur line adder.” However, the recip peaker does not include this additional cost, which PSE says is already incorporated via the 2021 IRP. We asked PSE to point us to the location in the 2021 IRP where this could be confirmed, but we have not received a response. We would appreciate confirmation that the interconnection spur line adder is consistent across all resources, including the recip peaker.

PSE makes mention of various changes to upcoming resource planning and procurement efforts which we support:

We are reviewing PSE’s climate change data calculations provided during a January 20, 2022, stakeholder meeting for the 2023 Electric IRP Progress Report. Phase 2 of PSE’s All-Source RFP will “include an updated load forecast, which incorporates climate change, as well as updated effective load carrying capabilities of resources.”¹⁵ We will be actively engaged in these discussions, as we anticipate that the consideration of climate change will shift PSE’s peak load events and will warrant a deep dive into the capacity resources which would be best suited to maintain resource adequacy.

Additionally, we look forward to seeing PSE’s revised enablement and transmission costs in the 2023 Electric IRP and CEIP Progress Reports, as PSE notes it will incorporate information gathered through the 2021 All-Source and 2022 Targeted DER RFPs.¹⁶ Any market insight gained via this broad solicitation will help the Company more accurately model the least-cost, least-risk portfolio to serve load considering CETA.

To conclude, we would like to encourage the Commission to consider language in its order on PSE’s 2021 CEIP that would hold open the possibility of PSE pursuing more CETA-compliant resources earlier in the planning horizon, considering the urgency of the climate crisis and potential cost savings associated with earlier procurements. We understand that the Company has filed a large, multi-component and multi-year general rate case which in part addresses the cost of CETA implementation to its customers’ rates. We support the efforts of stakeholders to understand the discrete costs of CETA implementation all in one place, versus the current fragmented organization of the filing. This, along with the market insight gained via PSE’s 2021 and 2022 RFPs, will best help the Company and the Commission understand the extent to which PSE can decarbonize near-term, beyond the targets set in the 2021 CEIP.

¹⁴ PSE 2021 CEIP Appendix F, *available at* https://irp.cdn-website.com/dc0dca78/files/uploaded/2022_0201_Appendix%20F_Detailed%20Costs%20by%20Program%20Area_2.1.22.xlsx.

¹⁵ PSE 2021 CEIP at 122.

¹⁶ PSE 2021 CEIP at 178.

IV. CONCLUSION

Renewable Northwest thanks the Commission for its consideration of this feedback. We look forward to continued engagement as a stakeholder in this 2021 CEIP process.

Sincerely,

/s/ Katie Ware

Katie Ware

Washington Policy Manager

Renewable Northwest

katie@renewablenw.org

/s/ Max Greene

Max Greene

Regulatory & Policy Director

Renewable Northwest

max@renewablenw.org

EXHIBIT A

October 22, 2021

Mark Johnson
Executive Director and Secretary
Washington Utilities and Transportation Commission
621 Woodland Square Loop SE
Lacey, WA 98504-7250

RE: Comments of Renewable Northwest, NW Energy Coalition and Rye Development, Docket UE-210220

Puget Sound Energy's Effective Load Carrying Capability Estimates and Use in the Company's All-Source Request For Proposals.

I. INTRODUCTION

Renewable Northwest, NW Energy Coalition and Rye Development ("Joint Parties") thank the Washington Utilities and Transportation Commission ("the Commission") for this opportunity to comment in response to the Commission's August 31, 2021, Notice of Opportunity ("Notice") to File Written Comments related to Puget Sound Energy's Effective Load Carrying Capability Estimates and Use in the Company's All-Source Request For Proposals Pursuant to WAC 480-107, which Puget Sound Energy ("PSE" or "the Company") originally filed on April 1, 2021, and updated on May 10, 2021.¹

While we still have lingering concerns about PSE's methodology to calculate ELCC values for both short- and long-duration storage resources, we appreciate PSE's willingness to consult with E3 to provide an unbiased review of PSE's methodology and present their findings and recommendations before the Commission and stakeholders. Our comments below reflect discussions during the ELCC workshop including E3's presentation and report as well as previous discussions and comments that we submitted before the Commission. We hope to discuss this further going forward.

¹ Unless otherwise noted, all references in these comments will be to the May 10, 2021, updated RFP.

II. COMMENTS

1. E3's Report highlights the inherent deficiencies existent in treatment of market availability in PSE's ELCC modeling methodology

Puget Sound Energy hired Energy and Environmental Economics ("E3") to review the ELCC methodology emanating from the Integrated Resource Plan which flowed through to the Request for Proposal filed on Apr. 1, 2021. In their review, E3 looked at the model input, outputs and assumptions which were key to inform PSE's ELCC values. Based on their review, E3 pointed out several methodological concerns or flaws that were apparent based on prudent utility practices in the region and across the United States. E3 found that PSE's treatment of the Mid-Columbia ("Mid-C") market's capacity undervalues both short- and long-duration storage resources because it underestimates the capacity available and being procured in the region. This underestimation inaccurately reflects a market that is short on energy during particular hours of the day when, in reality, recent analysis from the Northwest Power and Conservation Council ("NWPPCC") for their 2021 Northwest Power Plan shows that the region has enough capacity to ensure a reliable and adequate supply for the year 2025. In our previous comments and related technical memo, we highlighted a similar issue in which PSE's treatment of Mid-C's availability is artificially constraining the system and causing an energy shortfall, consequently preventing battery and pumped hydro storage facilities from being able to charge prior to peak load hours. This is causing the extremely low ELCC values coming out of PSE's RAM modeling which, in turn, would have negative consequences for the Company's resource acquisition, leading to neither a cost-effective nor a reliable supply for PSE's customers.

In our previous comments, we pointed out that the reduction in availability of market purchases in PSE's IRP may be artificially constraining the ability of storage resources (including battery and pumped hydro storage) to meet PSE's capacity needs. By revising assumptions to reduce the availability of market purchases across the board, the GENESYS model artificially imposes a significant market import limitation across the full 24-hour window on all days in January and February instead of only during "super-peak" and "heavy-load" hours.² As a result, PSE's modeling suggests there may be insufficient energy to charge storage resources even though PSE has not presented analysis to support this lack of available energy in low loss-of-load hours. In other words, the IRP's modeling assumption does not appear to reflect expected system conditions. Rather, it creates artificial conditions where storage resources do not have enough

² Final PSE IRP at 7-36 to 7-43.

energy to charge during off-peak hours, thereby reducing their capacity contribution and availability to dispatch when PSE's needs are the highest.

In their recommendations, E3 note that “[t]o assess the impact of changes in PSE’s approach to Mid-C on ELCC values, E3 recommends an additional GENESYS model run assuming regional capacity additions such that the region meets a 5% LOLP standard before recalculating ELCC.” E3 points out that “adding capacity to the region would increase the reliability of the Mid-C resource but would also reduce the need for reliability-driven capacity additions to PSE’s system.”

E3 in their review of PSE’s ELCC modeling methodology also point out that “[f]ailure to consider the availability of surplus energy in the regional market would result in over-procurement and higher costs for PSE ratepayers. It is reasonable for PSE to assume that some amount of energy would be available in the market due to the nature of the region’s hydroelectric resource base, which produces surplus energy during most years. PSE must therefore strike a careful balance between the potential reliability implications and cost savings associated with reliance on the regional market.”³

The concerning aspect of PSE’s treatment of Mid-C availability lies in the fact that PSE does not model the assumption that reliability-driven capacity additions are made to the broader Pacific Northwest region to achieve a reliability standard. Instead, it relies on outdated model (NPCC’s GENESYS) cases which portray that regional system’s reliability degrades below accepted resource adequacy thresholds as load continues to grow and plants retire. This is not a prudent observation because NPCC’s recent adequacy analysis, as well as active large-scale procurement of capacity resources,⁴ shows that the region is procuring enough capacity resources to stay below the Council’s 5% LOLP threshold even under an early coal retirement scenario.⁵

In their review of market access assumptions, E3 shows an illustrative example for which “increasing the Mid-C market availability by an additional 500 MW would *reduce outage durations substantially* by effectively segmenting the long duration outage shown above into multiple smaller-duration outages” (emphasis added). This suggests that shorter duration resources would have greater value if PSE were to fully account for their capabilities under an

³ Page 20, E3’s Review of Puget Sound Energy Effective Load Carrying Capability Methodology. October 2021.

⁴ PacifiCorp submits final shortlist as key part of company’s largest ever renewables solicitation.

<https://www.pacificorp.com/about/newsroom/news-releases/shortlist-submitted-as-part-of-largest-ever-renewables-solicitation.html>

PSE 2021 RFP: <https://www.pse.com/press-release/details/puget-sound-energy-seeks-bids-for-new-energy-resources>

⁵ RAAC-SAAC Steering Committee Meeting. July 9th, 2021.

<https://nwcouncil.app.box.com/s/k12r8hry1ofogeqxgiw8spgnv2n55lvm>

assumption of regional adequacy, which underscores the importance of the Company following E3's suggestion to re-run their ELCC calculations with the region in a resource adequate position.

We also note that there are some inconsistencies in E3's report related to their review of the impact of potential additions to the regional capacity by replacing 500 MW of perfect capacity with 500 MW of Mid-C capacity. A close review of Figures 2 and 3 reveal inconsistencies in the reported unserved energy in the plots and inconsistencies between the data in the plots and their textual interpretation. Without additional clarification, it is difficult to discern whether E3's analysis adequately investigates the potential sensitivity of PSE's modeling to Mid-C availability and reiterates the importance of PSE conducting additional analysis on this topic.

2. Additional Comments and Clarifications

While not addressed in the report, PSE's presentation on the calculation of energy storage ELCCs raised an additional question regarding their methodology. PSE claims that they are calculating a last-in ELCC for energy storage by adding energy storage after perfect capacity. However, PSE has not clarified whether the energy storage dispatch algorithm is able to see and access energy from the added perfect capacity resource for the purposes of storage charging. If energy storage resources *do not* have access to the energy delivered by the perfect capacity resource for charging, then the perfect capacity added has no effect on the storage ELCCs which causes further degradation to their value, which should be remedied. We request that PSE clarify this point with regard to the IRP modeling and ensure in the RFP modeling that the energy storage dispatch algorithm is able to rely upon other added resources, including any added perfect capacity, to charge.

In the report, E3 also points out that there are artificial limits placed on the State of Charge (SoC) of battery storage resources, contrary to their own consultant's report on standard utility practices. Folding in a Minimum SoC requirement has a rollover effect on battery storage ELCC values because of a limitation in their charge and discharge, causing inefficiencies for the PSE system. We agree with E3's recommendation that PSE should restate its ELCC values for battery storage in a manner more aligned with industry standards and align the presentation of ELCC values with the characterization of minimum, maximum, and nameplate MW values in its RFP documentation. We hope that PSE will change these artificial limits based on technical characteristics of the bids they receive for the RFP.

In addition to these two critical issues, there are several other deficiencies pointed out by E3 that warrant the Commission's attention. PSE's use of outdated weather and temperature datasets in

light of severe climate change is concerning because it relies on data going back to 1929 to inform its resource planning and procurement in 2021. This is leading to a situation in which the outage events in PSE's modeling are not evenly distributed across temperature input years -- 33% and 35% of simulated draws with loss-of-load events in January 2027 and January 2031, respectively, occur with load data prior to 1948. Further, 94% of simulated draws with loss-of-load events in January 2027 and January 2031 occur with load data prior to 1972, the midpoint of the temperature year data. Using outdated weather and temperature datasets in light of climate change runs the risk of skewing the Company's analysis and leading to imprudent procurement decisions. We recommend PSE run additional ELCC and loss-of-load studies based on datasets from 1980 onwards to ensure that the effects of climate change on load and temperatures are clearly analyzed and evaluated.

3. RFP Process

PSE has stated that they intend to make ELCC methodological updates in Phase 2 of the RFP, but that they will continue to rely on generic ELCC assumptions from the IRP to screen resources in Phase 1 of the RFP. This approach could lead to poor procurement decisions if resources are screened out in Phase 1 that would otherwise have contributed to stronger portfolio performance in Phase 2. PSE has asserted that the ELCC methodology does not need to be updated in Phase 1 because resource comparisons in Phase 1 are only made between technologically similar resources. However the validity of this assertion cannot be confirmed without additional transparency into how methodological updates affect storage ELCCs and whether the generic storage ELCCs from the IRP represent reasonable proxy values for a wide range of potential storage configurations with different round-trip losses, minimum and maximum storage levels, and other key parameters. In addition to the methodological updates that we recommend in these comments, we also recommend that PSE be required to demonstrate that screening decisions made in Phase 1 are robust to any implemented ELCC methodological updates in Phase 2. In the event that the ELCC methodological updates materially affect the performance of any storage resource that was screened out in Phase 1 such that it could reasonably compete with resources (of any technological type) that were taken to Phase 2, that storage resource should be advanced to Phase 2 for full evaluation.

III. CONCLUSION

Renewable Northwest, NW Energy Coalition and Rye Development thank PSE and the Commission for their consideration of this feedback. In conclusion, we recommend that:

- PSE conducts additional GENESYS model runs assuming a regionally adequate system and folds in that analysis to recalculate the ELCC values of short and long-duration storage resources.
- PSE consults with E3, to clarify and correct the errors mentioned in our comments relating to E3's review of PSE's treatment of Mid-C output.
- PSE demonstrates that screening decisions made in Phase 1 are robust to any implemented methodological updates in Phase 2 to avoid exclusion of cost-effective capacity resources in Phase 1 of the RFP.

We are optimistic that the changes and additional analysis that have been recommended by E3 and stakeholders will help PSE to identify a least-cost portfolio that also puts the Company on a path to achieving CETA's clean energy standards and the Company's own emission reduction goals. We look forward to continued engagement as stakeholders in the 2021 AS-RFP process to ensure that PSE's resource acquisitions are prudent and based on fair and accurate valuation of all technologies.

Sincerely,

/s/ Michael Rooney
Vice President
Rye Development



Katie Ware
Washington Policy Manager
Renewable Northwest

/s/ Sashwat Roy
Technology & Policy Analyst
Renewable Northwest

A handwritten signature in black ink, appearing to read "Fred Heutte". The signature is written in a cursive, slightly slanted style.

Fred Heutte
Senior Policy Associate
NW Energy Coalition