

February 17, 2021

Puget Sound Energy
IRP Team

RE: Feedback of Renewable Northwest, 2021 IRP Webinar 12

Puget Sound Energy’s February 10, 2021, Webinar Relating to Delivery System and Grid Modernization Solutions, Flexibility Analysis results, Portfolio draft results, and Economic, Health and Environmental Benefits Assessment of Current Conditions Status Update.

I. INTRODUCTION

Renewable Northwest thanks Puget Sound Energy (“PSE”) for this opportunity to provide feedback as a stakeholder in the company’s effort to develop its 2021 Integrated Resource Plan (“IRP”). This feedback is in response to PSE’s February 10, 2021, webinar and associated materials regarding various updates and draft results for the continued development of the 2021 IRP.

Renewable Northwest participated in the webinar and asked various clarifying questions throughout. Below, we first follow up on PSE’s request for stakeholder feedback to help develop the sensitivity to model the effect of the incremental cost of compliance, as outlined by the Clean Energy Transformation Act (“CETA”), on the preferred portfolio.¹ We also provide feedback on PSE’s flexibility analysis results.

II. FEEDBACK

A. Incremental Cost of Compliance

For the final IRP, PSE will be testing its preferred resource mix against the two-percent cost threshold outlined by CETA (RCW 19.405.060(3)(a)), an alternative compliance mechanism.² In the slide deck associated with the most recent IRP webinar, PSE revealed that the Mid Scenario and three newly-modeled sensitivities exceed the two-percent cost threshold at some point over the planning horizon.³ To ensure PSE’s energy transition follows a trajectory toward

¹ RCW 19.405.060(3)(a)

² RCW 19.405.060(3)(b)

³ Slide 63, Webinar 12

meeting CETA’s clean energy mandates and the company’s own internal carbon reduction commitments, PSE must minimize its use of alternative compliance mechanisms.⁴ As PSE prepares for submission of its first Clean Energy Implementation Plan (“CEIPs”) per WAC 480-100-640, the company should take full advantage of the modeling tools deployed during IRP development to understand the effect of the incremental cost of compliance on the preferred portfolio.

We recommend PSE design the incremental cost of compliance threshold (as shorthand, just “cost threshold”) sensitivity as a split analysis, considering how various resource configurations or planning decisions will affect how closely the company tracks to the cost threshold and, thus, how likely it is the company will achieve its 2045 clean energy commitment. At minimum, PSE should consider:

a. How altered procurement timelines may adjust the portfolio’s diversion from the cost threshold.

In the slide deck, PSE reveals that the Mid Scenario falls below the cost threshold until around 2026, when coal-fired resources must be removed from PSE’s allocation of electricity.⁵ First, PSE should clarify whether the Mid Scenario reported in the draft IRP accounts for the SCGHG of gas-enabled combustion turbines, as it’s not currently clear that alternative fuels will be comparable in cost and, thus, least cost. And if the Mid Scenario actually mirrors sensitivity W, which ramps in distributed energy resources (“DERs”) over time and includes biodiesel-fueled combustion turbines, PSE should revise its fuel cost assumptions, as biodiesel will not remain at a stale price across the planning horizon.

Beyond that, PSE notes in the draft IRP that the model prefers to procure DERs near the end of the planning horizon to realize cost reductions, and that sensitivities V and W are performed to spread those procurements at only a slight increase in levelized cost. However, the actual “spread” of procurements is still back-end heavy, with the Mid Scenario reporting nearly two-thirds of the DER procurements in the 2031 to 2045 timeframe. PSE should analyze how a more evenly-distributed DER procurement schedule may - at a minor increase in cost - allow PSE to remain below the cost threshold beyond 2026.

b. How portfolios with a slightly higher levelized cost in the near term (from 2022 to 2026) may extend the number of years PSE falls below the cost threshold.

⁴ PSE sets “Beyond Net Zero Carbon” goal (Jan. 21, 2021), *available at* https://www.pse.com/press-release/details/pse-sets-beyond-net-zero-carbon-goal?utm_source=Social&utm_medium=LINKEDIN&utm_campaign=TOGETHER.

⁵ RCW 19.405.030(1)(a)

Renewable Northwest has urged PSE in previous comments to consider how the model's preference for lowest-cost resources may be undervaluing the dynamic, long-term contributions of slightly higher cost resources. For example, PSE has indicated in various sensitivity analyses and in past webinars that the model selected the 2-hour Li-ion battery because it was least cost. However, because this resource does not offer as much flexibility value and resource adequacy contribution as a 4-hour Li-ion battery or a solar + 4-hour Li-ion battery hybrid resource, there may be unrealized cost reductions to procuring these resources earlier in the planning period. Because the capital cost is higher, the extra margin below the cost threshold in the near term should prompt PSE to study whether earlier investments in these resources may not only track PSE closer to the cost threshold beyond 2026, but also improve the flexibility of PSE's system by a means compliant with CETA.

c. How revising resource assumptions to better align with current estimates alters the Mid Scenario's relationship to the cost threshold.

See the comments of Renewable Northwest, submitted to docket UE-200304, for details and references.⁶

B. Flexibility Analysis

Regarding the flexibility analysis, we have a few clarifying questions and comments which would be helpful for this process in the current IRP as well as going forward.

1. It would be helpful if staff provides a detailed look at the **magnitude and duration** of the flex violations coming out of the model. As we mentioned in our previous comments, flexibility is not uni-dimensional but involves four key dimensions, each of which should be accounted for in the modeling effort. This would provide a better understanding as to what resource types and technologies would be most efficient and cost-effective in treating those violations. For example, battery storage resources of smaller sizes (30-minute or 1-hour duration) may be more cost-effective in providing flexibility (both up and down) reserves if the both the magnitude and duration of the majority of flex violations are shorter in nature.

⁶ Renewable Northwest comments re: PSE Draft IRP (Feb. 5, 2021), Docket UE-200304, *available at* https://www.utc.wa.gov/_layouts/15/CasesPublicWebsite/CaseItem.aspx?item=document&id=00026&year=2020&docketNumber=200304&resultSource=&page=1&query=200304&refiners=&isModal=false&omItem=false&doItem=false.

2. In the webinar, staff mentioned that the reason the flexibility value or benefit for 4-hour battery storage is lower is because that resource requires to be charged using market purchases which have an associated social cost of greenhouse gas (“SCGHG”). **Hybrid resources**, on the other hand, can assist PSE meet its CETA goals, can provide clean, non-emitting energy to charge the battery, and can capture the sizable federal ITC, ensuring cost-effectiveness. It would be helpful if staff can run the flexibility analysis to evaluate the flexibility benefits of a solar + 2-hour Li-ion and solar + 4-hour Li-ion battery configurations.
3. To what level of detail does this analysis evaluate other flexibility-related value streams such as **fast-frequency response and voltage (volt/var) support**? As conventional power plants retire, these key grid services will become increasingly important, and resources like batteries which are able to provide these services should be valued accordingly in flexibility analyses.

III. CONCLUSION

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

Sincerely,

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