PSE IRP Feedback Report Addendum
Webinar 6: Portfolio Sensitivities
August 11, 2020

9/01/2020

The following stakeholder input was gathered through the online Feedback Form, from August 4 through August 18, 2020. PSE was unable to gather the responses in time for the August 25, 2020 Feedback Form. This report addendum is a response to the items not included in the August 25, 2020. The responses were published on September 1, 2020 and referenced in the Consultation Update.

Feedback Form Date	Stakeholder	Comment	PSE Response
8/18/2020	Katie Ware, Renewable Northwest	1. Renewable Northwest appreciates PSE's request for stakeholder suggestions regarding the appropriate portfolio sensitivities PSE should model. Below are our recommendations: a. Regarding the renewable over-generation test, we recommend that PSE incorporate the effects of this sensitivity on the 2% cost threshold relevant to compliance with CETA standards. Specifically, should PSE choose to or be required to over-generate renewables to meet load, how early in a compliance period would PSE meet the 2% cost threshold, and thus be considered in compliance with the clean energy standards? b. Regarding the must-take DR and battery storage sensitivity, we again recommend that PSE incorporate the effects on the 2% cost threshold. We recommend that PSE consider this detail in modeling other sensitivities which may lead PSE to the cost cap early in each compliance period. c. Regarding the highly-centralized sensitivity within the Transmission Constraints and Build Limitations category, we recommend that PSE consider including additional constraints specific to renewable proxy locations, whereby a strict delivery requirement mandated by CETA may create geographic limitations to new-build renewables. d. Regarding the SCC as a tax in WA, OR and CA sensitivity, we agree with PSE that this tax should be modeled WECC-wide for consistency.	Thank you for your comments and questions. PSE responses referenced as "a – d": a. PSE plans to include renewable resources to meet CETA requirement and does not elect to over-generate renewable resources during planning. However, over-generation may occur during certain times of the year. It is important to understand the impact of over-generation without additional constraints. Including the 2% cost threshold may limit the addition of new resources and thus not meet CETA requirements. PSE plans to model the over-generation sensitivity without the 2% cost threshold. b. The description you provided is consistent with PSE's approach regarding the must-take DR and battery storage. c. Update for September 1: PSE reached out to Katie Ware on 08/27 and the clarification will be made well before the October 20 IRP meeting. d. Thank you for expressing your support for implementing the SCC as a WECC-wide tax. This will be noted in the updated spreadsheet file.
8/18/2020	Kyle Frankiewich, WUTC Staff	Slide 11: I'm still struggling some with the difference between a scenario and a sensitivity. It seems to me that some single-input changes, which could be called a sensitivity, could change the company's electric price forecast. It would be nice if it was possible to freeze the electric price forecast, and then compare various tweaks to the models and see how PSE might respond to that forecast, but if a sensitivity is likely to impact the forecast, then the comparison becomes difficult.	Scenarios are different sets of assumptions that create future power market conditions. These assumptions include: - Gas prices, carbon regulation, and regional loads that create different wholesale market power prices, which affect the relative value of different resources. - Wholesale price forecasts developed using the AURORA model. - Other major generators in the Western U.S., as well as loads from those areas. Portfolio sensitivities are minor changes to a scenario that creates alternate portfolios of supply and demand side resources for PSE. - A scenario must be selected to change in order to perform a sensitivity analysis. - Typically, a single variable or single set of assumptions is changed in order to isolate the effect of that change on the scenario. - The results of a sensitivity can be compared to the chosen scenario, or other sensitivities that are based on the same scenario. The electric price forecast is an input to the IRP model. PSE runs different scenarios to create different electric price forecasts to test with PSE's portfolio. PSE will reach out to you to discuss this further. Update for September 1: PSE discussed this with Kyle on 08/27/2020.

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8/18/2020	Kyle Frankiewich, WUTC Staff	Slide 21: What NEIs are included in sensitivity 16? I understand that the CPA provided some NEIs on a measure-by-measure basis. I'd like to better understand this and verify that there's no double-counting here, and that NEIs are appropriately included in the baseline model run. Relatedly, the company has previously mentioned that early runs show the cost-effective conservation selection are pretty far up the conservation curve. Where specifically? In the company's current runs, what is the $/MWh delta between where the marginally cost-effective bundle and the next available conservation bundle that was marginally not cost-effective?	PSE will use the EPA study suggested by NWEC for the sensitivity that accounts for the health benefits of conservation. There will be no overlap with the NEIs that are currently in the CPA as they not related to the health benefits addressed by the study. More data will be available regarding the supply curve once the portfolio analyses are complete.
8/18/2020	Kyle Frankiewich, WUTC Staff	Slide 54: How soon will these forecasting and hosting capacity capabilities be available? Will this granularity prompt a revisit of the system-wide T&D deferral estimates?	PSE expects to implement geospatial load forecasting in 2021. Hosting capacity analysis methods are currently being researched and requirements for those tools are in development. The requirements of the selected tool will drive the implementation schedule, but implementation of HCA is expected by 2022. Full capability will not be realized until the completion of AMI implementation in 2023. Geospatial load forecasting and HCA would not trigger a revisit of the system-wide T&D deferral estimate. Additional analysis would be required to determine if adjusting the T&D deferral value was warranted.
8/18/2020	Kyle Frankiewich, WUTC Staff	Slide 54: How does PSE anticipate the geospatial analysis will inform the utility's compliance with CETA's requirement to equitably distribute energy- and non-energy benefits?	PSE anticipates that demand side management and customer DER program participation will be modeled in the geospatial load forecast. Equity and accessibility in program design will be reflected in the forecast, and will drive electric system investments accordingly.
8/18/2020	Kyle Frankiewich, WUTC Staff	Slides 57-58: I understood the company's explanation of the must-take solar and batteries as an inclusion of PSE's acquisition of these resources not for whole-system need, but as cost-competitive alternatives to other distribution-level system projects. Is this correct? This seems reasonable, but more information would be useful – info on historical acquisition rates for these types of NWAs, and on the company's forecasted future acquisitions. Are the ~160 MW of cumulative resources shown in slide 57 *all* included as must-take?	Yes, that is correct. As presented in the table on Slide 58, must-take solar and batteries as an inclusion of PSE's acquisition of these resources not for whole-system need, but as cost-competitive alternatives to other distribution-level system projects. As presented in the table on Slide 58, must-take solar and batteries are included as cost-competitive alternatives to other distribution-level system projects. Concerning your suggestion for additional information: PSE's work regarding NWAs began in 2018/2019 and is growing. To date, one area's concerns are economically solved by NWA (Bainbridge Island). More area studies on this process are underway to determine solution viability. The NWA forecast as shown on slide 57 was developed from comparing the known concerns against characteristics that were proven by the Bainbridge Island solution. More detailed studies will be performed to sharpen this forecast over time. The forecast basis for storage and targeted EE/DR are based on both the Bainbridge Island and Lynden NWA study results, while the PV projection is based on current industry knowledge. The forecast will become more accurate as we complete more studies. This forecast includes Non-wire alternatives to solve localized capacity needs. Correct, the ~160 MW of cumulative resources shown in slide 57 *all* are included as must-take.
8/18/2020	Kyle Frankiewich, WUTC Staff	[Recommendation 5:] Upstream emissions and NWPCC: I haven't verified this, but I understand that the Northwest Power and Conservation Council intends to model upstream emissions on natural gas in their next power plan. I have heard that their estimate is about 1.37% leakage. How does this compare to the estimates PSE intends to use? How does this compare with other published studies exploring this issue, such as the 2018 EDF assessment? Do the NWPCC's approach and assumptions align with PSE's (EPA and Canadian province govt estimates, if I recall)? To the extent PSE's modeling of this issue diverges from the Council's, I'd like to fully understand why.	PSE reached out to Kyle on 08/27 to discuss this and there will be additional follow-up.