

Feedback report

RPAG Meeting

Meeting details

- Tuesday, May 14, 2024, 10:00 a.m. - 1:00 p.m.
- Virtual webinar hosted by PSE and facilitated by Triangle Associates
- Links to:
 - Presentation
 - Meeting recording

Feedback

The following table records participant questions and PSE responses from the public comment opportunity and comments submitted via online [feedback form](#) or irp@pse.com. Meeting materials are available on the IRP [website](#).

Note: PSE aims to provide clarity in responses but subsequent follow-up may be required at times. Please direct any follow-up clarifications to irp@pse.com.

No.	Date	Interested party	Submitted via	Question or comment	PSE response
1	5/14/2024	RPAG member	In meeting	What kind of SMR is PSE considering modeling?	<p>Our cost and operating assumptions for the small modular reactor (SMR) technology are derived from multiple sources and are largely modeled after three different SMRs currently in development:</p> <ul style="list-style-type: none">• NuScale VOYGR: 77-MWe Pressurized Water Reactor (PWR)• GE BWRX-300: 300-MWe Boiling Water Reactor (BWR)• X-Energy Xe-100: 80MWe High-Temperature Gas Reactor (HGTR)

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2	5/21/2024	Joel Nightingale on behalf of Washington Utilities and Transportation Commission staff	irp@pse.com	<p>WRAP:</p> <p>1. Staff appreciates PSE’s consulting with the RPAG on its involvement with the WRAP and how that may impact the Company’s planning processes. We do have some questions about the WRAP’s resource neutrality in light of PSE’s CETA compliance obligations:</p> <p style="padding-left: 40px;">a. WRAP’s resource neutrality poses potential problems with PSE meeting its CETA obligations after 2045, and possibly after 2030 depending on how often emitting resources are used to meet PSE’s need. While 2045 may feel like a distant future, the nature of resource adequacy and integrated resource planning requires a long-term view. Does the WRAP have plans to address the discrepancies in clean energy requirements between its various members in future tariff updates or otherwise?</p> <p style="padding-left: 40px;">b. Staff would also appreciate more information about how transmission constraints are considered in the WRAP’s design. How does the WRAP ensure that a WRAP resource will be deliverable when it is needed regardless of the location of that resource and the location of the utility that needs it? (For example, during a winter peaking event, how can PSE be confident that, say, a desert southwest resource would be deliverable to PSE’s territory given transmission constraints?)</p>	<p>1a. WRAP is currently focusing on ensuring the Tariff aligns with the intended program design and does not have immediate plans to address state-specific requirements; however, it should be noted that Tariff changes can be proposed by anyone and will be evaluated via an iterative multi-stakeholder process. It is currently a core tenet of the WRAP that the program does not place limitations upon the type of generation Participants can try and register as Qualified Resources; it is up to each Participant to ensure that the resources they are claiming in their Forward Showing meet relevant state obligations. The Operations Program is there for deficient Participants that have confirmed they need assistance on the Pre-Schedule Day (the day before the Operating Day). The deficient Participant has the opportunity to resolve any deficiencies bilaterally and outside of the WRAP in accordance with their business practices and requirements before they choose to take advantage of WRAP capacity held back by a sufficient Participant on their behalf.</p> <p>1b. The WRAP Region is currently split into two Subregions comprised of Load and Resource Zones (LRZs) that group load and generation according to weather variability: the Northwest Subregion (sometimes referred to as just Mid-C) and the Southwest and East Subregion (sometimes called “SWEDE”). Each Subregion is comprised of load and generation from within certain Balancing Authority Areas, and the boundaries of each Subregion are defined by the boundaries of the combined area of the component Balancing Authority Areas.</p> <p>Participants are in general agreement that there are transmission constraints between the Subregions, and as a result the WRAP currently</p>

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				<p>c. How does participation in the WRAP interact with PSE’s participation in real-time and/or day-ahead markets?</p> <p>PSE proposed alignment with WRAP in future IRPs:</p> <p>2. Staff appreciates the work that PSE and other utilities have done to incorporate climate change modeling into their load forecasts, rather than relying entirely on historical load data. Is WRAP planning to incorporate climate model-informed load and/or generation forecasts into its assumptions?</p> <p>3. As Fred Heutte mentioned during the RPAG meeting, a recent report from GridLab discusses the WRAP and its implications in planning. How does PSE’s proposal to align its IRP process with WRAP’s metrics and methodologies compare to the recommendations made in that report (see page 31)? (Link: The Western Resource Adequacy Program: Considerations for Planners and Policymakers - GridLab)</p> <p>4. Staff appreciates PSE’s presenting its proposed approach to aligning further with the WRAP program in PSE’s planning. Staff sees significant value in the WRAP and the potential for meeting regional needs with fewer and less expensive resources. Given (1) the outstanding questions that came up during the meeting, (2) the fact that WRAP members have chosen to delay their entering the binding phase of the program, and (3) other questions we provide above, Staff believes it may be premature to fully adopt PSE's proposed WRAP-based</p>	<p>has Subregion-specific Monthly Forward Showing Planning Reserve Margins depending on where a Participant is located. Currently, there are also separate Subregional Operations Programs, so Participants in the Northwest assist other Participants in the Northwest (and the same for Participants in the SWEDE), but not between Subregions. As WRAP evolves, Participants are exploring the potential extent of interconnectivity between the Subregions (i.e. beyond the current working assumption of zero) - and the impacts for both the Forward Showing and the Operations Program, as well as modeling considerations - in order to take advantage of the load and resource diversity across the whole WRAP Region in a reliable way.</p> <p>To try and ensure deliverability within the Subregions, the Forward Showing requires Participants to demonstrate sufficiently firm transmission rights (NERC Priority 6 or 7) to be able to deliver 75% of their Forward Showing Capacity Requirement (i.e., Monthly load forecasts plus corresponding Monthly Forward Showing Planning Reserve Margins for Winter and Summer, by Subregion) from Qualifying Resources to load: this is called the Forward Showing Transmission Requirement. Moving into the Operations Program, WRAP requires that Participants have secured the remaining firm transmission rights required to deliver all of their resources; however, WRAP does not confirm this. Instead, if a Participant with excess capacity is required to holdback and deliver energy to a deficient Participant but is unable due to insufficient transmission rights, the Participant failing to assist will be liable for a Delivery Failure Charge.</p>

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				<p>resource adequacy methodology. However, Staff does support PSE continuing to explore the implications of moving in this direction through sensitivity/scenario analysis and further discussion of the methodology and results with advisory groups.</p> <p>5. How does PSE plan to treat demand response for the purposes of WRAP participation among the three options given? See 1 hour, 11 minutes into the meeting recording.</p>	<p>1c. The WRAP is a voluntary compliance-based framework designed to increase regional reliability. The Operations Program creates a framework to provide participants, like PSE, with pre-arranged access to capacity resources in the WRAP footprint during times when a participant is experiencing an extreme event, such as excess load or forced outages. However, it is intended to be used as a measure of last resort. The Operations Program provides multi-day ahead and within-day monitoring of load-resource balance. If a participant has an anticipated capacity need for a particular timeframe within the following 7-day operating window, they would look to procure the required capacity from WRAP participants who have surplus capacity, prior to the operating day or hour.</p> <p>The WRAP Operations Program timeline was created to work with the day-ahead trading schedule and aligns with the WECC preschedule calendar. Participants send multi-day ahead forecast data to the Program Operator (PO) by automated file transfer by 05:20 PPT on each preschedule day for Operating Days 1 to 7. The PO uses the multi-day ahead forecast data to calculate the Sharing Calculation which determines which participants are capacity deficient and which are capacity surplus over the following 7-day operating window. The PO calculates the Sharing Calculation by 05:45 PPT and publishes these results by 06:00 PPT. By 06:30 PPT, deficient participants opt in or out of receiving capacity and the final Holdback Requirement (Capacity Obligation) for surplus participants is posted at 07:00 PPT. Deficient participants have from 06:00 – 06:30 PPT to procure capacity and cure any deficiencies in the day-head market if they choose to do so.</p>

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					<p>During the Operating Day, participants provide up-to-date operational data to the PO each hour for a forward-looking 24-hour period. A deficient participant that opted in for capacity the previous day shall confirm the final amount of required energy deployment two hours prior to any hour with an indicated deficiency. Participants can look to cover any deficiency in the real-time market rather than confirming energy deployment.</p> <p>2. To model the effects of weather variability on load in the WRAP Loss of Load Expectation (LOLE) study, a load shape provided by Participants from recent historical load data is combined with historical weather data to synthesize at least forty years of synthetic historical weather data. These synthesized load shapes are updated to consider factors such as changes in load patterns, sharp increases in load due to large new customers, or changes in climate. The LOLE Study leads to the calculation of the Monthly Forward Showing Planning Reserve Margins based on the WRAP load in aggregate (by Subregion). A Participant's Forward Showing then requires them to meet Monthly Forward Showing Capacity Requirements, calculated by applying the Planning Reserve Margins to a Participant's specific load forecasts (determined by the program). As required by the Tariff, WRAP is currently exploring the establishment of a load growth rate for Participants' load forecasts that could account for location and weather among other potential factors, including climate change.</p> <p>3. The methods PSE has proposed using align fairly well, although not perfectly with the recommendations proposed by GridLab.</p> <ul style="list-style-type: none"> • GridLab recommends testing each separate portfolio considered against integrated

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					<p>reliability standards, whereas PSE does this once upfront with a base portfolio and uses these results to plan targets for portfolios being considered. PSE then tests the final selected portfolio at the end of the process to ensure that the preferred portfolio meets adequacy standards, but this check is only done on the final portfolio iteration rather than testing every considered portfolio along the way for reliability.</p> <ul style="list-style-type: none"> • GridLab suggests that WRAP metrics could eventually become the default reliability modeling assumptions. PSE is proposing using reliability metrics from WRAP or based off of WRAP provided data and methodologies as a sensitivity, which would be a first step towards taking the action recommended here by GridLab. <p>4. Thank you for your comment.</p> <p>5. PSE models demand response by including it as a dispatchable capacity resource in the Aurora model, which is the last of the three options outlined by WRAP during the meeting.</p>