

**EXH. RJR-6
DOCKET UG-230393
WITNESS: RONALD J. ROBERTS**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

Docket UG-230393

**FIFTH EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

RONALD J. ROBERTS

ON BEHALF OF PUGET SOUND ENERGY

MAY 25, 2023

Excerpt from
PSE 2019 IRP Progress Report

Revised December 10, 2019

Puget Sound Energy 2019 IRP Progress Report

December 10, 2019

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Overview

On November 7, 2019, the Washington Utilities and Transportation Commission (WUTC) issued an order, Docket UE-180607 and Docket UG-180608 Order 2, granting a temporary exemption from the requirements of WAC 480-100-238(4)-(5) and WAC 480-90-238(4)-(5). In accordance with the order, PSE files this progress report and plans to file the next draft Integrated Resource Plan (IRP) by January 4, 2021 and the next final IRP by April 1, 2021.

This progress report reviews key updates developed during the work on PSE's 2019 IRP. It includes:

- An update on the 2017 IRP electric and natural gas action plans
- An updated electric needs analysis for capacity and renewable/non-emitting energy
- An updated power price forecast modeled with renewable portfolio standards and clean energy policies passed in 2019
- An updated natural gas needs analysis
- A summary of the public participation and consultation PSE conducted during the 2019 IRP cycle
- An update on open action items developed during the development of the 2019 IRP

The energy industry is in a state of transition as major clean energy policies are being implemented in most states, significant amounts of firm generation is being retired, new intermittent renewable generation is being constructed, and Western energy prices have become more volatile. These changes will cause PSE to make changes in how we plan, especially with regard to resource adequacy, exposure to the Mid-C bilateral spot market and the acquisition of new resources.

During the past eight months, PSE has worked diligently with WUTC staff and stakeholders to solicit public input on the model inputs, assumptions, methodology and modeling needed to ensure that PSE's IRP complies with the requirements of the Clean Energy Transformation Act (CETA). PSE appreciates the time, expertise and input of the Technical Advisory Group (TAG) and the IRP Advisory Group (IRPAG) during the 2019 IRP process. Many recommendations made by TAG members were incorporated in the 2019 effort. We will work with care and deliberation to ensure that the applicable contributions and feedback of TAG members in the 2019 process is included in the 2021 IRP.

PSE remains committed to removing coal-fired generation from its portfolio of generating resources by 2025 and transitioning PSE's electric supply portfolio to be 100 percent carbon-free by 2045. We are committed to delivering safe, dependable, reliable power to meet our customer's needs with a resource planning and acquisition strategy focused on the following key elements:

- target increased levels of conservation;
- acquire firm, dispatchable, flexible replacement capacity to meet peak capacity need, using

Natural Gas Resource Need

PSE's natural gas sales need is driven by peak day demand, which occurs in the winter when temperatures are lowest and heating needs are highest. The current design standard ensures that supply is planned to meet firm loads on a 13-degree design peak day, which corresponds to a 52 Heating Degree Day (HDD).⁹ Two primary factors influence demand, peak day demand per customer and the number of customers. The heating season and number of lowest-temperature days in the year remain constant and use per customer is growing slowly, if at all. The biggest factor in determining load growth at this time is the increase in customer count.¹⁰

The IRP analysis tested three customer demand forecasts over the 20-year planning horizon: mid, high and low demand forecasts.

- In the low demand forecast, we have sufficient firm resources to meet peak day need throughout the study period.
- In the mid (base) demand forecast, the first resource need occurs in the winter of 2022-2023.
- In the high demand forecast, the first resource need occurs immediately.

Mid, low and high demand forecasts were developed for the 2019 IRP planning horizon using national, regional and local economic and population data. These forecasts were presented to the IRP Technical Advisory Group at its September 2019 meeting and are available online at www.pse.com/irp. Demand forecasts are updated for every IRP and will be updated in 2020 for the 2021 IRP.

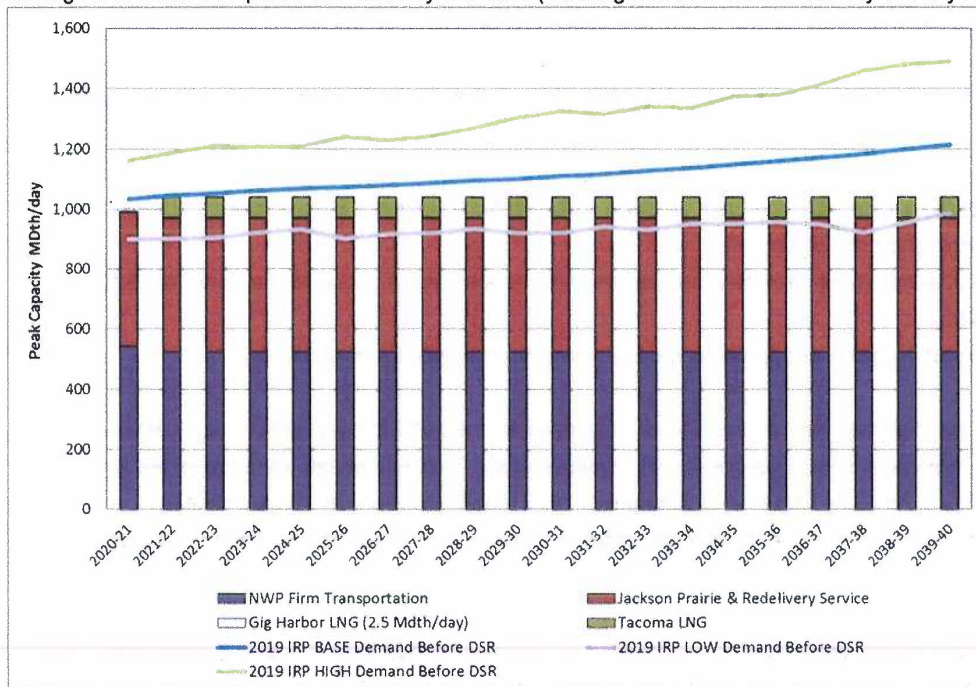
Figure 8 illustrates natural gas sales peak resource need over the 20-year planning horizon for the three demand forecasts modeled in this IRP. Figure 9 shows the resource need surplus/deficit for the base (mid) demand forecast.

9 / Heating Degree Days (HDDs) are defined as the number of degrees relative to the base temperature of 65 degrees Fahrenheit. A 52 HDD is calculated as 65° less the 13° design peak day temperature.

10 / The 2019 IRP demand forecast projects the addition of approximately 12,000 natural gas sales customers annually on average.

In Figure 8, the lines rising toward the right indicate peak day customer demand before additional demand-side resources (DSR),¹¹ and the bars represent existing resources for delivering gas supply to our customers. These resources include contracts for transporting natural gas on interstate pipelines from production fields, storage projects and on-system peaking resources.¹² The gap between demand and existing resources represents the resource need.

Figure 8: Gas Sales Peak Resource Need before DSR, Existing Resources Compared to Peak Day Demand (Meeting need on the coldest day of the year)



11 / One of the major tasks of the IRP analysis is to identify the most cost-effective amount of conservation to include in the resource plan. To accomplish this, it is necessary to start with demand forecasts that do not already include forward projections of additional conservation savings. Therefore the IRP gas demand forecasts include only demand-side resources (DSR) measures implemented **before** the study period begins in 2020. These charts and tables are labeled “before DSR.”

12 / Tacoma LNG is shown as an existing resource, as the facility is currently under construction and anticipated to be in service and available by the winter of 2021-2022.

Figure 9: Gas Sales Peak Resource Deficit in Mid (Base) Demand Forecast before DSR

