

**EXH. RJR-5
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

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

RONALD J. ROBERTS

ON BEHALF OF PUGET SOUND ENERGY

MAY 25, 2023

Excerpt from
2017 PSE Integrated Resource Plan



2017 PSE Integrated Resource Plan

Gas Analysis

This analysis enables PSE to develop valuable foresight about how resource decisions to serve our natural gas customers may unfold over the next 20 years in conditions that depict a wide range of futures.

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1. RESOURCE NEED AND KEY ISSUE

Resource Need

More than 800,000 customers in Washington state depend on PSE for safe, reliable and affordable natural gas services.

PSE's 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).¹ 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 fairly constant and use per customer is growing slowly, if at all, so the biggest factor in determining load growth at this time is the increase in customer count.

The IRP analysis tested three customer demand forecasts over the 20-year planning horizon: the 2017 IRP Base Demand Forecast, the 2017 IRP High Demand Forecast and the 2017 IRP Low Demand Forecast.²

- In the Low Demand Forecast, we have sufficient firm resources to meet peak day need until the winter of 2035/36.
- In the Base Demand Forecast, the first resource need occurs in the winter of 2018/19 in the study, after that, there are sufficient firm resources to meet peak day need until the winter of 2022/23.
- In the High Demand Forecast, we do not have sufficient firm resources to meet peak day need throughout the study.

Figure 7-1 illustrates gas sales peak resource need over the 20-year planning horizon for the three demand forecasts modeled in this IRP. Figure 7-2 shows the resource need surplus/deficit for the Base Demand Forecast.

¹ / HDDs are defined as the number of degrees relative to the base temperature of 65 degrees Fahrenheit. A 52 HDD day is calculated as 65° less the 13° temperature for the day.

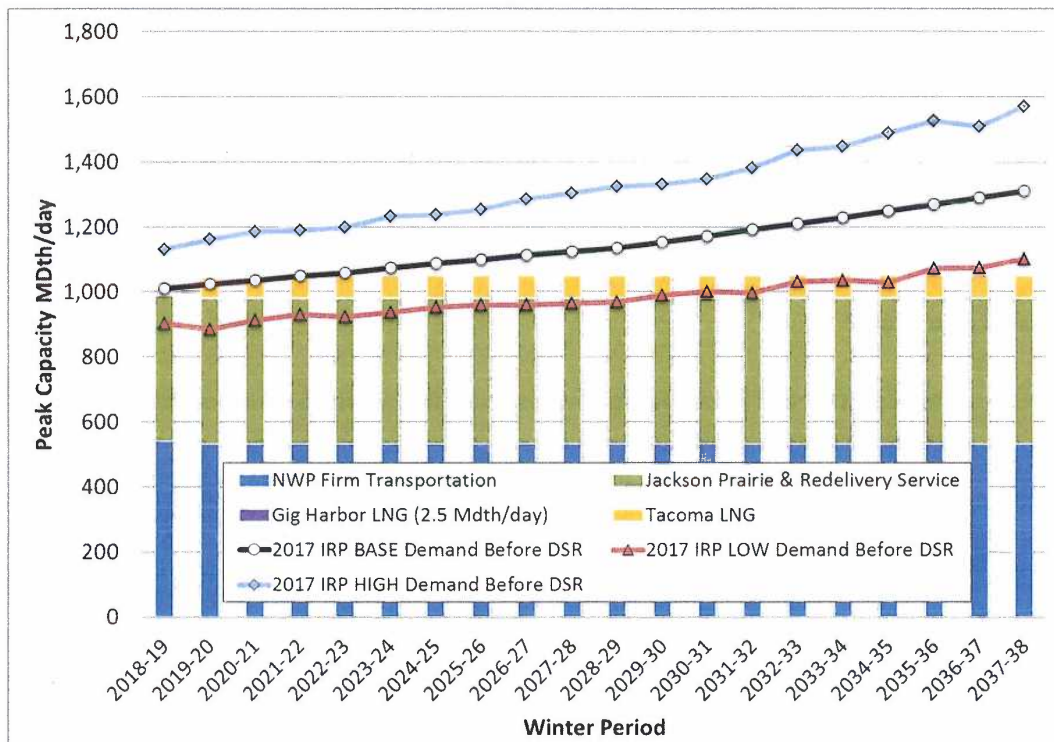
² / The 2017 IRP demand forecasts are discussed in detail in Chapter 5, Demand Forecast.

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In Figure 7-1, the lines rising toward the right indicate peak day customer demand before demand-side resources (DSR),³ and the bars represent existing gas supply resources to deliver gas to our customers. These resources include contracts for transporting natural gas on interstate pipelines from production fields, storage projects and on-system peaking resources.⁴ The gap between demand and existing resources represents the resource need.

Figure 7-1: Gas Sales Peak Resource Need before DSR,
Existing Resources Compared to Peak Day Demand
(Meeting need on the coldest day of the year)

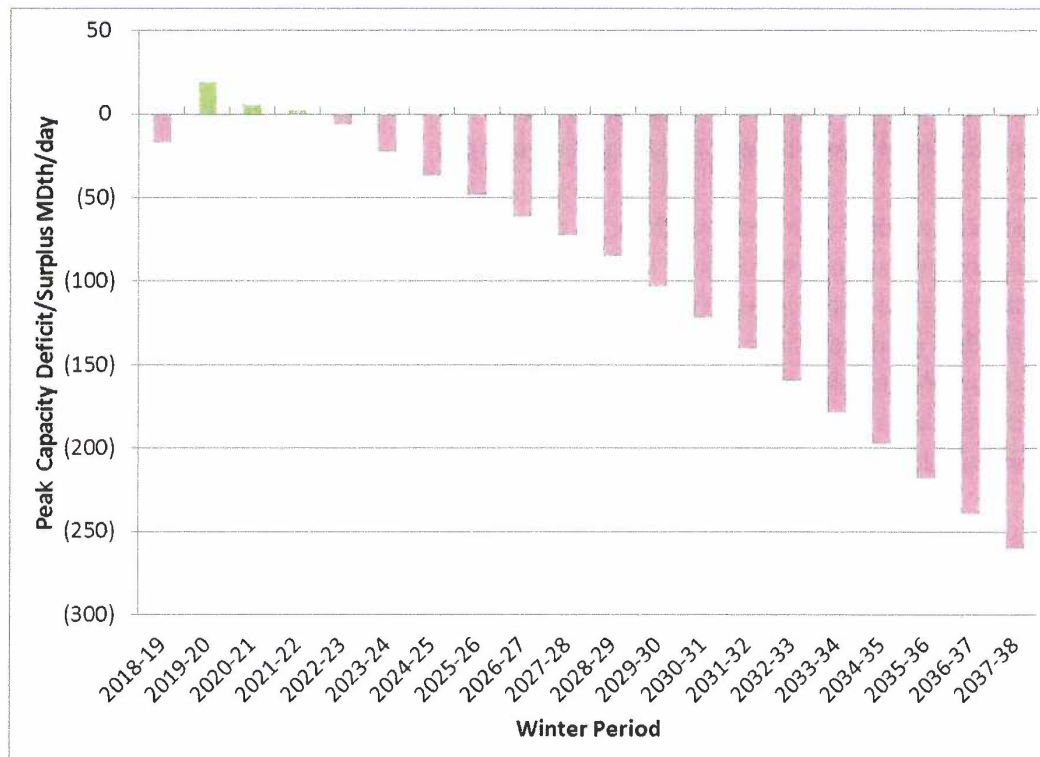


3 / One of the major tasks of the IRP analysis is to identify the most cost-effective amount of conservation to include in the resource plan. To accomplish this, it is necessary to start with demand forecasts that do not already include forward projections of conservation savings. Therefore the IRP Gas Demand Forecasts include only DSR measures implemented before the study period begins in 2018. These charts and tables are labeled "before DSR."

4 / 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 2019.

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Figure 7-2: Gas Sales Peak Resource Need Surplus/Deficit in Base Demand Forecast before DSR



Gas Sales Key Issue

Adequacy of Sumas Market

The Sumas market (the Huntingdon, British Columbia / Sumas, Washington hub) is essentially an interconnection between the Enbridge/Westcoast Energy Pipeline (Westcoast) and Northwest Pipeline (NWP). Unlike other market hubs, there is no gas production and no convergence of several supply pipelines. PSE implemented a strategy to hold firm capacity on Westcoast for approximately 50 percent of its peak demand for gas from British Columbia (B.C.). This strategy provides a level of reliability (physical access to gas in the production basin) and an opportunity for pricing diversity, as often there is a significant pricing differential between Station 2 and Sumas that more than offsets the cost of holding the capacity.

Since its last major expansion in 2002, Westcoast has had capacity to transport adequate supplies to satisfy all firm demand relying on gas from northeast British Columbia (NE B.C.).