BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Dockets UE-260005 & UG-260006
Puget Sound Energy
2026 General Rate Case

PUBLIC COUNSEL DATA REQUEST NO. 299:

Re: Power Cost Forecast. Demand.

This data request constructs the electricity demand for each of the 30 scenarios.

Baseline preparation. Define the baseline load as the hourly forecast used in PSE's testimony for 2027 (Feb 2027 through Jan 2028). The baseline weather sensitive load (BWSL) is the baseline load with the baseline non-weather sensitive load (BNSL) removed.

Scenario load preparation. The scenario weather sensitive load (SWSL) is the actual hourly load for that year with the scenario non-weather sensitive load (SNSL) removed.

Use the SWSL load from the 30-year period ending July 31, 2025, to generate scalars. For every hour (h) in each month (m) in each historical year (y), calculate the Demand Variation Scalar (S_load):

S_(load,y,m,h)= 〖SWSL〗_(y,m,h)/〖SWSL Mean〗_(y,m)

Please provide these values in Excel format.

The calculated scalars to the 2027 BWSL and add back in the BNSL.

〖Scenario Load〗_(y,m,h)=〖BWSL〗_(m,h) 〖×S〗_(load,y,m,h)+〖BNSL〗_(m,h)

Response:

Public Counsel Data Request Nos. 296 through 301 asked Puget Sound Energy ("PSE") to develop 30 power cost scenarios using historical demand, price, wind, and hydroelectric supply as inputs (or to shape inputs) for each of the scenarios. On June 1, 2026 PSE and Public Counsel met to discuss the request, clarify expectations, and explain PSE's limited ability to perform the model runs exactly as requested within a reasonable amount of time. Due to data limitations and the time required to complete power cost model runs with PSE's current Aurora model-based set up it will not be possible to complete 30 model runs for this analysis. As discussed, PSE will instead complete 10 individual power cost model runs using historical data from the period

February 1, 2016, through January 31, 2026. Each scenario will cover 12 months beginning February 1 and ending January 31 in order to correspond with the first 12 months of the Multi-Year Rate Plan ("MYRP") period in this proceeding. In addition to the 10 scenarios, PSE will provide one additional scenario using average demand, prices, wind, and hydro as inputs. This 11th scenario will provide a baseline against which the stochastic mean results can be evaluated. The following summarizes specific inputs that PSE will use in each of the 10 scenarios.

Hydro flows: For each of the 10 scenarios PSE will utilize the same 30-year median monthly hydroelectric production volumes that it used in its initial power cost forecast filed in this case. While hydro variability can have a material impact on power cost results, it is not appropriate to use actual historical hourly or daily hydro production as a model input given that PSE has the ability to shape hydro production in response to hourly or daily variations in demand or power prices. The Aurora model seeks to optimize input monthly hydro volumes in a manner materially similar to PSE's actual utilization of its hydro resources. Further, the scenarios developed herein will not vary monthly hydro production from the 30-year median inputs because doing so would create a mismatch with the normalized monthly prices that will be used for each scenario.

Natural gas prices: For each of the 10 scenarios PSE will utilize the same 90-day average monthly forward market gas prices that it used in its initial power cost forecast filed in this case. Public Counsel Data Request Nos. 296 through 301 requested that PSE use historical data to shape monthly gas prices into hourly or daily inputs, but PSE's Aurora model is currently only set up to accept monthly gas price inputs. Adapting the model to accept more granular inputs would add significantly to the time required for PSE to complete this request. Further, PSE does not expect that more granular gas price inputs would materially affect the outcome of this analysis. Variations in gas prices relative to forecasted gas prices do cause material variations in power costs, but this is generally due to movement in overall price level (i.e. monthly average prices moving up or down) and not due to hourly or daily shaping of prices within a particular month. Gas price volatility within a month is relatively low in large part to regional gas storage resources that can be drawn down or filled up in response to short-term demand fluctuations.

Electricity prices: For every hour (h) in each month (m) in each of the 10 historical year scenario (y), PSE will calculate a Price Variation Scalar (S_{elec}) as follows:

$$S_{elec,y,m,h} = \frac{Actual\ Historical\ Price_{elec,y,m,h}}{Actual\ Historical\ Monthly\ Mean\ Price_{elec,y,m}}$$

The hourly price scalars will then be applied to the average monthly 2027 forecasted prices from PSE's initial filing power cost model to generate 10 unique scenarios files:

$$Scenario\ Price_{elec,y,m,h} = Average\ monthly\ price_{elec,m} \times S_{elec,y,m,h}$$

Demand: PSE will use actual hourly demand (load) from the 10-year period ending January 31, 2026 to generate hourly scalars. For every hour (h) in each month (m) in each historical year (y), PSE will calculate the Demand Variation Scalar (S_{load}):

$$S_{load,y,m,h} = \frac{Actual\ demand_{y,m,h}}{Mean\ actual\ demand\ for\ the\ month_{y,m}}$$

The calculated scalars for each hour will then be applied to PSE forecasted monthly demand for the period February 1, 2027, through January 31, 2028 to generate hourly demand inputs for each of the 10 scenarios.

$$Scenario\ Load_{y,m,h} = Forecasted\ monthly\ average\ load_{m,h} \times S_{load,y,m,h}$$

Forecast wind production: PSE will use hourly wind production from each of the wind facilities in its 2027 portfolio as model inputs. Actual hourly production for the period February 1, 2016, through January 31, 2026, will be used to the extent such data exists. Where actual production data is not available (i.e. in the case of a wind facility that was recently constructed or is not yet commercially operating) PSE will use estimated hourly production based on historical actual wind speeds and estimated power curves for each facility. This data was provided to PSE by DNV Consulting and will be provided to Public Counsel with PSE's analysis and final response to this set of data requests.