

December 4, 2019

To: Irena Netik – Puget Sound Energy (PSE) Director of Energy Supply Planning and Analytics

Cc: Jay Balasbas – UTC Commissioner

Rachel Brombaugh – King County Executive Energy Policy & Partnerships Specialist

Brad Cebulko – UTC Staff

Carla Colamonici – Regulatory Analyst, Public Counsel

David Danner – Utilities and Transportation (UTC) Commission Chair

Lisa Gafken – Assistant Attorney General, Public Counsel Unit Chief

Steve Johnson – UTC Staff

Ann Rendahl – UTC

Deborah Reynolds – UTC Staff

Kathi Scanlan - UTC Staff

Subject: Response to PSE’s 2021 IRP Progress Report, Peak Demand Reporting

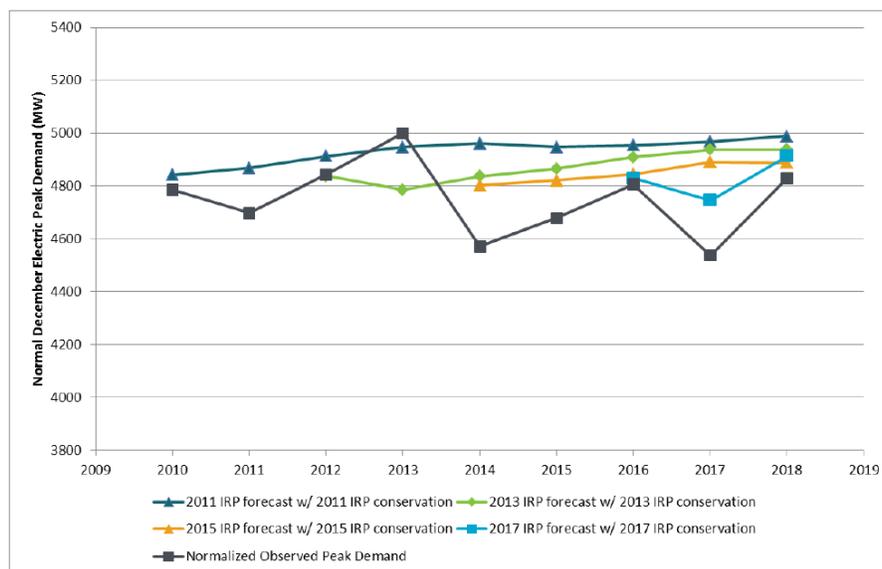
Dear Ms. Netik,

As PSE reminds us, the energy grid must be designed to serve instantaneous peak demand without failing. For this reason, a forecast of peak demand is an essential part of resource planning. A graph of the forecast is often shown at the beginning of an Integrated Resource Plan. PSE’s 2021 IRP Progress Report displays the peak demand forecast in the first graph of the report, Figure 1.

Members of the Technical Advisory Group have urged PSE to include historical peak demand values to help everyone understand how demand has evolved over time and how the forecast extends or deviates from the trends.

PSE responded to our requests by including a graph of observed peak demand in Figure 12 of the Progress Report:

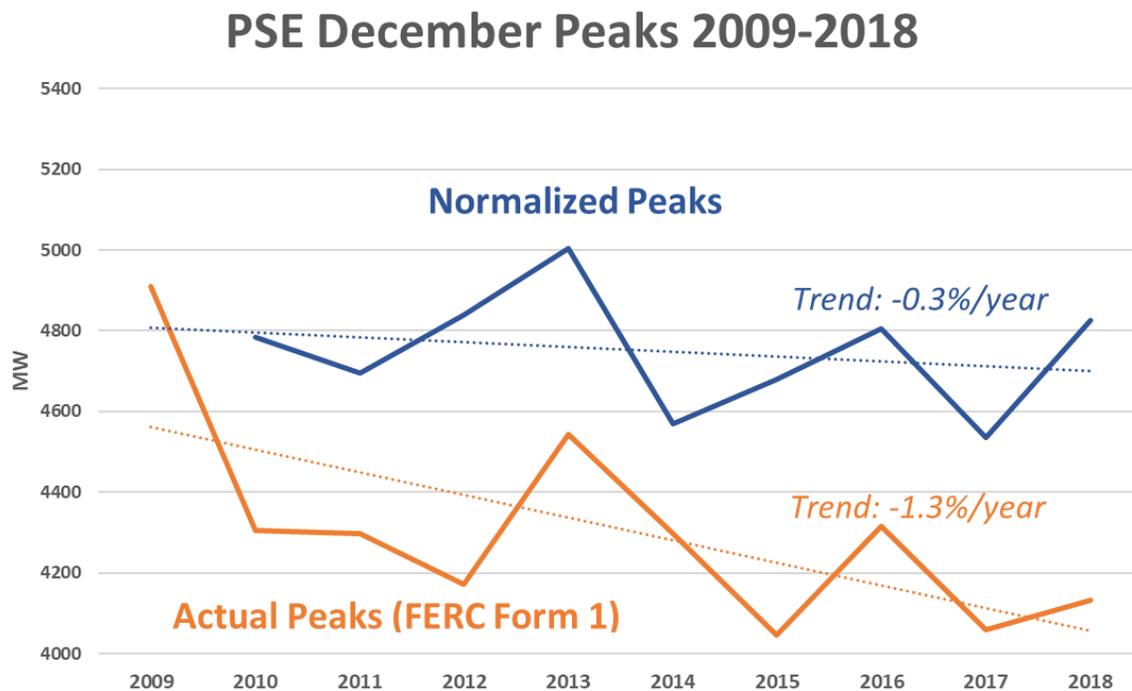
Figure 12: Observed Normalized Electric December Peak Demand Compared to Previous IRP Forecasts



PSE explains some of the inputs used to “normalize” the values shown in this graph: “The normalized actual observations account for peak hourly temperature, monthly HDDs [Heating Degree Days], and the day of week and time of day the actual peak was observed. [Footnote] Given that the forecasts are for peaks at a design temperature, observed actual peaks are adjusted to reflect what would have been the peak if the design peak temperatures had been achieved.”

Comparison to actual peaks

TAG members and other stakeholders believe it is likely that PSE’s normalization process obscures actual trends and may mislead the public. The following graph compares the normalized peaks with actual peaks reported in PSE’s FERC Form 1 reports for this period:

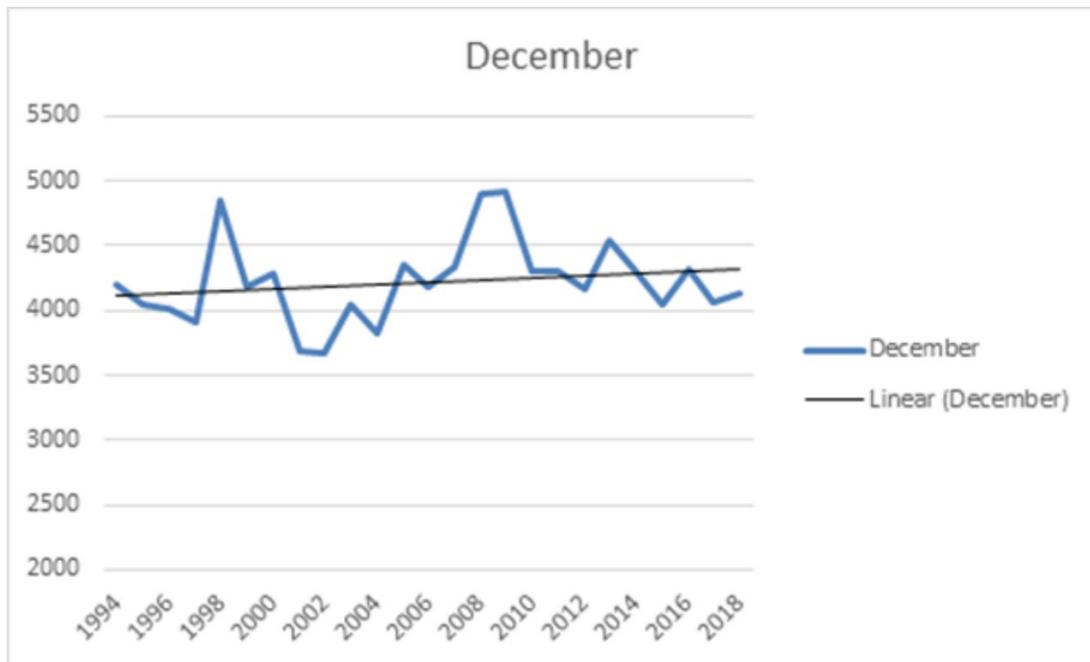


The significant divergence between reported values and normalized values raises two concerns from a planning standpoint:

- Normalization produces high peaks.** At 5000 MW, the theoretical peak for 2013 is almost 500 MW higher than the actual peak. In fact, the 2013 normalized peak is higher than any actual peak during the decade, including the record peak of 4911 MW in December 2009. This becomes problematic if normalized peaks are used to justify infrastructure investments that are not needed, to the detriment of ratepayers.
- Normalization understates the actual rate of decline.** PSE’s normalized values decline -0.3% per year, while the actual December peaks fell at a more precipitous rate of -1.3% per year. The difference may cause ratepayers to be charged for infrastructure investments to handle peaks that will likely never materialize.

Reporting timeframe

In response to a different letter questioning the use of peak forecasts to justify PSE's "Energize Eastside" transmission project, PSE produced the following graph of actual peaks:



PSE's interpolated trend shows December peaks rising at 0.2% annually over a 25-year period. TAG members are concerned that this timeframe understates the effect of warming winters and rapid adoption of LED lights and other energy efficient devices during the past decade. This concern is supported by an article by Scott Madden Management Consultants:

According to a 2013 paper published in the Journal of Applied Meteorology and Climate, the use of 30-year surface temperature averages as estimates of future temperatures will, in many instances, result in a "cold bias"—predicting temperatures will be colder than those actually experienced; using the most recent 15-year average is the best method for developing weather normalization curves... Recently, the New York Public Service Commission authorized the use of 10-year historical averages for the development of weather normalization calculations for rate cases submitted by Central Hudson Gas and Electric, New York State Electric & Gas, and Consolidated Edison.¹

We believe that warming winters, further efficiency advances, and concerted conservation efforts are likely to extend the downward trend in peak demand, reversing the rising trend of previous decades. This is the conclusion of neighboring utilities like Seattle City Light, Tacoma Power, and Snohomish PUD. A more realistic representation of demand growth will provide additional flexibility to pursue clean energy and smart technology in coming decades.

¹ <https://www.scottmadden.com/insight/traditional-weather-normalization-practices-used-utilities-ratemaking-process-appropriate-given-increased-climate-variability/>

Conclusion

We have shown that PSE's normalization method for historical data is opaque and potentially misleading. It appears to obscure the actual data, overstate demand, and understate the actual rate of decline.

We request written responses to the following questions:

1. Will PSE report **actual peak demand** in the final draft of the 2019 IRP Progress Report?
2. Will PSE analyze demand trends from the past **ten or fifteen years** to provide a realistic assessment of the impacts of warming winters and energy efficiency advances?
3. Will PSE recognize that **peak December demand has been declining** during the past decade and explain why? (We believe this will enable more accurate planning for future IRPs.)

Sincerely,

PSE TAG members

- Don Marsh (CENSE)
- James Adcock (Ratepayer)
- Norm Hansen (Bridle Trails neighborhood)
- Doug Howell (Sierra Club)
- Warren Halverson (CENSE)
- Kevin Jones (Vashon Climate Action Group)
- Rob Briggs (Vashon Climate Action Group)
- Kate Maracas (Western Grid Group)
- Willard Westre (Union of Concerned Scientists)
- Elyette Weinstein (Ratepayer)
- Cynthia Mitchell (Energy Economics, Inc.)
- Court Olson (Project management / energy efficiency consultant to commercial building owners)

Interested stakeholders

- John Williams (Vashon Climate Action Group)
- Michael Laurie (Vashon Climate Action Group)
- Sara Papanikolaou (350 Eastside)
- Janis Medley (CENSE)
- Linda Hagedorn (350 Eastside)
- Emily Powell (350 Eastside)
- Kathie Ossenkop (Ratepayer)
- David Perk (350 Seattle)