



energizeEASTSIDE

federal regulations and transmission planning

October 2016

Federal transmission planning requirements

PSE is responsible for providing continuous, reliable power to customers. To do this, PSE plans its transmission system to meet mandatory reliability performance requirements consistent with Federal Energy Regulatory Commission (FERC), North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) regulations.

Utilities are required to rigorously plan the transmission system. They must ensure the system will maintain reliable service to customers under a wide range of reasonable scenarios of normal and not-so-normal conditions. These conditions include when the weather is extremely hot, extremely cold, or when components of the system are out of service (i.e., existing powerline down for repair, equipment failure, or other unexpected outage). These federal regulations are not optional; they are required.

After investigating the Northeast blackout of 2003, which affected 50 million people in the US and Canada, in 2007 the Federal Energy Regulatory Commission (FERC) established new, more aggressive mandatory reliability regulations to prevent future large-scale blackouts. These



In the Northeast blackout of 2003, 50 million people in the US and Canada were affected. This map shows the states and provinces that had areas affected by the power outage. This map is for illustrative purposes only; power grids are not aligned with political boundaries. Image credit: Lokal_Profil, CC-BY-SA-2.5.

new regulations require utilities to plan for numerous scenarios, even those that may have a low probability of occurring. When a potential transmission system deficiency is found during planning studies, utilities are required to identify and implement a solution. As such, it is PSE's responsibility to follow the federal standards requiring utilities to be rigorous in planning for infrastructure improvements and upgrades in order to keep the lights on for our customers.

Forecasting future infrastructure needs

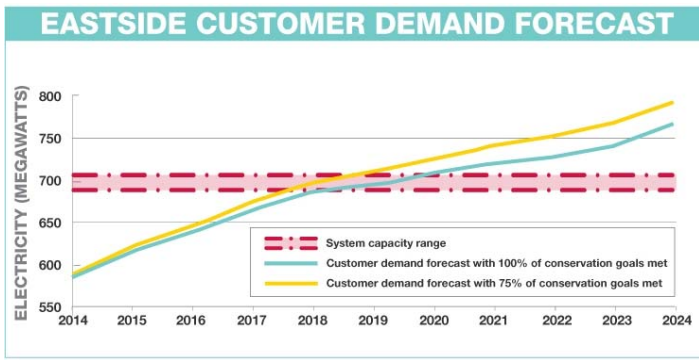
Federal regulations require that utilities plan a reliable system based on forecasted loads. A load forecast is a projection of how much power PSE's customers will need in future years. This is also referred to as "demand." The forecast allows PSE to plan upgrades to its electrical system to ensure that current and future customers continue to have reliable power.

When developing a load forecast, PSE takes multiple factors into account like current loads, economic and population growth, planned large building projects, conservation goals, and weather events.



Planning for local power needs

For years, PSE's Transmission Planning experts have conducted load forecasts to determine how the system is expected to perform and to identify any risks to system performance with the goal of maintaining continuous, reliable service to customers.



Growth studies project that demand for reliable power will exceed capacity as early as winter 2017/2018. Without substantial electrical infrastructure upgrades and aggressive conservation efforts, the Eastside's power system will lose redundancy, increasing the possibility of outages.

The process uses historic data and the latest data available at the time, including achievable conservation potential. PSE uses growth data primarily provided by third-party agencies, such as the Puget Sound Regional Council and Eastside jurisdictions.

Establishing the need for Energize Eastside

In the case of Energize Eastside, most recently we've run 550 different scenarios, 6.3 million different contingencies of different equipment going out, and logged 2,200 hours of actual computing time. These studies were conducted following mandatory federal regulations and used industry established protocols.

Based on those same federal planning requirements, a total of five studies have confirmed the need for the Energize Eastside project.

Energize Eastside eliminates the federally required plan for intentional rolling blackouts

Federal regulations require PSE to have sufficient infrastructure to meet foreseeable load requirements or plan for intentional rolling blackouts to customers. If PSE plans to use rotating blackouts to meet our federally mandated requirements, we must discuss that plan publicly. Our studies show that if no action is taken to upgrade the backbone of the Eastside's transmission system, PSE will have to utilize additional Corrective Action Plans that may resort to intentional rolling blackouts. That is why we need to act now. This could impact more than 130,000 customers as early as the summer of 2018, at a cost of tens of millions of dollars to the local economy. The Energize Eastside project will provide the necessary infrastructure to meet

federally-mandated requirements without having to plan for rotating blackouts and without having a public discussion of the need to plan for blackouts. No responsible utility – or community, particularly those that value sophisticated technology industries – wants to use intentional rolling blackouts as a federal compliance strategy. That certainly is not PSE's desire.

Study	Author	Year	Commissioned by
Electric Reliability Study	Exponent	2012	City of Bellevue
Eastside Needs Assessment Report	Quanta Services	2013	PSE
Supplemental Eastside Needs Assessment Report	Quanta services	2015	PSE
Independent Technical Analysis	Utility System Efficiencies, Inc.	2015	City of Bellevue
Review of Project Need Memo	Stantec Consulting Services Inc.	2015	EIS consultant


Multiple independent studies have made it clear that we need to upgrade the Eastside's electric infrastructure now to accommodate local growth and avoid power outages. Read these studies and more at energizeeastside.com/documents.

Energize Eastside

The Energize Eastside project will build a new substation and approximately 18 miles of transmission lines from Redmond to Renton. Combined with continued aggressive electric conservation, Energize Eastside will keep the lights on for homes and businesses in our Eastside communities for years to come.

Thank you for your interest in Energize Eastside.

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