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California Energy Commission

June 20, 2018

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Intergovernmental Affairs



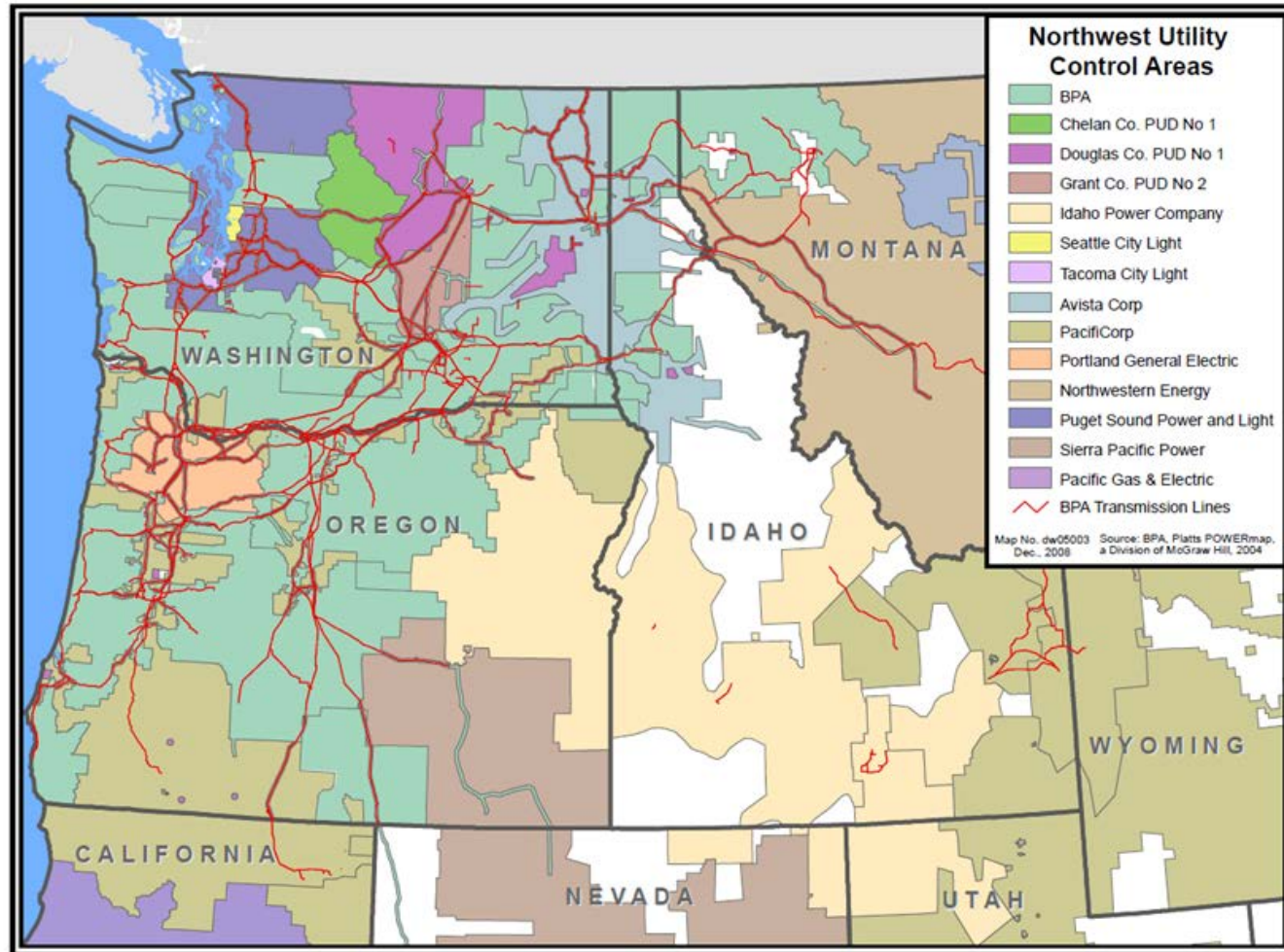
Bonneville's Unique Role in the Pacific Northwest

The Bonneville Power Administration is an engine of the Pacific Northwest's economic prosperity and environmental sustainability.

As a wholesale power marketer and transmission provider, BPA sells its products and services at the cost of production, giving its customers access to clean, reliable hydropower across 15,000 miles of high-voltage transmission lines.

Bonneville provides low-cost, reliable power to the entire region, but also allows for the sale of surplus power across the West.

Surplus sales help to offset BPA's costs and keep rates affordable for Northwest consumers.



BPA Strategy

- Bonneville released the 2018-2023 Strategic Plan in February.
- The strategic plan describes the actions Bonneville will take over the next several years to deliver on its public responsibilities through a commercially successful business.
- Modernize federal power and transmission system operations and supporting technology
- Obtain value for flexible hydro capabilities



www.bpa.gov/StrategicPlan/Pages/Strategic-Plan.aspx

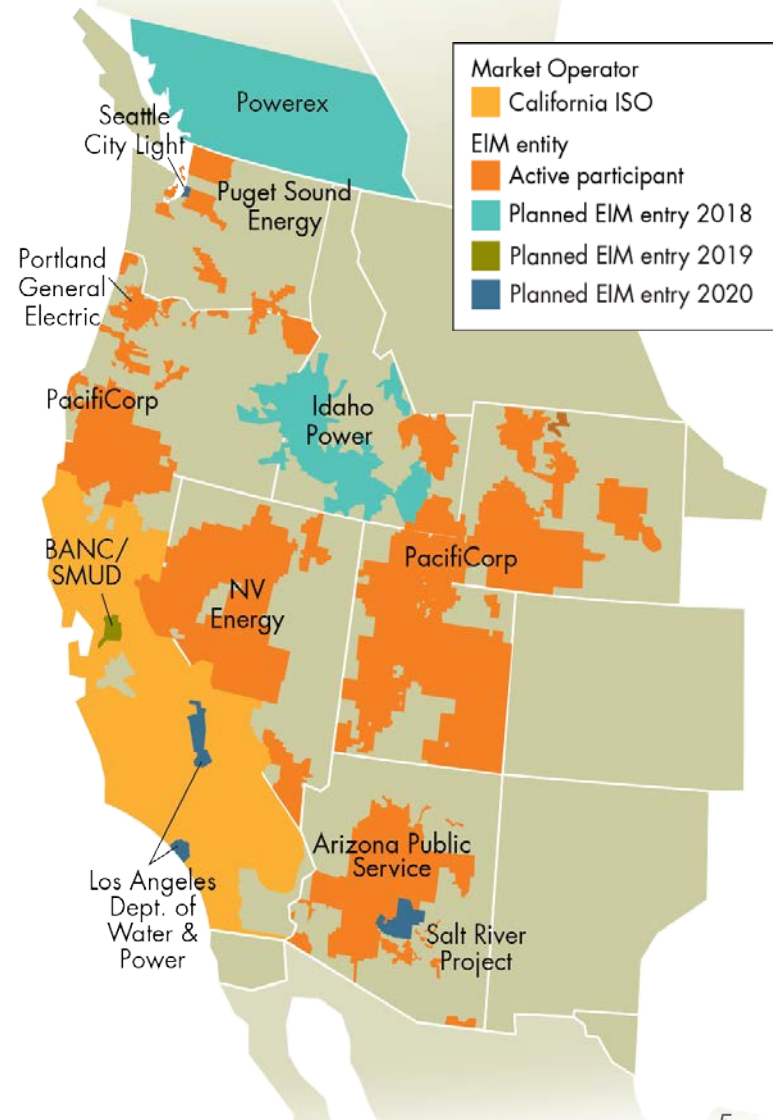
Grid Modernization Overview

- Investments in grid modernization will support a more reliable, flexible and efficient system, helping to reduce future costs and create new market opportunities.
- As California and other Western states increase the amount of variable energy resources on the grid, we will seek opportunities to market the valuable flexibility and capacity services that clean hydropower resources can provide.
- Bonneville is mapping out the steps to modernize the federal power and transmission system that will enhance system operations in three major ways: automation, accuracy and visibility.
 1. By automating processes, we will minimize the potential for human error and support a faster intra-hour system dispatch.
 2. By incorporating real-time data and analysis into power and transmission operations, Bonneville will be able to more accurately determine system obligations and monitor operating conditions.
 3. Increasing the visibility of loads, resources and flows, including market flows, will also help Bonneville to preserve reliability, optimize reserve levels and operate the transmission system closer to its physical limits.

Opportunities from Market Engagement

- Bonneville has been talking with other Northwest utilities who also are evaluating wholesale market changes, modernizing their systems to be in the best position to take advantage of market opportunities, and that have or are planning on joining the Western EIM.
- Many of our experiences in the market are the same, particularly the need to find ways to fully realize the value of our flexible, carbon-free hydro product.
- Several Northwest utilities have already joined the CAISO Energy Imbalance Market (EIM) also known as the Western EIM: PacifiCorp, Puget Sound Energy, Portland General Electric, and Idaho Power Company.
- Seattle City Light intends to join the Western EIM.
- Thus, Bonneville has begun to study and determine how and under what conditions it could join the Western EIM.

Western EIM active and pending participants



Improving transfer capabilities between PNW and California



January 2018 – CEC/CPUC Request to CAISO/LADWP to conduct sensitivity analysis of Northwest hydro resources and transmission capabilities to address California needs.

Transmission capabilities include:

- DTC
- Subhourly scheduling
- Operational and physical expansions

CAISO responding in 2018-2019 TPP

BPA participating in the analyses.

CAISO Day Ahead Market Enhancements

- In last year's workshop, BPA spoke to the value of incenting scheduling flexible ramping resources into the California.
- CAISO's day-ahead market enhancements stakeholder process advances this concept.