Electric Transmission Challenges and Opportunities

Washington Joint Committee on Energy Supply & Energy Conservation

Presented by Scott Bolton, PacifiCorp Government Affairs Director

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Northern Tier Transmission Group

- **PacifiCorp is a member of NTTG.**
- **Participating utilities own more than 27,500 miles of transmission lines and serve approximately 3.5 million customers in Oregon, Washington, California, Idaho, Montana, Wyoming, and Utah.**
- **Participating Utilities:**
  - PacifiCorp
  - NorthWestern Energy
  - Portland General Electric
  - Idaho Power
  - Deseret Power Electric Cooperative
  - Utah Associated Municipal Power Systems

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PacifiCorp Transmission System Overview

- PacifiCorp owns and operates one of the largest privately held transmission systems in the United States
- We serve approximately 1.7 million PacifiCorp customers as well as non-affiliated utilities and other entities via 15,000+ miles of transmission line.
- Our system crosses 10 western states, and is interconnected with more than 83 generating plants and 12 adjacent control areas at 153 interconnection points.
- PacifiCorp is investing approximately $6 billion in its Energy Gateway Transmission Expansion Project to meet growing load and renewable energy policy requirements.

PacifiCorp's Energy Gateway Transmission Project

- **Over 1900 miles of new transmission**
- **Over $6 billion of investment**
- **Siting in 6 states**
- **Major segments in-service 2010-14**

Priorities

- Reliably serve growing energy needs of existing network customers.
- Meet renewable portfolio standards.
- Connect network resources to loads.
- Reduce projected delivered costs of wholesale power.
- Expansion available if timely financial commitments from third parties are received.

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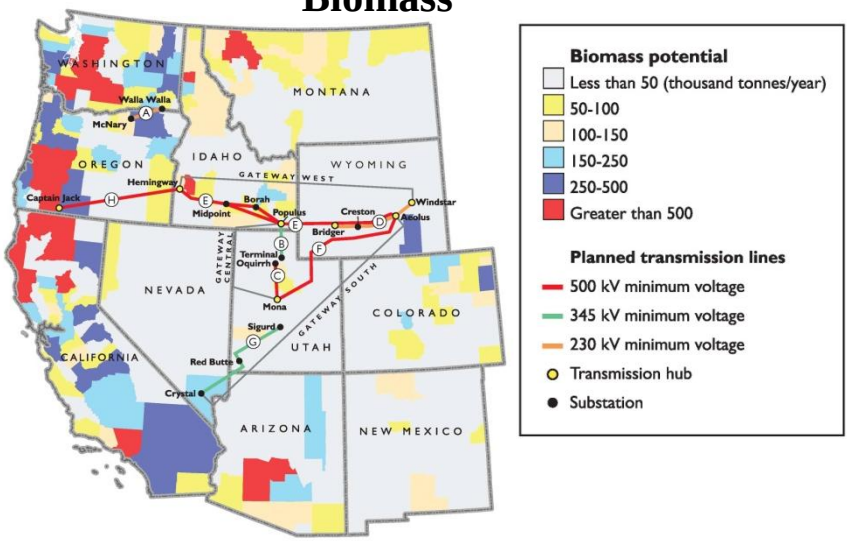
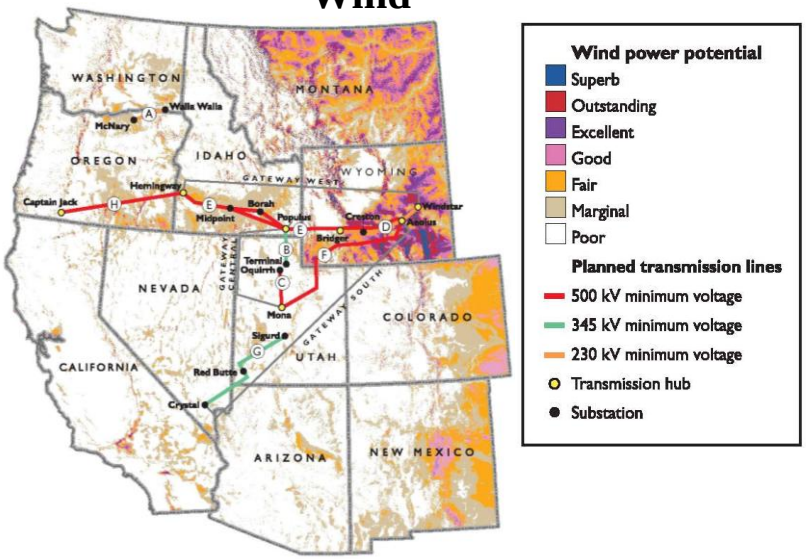
Energy Gateway – Renewable Potential Maps

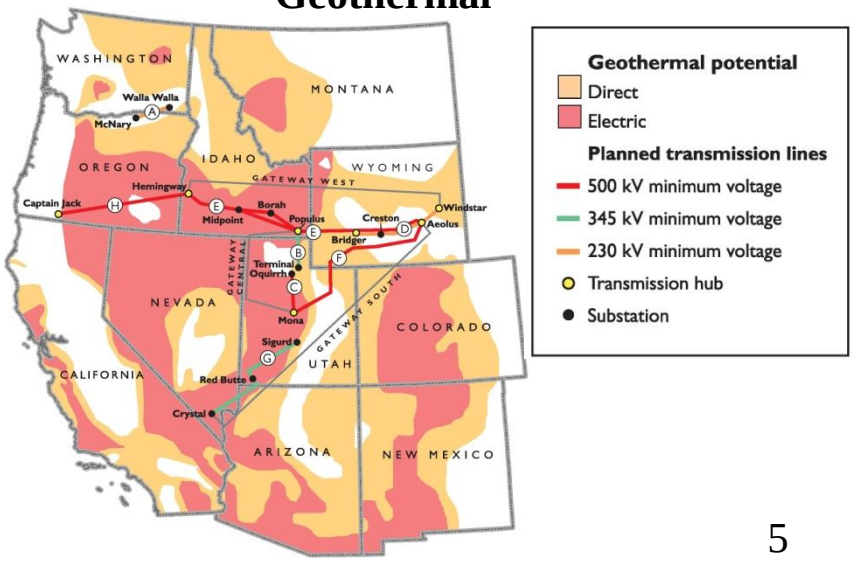
Biomass



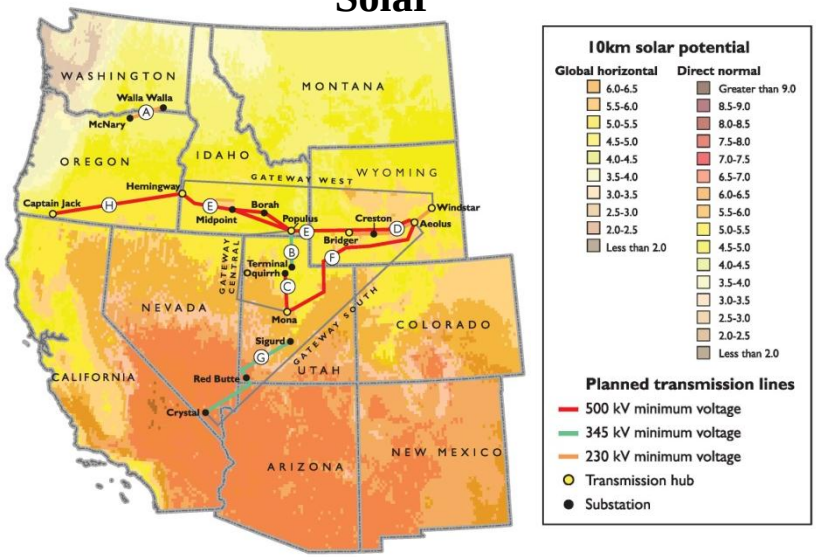
Wind



Geothermal



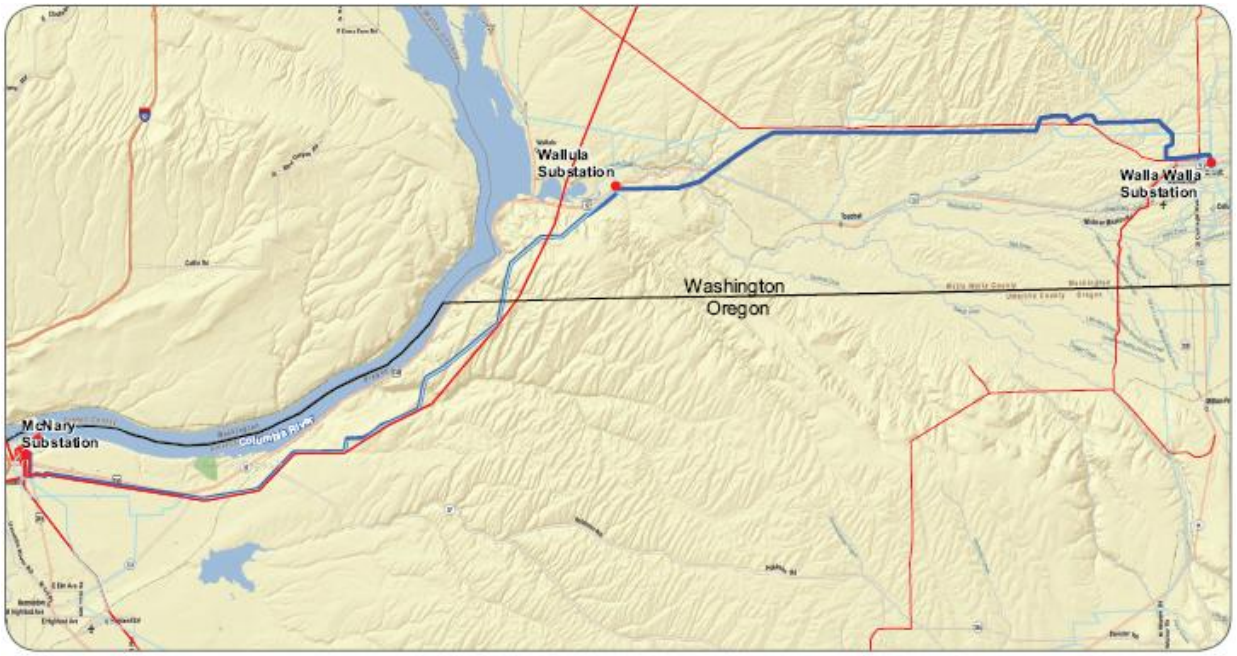
Solar



These maps are indicative of renewable potential and do not address either the technical or economic potential for energy resource development. Data on renewables potential from the National Renewable Energy Laboratory for the U.S. Department of Energy. http://mapserve2.nrel.gov/website/resource_atlas/viewer.html 6/08

Walla Walla-McNary Transmission Project

- A 56-mile, 230kV transmission line connecting substations in Walla Walla and Wallula, Washington, to the McNary substation in Umatilla, Oregon.
- Improves system reliability, relieves constraints and improves access to southeast Washington's considerable renewable energy resources.



The blue line shows the preferred route for this new transmission line. Pacific Power plans to add this new transmission line to better serve customers and support new renewable energy development, and has been working with affected landowners, officials and other interested parties to determine a preferred route. Red dots indicate existing substations.

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Challenges

- Transmission projects require considerable upfront capital investment, and several years of planning, permitting and construction before they can be placed in service.
- Renewable energy mandates require a substantial increase in renewable energy generation. Renewable resources like wind and solar are location-specific, and are commonly located far from population centers, requiring extensive transmission improvements.
- Chicken or the egg? Developers are reluctant to site projects in areas lacking adequate transmission, but current regulations allow for cost recovery of transmission facilities considered used and useful.
- Siting challenges (NIMBY factor)

Opportunities

- Incentivize transmission investment to support new smart-grid and electric-vehicle technologies.
- Promote development of high-potential renewable energy zones and provide greater certainty for transmission investments connecting to these zones.
- Allow utilities cost recovery for sizing transmission projects to meet anticipated load growth—harnessing economies of scale and using corridors more efficiently.
- Establish consistent policies that streamline the approval process for transmission investment.

Questions/Discussion

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