

Calculating Transmission Benefits at PacifiCorp
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October 28, 2021



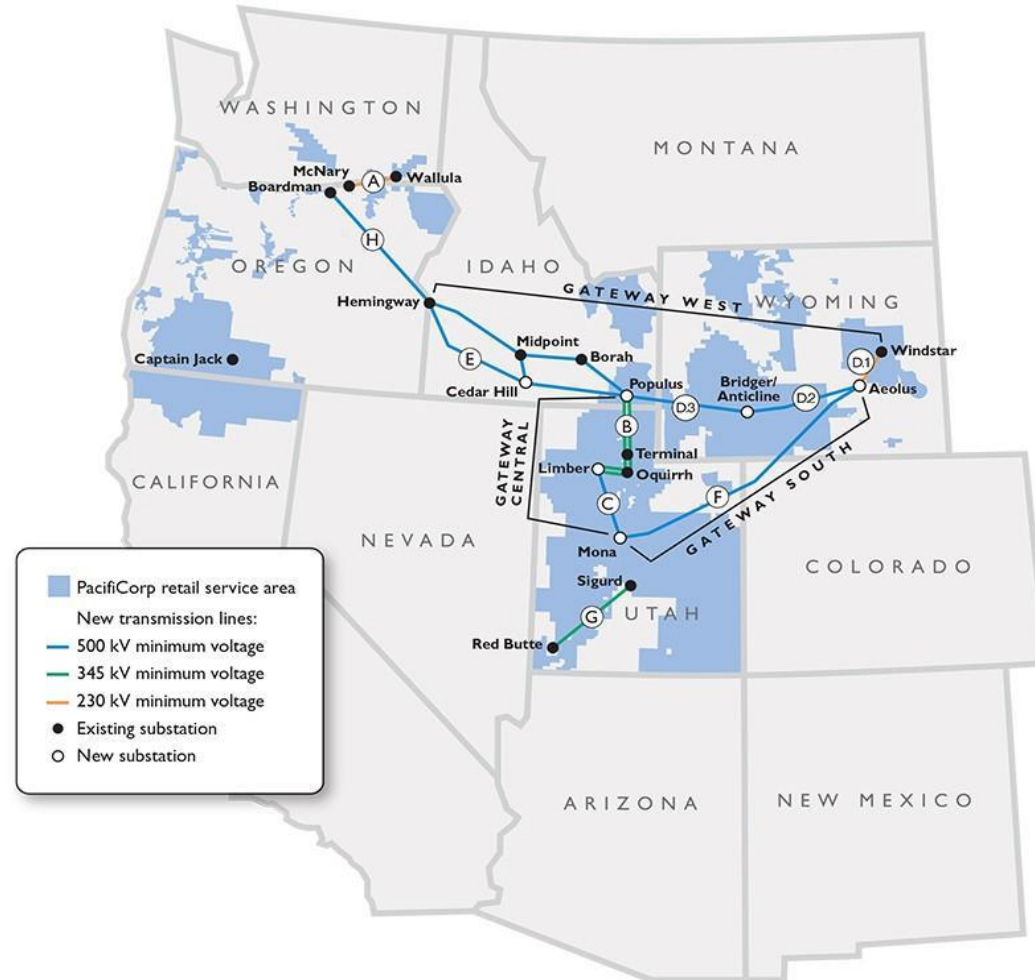


Agenda for discussion

1. Energy Gateway Transmission Expansion
2. Historical Transmission Benefit Calculations
3. 2019 IRP Transmission Modeling Enhancements
4. Additional Transmission Modeling Enhancements

Energy Gateway Transmission Expansion

- Energy Gateway Transmission Expansion – a multi-year investment plan to add approximately 2,000 miles of new transmission lines across the West.
- Four major segments of Energy Gateway are complete and in service. Outreach, siting and permitting processes continue for several other segments. In October 2019, PacifiCorp announced plans to construct the Gateway South project in Wyoming, Colorado and Utah.



This map is for general reference only and reflects current plans.
It may not reflect the final routes, construction sequence or exact line configuration.

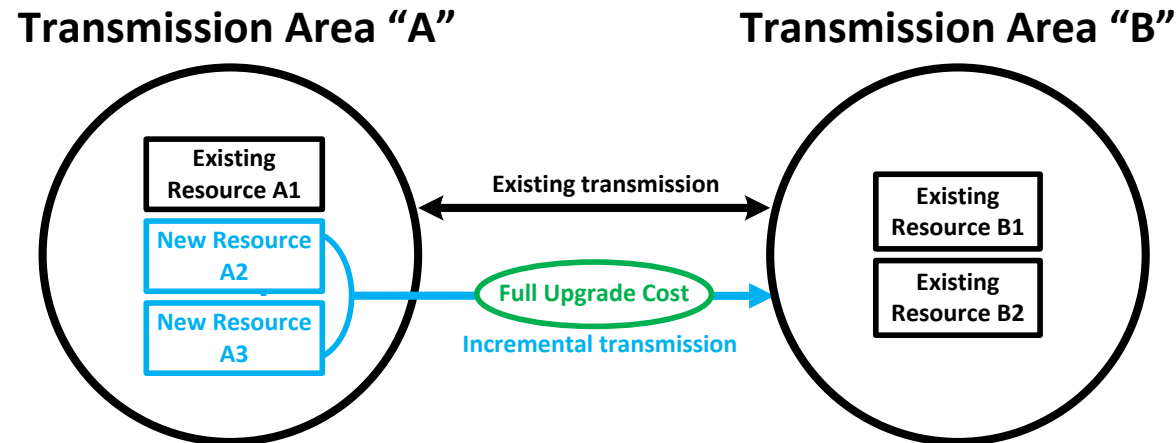
Historical Transmission Benefit Calculations

- Seven benefit categories in the proposed system benefit tool:
 1. Operational cost savings (economic driven)*
 2. Segment loss savings (energy and capacity)*
 3. Transmission reliability benefits*
 4. Customer reliability and regulatory benefits
 5. Avoided capital cost
 6. Improved generation dispatch (reliability driven)
 7. Wheeling revenue opportunity

* 2015/2017 IRP criteria

2019 IRP Transmission Modeling Enhancements

- Efforts continue to more precisely represent transmission costs and opportunities associated with plant retirements
- Endogenous transmission modeling enhancements focus on the following areas:
 - Incremental transmission upgrades
 - Transmission upgrade costs
- Retirement implications on transmission



- Incremental transmission can be selected endogenously by the model
- Transmission upgrade costs are tied to total new resource capacity in a transmission area
- Out-of-model cost reconciliation no longer needed
- System Optimizer can identify potential benefits of added transmission capacity

Additional Transmission Modeling Enhancements

- Plexos modeling allows endogenous selection of incremental transmission construction to connect areas with resource surplus to areas where load needs to be served
- New to the 2021 IRP is the option for the Plexos model to endogenously select construction of Energy Gateway transmission to support the resource selection process and account for avoided capital costs of other projects
- PacifiCorp has reached outside the company to conduct additional consulting studies to identify transmission benefits beyond it's footprint



Questions?