

Transmission and Resilience

ESIG June, 2021

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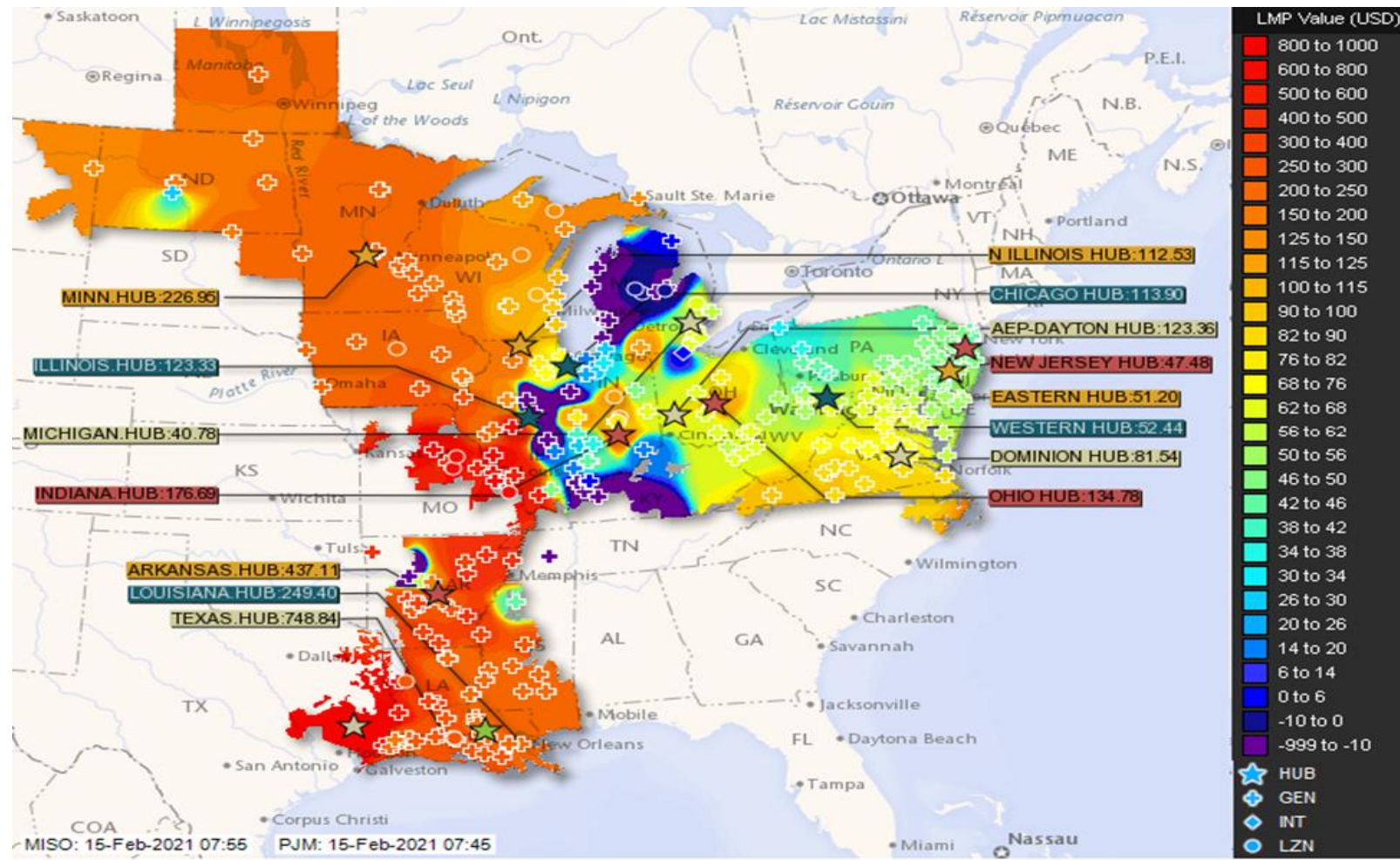


Interregional Transmission Keeps the Lights On in Winter Storm Uri Feb 2021

MISO imported 13 GW, ERCOT only 0.8 GW (East to West flow)

Eastern polar vortex incidents in 2014, 2018 served by Midwest power (West to East flow)

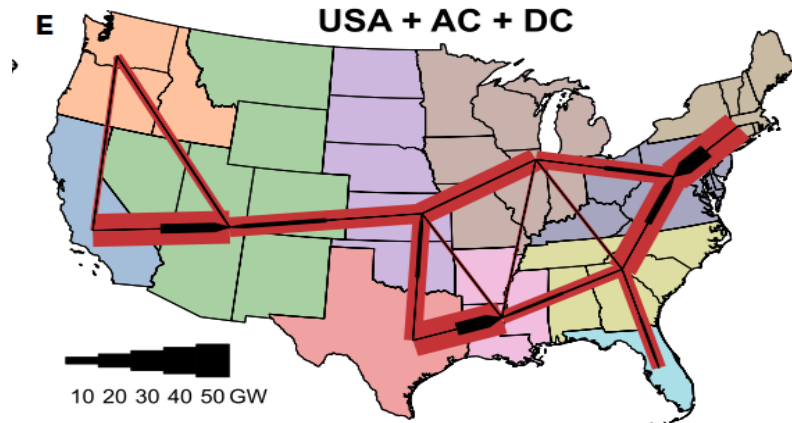
For transmission planning and cost allocation—who is the beneficiary???



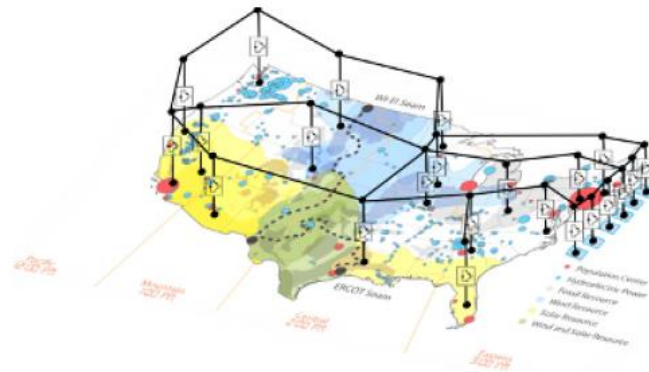
Low-cost decarbonization requires large scale transmission

10s of GWs of power transfer back and forth across and between regions

2-3x increase in national transmission capacity



[https://www.cell.com/joule/fulltext/S2542-4351\(20\)30557-2](https://www.cell.com/joule/fulltext/S2542-4351(20)30557-2)



<https://cleanenergygrid.org/wp-content/uploads/2020/11/Macro-Grids-in-the-Mainstream-1.pdf>

Modeled flows NREL Seam study

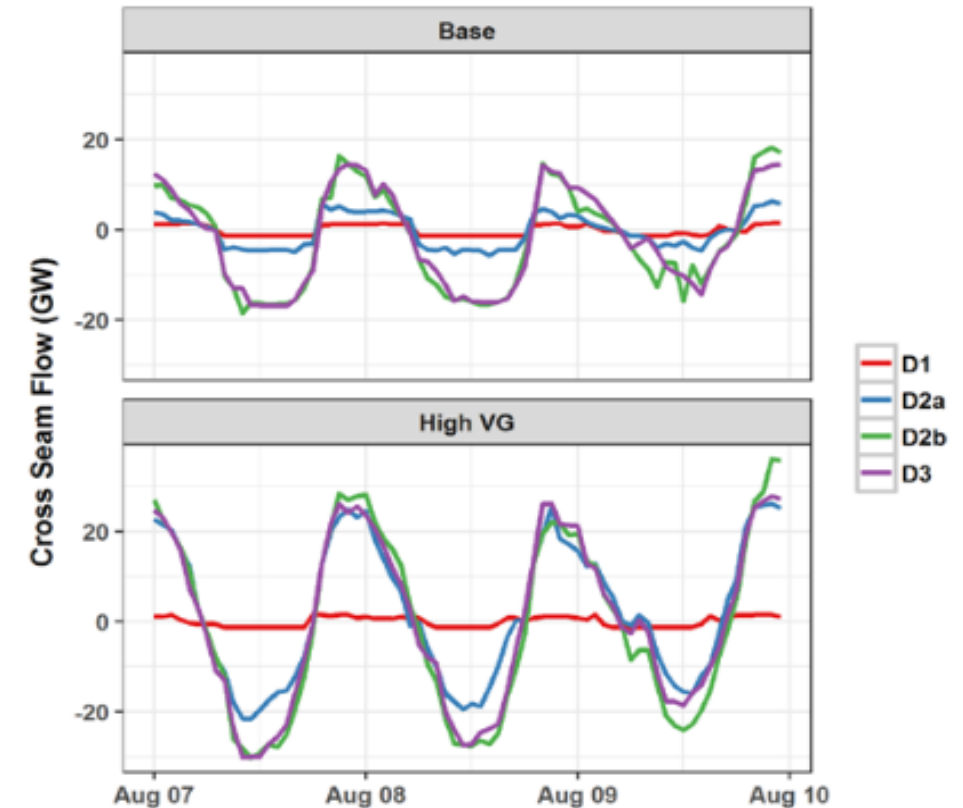
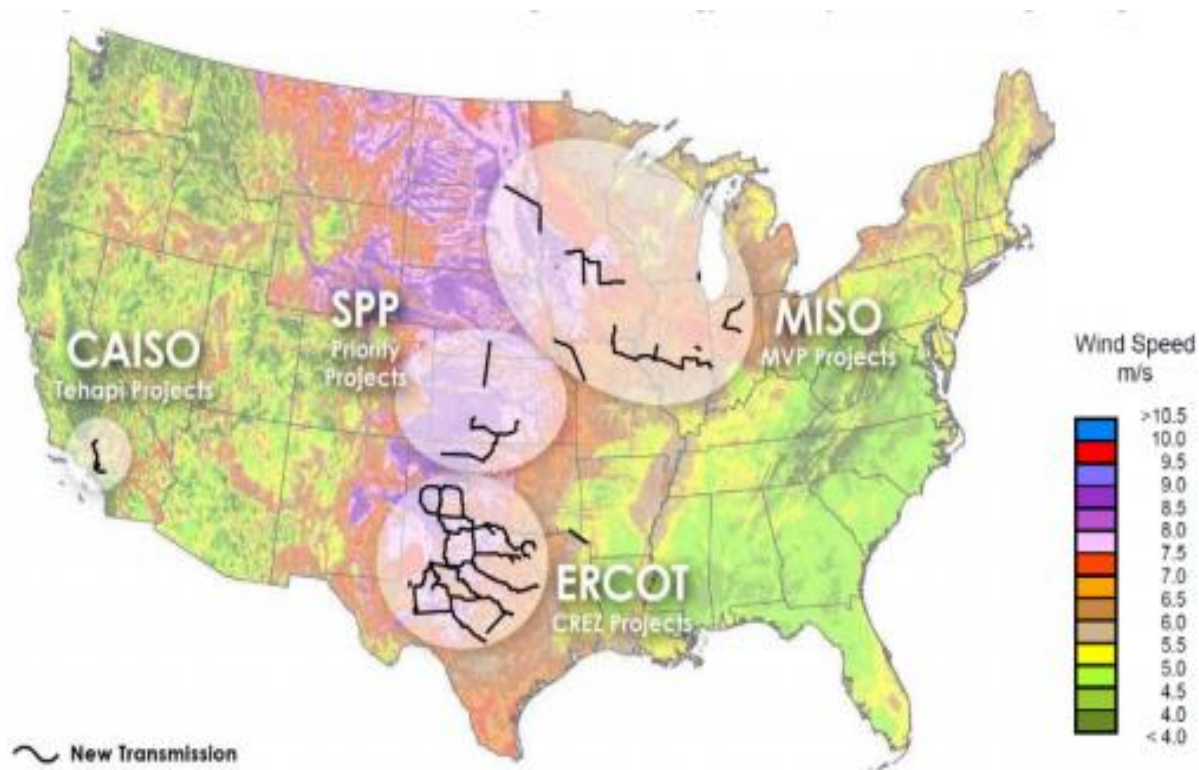


Fig. 3. Cross-seam transmission power flow (B2B and HVDC) during the coincident peak load period. A positive flow is a net export from the EI to the WI; a negative flow is a net import into the EI from the WI. Times are Eastern Standard Time.

Big transmission CAN be built!

Recent US Large-Scale Expansions

- MISO MVP, SPP priority projects, ERCOT CREZ
- 3:1 Benefit-Cost ratios
- Winning formula:
 - Pro-active multi-benefit planning
 - Broad, beneficiary pays allocation



FERC Initiatives

Transmission planning and cost allocation

- Estimate generation as well as load
- Multi-benefit, de-silo—congestion, resilience, public policy
- Resilience scenarios that might afflict a given region
- Electrification estimates in load forecasts
- Benefit-cost analysis
- Inter-regional

Reliability rules? Minimum import/export capacity?

Chairman Glick: revisiting the planning process for developing high-voltage power lines across the country should be “front and center” at the Commission. “That’s my goal: to have something in place at least to start the process, whether it’s rulemaking or a policy approach, before the end of the summer.”



Transmission Policy in the 117th Congress

- **Infrastructure legislation:**
 - Transmission Investment Tax Credit
 - Funding for large scale transmission
 - Anchor tenant loans
 - Power Marketing Administration loan authority
 - DOE studies and helping with planning
- **Direct FERC to fix interregional planning and cost allocation**
- **Funding for states to constructively engage in transmission planning**
- **Federal transmission siting**



Executive Agency Transmission Initiatives

Sec. Granholm: “deploy, deploy, deploy”

- Improve federal permitting
 - DOT: highways
 - DOI: federal lands
- Federal backstop siting
 - DOE and FERC
- Grid Deployment Authority
 - Macro Grid planning?
- WAPA Transmission Infrastructure Program loans
- Loan guarantees—DOE Loan Program Office

