

Transmission and Community Support

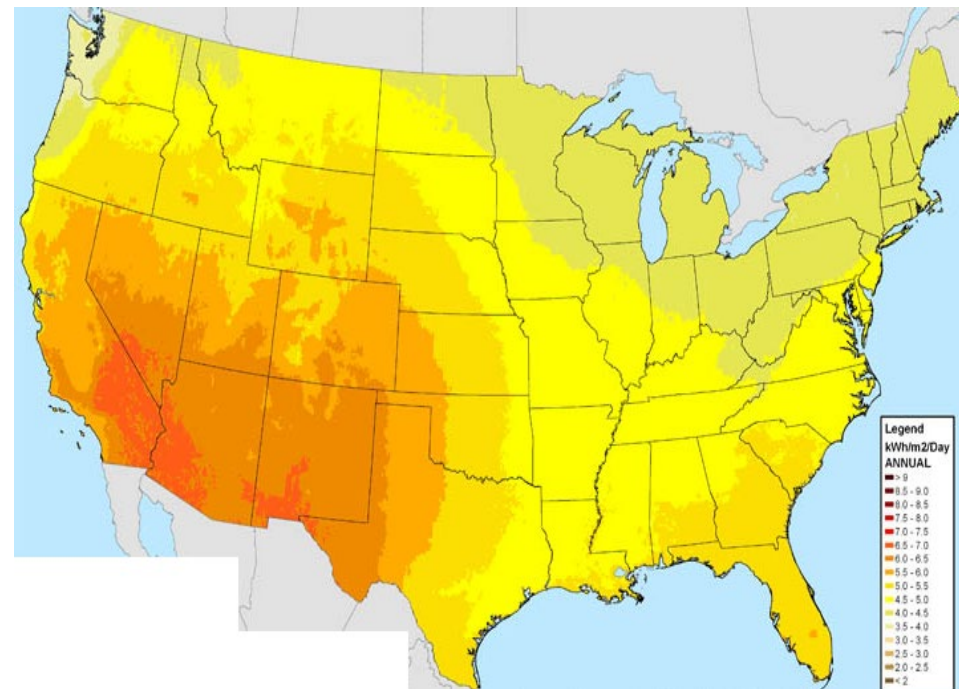
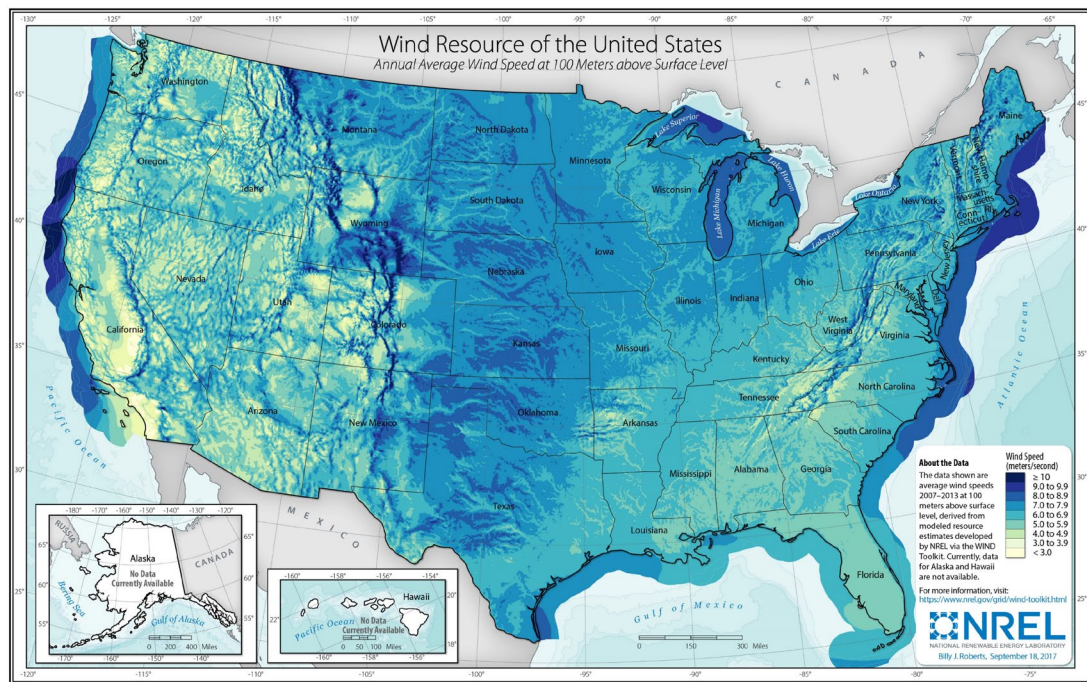
Rob Gramlich
October, 2022



Transmission and Renewable Energy

Two universal physical properties

1. Best wind and solar far from load
2. Regional exchange allows system balancing with higher penetration



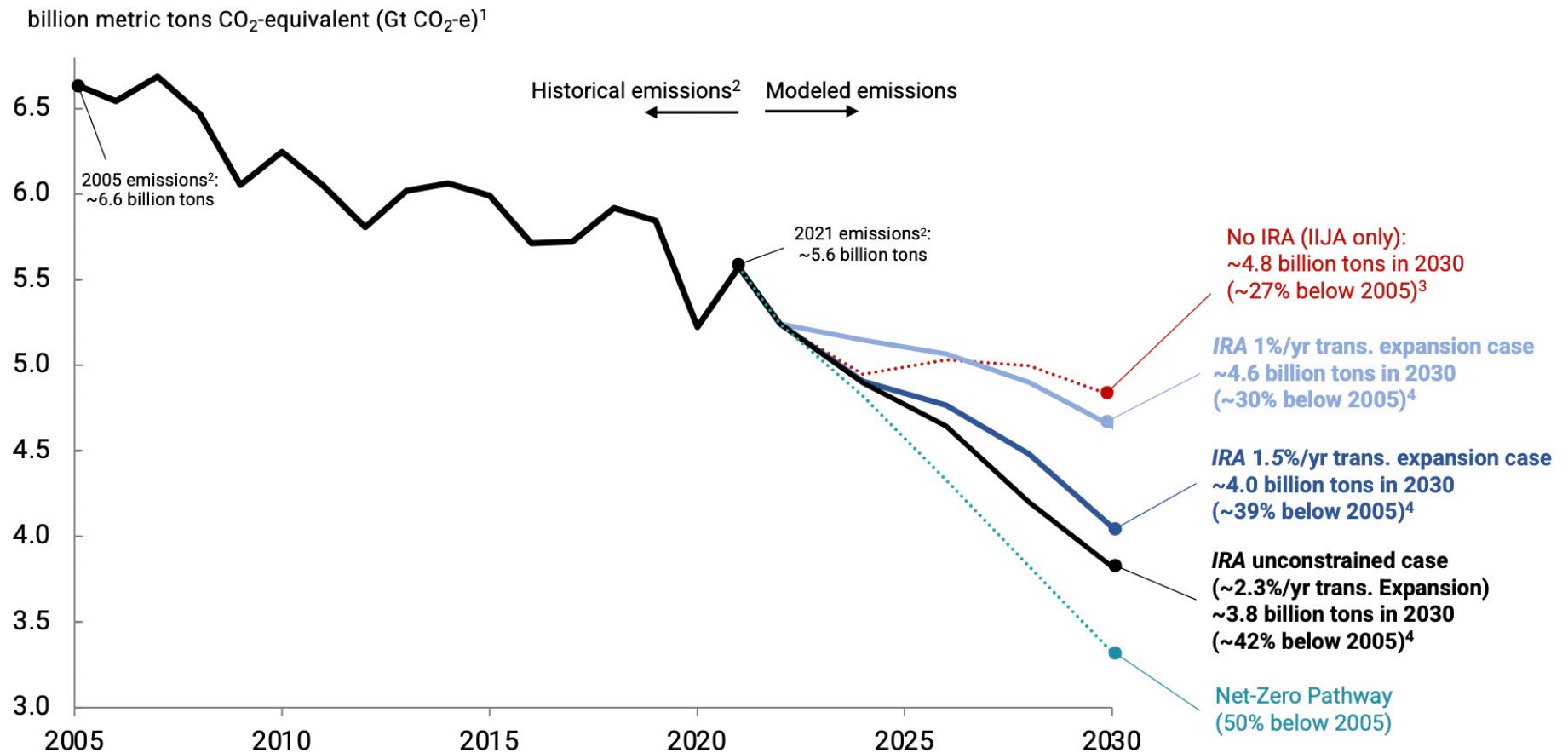
NREL Wind (left, 100m height) and Solar (right) Resource Maps

<https://windexchange.energy.gov/maps-data/319> , https://www.nrel.gov/gis/images/map_pv_us_annual10km_dec2008.jpg



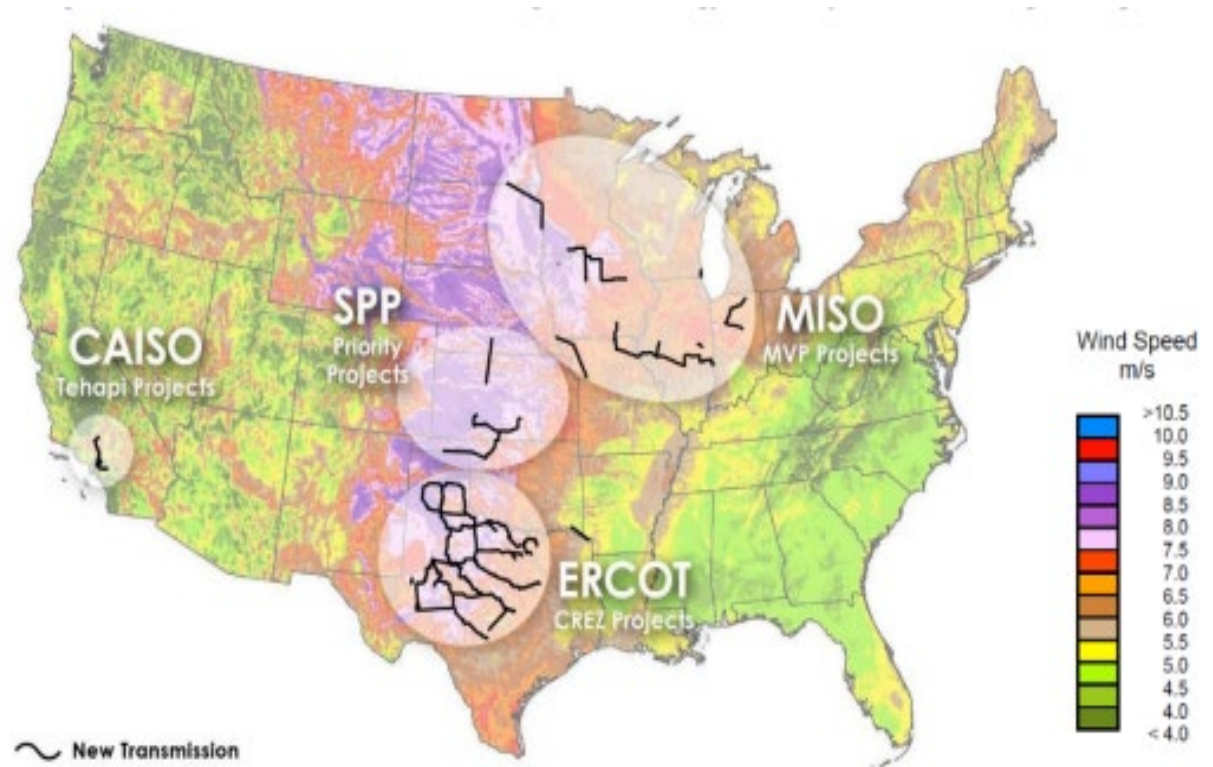
Princeton: 80% of IRA value lost without transmission expansion

“To unlock the full emissions reduction potential of the Inflation Reduction Act, the pace of transmission expansion must more than double the rate over the last decade”



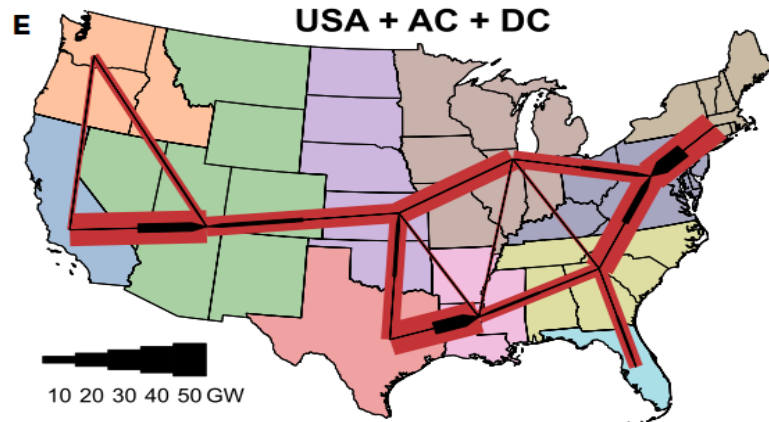
Recent US Large-Scale Expansions

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

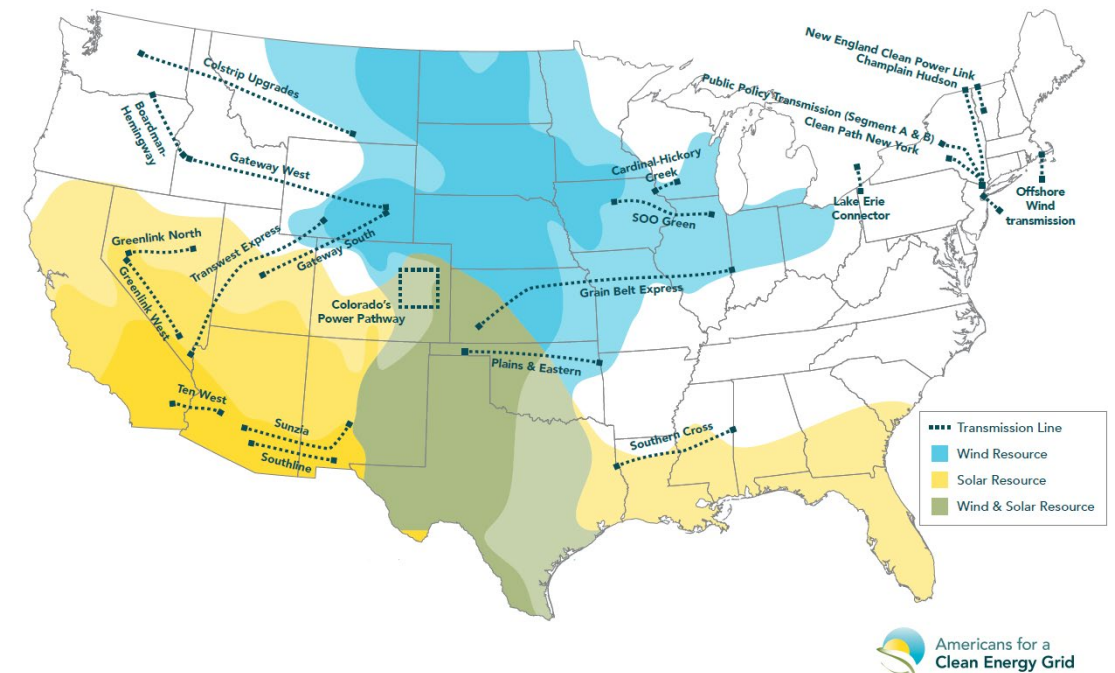
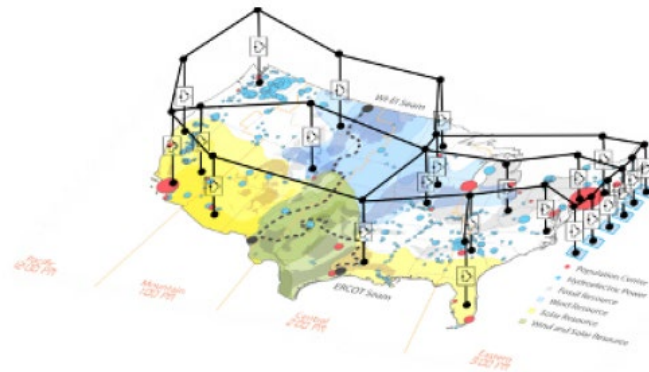


Regional, interregional connectors, and full macro grid

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



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



“Transmission Projects Ready to Go”

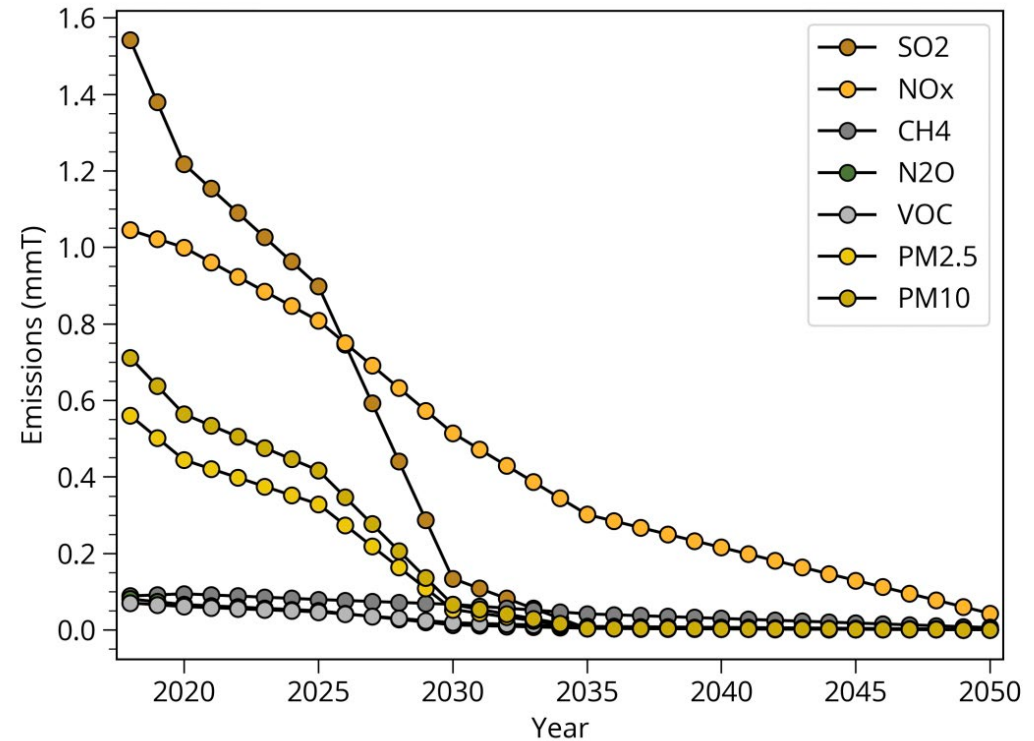
<https://cleanenergygrid.org/wp-content/uploads/2019/04/Transmission-Projects-Ready-to-Go-Final.pdf>

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



Transmission development helps environmental justice and other communities

- Economic development from new energy infrastructure
- Reduced pollution, especially in densely populated and low-income areas



Air pollutants drop in high-solar scenario



Community Support Policy

- **IRA Section 50152**

- “GRANTS TO FACILITATE THE SITING OF INTERSTATE ELECTRICITY TRANSMISSION LINES.”
- \$760 million 2022-2031
- “(2) ECONOMIC DEVELOPMENT.—The Secretary may make a grant under this section to a siting authority, or other State, local, or Tribal governmental entity, for economic development activities for communities that may be affected by the construction and operation of a covered transmission project.”
- “Covered transmission project” = high voltage, ≥ 275 kV

- **Energy Security and Independence Act (has not passed)**

- Includes cost recovery and incentives for “all prudently incurred costs associated with payments to jurisdictions impacted by electric transmission facilities designated by the Secretary to be necessary in the national interest.”



Community ownership

- Ownership partnership model
 - Webinar: <https://cleanenergygrid.org/event/transmission-time-innovative-partnerships-for-accelerating-transmission-buildout/>
 - Citizens Energy: <https://www.citizensenergy.com/transmission-projects>
 - Morengo Tribe as a participating transmission owner: <https://indiancountrytoday.com/the-press-pool/landmark-federal-energy-regulatory-commission-decision-advances-morongo-transmission-llc>

