



Public Engagement across the Transmission Development Lifecycle: Planning

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How are we going to build all that clean energy infrastructure?

Considering Private Enterprise, Public Initiative, and Hybrid Approaches to the Challenge of Electricity Transmission

CA
TF

CLEAN AIR
TASK FORCE

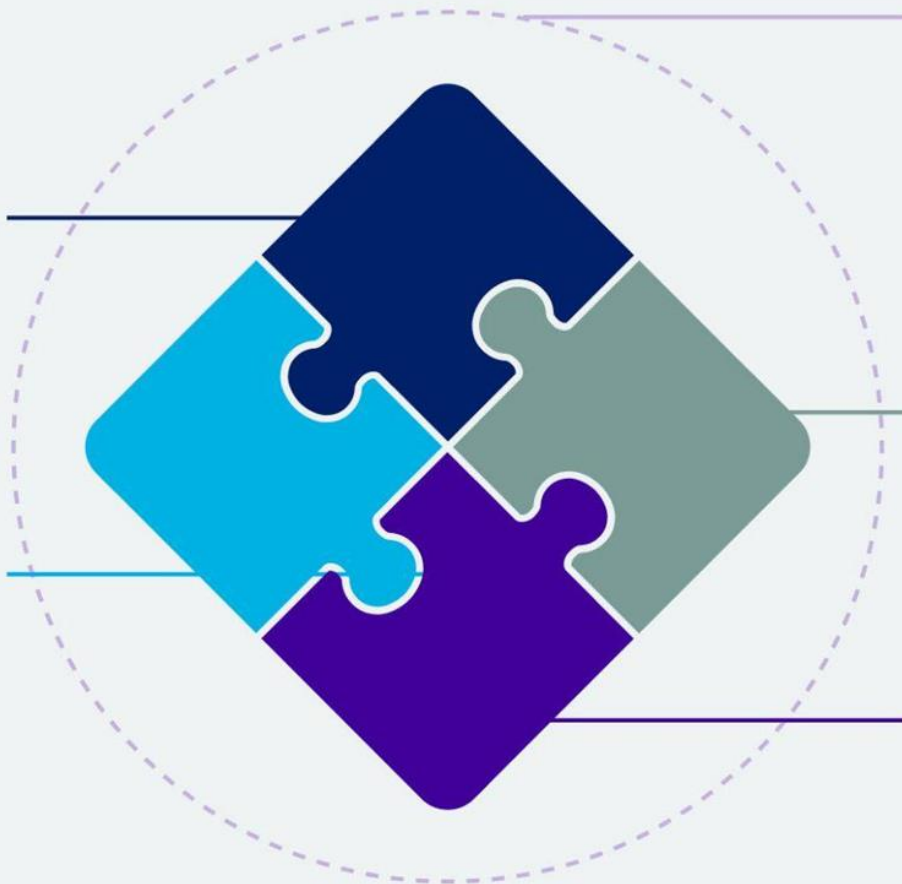
NISKANEN
C E N T E R

Planning

Studies of current and future conditions, including demand and generation, congestion, and other factors to identify priority areas for expansion

Permitting

Siting and various impact assessments required for permission to build the project at a given location



Process


Existing process is fragmented and different for each line. Consistent and transparent process reduces uncertainty, transaction costs, and barriers to participation

Paying

Financing through power purchase agreements, participation in power markets, or other structures

Participation

Inclusive, “smart from the start,” sustained interaction should educate, build trust, and incorporate local input and community compensation



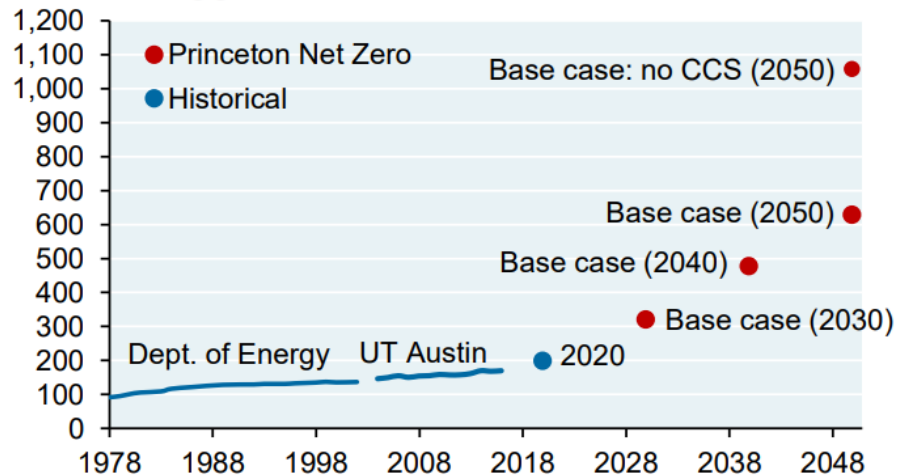
Transmission is essential infrastructure for every decarbonization path:

We need 2X-3X more transmission capacity to decarbonize by 2050

That's a lot of new transmission...

US transmission infrastructure

Thousands of gigawatt-miles

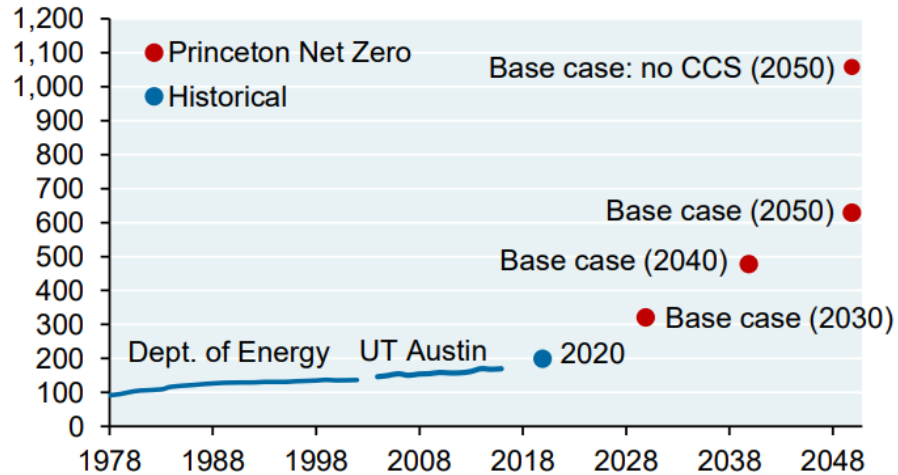


Source: DOE, UT Austin, "Net Zero America", Larson et al., Princeton. 2020.

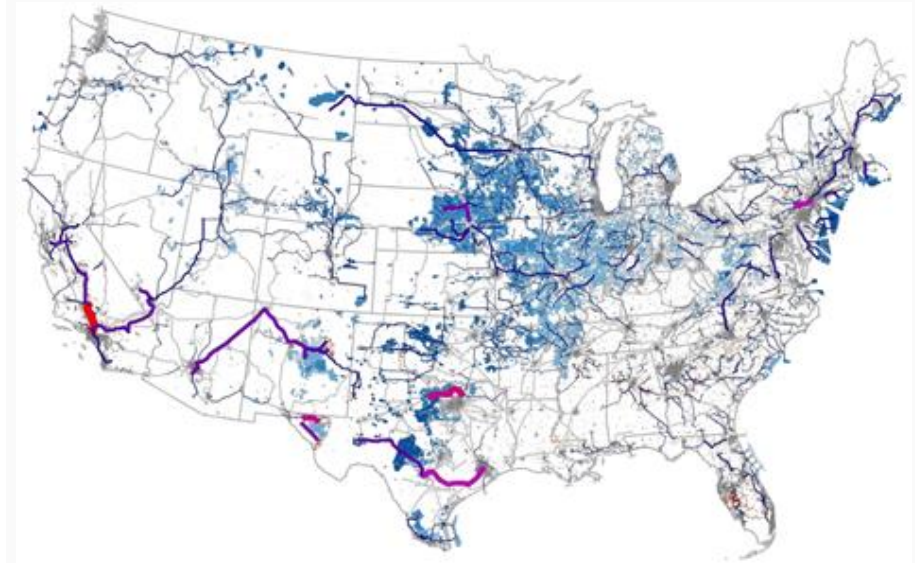
...that needs to go just about everywhere

US transmission infrastructure

Thousands of gigawatt-miles



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Where is transmission needed?

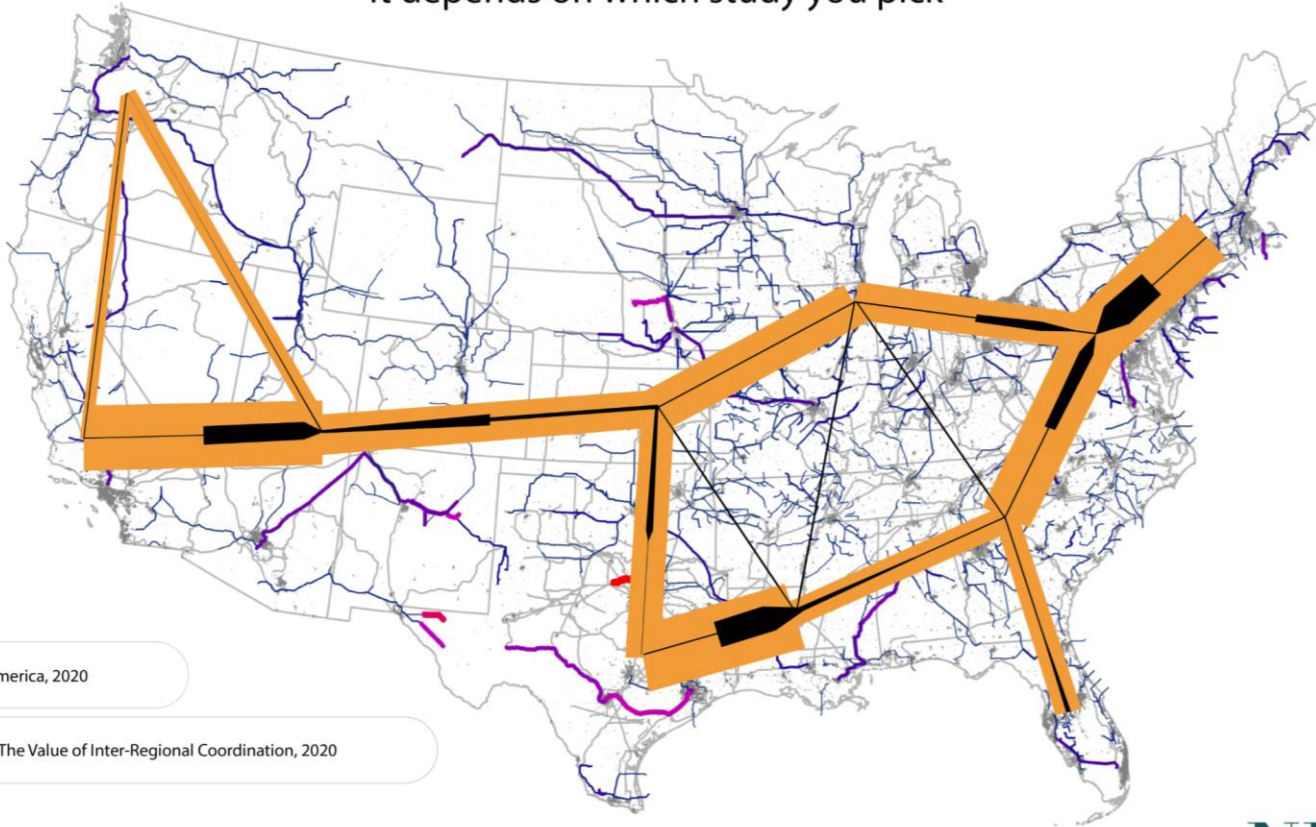
It depends on which study you pick



Princeton Net Zero America, 2020

Where is transmission needed?

It depends on which study you pick

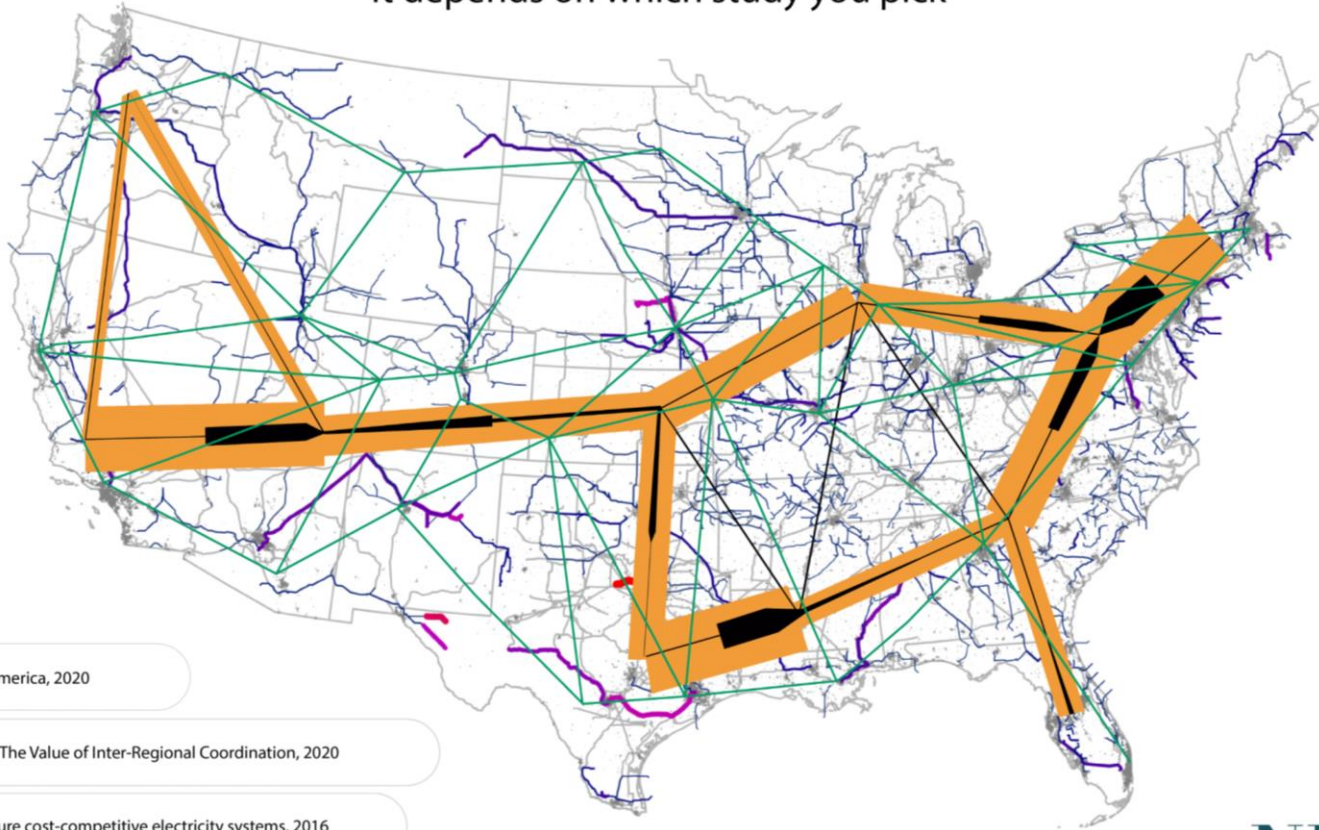


Princeton Net Zero America, 2020

Brown and Botterud, The Value of Inter-Regional Coordination, 2020

Where is transmission needed?

It depends on which study you pick



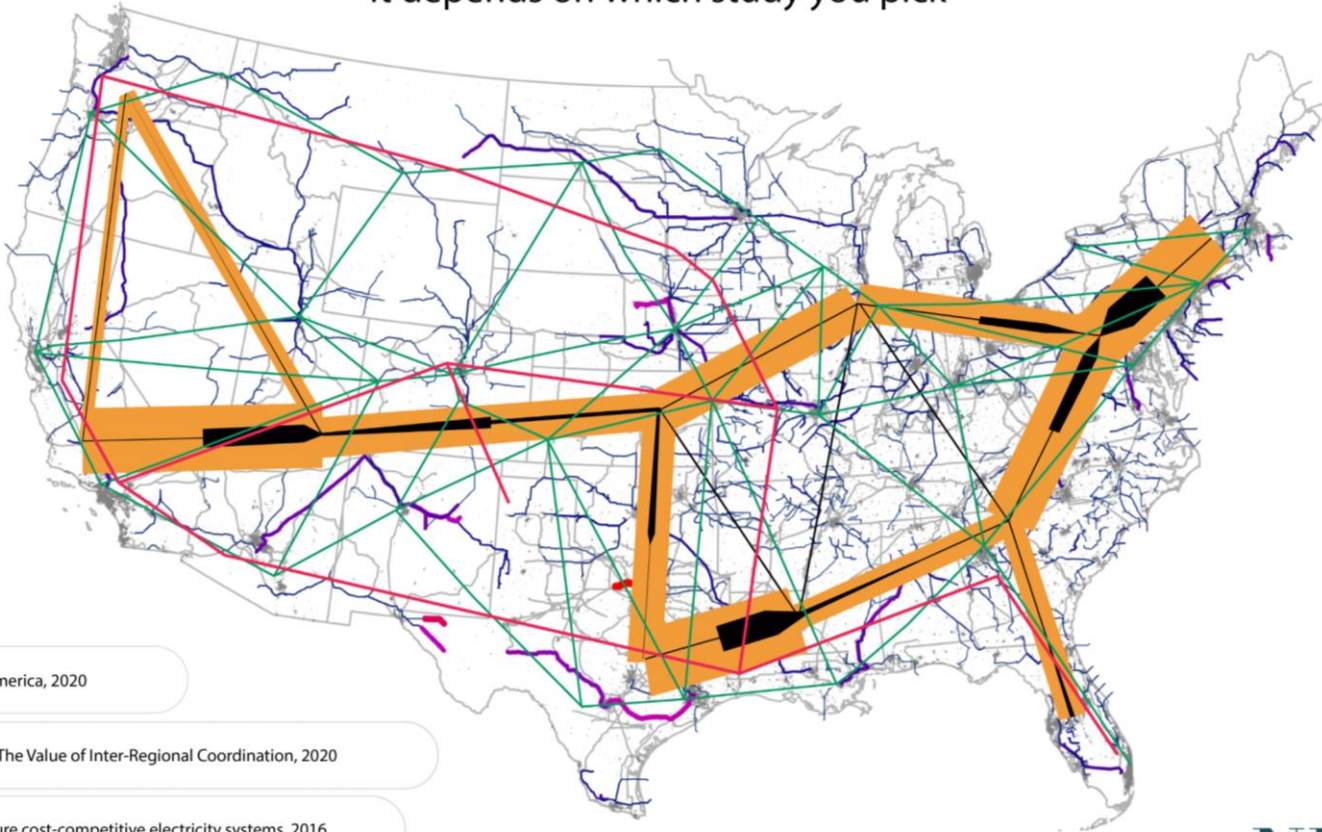
Princeton Net Zero America, 2020

Brown and Botterud, The Value of Inter-Regional Coordination, 2020

MacDonald et al, Future cost-competitive electricity systems, 2016

Where is transmission needed?

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Princeton Net Zero America, 2020

Brown and Botterud, The Value of Inter-Regional Coordination, 2020

MacDonald et al, Future cost-competitive electricity systems, 2016

ESIG, Transmission Planning for 100% Clean Electricity, 2021

The background of the slide features a photograph of the United States Capitol dome, showing its iconic white columns and ornate architecture. The image is slightly faded to allow the text to be prominent.

Congress to the rescue?

Inflation Reduction Act:

Grants to Facilitate the Siting of Interstate Electricity Transmission Lines

\$760 million in grants for purposes including:

- transmission project studies,
- examination of alternative siting corridors,
- hosting negotiations with project backers and opponents, participating in federal and state regulatory proceedings,
- and promoting economic development in affected communities

Where do we go from here?



Thank you!

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References

- Eric Larson et al., *Net-Zero America by 2050: Potential Pathways, Infrastructure, and Impacts*. (Princeton University, December 15, 2020)
- Aaron Bloom et al., *The Value of Increased HVDC Capacity Between Eastern and Western U.S. Grids: The Interconnections Seam Study*, NREL/ JA-6A20-76580 (National Renewable Energy Laboratory, October 2020);
- Aaron Bloom et al., *Transmission Planning for 100% Clean Electricity*, (Energy Systems Integration Group, January 2021);
- Patrick Brown and Audun Botterud, "The Value of Inter-Regional Coordination and Transmission in Decarbonizing the US Electricity System," *Joule* 5, no. 1 (December 2020): 115-134;
- Christopher Clack et al., *Weather-Informed Energy Systems: for Design, Operations and Markets* (Planning Version) (Vibrant Clean Energy, August 2020)