

Interregional transmission benefits: an overview

Bridging the Transmission Gap

Hosted by: Environmental and Energy Study Institute & World Resources Institute

Presentation by: Rachel Levine, Niskanen Center

The Niskanen Center is a 501(c)(3) think tank based in Washington D.C. We promote policies that emphasize free market principles and effective, limited government.

What is interregional transmission?

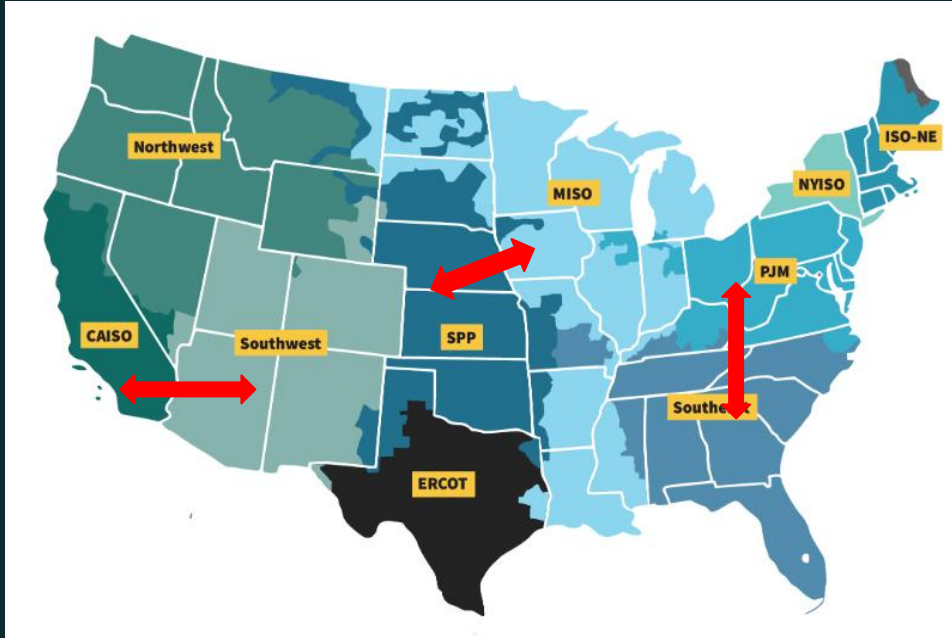
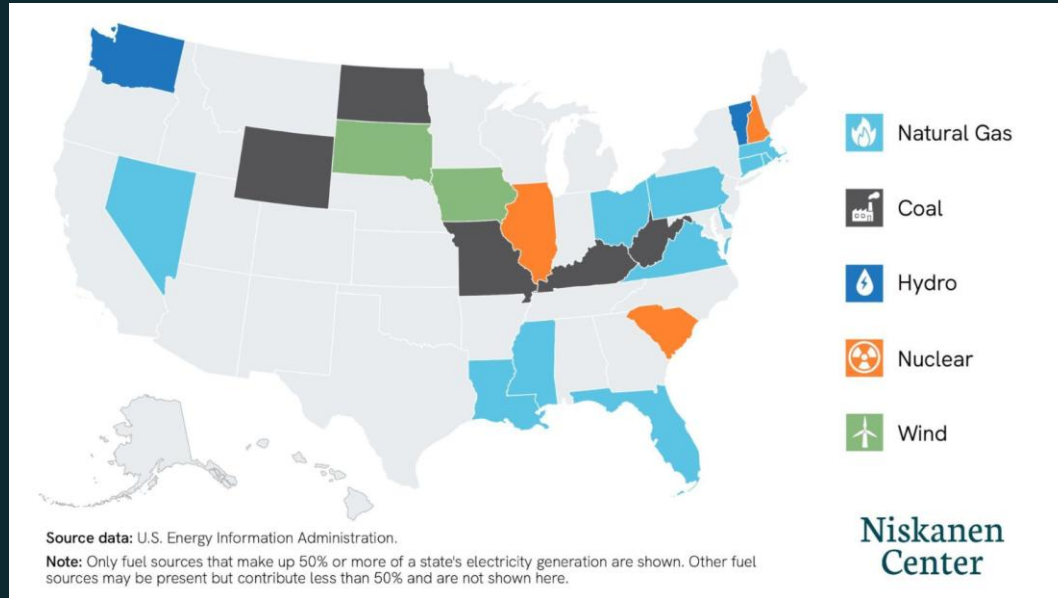


Image: [FERC](#)

- Our grid is fragmented
- No regulatory mandates for building interregional lines, regional mandates were only finalized in 2024
- Utilities are not incentivized to build these lines, 'merchant' developers try to fill the void
- Market and regulatory reforms are needed (many of which are in BAAJA!)

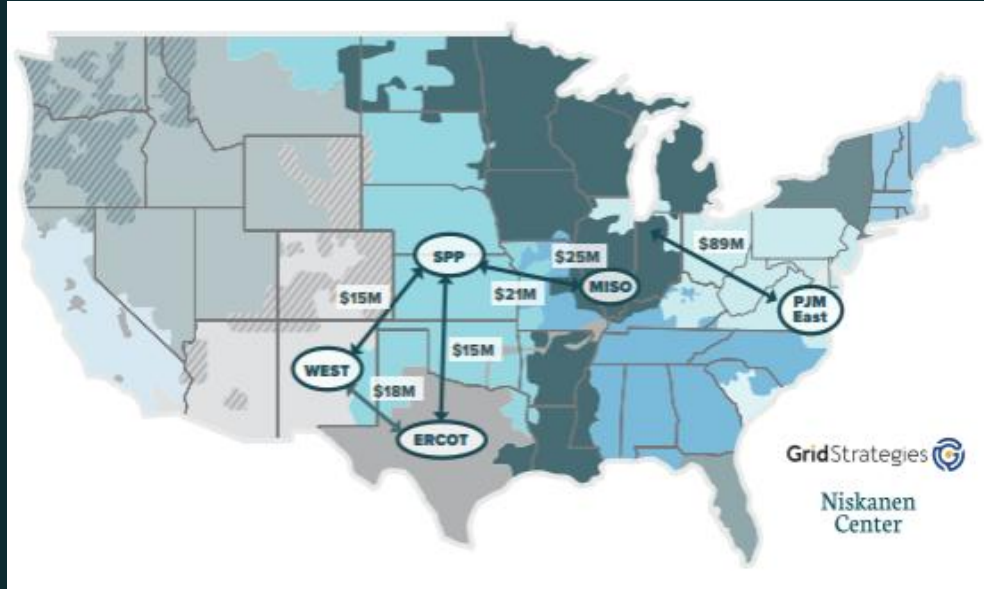
How does a lack of interregional lines impact the grid?



- For 23/48 contiguous states, **over 50%** of power generated is from a single fuel source
- When power can't be easily moved around, states and regions without diverse supply are more susceptible to disruptions and high costs

Interregional lines = grid diversity

How does grid diversity impact the cost of electricity?



- When supply doesn't match demand, prices spike
- During Winter Storm Fern, ratepayers could have received **\$183 million** in value by expanding transmission ties between each impacted region by only one gigawatt

Bigger markets = lower costs

Image: [Niskanen Center and Grid Strategies](#)

Consumer cost benefits

- A recent [national lab study](#) looked at average 2012-2022 electricity prices and compared them with annualized average transmission cost estimates

The results:

- Interregional projects provided 1.6 times the value for consumers per dollar spent
- Cross-interconnection projects had an *even higher* value-to-cost ratio: 4-to-1

Lines connecting grid regions provide the biggest bang for the buck.

Interregional transmission also has nat. sec. implications

Winter Storm Uri is an instructive example...

- TX grid is largely islanded
- 12 of 15 bases in TX lost power during the storm
- Back-up generation (like diesel generators) not designed for long-duration outages, and are reliant on access to diesel

**Bottom line: 99% of military installations all rely on the same grid we do.
Not just for electricity, but also internet connectivity, commercial
transportation, sewage treatment, and drinking water access.**

What's the best technology to build high-voltage, long distance transmission?

High-voltage direct current (HVDC)

What is HVDC?

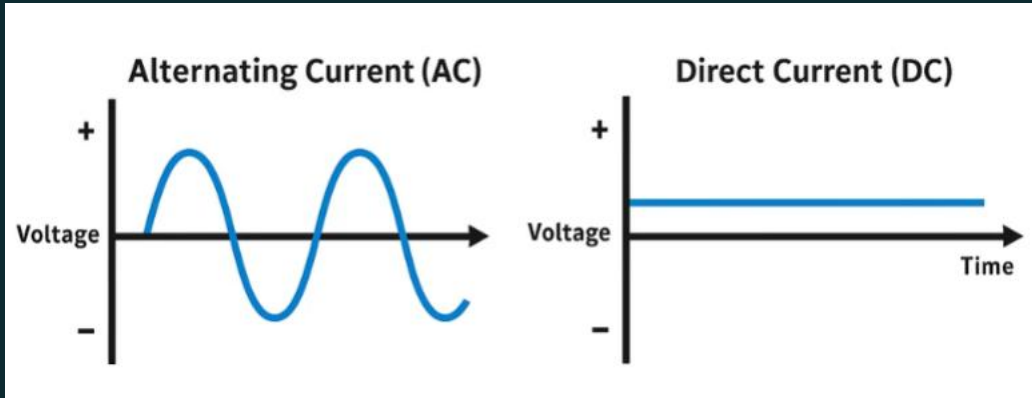


Image: [OUPES](#)

- Right now, our grid is mostly alternating current (AC) lines
- Electron movement is the differentiating factor
 - AC - electrons oscillate as they move
 - DC - electrons are moving in a constant direction

Why is HVDC good for interregional lines?

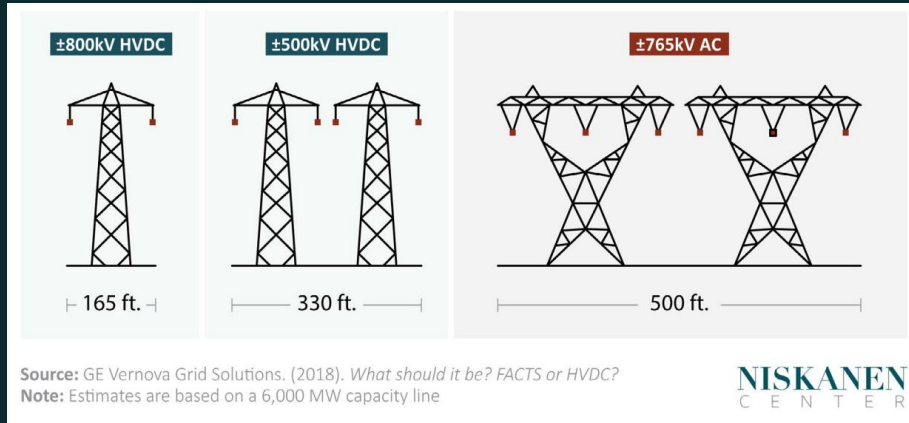
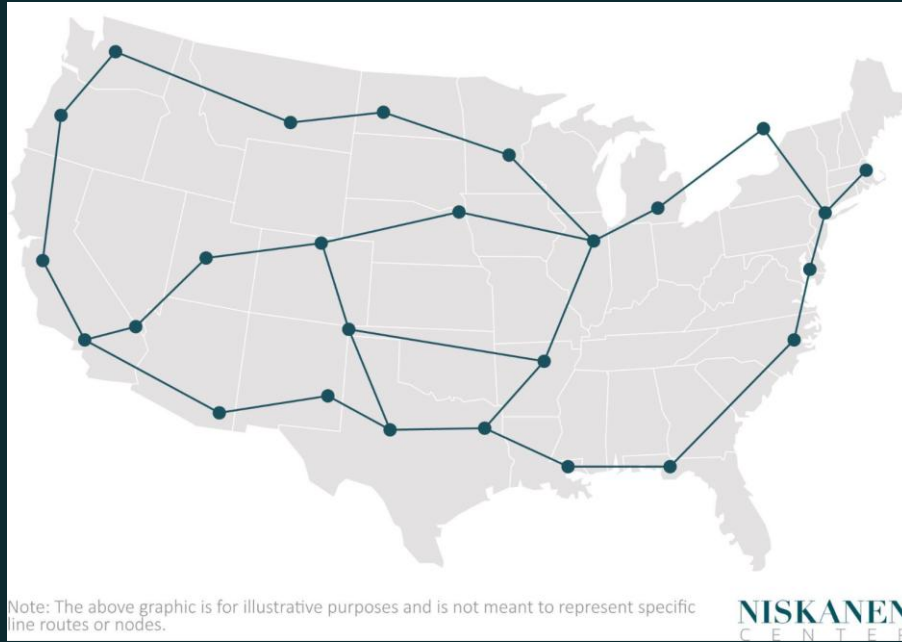


Image: [Niskanen Center](#)

- At very long distances, HVDC is very stable and has low losses
- At > 350 miles, HVDC is cost-effective
- HVDC provides other benefits to the grid than just energy arbitrage:
 - Black start capability
 - Voltage regulation/stabilization
 - Can be undergrounded
 - Narrower right-of-way than equivalent capacity HVAC lines

HVDC is the best technology to get us to a macrogrid



Macrogrid: an interconnected network of high voltage transmission lines that can move power vast distances with relatively few losses, providing power delivery at a national scale

Image: [Niskanen Center](#)

Our regulatory and market institutions are not conducive to building interregional transmission.

BAAJA is a critical first step towards building the grid we need.

Thank you!



Rachel Levine

Senior Transmission Policy Analyst

rlevine@niskanencenter.org

[LinkedIn](#)