



Improving Energy Grid Reliability and Resilience to Lower Energy Bills

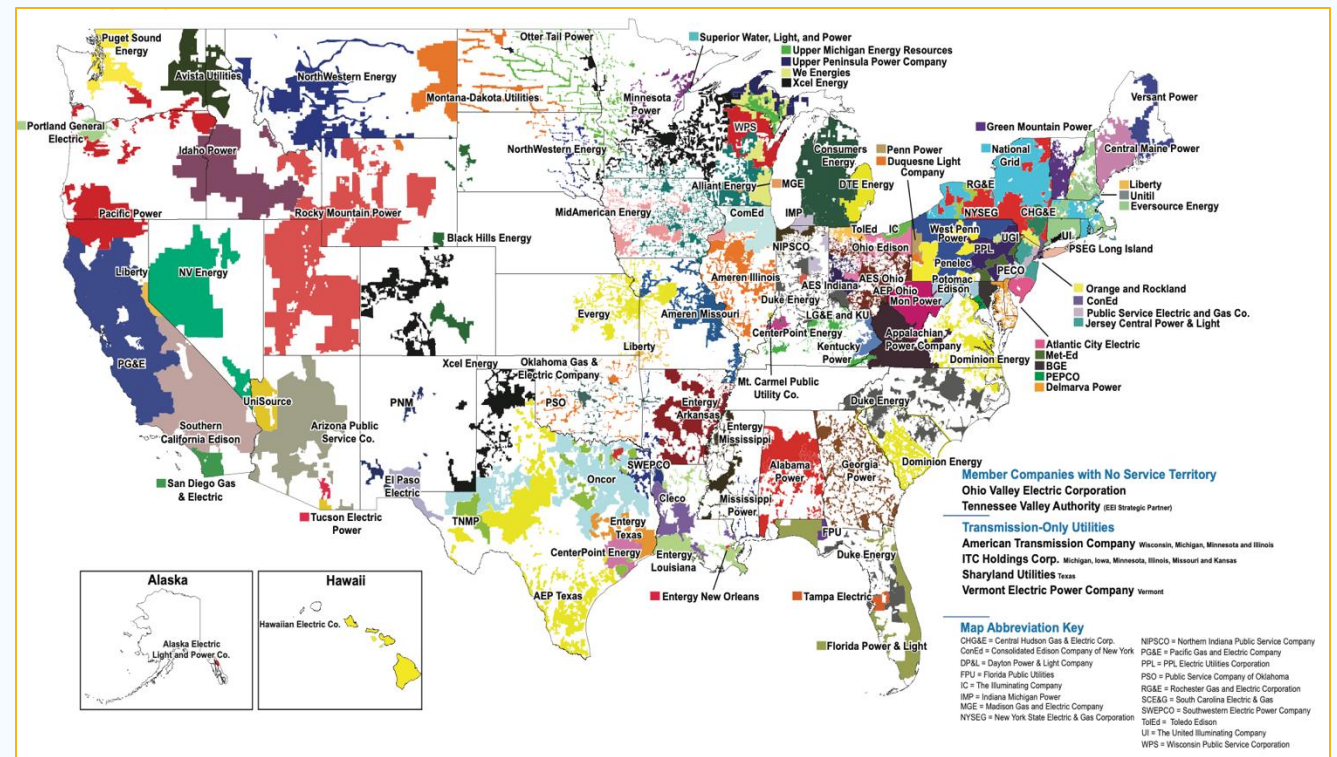
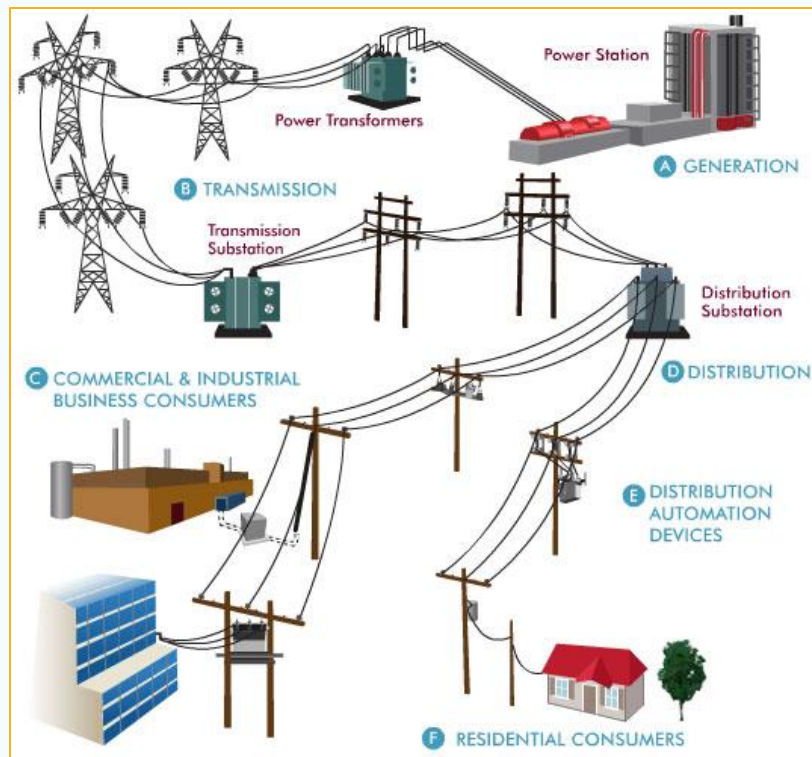
Zach Zimmerman, Research and Policy Manager

October 2025

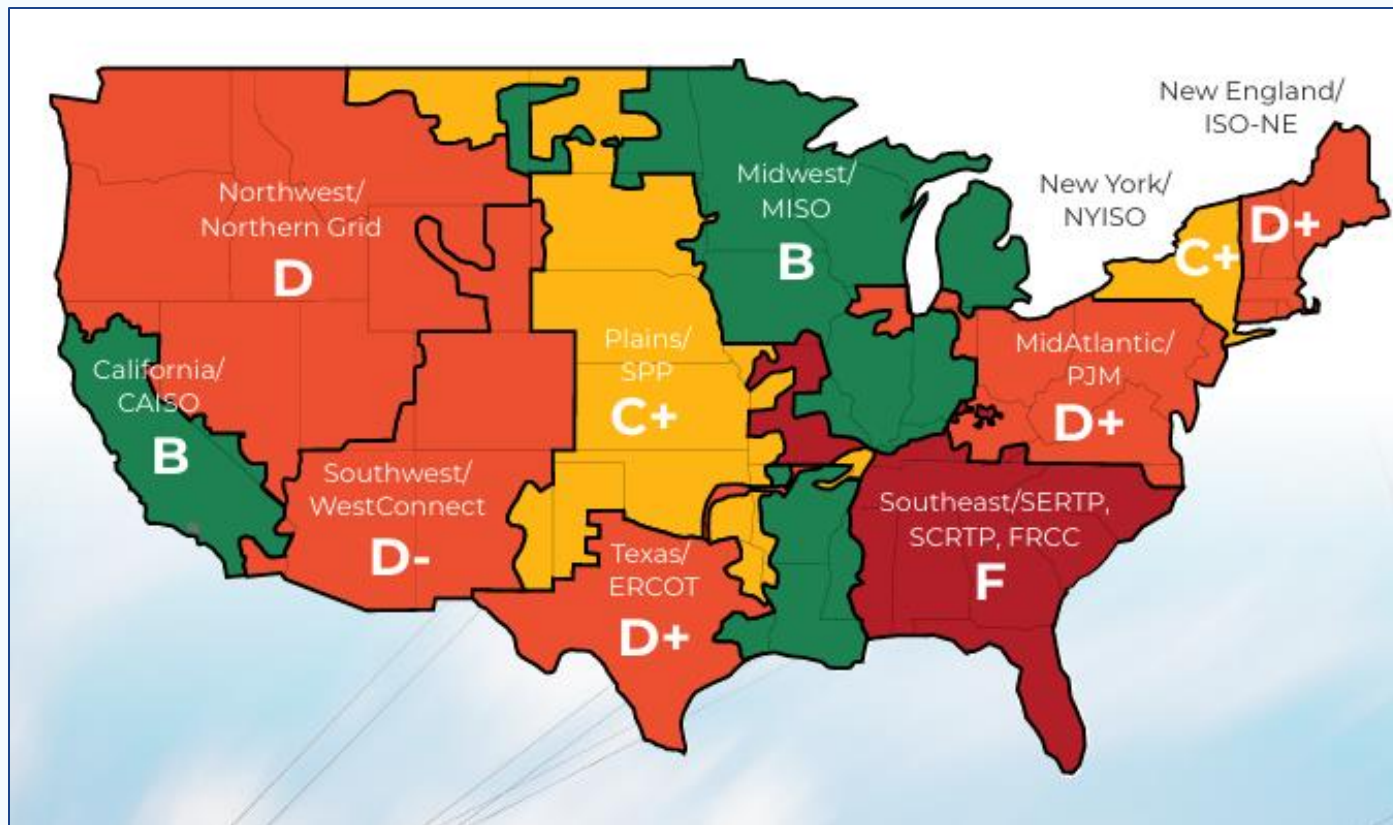
Fragmented US utility industry not designed to build large regional networks

Utilities operate individual systems...

...with around 3,000 separate utilities focused on their own small footprint



Regional planning has limited success in developing new transmission



- ISO New England (ISO-NE)
- New York Independent System Operator (NYISO)
- PJM Interconnection (PJM)
- Southeastern Regional Transmission Planning (SERTP)
- South Carolina Regional Transmission Planning (SCRT)
- Florida Reliability Coordinating Council (FRCC)
- Midcontinent Independent System Operator (MISO)
- Southwest Power Pool (SPP)
- WestConnect
- Northern Grid
- California Independent System Operator (CAISO)
- Electric Reliability Council of Texas (ERCOT)*

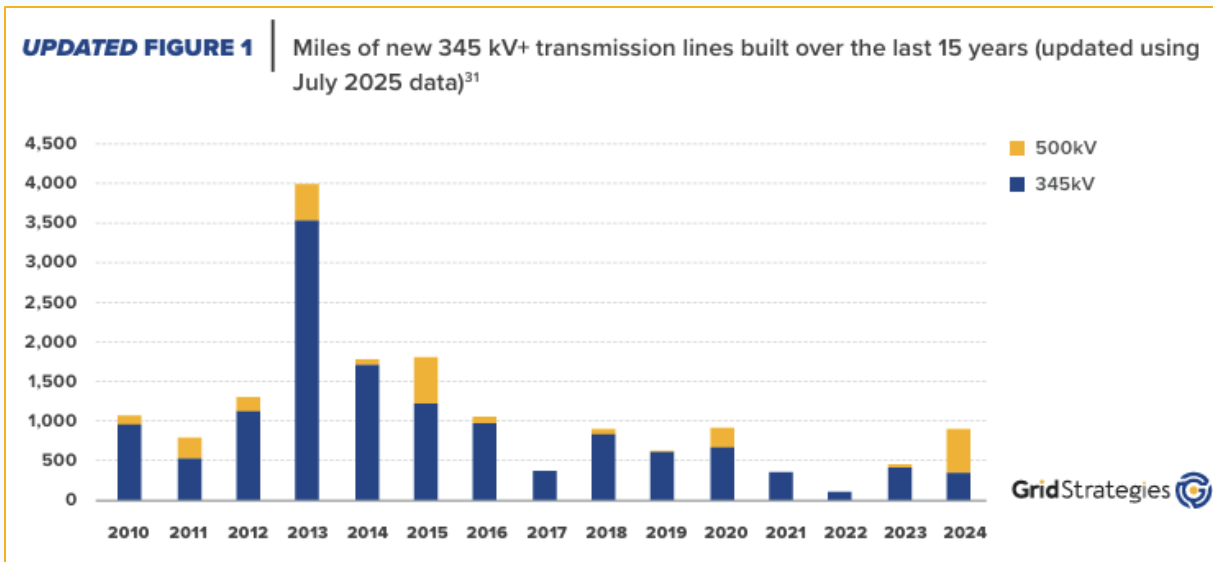
SOURCE | [ACEG Transmission Planning Report Card 2023](#)

Result: very little long-distance transmission has been built recently

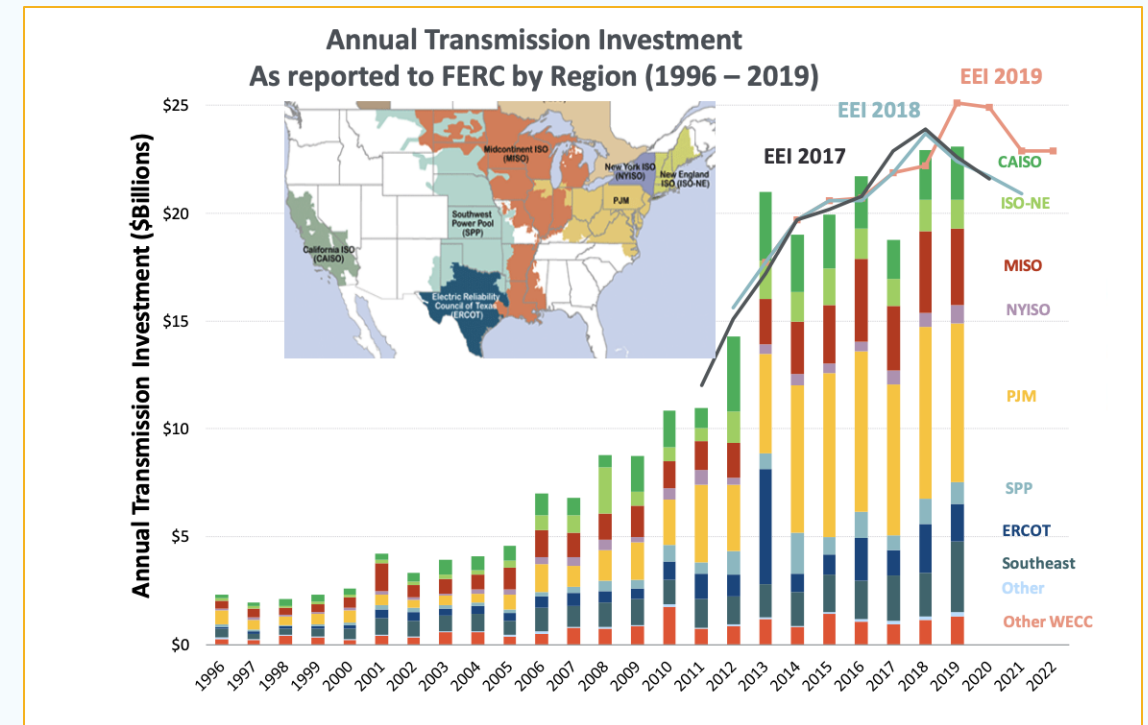
Many miles of new transmission in 2013, then dropped to a trickle...



...with investment rising but capacity not increasing—mostly replacing aging assets



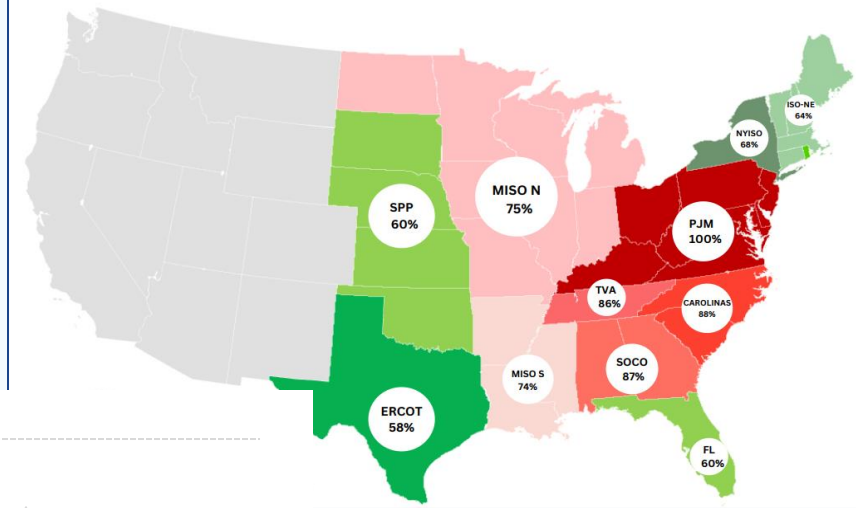
SOURCE | Grid Strategies LLC, [Fewer New Miles](#) (July 2025)



SOURCE | The Brattle Group, [Annual US Transmission Investments 1996-2023](#) (June 2024)

Transmission relieves congestion diversifies supply + demand of electricity, improving grid reliability and resilience

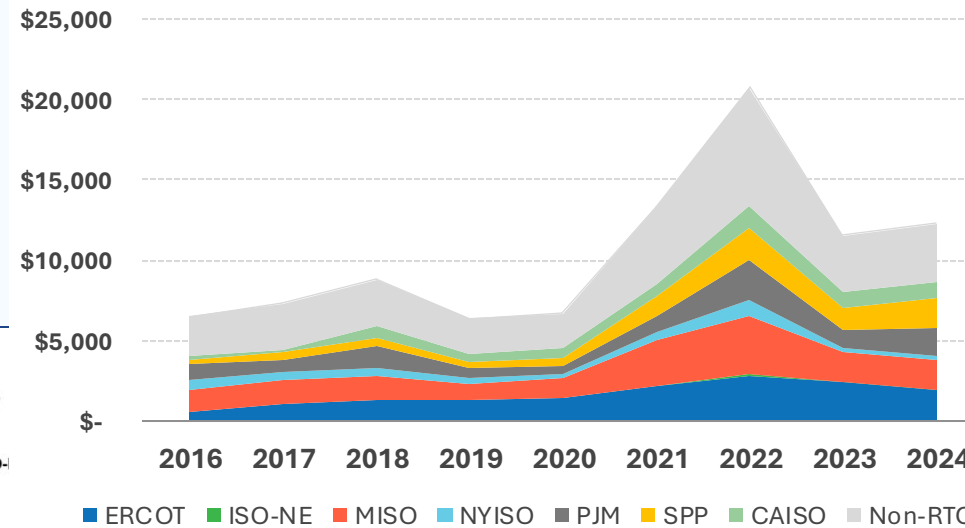
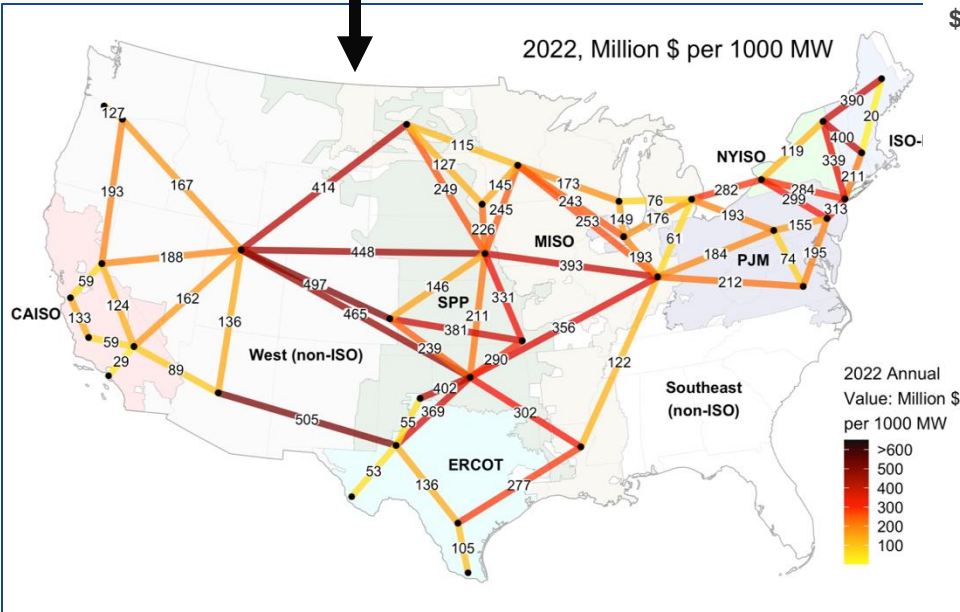
2014 POLAR VORTEX EVENT, JANUARY 17, 2014, AT 7 AM ET



Intraregional congestion



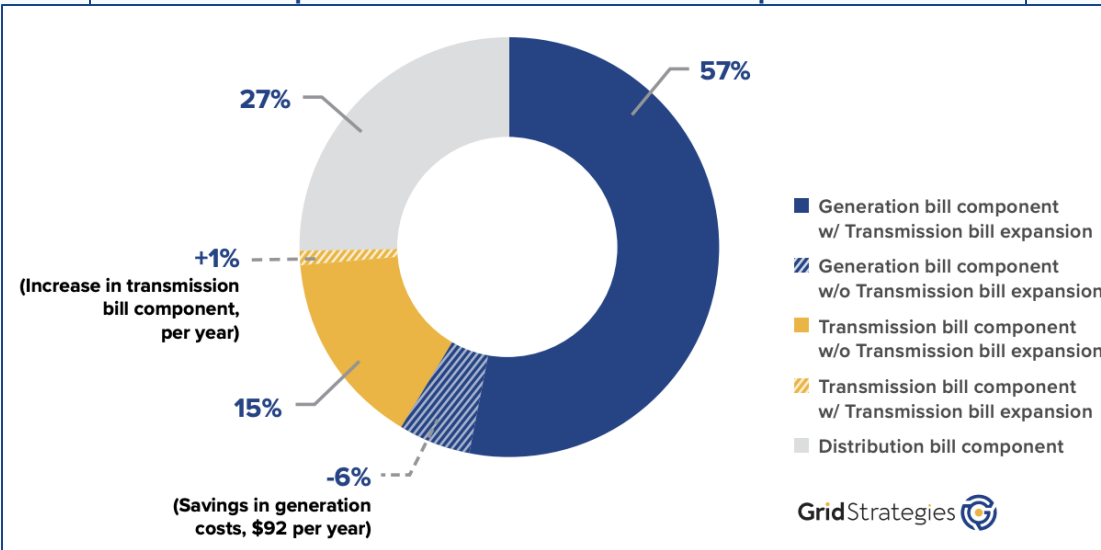
Interregional congestion



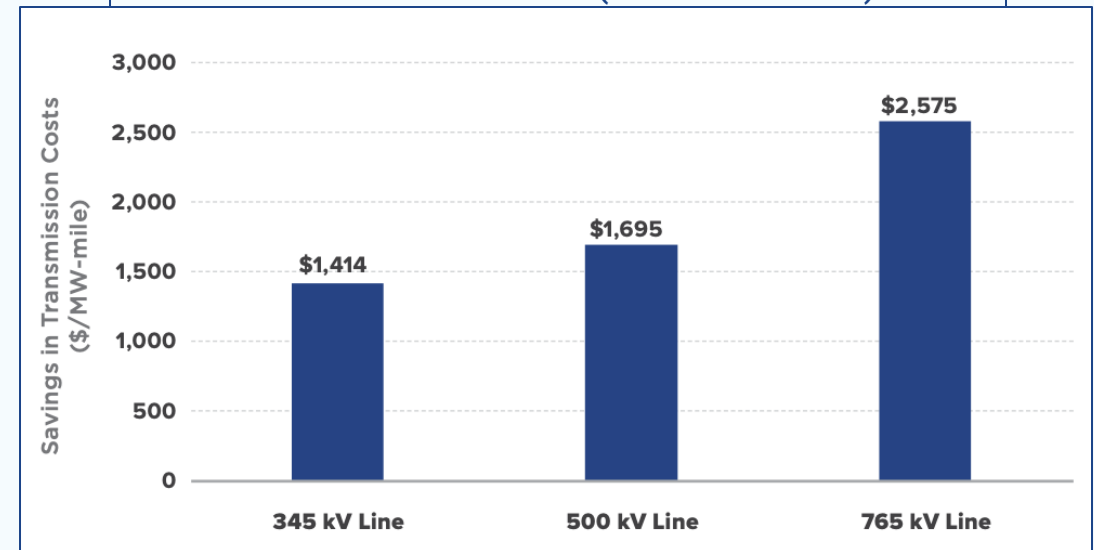
Well-planned transmission saves consumers money

Transmission expansion could save U.S. households on net \$6.3-10.4 billion annually

Components of an electric bill with and without well-planned transmission expansion



Savings (\$/MW-mi) compared to 230 kV transmission lines (Source: MISO)



Planning

The existing transmission planning paradigm has not resulted in enough transmission.

Key issues:

- Too near term
- Fails to consider all the drivers of transmission
- Fails to consider all the benefits of transmission
- Static view of the system
- Does not consider advanced technologies
- No real framework for interregional

FERC attempting to address issues with Order 1920



OFFICE OF PUBLIC PARTICIPATION
FEDERAL ENERGY REGULATORY COMMISSION

Explainer

Transmission Planning and Cost Allocation Final Rule

Building for the Future Through Electric Regional Transmission Planning and Cost Allocation, Docket No. RM21-17; Order No. 1920, Order No. 1920-A, and Order No. 1920-B

Congress
required NERC →
to study
interregional

Public Law 118-5
118th Congress

An Act

To provide for a responsible increase to the debt ceiling.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Fiscal Responsibility Act of 2023”.

SEC. 2. TABLE OF CONTENTS.

The table of contents for this Act is as follows:

Sec. 1. Short title.
Sec. 2. Table of contents.
Sec. 3. References.

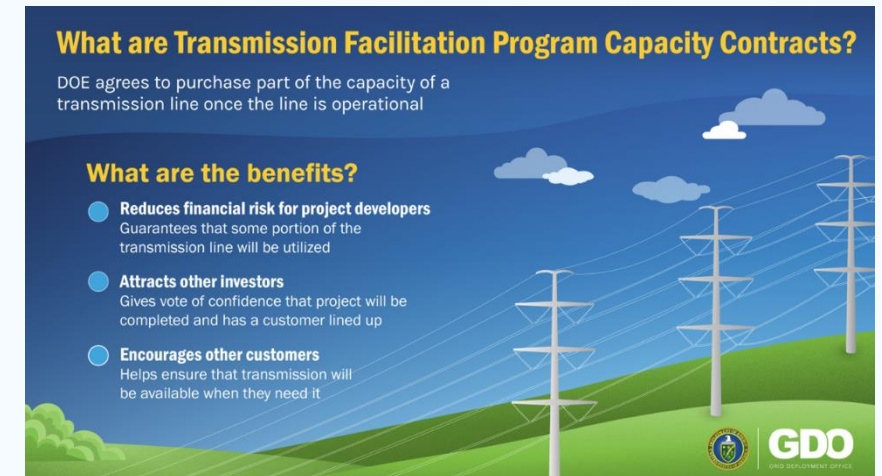
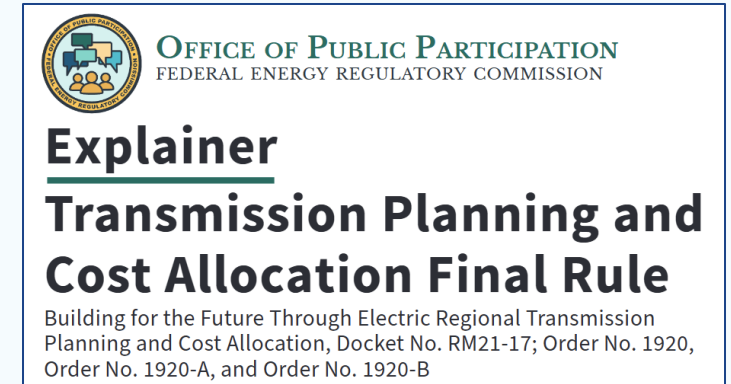
Paying

Need a standardized definition of transmission benefits. Also, chicken-and-the-egg problem for financing transmission.

Key issues:

- Fails to consider all the benefits of transmission or standardize
- Failure to pay from those who benefit (free rider problem)
- Unreasonable focus on precise quantification
- No real framework for interregional

FERC attempting to address issues with Order 1920



Congress/DOE has attempted to address with federal tools

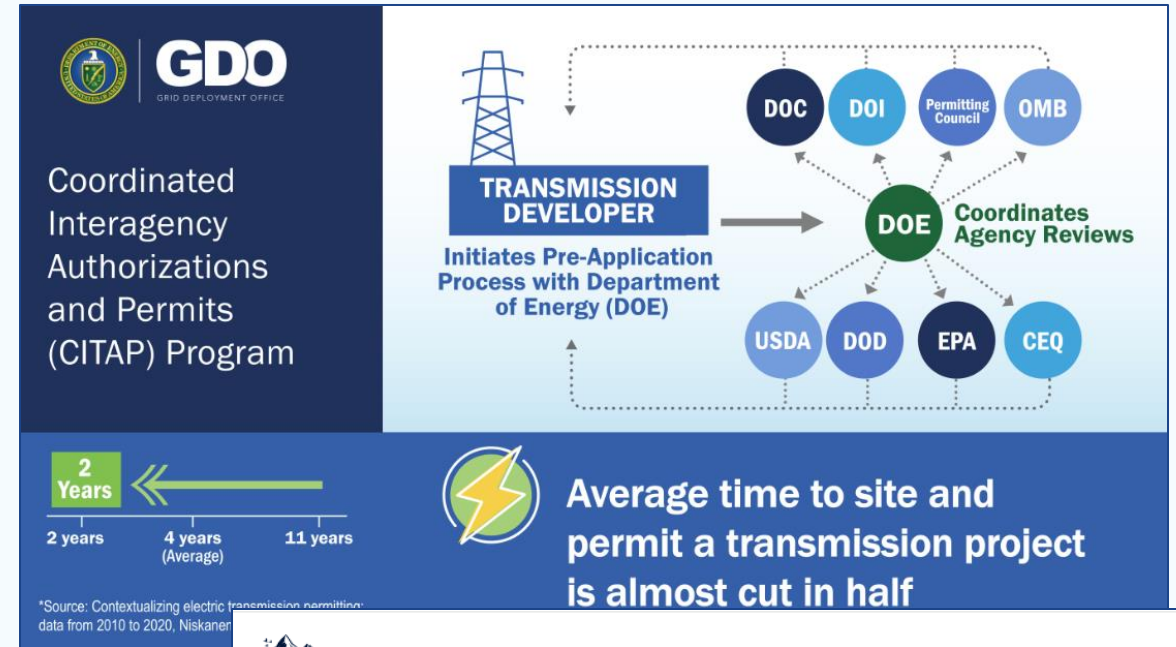
Permitting

Siting and permitting timelines slow down transmission development, especially where multiple entities must issue approvals.

Key issues:

- Federal, state, and local permits required
- No timelines and/or frequent delays
- Narrow view of benefits of transmission
- Failure to notify and engage landowners early in the process

DOE attempting to address with CITAP + support for state authorities



Congress taking up permitting reform (again)



HOUSE COMMITTEE ON NATURAL RESOURCES
CHAIRMAN BRUCE WESTERMAN

Westerman and Golden Introduce Bipartisan Permitting Reform Legislation

WASHINGTON, D.C., July 25, 2025 | [Committee Press Office](#) (202-225-2761)

[f](#) [t](#)

But first, get the most out of the existing grid

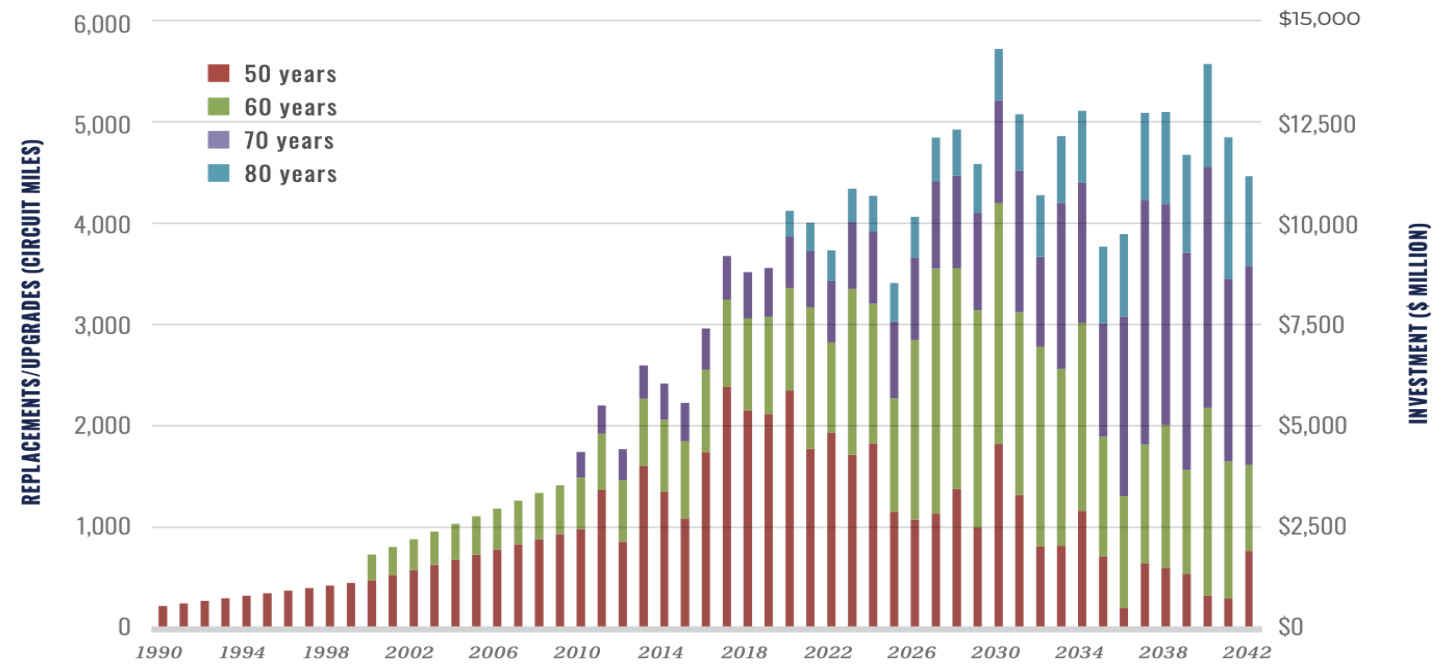
Grid Enhancing Technologies

- Power Flow Control
- Dynamic Line Ratings
- Topology Optimization

High Performance Conductors

- Carbon fiber / composite core conductors
- Superconductors

Huge opportunity to replace aging wires



Thank you!

Zach Zimmerman

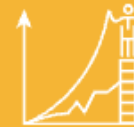
Research and Policy Manager

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We offer research and advising on



Clean Energy
Integration



Business & Policy
Solutions



Regulatory
Engagement

Founded in 2017, Grid Strategies works on policy to enable decarbonization and an affordable, reliable electricity system.