NASEO
National Association of State Energy Officials

NASEO's 2026 State Transmission Summit

Powering Progress: State Leadership and the Future of America's Grid

Day 1: March 24, 2026

Welcome and Summit Objectives

David Terry

- President, National Association of State Energy Officials

Catherine Reed

- Senior Program Director, Electricity, National Association of State Energy Officials

Day 1: Tuesday, March 24, 2026

9:45 – 10:45 a.m.	**Navigating Load Growth and the Transmission Needed to Power It**
10:45 – 11:00 a.m.	**Break**
11:00 – 12:00 p.m.	**Transmission Expansion from the National Security Perspective**
12:00 – 1:00 p.m.	**Networking Lunch**
1:00 – 1:30 p.m.	**Keynote Address: Transmission Landscape and Outlook**

Day 1: Tuesday, March 24, 2026

1:35 – 2:30 p.m.	**Opportunities for Permitting Reform at the Federal Level**
2:30 – 3:30 p.m.	**State Roles and Opportunities in Long-Term Transmission Planning**
3:30 – 3:45 p.m.	**Break**
3:45 – 4:55 p.m.	**Engagement in Interregional Transmission Planning**
5:00 – 6:30 p.m.	**Reception (Sponsored by CTC Global)**

Keynote Opening Remarks

David Terry

- President, National Association of State Energy Officials

The Honorable Catherine Jereza

- Assistant Secretary, Office of Electricity, U.S. Department of Energy

Navigating Load Growth and the Transmission Needed to Power It

Julie Staveland

- Assistant Division Director, Michigan Department of Environment, Great Lakes, and Energy; Secretary, NASEO Board of Directors

Christina Hayes

- Executive Director, Americans for a Clean Energy Grid

Mike Hagerty

- Principal, The Brattle Group

Dave Rardin

- Manager, Regulatory/Legislative Affairs, Governmental Services, PJM Interconnection

Casey Kelly

- Senior Manager, Electricity Policy, ClearPath

Americans for a Clean Energy Grid

Navigating Load Growth and the Transmission to Power it

National Association of State Energy Officers
March 24, 2026

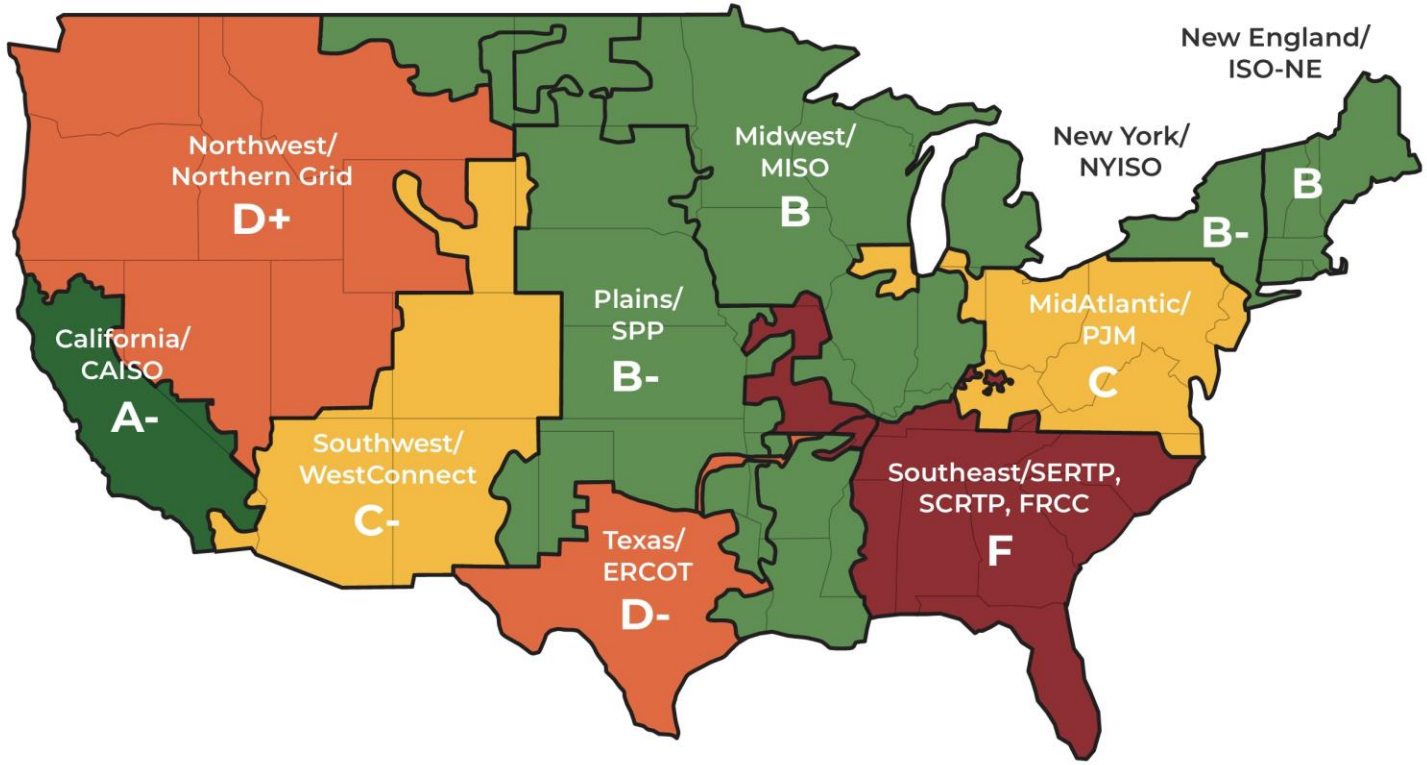
About ACEG

Americans for a Clean Energy Grid (ACEG) is a public interest advocacy coalition focused on the need to expand, integrate, and modernize the North American high-capacity grid. ACEG brings together a diverse coalition — including customers, labor, environmental groups, utilities, and developers — to advocate for policies that recognize the multifaceted benefits of a robust electric grid.

Americans for a Clean Energy Grid

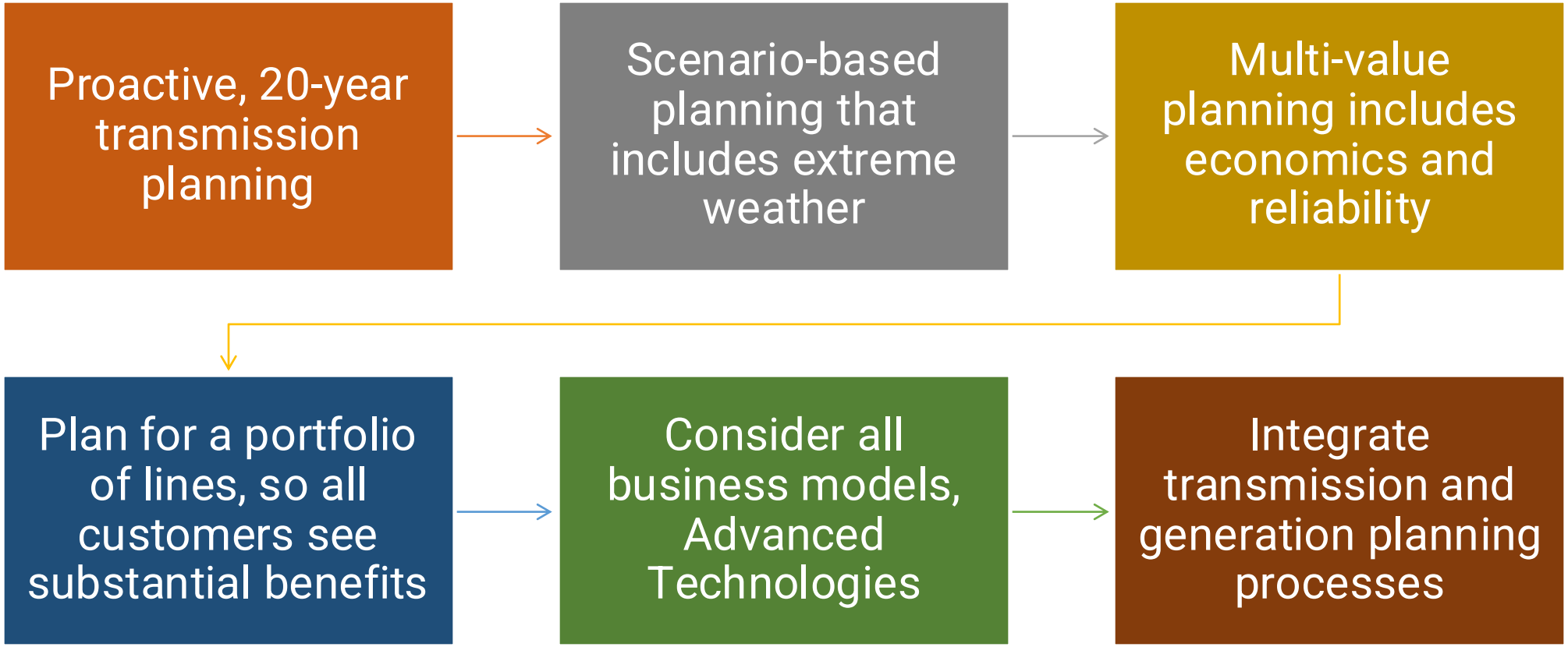
Key Findings:

- Interregional planning remains a major weakness
- Rising demand drives urgency in replacing aging facilities
- Every year of delay increases costs of a line by 15-35%



Americans for a Clean Energy Grid

Recommendations



NERC's Findings:

- Current framework results in deficiencies
- 35 GW of transfer capacity is needed to bolster grid reliability
- NERC only evaluated reliability – adding economics and other scenarios require an even greater buildout

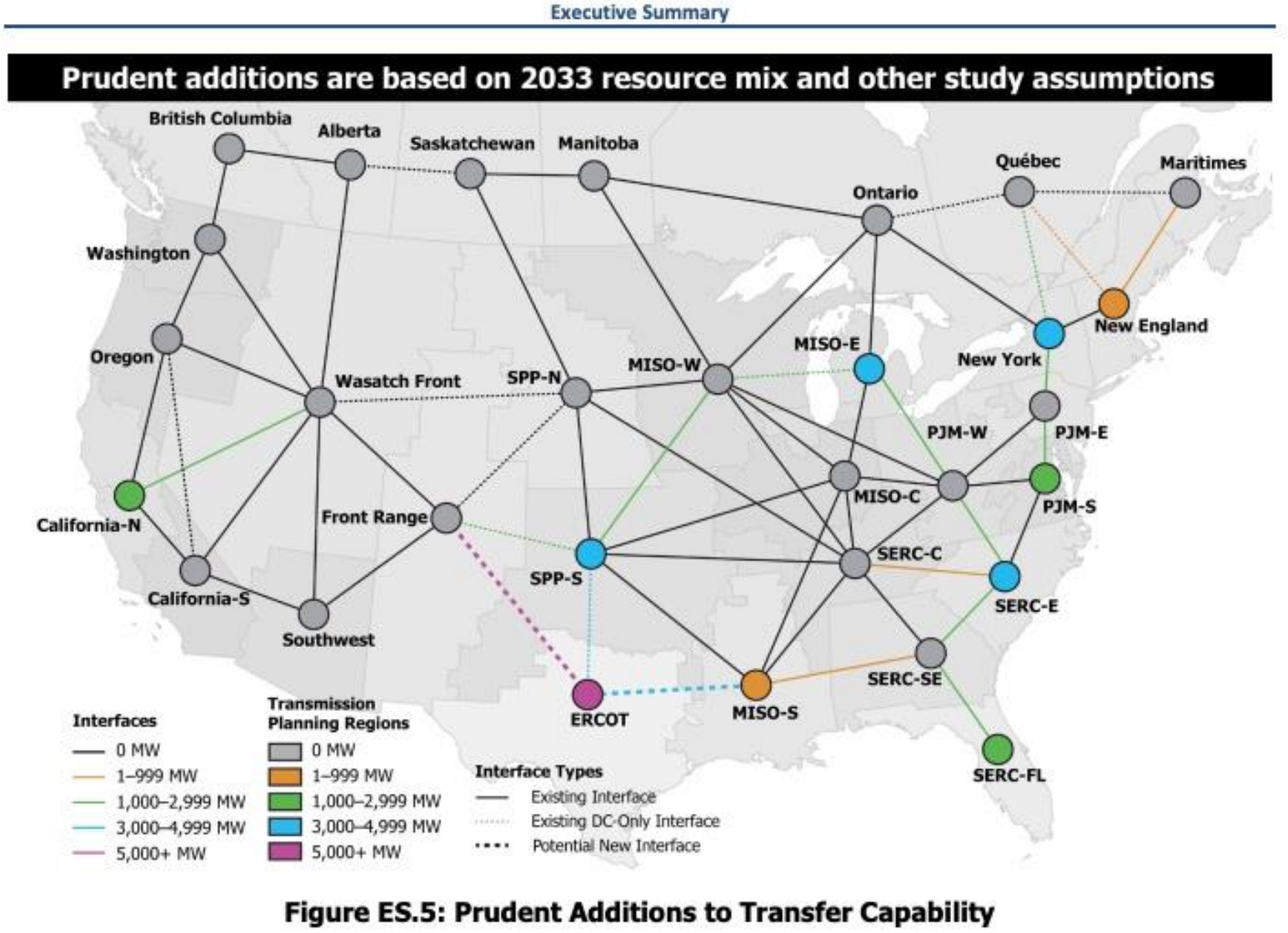


Figure ES.5: Prudent Additions to Transfer Capability

Americans for a Clean Energy Grid

State roles in energy and transmission

- Regulation of generation and distribution– and anything not expressly given to the federal government (under the Federal Power Act)
- Regulation of retail utilities– which includes service to customers (under state law)
- Siting of transmission and other energy facilities on private and state lands (under state law)
- Allocation of costs for regional transmission – but if no agreement, then FERC gets the final say (under FERC Order No. 1920 and 1920-A)

Americans for a Clean Energy Grid

Keys to fair cost allocation

Ensure new investment in energy facilities benefits *all* customers

State large load tariffs allocate costs to customers – consider residential and industrial balance

Fed cost allocation should true-up annually to align with where load moves to

Evaluate timing of new customer payment of rates, and how to align state and federal rates

Thank you!

Christina Hayes
Americans for a Clean Energy Grid
www.cleanenergygrid.org

Americans for a
Clean Energy Grid

Interconnection and Planning Processes for a High Load Growth Future

Navigating Load Growth and the Transmission Needed to Power It

PREPARED BY

J. Michael Hagerty

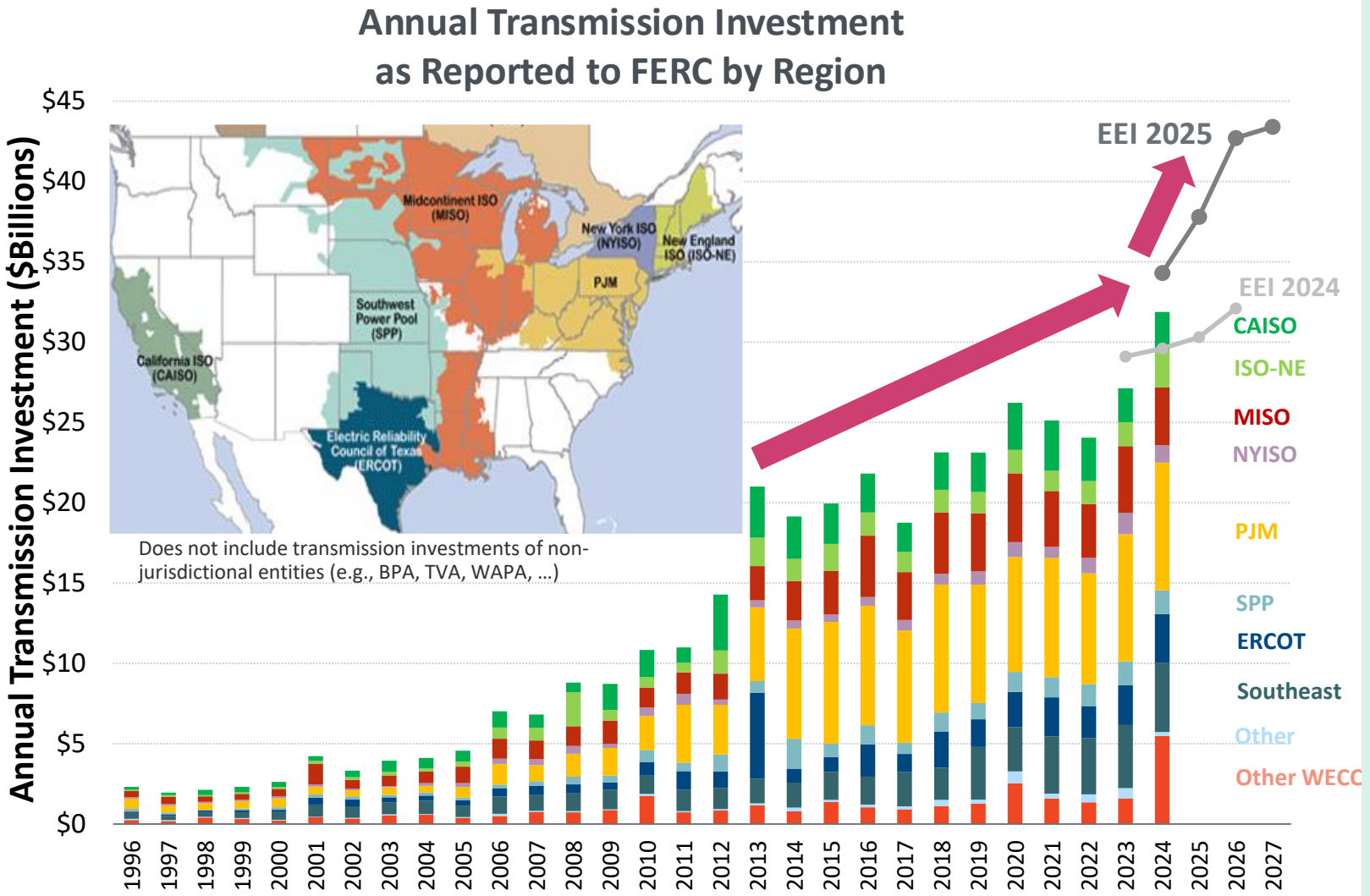
PREPARED FOR

NASEO State Transmission Summit

Brattle

MARCH 24, 2026

Transmission Costs Have Risen Dramatically and Keep Rising

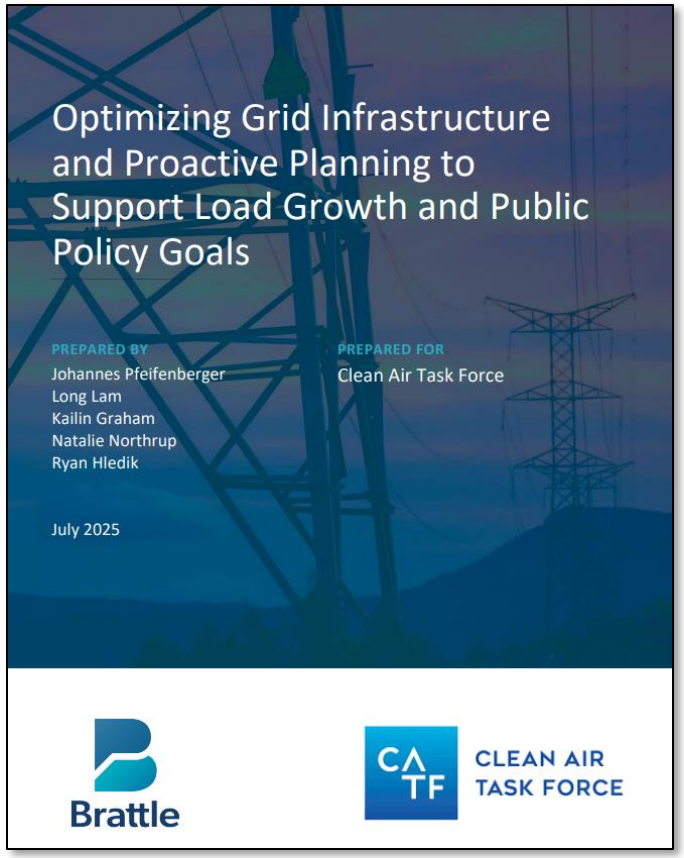


US transmission investment increased from $3 to $30 billion in the last 30 years and is projected to reach $45 billion!

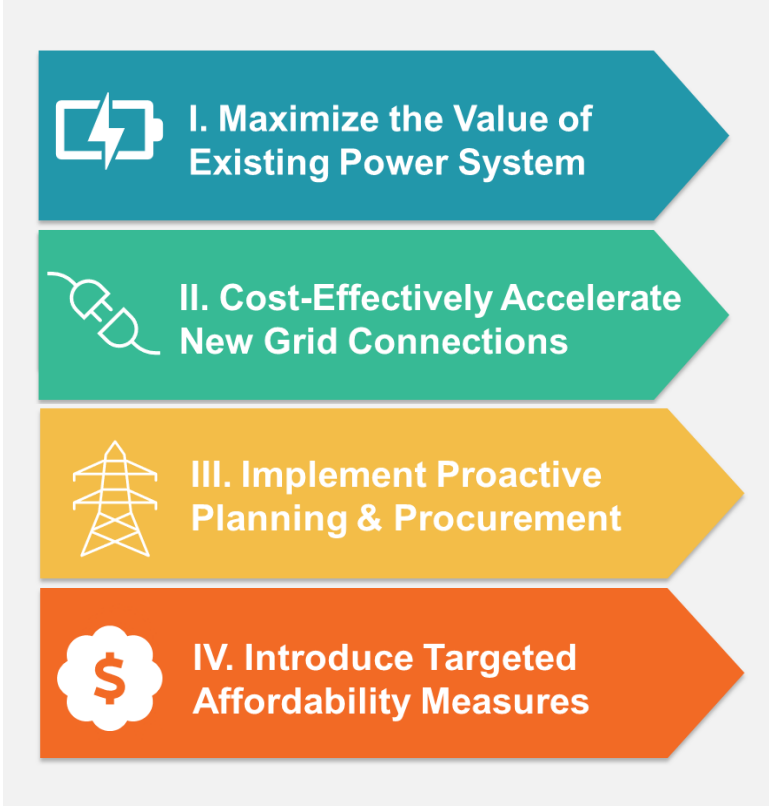
- About 90% based on reliability needs (without benefit-cost analysis)
- About 50% based on "local" utility criteria (aging assets; without going through regional planning processes)
- Few projects are justified based on multi-driver regional planning studies outside of MISO
- Longer and higher voltage transmission projects are coming, planned for early 2030s

Sources: The Brattle Group analysis of FERC Form 1 Data; EEI "Historical and Projected Transmission Investment" most recent accessed here https://www.eei.org/-/media/Project/EEI/Documents/Resources-and-Media/bar_actual_and_projected_trans_investment.pdf

How to Support Load Growth and Policy Goals Quickly and Efficiently



Four Pillars to Supporting Load Growth



Transmission-Related Recommendations

I.C Utilize GETs, ATTs, and RASs
I.D Capitalize on grid upsizing opportunities

II.B Co-locate new generation and load
II.C Streamline gen interconnection processes

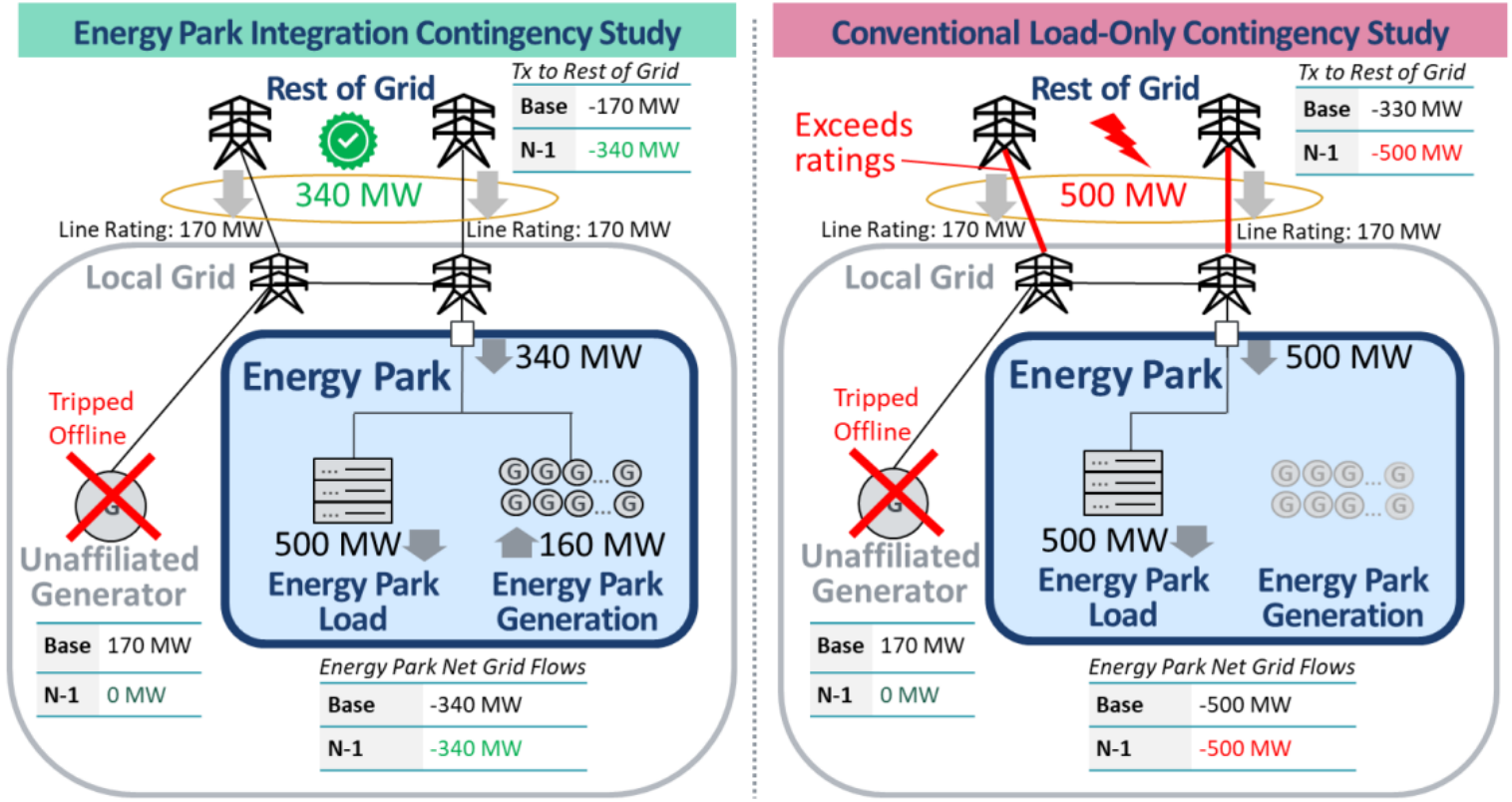
III.A Proactively plan gen and transmission
III.D Improve load interconnection processes

For each of these key areas, the report offers case studies, cross references to industry experience and commercially-available technologies, and a discussion of best practices.

Co-Location through Energy Park Interconnection Processes

Studying interconnection of energy parks together can (1) reduce interconnection study time and (2) reduce costs and time for building network upgrades

How Energy Park Interconnection Studies Reduce Upgrades



No Upgrade ☺

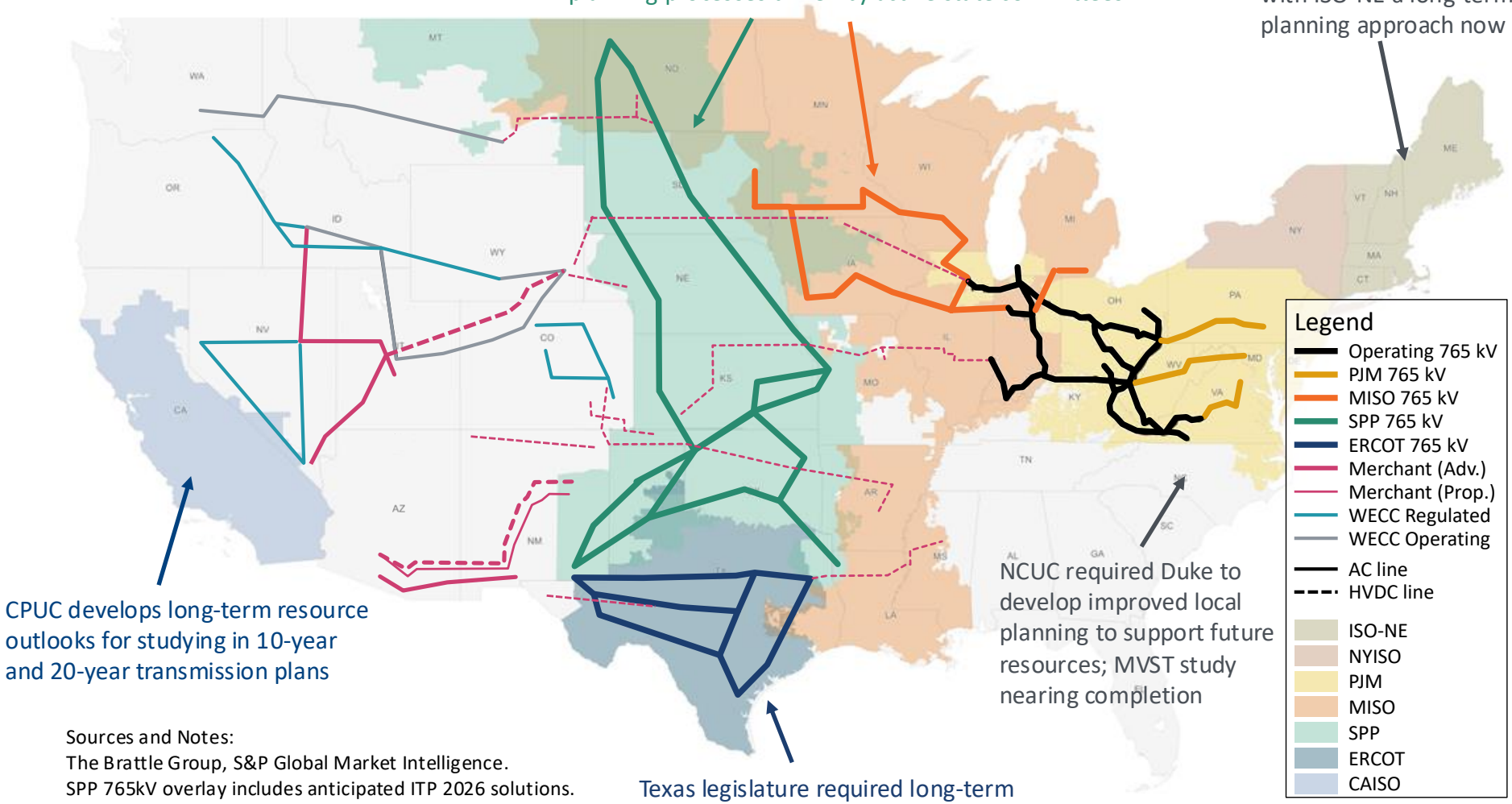
160 MW Upgrade ☹

Source: A. Levitt, et al., Accelerating the Integration of New Co-located Generation and Loads, Prepared for Bloom Energy, April 2025.

States Play Key Role in Developing Proactive Planning Processes

MISO and SPP developed long-term, scenario-based planning processes driven by active state committees

New England states initiated and developed with ISO-NE a long-term, multi-value planning approach now underway



CPUC develops long-term resource outlooks for studying in 10-year and 20-year transmission plans

NCUC required Duke to develop improved local planning to support future resources; MVST study nearing completion

Texas legislature required long-term reliability-based study to serve growing load in West Texas; ERCOT led study

765 kV lines planned by PJM, MISO, SPP, and ERCOT are adjacent to each other

- Could be planned to be connected, which would create an interregional Macro Grid
- Should also be integrated with HVDC lines, including into ERCOT and WECC

Sources and Notes:
The Brattle Group, S&P Global Market Intelligence.
SPP 765kV overlay includes anticipated ITP 2026 solutions.

Speaker Information

J. Michael Hagerty

PRINCIPAL

WASHINGTON, D.C.

Michael.Hagerty@brattle.com

12 years of experience in electric power industry planning and regulatory analysis, including generation & transmission planning, and generation interconnection processes

- Supported transmission & generation developers, utilities, state regulators, and RTOs with transmission planning processes in ERCOT, SPP, MISO, NYISO, PJM, CAISO and ISO-NE
- Evaluated generation interconnection across the country and developed additional reforms needed beyond Order 2023

Brattle Group Publications on Transmission

DeLosa, Pfeifenberger, Joskow, Regulation of Access, Pricing, and Planning of High Voltage Transmission in the US, MIT-CEEPR working paper, March 7, 2024.
Pfeifenberger, How Resources Can Be Added More Quickly and Effectively to PJM's Grid, OPSI Annual Meeting, October 17, 2023.
Pfeifenberger, Bay, et al., The Need for Intertie Optimization: Reducing Customer Costs, Improving Grid Resilience, and Encourage Interregional Transmission, October 2023.
Pfeifenberger, Plet, et al., The Operational and Market Benefits of HVDC to System Operators, for GridLab, ACORE, Clean Grid Alliance, Grid United, Pattern Energy, and Allete, September 2023.
Pfeifenberger, DeLosa, et al., The Benefit and Urgency of Planned Offshore Transmission, for ACORE, ACP, CATF, GridLab, and NRDC, January 24, 2023.
Brattle and ICC Staff, Illinois Renewable Energy Access Plan: Enabling an Equitable, Reliable, and Affordable Transition to 100% Clean Electricity for Illinois, December 2022.
Pfeifenberger et al., New Jersey State Agreement Approach for Offshore Wind Transmission: Evaluation Report, October 26, 2022.
Pfeifenberger, DeLosa III, Transmission Planning for a Changing Generation Mix, OPSI 2022 Annual Meeting, October 18, 2022.
Pfeifenberger, Promoting Efficient Investment in Offshore Wind Transmission, DOE-BOEM Atlantic Offshore Wind Transmission Economics & Policy Workshop, August 16, 2022.
Pfeifenberger, Generation Interconnection and Transmission Planning, ESIG Joint Generation Interconnection Workshop, August 9, 2022.
Pfeifenberger and DeLosa, Proactive, Scenario-Based, Multi-Value Transmission Planning, Presented at PJM Long-Term Transmission Planning Workshop, June 7, 2022.
Pfeifenberger, Planning for Generation Interconnection, Presented at ESIG Special Topic Webinar: Interconnection Study Criteria, May 31, 2022.
RENEW Northeast, A Transmission Blueprint for New England, Prepared with Borea and The Brattle Group, May 25, 2022.
Pfeifenberger, New York State and Regional Transmission Planning for Offshore Wind Generation, NYSERDA Offshore Wind Webinar, March 30, 2022.
Pfeifenberger, The Benefits of Interregional Transmission: Grid Planning for the 21st Century, US DOE National Transmission Planning Study Webinar, March 15, 2022.
Pfeifenberger, 21st Century Transmission Planning: Benefits Quantification and Cost Allocation, for NARUC members of the Joint Federal-State Task Force on Electric Transmission, January 19, 2022.
Pfeifenberger, Spokas, Hagerty, Tsoukalis, A Roadmap to Improved Interregional Transmission Planning, November 30, 2021.
Pfeifenberger, Tsoukalis, Newell, "The Benefit and Cost of Preserving the Option to Create a Meshed Offshore Grid for New York," Prepared for NYSERDA with Siemens and Hatch, November 9, 2022.
Pfeifenberger, Transmission–The Great Enabler: Recognizing Multiple Benefits in Transmission Planning, ESIG, October 28, 2021.
Pfeifenberger et al., Transmission Planning for the 21st Century: Proven Practices that Increase Value and Reduce Costs, Brattle-Grid Strategies, October 2021.
Pfeifenberger et al., Initial Report on the New York Power Grid Study, prepared for NYPSC, January 19, 2021.
Van Horn, Pfeifenberger, Ruiz, "The Value of Diversifying Uncertain Renewable Generation through the Transmission System," BU-ISE, October 14, 2020.
Pfeifenberger, Newell, Graf and Spokas, "Offshore Wind Transmission: An Analysis of Options for New York", prepared for Anbaric, August 2020.
Pfeifenberger, Newell, and Graf, "Offshore Transmission in New England: The Benefits of a Better-Planned Grid," prepared for Anbaric, May 2020.
Tsuchida and Ruiz, "Innovation in Transmission Operation with Advanced Technologies," T&D World, December 19, 2019.
Pfeifenberger, "Cost Savings Offered by Competition in Electric Transmission," Power Markets Today Webinar, December 11, 2019.
Chang, Pfeifenberger, Sheilendranath, Hagerty, Levin, and Jiang, "Cost Savings Offered by Competition in Electric Transmission: Experience to Date and the Potential for Additional Customer Value," April 2019 and "Response to Concentric Energy Advisors' Report on Competitive Transmission," August 2019.
Ruiz, "Transmission Topology Optimization: Application in Operations, Markets, and Planning Decision Making," May 2019.
Chang, Pfeifenberger, "Well-Planned Electric Transmission Saves Customer Costs: Improved Transmission Planning is Key to the Transition to a Carbon-Constrained Future," WIRES&Brattle, June 2016.
Newell et al. "Benefit-Cost Analysis of Proposed New York AC Transmission Upgrades," on behalf of NYISO and DPS Staff, September 15, 2015.
Pfeifenberger, Chang, and Sheilendranath, "Toward More Effective Transmission Planning: Addressing the Costs and Risks of an Insufficiently Flexible Electricity Grid," WIRES and Brattle, April 2015.
Chang, Pfeifenberger, Hagerty, "The Benefits of Electric Transmission: Identifying and Analyzing the Value of Investments," on behalf of WIRES, July 2013.
Chang, Pfeifenberger, Newell, Tsuchida, Hagerty, "Recommendations for Enhancing ERCOT's Long-Term Transmission Planning Process," October 2013.
Pfeifenberger and Hou, "Seams Cost Allocation: A Flexible Framework to Support Interregional Transmission Planning," on behalf of SPP, April 2012.
Pfeifenberger, Hou, "Employment and Economic Benefits of Transmission Infrastructure Investment in the U.S. and Canada," on behalf of WIRES, May 2011.

Brattle Group Practices and Industries

ENERGY & UTILITIES

- Competition & Market Manipulation
- Distributed Energy Resources
- Electric Transmission
- Electricity Market Modeling & Resource Planning
- Electrification & Growth Opportunities
- Energy Litigation
- Energy Storage
- Environmental Policy, Planning and Compliance
- Finance and Ratemaking
- Gas/Electric Coordination
- Market Design
- Natural Gas & Petroleum
- Nuclear
- Renewable & Alternative Energy

LITIGATION

- Accounting
- Analysis of Market Manipulation
- Antitrust/Competition
- Bankruptcy & Restructuring
- Big Data & Document Analytics
- Commercial Damages
- Environmental Litigation & Regulation
- Intellectual Property
- International Arbitration
- International Trade
- Labor & Employment
- Mergers & Acquisitions Litigation
- Product Liability
- Securities & Finance
- Tax Controversy & Transfer Pricing
- Valuation
- White Collar Investigations & Litigation

INDUSTRIES

- Electric Power
- Financial Institutions
- Infrastructure
- Natural Gas & Petroleum
- Pharmaceuticals & Medical Devices
- Telecommunications, Internet, and Media
- Transportation
- Water

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NASEO State Transmission Summit

Navigating Load Growth and the Transmission Needed to Power It

Dave Rardin, Manager of
Regulatory and Legislative Affairs

March 24, 2026

PJM's Role as a Regional Transmission Organization

PLANNING

Planning for the future like...

OPERATIONS

Matches supply with demand like...

MARKETS

Energy Market Pricing like...

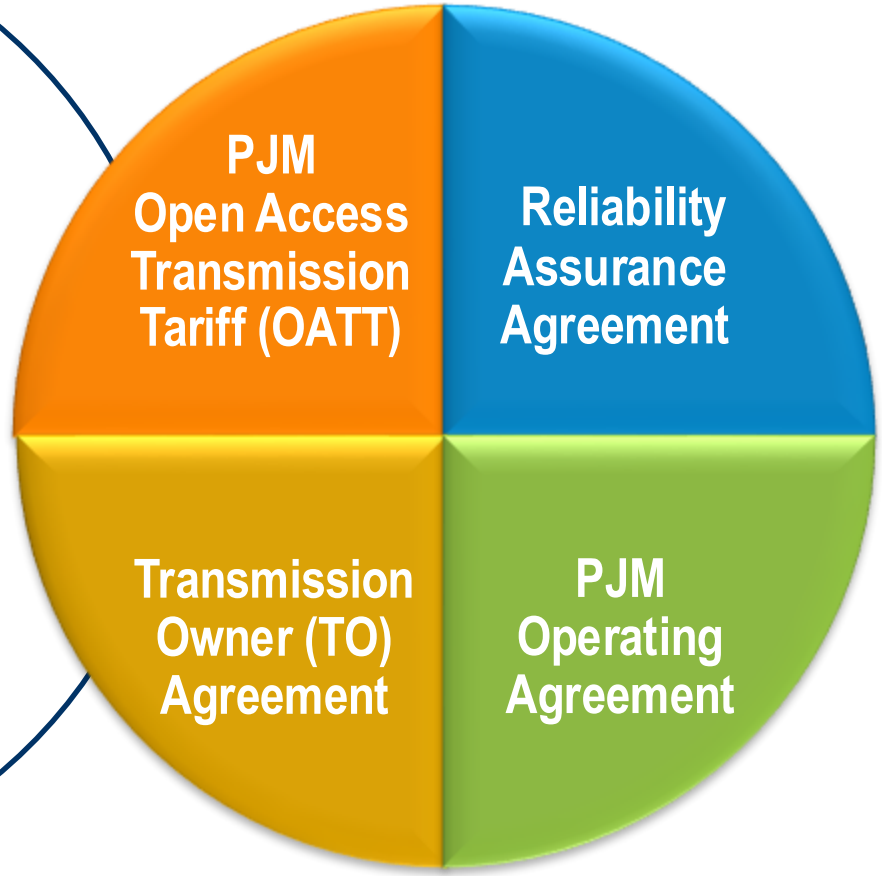
How Is PJM Different from Other Utility Companies?

PJM Does:

- *Direct operation of the transmission system*
- *Remain profit-neutral*
- *Maintain independence from PJM members*
- *Coordinate maintenance of grid facilities*

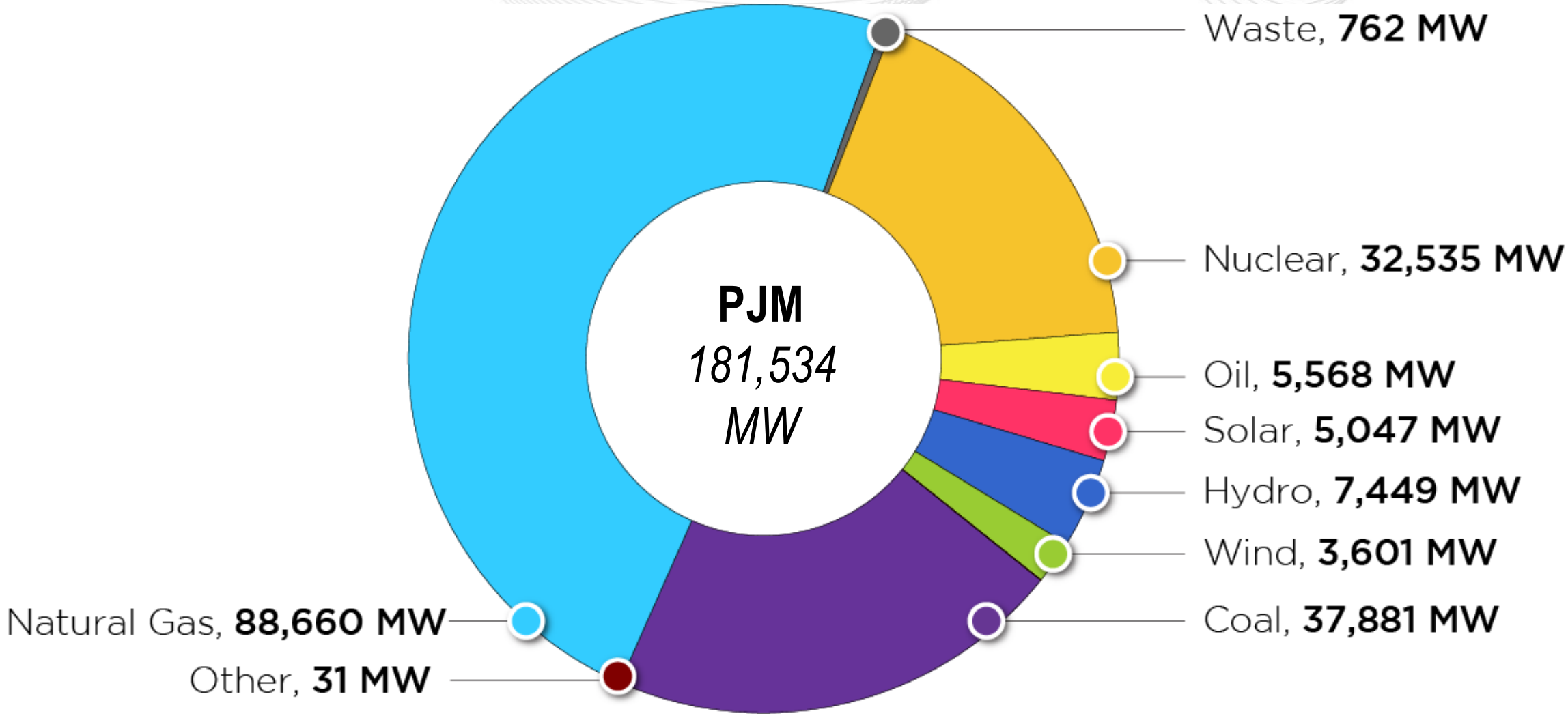
PJM Does *NOT:*

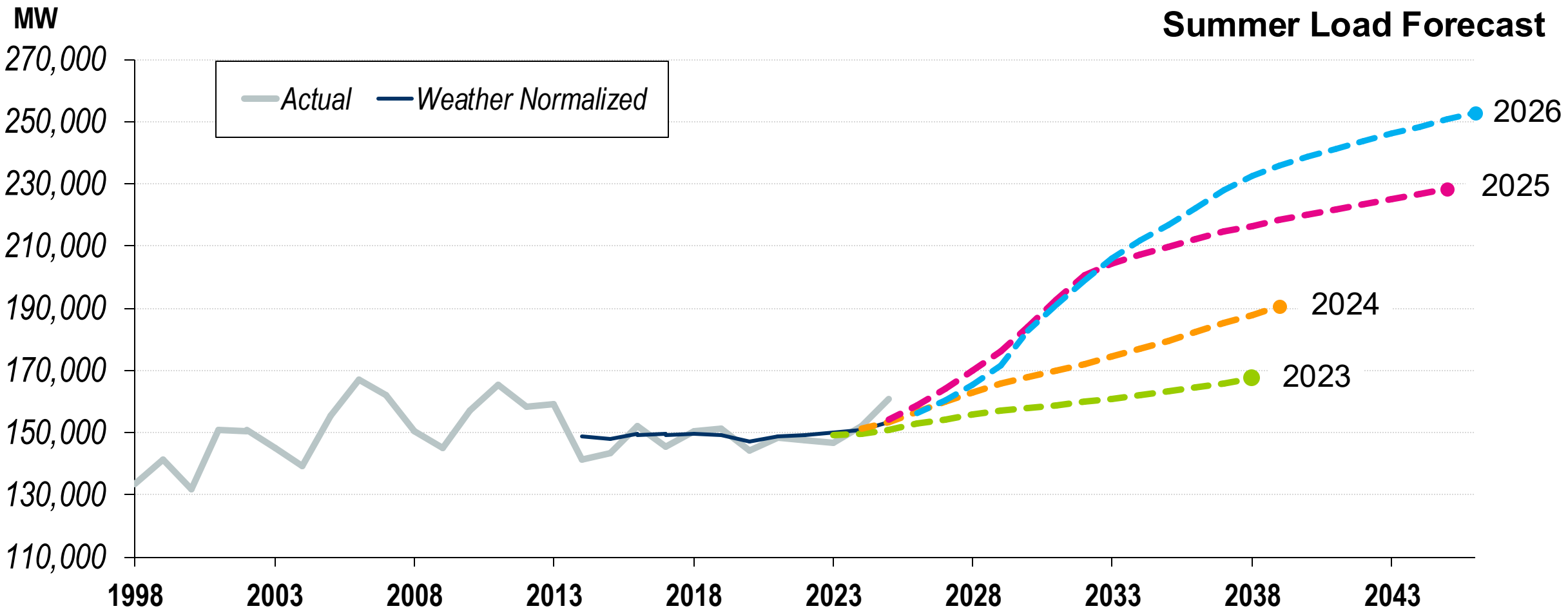
- *Own any transmission or generation assets*
- *Function as a publicly traded company with shareholders and concerns around "earnings"*
- *Perform maintenance on generators or transmission systems (e.g., repair power lines)*
- *Serve or direct any end-use customers (retail)*



PJM Existing Installed Capacity Mix

(CIRs – as of Dec. 31, 2024)




MW
Summer Load Forecast
270,000
250,000
230,000
210,000
190,000
170,000
150,000
130,000
110,000
Actual
Weather Normalized
2026
2025
2024
2023
1998
2003
2008
2013
2018
2023
2028
2033
2038
2043

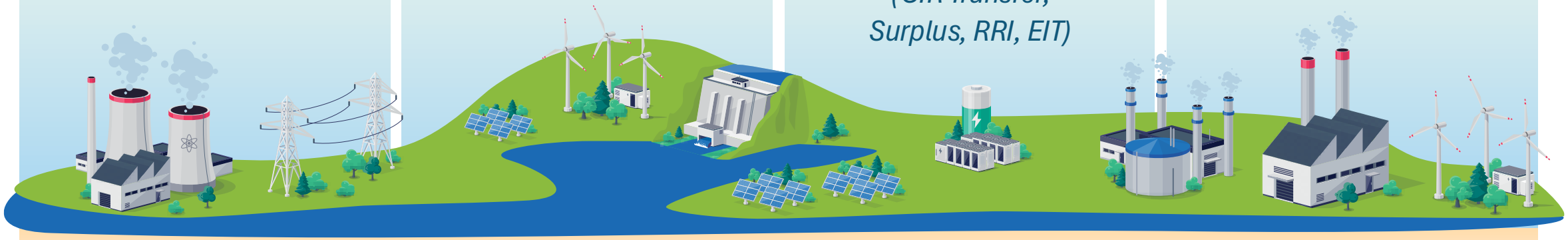
PJM's Generation Interconnection Queue

Queue Not Closed: 1-1.5 Year Turnaround Time to be Studied

Google AI to Further Expedite

Creation of On-Ramps to Go Quicker
(CIR Transfer, Surplus, RRI, EIT)

~57 GW Have Agreements



PJM has shifted from queue reform to delivery with faster study timelines, new on-ramps, and significant new supply already approved or connected.

PJM Board Decision on Large Load (Data Centers) Additions

Significant Load Forecasting Improvements

Price Cap and Floor

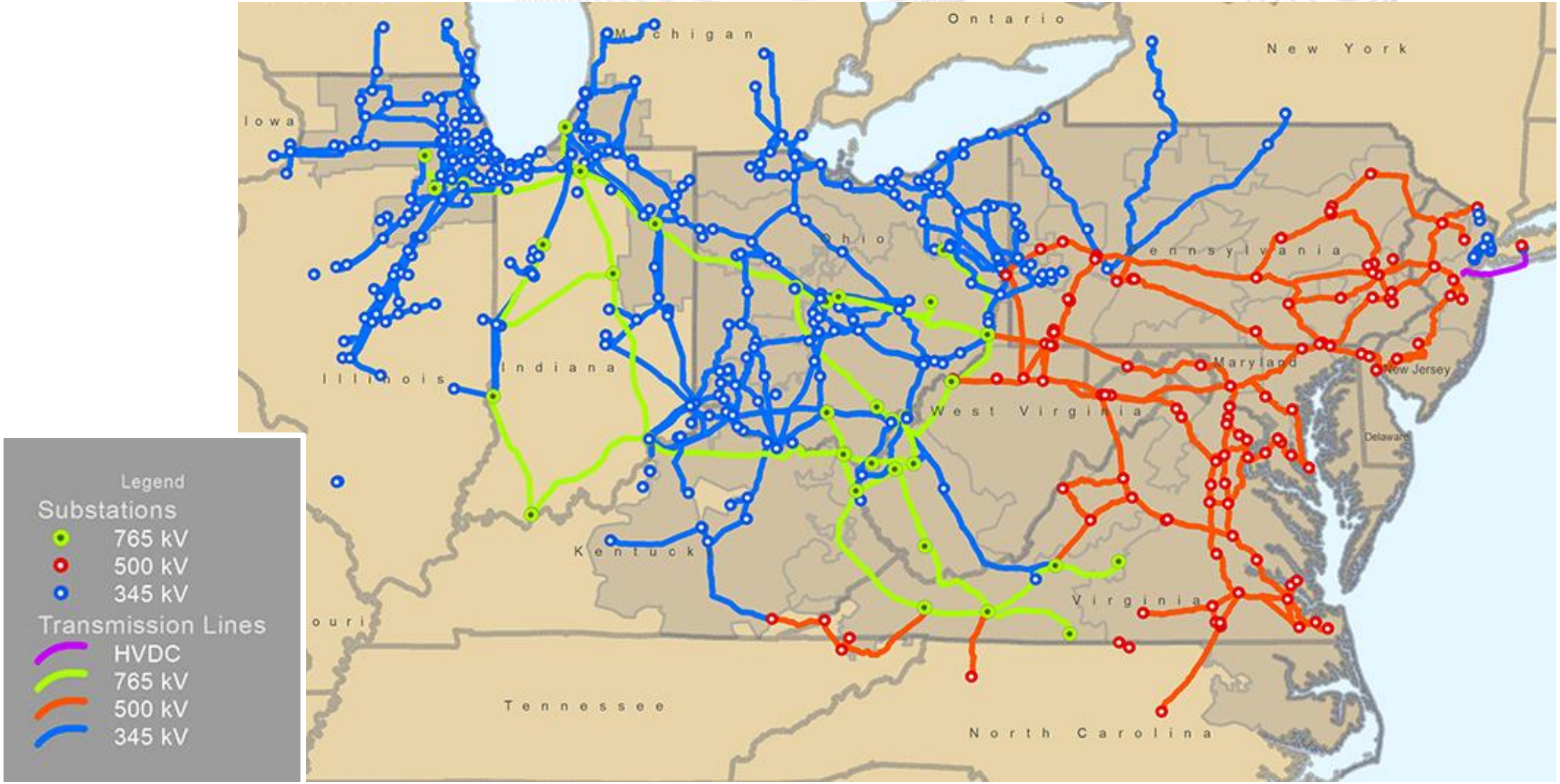
Bring Your Own New Generation and Expedited Interconnection Track

Reliability Backstop Procurement

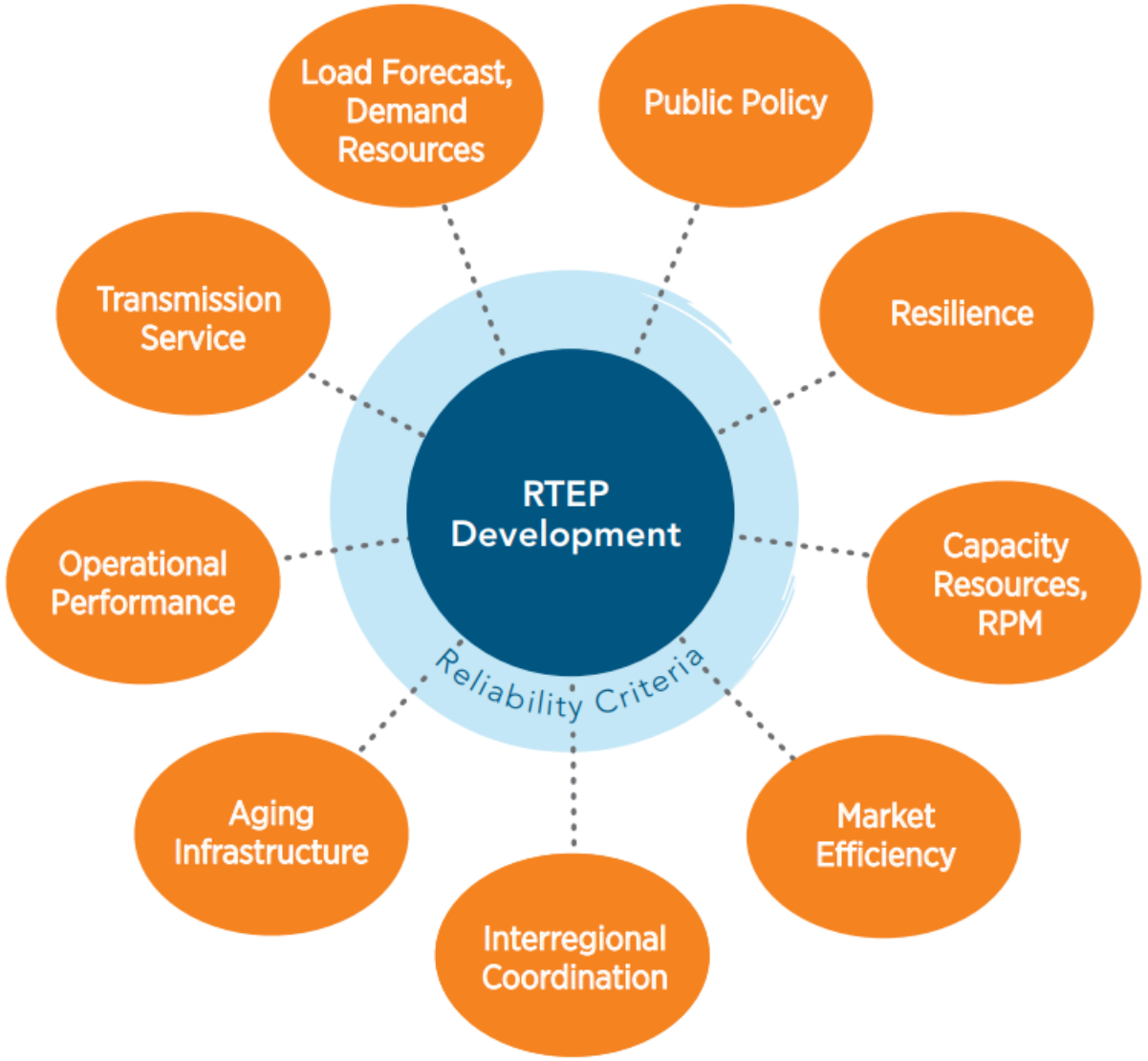
Curtailment of Data Centers Not Bringing New Generation

Study on Market Incentives for New Supply

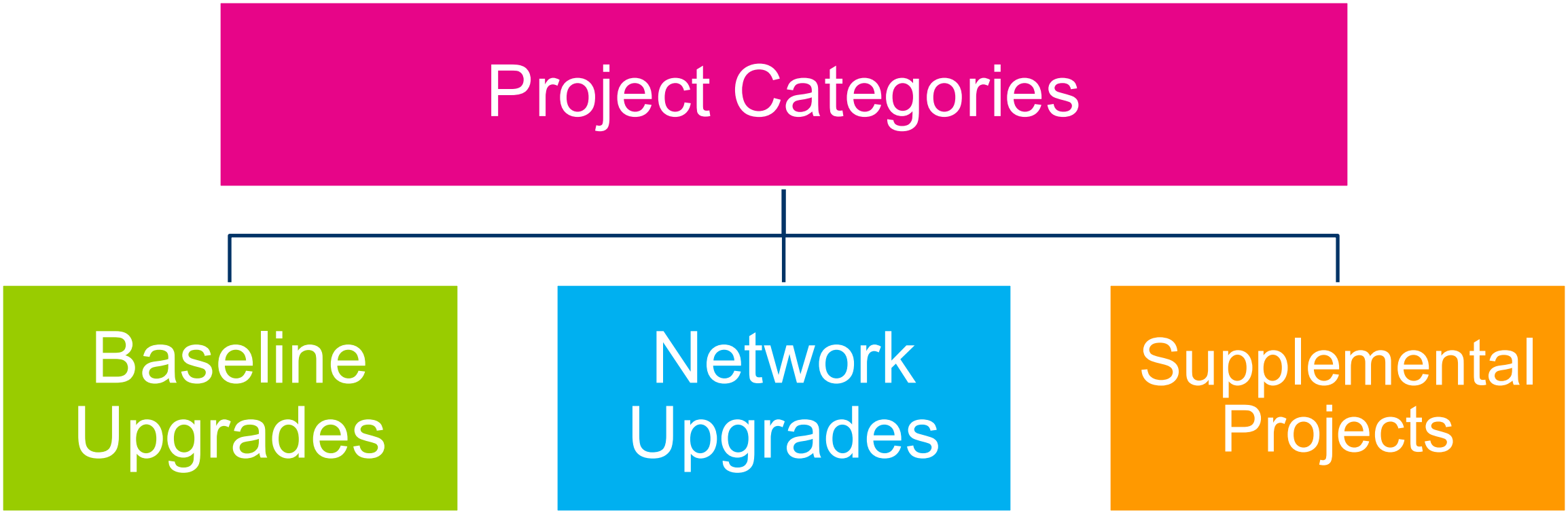
PJM Backbone Transmission



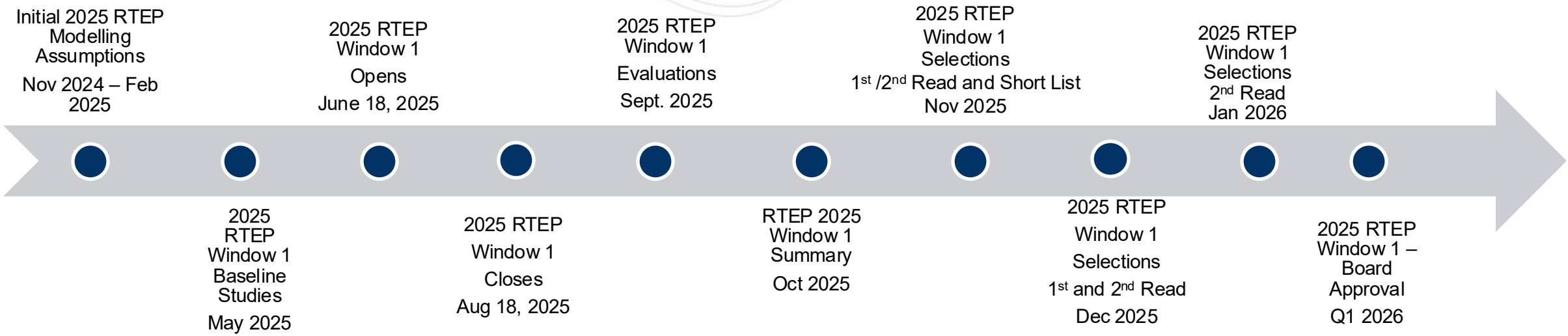
Regional Transmission Expansion Plan: Development Drivers



Types of Transmission Enhancement Projects



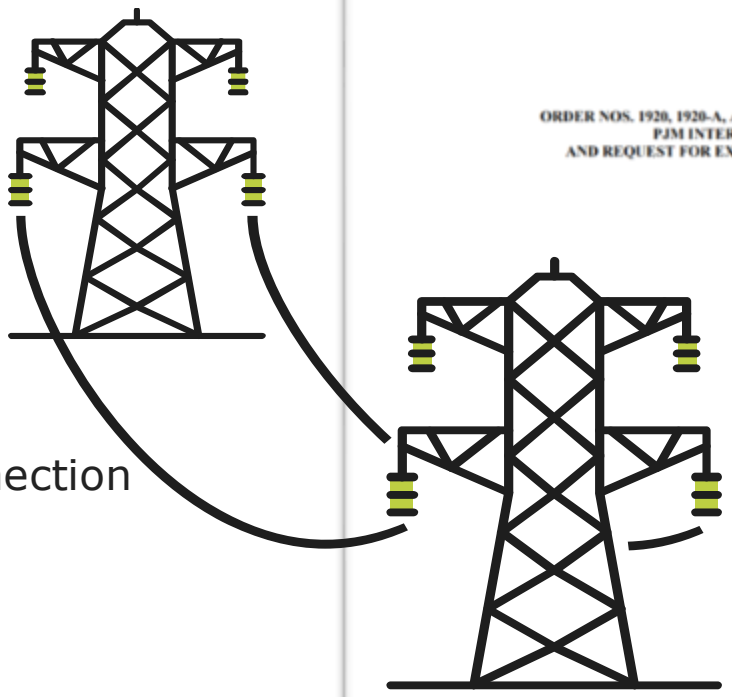
Example: 2025 RTEP Window 1 – Timeline



FERC Order 1920: Filed December 12, 2025

PJM's proposed long-term planning approach relies on extensive collaboration with the PJM Region's Relevant State Entities, including during the development of the assumptions and scenarios; this will help PJM to proactively plan solutions that will:

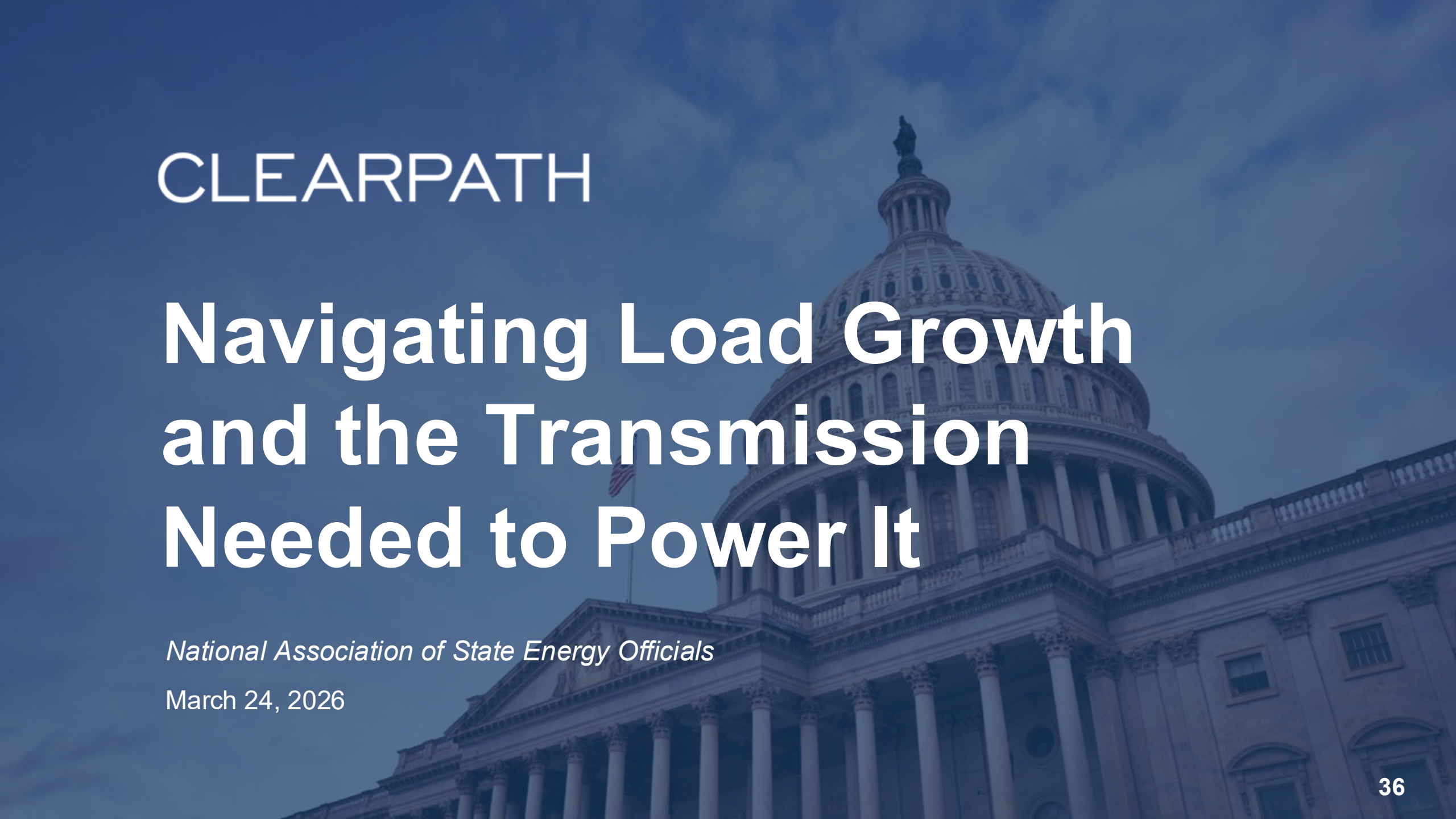
- Maintain transmission system reliability
- Provide economic benefits
- Advance public policy objectives
- Meet rising demand at reasonable costs
- Enable more efficient new generation interconnection
- Lead to actionable and timely transmission development



UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.)
)
Building for the Future Through) Docket No. ER26-751-000
Electric Regional Transmission)
Planning and Cost Allocation)

ORDER NOS. 1920, 1920-A, AND 1920-B COMPLIANCE FILING OF
PJM INTERCONNECTION, L.L.C.
AND REQUEST FOR EXTENSION OF COMMENT PERIOD



CLEARPATH

Navigating Load Growth and the Transmission Needed to Power It

National Association of State Energy Officials

March 24, 2026

ClearPath's Mission and Vision

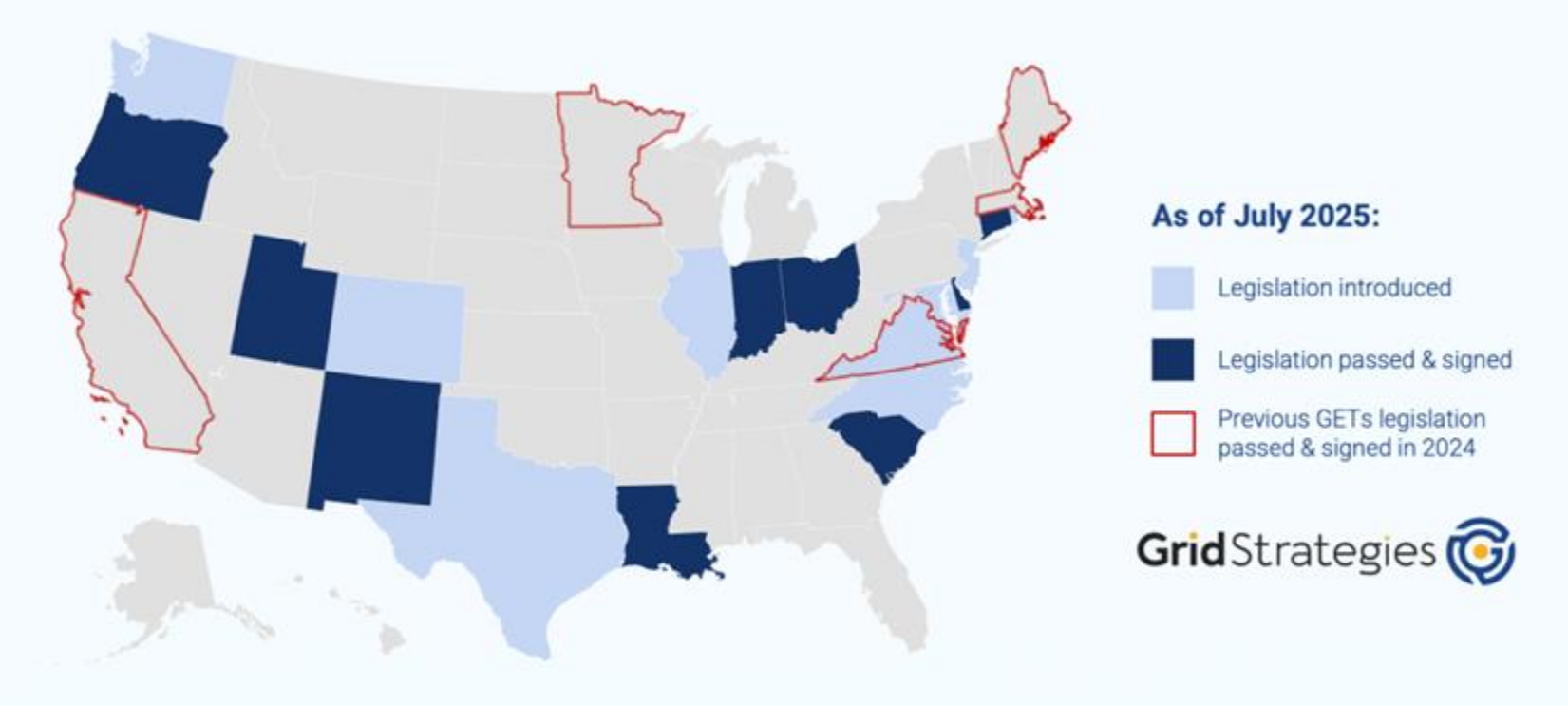
Mission: ClearPath's mission is to accelerate American innovation to reduce global energy emissions.

Vision: America leads the world in addressing climate change by developing innovative, market-competitive clean energy technologies.

Maximize the Performance of the Grid with Innovation

States can encourage utility adoption and deployment of grid innovations by

- Directing their evaluation when assessing solutions for near-term and long-term transmission needs and interconnecting new energy resources
- Providing clear regulatory pathways for approvals and cost-recovery
- Supporting education and workforce development



Build More Transmission Faster

>30,000 miles of high-voltage transmission in development

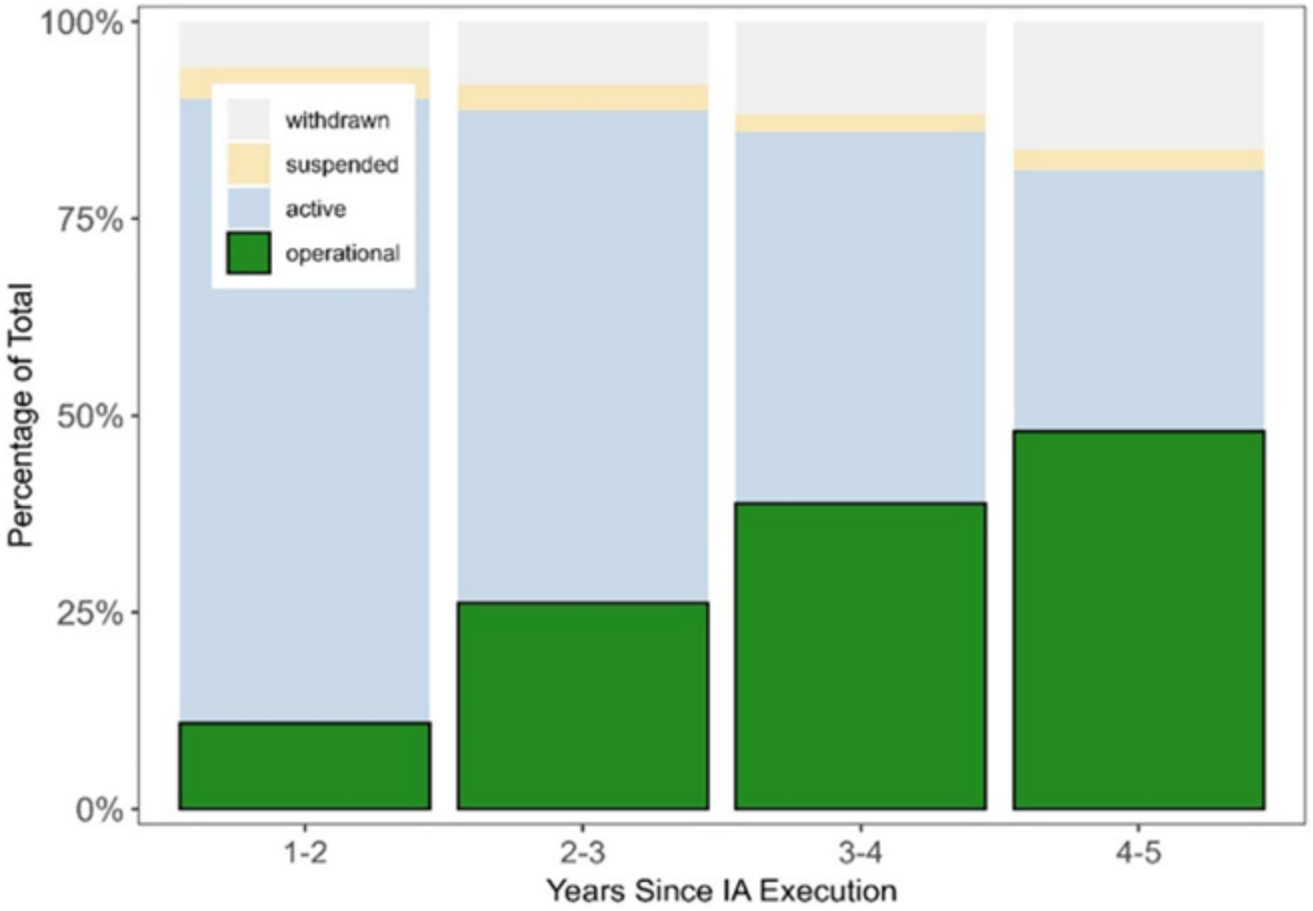
- Coordinate transmission siting and permitting processes with other states
- Streamline permitting and approval processes for siting or upgrading transmission, especially in existing ROWs
- Leverage CITAP or FAST-41 to streamline and find efficiencies between State and Federal permits

Source: Horizon Energy Systems, *Our Grid Future*, March 2026.

Modernize Interconnection and Support Project Completion

- Maximize the use of existing grid capacity
- Integrate Transmission & Interconnection to enable faster, cost-effective project delivery
- Encourage the adoption of modern software to accelerate interconnection
- Support project completion through
    - Long-term offtake agreements,
    - Procurement of common equipment
    - Aligning siting and permitting with interconnection

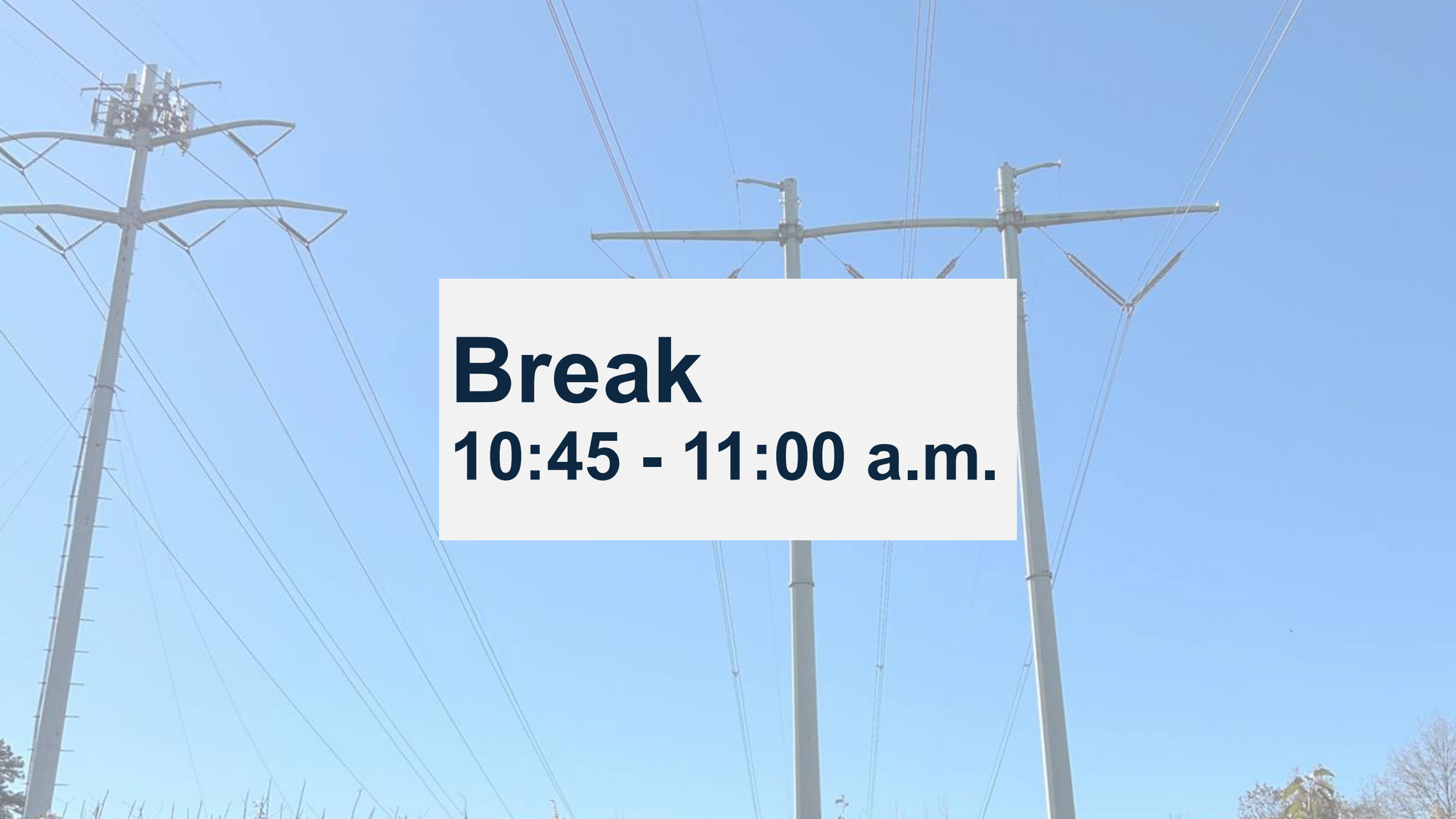
Project status by number of years after Interconnection Agreement execution



Source: LBNL, *Queued Up: 2025 Edition,* December 2025.

Casey Kelly

Sr. Manager, Research & Electricity Policy
kelly@clearpath.org


Break
10:45 - 11:00 a.m.

Transmission Expansion from the National Security Perspective

Curtis Thayer

- Executive Director, Alaska Energy Authority

Rebecca Isacowitz

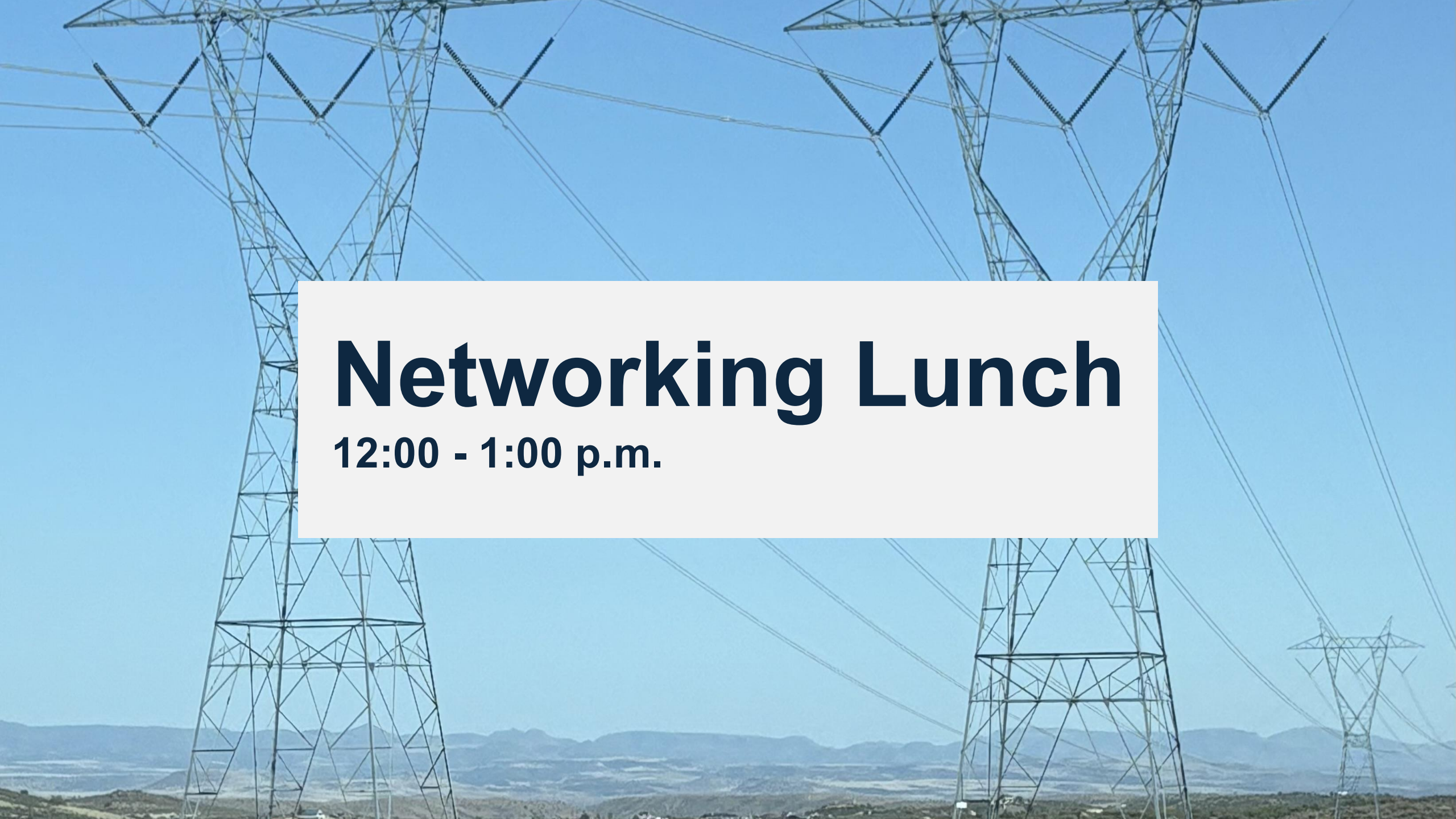
- Deputy Assistant Secretary of Defense for Energy Resilience and Optimization, U.S. Department of War

Danielle Russo

- Executive Director of the Center for Grid Security, Securing America's Future Energy

Jonathan Monken

- Senior Partner, Converge Strategies, LLC


Networking Lunch
12:00 - 1:00 p.m.

Keynote Address: Transmission Landscape and Outlook

Kelly Speakes-Backman

- Director, Maryland Energy Administration

James Robb

- President and Chief Executive Officer, North American Electric Reliability Corporation

RELIABILITY | RESILIENCE | SECURITY

POWERING TODAY. PROTECTING TOMORROW.

NERC

2025 Long-Term Reliability Assessment

NASEO Transmission Summit

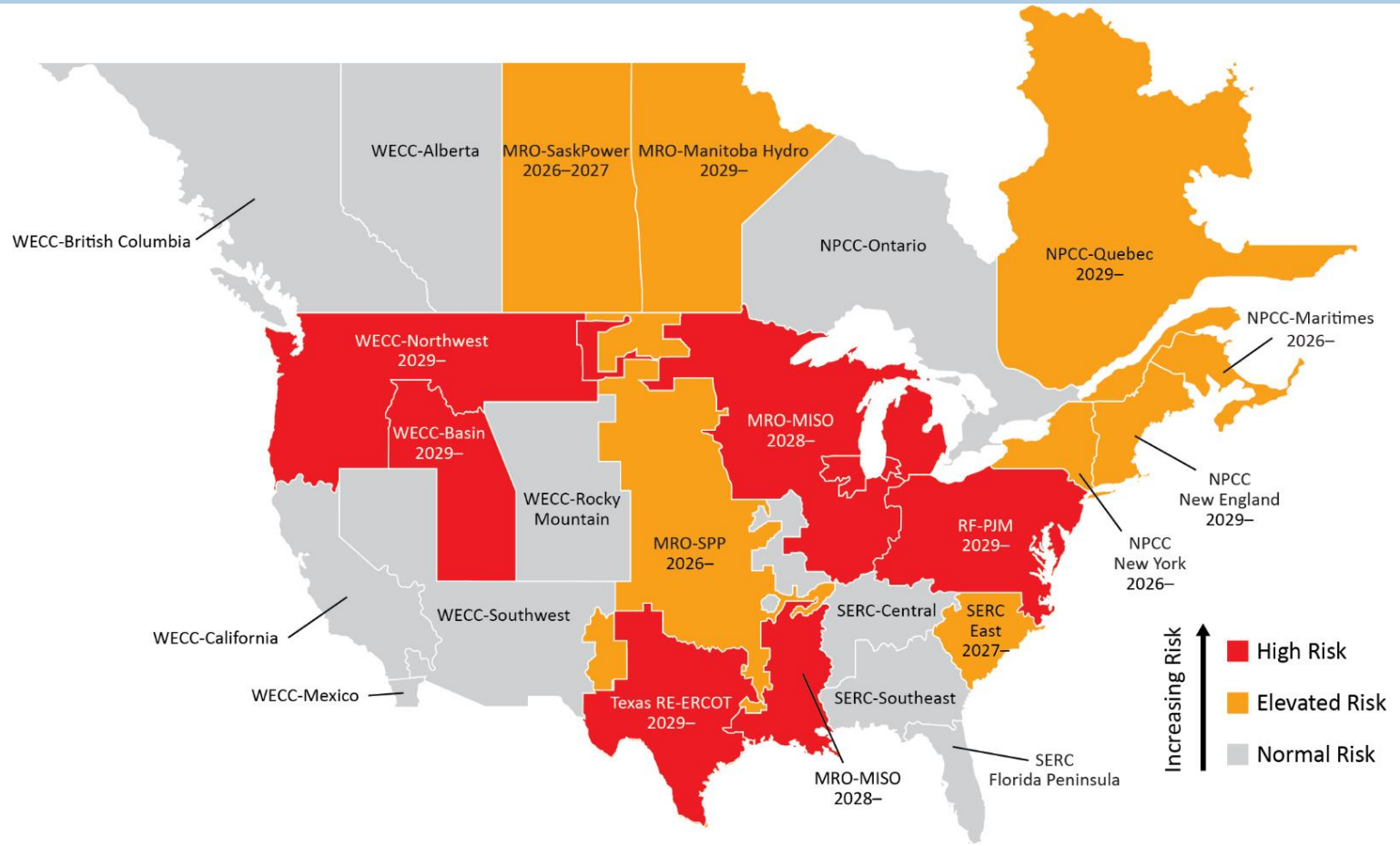
Jim Robb,
President & CEO, NERC

March 24, 2026

2025 LTRA Risk Area Summary

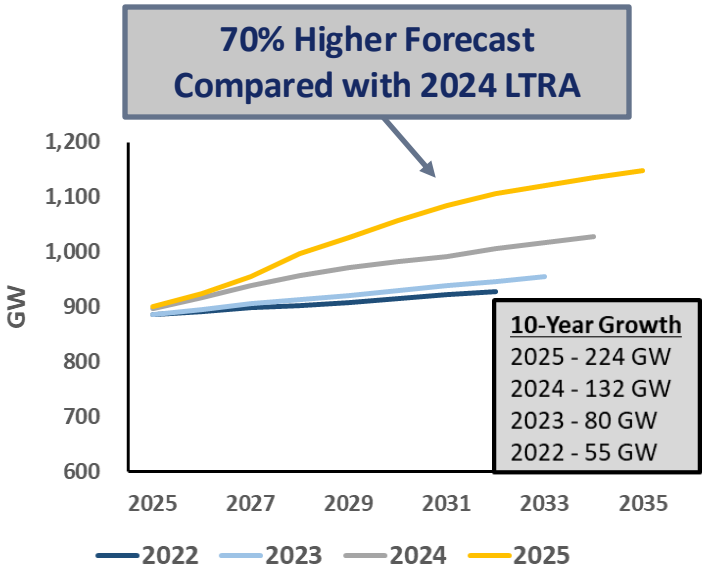
Risk Area Summary 2026 – 2030

Shows highest risk category in the 5-year period and the year it occurs



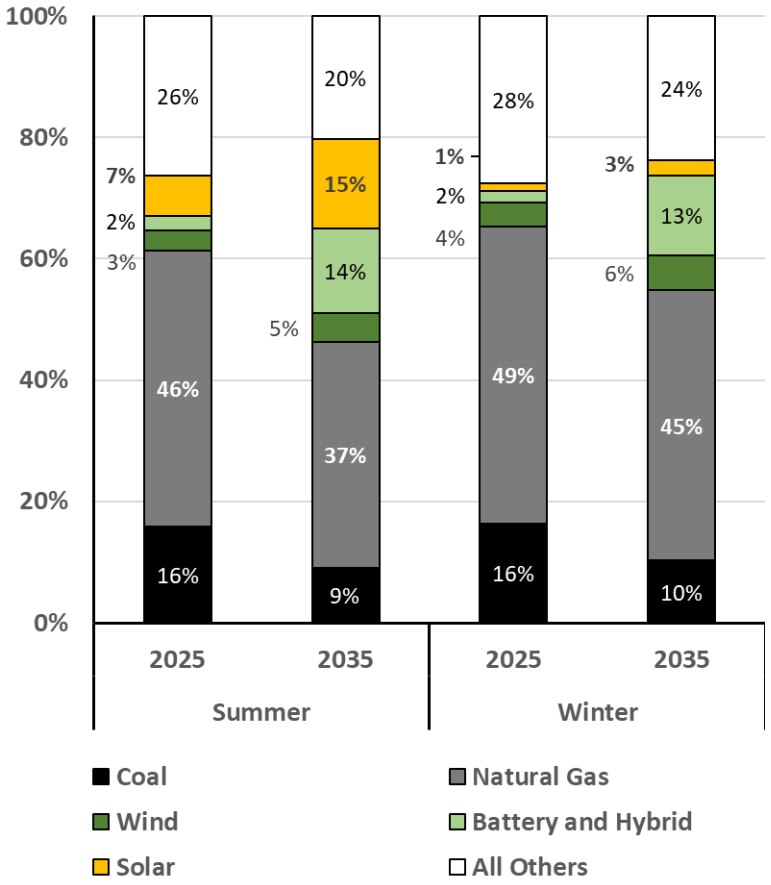
Note: Assessment inputs include: 1) Probabilistic assessment (studied years 2027 and 2029) and planning reserve margins (2026 through 2030). Risk determination based on established resource adequacy criteria (1-day-in-10 years) and NERC-National Academy of Engineering Workshop Report criteria for load-loss and unserved energy

More Resources Are Needed for Demand Growth



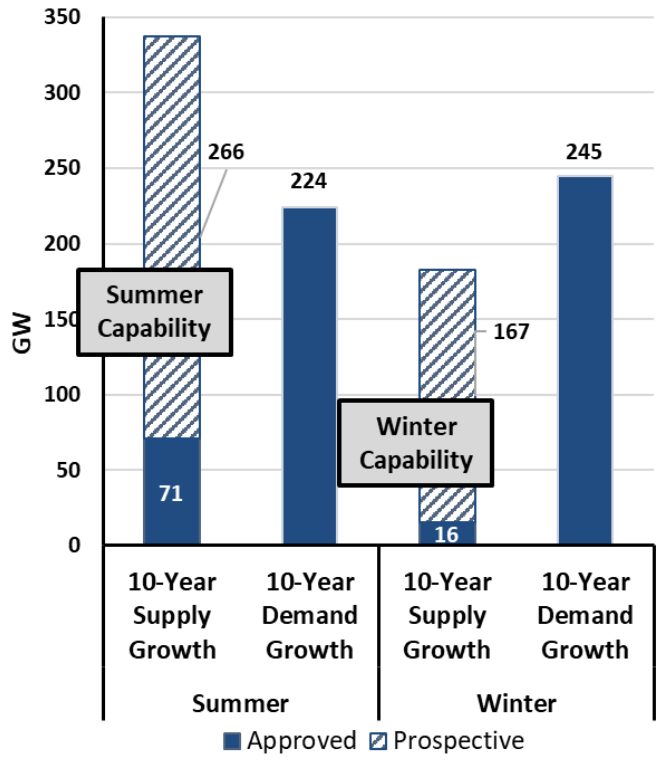
10-year BPS Summer Peak Demand Growth

With 10-year Growth From Previous LTRAs



Change in Summer and Winter Resource Mix

Over the next 10-years with confirmed retirements and Approved + Prospective resource additions



Demand and Resource Growth

Approved Resources with Interconnection Agreements or regulatory approval

Prospective Resources In earlier planning

Takeaways and Calls to Action

Familiar issues continue…

- Extreme weather risk
- Generation retirements
- Load growth / winter load growth increasing faster and increasingly uncertain
- Large load integration
- Natural gas interdependency

Some bright spots emerging…

- Retirement deferrals
- Gas and Electric sectors “leaning in”
- Energy Assurance Planning Standard (in drafting)
- Expanded IBR registration, FERC 901 actions
- Battery / synchronous condenser deployments helping (lessons learned from Iberian Blackout)

Continued focus required…

- Investment in critical infrastructure
- Large load interconnection requirements
- Situation awareness and rapid recovery
- Retention of essential reliability services as well as energy supply
- Technology (nuclear and LDES) development and deployment

NERC

Discussion

Opportunities for Permitting Reform at the Federal Level

Jeff Dennis

- Executive Director, Electricity Customer Alliance

Devin Hartman

- Director, Energy and Environmental Policy, R Street Institute

Kyle Davis

- Senior Director, Federal Affairs, Clean Energy Buyers Association

Shane Londagin

- Senior Policy Advisor, Office of Senator John Hickenlooper

Kris Pittard

- Professional Staff Member, House Energy and Commerce Committee

Madeline Kelley

- Member Services Director, House Natural Resources Committee

State Roles and Opportunities in Long-Term Transmission Planning

Marion Gold

- Senior Advisor, National Association of State Energy Officials

Lindsay Gilton

- Energy Policy Coordinator, Maine Department of Energy Resources

James Lester

- Senior Advisor, Transmission, Climate, and Energy, Colorado Energy Office

Blan Holman

- General Counsel, Southern Renewable Energy Association

Maison Bleam

- Regional Director, State Regulatory Affairs, Midcontinent Independent System Operator, Inc.

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NASEO State Transmission Summit

State Roles and Opportunities in Long-Term Transmission Planning

March 24, 2026

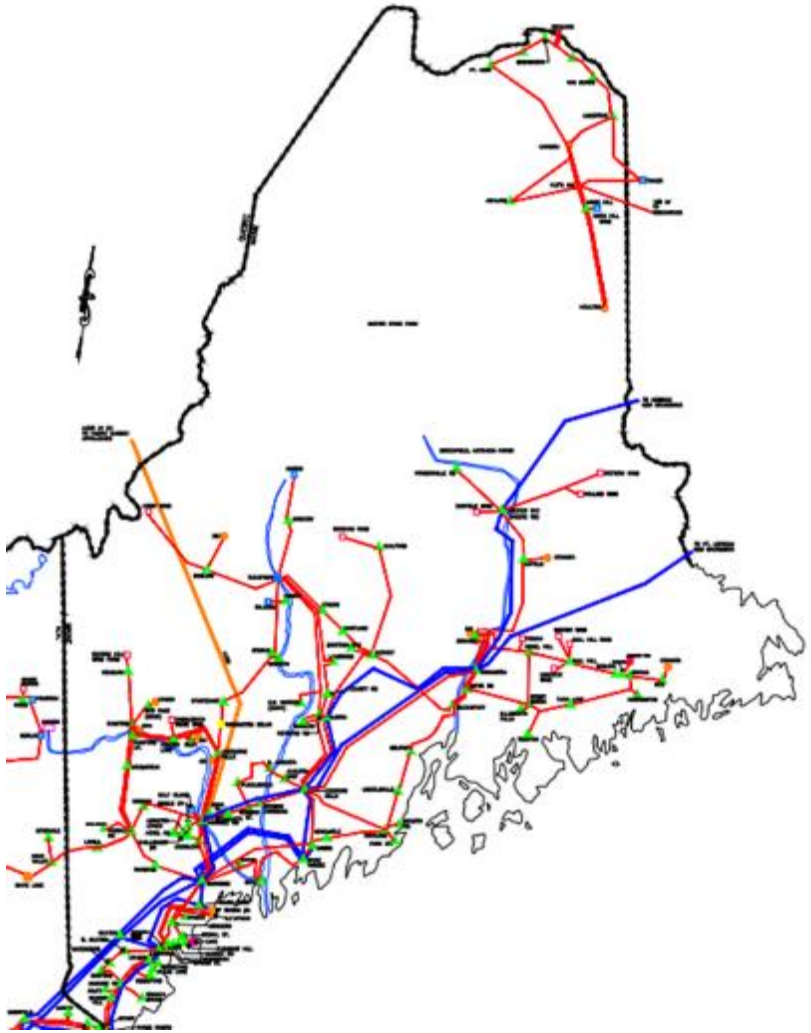
Celina Cunningham, Deputy Commissioner

Maine's Electric Grid

- Maine is part of the regional electric grid, managed by ISO New England (ISO-NE), as well as another grid managed by the Northern Maine Independent System Administrator (NMISA), responsible for the Northern Maine transmission system and electric power markets in much of Aroostook and Washington counties

- The state experiences long-standing transmission constraints that impact power flow across the New England power system

- Regional transmission planning and upgrading transmission infrastructure are critical to connecting electricity generation to areas of need as load forecasting predicts increasing electricity demand



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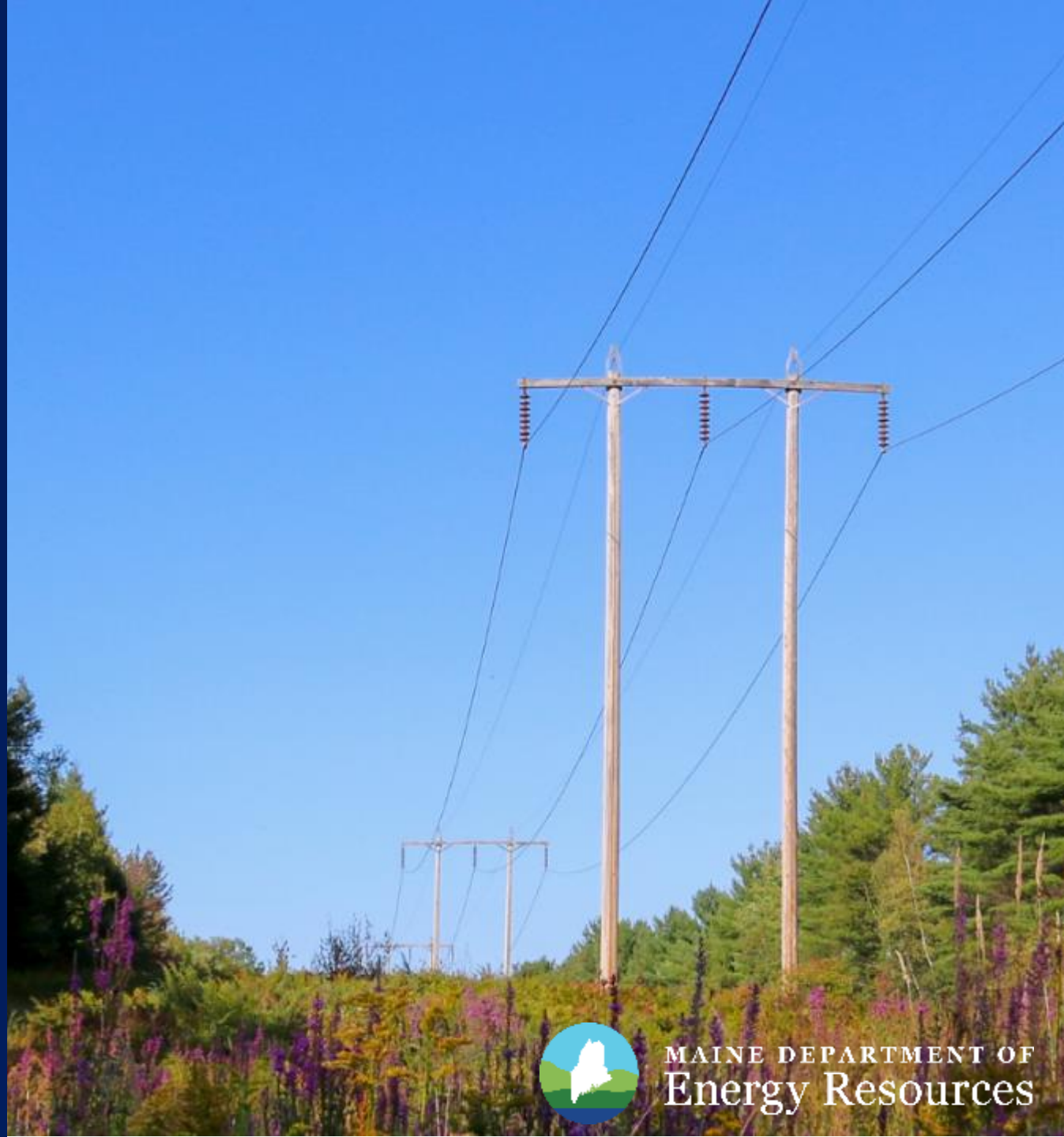
Maine Energy Plan

- On January 17, 2025 the Governor's Energy Office (now the Maine Department of Energy Resources or DOER) submitted to the Legislature the Maine Energy Plan, a strategic plan for the state to advance affordable, reliable and clean energy for Maine's people and economy.
- The Plan underscores the need to implement responsible grid infrastructure investments to advance affordable, reliable, and cleaner energy for Maine.
- DOER works in partnership with various state agencies, federal and local officials, industry, nonprofits, and research institutions to conduct regional transmission system planning.
- DOER is launching the 2027 Energy Plan process.



NESCOE and advancing regional reliability

- The New England States Committee on Electricity (or NESCOE) is a Regional State Committee recognized by FERC and represents the collective perspective of the six New England states in regional electricity matters
  - NESCOE advances the New England states' common interest in the provision of electricity to consumers at the lowest possible price over the long-term, consistent with maintaining reliable service and environmental quality
- In 2021, NESCOE requested ISO-NE identify transmission upgrades needed to meet state energy goals through 2050. This resulted in the ISO-New England 2050 Study which concluded that:
  - The Maine-New Hampshire and North-South transmission interfaces are high likelihood concerns due to a variety of thermal overloads, impacting reliability
    - Congestion is identified as early as 2035 during both the summer and winter seasons, impacting system reliability and the export of new energy resources from Maine

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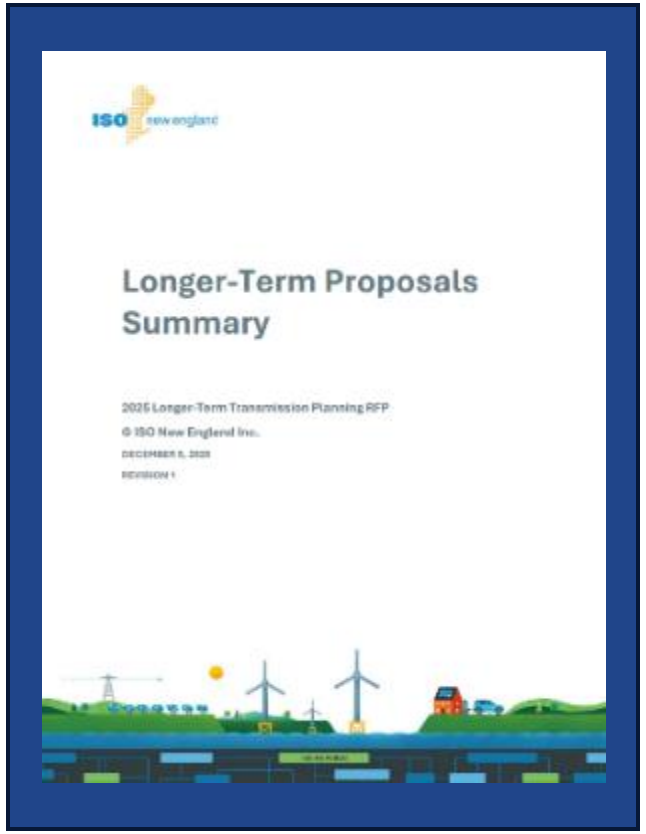
NESCOE and advancing regional reliability, cont.

- As a result of the 2050 Transmission Study, NESCOE requested ISO-NE to prepare an RFP for projects to resolve these constraints.
- In April 2025, ISO-NE issued New England's first competitive Request for Proposals (RFP) for longer-term transmission investments; Proposals were due to ISO-New England on September 30, 2025.
  - On December 5, 2025, ISO-New England published a summary of the six proposals received.
  - ISO-NE is working toward completion of its review of proposals by **September 2026.**
- LTTP is a critical component of ensuring long-term electric reliability throughout the entire New England region.



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Maine Transmission Infrastructure Study

- Pursuant to L.D.197, passed by the Maine legislature in June 2025, DOER is conducting a transmission study and convening the named stakeholder group to inform coordinated, cost-effective, and stakeholder-driven strategies for designing, planning, and developing transmission infrastructure in Maine.
- DOER has selected two consultants to provide stakeholder engagement and facilitation support and technical expertise throughout the development of the study.
- A final report is due to the Maine legislature in September 2026.

Maine Transmission Infrastructure Study, cont.

Pursuant to the legislation, the study must include a review of:

1. Existing processes for the siting and permitting of new and upgraded electric transmission infrastructure in the State;

2. Best practices related to electric transmission planning, siting, permitting and community engagement from other states or regions;

3. Existing analyses of future electric transmission needs in the State necessary to integrate new renewable resources as well as to ensure reliability, improve market efficiency or support the achievement of the State's policy goals;

4. Types of existing rights-of-way and opportunities for potential use of those rights of-way for siting of electric transmission infrastructure in the State; and

5. Existing and emerging technology and construction methods

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Thank You

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www.maine.gov/energy

Sign up for the DOER email newsletter

Colorado's Approach to Transmission Planning

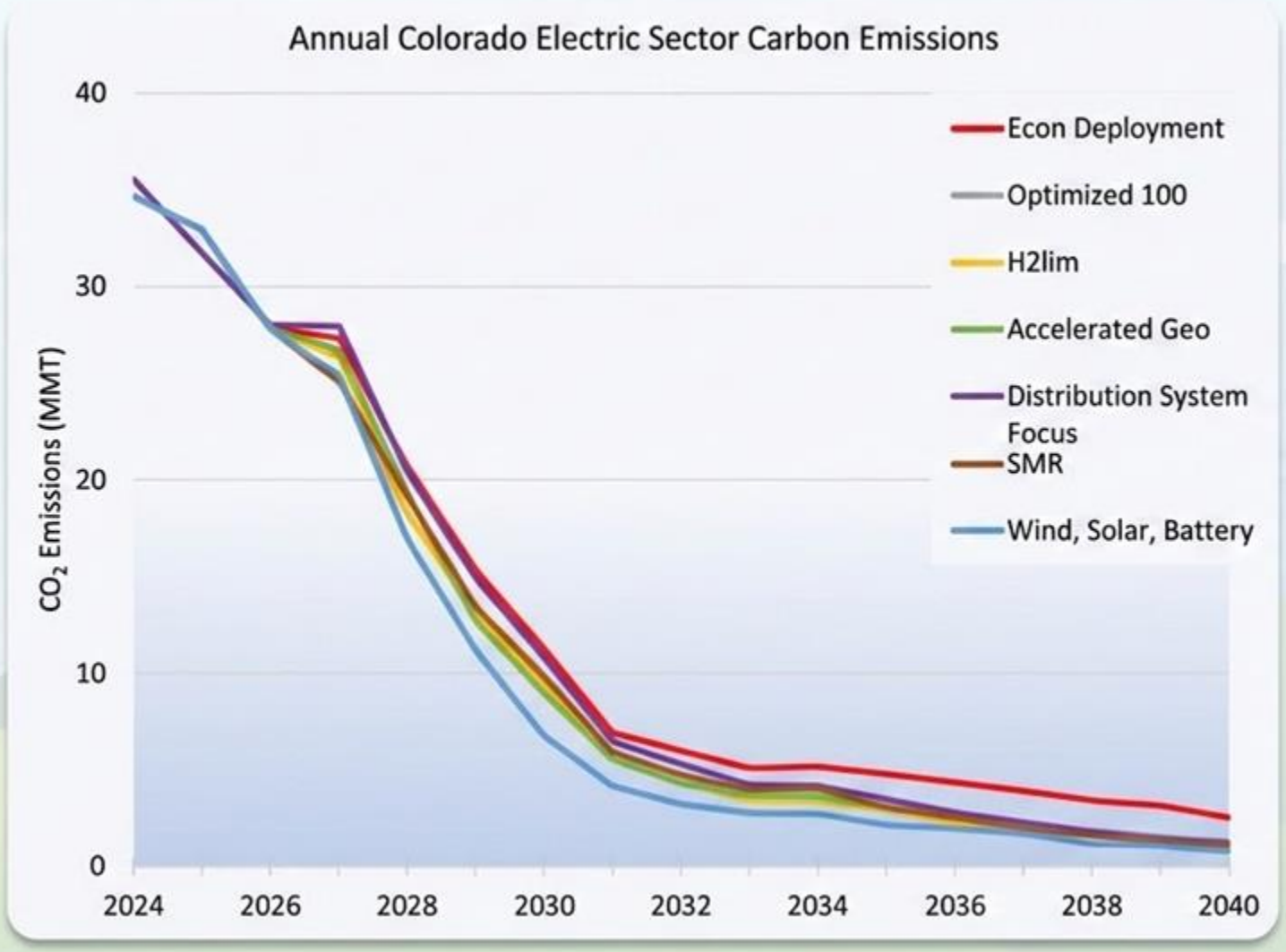
March 24, 2026

COLORADO

Major Components of Colorado's Climate Policy

- Establish greenhouse gas inventory with 2005 baseline
- Reduce GHG emissions 26% by 2025, 50% by 2030, and net zero by 2050
- Develop rules and policies to reduce GHG emissions
- Creates regulatory path for electric utilities to meet 80% GHG reduction by 2030
- Requires annual tracking and reporting through CDPHE

Additional Renewables Needed to Reach 2040 Goals



- CEO 2040 Study modeling shows can reach **94% reduction** in GHG emissions from electricity sector by 2040 at no incremental cost.
- This scenario entails additions of **5.5 GW** wind, **11 GW solar**, and **9 GW** storage, compared to 2022 levels of 5 GW wind, **2 GW solar**, and 0.5 GW of storage.

CETA is a Transmission Developer with a Public Purpose

To advance statewide reliability, clean energy goals, and economic development.

- Independent special purpose authority and subdivision of the state
- Not subject to direction by a state agency or commission
- 9-member independent board appointed by governor and legislature

The developer as last resort

Pursuant to statute, CETA can:


Identify And Establish Corridors For Electric Transmission


Coordinate, Investigate, Plan, Prioritize, And Negotiate With Entities Within And Outside Colorado For The Establishment Of Interstate Transmission Corridors


Engage In Other Transmission Planning Activities That Would Increase Grid Reliability, Help Colorado Meet Its Clean Energy Goals, And Aid In Economic Development;


Conduct A Competitive Process To Select A Qualified Transmission Operator, To Assume The Responsibility To Carry Out All Required Financing, Planning, Acquisition, Maintenance, And Operation Of Eligible Facilities


With Certain Limitations, Exercise Eminent Domain For Acquiring Any Property Or Rights-Of-Way


The Authority Can Issues Bonds To Fund Transmission Projects That It Finds Necessary

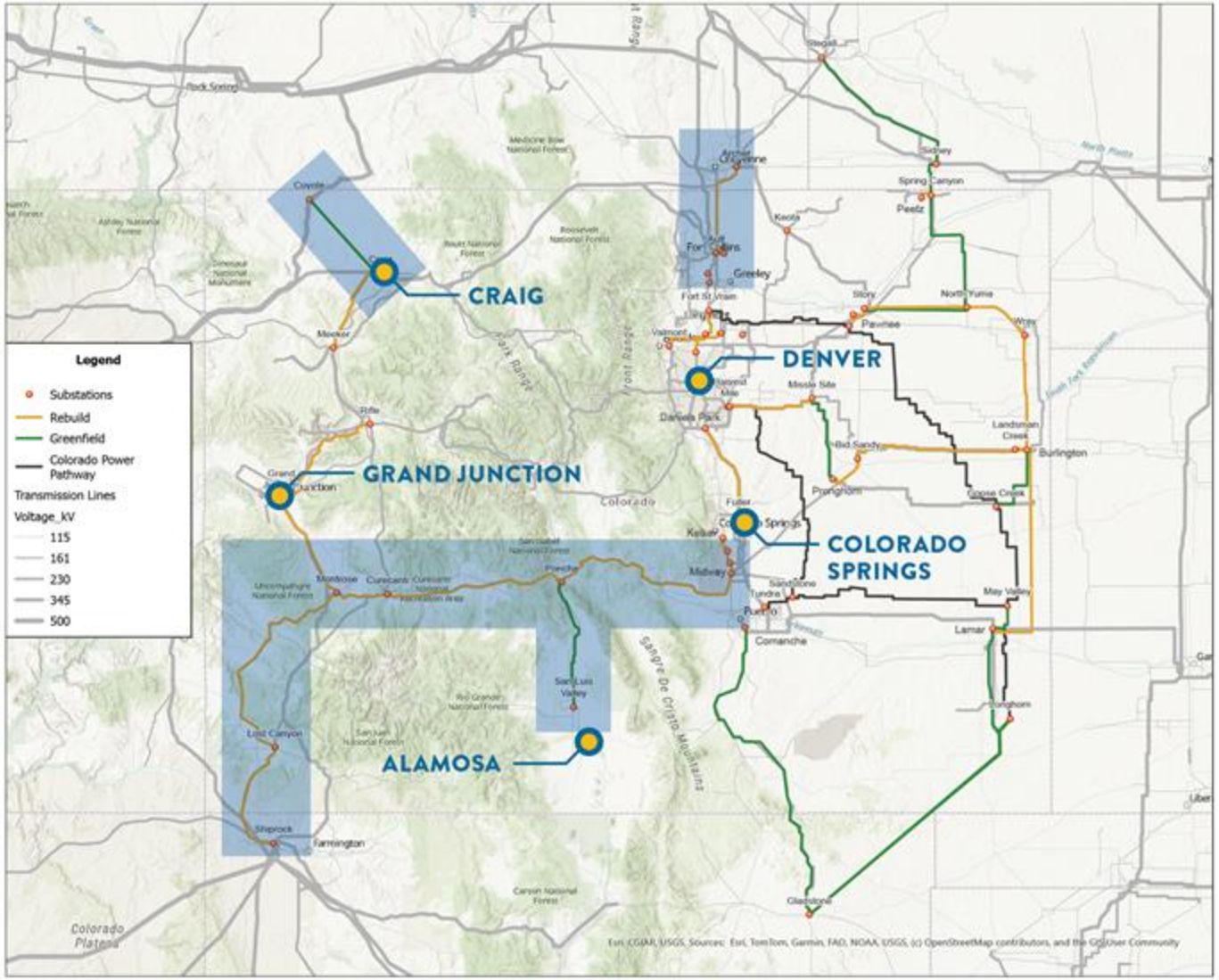
CETA's Work

Unique Tools

- Public-private partnerships
- Identify transmission corridors
- Revenue bonds
- Eminent domain

2026 Priorities

- Select a project(s) for development
- Revenue bonding policy
- Notification policy



Colorado Has an Urgent Need for Transmission

Transmission Portfolios: Reference Case (+ Reconductoring)

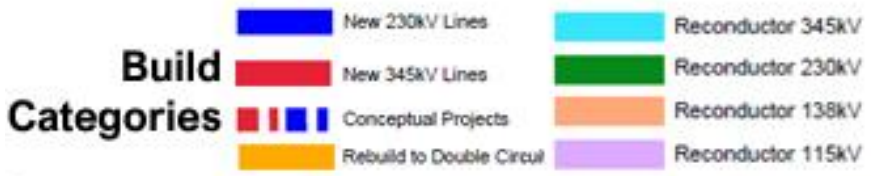
- Reference Case portfolio meets the 20-year reliability, deliverability and economic needs of high-voltage system in Colorado

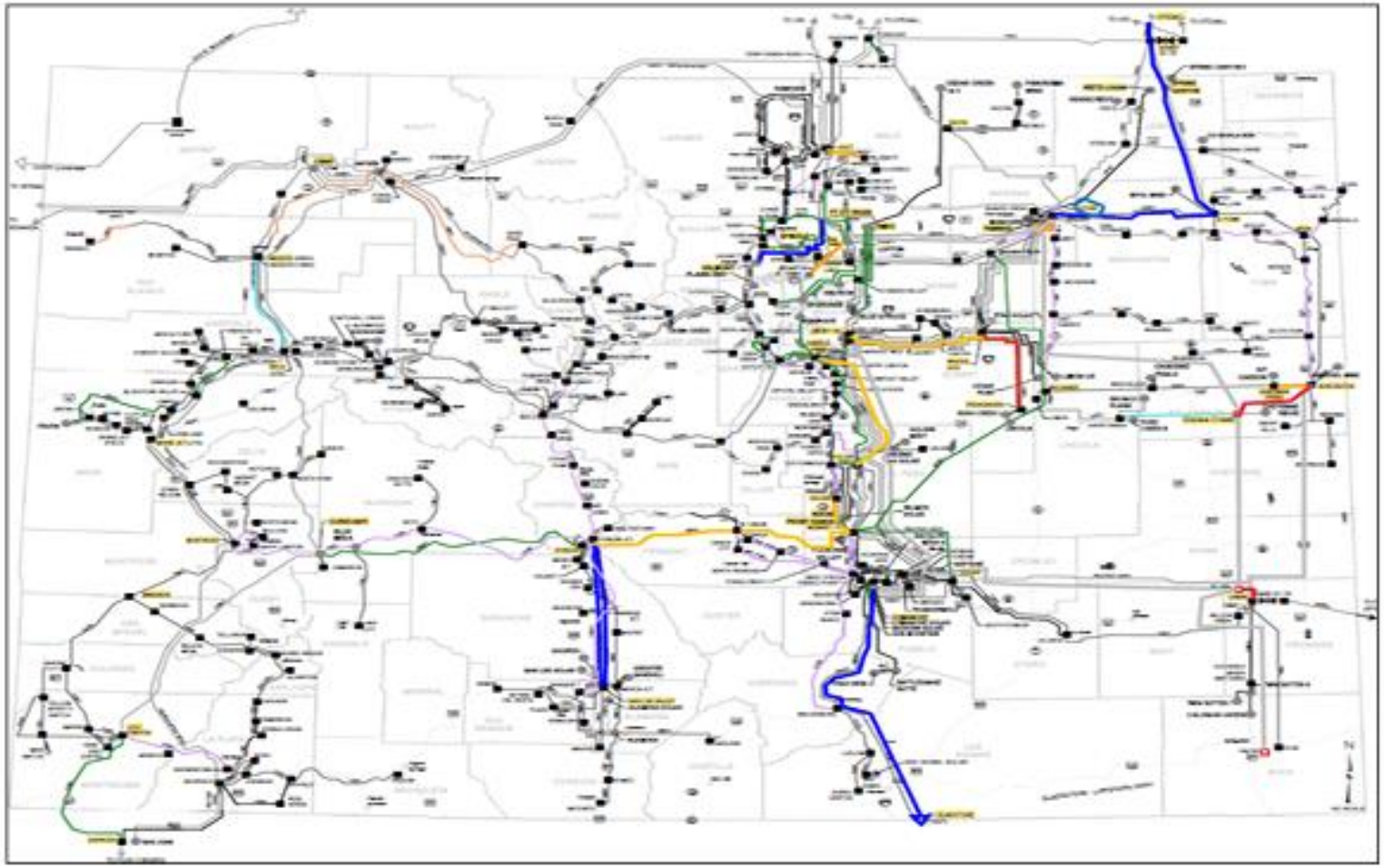
Capital Investment ($M)

$4,503

Portfolio Line Miles

Greenfield	548
Rebuild	269
Reconductor	2883





Impact of SB21-072 on Transmission Planning

Senate Bill 21-072 was a landmark piece of legislation

- A Colorado PUC Study estimated that joining a OWM could yield $230 million in annual savings and about 5 percent annual cost reductions for consumers.
- Tri-State Generation and Transmission, along with Colorado Springs Utilities, Platte River Power Authority, and several other Western utilities, are on track to join SPP as full RTO West members in April 2026.
- Xcel Energy, Colorado's largest electricity provider took a different path. The Colorado PUC approved Xcel's application to join SPP's Markets+ in a 2-to-1 vote in mid-2025
- The split market participation creates seams management challenges and raises questions about emissions tracking harmonization between Markets+ and RTO West within SPP.

Impact of SB21-072 on Transmission Planning

Senate Bill 21-072 was a landmark piece of legislation

PUC Study & Savings

A Colorado PUC Study estimated that joining a OWM could yield $230 million in annual savings and about 5 percent annual cost reductions for consumers.

RTO West Path (Full Membership)

Tri-State Generation and Transmission, along with Colorado Springs Utilities, Platte River Power Authority, and several other Western utilities, are on track to join SPP as full RTO+ members in April 2026.

Xcel's Markets+ Path

Xcel Energy, Colorado's largest electricity provider—took a different path. The Colorado PUC approved Xcel's application to join SPP's in mid-2025

Challenges of Split Participation

Seams management challenges and questions about emissions tracking harmonization between Markets+ and RTO within SPP.

Committee on Regional Electric Power Cooperation (CREPC-TC)

CREPC TC provides a standing forum for utility commissioners and energy office directors to collaborate on Western transmission issues.

Colorado has three Relevant State Entities actively engaged: the **PUC, CEO, and CETA**, reflecting the state's newfound investment in regional transmission outcomes.

Three major parallel workstreams:

State input into WestTEC's West-wide 10/20-year transmission plan
(20-year report due September 2026)

State-driven cost allocation frameworks study
(completed 2025, funded by DOE, conducted by Energy Strategies)

FERC Order 1920 compliance
through the 1920 Ad Hoc Committee.

Questions?

james.lester@state.co.us

COLORADO

Transmission Planning in the Southeast and Role of the States

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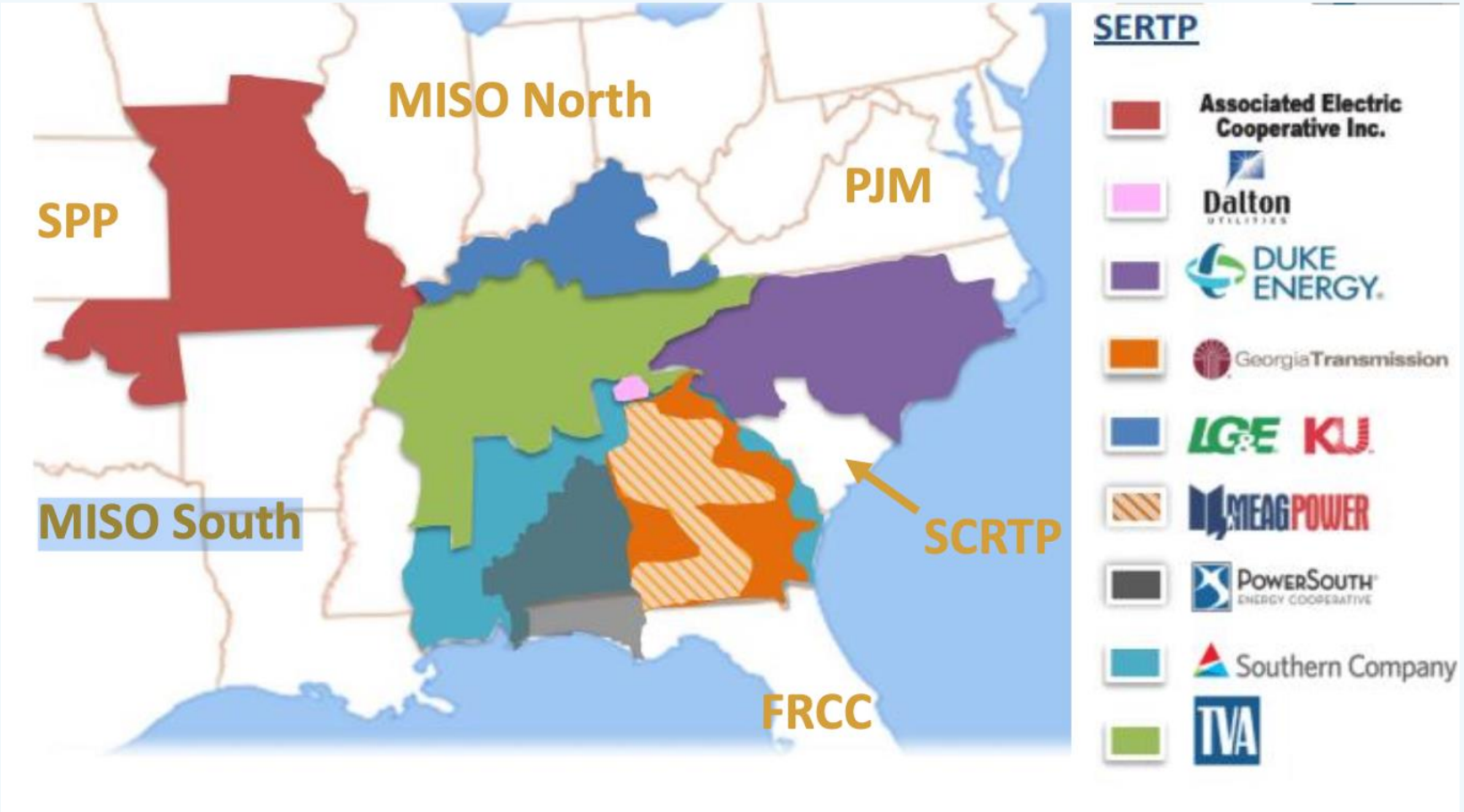
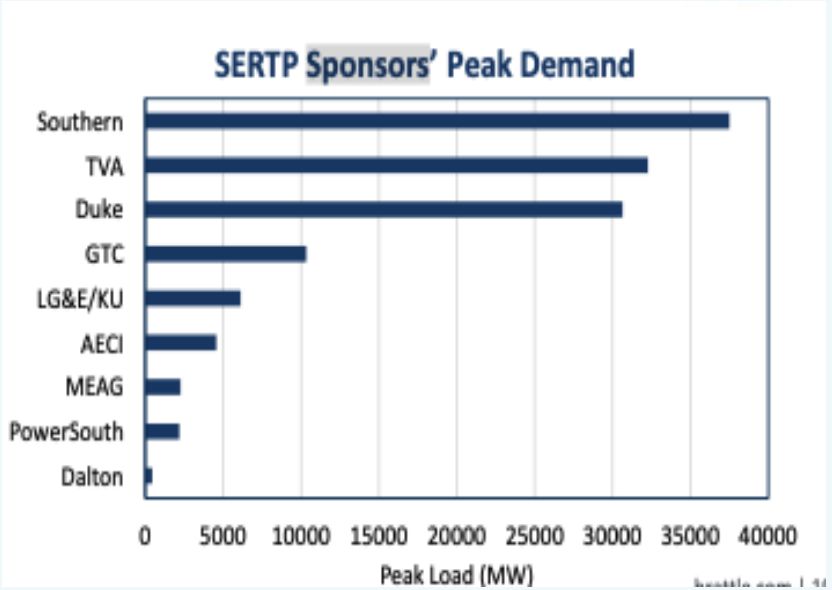
What is SERTP?

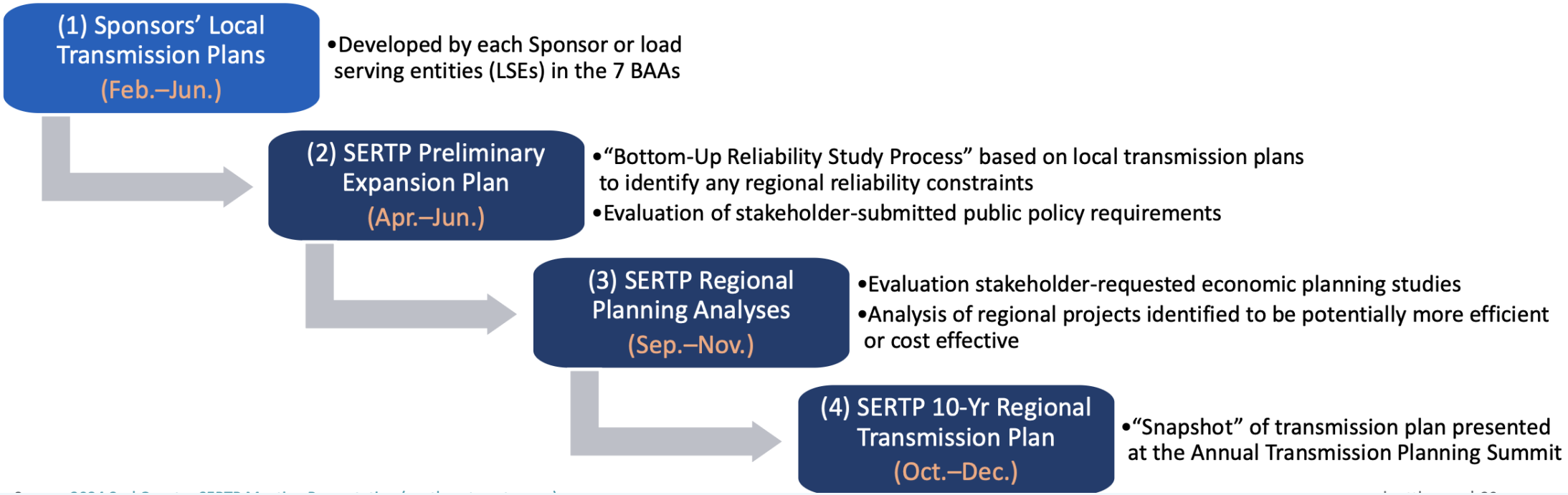
Southeast Regional Transmission Planning - formed in 2007 to comply with FERC Order No. 890 by Southeast transmission providers (or “Sponsors”)





How Does SERTP do the SERTP?
Every Year, SERTP Updates and Adopts Ten-Year Transmission Plan

- SERTP hosts 4 meetings in each annual planning cycle to present their progress and allow for stakeholder input
- Stakeholders can request SERTP to study regional "economic" and "policy" needs and identify required upgrades



Gaps in SERTP Planning Process

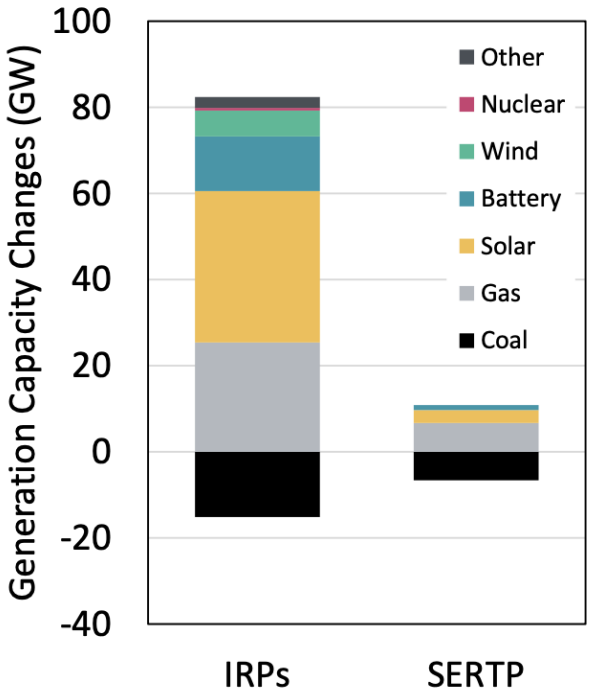
SERTP models regional system conditions for a **single future scenario** using **sponsor-specific assumptions** to examine **only reliability-related benefits**:

- Only 10 GW of the 80 GW of new generation resources identified in the latest IRPs by 2035 (12%) included in SERTP model, including just 8% of solar additions, 27% of gas additions, and 41% of coal retirements.

- Single future scenario = does not utilize IRP future scenarios that assess uncertainties in future changes (e.g., high growth scenarios or alternative generation resource mixes).

- Evaluates whether regional projects would be more cost-effective than local upgrades based on: 1) Ability to resolve NERC reliability violations based, 2) Project feasibility (i.e., viability of construction timing; 3) avoided local transmission cost; 4) avoided real power losses

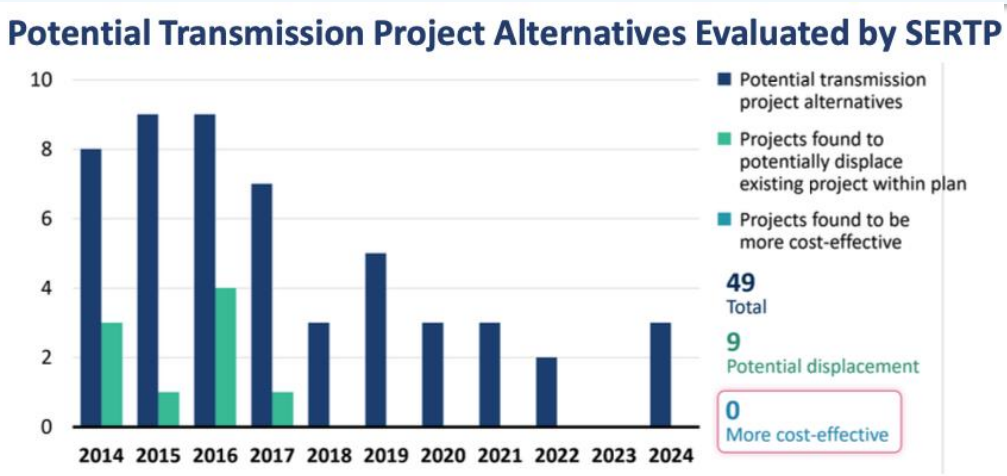
IRP vs SERTP 2035 Generation Changes
(TVA, Duke, LG&E/KU, GPC)

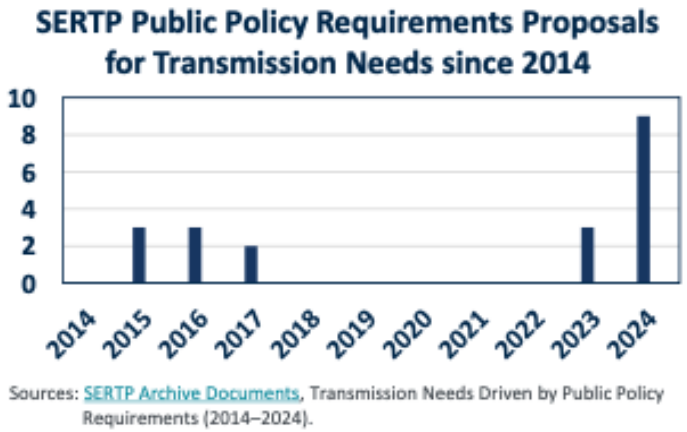


Results of SERTP Planning Process

Due to limited scope of benefits analyzed, SERTP's study of 49 alternative projects has **never identified a more efficient or cost-effective regional project to include in its annual regional plan**.

Stakeholders can propose study of Tx needs driven by Public Policy Requirements (PPRs) if PPR is an enacted local, state, or federal law(s) and/or regulation(s); PPR drives a transmission need(s); Tx need not already addressed or otherwise being evaluated in the then-current planning cycle. **SERTP has never evaluated a regional transmission needs for a PPR**





Sources: SERTP Archive Documents, Transmission Needs Driven by Public Policy Requirements (2014–2024).

Could Regional/Interregional Transmission Help the Southeast?

National Transmission Needs Study (2023)

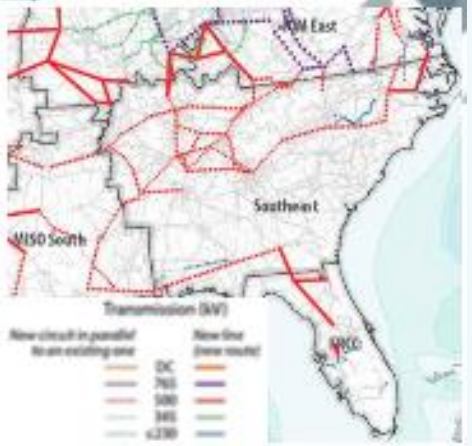
Summarizes 300 future scenarios and sensitivities from 6 independent studies for 2030, 2035, and 2040. By 2035, Southeast will need **7 TW-miles of new within-region transmission** and significant expansion of interregional transmission, ranging from **5.1 – 39.9 TW-miles with neighboring regions.**

Range of new transmission need for future scenarios with moderate load and high clean energy growth (green, top for each region) and high load and high clean energy growth (purple, bottom). Median % growth compared to 2020 system shown.

Source: National Transmission Needs Study

National Transmission Planning Study (2024)

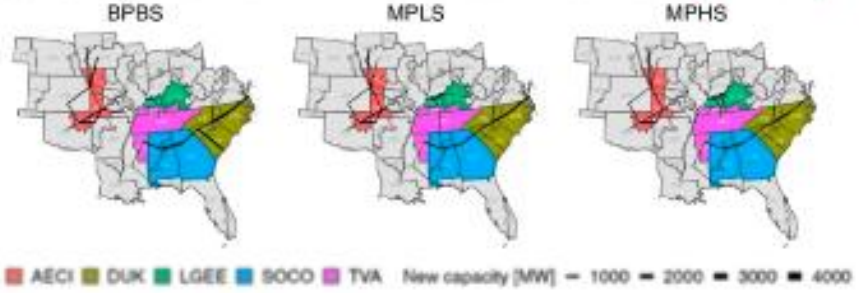
Conducted zonal capacity expansion and RA modeling through 2050 under 96 scenarios. Mid-demand, 90% emissions reduction AC scenario **strengthens existing 500 kV networks and connects SERTP to the Midwest and Plains through 345 kV and 500 kV lines** to enable flows across north-south and west-east interfaces to key load centers.



Source: National Transmission Planning Study

NREL/LBNL Solar and Storage Integration Study (2024)

Investigates higher levels of solar and storage on transmission needs by 2035 and benefits of increased operational coordination among utilities. In lower-solar scenarios, **transmission additions added east-west regional capacity.**



NERC Interregional Transfer Capability Study (2024)

Analyzed transfer capability between neighboring regions and recommended "prudent" interregional additions to maintain reliability. Identifies 4.1 GW of transmission into SERC-E (NC/SC) from other Southeast regions and PJM by 2033 **justifiable based on reliability alone** to alleviate resource deficiencies.

Table ES.1: Recommended Prudent Additions Detail

Transmission Planning Region	Weather Years (WY) / Events	Resource Deficiency Hours	Maximum Deficiency (MW)	Additional Transfer Capability (MW)	Interface Additions (MW)
SERC-E	Winter Storm Elliott (WY2022)	9	5,849	4,100	SERC-C (300) SERC-SE (2,200) PJM-W (1,600)
SERC-Florida	Summer WY2009 and Winter WY2010	6	1,152	1,200	SERC-SE (1,200)
MISO-S	WY2009 and WY2011	4	629	600	ERCOT (300) SERC-SE (300)

brattle.com | 16

PNAS RESEARCH ARTICLE | SUSTAINABILITY SCIENCE OPEN ACCESS

Transmission lowers US generation costs, but generator incentives are not aligned

Dasom Ham [a,1], Owen Kay[b,1,2], and Catherine Hausman [c,3,1]

Edited by Geoffrey Heal, Columbia University Business School, New York, NY; received September 2, 2025; accepted December 16, 2025

February 24, 2026 | 123 (9) e2524463123 | https://doi.org/10.1073/pnas.2524463123

Significance

Transmission build-out and related grid reforms could bring electricity generation cost reductions, with low-cost wind and solar better able to provide energy to faraway demand centers. But market integration saves costs precisely because it pushes out high-cost suppliers, and we show that incumbent generators in some regions have financial incentives to block or delay transmission. Using hourly unit-level data on electricity supply across the lower 48, we document that removing spatial constraints would save billions of dollars in generation costs per year, but that East Coast suppliers in particular would see lower profits. As analysts and policymakers propose grid reforms, it will be important to consider the incentives of suppliers and therefore the role of grid governance.

Winners and Losers Among Power Plants. Power producers in the Great Lakes and Great Plains states would see significant revenue increases from increased market integration, and those in the Northeast, Southeast, and California would see lower revenues (Fig. 2).

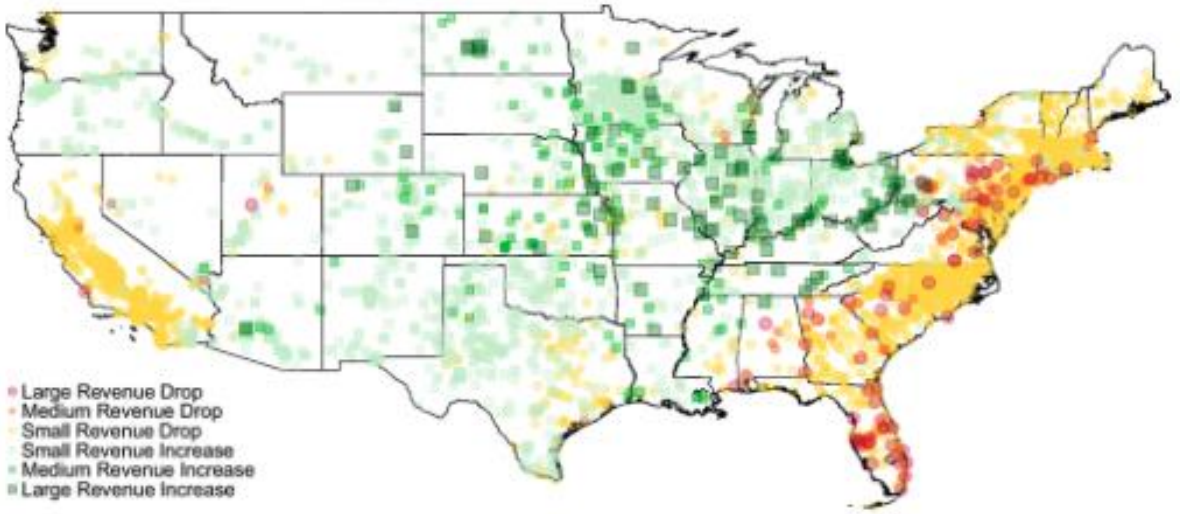


Fig. 2. Some Power Plants Would See Net Revenues Drop With Market Integration, and Others Would See Increased Net Revenues. This map plots the power plants that earn more net revenue with market integration (green) versus less net revenue with market integration (yellow, orange, and red). "Large" revenue changes are defined as greater than $20 million per year; "medium" revenue changes as $10 to 20 million; and "small" revenue changes as $0 to 10 million. Net revenue changes are calculated as the average annual difference (over the 2020–2023 period) relative to the congested scenario. Results by year and fuel type are shown in *SI Appendix*.

Modernizing Southeast Grid Investments: How Enhanced Regional Transmission Planning Supports a Growing Economy

PREPARED BY

J. Michael Hagerty

Peter Heller

Evan Bennett

Brattle

APRIL 2, 2025

PREPARED FOR

CCEBA Carolinas Clean Energy Business Association

CEBA Clean Energy Buyers Association

SOUTHERN RENEWABLE ENERGY ASSOCIATION

Paid for by the Clean Grid Initiative, a project of Multiplier

Case Study: Assessing Benefits of SERTP Regional Projects

To demonstrate the value of Southeast regional transmission, we performed a high-level analysis of three 500 kV upgrades SERTP identified in its 2024 regional planning process (see map).

The analysis evaluated the potential cost savings and other benefits of the regional projects based on an expanded set of benefits utilizing recent historical market data:

- **Production cost savings** based on historical 2015–2023 system lambdas reported by SERTP Sponsors as a proxy
- **Load diversity benefits** based on historical 2011–2023 load shapes, accounting for capacity cost savings from imports
- **Resilience benefits** during extreme weather conditions, such as Winter Storm Elliott

Regional Projects Evaluated in 2024 SERTP Regional Plan

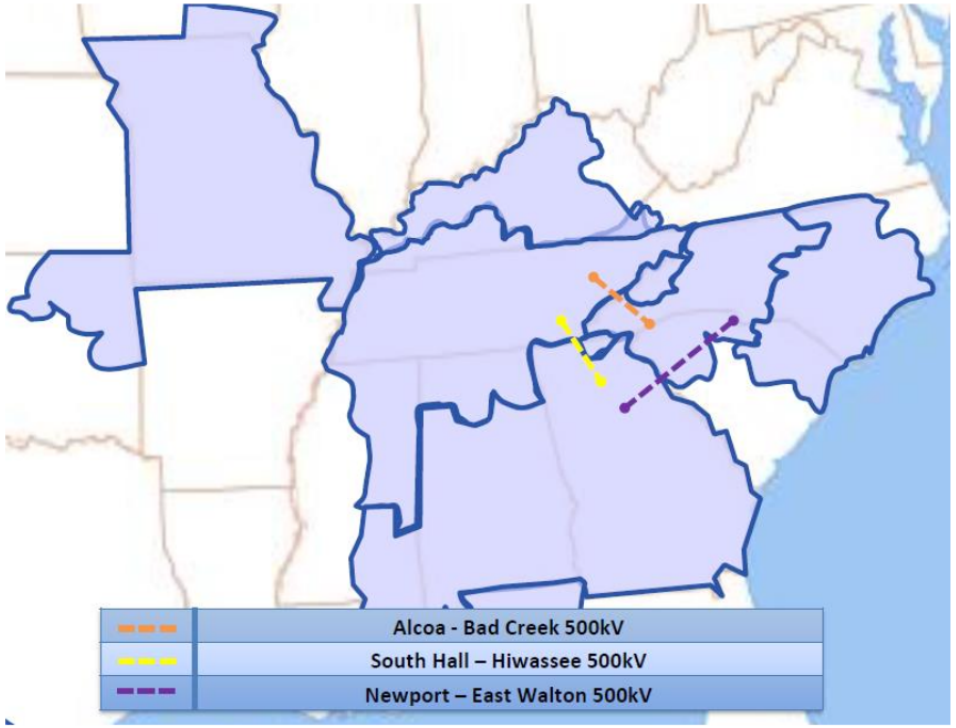


Image Source: SERTP 2024 SERTP 3rd Quarter Meeting Presentation, slide 49.

NOW

Expanded Scope of Cost Savings Identifies Cost-Effective Upgrades

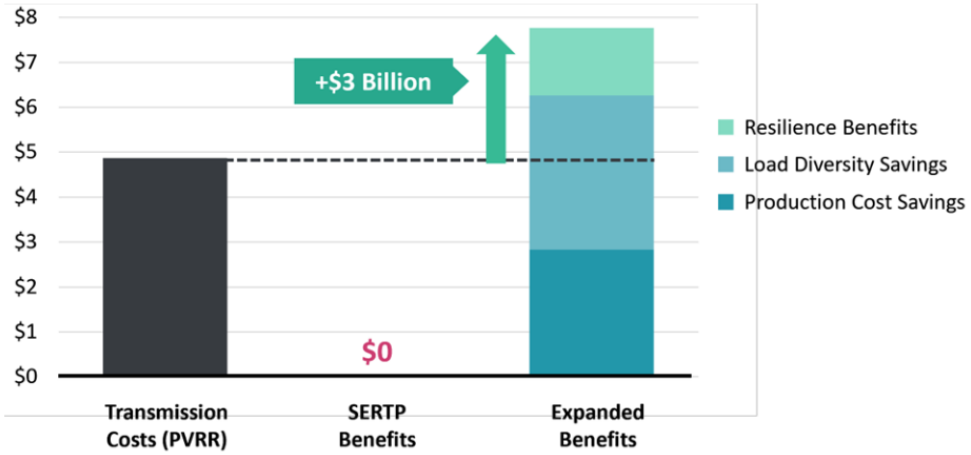
Using an expanding set of benefits, we estimated $8 billion of cost savings and other benefits for these proposed regional lines, resulting in $3 billion of net benefits for customers in the Southeast over the life of the assets.

- Production cost savings: $2.8 billion (range: $2.0–3.6 billion)
- Load diversity cost savings: $3.3 billion (range: $0.9–6.0 billion)
- Resilience benefits: $1.6 billion (range: $0.7–2.3 billion)
- *Note: A more detailed study is likely to identify additional benefits not quantified in this high-level analysis, including avoided reliability and interconnection upgrades, greater production cost savings with increased solar/wind, and reduced generation costs*

Regional transmission can reduce system costs when a broader scope of cost savings and other benefits are analyzed

By contrast, SERTP's very narrow view of benefits based solely on avoided local transmission costs identified **no cost savings**.

Estimated Net Benefits of Regional Projects

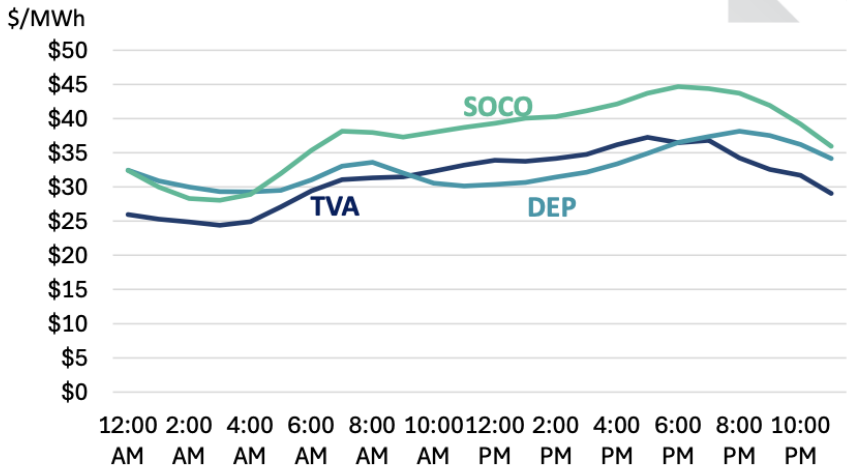


Estimated Production Cost Savings

Using historical system lambdas, we estimate the potential value of 1 GW of transfer capability for pairs of our case study balancing authorities

- Methodology for Estimating Production Cost Savings:
  - System lambdas represent an approximation of marginal unit cost in an hour and are directly reported by each utility to FERC
  - We assume the new transmission will optimize flows by sending power from the BA with a lower price to the BA with a higher price every hour when the price separation exceeds a specific "hurdle" (representing trading costs like wheeling charges and other frictions)[1]
  - Resulting flow and price separation estimate value of new transmission upgrades
- Production Cost Savings Results:
  - With a trading hurdle of $8/MWh, the regional upgrades provide $2.8 billion in production cost savings
  - Average price separation between BAs is $8 - $10/MWh, but there is significant value in periods of high price separation

2019-2023 Average Marginal Cost of Energy



Estimated 2019 – 2023 Value of 1 GW of New Transmissior

Transmission BAA Pair	Average Annual 2019-2023 Value			50 Year NPV of 1,000 MW (at 7% Discount Rate)		
	$0/MWh Hurdle	$8/MWh Hurdle	$15/MWh Hurdle	$0/MWh Hurdle	$8/MWh Hurdle	$15/MWh Hurdle
	$ Millions	*$ Millions*	*$ Millions*	*$ Millions*	*$ Millions*	*$ Millions*
TVA and DUKE	$91	$72	$55	$1,261	$994	$758
SOCO and TVA	$90	$70	$49	$1,244	$963	$671
SOCO and DUKE	$82	$63	$43	$1,138	$871	$596
			Total Savings	$3,643	$2,828	$2,025

[1] The selection of $8/MWh and $15/MWh hurdle rates mimics the low-coordination and high-coordination scenarios in the Southeast from Kahrl, Fredrich, et al., *Solar and Storage Integration in the Southeastern United States: Economics, Reliability, and Operations.* Lawrence Berkeley National Laboratory and National Renewable Energy Laboratory, 2024.

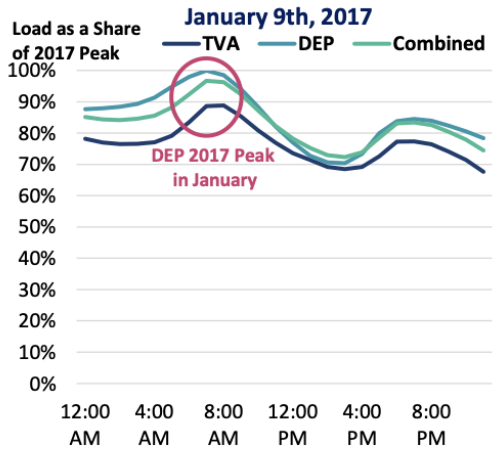
APPENDIX

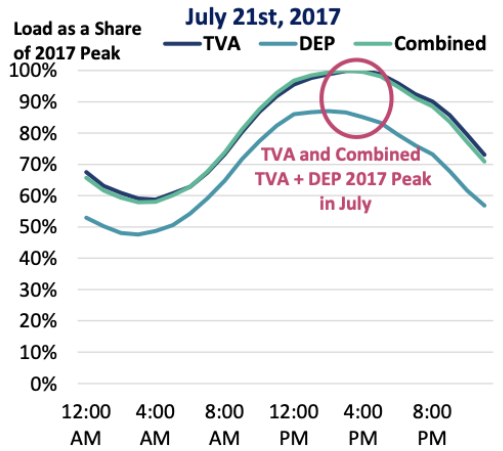
Load Diversity Savings Value

As an example, DEP peaks independently in January 2017 while TVA is 3.4 GW below its own 2017 peak that it planned its system to meet

TVA and DEP's load diversity savings calculation is shown on the right

- The independent gross peak is each BAs annual peak on their own
- The coincident peak is each BAs load during the joint TVA + DEP peak during the year
- The potential load diversity savings is the difference between a BA's gross peak and load during the coincident peak
- **This is then compared in our summary table in the previous slide to the existing transfer capacity** to see if this diversity value can be captured via existing transmission already





Load Diversity Savings Calculation Example for TVA and DEP

	Tennessee Valley Authority			Duke Energy Progress LLC		
Year	Independent Gross Peak	Peak During TVA + DEP Coincident Peak	Potential Load Diversity Savings from TX	Independent Gross Peak	Peak During TVA + DEP Coincident Peak	Potential Load Diversity Savings from TX
	MW	*MW*	*MW*	*MW*	*MW*	*MW*
2011	36,765	36,627	138	16,244	15,861	383
2012	36,696	36,696	0	16,095	15,989	106
2013	33,897	33,897	0	15,278	14,649	630
2014	39,355	39,355	0	17,342	17,170	172
2015	38,646	38,646	0	18,994	17,713	1,281
2016	35,192	35,192	0	16,224	16,224	0
2017	35,281	35,235	46	17,731	15,351	2,380
2018	38,361	37,454	906	18,933	17,969	964
2019	34,891	34,891	0	16,676	15,533	1,143
2020	34,139	34,111	27	16,144	16,144	0
2021	35,883	35,553	329	15,916	15,666	250
2022	39,442	39,355	86	17,181	15,538	1,643
2023	37,578	37,578	0	15,825	15,202	622
Average Peak Saving			**118**			**737**
Maximum Peak Saving			**906**			**2,380**

Resilience Benefits from Transmission

Additional customer savings are unlocked from transmission in the form of resilience to extreme weather events like Winter Storm Elliott by allowing BAs to import power in periods of system stress

TVA, Duke, and LG&E/KU were all forced to order firm load shedding during Winter Storm Elliott

- TVA shed 19,000 MWh; Duke shed a combined 4,936 MWh; and LG&E/KU shed 1,265 MWh

Utilizing regional and interregional transmission to unlock greater access to imports during emergency events can avoid load shed and create significant cost savings resulting from lost load

- Lost load is valued somewhere between $10,000/MWh (in MISO) and $35,000/MWh (in ERCOT)
- Based on outage data from Winter Storm Elliott, 1 GW of additional transmission available to import generation across the region could have avoided between $95 million to $333 million in lost load during the event

If we assume these events happen roughly every five years, regional transmission could provide nearly $668 million to $2.3 billion in resiliency benefits of avoided lost load.

CTPC/Duke Multi-Value Strategic Transmission (MVST) Study

Carolinas Transmission Planning Collaborative (CTPC) completes local transmission planning for utilities in North and South Carolina, including Duke Energy (DEC/DEP), ElectriCities, and NCEMC

CTPC identified **$503 million of Public Policy upgrades** in its 2023 Annual Plan to support solar additions based on upgrades identified in multiple interconnection cluster studies.

CTPC added to its local planning process a **proactive, scenario-based, multi-driver process to identify Multi-Value Strategic Transmission (MVST) projects;** implementing its first MVST study in 2024–2025.

Key Aspects of CTPC Multi-Value Strategic Transmission Process

IRP-based Scenarios
Identify reliability and economic needs for future scenarios based on Duke's projected load and IRP-developed generation portfolios

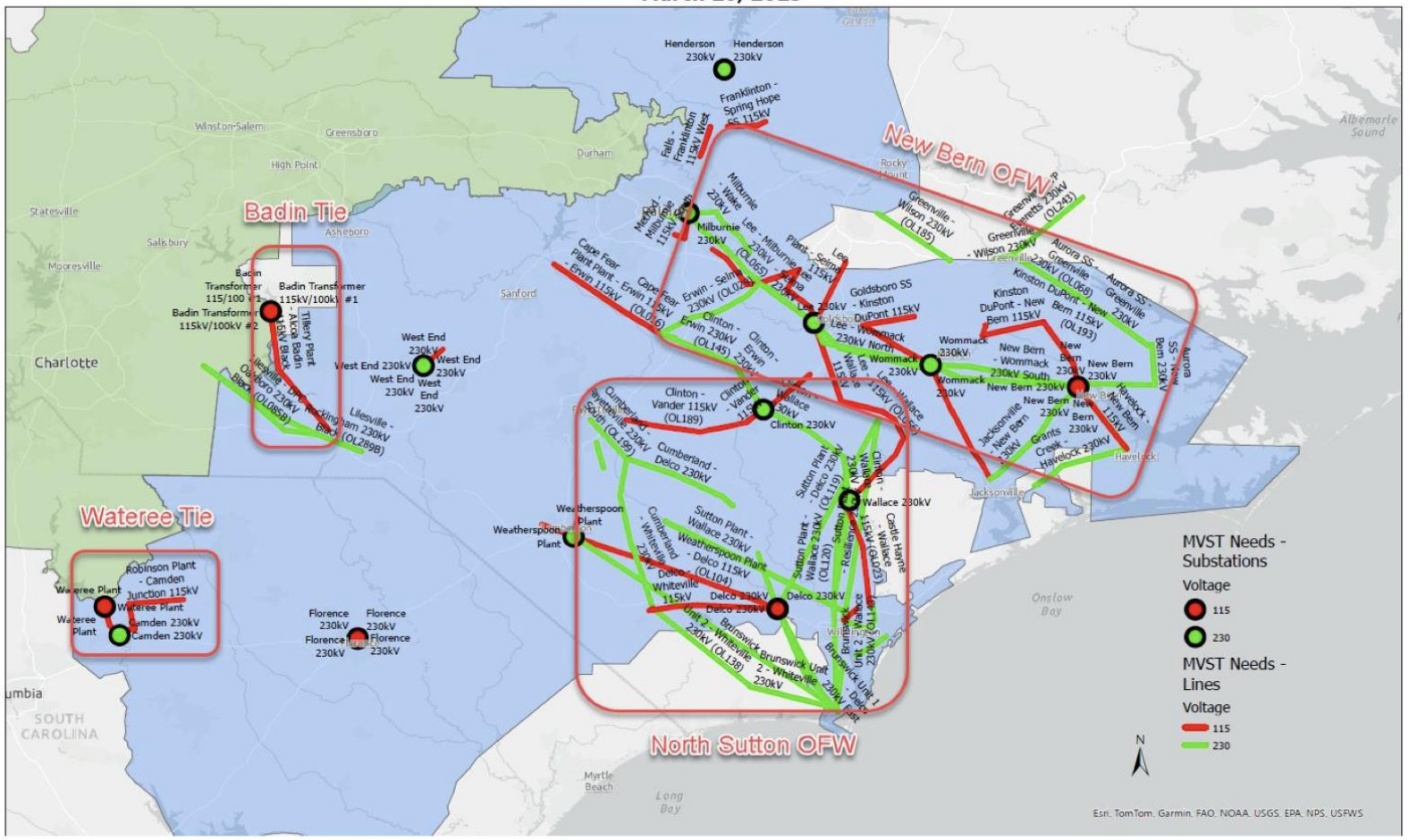
Alternative Solutions
Consider GETs, advanced conductors, Remedial Action Schemes (RAS), and storage as potential solutions as well as existing lines upgrades and greenfield transmission

Portfolio Evaluation
Evaluate a portfolio of transmission solutions over the life of the assets to resolve identified needs

Benefits Analysis
Quantify (1) avoided capacity costs, (2&3) capacity cost and energy cost savings from reduced losses, (4) congestion and fuel cost savings, (5) avoided customer outages, and (6) avoided transmission costs

MVST Needs Clustering - DEP

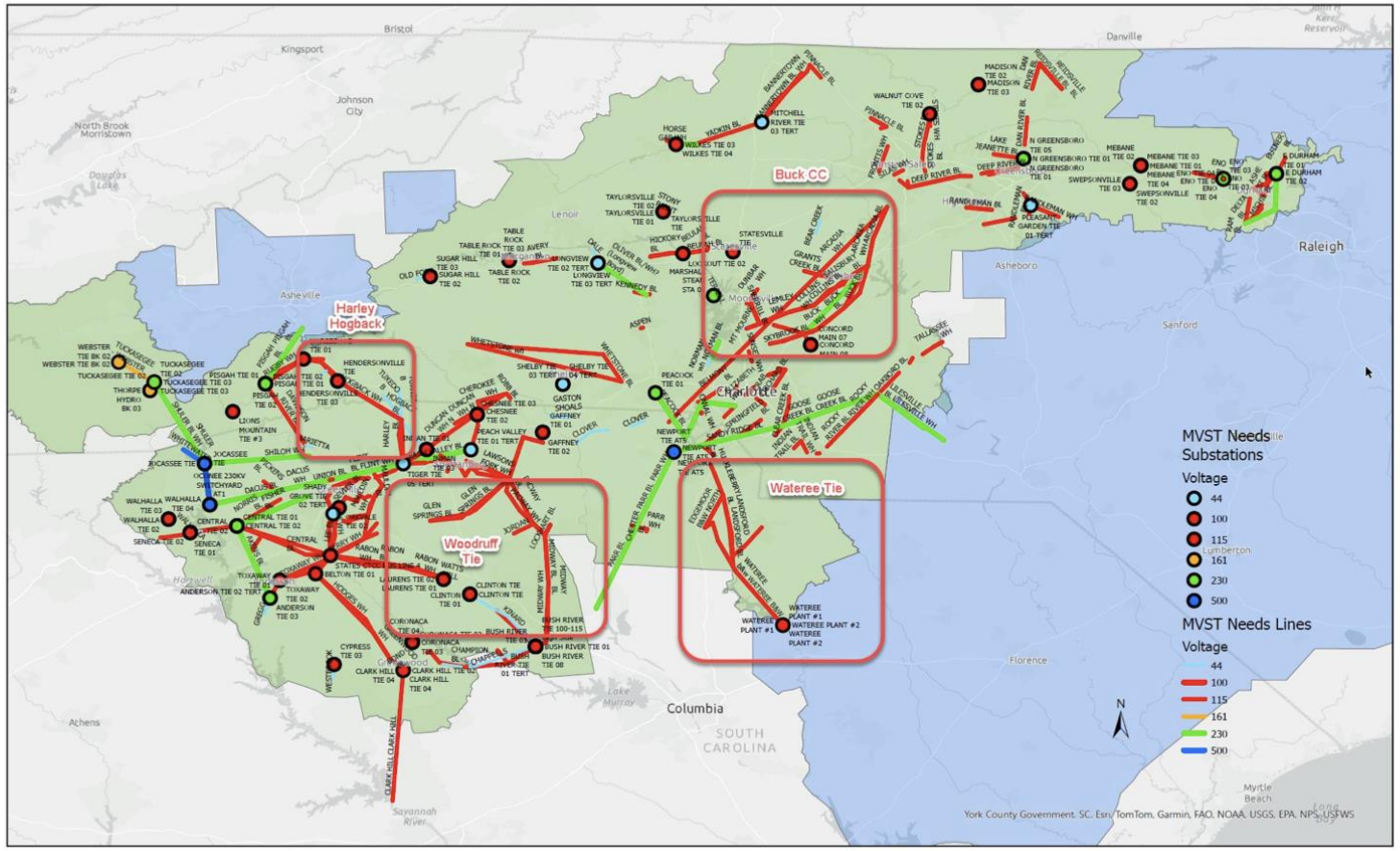
Carolinas Transmission Planning Collaborative
Multi-Value Strategic Transmission Needs
March 20, 2025



5

MVST Needs Clustering - DEC

Carolinas Transmission Planning Collaborative
Multi-Value Strategic Transmission Needs
March 20, 2025



14

Duke MVST Room for improvement

- Identify needs based on both reliability violations and non-economic dispatch (only did reliability this time around)
- Too easily dismissed ATT/GETs as solutions
- Improved benefits analysis

Order 1920 Provides Southeast Opportunity in 2025 to Enhance Its Regional Transmission Planning Process

- **Southeast is the only major U.S. region that has not pursued significant regional transmission projects over the past decade**
- **Every year without a proactive regional transmission planning process in the Southeast results in higher electricity bills, increased blackout risks, and lost business investment over the long term due to insufficient grid infrastructure**
- **FERC issued Order No. 1920 last year that requires SERTP to implement a proactive, long-term, multi-value regional planning process, presenting a pivotal opportunity for the Southeast to align its regional transmission planning with industry best practices developed over the past 10–20 years**
- **The Southeast should embrace this opportunity in 2025 to modernize SERTP's regional transmission planning to build a stronger, more efficient grid that supports economic growth, energy affordability, and long-term resilience**

NASEO State Transmission Summit

State Roles and Opportunities in Long-Term Transmission Planning

March 24, 2026

MISO Overview

MISO is an independent, not-for-profit, member-based organization responsible for keeping the power flowing across 15 U.S. states and Manitoba reliably and cost-effectively.

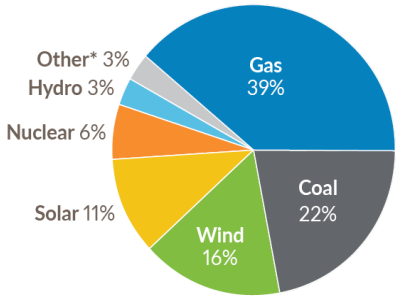
MISO's reliability footprint and regional control center locations

MISO STATISTICS

Population Served	45 Million
Transmission Line	79,000 Miles
Generating Units	1,979
Members	57 Transmission Owners
	174 Non-transmission Owners
Market Participants	> 550
Market Transactions	> $53 billion in 2025
Carbon Reduction	Approximately 32% since 2014

INSTALLED CAPACITY

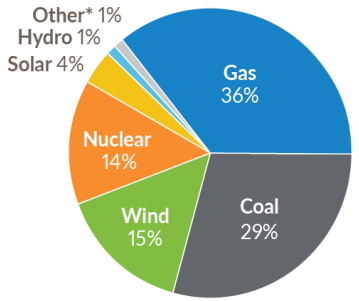
December 2025



207 GW

ENERGY PRODUCTION

January-December 2025

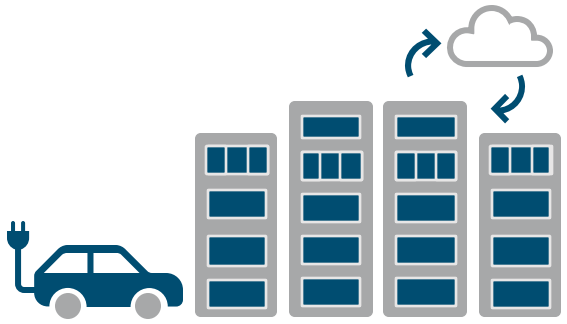


663 Million MWh

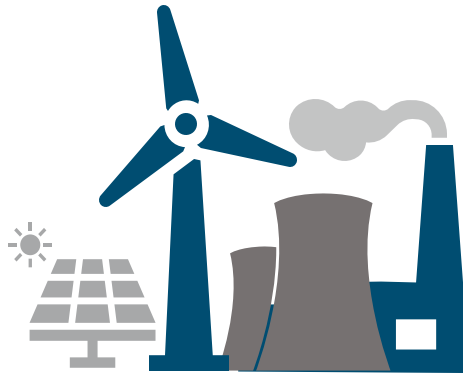
*Other: Diesel, Biomass, Storage, Demand Response Resources

Data as of January 23, 2026

Nationwide energy challenges are reshaping grid planning and operational priorities throughout the region



Electricity demand is
ACCELERATING



Resource mix is
SHIFTING

Transmission planning is
EXPANDING

Operational risk is
INCREASING

THIS IS THE NEW NORMAL

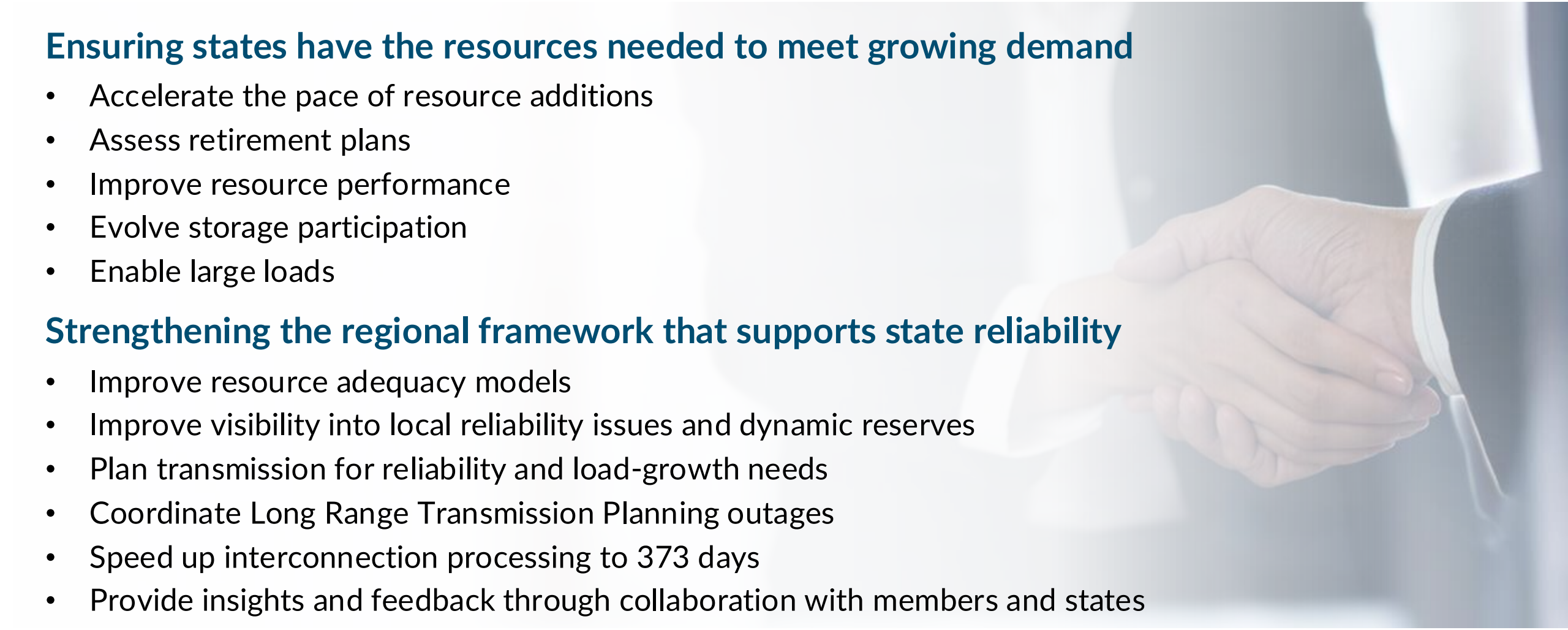
In partnership with members, stakeholders and states, MISO's 2026 priorities focus on readiness, speed, coordination and transparency

Ensuring states have the resources needed to meet growing demand

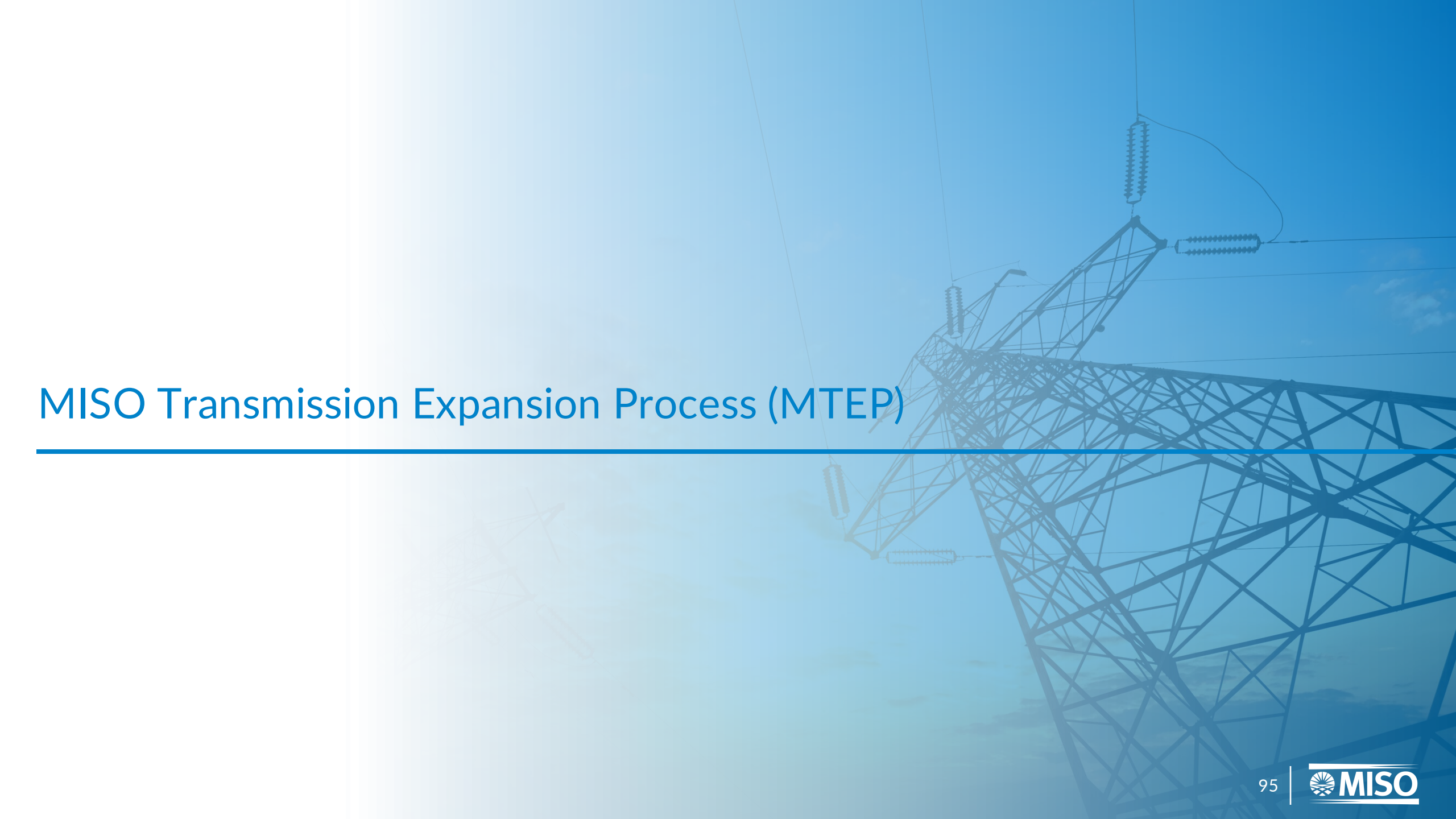
- Accelerate the pace of resource additions
- Assess retirement plans
- Improve resource performance
- Evolve storage participation
- Enable large loads

Strengthening the regional framework that supports state reliability

- Improve resource adequacy models
- Improve visibility into local reliability issues and dynamic reserves
- Plan transmission for reliability and load-growth needs
- Coordinate Long Range Transmission Planning outages
- Speed up interconnection processing to 373 days
- Provide insights and feedback through collaboration with members and states



MISO Transmission Expansion Process (MTEP)



MISO's comprehensive transmission planning approach enables us to meet the evolving needs of the electrical grid

LOCAL

Addresses immediate reliability needs in local communities

Recent Results

MTEP25

Approved: **432 projects**

Miles to be Added: **1,900+**

REGIONAL

Plans the grid for the future, using shared long-term scenarios

Recent Results

Tranches 1 and 2.1

Miles Added: **5,600+**

Net Benefits: **$46-$124 Billion**

INTERREGIONAL

Strengthens connections with neighboring grid operators to improve reliability across state lines

Recent Results

MISO-SPP Proposed High-Voltage Portfolio:

Import capability: **2.6-3.4 GW**

Congestion relief: **$83k-300K**

MISO's Expedited Project Review process facilitates study and approval for urgent member-submitted transmission projects required to interconnect new load

Expedited Project Reviews (EPRs)

While traditional MTEP projects move through an 18-month study and approval process,
EPRs are an out-of-cycle opportunity to accelerate approval of urgent needs while maintaining study rigor and transparency

Timeline

- 3 months from submission to approval:
  - ✓ Average of 80 days to study
    - 30 days for transmission-only studies
    - 60+ days for large load studies*
  - ✓ About 1 week to approve (PAC email with 5 business days to respond)
- Study cycles kick off every other month, and stakeholder meetings occur every month at the Technical Study Task Force (TSTF)

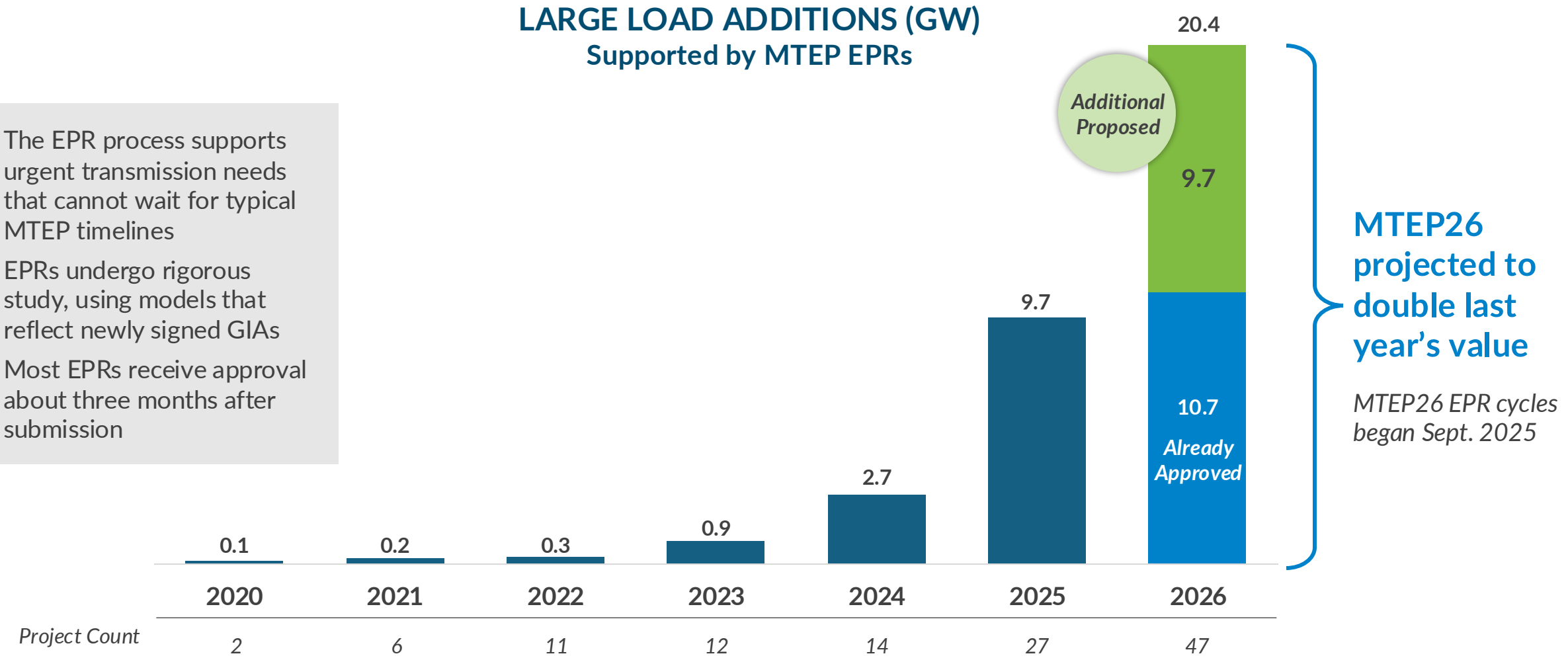
Scope

- Aligns with scope and models for traditional MTEP projects, including stability analysis
- Cumulative study process
- Updated models with newly signed GIAs
- As required coordination with neighbors
- Approved projects are rolled into the annual MTEP plan

*Large load study timelines are impacted by the transmission needs, whether coordination is required with our neighbors, and other load requests in the area,

This work has already begun; through the MTEP26 Expedited Project Review (EPR) process, MISO is approving projects that support significant economic development

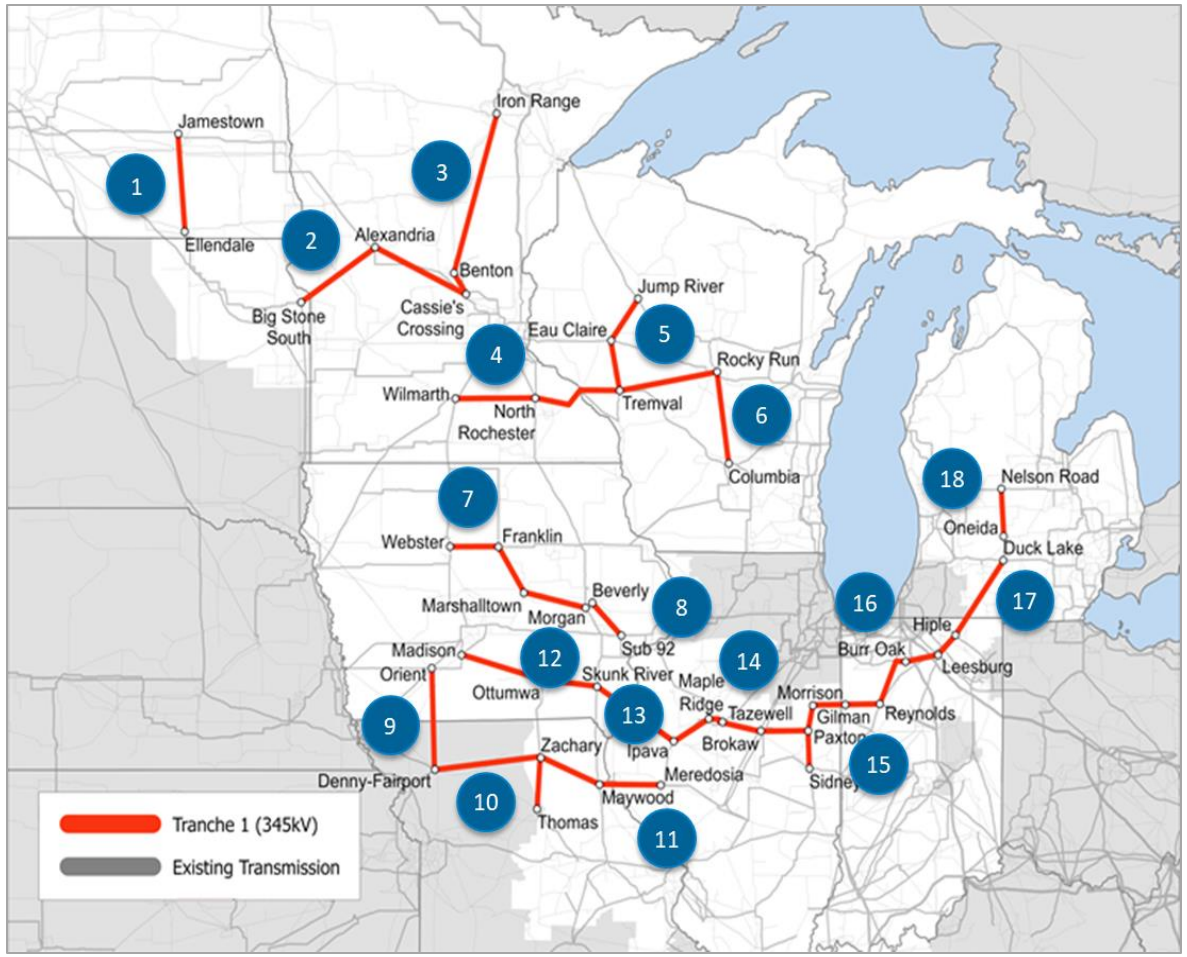
- The EPR process supports urgent transmission needs that cannot wait for typical MTEP timelines
- EPRs undergo rigorous study, using models that reflect newly signed GIAs
- Most EPRs receive approval about three months after submission



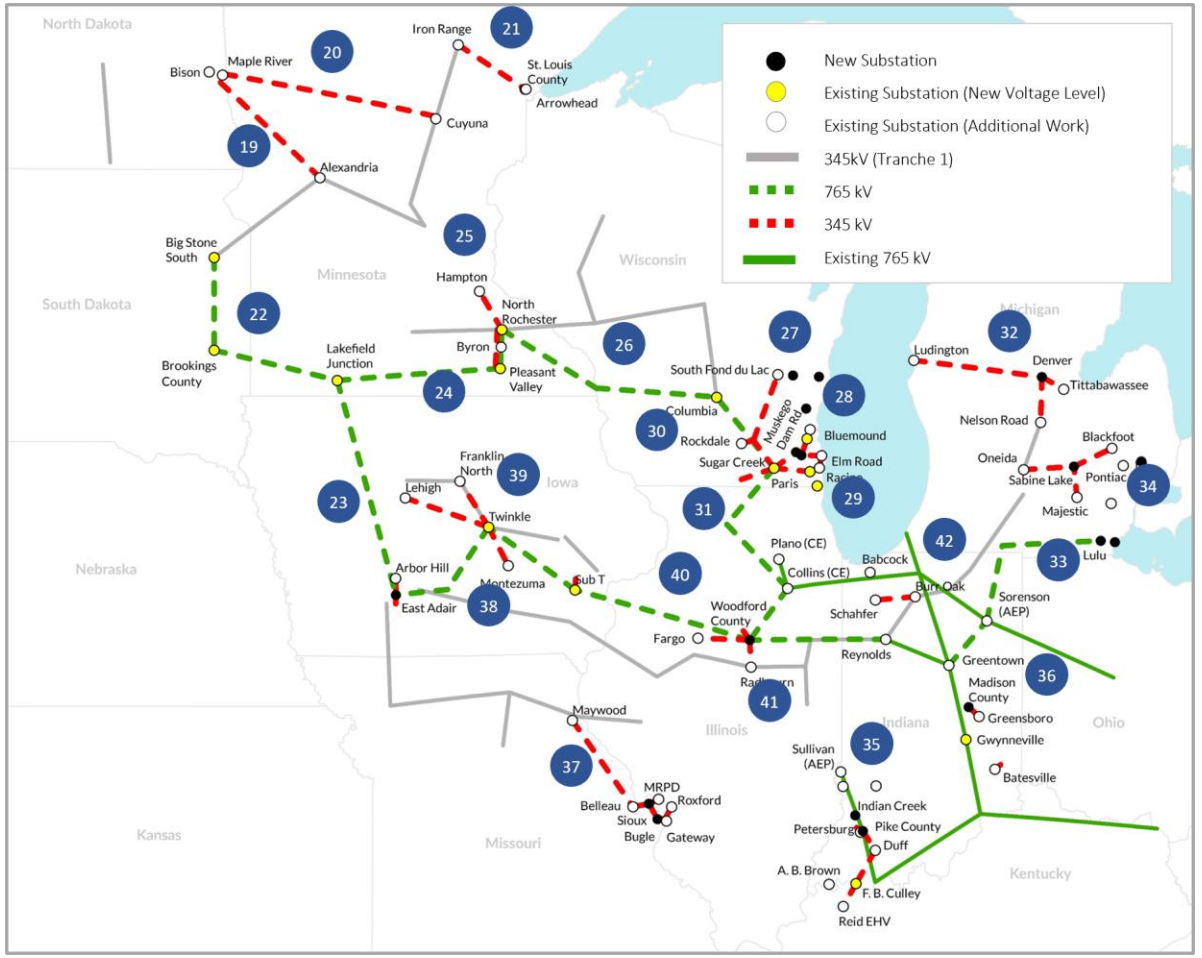
Data as of 3/2/26 GIA: Generator Interconnection Agreement

Long Range Transmission Planning (LRTP)

Tranche 1
Identified an 18-project portfolio



Tranche 2.1
Identified a 24-project portfolio



MISO plans to begin its next set of LRTP studies in 2026

South LRTP

Begins the subregional journey with a collaborative, investigative approach

Needs Support reliability and load growth

Process Evaluate system reliability and load-serving needs using models defined by the updated Futures; develop detailed scope with stakeholders, beginning with Louisiana and Texas

Outcome Options to guide next steps, which could include transmission and/or generation solutions for further study

LOAD POCKET Supporting Work
Developing enhanced simulation capabilities to assess risk

Midwest LRTP

Builds on an extensive foundation of prior studies and stakeholder engagement

Needs Support subregional transfers, state and member goals, and load growth

Process Evaluate system reliability and economics using models defined by the updated Futures

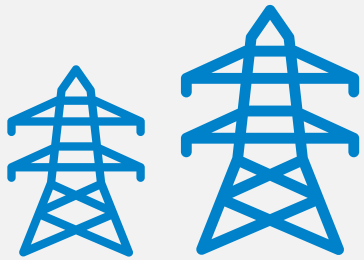
Outcome Solutions for identified issues (subsequent MTEP cycles)

Interregional studies are being conducted to evaluate a holistic set of future system needs along the PJM-MISO and SPP-MISO seams

Focus on the future

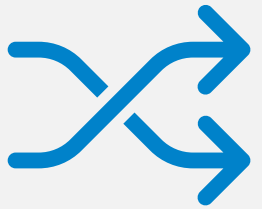
- Studies strengthen RTO collaboration for future engagements as approaches are shared and lessons learned
- Order 1920 can build on these evaluations to pave the way for efforts focused on longer-term needs and greenfield solutions

Capture transmission value



- Current Joint Operating Agreements reflect historical needs and may not capture all forward-looking risks
- New evaluation processes will consider multiple values, including reliability, economic and transfer value

Maintain flexibility



- Results from the collaborative approach will drive next steps
- RTOs will partner with states and stakeholders to determine Joint Operating Agreement / Tariff adjustments as needed

FERC Order 1920-A

Federal regulatory requirements have planned a major role in shaping MISO and how we plan in transmission planning

FERC ORDERS

MISO developed a compliance plan with stakeholders for FERC Order 1920 while maintaining flexibility to meet regional and subregional needs

Key Areas for Order 1920 Compliance

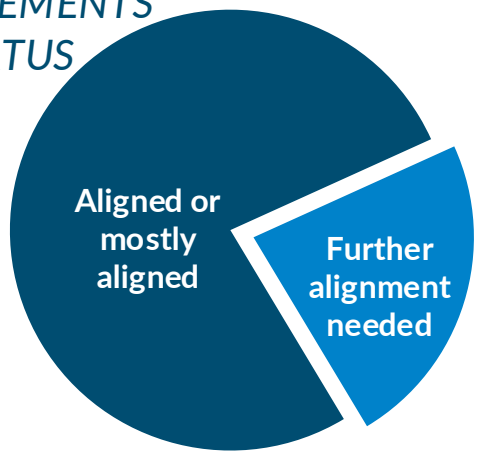
Long Range Transmission Planning
A consistent part of the transmission planning process, with required scenarios and benefit metrics

Benefits
Standardized according to a set of seven defined metrics

Interregional Planning Agreements
Revised to reflect new long-term planning requirements and expanded data-sharing protocols

Cost Allocation
Aligned with state preferences and commensurate with benefits

REQUIREMENTS STATUS



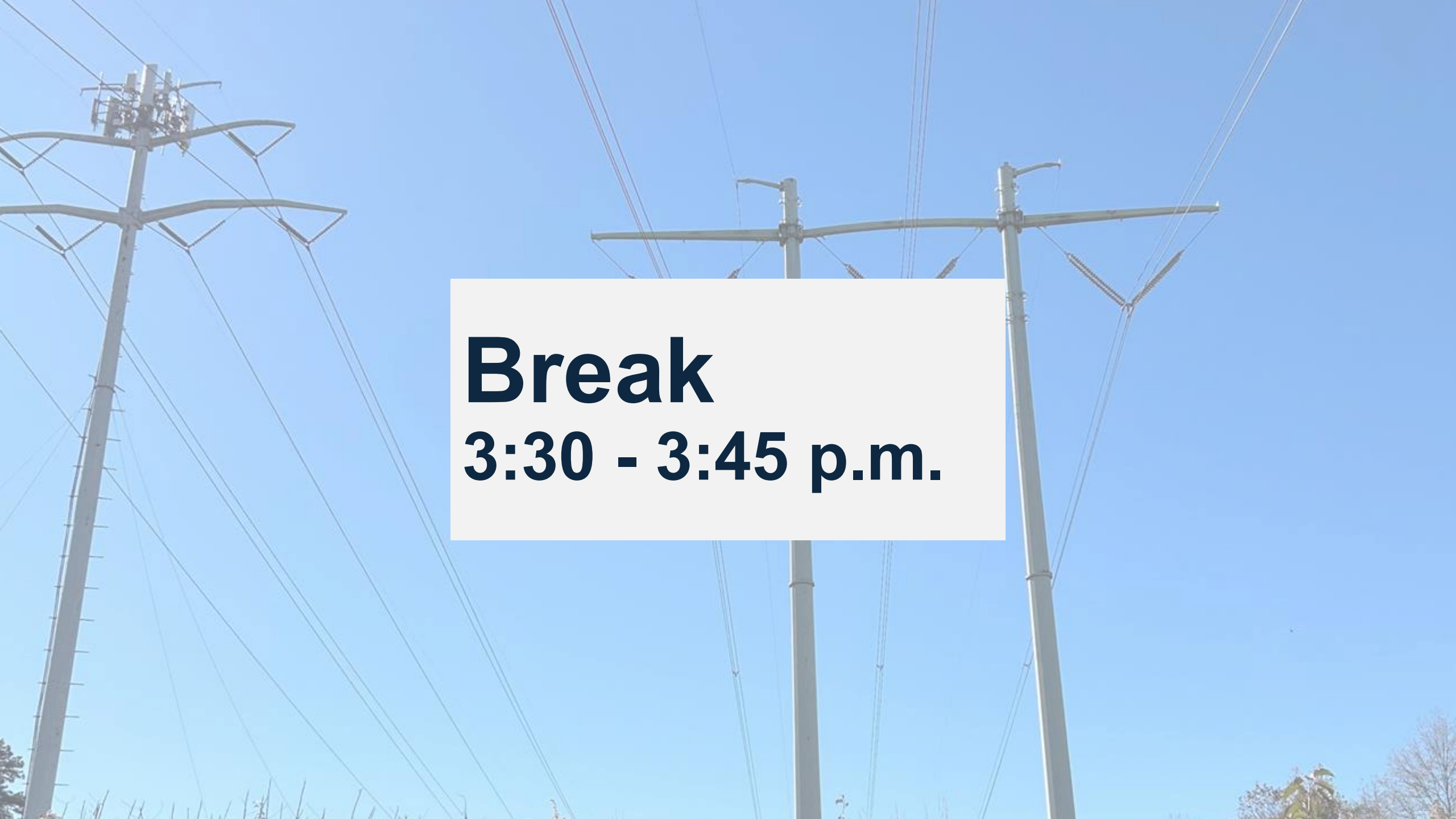
2024	2025	2026	2027	2028
May FERC Issued Order 1920 **November** FERC Issued Order 1920-A	**March** MISO starts 12-month State Engagement Period **April** MISO Request 16-month Interregional Extension	**March** End of 12-month State Engagement Period **June** MISO Regional Compliance Filing **December** MISO Interregional Compliance Filing		**June** Regional Compliance Implementation Date **December** Interregional Compliance Implementation Date

MISO is the electric grid operator for the central United States. We ensure power flows reliably and affordably across 15 states and the Canadian province of Manitoba. Additionally, MISO facilitates the buying and selling of electricity in its region and partners with its stakeholders to plan the grid of the future.

45 million people depend upon the work we do and the service we provide 24/7/365.

Learn more and follow MISO at:

misoenergy.org LinkedIn: Midcontinent ISO


Break
3:30 - 3:45 p.m.

Engagement in Interregional Transmission Planning

John Jenks

- Director of Energy Markets Development, Wyoming Energy Authority

Rachel Levine

- Senior Transmission Policy Analyst, Niskanen Center

Sarah Edmonds

- President and Chief Executive Officer, Western Power Pool

Dan Lloyd

- Community Relations Manager, Grid United

Abe Silverman

- Research Scholar, John Hopkins University

WYOMING ENERGY AUTHORITY

NASEO Transmission Summit

Engagement on Interregional Transmission Planning Panel

March 24, 2026

WHO WE ARE

Our Team

The Wyoming Energy Authority team are advocates, partners, environmental stewards, and innovators working to keep Wyoming at the front and center of the energy economy of tomorrow.

Rob Creager
Executive Director

Kyle J. Wendtland
Director of Fossil Fuel Development

Brayden Connour
Director of Investments

John Jenks
Director of Energy Market Development

Sean Schaub
Nuclear Industry Coordinator

Patrick Millin
State Energy Program Manager

Jami Blosmo
Accounting Manager

Cindy Prevedel
Administrative Assistant

WYOMING ENERGY AUTHORITY

The Wyoming Energy Authority (WEA) was created by the Wyoming Legislature and became operational on July 1, 2020, to serve as a unified, "one-stop-shop" for energy strategy and business development.

Brief Timeline

Wyoming Pipeline Authority was created in 1979.

facilitate the development of energy transmission infrastructure. It was designed to encourage natural gas pipeline capacity expansion, playing a key role in projects like the Kern River Transmission system in 1993.

Wyoming Infrastructure Authority was created in 2004.

It was created as an instrumentality of the state to diversify and grow Wyoming's economy by facilitating electric transmission infrastructure and energy

01

Streamlined Government—One Stop Shop

WEA serves as a central convener—connecting state agencies, utilities, developers, communities, and regulators to reduce silos and present a coherent, statewide energy strategy.

02

Infrastructure to Enhance Wyoming's Energy Economy

Wyoming is the second-most one electricity exporter in the west and number one electricity producer per capita. The WEA works to proactively attract and support energy-intensive industries by helping align generation, transmission, fuels, and policy so projects can actually get built in Wyoming.

03

Advocate

As markets, federal policy, and technology evolve, WEA helps Wyoming leverage its existing strengths while exploring new opportunities so the state isn't reacting late or defensively.

The need for interregional transmission: an overview

NASEO State Transmission Summit
Rachel Levine
March 24, 2026

Niskanen Center

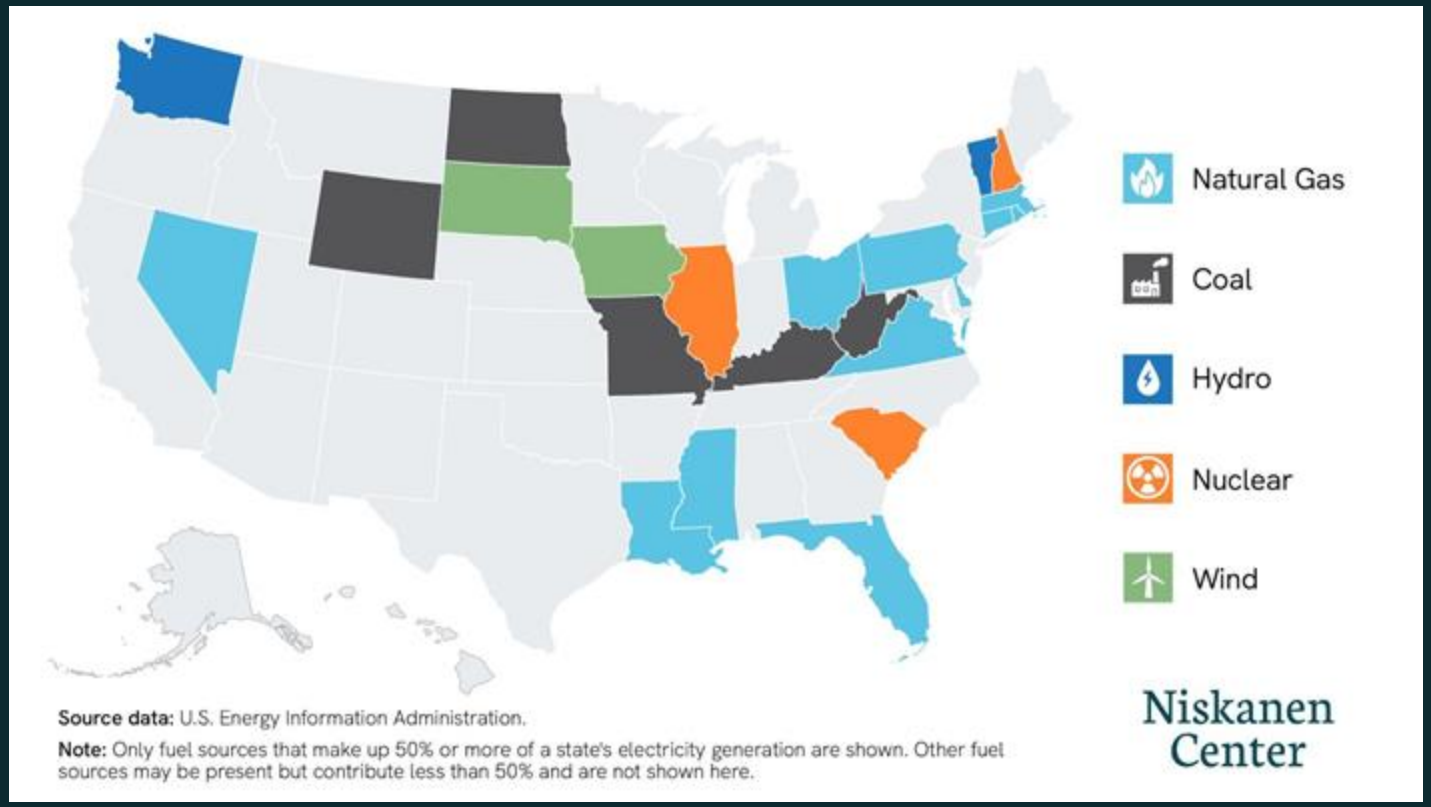
The Niskanen Center is a 501(c)(3) think tank based in Washington D.C. We promote policies that emphasize free market principles and effective, limited government.

Interregional transmission primer

- 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

Images: (1) Niskanen Center ; (2) FERC

How does a lack of interregional lines impact resiliency?



- 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 are more susceptible to severe weather
- Interregional tx provides arbitrage capabilities
- **Bigger markets = lower costs**

Image: Niskanen Center (updated from report to reflect 2025 data)

Technology options to meet the moment: AC vs DC

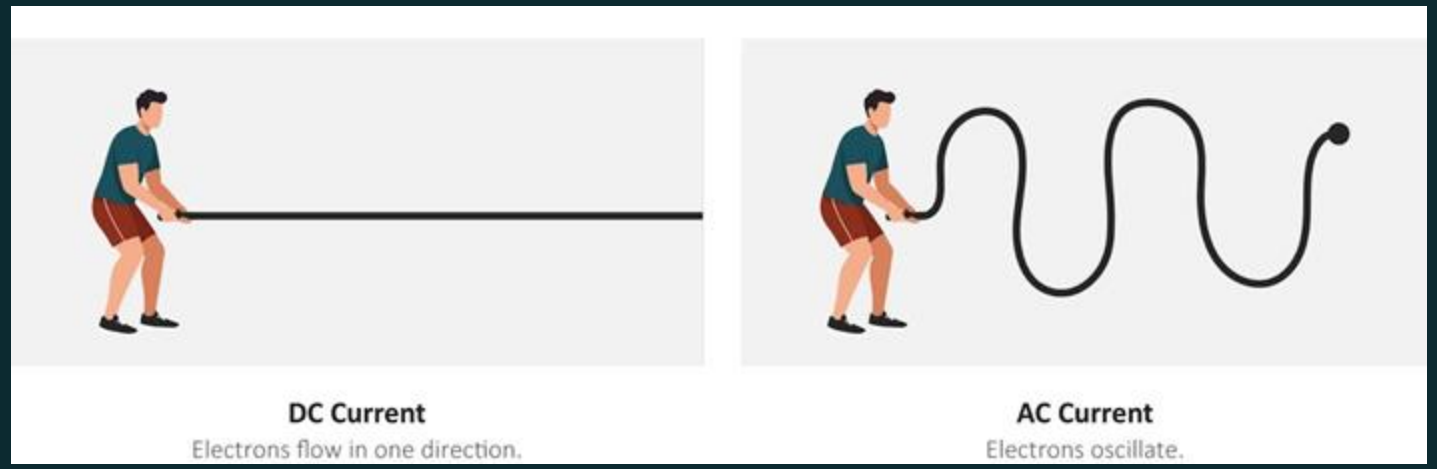


Image: Niskanen Center

- Right now, our grid is mostly AC lines
- These lines are great for stepping up or down voltage
- At > 350 mi, DC lines are more cost effective and more stable
- Electron movement is the differentiating factor
- Niskanen Center's *Unlocking HVDC* paper makes the case

HVDC is the best technology to build a macrogrid

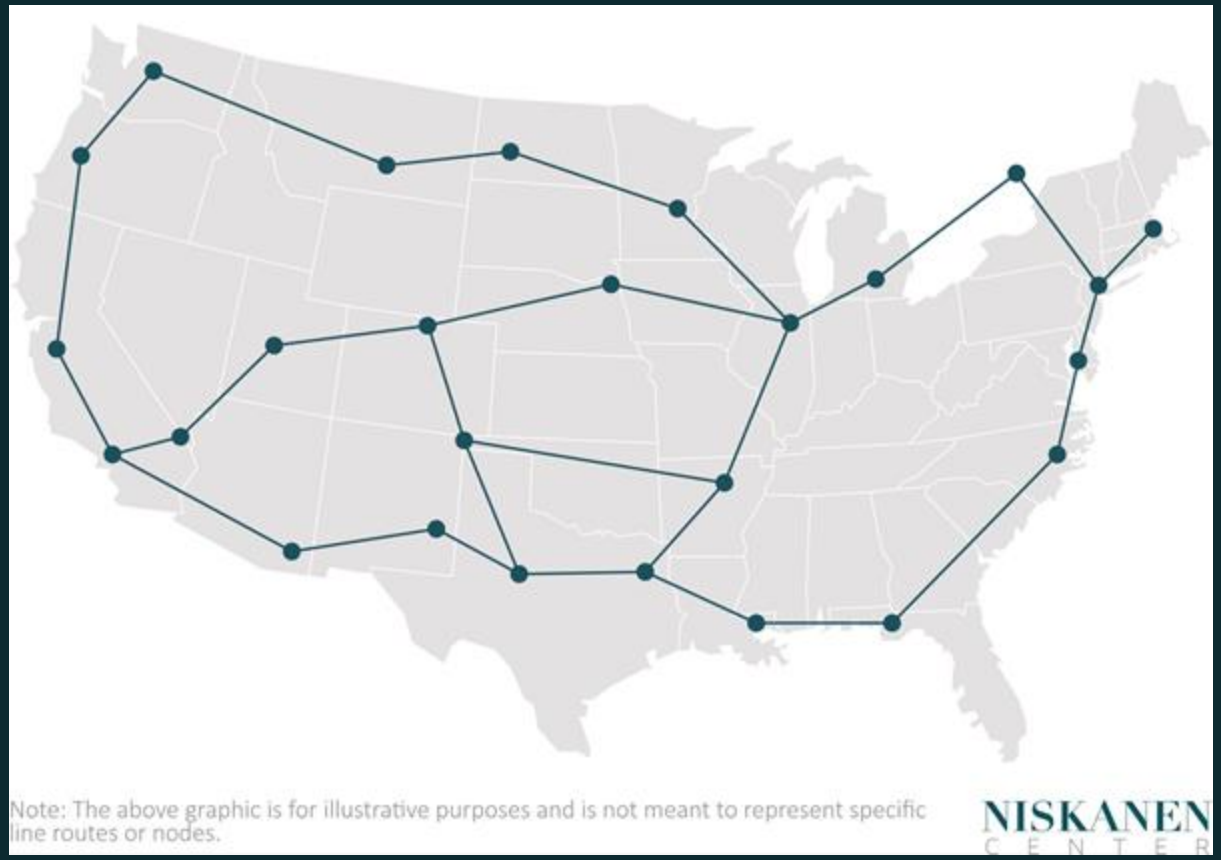


Image: Niskanen Center

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

How can states help get interregional transmission built?

- Governors can:
  - Elevate need for interregional tx or a ‘macrogrid’
  - Work together to plan and permit mutually beneficial tx
- State regulators can:
  - Streamlining permitting and siting process
  - Conduct necessary analyses

Deseret News

GUEST OPINION OPINION

Opinion: Utah is leading the energy charge. Now let’s connect it

Western governors have a chance to lead together by advancing coordinated regional grid planning and pressing for a federal permitting package that cuts through red tape

Link to op-ed by Rachel Levine & Josh Smith

Thank you!

Rachel Levine

Senior Transmission Policy Analyst

rlevine@niskanencenter.org

LinkedIn

WestTEC
POWERED BY WPP

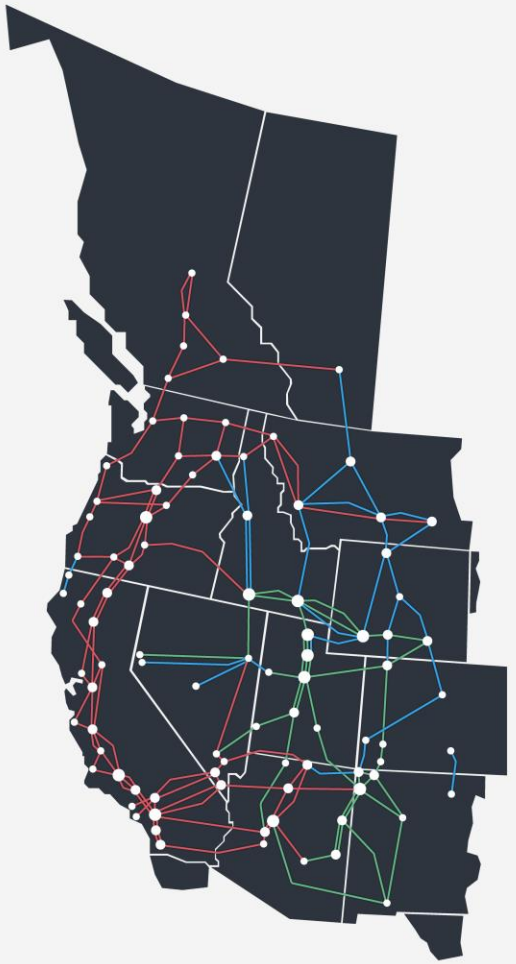
Western Transmission Expansion Coalition "WestTEC"

March 24th, 2026

NASEO: Engagement in Interregional Transmission Planning

Western Transmission Expansion Coalition – "WestTEC"

- *West-wide 10 and 20-year transmission study*
- *Voluntary, industry-led with unprecedented regional partner inclusion*
- *Goal is to produce an actionable transmission study that results in transmission build*

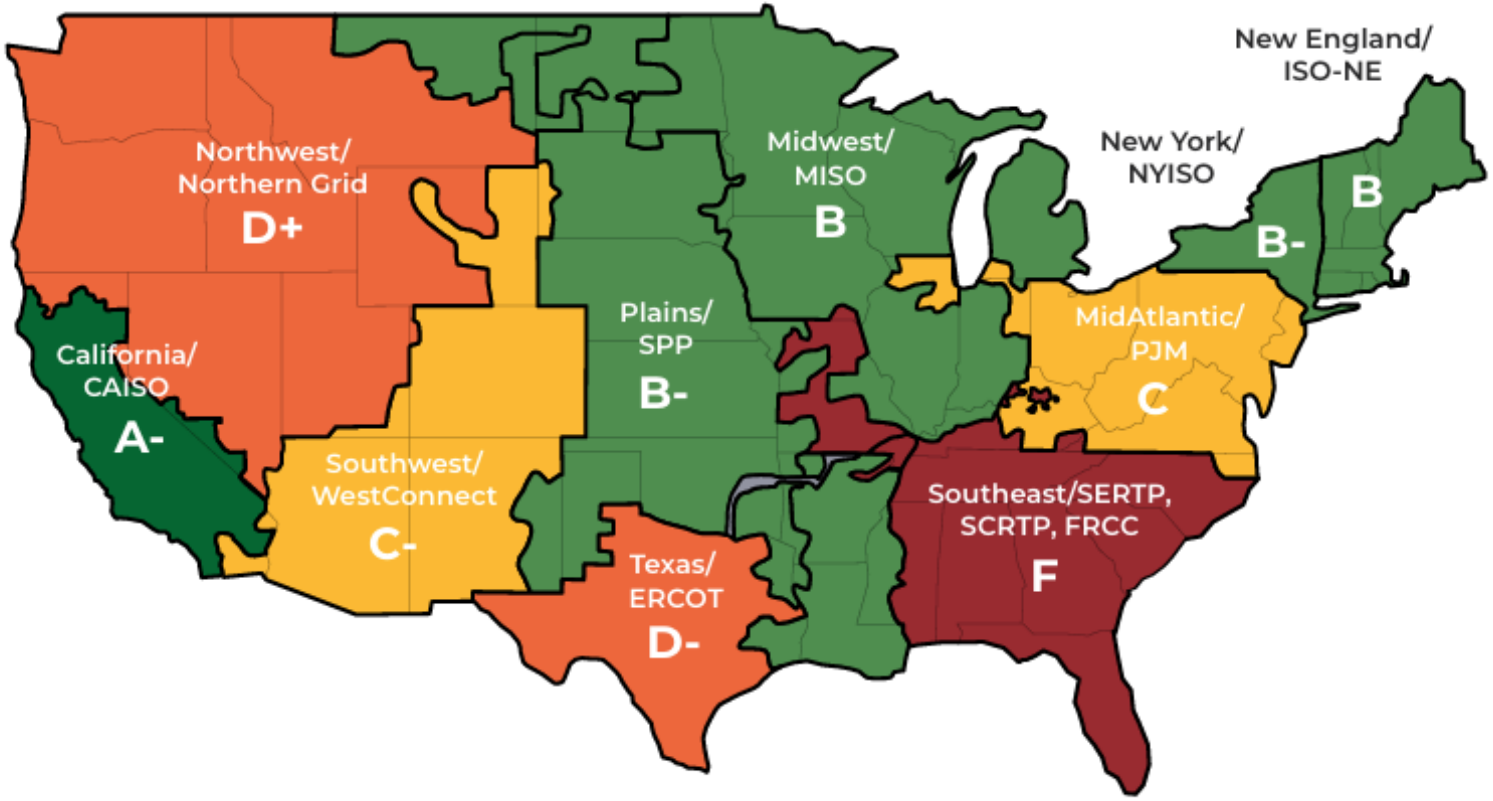


WestTEC
POWERED BY WPP

"...[I]n the West, the Northwest and Southwest along with California are participating in ...WestTEC, a voluntary, west-wide transmission planning process that has broad stakeholder participation and is currently one of the best interregional transmission planning practices in the country."

2025 Transmission Planning & Development Report Card

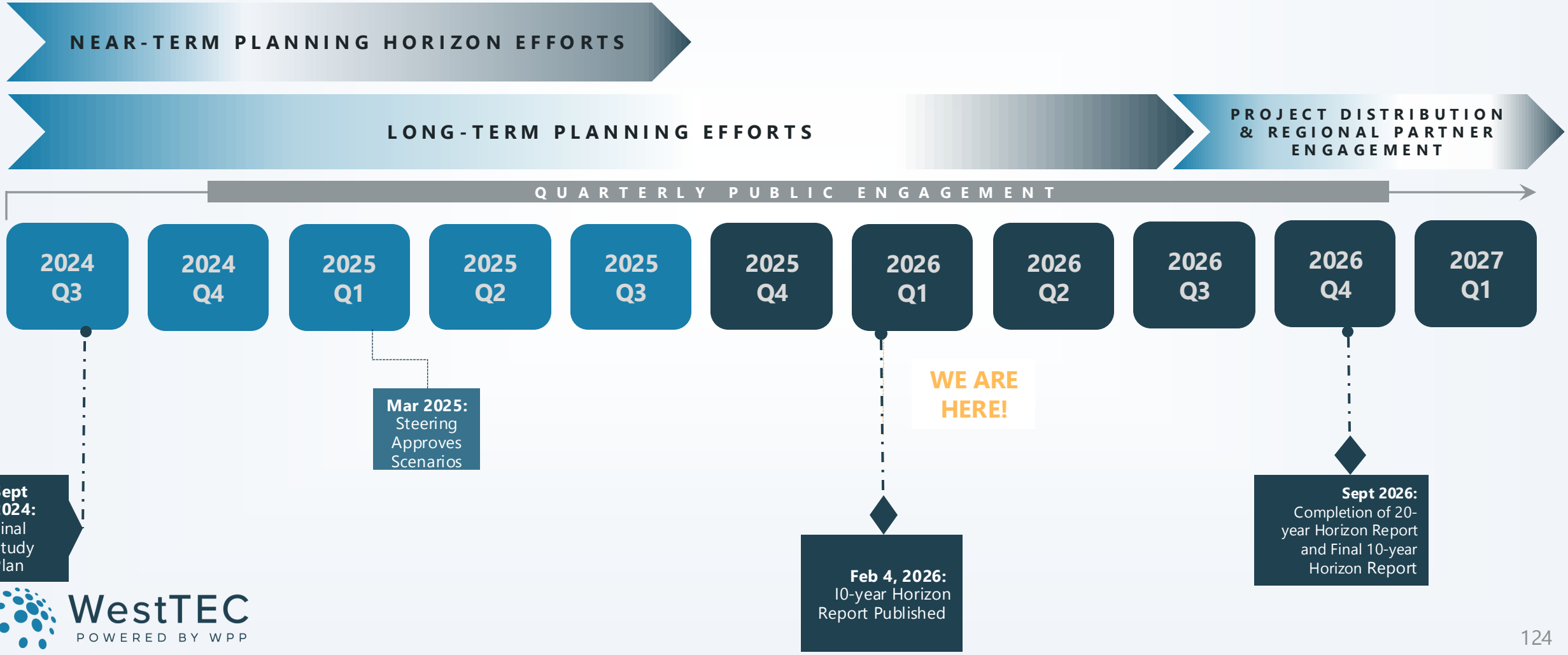
FIGURE ES-1 Summary of overall grades by region



Source: Americans for a Clean Energy Grid, 2025 Transmission Planning and Development Report Card, February 2026

WestTEC
POWERED BY WPP

WestTEC Project Timeline & Future



WestTEC
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WestTEC Regional Partners – Over 70+

- Western Interstate Energy Board
- GridWorks
- Western Electricity Coordinating Council
- Connected Grid Initiative
- Wyoming Office of Consumer Advocate
- Public Advocates Office at the California Public Utilities Commission
- Bonneville Power Administration
- Grid United
- Clean Energy Buyers Association
- Amazon Energy
- PacifiCorp
- Puget Sound Energy
- Portland General Electric
- Renewable Northwest
- Snohomish PUD
- Tucson EPC
- Grant County PUD
- *Western Power Pool*
- *GDS Consulting*
- Washington Department of Commerce
- Interwest Energy Alliance
- Invenergy
- Idaho Power Company
- NorthWestern Energy
- NV Energy
- Salt River Project
- Arizona Public Service
- Public Service Company of New Mexico
- Western Area Power Administration
- WestConnect
- NRDC
- Northwest & Intermountain Power Producers Coalition
- Public Power Council
- Colorado River Energy Distributors Association
- LS Power
- Tacoma Power
- New Mexico RETA
- Northwest Requirements Utilities
- PNGC
- Western Resource Advocates
- Clean Energy Transition Institute
- NW Energy Coalition
- From the Light Consulting
- Navajo Transitional Energy Company
- Warm Springs Power & Water Enterprises
- Avangrid Renewables
- EDF Renewables
- Aypa Power
- Grid Strategies
- PG&E
- Southern California Edison
- Seattle City Light
- Black Hills Energy
- LADWP
- GridLab
- The Public Generating Pool
- California ISO
- Southwest Power Pool
- Avista
- Xcel Energy
- Powerex
- BC Hydro
- GridLiance
- Pacific Northwest Utilities Conference Committee
- Pattern Energy
- Cascade Renewable Transmission
- Chelan County PUD
- Pacific Northwest National Laboratory
- Northwest Power and Conservation Council
- Whatcom County PUD
- Savion
- *E3*
- *Energy Strategies*

10-year Horizon: Study Purpose and Transmission Drivers

- **Why we are doing this?**
  - Need for a credible, holistic, and integrated evaluation of Western transmission needs
  - Focus on identifying critical interregional transmission gaps and actionable projects
  - Prepare starting point for 20-year horizon with tailored models and methods

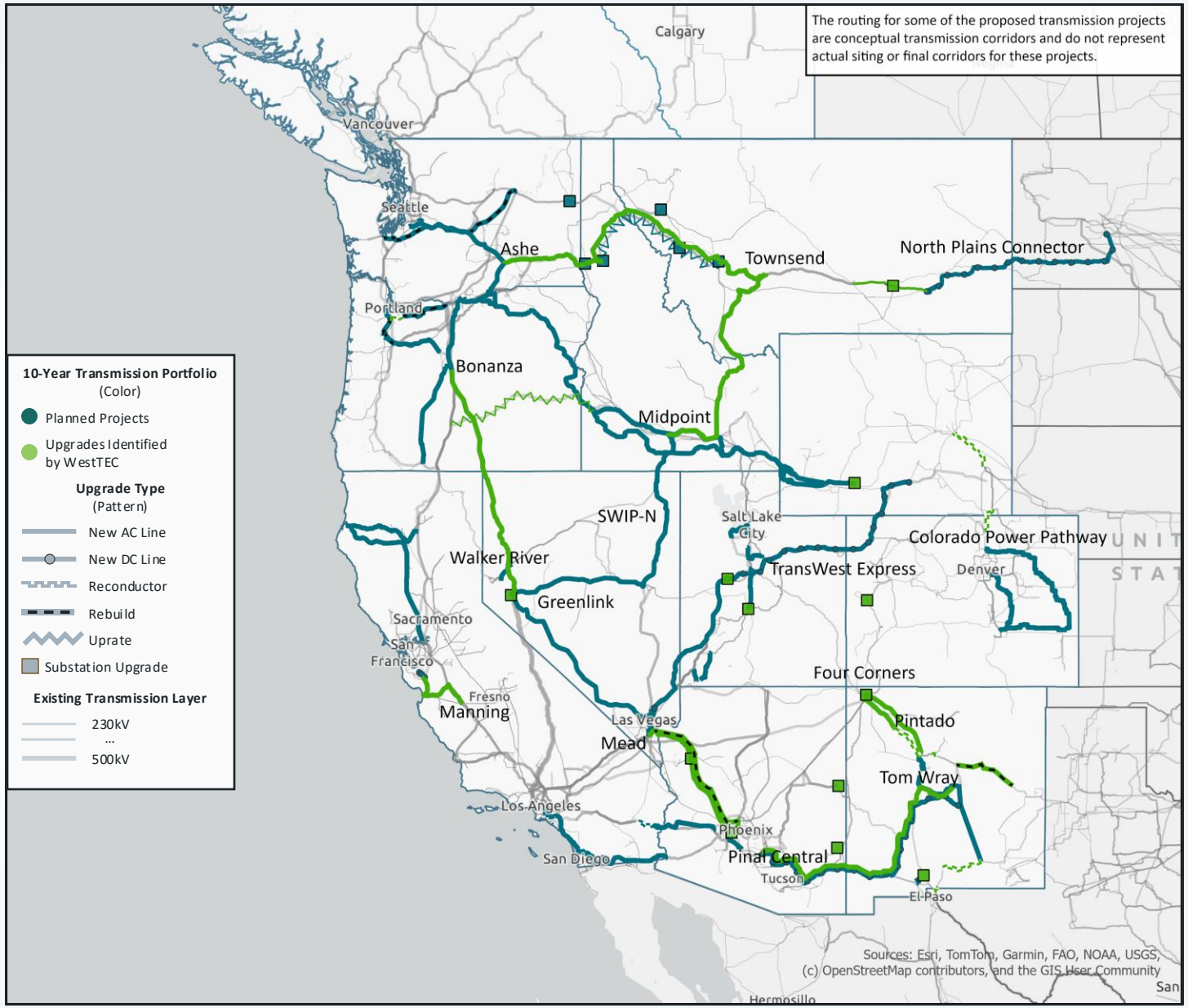
- **Drivers of transmission challenges we see over the approaching 10-years:**
  - **Unprecedented load growth.** West-wide peak demand increase of approximately 30% (3x of prior decade).
  - **Resource additions.** Forecasted at 20 GW per year, doubling historical rate.
  - **High interregional power transfers** during critical peaks, cold snaps, etc.

Metric	2024	WestTEC 2035 Reference Case	Change (%)
Coincident Peak Demand (GW)	168	219	**+30% (2.4% per year)**
Annual Energy (TWh)	926	1,246	**+35% (2.7% per year)**
Generation Capacity (GW)	322	551	**+71% (5.0% per year)**
Transmission 230kV+ (Miles)	~98,000	~111,400	**+14% (1.2% per year)**

🚨 **Transmission is not keeping pace**

10-Year Horizon Portfolio:

All Upgrades Needed by 2035



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10-year Horizon Portfolio Summaries and Cost Estimates

- The 10-Year Horizon portfolio includes over 12,600 miles of regionally-significant upgrades or additions with a total cost of ~$60 billion
- About two-thirds of these line miles meet the criteria of planned projects according to the WestTEC study plan
  - Nearly 20% of these are under-construction or are nearing construction
- The remaining one-third of line miles represent upgrades identified as part of WestTEC transmission solutioning efforts

Transmission Project Category		Project Count	Total Line Miles	Total Estimated Cost ($M)
Planned upgrades in Portfolio		73	9,358	$46,648
Upgrades identified by WestTEC in Portfolio	Reliability-driven	21	1,156	$6,050
	Deliverability-driven	8	1,742	$7,239
	Economic-driven	3	394	$391
10-Year Horizon Portfolio Total		**105**	**12,650**	**$60,328**

WestTEC
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Next Up! WestTEC 20-Year Scenarios

	Reference	Flux	Core
Narrative	**A baseline scenario reflecting reasonably anticipated trends in load growth, technology, and policy**	**A high-growth scenario reflecting rapid changes in power demand and technology innovation**	**A moderate-growth scenario with select technology breakthroughs**
Load Growth (2025-2045)	2.2% per year (56% increase)	3% per year (80% increase)	2% per year (48% increase)
Technology Costs	Moderate innovation trajectory	Advanced innovation trajectory	Conservative innovation trajectory* (No Tax Credits) *Breakthroughs in Storage, Advanced Geothermal, Nuclear SMRs, and CCS
GHG Policies	Statutory	Statutory & voluntary	Statutory with 5-year compliance delay

Discussion/Q&A

Admin-WTEC@westernpowerpool.org

GRID UNITED

NASEO State Transmission Summit

Engagement in Interregional Transmission Planning

March 24, 2006

Grid United Mission & Projects

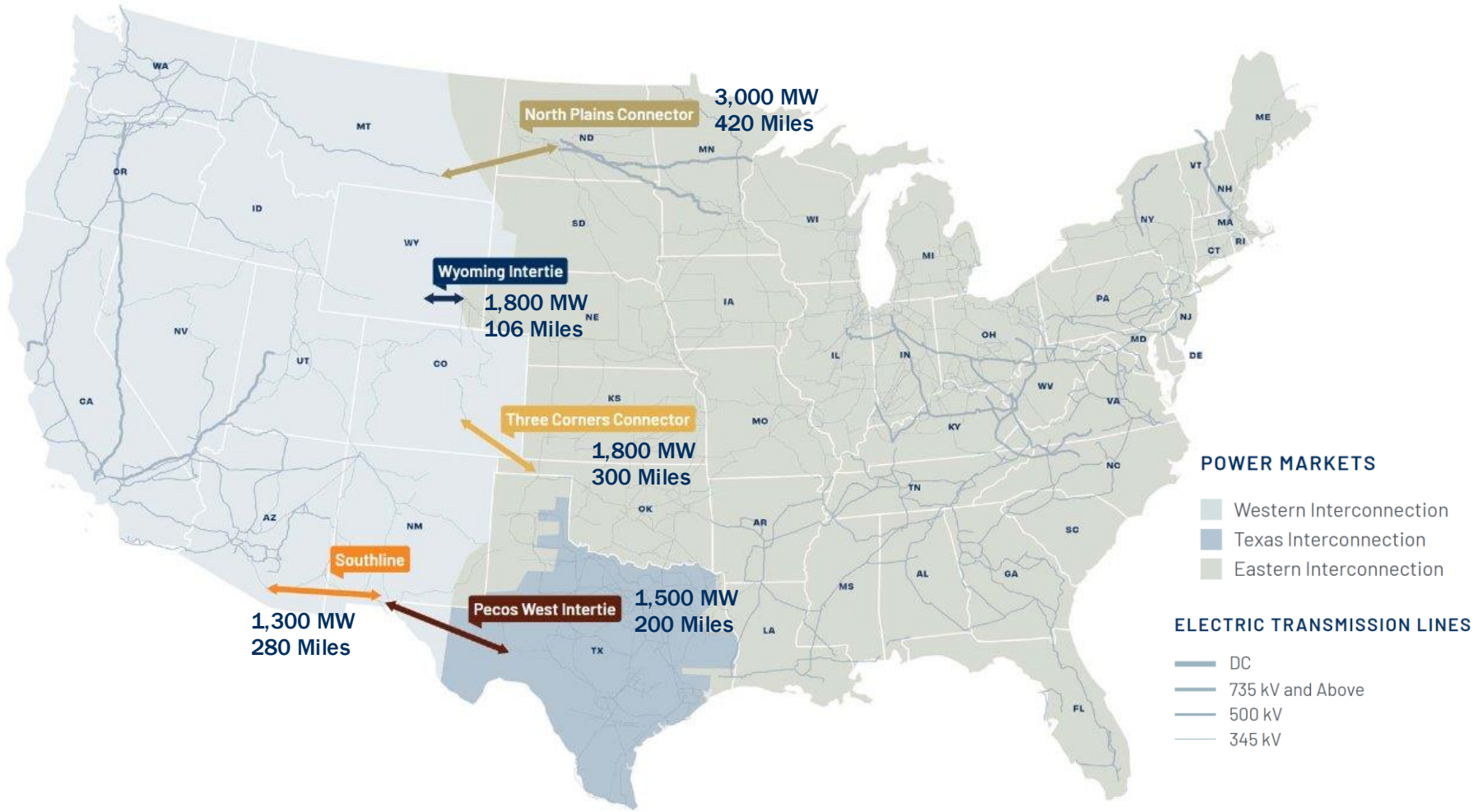
NORTH PLAINS CONNECTOR

GRID UNITED

Mission: To develop America's next-generation energy infrastructure to power our future

Our Projects:

- Connect key areas of the electric grid
- Create a more reliable and efficient electric system
- Utilize the nation's abundant resources
- Benefit all consumers



Grid United's Project Development Strategy

NORTH PLAINS CONNECTOR

GRID UNITED

Big-vision projects

- High value, will not be built otherwise and which few other developers are equipped to take on
- Large grid-to-grid ties — the key constraint in the movement of energy across the country
- Address critical gaps in energy transport and ensure energy reliability

Stakeholder first approach

- Strong and lasting relationships with stakeholders
  - Early, direct, and frequent communication with landowners
  - Voluntary easements
  - Flexible routing process
- Collaboratively development - work closely with impacted communities

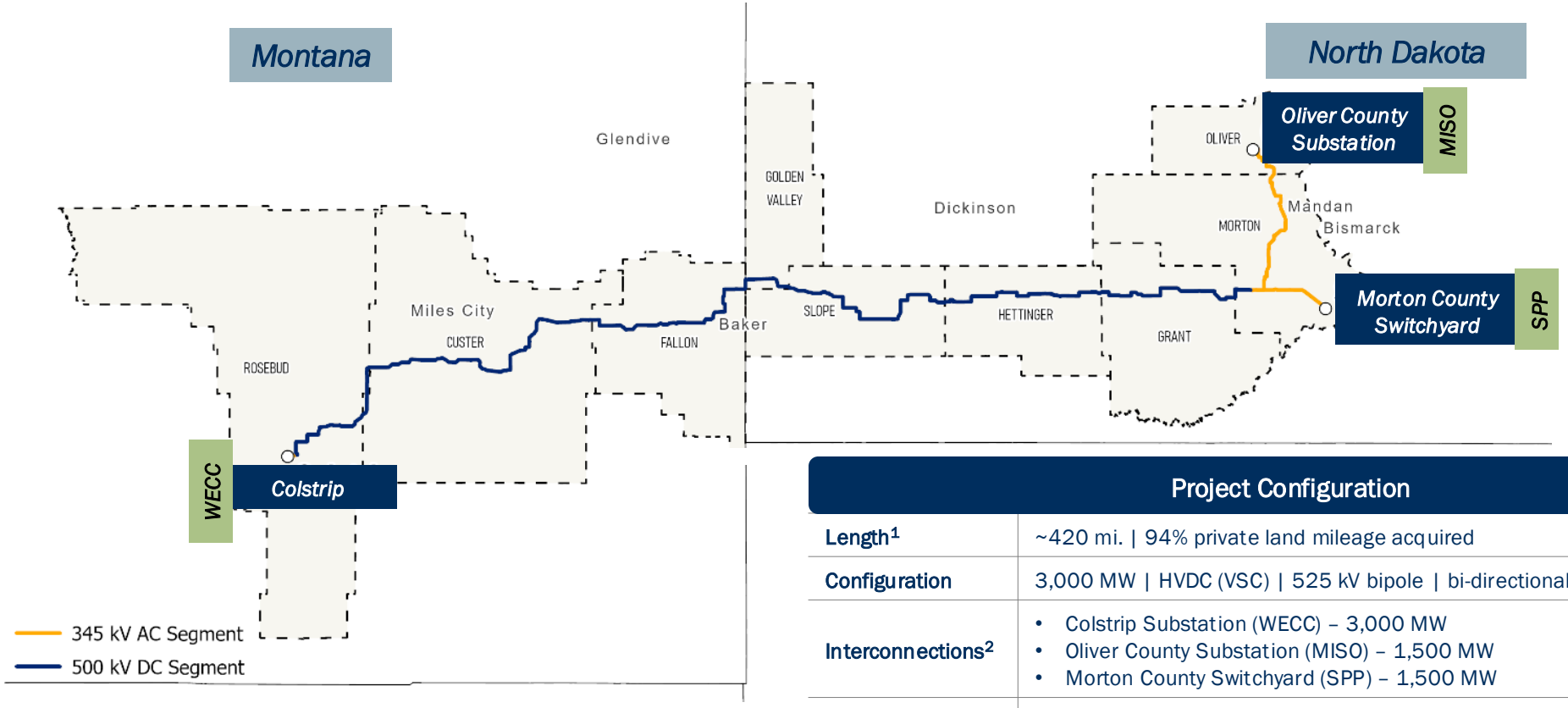
Utility partnerships

- Utility collaborations natural fit
- Siting and permitting focus, innovative technical approaches, invest early at-risk capital
- Provide high value, strategic, de-risked projects
- Maximize benefits to American energy consumers

North Plains Connector – Project Overview

NORTH PLAINS CONNECTOR

GRID UNITED



Project Configuration	
Length[1]	~420 mi. | 94% private land mileage acquired
Configuration	3,000 MW | HVDC (VSC) | 525 kV bipole | bi-directional
Interconnections[2]	• Colstrip Substation (WECC) – 3,000 MW • Oliver County Substation (MISO) – 1,500 MW • Morton County Switchyard (SPP) – 1,500 MW
Timeline	Construction start: 2028 (expected), COD: 2032 (expected)
CAPEX	~$6 billion investment in Montana & North Dakota
Jobs	~ 800 peak construction workforce
Domestic Content	• Steel: 180 million lbs. (more than in the Golden Gate Bridge) • Concrete: 200,000 cubic yards (25,000 concrete truck loads) • Conductor: 25 million linear feet (twice distance between DC and LA)

[1] Project route is under active development and is subject to change.

Community Investment Program

NPC partnered with the MT Community Foundation for the Community Investment Program (CIP)

Since 2023, approx. $3.8 million in grants to nearly 100 organizations/projects across Southeast Montana

Program Details:

- Applications received through online portal
- Applications reviewed by a Community Advisory Committee comprised of residents in each county
- 2 grant cycles per year

Montana Community Foundation

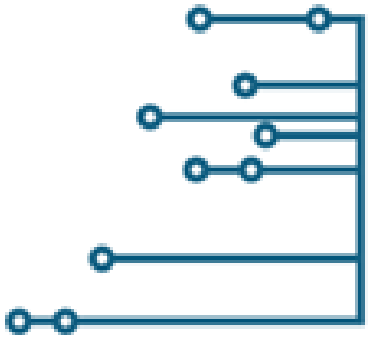
GRID UNITED

gridunited.com

linkedin.com/company/grid-united

info@gridunited.com

Northeast States Collaborative on Interregional Transmission



NASEO's State Transmission Summit

State Leadership in Interregional Transmission

March 24, 2026

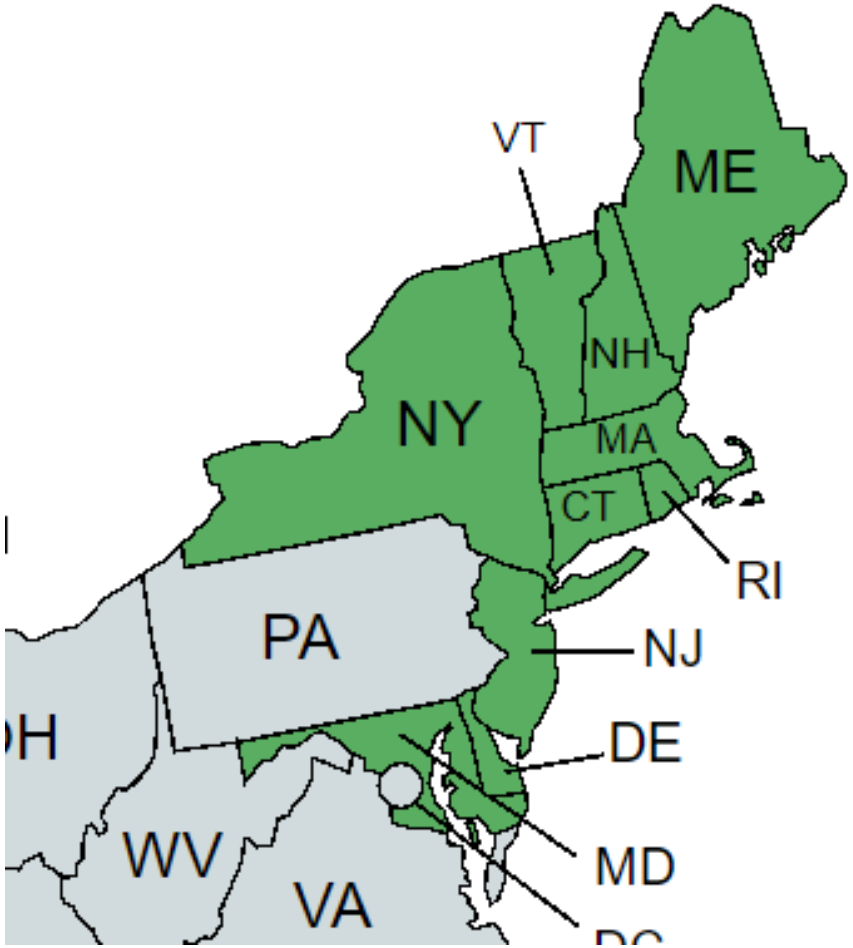
Abraham Silverman * abe.silverman@jhu.edu

https://energyinstitute.jhu.edu/northeast-states-collaborative-on-interregional-transmission/

JOHNS HOPKINS
RALPH O'CONNOR SUSTAINABLE ENERGY INSTITUTE

Energy at Hopkins

Northeast States Collaborative on Interregional Transmission



Maryland Energy Administration

VERMONT
DEPARTMENT OF PUBLIC SERVICE

NEW YORK STATE | Department of Public Service

July 9, 2024

Memorandum of Understanding

Northeast States Collaborative on Interregional Transmission ("Collaborative")

This Memorandum of Understanding (this "MOU"), effective as of the date upon which it has been executed by all the parties, establishes a non-binding framework to coordinate enhanced

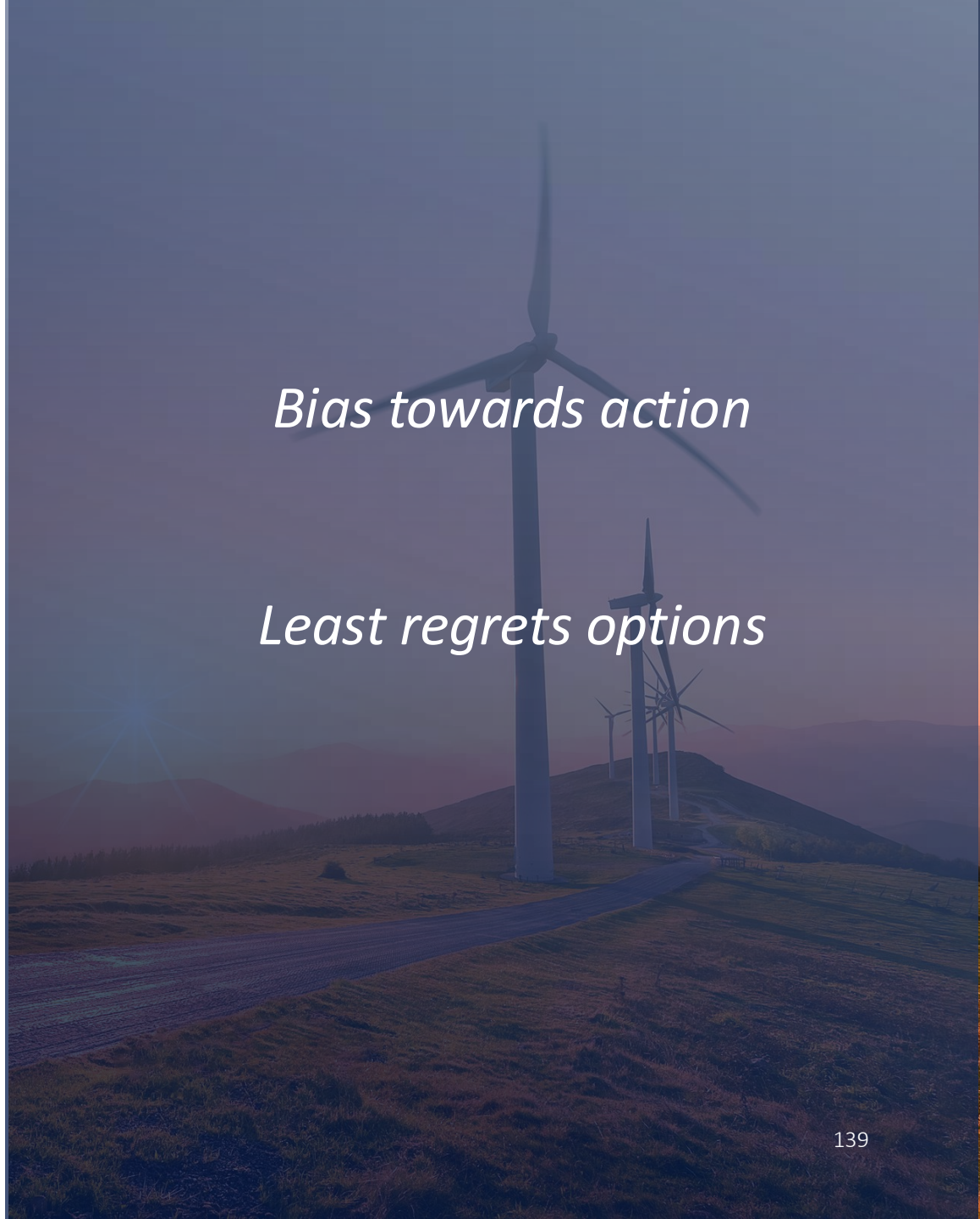
Goals of the Northeast State Collaborative on Interregional Transmission

1. Identify specific barriers to the development of interregional transmission and decide who needs to do what, when.

2. Identify potential multi-state or interregional projects that may be suitable for study & procurement, building off existing State & DOE analyses.

3. Coordinate on technical standards for high-voltage direct current (HVDC) offshore wind transmission equipment.

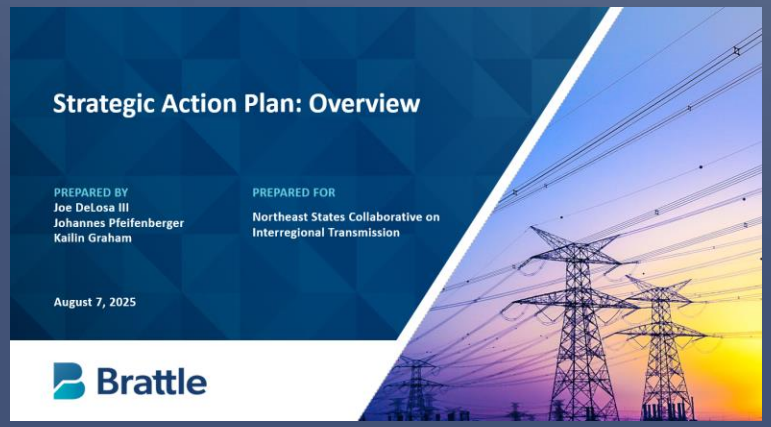
4. Establish an HVDC supply chain strategy for the United States.



Interregional Candidate Project Identification

In light of the lack of ISO-led processes for identifying beneficial interregional transmission, the Collaborative should **develop and issue a Request for Information** on project designs that could meet low-regrets needs.

Scope of the Request focused on “low-hanging fruit” opportunities to identify the most cost-effective projects with near-term benefits and feasible implementation plans, including grid enhancing technologies.



The Request for Information seeks to fill a gap in today’s transmission planning processes by identifying potential interregional transmission opportunities, or “Candidate Projects” that improve grid reliability, support economic growth, and reduce costs for consumers.

States’ Cover Letter to the RFI

June 23, 2025

Maine Governor’s Energy Office

Maryland Energy Administration

VERMONT DEPARTMENT OF PUBLIC SERVICE

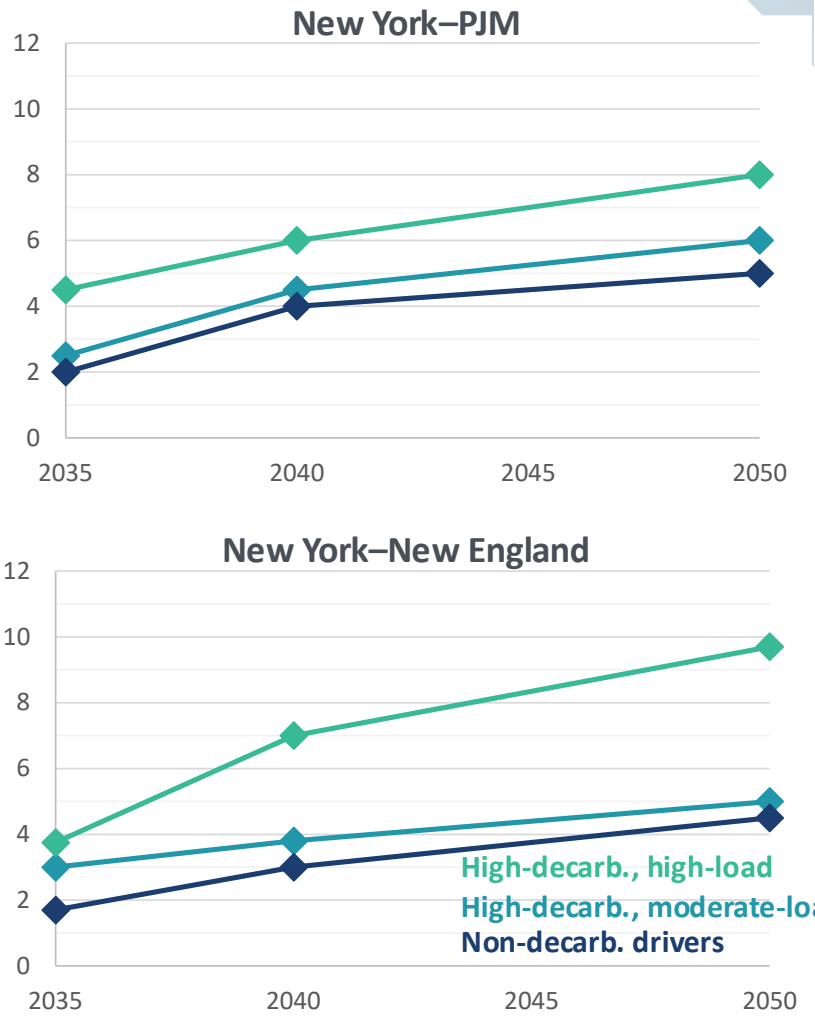
NYSERDA | Department of Public Service

Current Gaps in Interregional Transmission Initiatives

Interregional transmission between NY, NE, and PJM is highly valuable in the near- and long-term, and low-regrets expansion opportunities should be pursued

- Cost-effective expansions between these regions are identified in numerous studies by DOE, NERC, national labs, MIT, states, and industry
- Based on these studies, we identify a **2035 low-regrets** need of **2 GW between NY and PJM** and **1.7 GW between New York and New England**
  - While uncertain, studies expect the magnitude of low-regrets expansions to increase, even without decarbonization drivers
- **Studies also highlighted the long-term need for expansion between the Northeast and Canada**
  - **By 2050: 10 GW between Canada and Northeast is low-regrets**

Estimated Range of *Low-Regrets* Transmission Expansion Needs (GW)



POINTS Consortium

Planning Offshore Interregional Network Transmission Standardization (POINTS)

Principal investigators:
Johns Hopkins University and DNV

Transmission and Generation Developers:
EDF RE, Grid United, Invenergy, Ocean Winds Orsted, PPL Translink and Wind Grid, PSEG Renewables, RWE, Total Energies

Technical Partners
Coalition of Green Capital, Dartmouth College, E3, EPRI, GE, Glatz Consulting, Stantec, Yale University

Policy and Outreach Partners
ACORE, ACP, ARROW, Blue Green Alliance, Climate Jobs National Resource Center, Environmental League of Massachusetts, Groundwire Group, MAREC, Massachusetts Clean Energy Group, New England Committee on Electricity, Nova Scotia Power, Oceantic

Additional Entities:
Atlantic Shores Wind, Avangrid, Elevate Energy, Equinor, PSEG

GE Vernova
Hitachi Energy
Siemens Energy

NLR

Aker

The Brattle Group
Power Advisory
Stantec

EPRI

ConEdison
Eversource
National Grid
Ventures

DNV

Day 1: Wrap-Up

Day 2: Wednesday, March 25, 2026

9:00 – 10:00 a.m.	**Innovative Approaches to Siting and Permitting**
10:00 – 10:15 a.m.	**Overview of Federal Financing Opportunities for Transmission**
10:15 – 11:15 a.m.	**Interactive Deep Dives**
11:15 – 11:30 a.m.	**Break**
11:30 – 12:30 p.m.	**Interactive Deep Dives**

Concurrent Breakout Sessions: Interactive Deep Dives

10:15 – 11:15 a.m.

Breakout 1: The Role of Independent Transmission Monitors

This session will explore longstanding concerns that local transmission asset-condition projects often proceed with limited comparative review, while larger, regional and interregional projects often proceed with heightened scrutiny. Discussants will examine emerging state-led approaches to improve transparency, the role of regional entities, and how Congress is engaging on this issue.

Breakout 2: The Role of Transmission for Resource Adequacy

This session will explore the implications of electric transmission for resource adequacy, including approaches to valuation of transmission lines in regional and interregional planning and aligning resource and transmission planning.

Concurrent Breakout Sessions: Interactive Deep Dives

11:30 – 12:30 p.m.

Breakout 1: Transmission Planning Tools

This session will explore several tools that have been developed to assist in planning for transmission. Experts will be providing an overview of two distinct analytical tools: the U.S. Transmission System Utilization Study and the Reconductoring Economic and Financial Analysis Tool.

Breakout 2: The Role of State Transmission Authorities

State transmission authorities are emerging as key players in advancing critical grid infrastructure. This session will explore how these entities are structured, the goals they are designed to achieve, and the unique role they play in accelerating transmission development. Speakers will share insights on progress to date, highlight lessons learned, and discuss how state-led approaches are shaping the future of energy planning and deployment.

Day 1: Wednesday, March 25, 2026

12:30 – 1:30 p.m.	**Networking Lunch**
1:30 – 1:45 p.m.	**NASEO Grid Optimization Task Force Introduction**
1:45 – 2:45 p.m.	**Grid Optimization: The Path to Policy**
2:45 – 3:00 p.m.	**Break**
3:00 – 4:00 p.m.	**Grid Optimization: The Path to Implementation**
4:00 – 4:45 p.m.	**Grid Optimization: The Path to Implementation**

Reception Sponsored by CTC Global

22nd Floor of the NASEO Office Building located at 1812 North Moore Street