

Interregional Transmission Planning in the Can-Am Northeast

A distinct and demanding field of public policy left largely unaddressed

Council for Clean and Reliable Energy

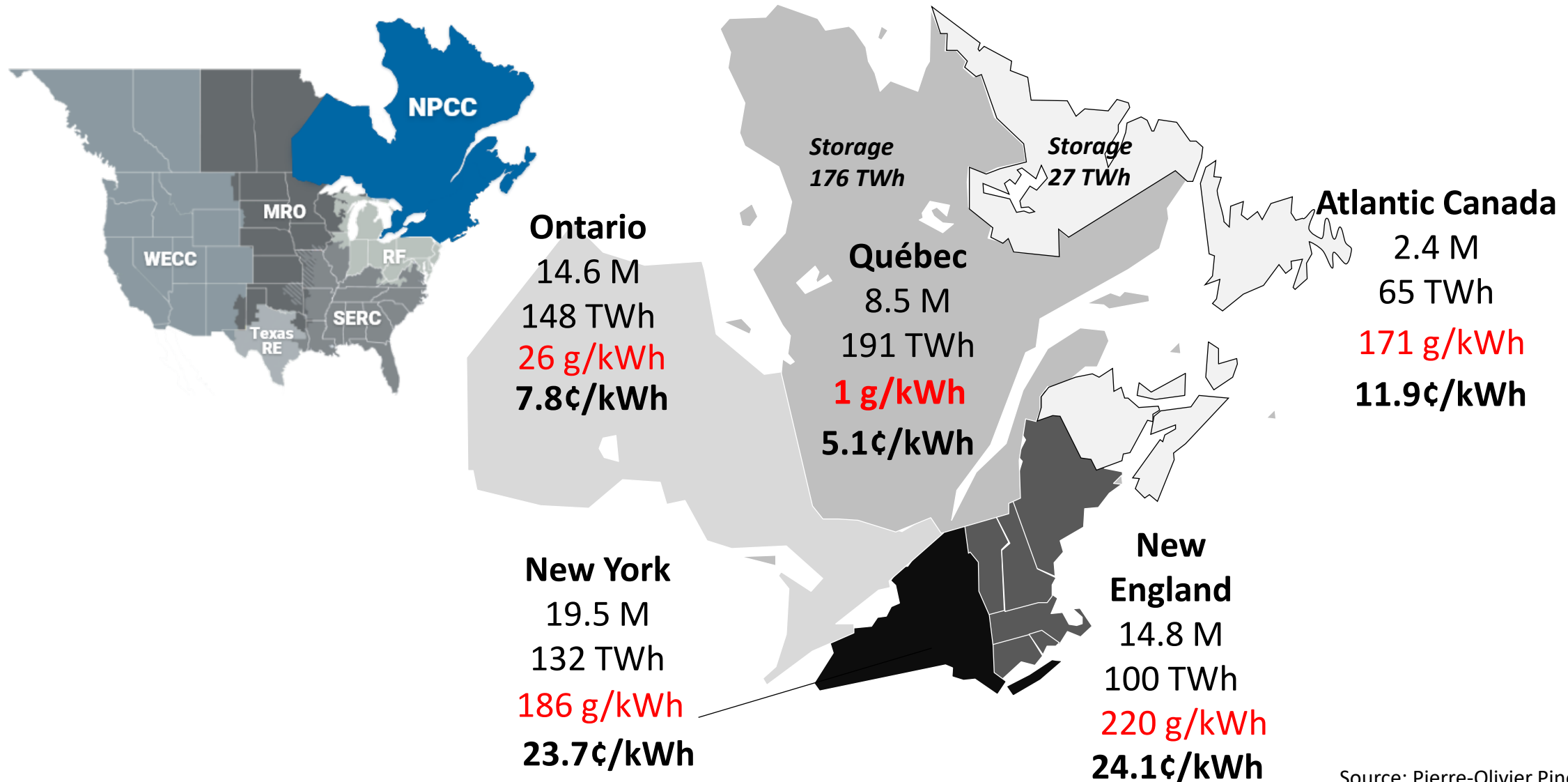
October 26, 2023



**NORTHEAST GRID
PLANNING FORUM**

Economic and Carbon Arbitrage:

NPCC 2020: Population, Generation, carbon intensity and average residential rates (USD)



2022 Long-Term Reliability Assessment

The LTRA identifies reliability trends, emerging issues, and potential risks to the bulk power system over a 10-year horizon.

NERC
NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

High Risk

Anticipated reserves fall below Reference Margin Levels, and energy risks exist in normal peak demand conditions during one or more years:

California-Mexico

The addition of new resources and retention of key generators is alleviating near-term capacity shortages, but energy risks persist. Variable resource output and changing demand could cause energy shortfalls that range from 1–10 hours.

MISO

A projected shortfall of 1,300 MW occurs next summer and continues to grow throughout the 10-year assessment period as coal, nuclear, and natural gas generation retire faster than replacement resources are connecting.

Ontario

A reserve margin shortfall of 1,700 MW begins in 2025 and continues to grow throughout the 10-year assessment period due to generation retirements and lengthy planned nuclear maintenance outages.

Elevated Risk

Reserves meet resource adequacy criteria, but the risk of energy shortfalls exists in severe hot or cold weather (90/10 extreme event):

U.S. Northwest and Southwest

The risk of energy shortfalls from wide-area, long-duration heat events are expected to increase. Coal and natural gas generation retirements and lower amounts of hydro availability threaten reliability over the next 10 years. With high reliance on energy transfers, wide-area severe weather poses an increased risk to electricity supplies and transmission network impacts.

Texas

While steps have been taken since Winter Storm Uri, reliability continues to be threatened in severe winter weather conditions by generator outages, the potential for natural gas supply disruptions, and abnormally high electricity demand during cold weather.

New England

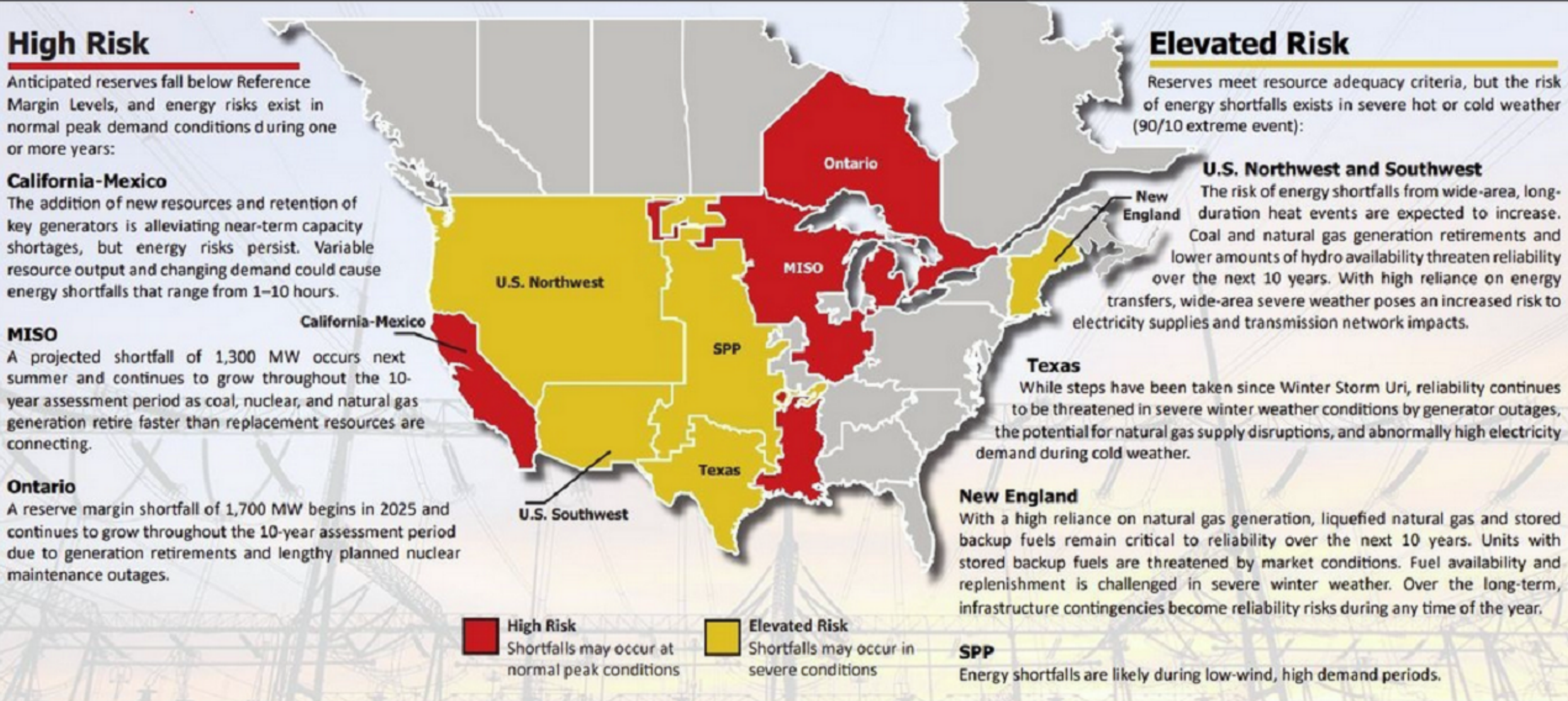
With a high reliance on natural gas generation, liquefied natural gas and stored backup fuels remain critical to reliability over the next 10 years. Units with stored backup fuels are threatened by market conditions. Fuel availability and replenishment is challenged in severe winter weather. Over the long-term, infrastructure contingencies become reliability risks during any time of the year.

SPP

Energy shortfalls are likely during low-wind, high demand periods.

High Risk
Shortfalls may occur at normal peak conditions

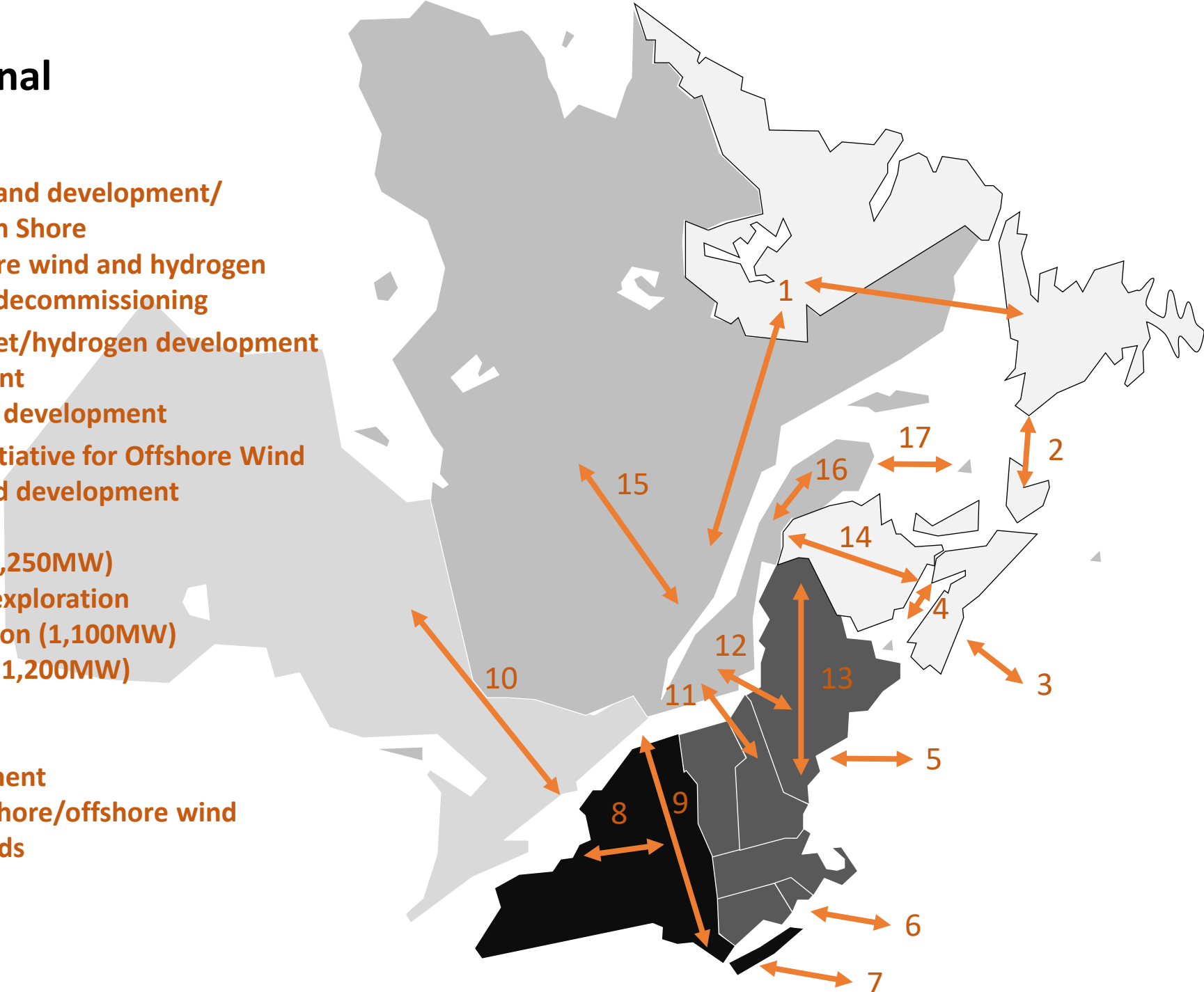
Elevated Risk
Shortfalls may occur in severe conditions



Source: Midwest Reliability Organization: <https://www.mro.net/2022-long-term-reliability-assessment-highlights-reliability-challenges-for-the-next-ten-years/>

Recent/Emerging Interregional Transmission Issues

- 1) Churchill Falls renegotiation/ Gull Island development/ emerging demand on Québec's North Shore
- 2) Newfoundland Atlantic Loop/Offshore wind and hydrogen development/Coal-fired generation decommissioning
- 3) Nova Scotia 5GW offshore wind target/hydrogen development
- 4) Bay of Fundy tidal power development
- 5) Gulf of Maine floating offshore wind development
- 6) New England States Transmission Initiative for Offshore Wind
- 7) New York/Mid Atlantic offshore wind development
- 8) Clean Path NY (1,300MW)
- 9) Champlain Hudson Power Express (1,250MW)
- 10) OPG new northern hydroelectricity exploration
- 11) Eversource Northern Pass Transmission (1,100MW)
- 12) New England Clean Energy Connect (1,200MW)
- 13) Northern Maine transmission RFP
- 14) Atlantic Loop/Belledune retirement
- 15) New Québec hydroelectric development
- 16) Alliance de l'Est development of onshore/offshore wind
- 17) Cable project for the Magdalen Islands





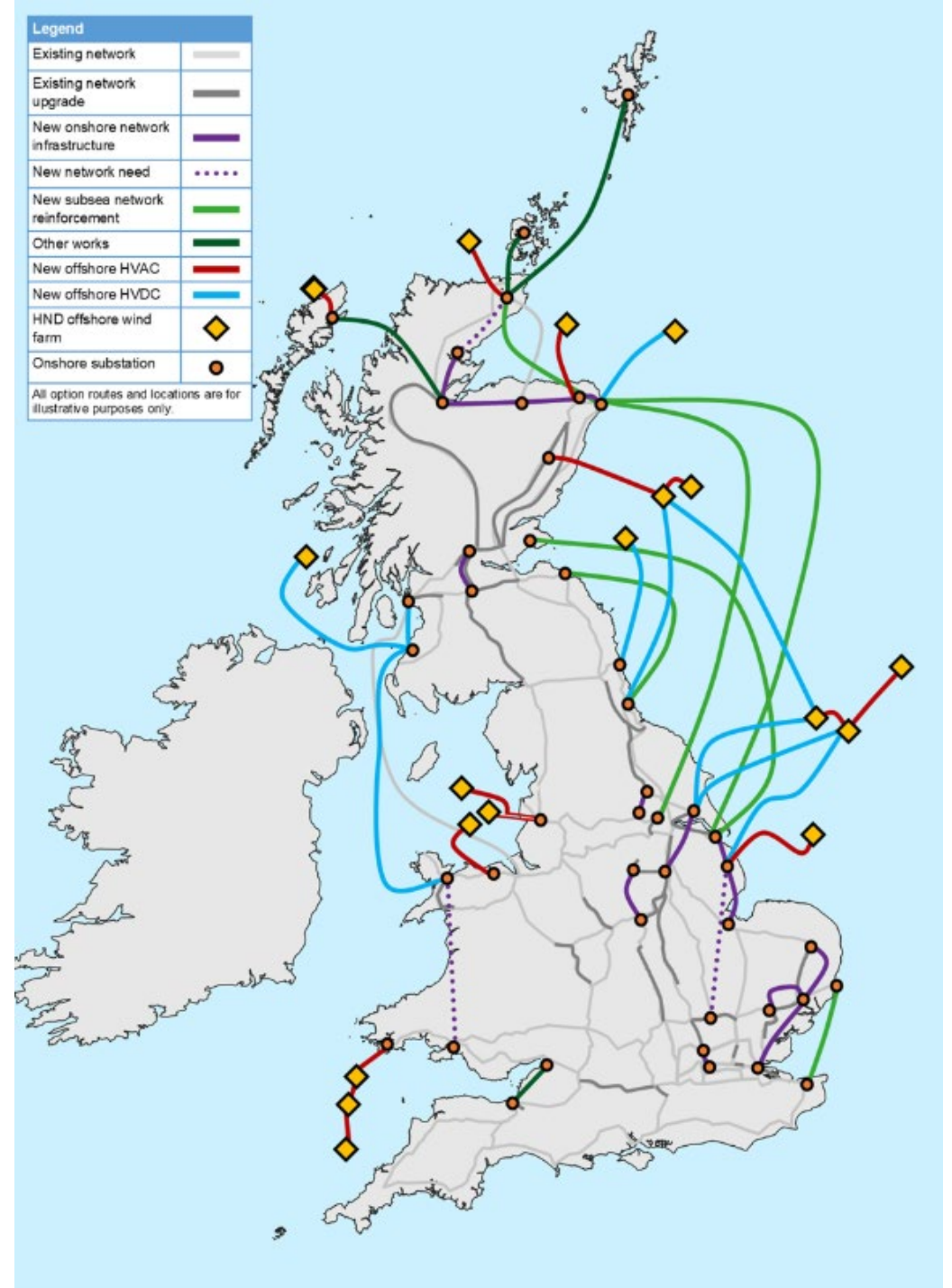
“There’s enough garbage for everybody.”
- Tony Soprano



A Holistic Network Design for Offshore Wind

The Holistic Network Design (HND) is a first of its kind, integrated approach for connecting 23GW of offshore wind to Great Britain:

<https://www.nationalgrideso.com/future-energy/the-pathway-2030-holistic-network-design/hnd>



Australian Energy Market Operator: "Rewiring the Nation"

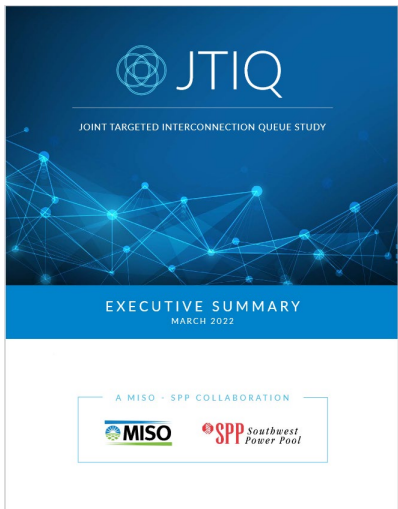
"While solar and wind projects are being planned for locations where these natural resources are abundant, often these sites are on the electrically weak fringes of the existing transmission network. This underlines the need for the alignment of new generating and transmission capacity. ... Building social licence with communities over benefits of creating new transmission and distribution infrastructure is crucial to our mission to design and operate a sustainable energy system for the future."



Sources: https://aemo.com.au/-/media/files/about_aemo/corporate-plan/2021/fy22-aemo-interactive-corporate-plan.pdf?la=en&hash=6853E9D2FDC8025EB37256D59D8452DA / <https://www.energy.gov.au/news-media/news/rewiring-nation-supports-its-first-two-transmission-projects>

MISO-SPP SEAMS Study

- The “projects would deliver \$724.2 million and \$246.7 million of “adjusted production cost” savings to customers in the MISO and SPP footprints,” virtually paying for themselves up front.
- In addition, the projects will enable 28-53GW “of generation interconnection in an area around the SPP-MISO border”, bringing more low-cost renewables to ratepayers affordably and at scale.
- “SPP and MISO expect to file a cost allocation methodology for Federal Energy Regulatory Commission review late this year.”



Sources:

<https://cdn.misoenergy.org/JTIQ%20Report623262.pdf>
<https://www.utilitydive.com/news/spp-miso-identify-seven-cross-seam-transmission-projects-renewable-wind/618152/>





FERC

FERC Issues Transmission NOPR Addressing Planning, Cost Allocation

April 21, 2022



Docket No. [RM21-17](#)

[Item E-1](#) | [Presentation](#)

FERC took steps today to improve regional transmission planning and cost allocation of certain types of transmission with a Notice of Proposed Rulemaking (NOPR). The proposed rule addresses the need for our nation's energy infrastructure to be more resilient and reliable while also achieving cost savings for consumers.

“Transmission facilities provide a broad range of benefits,” FERC Chairman Rich Glick said. “Planning for those facilities with a longer-term forward-looking approach, in addition to fairly allocating their costs, is essential to ensuring we are developing energy infrastructure in a manner that reduces costs and enhances reliability.”

“Today’s proposal is the culmination of months of work by FERC’s dedicated staff and the Commissioners,” Glick added. “While there is a great deal more to do, I believe the Commission is rising to meet a timely and important challenge.”

Documents & Docket Numbers

- [Explainer on the Transmission Notice of Proposed Rulemaking](#)

Contact Information

News media

Telephone: [202-502-8680](tel:202-502-8680)

Toll-free Telephone: [1-866-208-3372](tel:1-866-208-3372)

Email: MediaDL@ferc.gov

Key Finding:

“There exists among the key stakeholders in eastern Canada and the northeastern United States strong support for a broad-based collaborative effort to promote increased electric grid integration and coordination, so as to obtain all the economic and environmental benefits that such integration and coordination is likely to yield.”

Source: <https://www.raponline.org/knowledge-center/collaborative-greater-coordination->

A Collaborative for Greater Coordination and Integration Among the Electric Grids of Eastern Canada and the Northeastern United States

Assessment and Recommendations

5 October 2020

Submitted to
the Assessment Advisory Committee of the
Northeast Electrification and Decarbonization Alliance (NEDA)
by

Regulatory Assistance Project
Richard Cowart
Richard Sedano
Frederick Weston

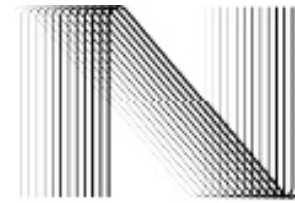
Raab Associates, Ltd.
Dr. Jonathan Raab

The Transition Accelerator
Philippe Abergel
Paul Burke

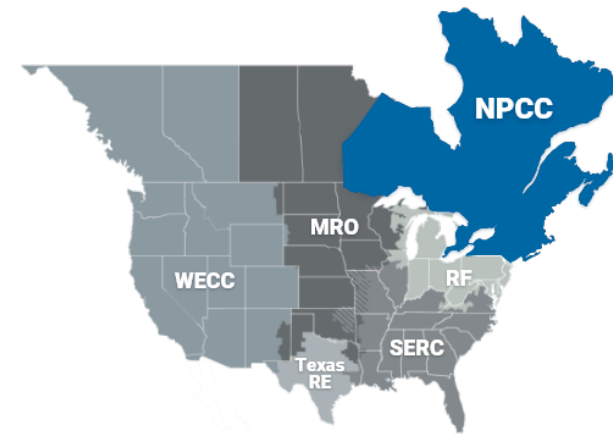


Northeast Grid Planning Forum

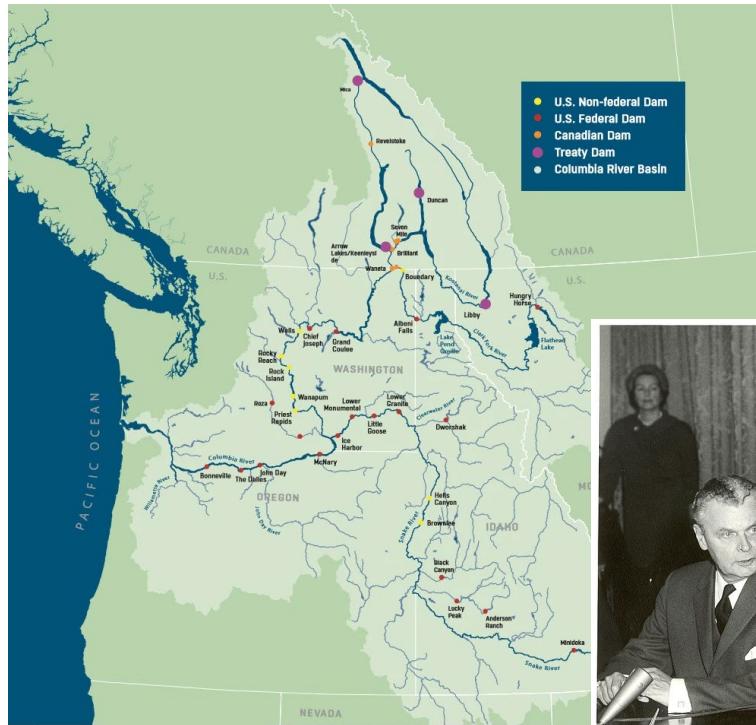
The forum facilitates a durable, deliberative stakeholder process designed to formalize and deepen collaboration among the northeast US states and the provinces of Ontario, Québec and Atlantic Canada around interregional system planning, transmission development and clean energy procurement.



**NORTHEAST GRID
PLANNING FORUM**



Canada and the USA have a history of building things together.



Canada 150: How the St. Lawrence Seaway changed the channel

It took decades of talk before Canada and the United States got to work on the St. Lawrence Seaway, but the result was amazing.

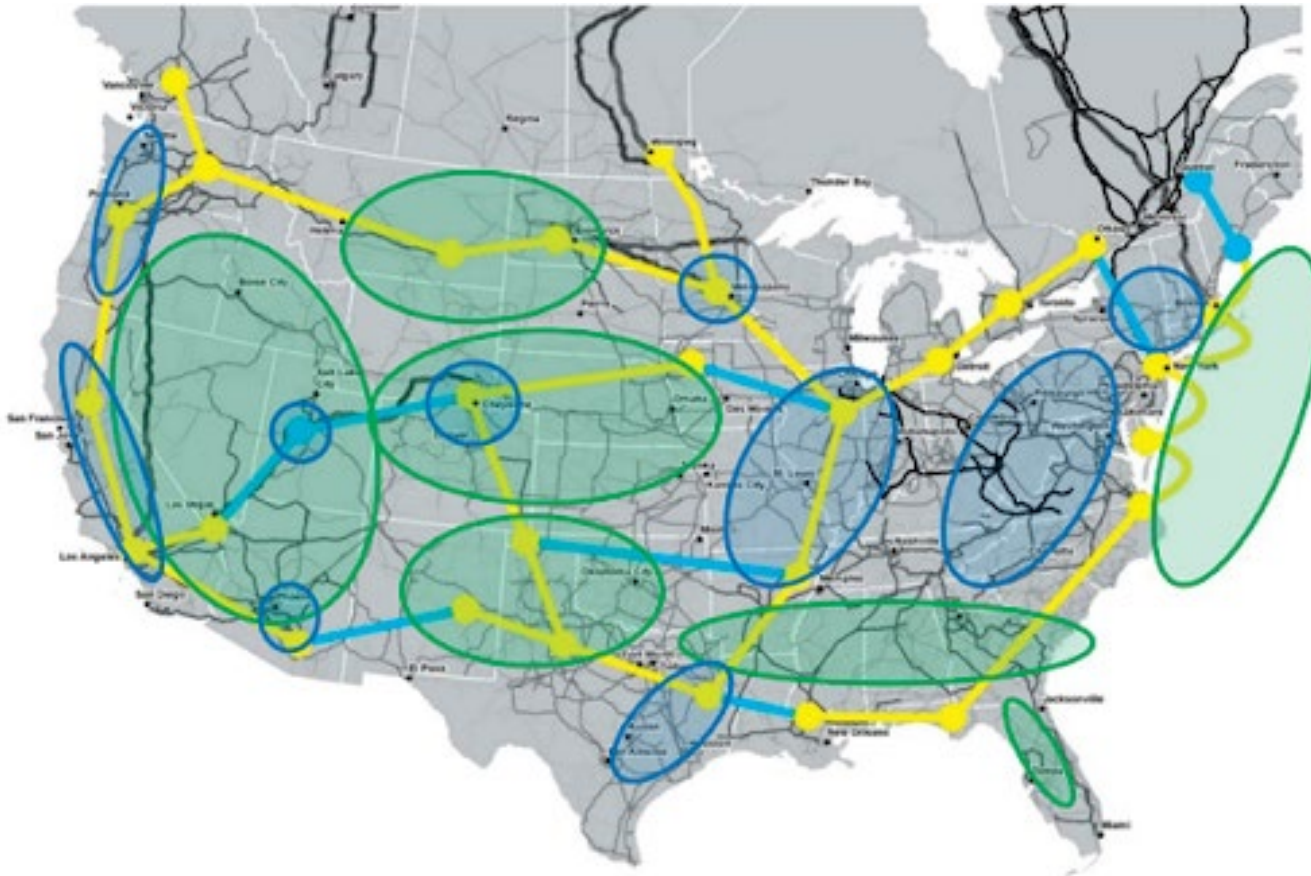


By **Jim Coyle** News

▲ Sat., May 13, 2017 | 6 min. read



Let's hope we do so in the future as well.



Source: <https://www.esig.energy/design-study-requirements-for-a-u-s-macrogrid/>

Design Study Requirements for a U.S. Macrogrid

**A PATH TO ACHIEVING THE NATION'S ENERGY
SYSTEM TRANSFORMATION GOALS**



Energy Systems
Integration Group
February 2022



THANK YOU!



Philip Martin Duguay is an infrastructure developer and public policy analyst with over a decade of experience working across Canada and the United States. Based in Montreal, he is Vice President of Business Development for Grid United. In previous roles, he worked as a 'macrogrid' policy advocate, originated a \$2 billion CAD transmission project in partnership with a Canadian institutional investor and an Indigenous government, and helped to develop energy strategies whilst working for the governments of Québec and the Northwest Territories.

Email: philip.duguay@gridunited.com

LinkedIn: <https://www.linkedin.com/in/philipmartinduguay/>

