

Outcomes Report

Environment Analyst Leadership Network Roundtable: Delivering a resilient energy transition in North America

12 August 2026, online

Executive Summary

This roundtable brought together professionals in the North American energy sector working to embed resilience into their business and projects with environmental and engineering consultancies, to share experiences and best practice.

The discussion covered accelerating grid interconnection and building a more resilient power system, unlocking capacity through energy storage, flexible demand, and low-carbon infrastructure, and leveraging digitalisation, AI, and smart energy systems to improve transmission & distribution planning and modernise the grid.

Some key takeaways from the session are:

- Transmission operators are getting more specific about which projects to let into the grid connection queue.
- Google is funding the development of a virtual power plant which will increase peak power capacity available when its loads spike due to data centres.
- Forward-looking public utilities are working closely with regulated authorities to try and balance rapid demand growth, to protect ratepayers in the long term.
- More sophisticated AI-based technologies are helping utilities make more accurate forecasts by processing large banks of data more quickly.
- Some expect to see more differentiation in insurance rates based on risk profiles factoring in things like climate resilience.

Full report

Data centres and grid connection queues

Regional transmission operators across the US report having queues of studies totalling hundreds of gigawatts for data centre projects, and they have not seen any slowdown in this trend. But they know not all the projects are going to come to fruition.

Further, lead times on seeing studies back from transmission organisations are growing, with some operators noting a doubling in lead time for indicative studies.

Pushback on data centres is influencing policy. In Illinois, the governor suspended tax credits for data centres, and the mayor of Chicago has called for a temporary moratorium on these projects.

Solutions: Transmission operators are getting more specific about which projects to let into the grid connection queue. End users must often now meet higher thresholds and credit requirements, for example. Some transmission organisations are starting to charge for studies – one group member noted a \$12k fee for indicative studies in one region, with \$1m expected for comprehensive studies in other regions and contexts.

Funding grid upgrades for data centres

Some of the concern around data centre projects comes from uncertainty about which party will end up paying for the necessary transmission and distribution grid upgrades.

Some regional transmission operators are undecided as to what data centre developers “paying their fair share” really should look like. If developers do pay for all upgrades, it will cost them billions.

One group member said that renewable energy developers have had to fund the necessary grid infrastructure upgrades for their projects themselves for many years, and therefore this approach, if applied to data centre developers, would not be new.

Solutions: Google is funding the development of a virtual power plant in the east of the US with Voltus, a leading provider of these systems, which will increase peak power capacity available when Google’s loads spike due to data centres or other energy intensive systems. The initiative uses Grid Optimisation by Leveraging Distributed Energy Resources (GOLD).

Matching supply to demand forecasts

The degree of unpredictability of load growth is making it very difficult to plan around. Some states are making large, long-term financial commitments for new energy supply despite this – for instance, Illinois is targeting 2GW of new nuclear power, and New York 5GW.

Similarly to projects seeking to bring new demand to the electricity grid, renewable energy developers looking to add new supply face increases in study timeframes from one year to four years, including preliminary, dynamic and steady state studies. The development phase can be longer than construction timelines.

Solutions: Forward-looking public utilities are working closely with regulated authorities to try and balance rapid demand growth, to protect ratepayers in the long term. One group member noted that such measures, like tariffs for those joining connection queues, are often being implemented later than they ought to have been

Microgrids with an intelligent control system that can tell how much energy is available from supply side systems (solar, batteries), can more effectively match it to demand. This is especially useful for resilience if there is a power outage. Virtual power plants with more diverse energy sources offer more resilience. Research has found that above 90% of customers are willing to participate in performance-based battery storage schemes

Using AI to support a resilient energy transition

Forecasting future energy demand, and matching this with supply, is increasingly uncertain and complex.

Solutions: More sophisticated AI-based technologies are helping utilities make more accurate forecasts by processing large banks of data more quickly.

And engineers designing energy systems are also leaning more on AI to speed up internal systems that feed into the information, documentation and equipment choices that they then feed to utilities. This is especially effective for processes that have more fixed rules. The quality of information fed into AI models must be high. One group member noted Interconnection capacity analysis maps, for example, can often contain errors.

Resilience and insurance

One group member said that where they are based, insurance premiums are increasing when facilities have on-site energy systems like solar photovoltaics, and batteries. This, they said, is the “wrong direction” for this to go and that insurers are not incentivising the right things when it comes to making sites more energy resilient.

Another participant supported this by saying insurance premiums often are tied too strongly to the cost of the assets, rather than how resilient they are.

Solutions: While insurers are often having trouble monetising resilience and sustainability in the short term, one member said they expect to see more differentiation in insurance rates based on risk profiles factoring in things like climate resilience. Consultants report more work coming their way to support climate modelling, worst-consequence analysis, and even social risks associated with energy assets.

Safety concerns around battery storage

One group member said that those voicing opposition against data centres often conflate these sites with the broader infrastructure used to deliver power to them, such as energy storage technologies like batteries.

Some are concerned about the risk of “thermal runaway”, due to the flammability of some of the material used in lithium-ion batteries, a common technology for electricity storage.

Solutions: There are ways to build lithium-ion batteries that reduce the risk of thermal runaway. Fire insulation can be applied at the cell level, rather than around a collection of cells. If fires do start within batteries, this is usually the cell level, which spread from one to another without insulation separating them.

Enhanced safety means batteries can be used closer to communities and be more suitable for facilities that lack space – without the right safety precautions built into the batteries, they would need to be so far from the facility they could be unfeasible.

Attendee list

First name	Last name	Job title	Company
Coleman	Peiffer	Senior Manager, Data Center Services	Alliant Energy
Alex	Scott	VP, Energy Transition	APTIM
Anjali	Purohit	Environment & Community Relations Manager	Boralex
Neil	Raffan	Program and Project Supervisor, IRP Transmission & Interconnection, Energy Division	California Public Utilities Commission
Ben	Schwartz	Policy Director	Clean Coalition
Craig	Lewis	Executive Director	Clean Coalition
Andrew	Lembeck	Strategy & Sustainability Sr. Advisor	Edison Intl
Beth	Myers-Graham	VP, Environment Market Leader, USA	GHD
Robert	Kloepfer	Distinguished Fellow	GISI Consulting Group
Brian	Granahan	Director	Illinois Power Agency
Kim	Watkins	Global Solutions Director, EHS Operational Excellence	Jacobs
Zachary T	Smith	Director of Market Solutions	NYISO
Kelly	Weger	Head of Sustainability	Qcells
Melinda	Truskowski	Global Energy Transition Market Development Director, Americas Director of Strategy	Ramboll
James	Hasselbeck	Chief Technical Officer	Revision Energy
Theodore	Henry	Fellow	United States Department of Energy
Mohammad	Hoda	Director of Engineering and Growth	Viridi Parente
Dane	Pehrman	Senior Director - Business Development	Worley
Kyle	Levesque	Energy Infrastructure Lead North America	WSP

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