July 2025 Demand Roundtable Summary

Held at NARUC Summer Policy Summit in Boston, MA

I. Series overview

The United States is facing a period of meaningful load growth, due to significant increases in electrification, reshoring of domestic manufacturing, and rapid data center construction. NERC's 2024 Long-Term Reliability Assessment estimates that the summer peak demand forecast is expected to rise by 15% (132 GW) for the 10-year period. As State Utility Regulators contend with growing demand for energy, consideration for how to best manage this growth period while balancing new energy needs with rising customer costs are critical to ensuring a smooth transition.

NARUC President Tricia Pridemore (GA PSC) convened the 2025 NARUC Demand Roundtable series as a response to increasing load growth forecasts. The goal of the Demand Roundtable is to bring together a rotating group of seven Public Utility Commissioners, seven large customers, and seven utility / regional transmission operators to discuss the critical issues surrounding increased energy demand over the next decade. These dialogues were part of the three national conferences convened by NARUC in 2025 (the February Winter Policy Summit, July Summer Policy Summit, and the Annual Meeting in November) with a goal of open, transparent discussion to foster dialogue that allows state commissioners to better understand energy demand associated with re-shoring, electrification, and data center growth, and what that will mean for individual states.

In preparation for the Demand Roundtables, a request for questions was shared with event registrants. Submitted questions were reviewed and refined for inclusion in the facilitated question and answer portion of the Roundtables.

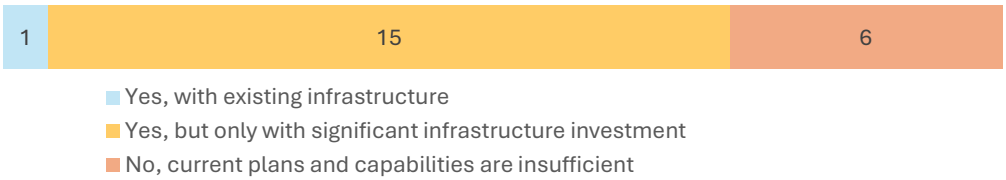
The Demand Roundtables all followed a similar format.

- Opening remarks by President Pridemore
- Level-setting polling questions for the group
- Opening statements from participants
- Facilitator questions with participant responses
- Closing statements

II. Introductory Polling Questions

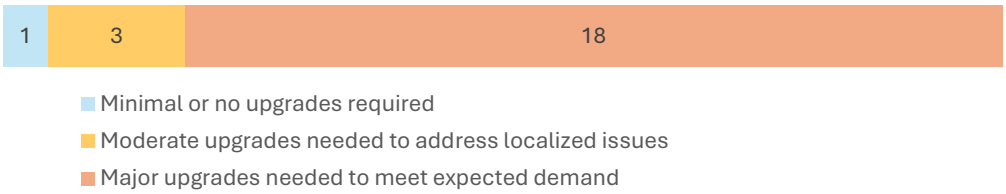
During the July Demand Roundtable, the 21 roundtable participants (listed on the last page of this document) responded to the following set of non-attributed, level-setting questions. Polling responses were displayed in the room for all attendees to view in preparation for the moderated discussion that followed.

1. Do you think utilities will be able to meet load growth demands in the next 5 years?



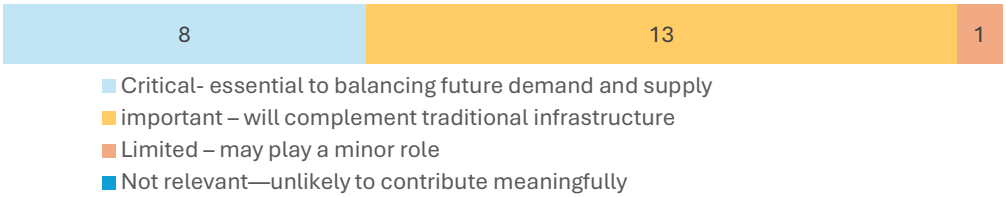
When asked if utilities would be able to meet load growth demands over the next 5 years, the majority of respondents believed that it would be possible with significant infrastructure investment, while some respondents considered current plans insufficient for meeting needs. Only one respondent thought that existing infrastructure would be sufficient for meeting load growth demand.

2. What level of electricity infrastructure upgrades are needed within your region?



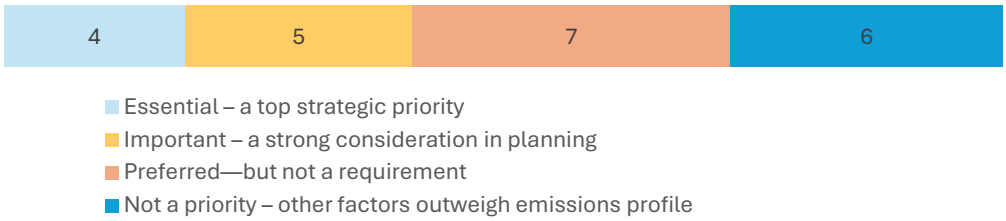
The majority of participants agreed that major upgrades would be needed to meet expected demand in their region. However, three participants responded that moderate upgrades would be sufficient, and one participant reported minimal, or no upgrades would be required. It is worthwhile to note that this question had a regional aspect—not all regions are facing the same projected load growth over the next decade.

3. What role do you think load flexibility and non-wires alternatives will play in meeting energy demand?



The majority of Demand Roundtable participants agreed that load flexibility and non-wires alternatives would play a critical or important role in meeting energy demand. Only one participant reported that they thought load flexibility and non-wires alternatives would play a limited role in meeting energy demand.

4. How important is it for your organization that load growth be powered by zero-emission energy?



The majority of participants reported that zero-emission energy to power load growth was preferred, important, or essential. Six respondents stated that zero-emission energy was not a priority, and that other factors outweigh emissions profile.

5. What do you see as the biggest challenge facing state regulators considering forecasted load growth? [open-ended question]

- Aligning legacy regulatory processes with the urgency, scale, and complexity of today's load growth—without compromising affordability or grid reliability. Making sure we don't live the large customer flexibility afterthought paradox
- How much, where and when the load will appear. Time to build to accommodate vs. desire to connect. Risk/cost of building vs. risk of not building
- The initial demand and cost factor
- Forecast itself is highly uncertain. Efficiencies will bend curve down but we are still on a significant upward trajectories. Need to balance concerns of overbuild with underbuilds.
- Incentivizing investment while promoting competition.
- Timeline certainty
- Aligning legacy regulatory processes with the urgency, scale, and complexity of today's load growth—without compromising affordability or grid reliability. Making sure we don't live the large customer flexibility afterthought paradox
- States retain the responsibility for resource adequacy, but in some restructured states, they do not have the tools to effectuate it.
- Adjusting costly infrastructure build in a dynamic environment.
- How do we get additional supply?
- Balance w consumer affordability
- Balancing economic growth with cost impacts to other consumers.
- Distinguishing "signals" from "noise"
- Understanding actual load needs over time.
- Pinning down/accurately forecasting expected growth and timing of it.
- Determine what's real vs speculative - ensuring we build to right amount and not over or under build which harms customers on either direction
- Determining how much of the forecast is real and will show up.
- Timing uncertainty and allocation of costs
- Ability to work and respond quickly while balancing broader customer affordability.
- Separating what projects are real from those that are not.

III. Introductory Remarks on Risk Mitigation and Assigning Costs to Cost Causers

During the July Demand Roundtable, Christopher Ayers, the Executive Director of the North Carolina Utilities Commission Public Staff was invited to provide introductory remarks on customer considerations regarding load growth. In his remarks, Chris highlighted the unprecedented speed at which large customers are now interested in connecting to the grid and the pressures this rapid expansion is poised to have on residential customers.

During this period of rapid change, Chris pointed to cost-of-service principles as a critical tool for ensuring fair outcomes to all parties. Chris also pointed to early lessons learned from this process such as the value of cluster studies, interconnecting projects that are ready to plug-and-play, and assigning costs to cost causers. He also highlighted strategies previously used by water and natural gas utilities during times of rapid growth that can be applied to the current environment of rapid load growth such as feasibilities studies, special contracts, and Contribution in Aid of Construction (CIAC).

Chris advocated for accurately allocating risks to the parties responsible and adopting mitigation strategies where possible, noting that "those [who] introduce incremental risks to the system should appropriately pay for the risk" and saying, "you cannot use the larger customer base as a whole as a backstop for stranded costs or assets". Chris voiced his support for broad customer participation in the larger conversation around planning, cost allocation, and risk.

"Those that introduce incremental risks to the system should pay for the risk"

Chris closed by emphasizing that load growth isn't bad, and that data centers play a critical role in driving our information-based economy. Even so, it is important to consider this growth responsibly. He pointed to states that have adopted protections to help contain risk to other customers (minimum contract terms, minimum billing requirements, collateral requirements, requirements for CIAC).

IV. Key themes

After responding to the set of level-setting questions and hearing introductory remarks, participants were asked to respond to a series of facilitated questions, including:

1. How are your organizations thinking about supply chain issues associated with meeting load growth demand? Have supply chain challenges impacted your plans for future generation development or caused your organization to consider alternative approaches?
2. What innovative partnership models are states and large customers exploring to help cost-share and de-risk the deployment of new and/or clean technologies? What additional tools or policies could help regulators meet the moment to advance rapid economic development while balancing affordability, reliability, and any state environmental requirements?
3. How are utilities developing and validating load forecasts and then sharing this information with Public Utility Commissions and other state planning entities. What are some best practices for right-sizing forecasts, validating large customer interconnection requests, and information sharing between parties?

From these questions, several themes emerged that provide insights into participant considerations and ideas for how to support load growth without negatively impacting residential customer rates: a need for accurate load forecasting and greater transparency, support for information sharing, supply chain challenges, and a sense of technological optimism.

a. Need for Accurate load Forecasting and Increasing Transparency

Participants stressed the importance of accurate load forecasts during the July Roundtable. Specifically, participants recognized the need for more proactive planning processes and greater transparency about where data center developers are planning to locate. Recent rapid increases in load forecasts due to reshoring of manufacturing, electrification efforts, and rapid expansion of data centers have created an environment with greater uncertainty, and participants at the table recognized that there would be risks to over- or under-estimating future energy needs. One participant noted that all of the other challenges related to load growth are built on forecasting, so it is an issue that should be resolved expeditiously.

> *"We need to figure this part out quick. All the other challenges are built on this piece, on the forecasting piece—what's real and what are we actually planning for and building for."*

Multiple participants emphasized the importance of transparency for decision making. This transparency can take the form of queue transparency (understanding who's in the line to connect to the grid), transparency from utilities or RTOs on a granular level, and transparency about where large loads are interested in connecting with the grid and what attributes are important to these customers (metropolitan location? available wind energy?). One large customer noted that to the extent that large customers have visibility, they would not be interested in queuing in areas that are already over-subscribed. One Regulator mused that all parties would benefit if transmission owners and RTOs identified opportunities on their system for interested customers to connect to the grid without costly upgrades if these opportunities exist.

Several approaches were suggested to improve load growth forecasting, including:

- improving transparency around locations where data centers plan to build
- developing load zones and routing transmission to those areas.

b. Support for Information Sharing Opportunities

Expanding upon participant interest in greater transparency, Roundtable participants also expressed support for more information sharing opportunities. The United States' new load growth paradigm has brought together new players who have not traditionally engaged as much in the regulated utility space. Recognizing this change and identifying opportunities for all stakeholders to better understand the field-of-play can help support better-informed outcomes. Participants identified a variety of approaches for supporting information sharing opportunities.

One state regulator observed that they were interested in de-siloing communications and moving towards the concept of intentional partnership ecosystems where different stakeholders had the opportunity to "have a seat at the table" to work together on topics of mutual interest such as R&D

and workforce development. Other participants also expressed support for less formal information sharing processes outside of existing regulatory dockets.

Another large customer highlighted the value of state-hosted workshops which bring together different kinds of participants to share information. Pennsylvania's en banc hearing examining the impact of hyperscale data centers and other large-load energy users on Pennsylvania's electric grid and the Virginia State Corporation Commission's Electric Utility and Data Center Load Growth Technical Conference are two recent examples.[1,2]

Finally, the Roundtable discussion highlighted the opportunity for improving existing processes for planning and information sharing. In particular, one participant suggested that timing for Integrated Resource Planning might be re-examined. For example, would more frequent IRP processes support better information sharing during this period of dynamic growth?

c. Supply Chain Challenges

During the July Demand Roundtable, participants highlighted the importance of supply chain considerations for ensuring the growing demand for energy could be met. The COVID-19 pandemic, Infrastructure Investment and Jobs Act, and recent tariff announcements from the Trump Administration have changed the dynamics of the energy supply chain notably compared to the pre-2020 period. Multiple participants noted that their companies were working on re-shoring efforts to move supply chains from overseas to Mexico and the United States.

Timing is a critical element to consider in conjunction with supply chain issues. Regulators participating in the Roundtable said they were ultimately responsible for construction and supply-chain-related delays, which are costly for customers. Scenarios where contracts are awarded but supplies are not available cause delays. Utility Roundtable participants reported on the careful consideration that goes into planning and managing complex projects—including considerations of long-lead items and balancing planned projects in the queue so that when delays occur, there are options for back-filling into the queue.

"Supply chain constraints are here because we haven't taken every opportunity to use the grid we have while we build the grid we need"

One question that came up during the supply chain discussion is whether there is adequate flexibility to determine the best usage for given items where items are in high demand?

"Being able to have a capable workforce who can install, maintain, and improve new technologies to achieve load growth… is critical"

During the Roundtable discussion on supply chain, one persistent thread was the importance of investing in skilled labor and workforce development. A capable workforce is critical to install, maintain, and improve advanced energy technologies. With the workforce discussion came recognition of the importance of timing for training and construction efforts. For example, workforce was critical to the success of the Plant Vogtle Units 3&4 construction, where

[1] https://www.puc.pa.gov/filing-resources/issues-laws-regulations/en-banc-hearing-on-interconnection-and-tariffs-for-large-load-customers/

[2] https://www.scc.virginia.gov/docketsearch#/caseDetails/145480

7,000 skilled laborers worked onsite to bring the new units online. Now that the project has wrapped up, these skilled workers are moving to different projects without a new nuclear power plant construction project to work on—If skilled workers aren't retained, that workforce dissipates.

d. Technological Optimism

Finally, participants highlighted promising technological solutions such as Grid Enhancing Technologies (GETs), energy efficiency measures, and load flexibility as showing great promise, especially at providing near-term solutions to help support grid reliability. Short-term technological solutions also provide an opportunity to help ensure that new generation is right-sized to actual demand.

One challenge mentioned by multiple participants was the generator interconnection queue process in wholesale markets. Participants suggested that reforming this process to make it more efficient was critical to meeting load growth. One utility pointed out the potential for AI to improve the efficiency of the interconnection queuing process. A current example of this is the Tapestry, Google Cloud, and PJM partnership which is focused on streamlining PJM's planning process for connecting new generation resources to the grid with the goal of significantly reducing processing time for reviewing new interconnection applications. [3]

Google also highlighted their partnership with CTC Global on advanced conductor technologies to improve capacity for existing wires.[4] The focus of this partnership is to identify high-impact transmission lines for reconductoring through a Request for Information process.

Another notable partnership mentioned was EPRI's DC Flex initiative which is a collaborative effort to demonstrate how data centers can become more flexible and responsive to grid needs, supporting the grid while enabling the growth of AI and other digital services.[5]

Finally, Tesla mentioned its participation in PG&E's Emergency Load Reduction Program which allows customers with Tesla Powerwalls to help form a large, distributed battery (virtual power plant) which is able to discharge power back to the grid during times of high electricity demand in return for compensation.[6]

[3] https://insidelines.pjm.com/pjm-google-tapestry-join-forces-to-apply-ai-to-enhance-regional-planning-generation-interconnection/
[4] https://ctcglobal.com/google-partnership/
[5] https://dcflex.sf.epri.com/about-us#:~:text=About%20DCFlex,dimensions%20of%20data%20center%20flexibility.
[6] https://investor.pgecorp.com/news-events/press-releases/press-release-details/2022/25000-PGE-and-Tesla-Customers-Invited-to-Form-Worlds-Largest-Distributed-Battery-to-Support-Electric-Grid-Reliability/default.aspx

V. Demand Roundtable Participants at the NARUC Summer Policy Summit

Moderator: Lisa Perry, Walmart
Introductory Remarks: Chris Ayers, the North Carolina Utilities Commission Public Staff

Public Utility Commissions	Utilities / Regional Transmission Organizations	Large Customers
Hon. Philip L. Bartlett II, Maine Public Utilities Commission	Elizabeth Adams, Entergy	Jeff Bladen, Verrus
Hon. Zenon Christodoulou, New Jersey Board of Public Utilities	Liam Baker, Alpha Generation	Brian George, Google
Hon. Dennis Deters, Public Utilities Commission of Ohio	Kaley Bangston, NextEra Energy	Bobby Hollis, Microsoft
Hon. Courtney Hjaltman, Public Utility Commission of Texas	Chad Burnett, AEP Texas	Sean Jones, Tesla
Hon. Jeremy Oden, Alabama Public Service Commission	Christine Martin, PPL Electric Utilities	Mary Sprayregen, Oracle
Hon. Brian Rybarik, Washington Utilities and Transportation Commission	Natasha Henderson, Southwest Power Pool	Craig Sundstrom, Oracle
Hon. Kathryn Zerfuss, Pennsylvania Public Utility Commission	Anne George, ISO New England	Therese Kerfoot, EdgeCore Digital Infrastructure