



NARUC

National Association of
Regulatory Utility Commissioners

CSG Data Center Masterclass

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NARUC

- The National Association of Regulatory Utility Commissioners (NARUC) is a non-profit organization founded in 1889.
- Our members are the state regulatory commissions in all 50 states, DC, and the territories. FERC & FCC Commissioners are also members.
- NARUC member agencies regulate electricity, natural gas, telecommunications, water utilities, and more.
- Mission: “to serve in the public interest by improving the quality and effectiveness of public utility regulation.”



Representing membership of approximately 250 elected & appointed state commissioners; hundreds of commission staff; and federal regulators & staff in energy / electricity, telecommunications, water, and transportation regulation





The NARUC Center For Partnerships & Innovation

Background & Focus

- NARUC staff dedicated to providing technical assistance to its members.
- CPI identifies emerging challenges and connects state commissions with expertise and strategies to inform their decision making.
- CPI builds relationships, develops resources, and delivers trainings.
- All CPI support is federally funded via cooperative agreements (grants) with U.S. Department of Energy and DOE National Labs.

NARUC Center for Partnerships & Innovation

Identifying emerging challenges and connecting state commissions with expertise and strategies to navigate their complex decision making

The NARUC Center for Partnerships & Innovation (CPI) builds relationships, develops resources, and delivers training to assist state commissions contending with complex current and emerging issues. CPI is funded by cooperative agreements with offices throughout the U.S. Department of Energy (DOE) and DOE National Laboratories. CPI works across five key energy areas:

Energy Generation	Energy Transmission	Energy Distribution	Energy Customers
- Resource Adequacy - Coal - Nuclear Energy* - Natural Gas - Renewables	- Bulk Power System - Transmission Infrastructure* - Comprehensive Electricity Planning* - Storage	- Distributed Energy Resources* - Integrated Distribution System Planning* - Grid Modernization - Virtual Power Plants - Ratemaking / PBR	- Demand Flexibility - Microgrids* - Electric Vehicles* - Data Centers - Stakeholder Engagement - Affordability

Contact Deborah Reynolds | Contact Jeffrey Laiter

Critical Infrastructure Resilience, Emergency Preparedness, and Cybersecurity

- Critical Infrastructure
- Cybersecurity for Utility Regulators
- Artificial Intelligence
- Integrated System Resilience*
- Defense Community Partnerships
- Energy Emergency Preparedness / Wildfires

Contact Lynn Costantini

*Join a members-only group on this topic for regular learning and peer exchange opportunities.

Sign up for the **CPI Newsletter** for twice-monthly updates about new resources and forthcoming events.

The NARUC CPI team looks forward to engaging with NARUC's members throughout the year—your needs drive our priorities and activities. Reach out at any time!

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www.naruc.org/cpi | Last updated July 2026

Recent Resources

Publications

- Comprehensive Electricity Planning Roadmaps, July
- NCEP Framework for Collaboration on Load Growth, July
- Energy Storage Primer, July
- Microgrids Interconnection Brief, July
- Transmission Cost Allocation State Agreement Process, June
- Summaries from Virtual Roundtables on Large Loads, June
- Large Load Tariffs and Load Forecasting, Apr.
- NCEP Mini Guide: PUCs and Consumer Advocates, Apr.
- NCEP Mini Guide: Customer Energy Bill Assistance, Feb.
- Mini Guide: Building a Workforce for Resilience, Feb.
- Proactive Investment Strategies for EVs, Feb.
- Wildfire Workbook for Utility Regulators, Dec. (2025)

Multimedia and Web-based Resources

- Day in the Life Videos: Behind the Scenes at State PUCs
- Load Growth Resources Webpage
- NCEP Library: Transmission Resources for States
- Critical Infrastructure Resource Repository
- Advanced Nuclear State Actions Map & Resource Repository
- Performance-Based Regulation State Tracking Map
- Electric Vehicle Case Study Catalog

Review "Essential Resources Guides," your starting point for finding existing resources on key topics at-a-glance: [load growth](#), [EVs](#), [data sharing](#), [resilience](#), [cybersecurity](#), [nuclear energy](#), [coal](#), [natural gas](#), [microgrids](#), and [cost recovery](#).

Virtual Learning Opportunities

- Distributed Energy Projects Interconnection Cohort Webinar Series, July 29: DSP and Capacity Expansion Modeling, Aug. 26: Model Guidelines and Flexible Interconnection, Sept. 23: Peer & Expert Coaching on Participant Questions. [Register and find recordings](#). Contact Jeff
- National Council on Electricity Policy (NCEP) Framework for State Agency Collaboration on Load Growth Webinar, Aug. 12. [Register now](#). Contact Deborah
- Distribution System Planning Peer Webinar Series, Aug. 13: Stakeholder Engagement Practices. [Register and find recordings](#). Contact Margerie
- Innovation Webinars, Aug. 27, Sept. 10, and Oct. 15. [Register and find recordings](#). Contact Jessica
- Comprehensive Electricity Planning Roadmaps Webinar, Aug. 31. Contact Danielle
- Load Growth Resources Webinar, Sept. 9. [Register now](#). Contact Jeff
- On-Demand Learning Modules. Dozens of videos on [bulk power system](#), [resource adequacy](#), and [load forecasting](#), [smart grid](#) and [EVs](#), [cybersecurity](#), [data access](#), and [more](#). Contact Danielle
- Tech Talk for Regulators Podcast Series, Ep 1: AI and Cybersecurity, Ep 2: Protecting Substations, Ep 3: Utility Cybersecurity, Ep 4: California Wildfire Mitigation. Contact Jody

Travel Reimbursements Available

Utility Regulators. New agenda & interactive exercises. Open to Staff, Sept. 15 to 17, Austin, Texas. [Register now](#). Contact Jody

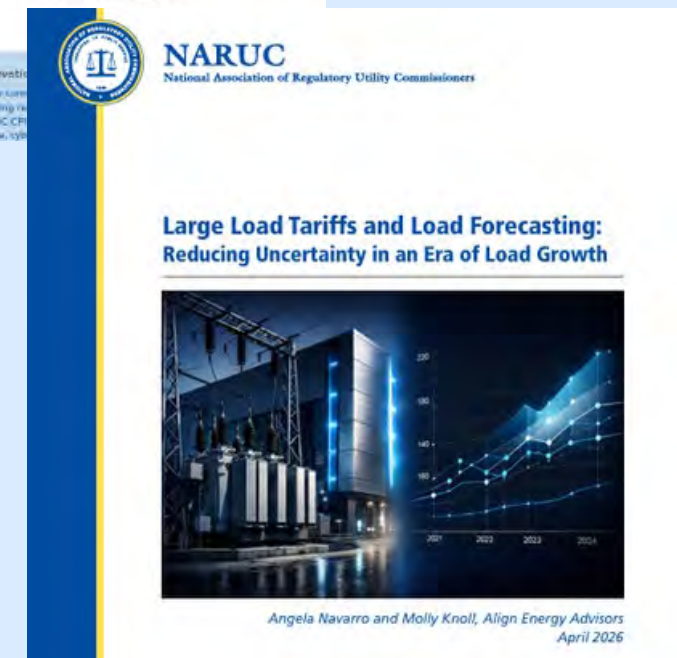
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NARUC Load Growth Resources



Load Growth Essential Resources Guide



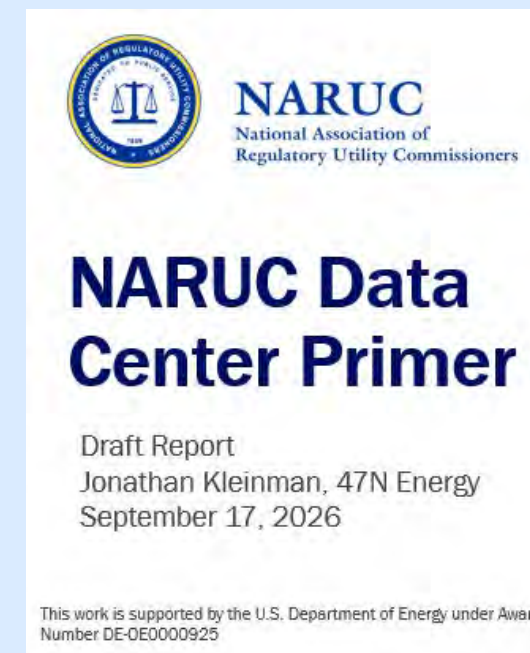
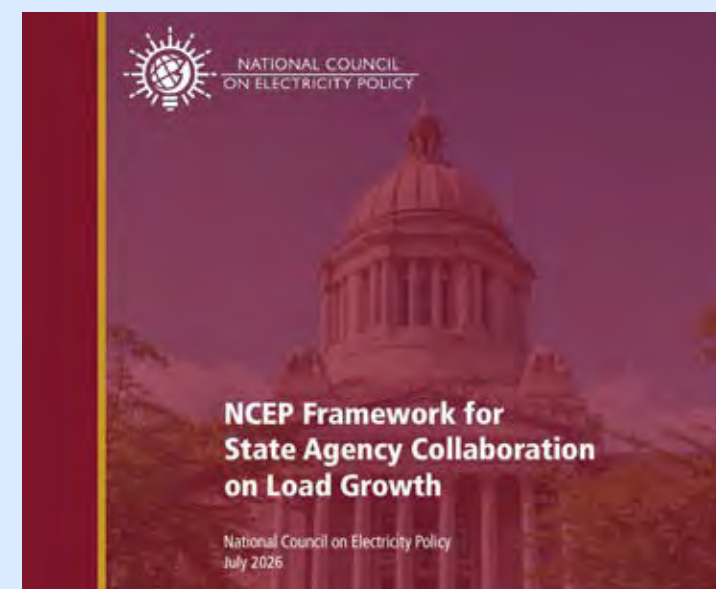
Large Load Tariffs and Load Forecasting

Coming Soon:
Addressing
Challenges of Load
Growth with Energy
Efficiency, Demand
Response, and
Demand Flexibility



All-in-One Webpage

NCEP Framework for Collaboration on Load Growth



Comprehensive Electricity Planning Roadmaps and Library

Roles of State Public Utility Commissions

Legislatively delegated entity responsible for ensuring safe, reliable utility service at fair, just, and reasonable rates.



- All operate in quasi-judicial mode with litigants (regulated entities) and intervenors/representatives of public interest
 - Decisions are made through orders based on evidence, testimony, reports added to the record
 - Like the judicial system, commissioners act independently of political influence
 - Orders can be appealed to the State Supreme Court
- Commission staff can operate in an advisory or independent role
- All are bound by public transparency / “sunshine” laws and state employee ethics rules
- They can also oversee rulemakings, technical workshops, convenings of multi-stakeholder working groups, and more

Commissions are structured to provide oversight over consequential decisions

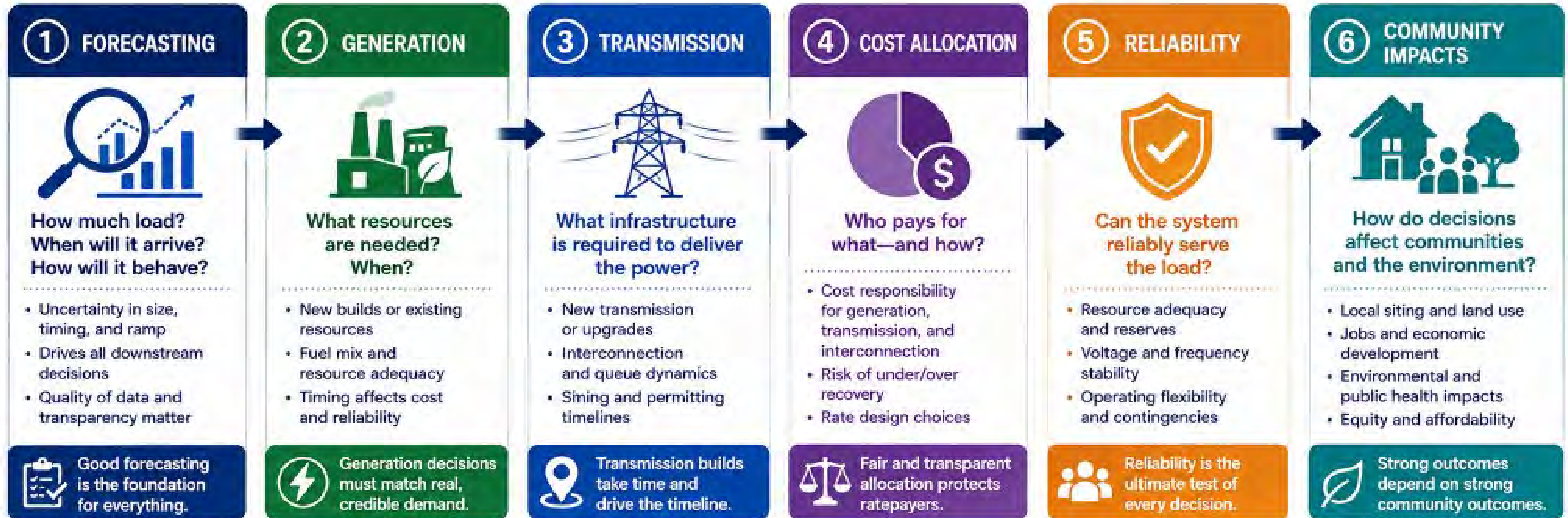
Data Centers will ‘show up’ in:

- Electricity Planning
- Load Forecasting
- Large Load Tariffs
- Data Center Interconnection Policies
- Certificates of Public Convenience and Necessity
- Rate Design
- General Rate Cases
- and more



The Questions Commissions Are Asking

Large Loads Drive a Chain of Regulatory Decisions



Every step affects the next. Regulators must look at the full chain—to *get it right together*.



Better data



Stronger coordination



Clear accountability



Smarter investment



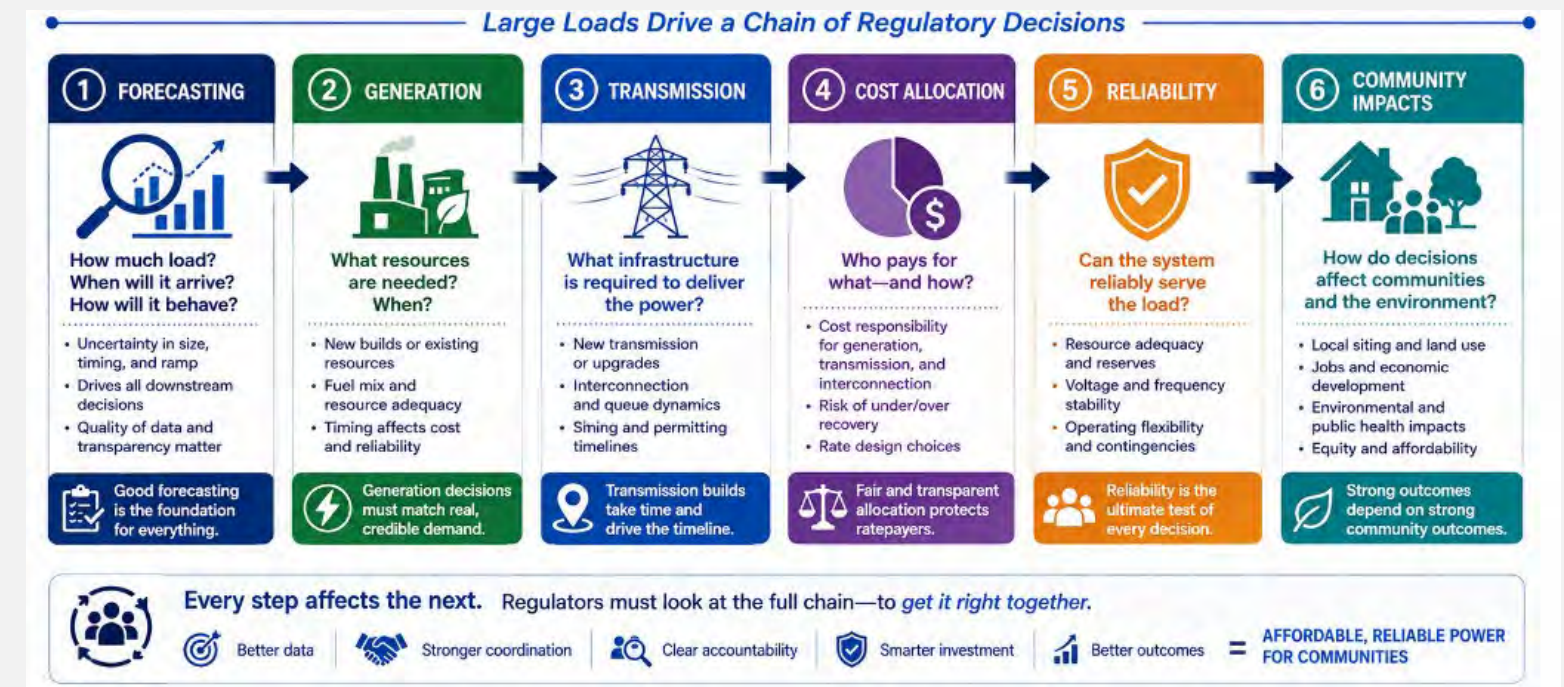
Better outcomes

=

**AFFORDABLE, RELIABLE POWER
FOR COMMUNITIES**

Electricity Planning is Where Many Questions are Asked / Answered

- **Utility planning processes vary** by state based on regional and organizational constructs, commission precedent, and state law
- **Three** nearly universal **types of electricity planning**: generation/resource, transmission, distribution system planning
- Different plans and **planning processes feed into each other**. Planning processes **inform each other**.
- Planning processes and underlying models **operate at different time and spatial granularity**, which necessitate different assumptions and can complicate coordination
- The degree to which transmission, resource, and distribution planning interact impacts the **types of solutions that can be chosen** to address reliability (resource adequacy)
- **Load forecasting** is central to all types of utility planning



Comprehensive Electricity Planning in an Era of Load Growth

Visions for State-led pathways toward a more resilient, efficient, and affordable grid that meets current and future electricity needs across the U.S.

Multiple approaches for **aligning distribution, resource, and transmission planning** to satisfy new loads and state goals.



[Comprehensive Electricity Planning Resource Library](#)

Search Filters

Planning Category:

Resource Type:

Topic:

Planning Scope:

Search

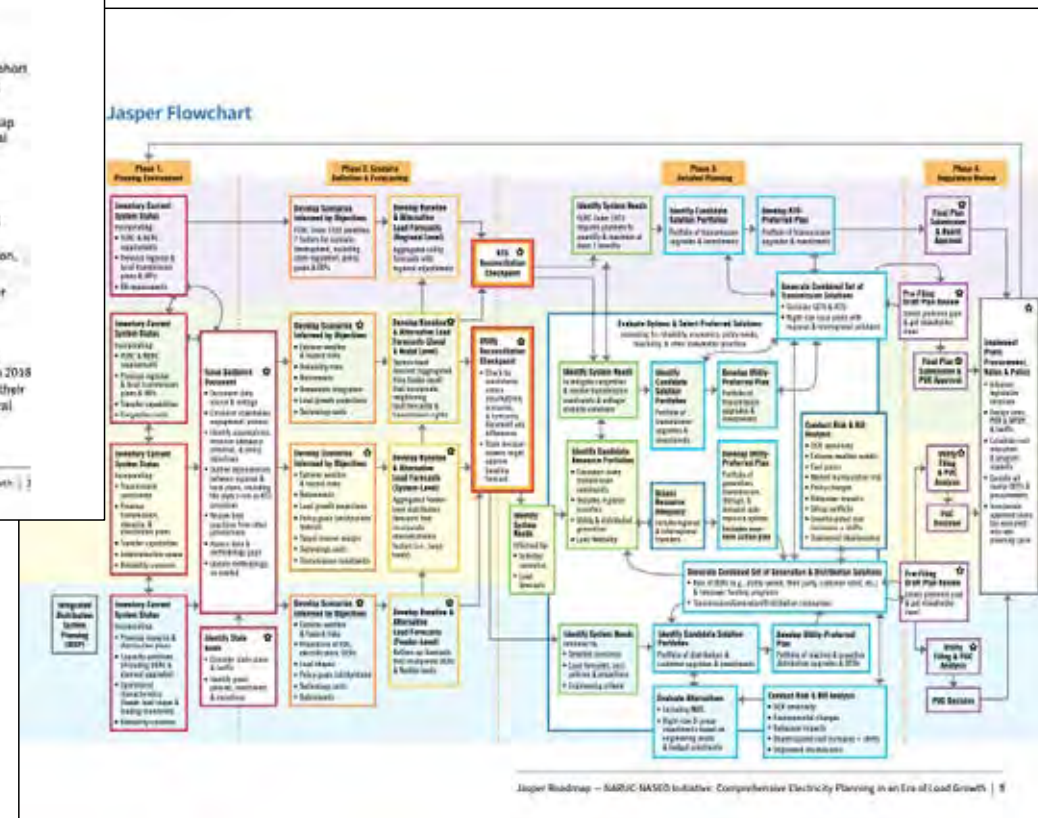
View definitions of the filter topics

PLANNING CATEGORIES

- Establish expectations & assumptions
- Develop scenarios
- Develop forecasts
- Identify system needs
- Identify solutions
- Evaluate solutions
- Finalize plan

Comprehensive Electricity Planning Roadmaps

Guidance, resources,
and examples are
filterable in [online
library](#) tagged by
planning category



Phase 1: Planning Environment

The process steps carried out in Phase I set the common foundation for the rest of the planning cycle. Known information about the current electric system, including scheduled additions and retirements over the planning horizon, as well as policy objectives that the planning processes should consider, are documented in Phase I and socialized with stakeholders through a guidance document before moving to Phase 2.

Phase 1 of the planning cycle incorporates previously approved or acknowledged utility short-term and long-term transmission plans, integrated resource plans, and distribution plans from prior cycles. These plans inform the **current system status**, influencing planning assumptions and baseline system conditions for this planning cycle. The current system status also includes an inventory of existing and planned electricity assets, including the generation mix, interconnection queue status, and fuel supply conditions.

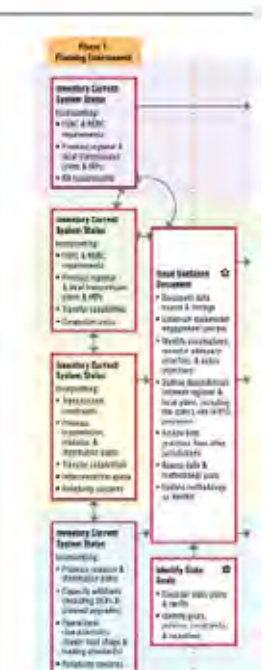
hase 1 also identifies the **key goals** to apply to the IRP, IDSP, and TFP planning processes. This step includes evaluating the state goals for planning purposes, the policies that outline the intended planning process, and the planning process constraints. This should consider other state plans, including state energy security, state energy, economic, land use, resilience, and disaster risk and mitigation plans.

The state goals and current system status for IDSP, IRP, and TFP lead into the **guidance document**, a public document formally adopted or acknowledged by the State Utilities Commission in some manner. The guidance Document serves as a common foundation or consistency check across IRP, IDSP, and Utility TFP, while also providing state input to the RTO TFP. Its purpose is to create a shared view of the current electric system status and policy objectives, so that data, methodologies, and planning assumptions can be reasonably aligned across the various planning processes. This alignment requires the development and sharing of data across multiple organizations and stakeholders.

The guidance documents should also outline processes for stakeholder engagement and inter-agency coordination, including the respective roles of states, utilities, RTOs, and the Federal Energy Regulatory Commission (FERC) in transmission planning. As shown by the curved arrows in the flowchart, this coordination process is often iterative. Notably, a state may have less influence on the TTP of a multi-state RTO than on its jurisdictional transmission plan. For example, if a state is not a member of the RTO, its clean energy by a certain date, even if that goal is not shared by other states in the RTO. While the RTO's TTP may not fully reflect that objective, the state's jurisdictional utilities' transmission plans would incorporate it. Aligning the current status of regional and local transmission systems early in the planning process is critical to ensuring that planning assumptions, analyses, and outcomes remain relevant and consistent across jurisdictions.

j. FERC requires ATOs to incorporate both trust policy and utility plans into their regional planning processes. "Local and regional transmission planning priorities must conform to transmission needs driven by public policy requirements established by state or federal regulations. Each public utility transmission provider must establish procedures to identify transmission needs driven by public policy requirements, and evaluate proposed solutions to those transmission needs." Source: <http://www.ferc.gov/ferc/orders/2012/20120501-ferc-order-no-686-0001.pdf>.

4. Jasper Blomberg — *IMBUC4ASTC Initiative: Comprehensive Electricity Planning in an Era of Rapid Growth*



PLANNING CATEGORIES

-  Establish expectations & assumptions
-  Develop scenarios
-  Develop forecasts
-  Identify system needs
-  Identify solutions
-  Evaluate solutions
-  Finalize plan
-  White boxes: Coordinat

- ★ Stakeholder engagement
- Information flows
- ↪ Iteration step (curved arrows)
- RTO transmission planning
- Utility transmission planning
- Integrated resource planning
- Integrated distribution system planning

Introduction

This roadmap document describes a vision for best-in-class comprehensive electricity planning, shown in a flowchart and accompanying descriptive text. This idealized planning process is viewed from the state perspective, specifically a collaboration between the State Public Utility Commission (PUC) and State Energy Office. The roadmap was the result of robust engagement with a cohort of National Association of Regulatory Utility Commissioners (NARUC) and National Association of State Energy Officials (NASEO) members drawn from 14 states and Washington, DC who joined the **NARUC-NASEO Initiative: Comprehensive Electricity Planning in an Era of Load Growth**. Initiative members attended virtual and in-person workshops to collaborate in articulating their priorities for better aligning distribution, resource, and transmission planning.

This roadmap includes:

- A flowchart of the entire integrated or aligned planning process
- Brief descriptions and explanations of each section of the flowchart
- A color key—outlining each box in the flowchart—to allow for comparison with other cohort roadmaps. The colors align with seven generalized procedural and analytical planning steps that typically characterize electricity system planning processes.

While these practices may not reflect current planning across all jurisdictions, the roadmap describes what could be implemented over time as utility capabilities, data and analytical sources, resource availability, and regulatory frameworks evolve.

The roadmap is intended to support states considering taking actions to increase the alignment of their own electricity system planning processes by providing:

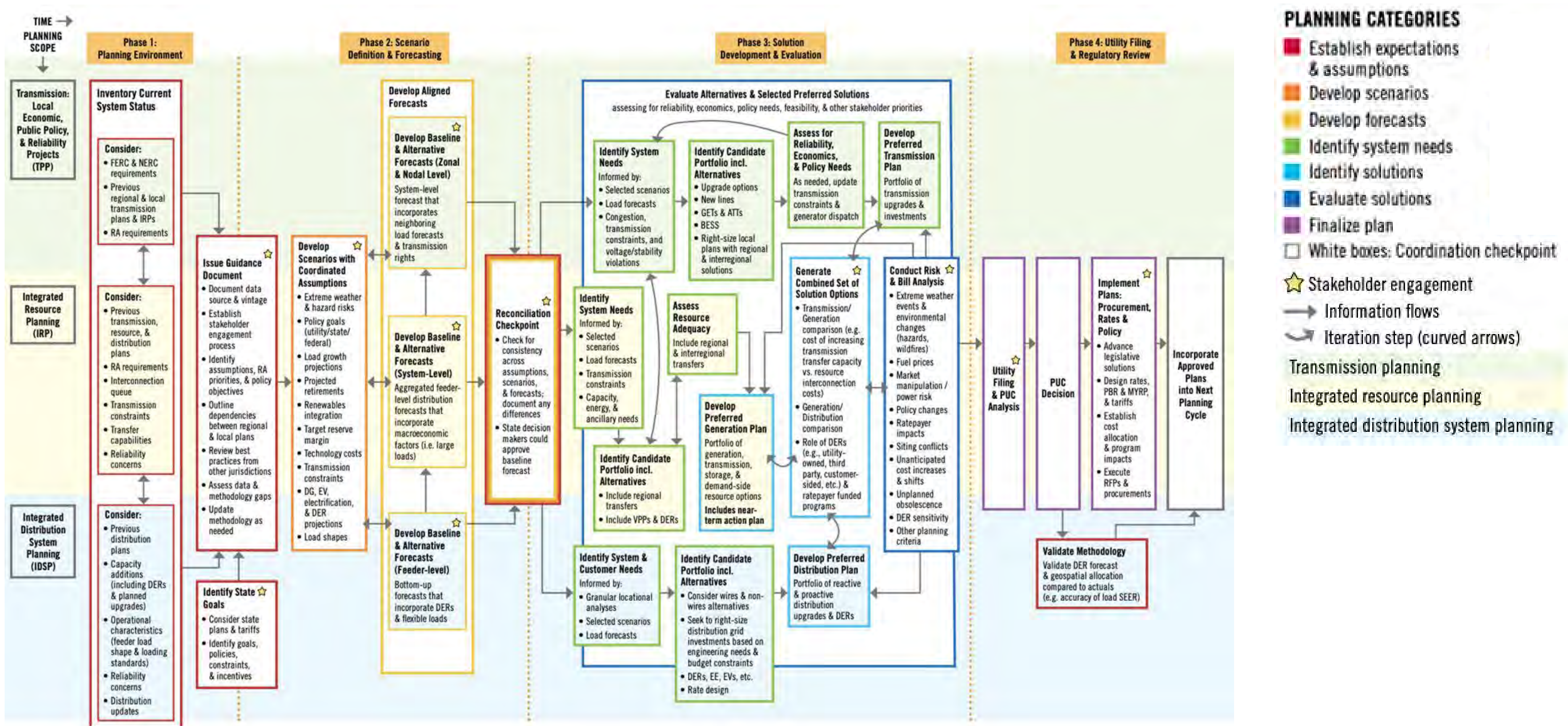
- A high-level understanding of the sequence of steps included in an electricity planning process
- Descriptions of ideal information flows and coordination points represented in the vision, as articulated by NARUC and NASEM members
- Starting points for all states, particularly those with similar characteristics to the Jasper cohort

Development of the Flowchart and Roadmap

An original set of five comprehensive electricity planning flowcharts and roadmaps were developed by a group of Commissioners and State Energy Office leaders from 15 states in 2018 to 2021. These resources were used by numerous states as starting points for enhancing their electricity planning processes. Given significant load growth projections and technological changes in the planning landscape since then, in 2025 NARUC and NASEO launched an

Further Readings: [HABOZ, A. \(2010\) Improving Comprehensive Disability Planning in an Era of Rapid Growth](#) |

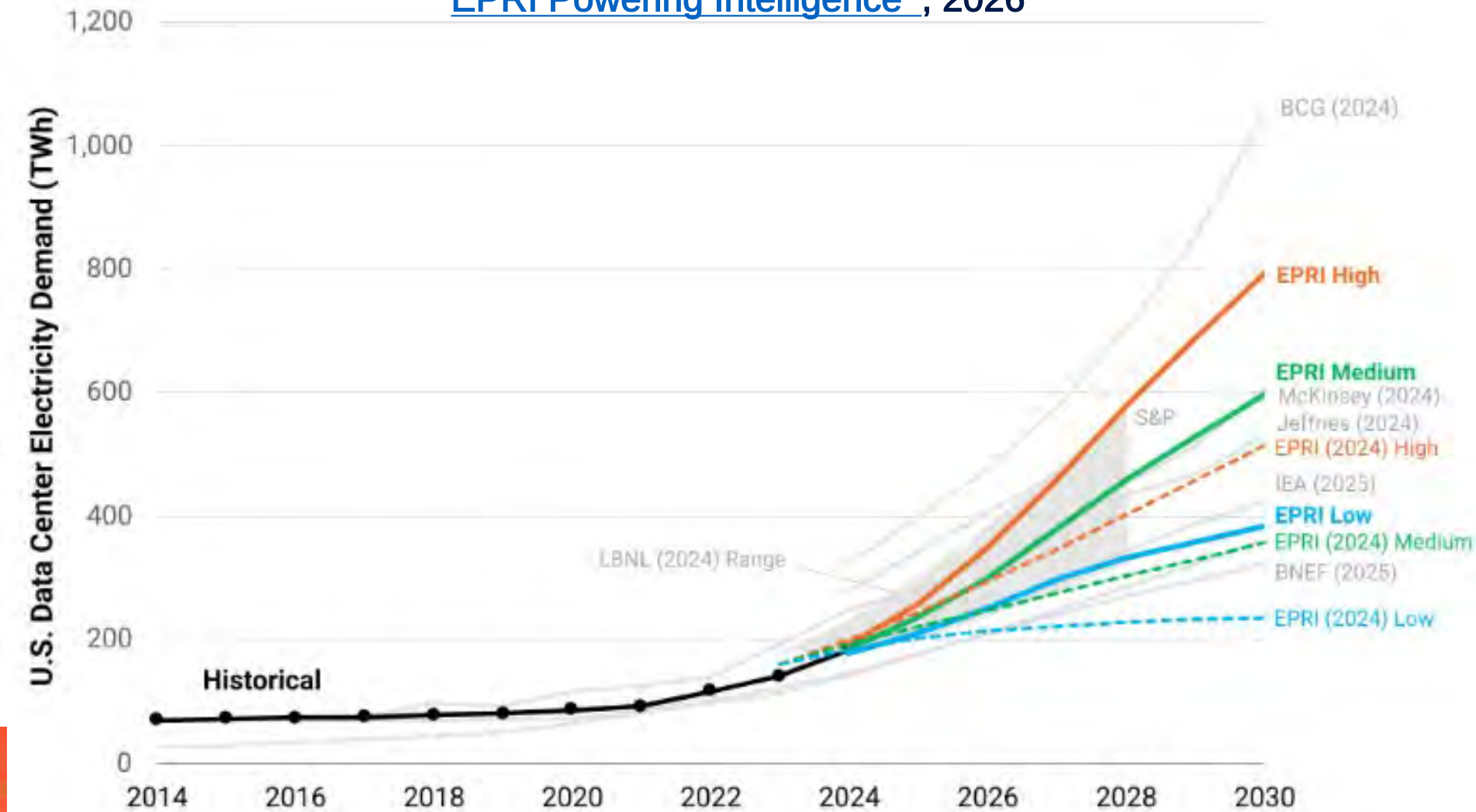
Topaz Flowchart: Vertically integrated outside of organized markets



Load Forecasting is Critical and Uncertain

- There is no universal approach among utilities – practices and forecasting methods vary widely
 - Some utilities include ALL requests
 - Some ‘de-rate’ capacity w/weights
 - State-by-state negotiations w/PSCs
- Best practices are available ([ESIG](#))

[EPRI Powering Intelligence](#) , 2026



Report Recommendations



1. Use all five large load metrics to create a large load forecast.
2. Develop a consistent framework to differentiate among large load types.
3. Account for uncertainty.
4. Increase certainty through large load financial requirements.
5. Reduce uncertainty in regional large load forecast practices.
6. Improve geographic detail.
7. Seek continuous improvement through forecast validation.
8. Collect large load forecast data in a shared database.
9. Apply consistent load weighting and modeling practices.
10. Adopt forecast standards for load flexibility.

Practices are evolving.
More transparency is needed.

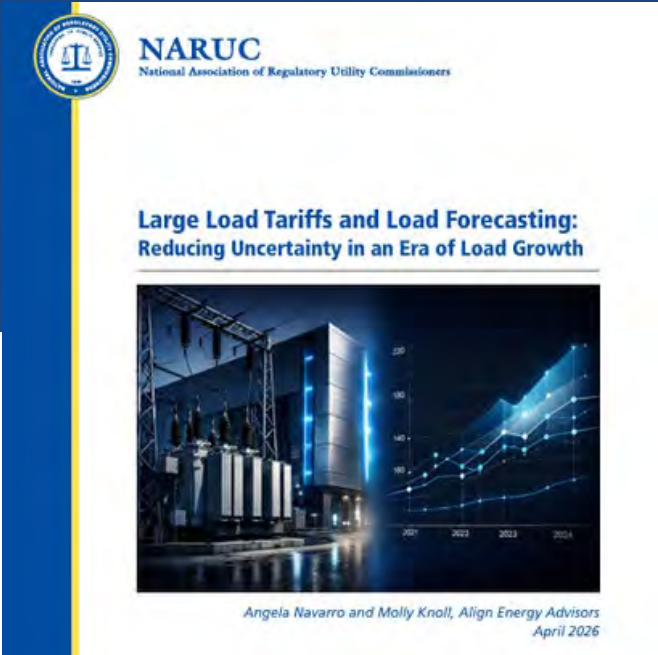
Large Load Tariffs are Increasingly Common

- Primarily focused on cost allocation & managing risks of potential stranded assets
- Also useful for reducing uncertainty in understanding large loads

Table 2: Tariff Elements and their Application in Forecasting

Tariff Element	Application
Eligibility Terms	Determines which loads require enhanced probabilistic treatment
Contract Length	Informs the duration of the load under baseline forecasts and scenarios
Minimum Billing or Demand Obligations	Narrows lower-bound forecast scenarios
Collateral Requirements	Adjusts inclusion weighting for early-stage loads
Load Ramp Period	Phases forecasted load growth
Contract Adjustments	Impacts sensitivities on load duration
Capacity Reassignments	Impacts scenarios and sensitivities on load duration
Termination or Exit Fees	Impacts baseline forecast and sensitivities on load duration

This mapping illustrates that tariff provisions provide structured, regulator-approved limitations on project risks that can be translated into forecasting practice without requiring new data sources or modeling frameworks.



Large Load Tariffs and Load Forecasting
April 20 26

Regulatory Approaches to Large-Load Growth

Practical tools regulators can use to ensure fair cost allocation, reduce risk, and enable responsible growth.



COMMON GOAL:

Match cost responsibility with cost causation, protect customers, and support reliable, affordable growth.

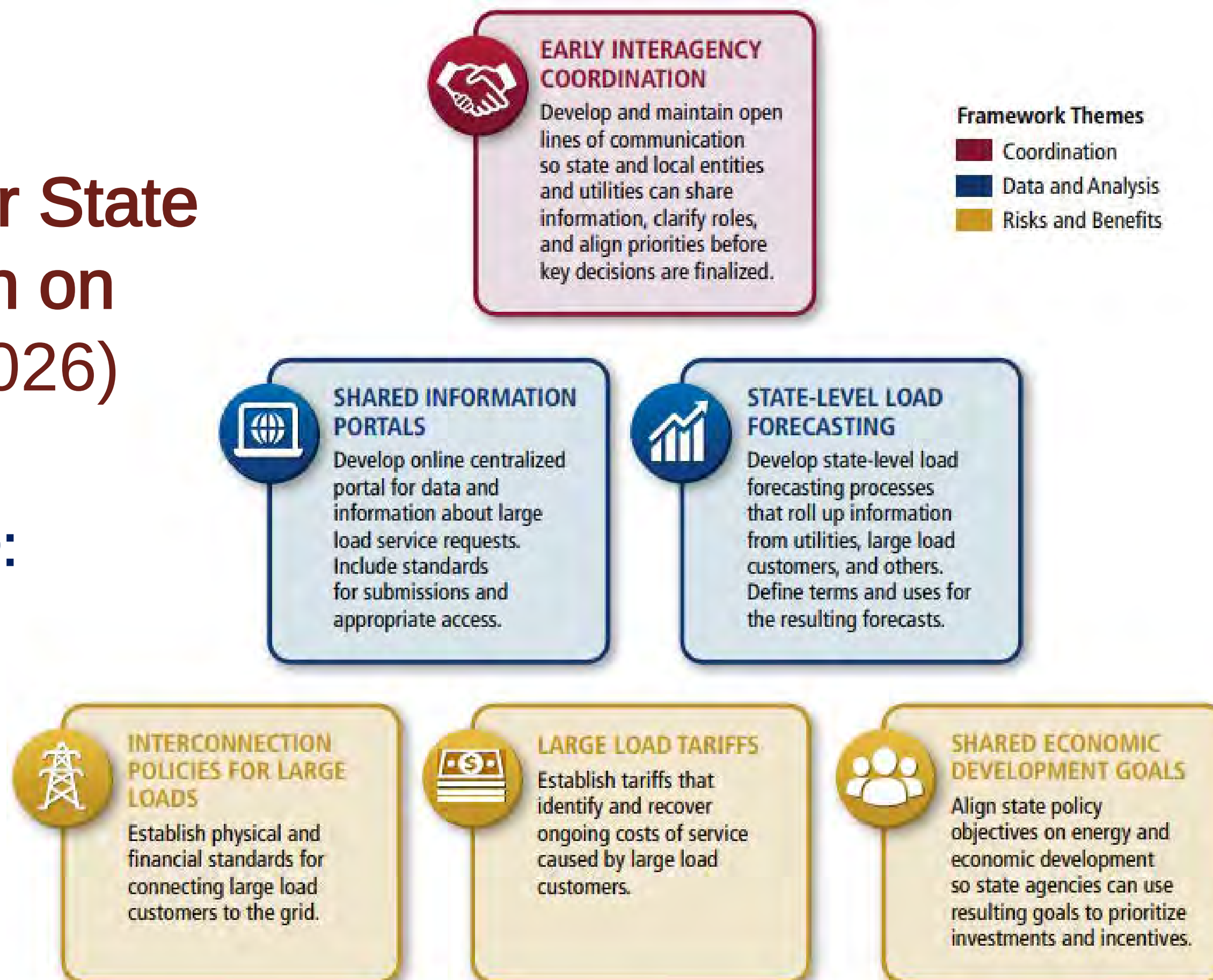
NCEP Framework for State Agency Collaboration on Load Growth (Aug 2026)



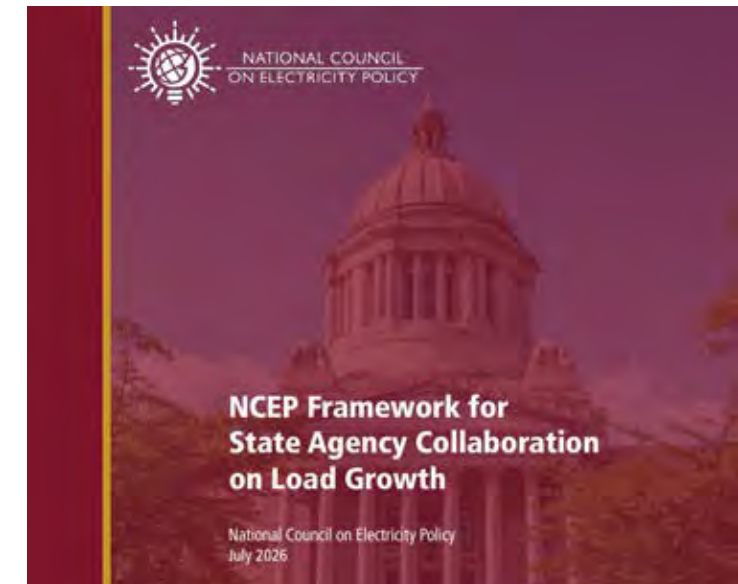
Utility Commissions AND:

- State Energy Offices
- Consumer Advocates
- State Legislators
- Air Quality Regulators
- Governors

www.naruc.org/ncep

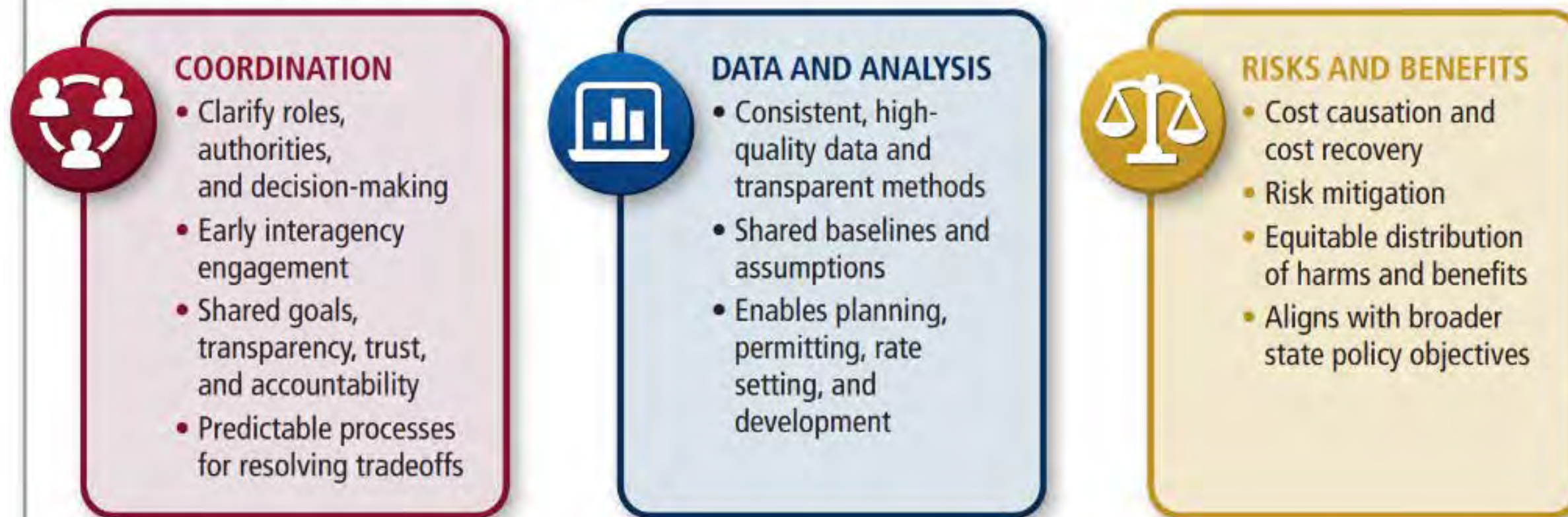


Key Takeaways



- Large load growth presents both opportunity and risk.
- Coordination should begin early.
- Shared data improves decisions.
- Consistent goals and standards help manage risk.
- Proactive planning is better than reactive decision making

THEMES (foundational and cross-cutting)





NARUC

National Association of
Regulatory Utility Commissioners



National Council on Electricity Policy
MINI GUIDE

Engagement between Public Utility Commissions and State Legislatures

Prepared for the National Council on Electricity Policy, administered by the National Association of Regulatory Utility Commissioners Center for Partnerships & Innovation

Prepared by Danielle Sass Byrnett, NARUC CPI, and Daniel Shea, National Conference of State Legislatures

State legislatures and public utility commissions (PUCs), also called public service commissions, are inextricably linked. In the early 1900s, state legislatures established PUCs to regulate companies providing public services as monopolies to ensure equitable and quality service. What started with railroads and trolleys has evolved to include electricity, natural gas, water, sewage, telecommunications and various forms of public transportation, depending on the state. State legislators outlined the mission, jurisdiction, and organizational structure of PUCs through state statute. Where legislators make policy decisions across a broad range of issues relevant to the direction and goals of the state, PUCs are delegated a significant level of responsibility and expected to possess deep subject matter expertise on the industries they regulate.

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