North Carolina Energy Policy Task Force

Secretary Reid Wilson
CO-CHAIR

Representative Kyle Hall
CO-CHAIR

September 30, 2025

Welcome and Opening Remarks

Representative Kyle Hall
CO-CHAIR

Secretary Reid Wilson
CO-CHAIR

Charge to Task Force

Governor Josh Stein

Task Force Member Swearing In

Honorable Justice Robert Rader

Call to Order & Roll Call

Rep. Hall	**Call to Order**
Members	**Roll Call**

Introductions

Share your name and organization

Conflict of Interest Policy

In accordance with the **State Government Ethics Act**, it is the duty of every Taskforce member to avoid both conflicts of interest and the appearance of conflicts of interest.

If any member has any known conflict of interest or is aware of facts that might create the appearance of such conflict with respect to any matters coming before the Taskforce today, please identify the conflict or facts that might create the appearance of conflict to ensure that any inappropriate participation in that matter be avoided.

If at any time, any new matter raises a conflict during the meeting, please be sure to identify it at that time.

Public Records Policy

N.C. GEN. STAT. §132-1(b): "Public records and public information compiled by the agencies of North Carolina Government of it subdivisions are the property of the people"

What is public record?

- Any type of document "made or receive pursuant to law or ordinance in connection with the transaction of public business…"
- "Commissions and committee members," including members of this task force are included
- Includes text messages, emails, instant messages regard state business on either public or private devices or accounts

Working Lunch

Level Set: Load Growth Projections & Approaches

Data Center Load Growth

Dr. Arman Shehabi
Staff Scientist, Energy Analysis & Environmental Impacts Division
Lawrence Berkeley National Laboratory

Data Center Load Growth

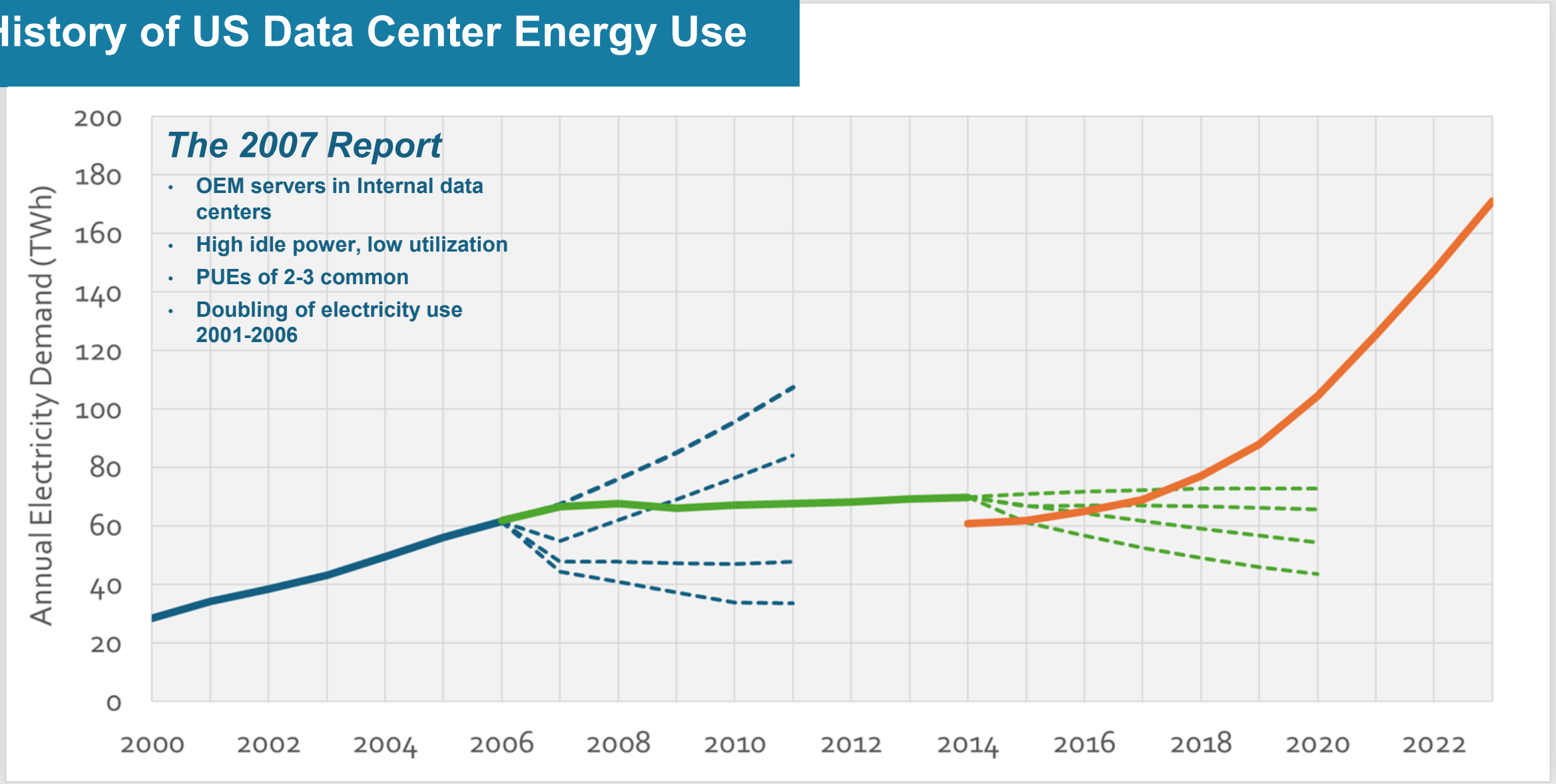
Highlights from Dec 2024 Berkeley Lab Report

Arman Shehabi
Staff Scientist

Energy Policy Task Force Meting
Raleigh, NC
September 30, 2025

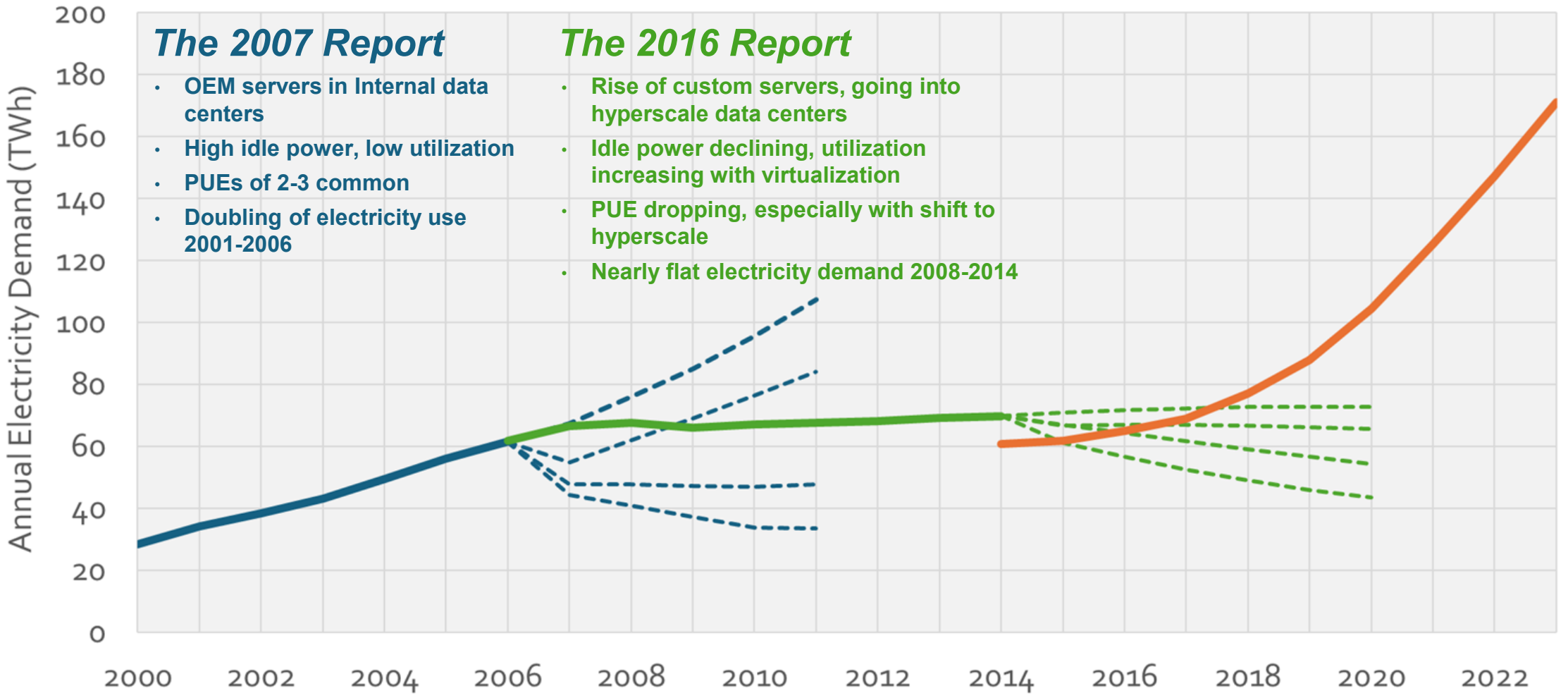
Energy Technologies Area
BERKELEY LAB

History of US Data Center Energy Use



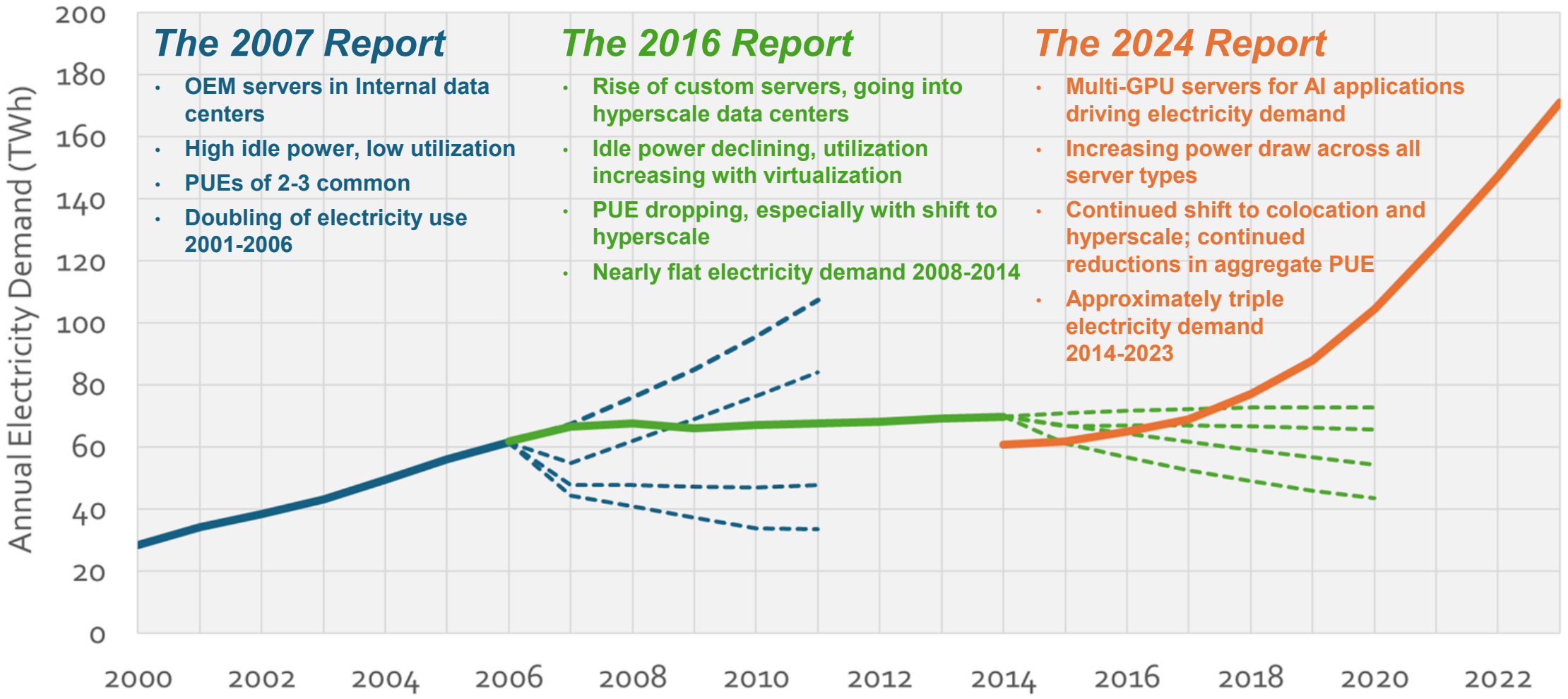
Contact: Sarah Smith, LBNL, sjsmith@lbl.gov

History of US Data Center Energy Use



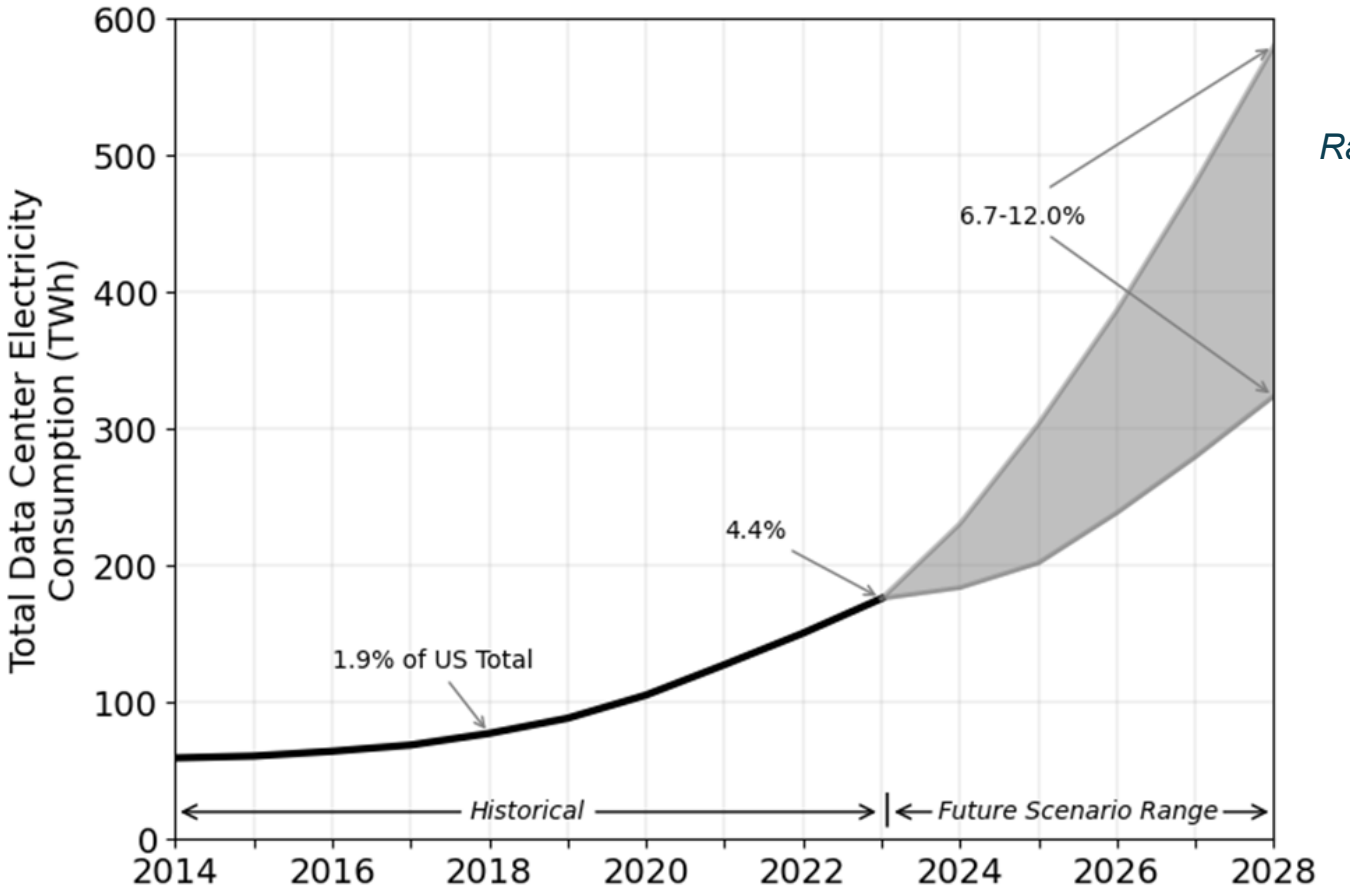
Contact: Sarah Smith, LBNL, sjsmith@lbl.gov

History of US Data Center Energy Use



Contact: Sarah Smith, LBNL, sjsmith@lbl.gov

Total electricity use 176 TWh in 2023; modeled range 325-580 TWh in 2028

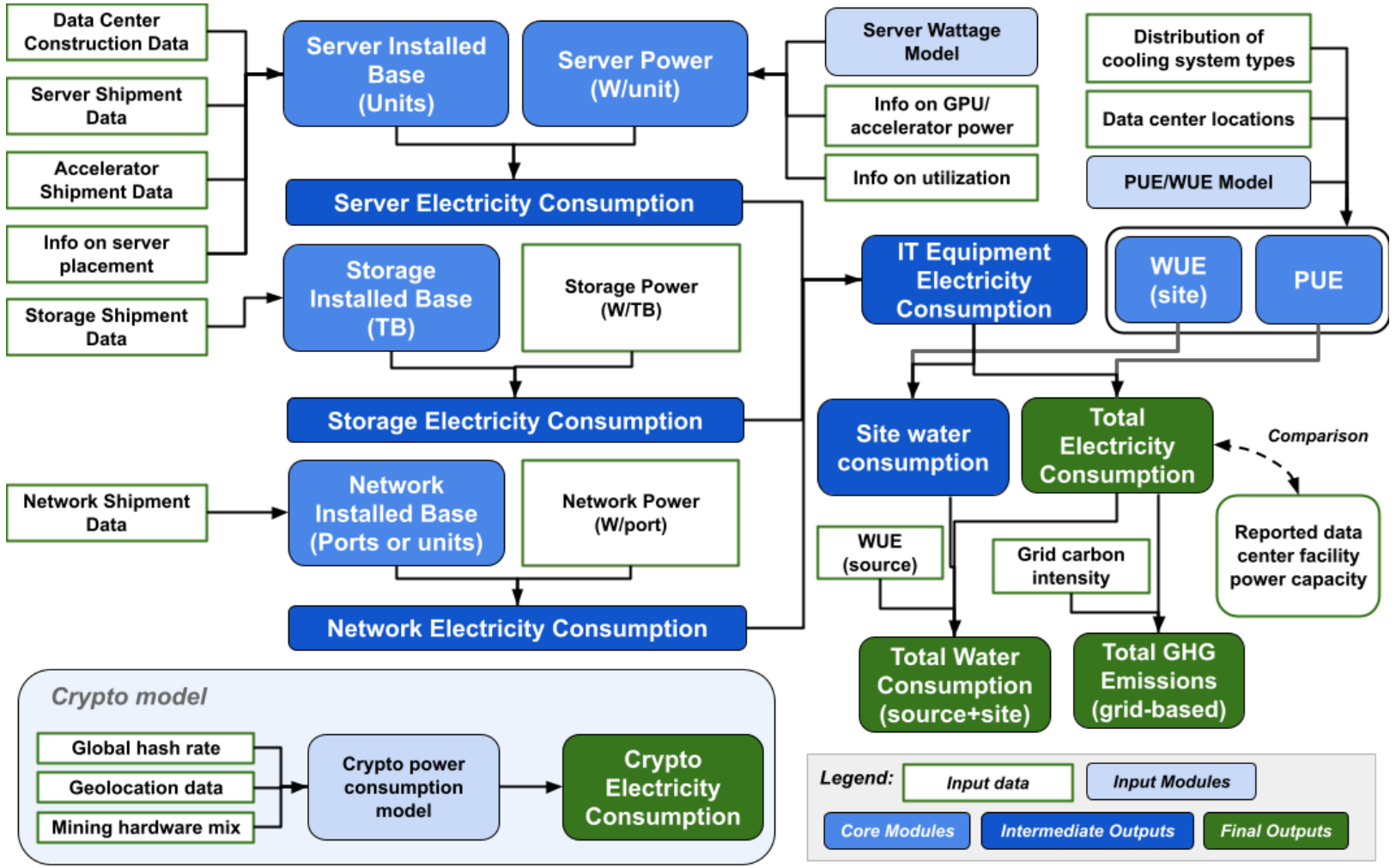


Range based on possible variations in:

- *Future GPU shipments*
- *Server utilization*
- *Cooling system efficiency*

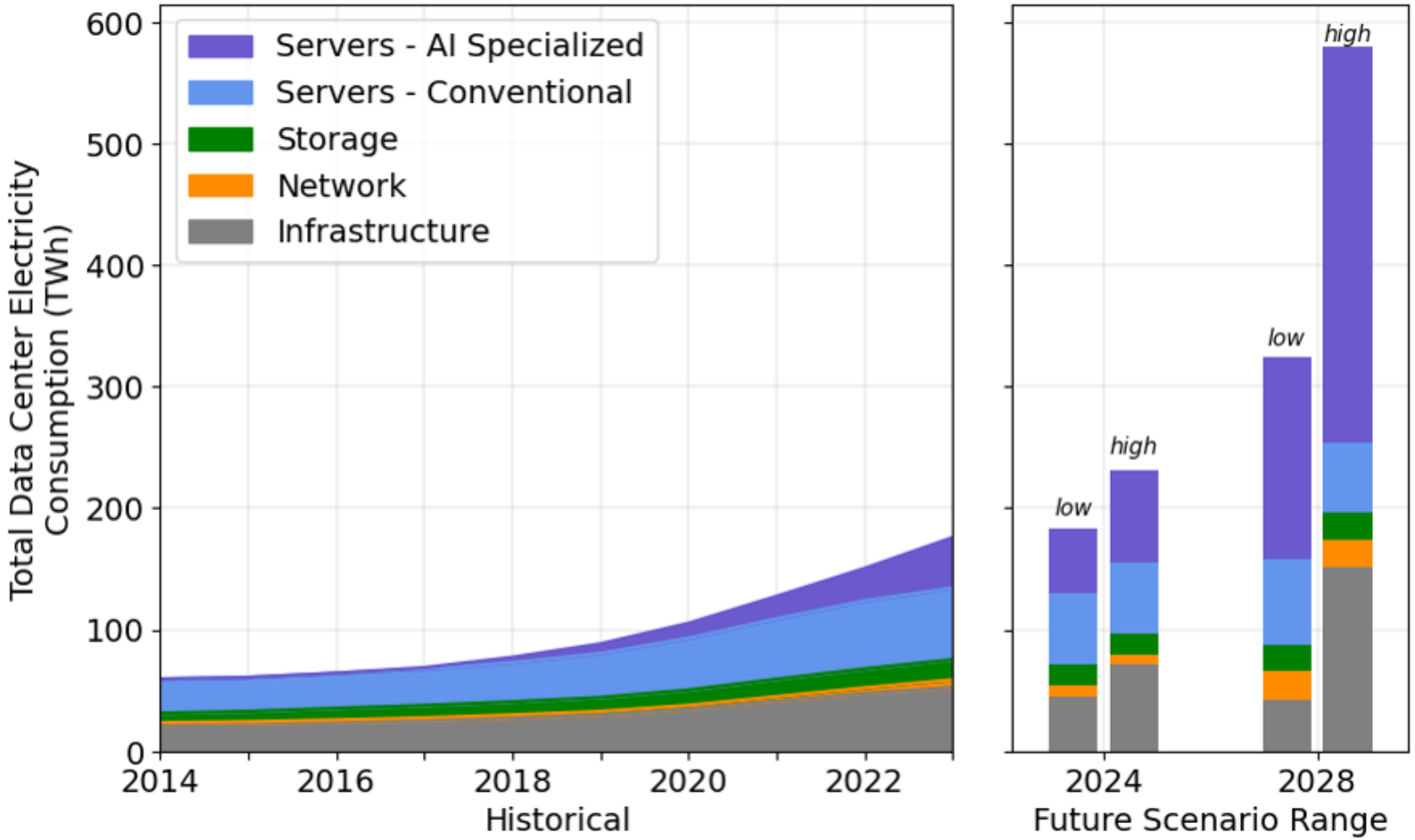
Contact: Sarah Smith, LBNL, sjsmith@lbl.gov

Berkeley Lab data center energy use modeling



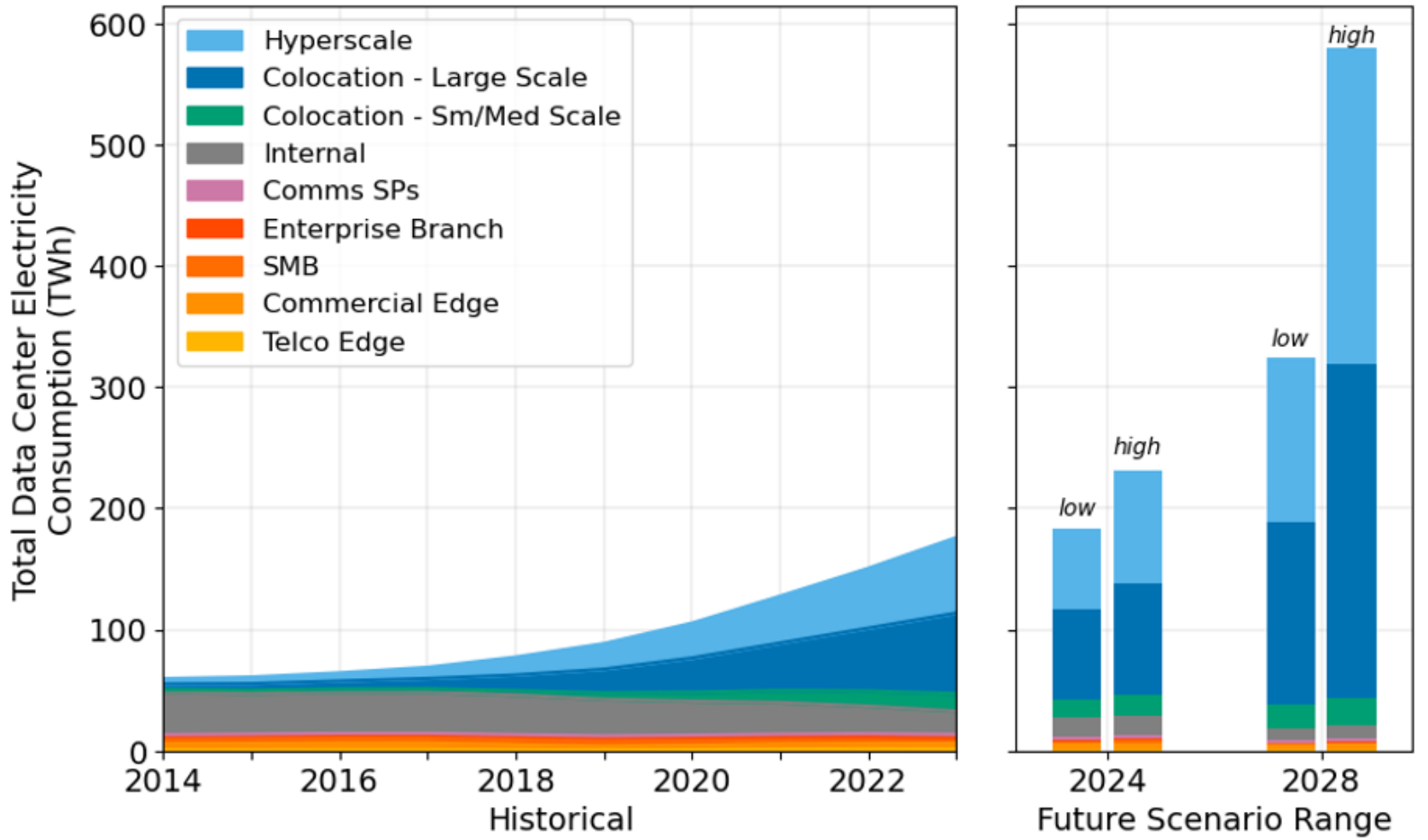
Contact: Sarah Smith, LBNL, sjsmith@lbl.gov

Total Data Center Energy Use



Contact: Sarah Smith, LBNL, sjsmith@lbl.gov

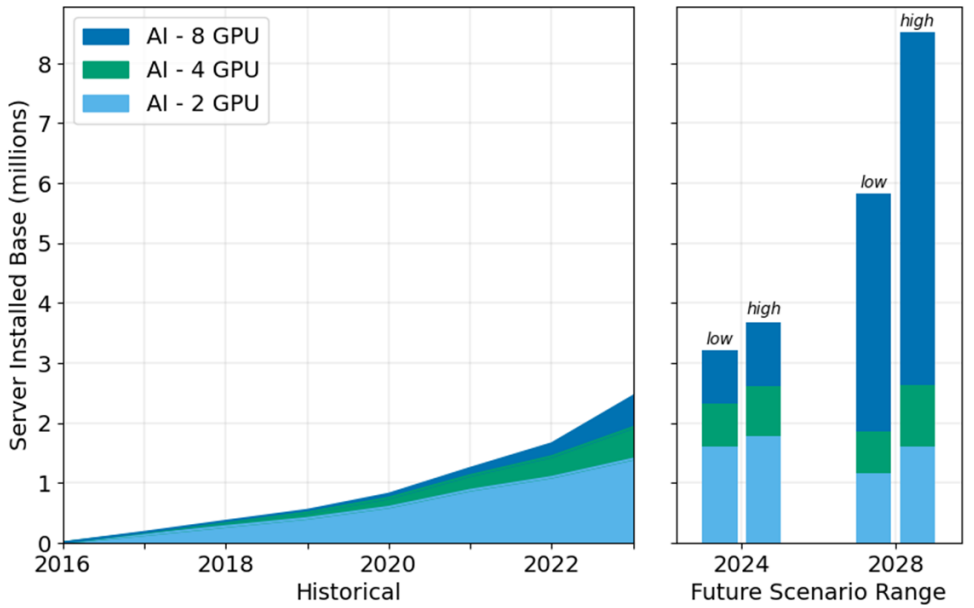
Total Data Center Energy Use

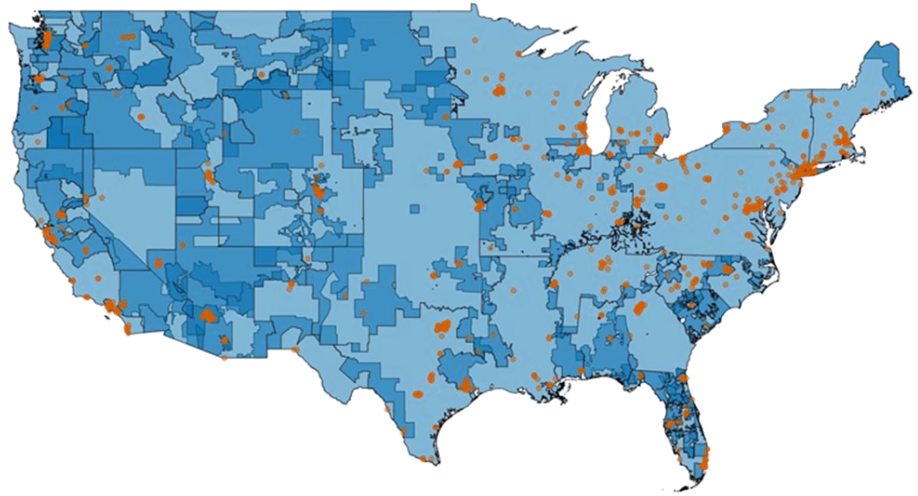


Contact: Sarah Smith, LBNL, sjsmith@lbl.gov

Looking forward

- Forecasts are very uncertain
  - Short timeline (3-4 years) can be based on orders placed for chips, facilities under construction, etc.
  - Longer timelines are highly uncertain growth of chips industry, efficiency, and demand for AI
- Computational efficiency has a high rebound effort
  - Improvement in GPU efficiency (currently) translates directly to larger models
  - Previous turning points identified waste and a rethinking of technology and operations
- Location is important
  - Data center demand growth is real, and it is happening fast. But growth and power demand varies by location





Locations of identified data centers (orange dots) in each U.S. balancing authority

Thank You!

Arman Shehabi
Staff Scientist

Energy Policy Task Force Meeting
Raleigh, NC
September 30, 2025

ENERGY TECHNOLOGIES AREA
BERKELEY LAB

Utility Approaches to Addressing Load Growth

Lesley Jantarasami
VP, Research & Industry Strategy
Smart Electric Power Alliance

Smart Electric Power Alliance

Utility Approaches to Addressing Load Growth

North Carolina Energy Policy Task Force Meeting

September 30, 2025

Lesley Jantarasami

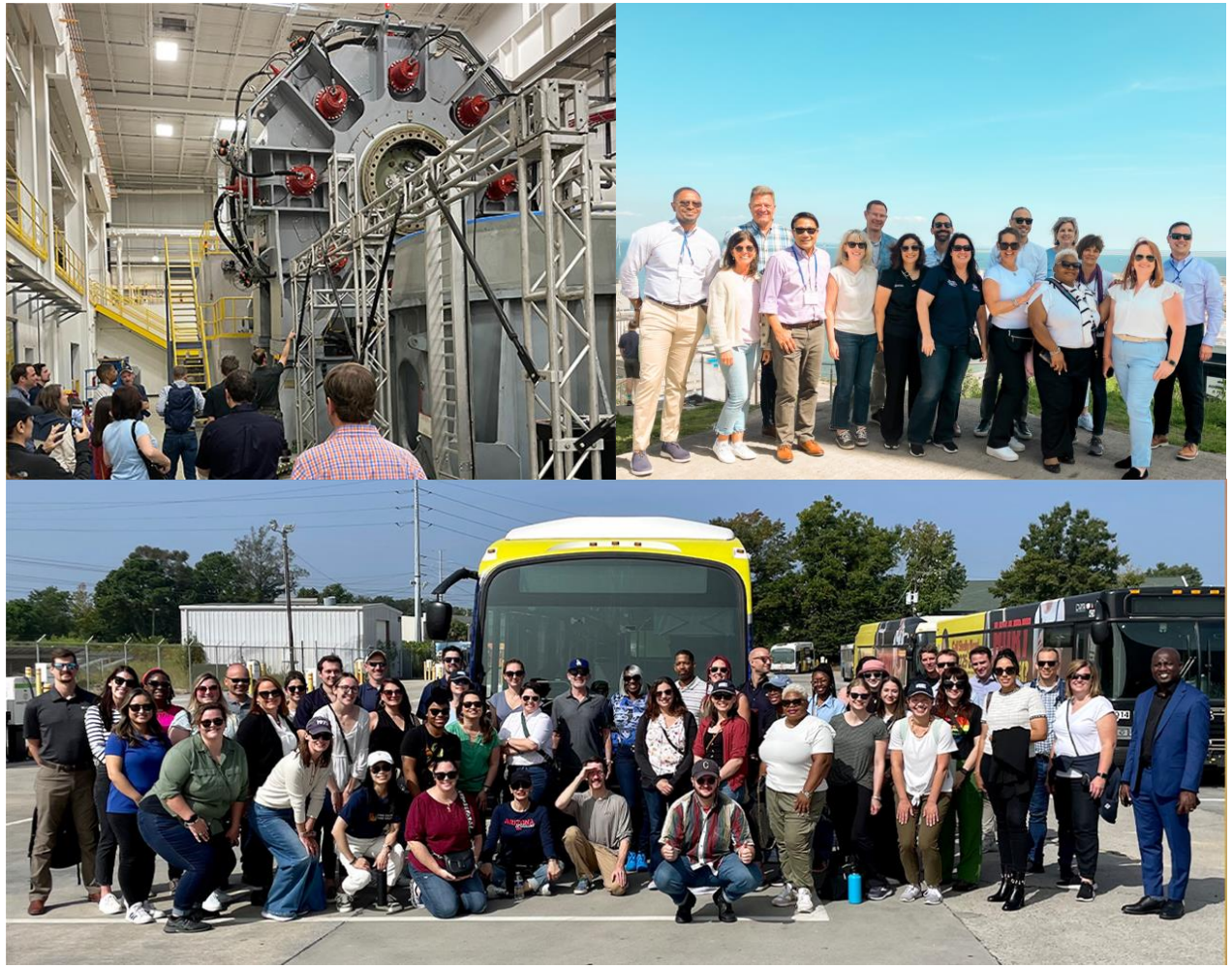
Vice President for Research and Industry Strategy,

Smart Electric Power Alliance

SEPA Overview

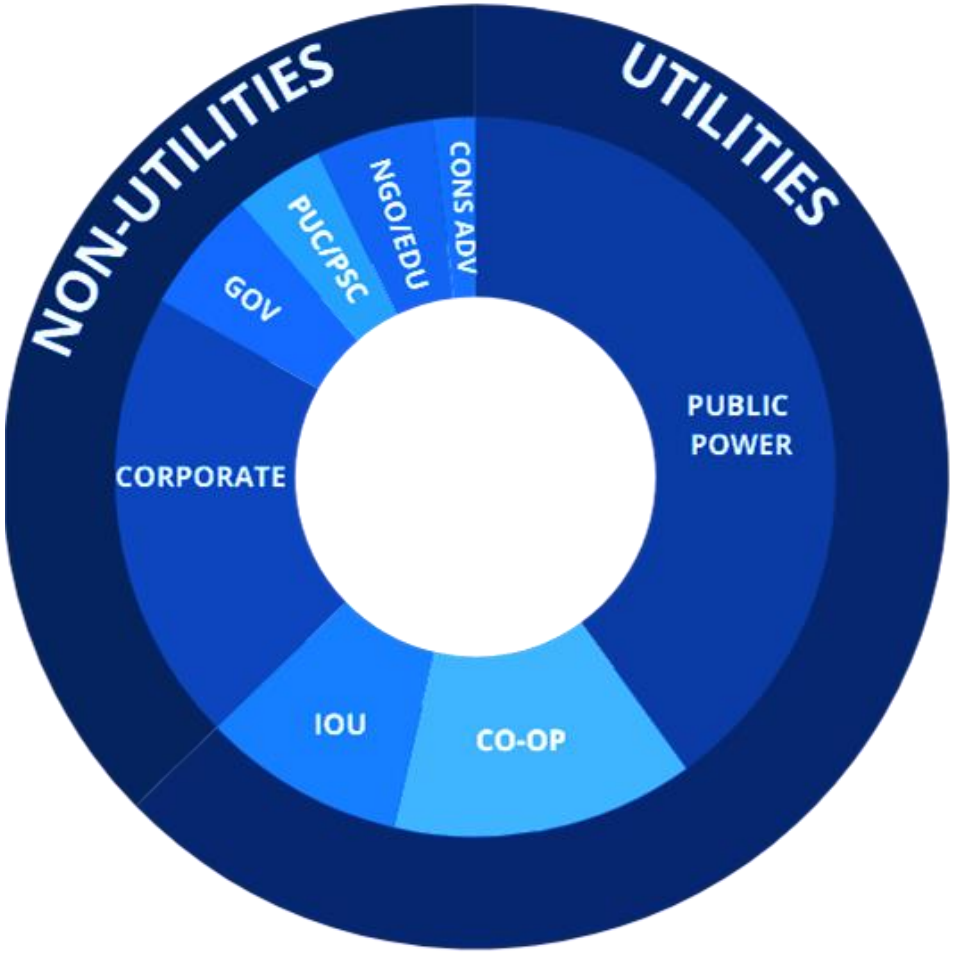
SEPA is a partner to the leading voices and actors in the energy ecosystem, serving as a trusted counselor and thought leader tackling industry-wide challenges.

Through research, convenings, and educational tools, **SEPA is accelerating the clean energy future.**



SEPA Membership

1,000
Total Members



65%+
of US customer accounts served

86%
of Public Utility Commissions & Public Service Commissions

SEPA's Strategic Focus Areas

Grid

The grid is the backbone of the clean energy transition. Modernizing it with advanced technologies and customer-centric programs is critical to ensuring resilience and meeting evolving energy needs.

Growth

As electricity demand rises with increased electrification, managing this growth is essential. SEPA works with stakeholders to implement strategies that meet new demand reliably, sustainably, and affordably.

Globe

By leveraging domestic and international innovations, SEPA equips members with scalable solutions to accelerate progress efficiently.

U.S. Power System Load Growth Drivers

__Generally__ agreed upon by grid planners and load forecasters

Short-term:

- Data centers, manufacturing, and other large loads

Medium-term:

- Transportation Electrification

Long-term:

- Broad-scale electrification (built environment)

Data Centers in Context

Recent trends and projections

- High uncertainty regarding the scale of data center load growth
- Data centers are incentivized to connect quickly to the grid but face congestion/delays
- Large new loads can require **substantial** grid upgrades
- What (and where) is the present electricity system headroom?
  - Many utilities/grid operations have capacity constraints throughout systems (G,T,D)
  - Difference between generation potential and grid demand
  - Planning reserve margin

Key question: Where and what kind of load growth can be accommodated?

Key Questions for Utilities

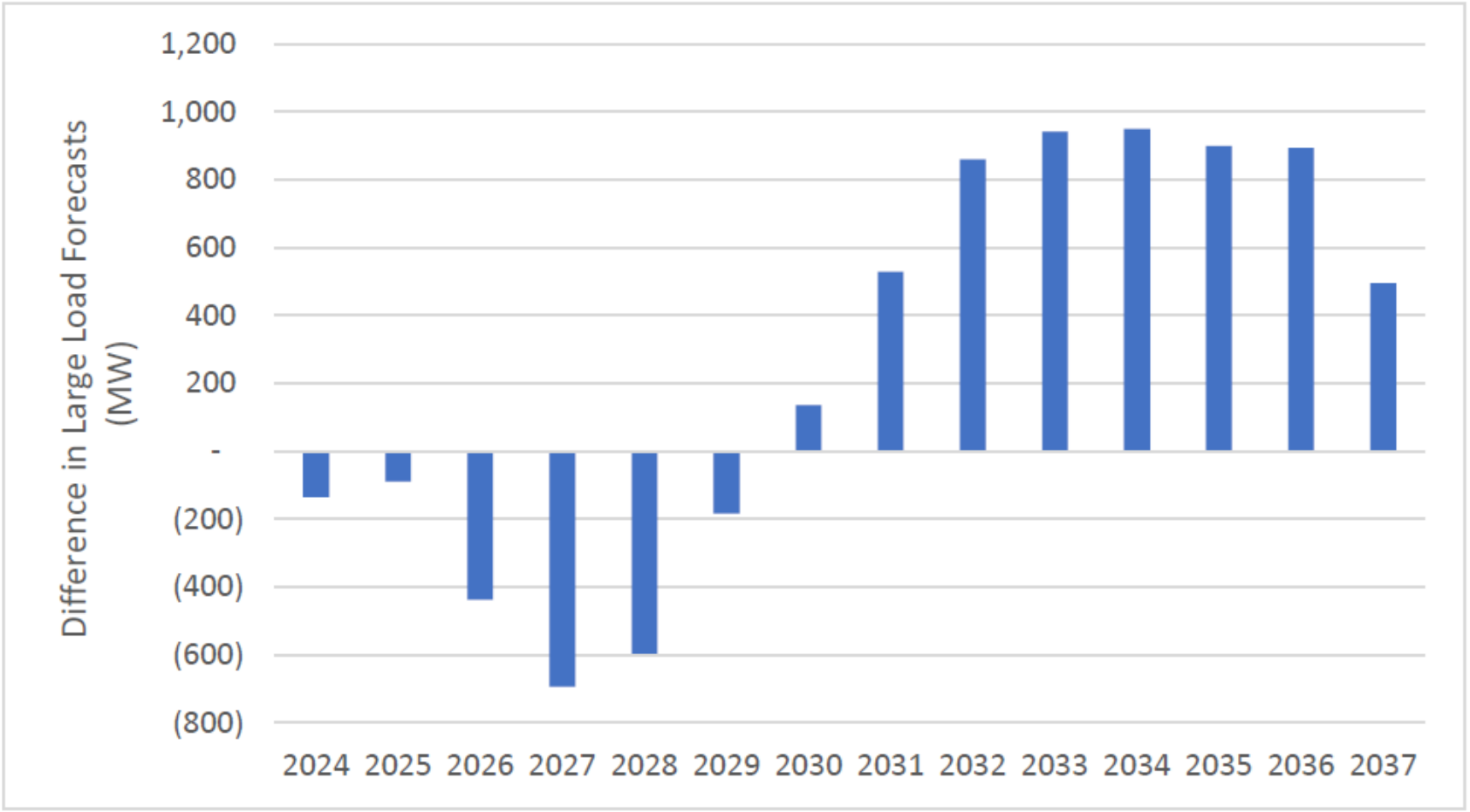
There are many challenges and key questions for utilities. Three examples:

- Load forecasting
  - There is “no consensus” among utilities; forecasting varies widely
  - The scale of these loads, their relatively “flat” profiles, and the speculative nature of some requests due to the “AI arms race” have clear implications
- Load interconnection
  - Complex for large loads, and no fully standardized interconnection process - it can vary widely across the country
  - Speculative requests create challenges for addressing available capacity (G, T, & D)
- Design of electricity tariffs (utilities’ rates and contracts with their customers)
  - Tariffs are a very important tool to address cost allocation; mitigate financial, operational, and resource adequacy risks; and accommodate customer needs

Example: Georgia Power

Rapidly changing forecasts with big changes

Figure 8: B2025 Large Load Forecast Simulation less February 2025 Large Load Forecast Simulation [79]



Source: Georgia PSC

Dominion Energy

Typical data center request process from contact to connection

1

High Level Assessment

Identify infrastructure requirements

2

Engineering Letter of Authorization

Detailed engineering plan;
Cost reimbursed to Dominion Energy

3

Construction Letter of Authorization

Authorizes construction;
Customer must reimburse Dominion Energy for all spent costs should they abandon the project

4

Install Infrastructure

Substation(s);
High Voltage Transmission Lines;
Distribution Lines;

5

Electric Service Agreement

Defines how the customer will take service and structure to recover costs;
Includes revenue requirement whether customer takes service or not

Source: Dominion Energy

Smart Electric Power Alliance

SEPA's Tariff Focused Resources

In partnership with the NC Clean Energy Technology Center

Large Load Tariffs

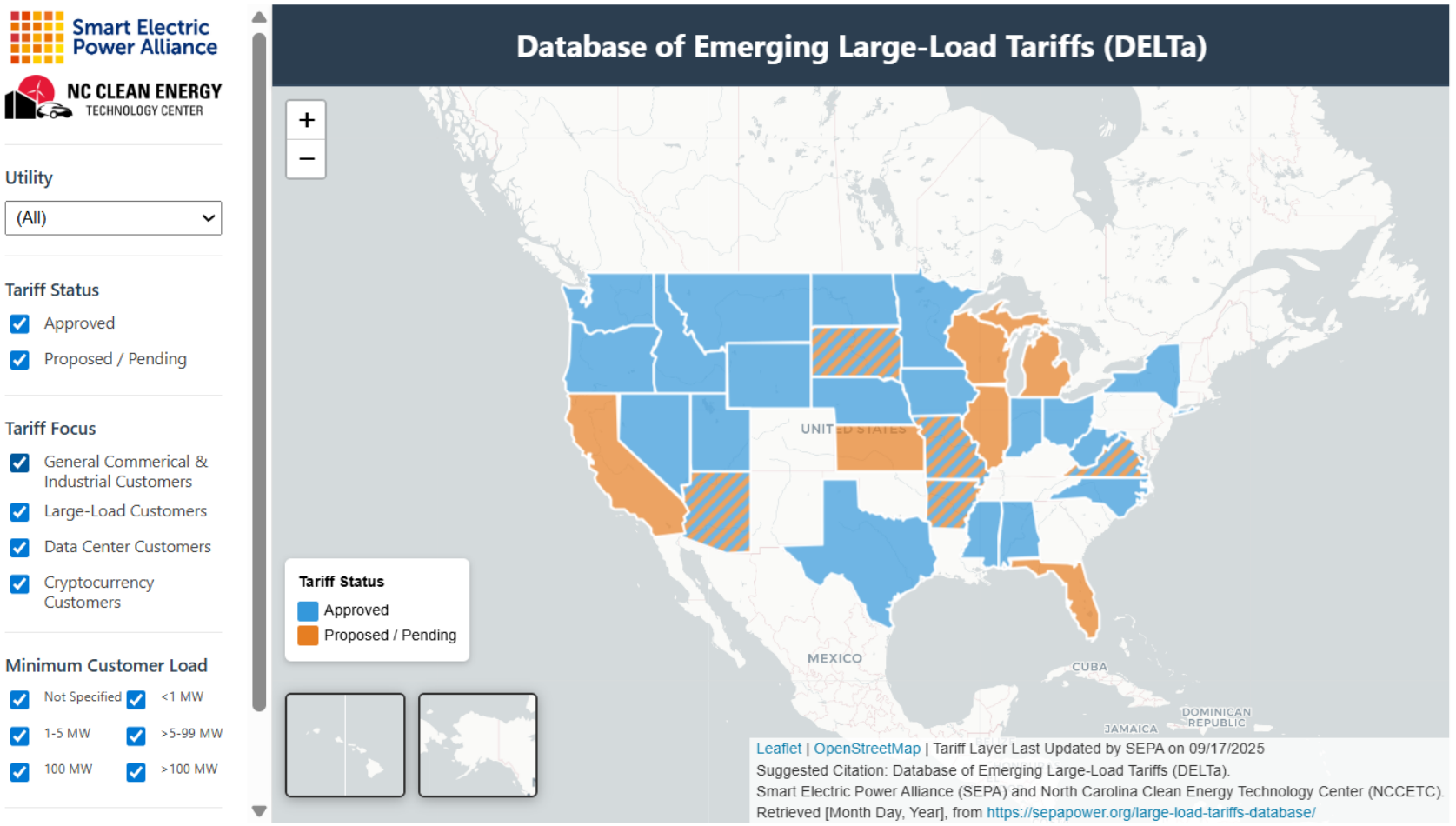
Electricity tariffs are a key tool to help manage the costs and uncertainties of serving new very large customers.

These rates and contracts can address many additional aspects related to large loads. These can be richly detailed and include provisions.

SEPA and NC CETC developed a free, publicly-available resource to be regularly updated

Database of Emerging Large-Load Tariffs (DELTa)

DELTa Highlights



About DELTa:

- Sourced from PUC filings and utility websites
- Categorized based on NCCETC and SEPA industry synthesis
- Publicly available
- Downloadable dataset
- Updated quarterly
- Broad reach to policymakers, regulators, utilities, industry, etc.
- Follow-on insight briefs

https://sepapower.org/large-load-tariffs-database

Why Large-Load Tariffs?

Smart Electric Power Alliance

NC CLEAN ENERGY TECHNOLOGY CENTER

Objectives

Maintain the power system

Adhere to cost-causation principles

Economic development

Offer attractive services

Mitigate cost-shifting risks

Clarify: What's "large"? How can customers get in line?

Challenges

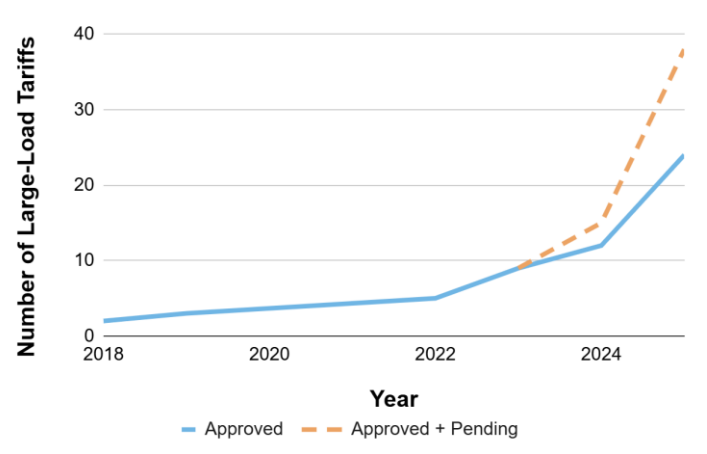
How to deal with large load requests in *forecasting and interconnection*?

How to deal with costs to serve large loads that *fail to show up* as expected?

How to deal with large loads that *do show up*– and require new resources / new investment to serve?

Opportunities

Tariffs are one of several tools for these objectives and challenges:



Source: DELTa (2025).

Others we track:

- State legislation
- Utility interconnection procedures
- Utility system planning
- Emerging technology

Tool for Context/Comparisons

Why are utilities proposing large-load tariffs? In what context?	**Narrative Highlights:** A short description of each tariff's origins, key features, and status.
Which utilities have large-load tariffs?	**State:** 30 states **Utility Name:** 49 operating companies **Utility Type:** Primarily IOUs; + coops, public power, and JAA **ISO/RTO:** e.g., SPP, PJM, MISO, CAISO *Note: SEPA & NCCETC also track legislative context and studies/investigations*
Who are utilities focused on serving through these tariffs?	**Sector or Segment:** Typically "large-load" C&I; occasionally data centers **Minimum Demand (MW):** Many define "large-load" as customers >20 MW **Minimum Load Factor:** Variable thresholds and less-common to-date
How do tariff terms support policy and grid objectives?	**Contract Term** **Load Ramp-Up Period** **Minimum Bill as % of Contract Capacity** **Financial Assurance & Contributions** **Customer Study Fees** **Contract Modification Terms** **Energy Transition Provisions**
Where can I find details of a specific tariff?	**References:** Database includes links to docket, final order, and final tariff sheet (where available).

Table lists fields in the Database of Emerging Large-Load Tariffs (DELTa). Smart Electric Power Alliance (SEPA) and North Carolina Clean Energy Technology Center (NCCETC). https://sepapower.org/large-load-tariffs-database.

Smart Electric Power Alliance

Thank you!

Lesley Jantarasami
ljantarasami@sepapower.org
https://sepapower.org/large-load-tariffs-database

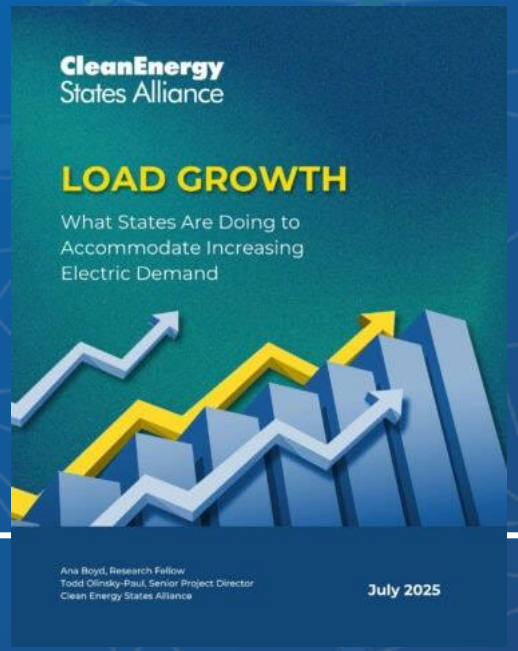
State Approaches to Addressing Load Growth

Todd Olinsky-Paul
Senior Project Director
Clean Energy States Alliance

CleanEnergy States Alliance

Load Growth

What States Are Doing to Accommodate Increasing Electric Demand



September 30, 2025

www.cesa.org

Celebrating 20 Years of State Leadership

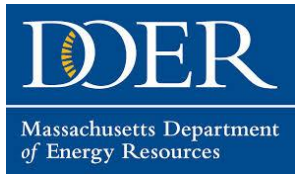
CleanEnergy States Alliance

The Clean Energy States Alliance (CESA) is a national, nonprofit coalition of public agencies and organizations working together to advance clean energy.

CESA members—mostly state agencies—include many of the most innovative, successful, and influential public funders of clean energy initiatives in the country.

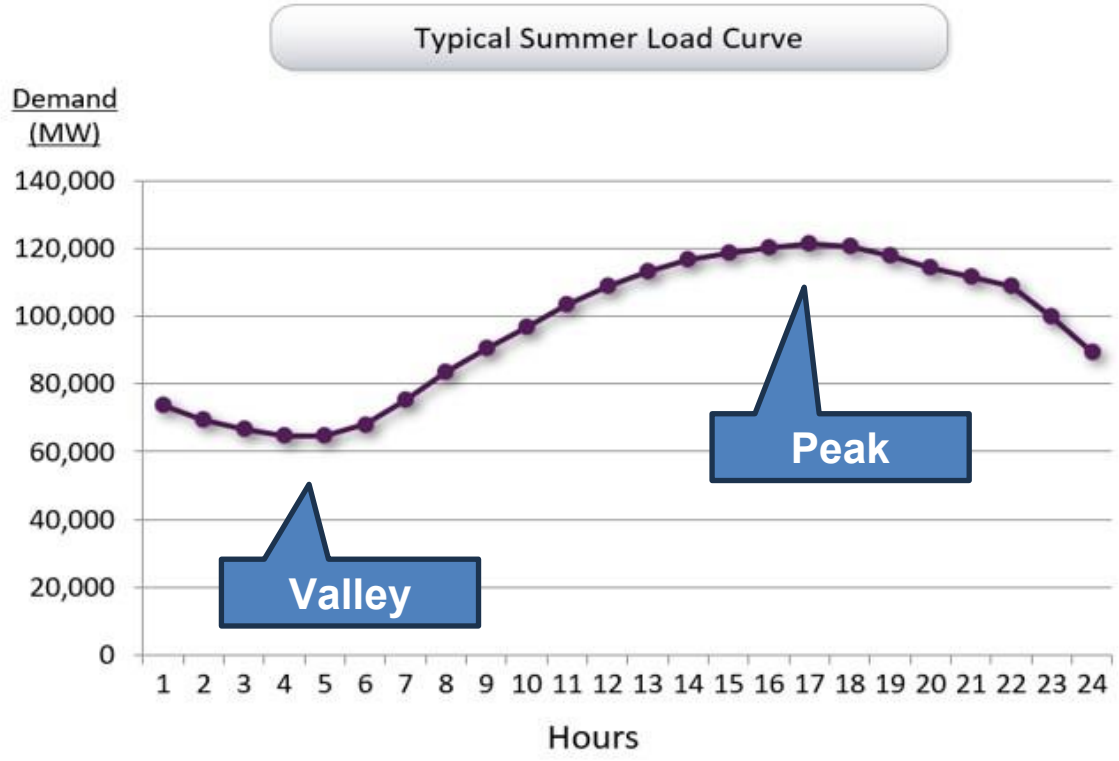
CleanEnergy States Alliance

www.cesa.org

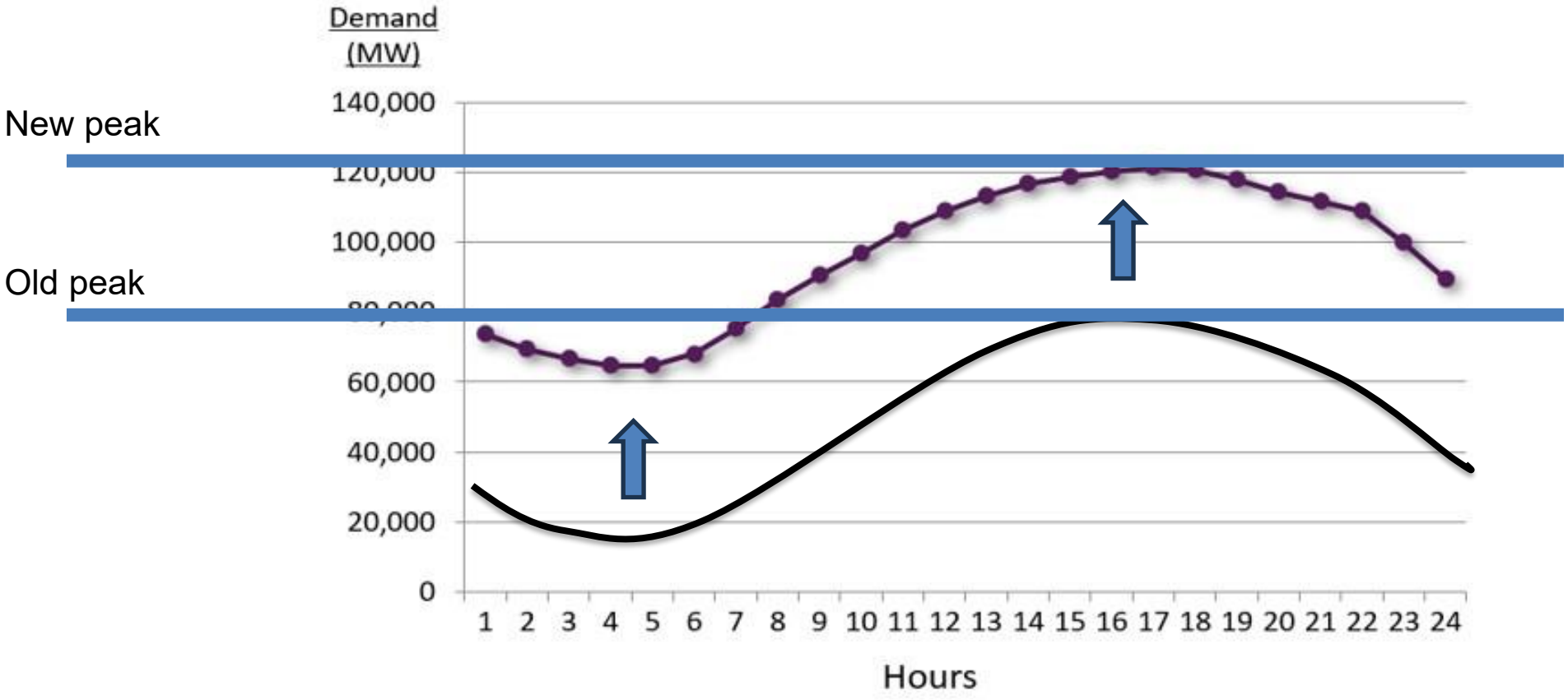


Definitions – are we really talking about load growth?

What is load growth? And why is it a problem?



What happens if demand gets pushed upward across the board?



The peaks do increase… but so do the valleys!

- Increasing peaks is a problem.
- Increasing valleys is a solution.

So what are we really talking about?

Maybe our “load growth” problem is actually a “peak load growth” problem!

There are two different types of solutions:

1. Building new generation, transmission, distribution etc. to accommodate the new peak
2. Shifting demand from peak to off-peak periods (or shifting excess generation from off-peak to peak periods) to flatten the demand curve and reduce the impact of peak demand growth

Load Growth Drivers

Data Centers

- Geography: High concentration in Mid-Atlantic (Virginia), Southeast (Georgia), and Texas
- Load Profile: Often around the clock operations with high load factors
- Timeframe: Near-Term

Manufacturing

- Geography: Midwest (PJM and MISO territory), Southeast, and West
- Load Profile: Daily variation, often following typical work shifts
- Timeframe: Near-Term

Electrification

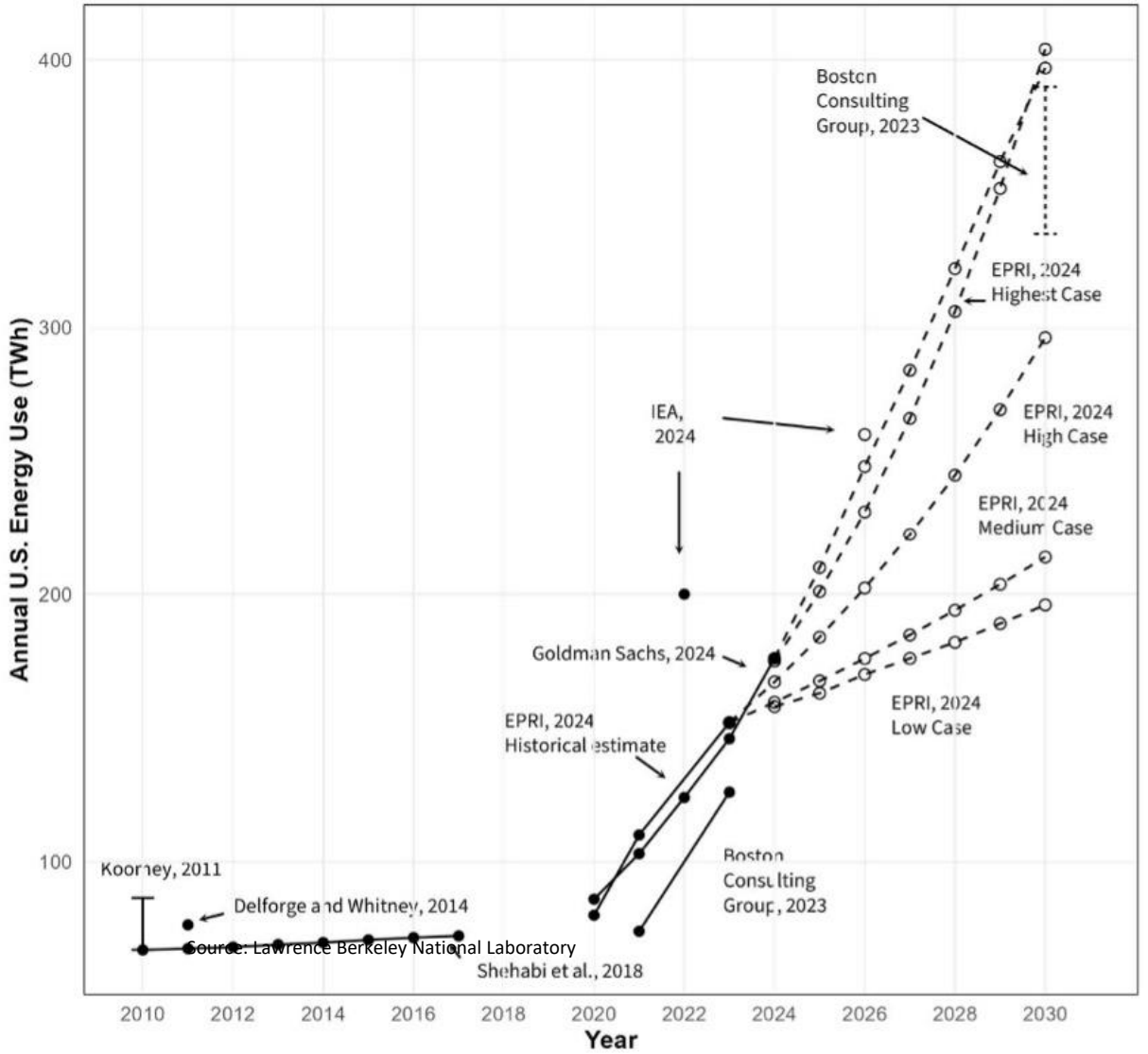
- Geography: California, New York, New England
- Load Profile: Daily variation (morning and late afternoon/evening)
  - Some areas will shift from summer to winter peaking systems
- Timeframe: Late 2020s-2030s

New large load customers: fast growing, geographically specific

Societal shift: slower changes, geographically widespread

Load Growth Trends

- Projected 15.8 percent increase in summer peak demand by 2029
- Data centers could account for 6.7-12 percent of forecasted total national electricity consumption by 2028
- Variation and uncertainty around load growth projections
  - Data centers scouting multiple locations
- Geographic variation
  - Some states dealing with significant and rapid load growth



Source: Lawrence Berkeley National Laboratory

State Load Growth Strategies #1: Supply-Side Investments

New gas plant investments

- 94 gigawatts (GW) of new gas in service by 2035
  - Rise in planned gas generation in utility integrated resource plans (e.g., Arizona, Virginia, Carolinas, Tennessee, Kansas, Nevada, Nebraska)
  - Texas identified 17 gas plants for state-backed loans

Delaying Fossil Plant Retirements

- 9,100 MW of capacity
- Closure delays in West Virginia, Georgia, Alabama, Mississippi, Illinois, Maryland, New York

Source: Georgia Public Broadcasting

State Load Growth Strategies: Supply-Side Investments (Cont.)

Advanced Nuclear Technology

- Widespread interest in Small Modular Reactors (SMRs)
- States developing plans for technology development, adding SMRs to integrated resource plans, and creating incentives to accelerate deployment
  - Examples: Virginia, Indiana, Tennessee, Arizona, Texas, New York

Existing Nuclear Capacity

- Microsoft arranging to purchase power from shuttered Three Mile Island plant

Renewable Energy and Storage

- Renewable energy and storage deployment continues to rise, but not as a result of load growth projections
  - Battery storage deployment doubled in 2024
  - CAISO operates over 11,000 MW of energy storage

Source: Capitol Weekly

State Load Growth Strategies #2: Demand-Side and #3: Transmission Investments

Leveraging demand response to reduce peak load to meet climate goals

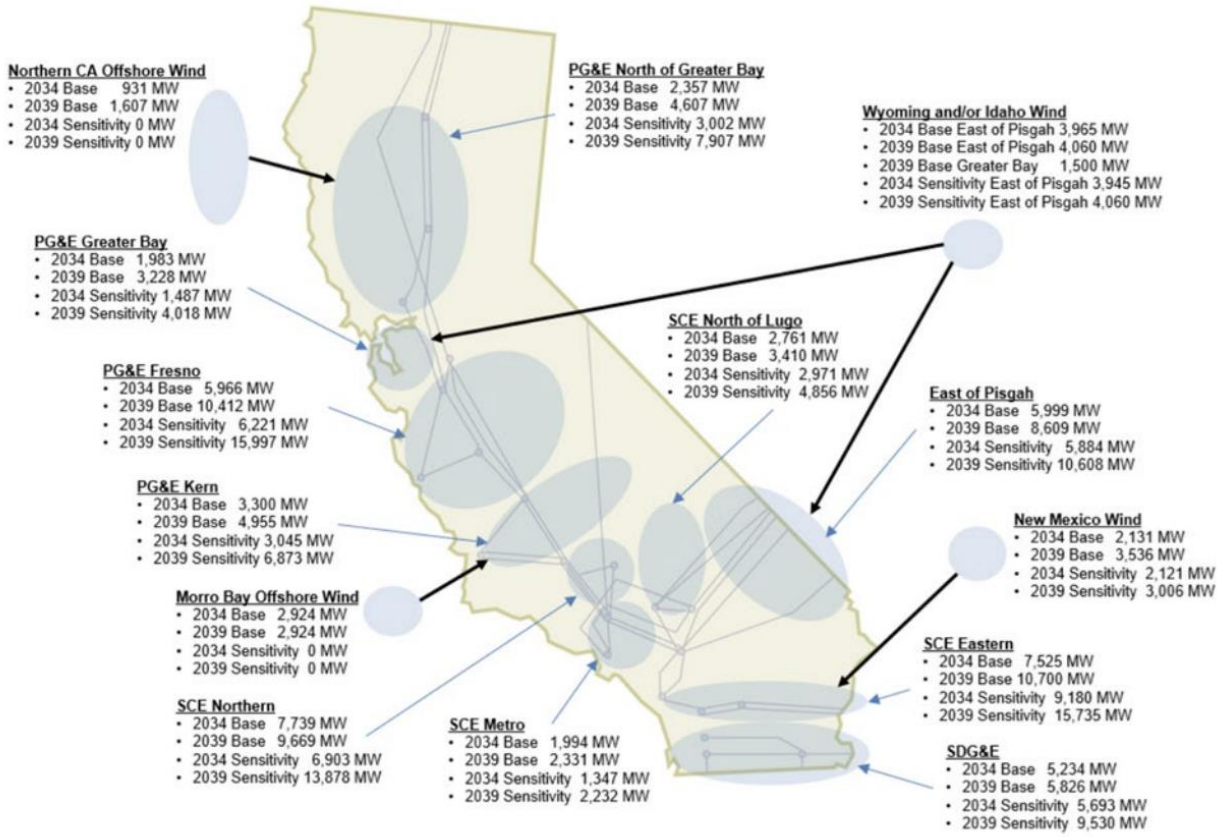
- Examples: California, Massachusetts, and Oregon

New York studying grid flexibility potential to address climate and electrification goals

RTO/ISOs approving new transmission investments

- MISO: $21.8 billion
- ERCOT: $14 billion
- SPP: $7 billion
- CAISO: $6 billion (2023-2024 plan) and $4.8 billion 2025 plan)

Figure ES-2: Transmission Planning Zones and Capacity



Source: CAISO

Who pays? Special Tariffs to Limit Ratepayer Cost Shifts

Georgia Public Service Commission new power usage terms

- Longer contract terms
- Large-load customers pay for grid upgrades

Indiana Utility Regulatory Commission approved settlement creating new large-load tariff

- Large-load customers pay for grid upgrades
- Downsizing requirements and exit fees

AEP's new large-load tariff approved in Ohio

- Large-load customers pay minimum of 85% of projected energy use
- Minimum contract terms
- Large-load customers pay for grid upgrade

Duke Energy adding minimum-take clauses to large-load tariff

Keeping it Clean and On-Site: Clean Energy Tariffs Facilitate Partnerships between Large-Load Users and Clean Energy Projects

NV Energy Clean Energy Transition Tariff

- Allows customers to partner with utility and power developer to fund new technologies
  - Example: Google partnering with geothermal developer, Fervo Energy

Duke Accelerating Clean Energy Tariffs

- Financing options for new clean technology
- Individualized clean energy portfolios for commercial and industrial customers

Source: Utility Dive

Data Centers on State Legislative Agendas: Cost Shifts and Efficiency

Protecting ratepayer groups from data center service costs:

- **Maryland:** Successful legislation to develop new rates for data center and prevent cost shifts
- **Oregon:** Successful legislation to shield customers from data center service costs
- **Texas:** Successful legislation to
  - Prevent duplicative interconnection requests
  - Require large load customers to pay transmission fees
  - Gives grid operator more authority to curtail large loads
- **California:** Proposed legislation creating tariffs to prevent cost shifts and promote clean energy
- **Virginia:** Unsuccessful legislation to study and prevent cost shifts

Improving data center efficiency:

- **California:** Proposed legislation to
  - Provide tax cuts to data centers relying on clean energy
  - Require energy usage reporting and set efficiency standards
- **Virginia:** Unsuccessful legislation to tie tax incentives to efficiency standards

Areas for Additional Research (in progress)

- Opportunity for states to ramp up renewable generation and storage deployment
- Interconnection queue and siting reform to expand renewable energy and energy storage deployment
- High-voltage transmission planning
- Data center load flexibility
- Demand response and virtual power plants expansion to address load growth
- Improve load forecasting to avoid suboptimal investments

Thank You

Todd Olinsky-Paul

Senior Project Director

Clean Energy States Alliance

todd@cleanegroup.org

Task Force Structure and Work Plan

Load Growth Subcommittee

Load Growth Subcommittee, to focus on, as appropriate:

1. Developing estimates of near term and longer-term load growth forecasts under varying economic outlook scenarios.
2. Assessing the implications of load growth and new large loads, including as related to existing resource capacity and reliability constraints, new resource needs, and transmission and distribution requirements.
3. Identifying technological and policy solutions, including load flexibility and demand response strategies, to address the growing energy needs of data centers and heavy industry.
4. Evaluating strategies for avoiding stranded assets while meeting growing electricity demand.
5. Identifying recommendations for minimizing residential rate increases and maintaining affordability while managing rising electricity demand.

Load Growth Subcommittee

Load Growth Subcommittee Meetings

- First meeting – Thursday October 16th 3:00 – 4:30 pm
- Will continue to meet biweekly on Thursdays from 3:00 – 4:30 pm

Other Ongoing Efforts Addressing Load Growth

- Duke Energy Carolinas Resource Plan filing (by October 1, 2025)
- NCUC Large Load Technical Conference (October 14-15, 2025)

Action Requested

If desired, please assign a representative for your organization, or join the Load Growth Subcommittee yourself to participate in the development of potential solutions and recommendations.

Technical Advisory Subcommittee

Technical Advisory Subcommittee, to focus on, as appropriate:

1. Advising the Office of the Governor on any commissioned modeling of North Carolina's electricity system.
2. Developing testable hypotheses and questions that can inform state energy policy.
3. Increasing transparency and public understanding of models used to inform energy policy, including their inputs and outputs, risks, and uncertainties.
4. Providing quantitative and qualitative assessment results and supporting information to other subcommittees.

Commissioned Modeling

Modeling Exercise:

- **What:** Capacity expansion, production cost, and resource adequacy modeling (EnCompass & SERVM) to inform February report
- **Who:** Energy Futures Group, as commissioned by and in collaboration with the Office of the Governor

Engagement:

- Technical Advisory Subcommittee meetings every 3-4 weeks
  - **First meeting: Monday, October 6th, 1:30-3:30P**
- Designated Subcommittee members with modeling and energy systems expertise
- Objectives:
  - Inform the modeling scenarios and sensitivities run by the EFG team.
  - Contribute to the selection and validation of modeling assumptions.

Action Requested

If desired, please assign a representative for your organization, or join the Technical Advisory Subcommittee yourself, to contribute modeling and/or planning expertise.

Discussion & Next Steps

Discussion

- What are your goals for possible solutions to load growth in North Carolina?
- Which goals should be prioritized?

Discussion

- What types of data and information would be helpful to this task force in developing policy recommendations?
- What types of speakers would be helpful to hear from?

Discussion

- Did you learn anything new today?

Future Meetings

- **Full Energy Policy Task Force**
  - Next meeting anticipated in early December 2025
- **Load Growth Subcommittee**
  - First meeting October 16th 3:00 – 4:30 pm
  - Meeting biweekly on Thursdays from 3:00 – 4:30 pm
- **Technical Advisory Subcommittee**
  - First meeting October 6th from 1:30 – 3:30 pm
  - At least three additional meetings expected for October – December 2025

Adjournment

Rep. Hall