Grid Strategies

Increasing the Certainty and Transparency of Load Forecasts

NASEO 2026 Energy Policy Outlook Conference

John D. Wilson, Vice President

February 2026

Two Reports:

Power Demand Forecasts Revised Up for Third Year Running, Led by Data Centers

- November 2025
- Third annual report summarizing utility load forecasts
- Co-authors: John D. Wilson, Sophie Meyer, Zach Zimmerman, and Rob Gramlich

Forecasting for Large Loads: Current Practices and Recommendations

- December 2025
- First of the ESIG Large Load Task Force reports, six more reports forthcoming
- Lead authors: John D. Wilson and Sophie Meyer
- Editing committee had 16 members, representing utilities, research laboratories, regional planning authorities, and consulting firms

PROJECT SPONSORED BY

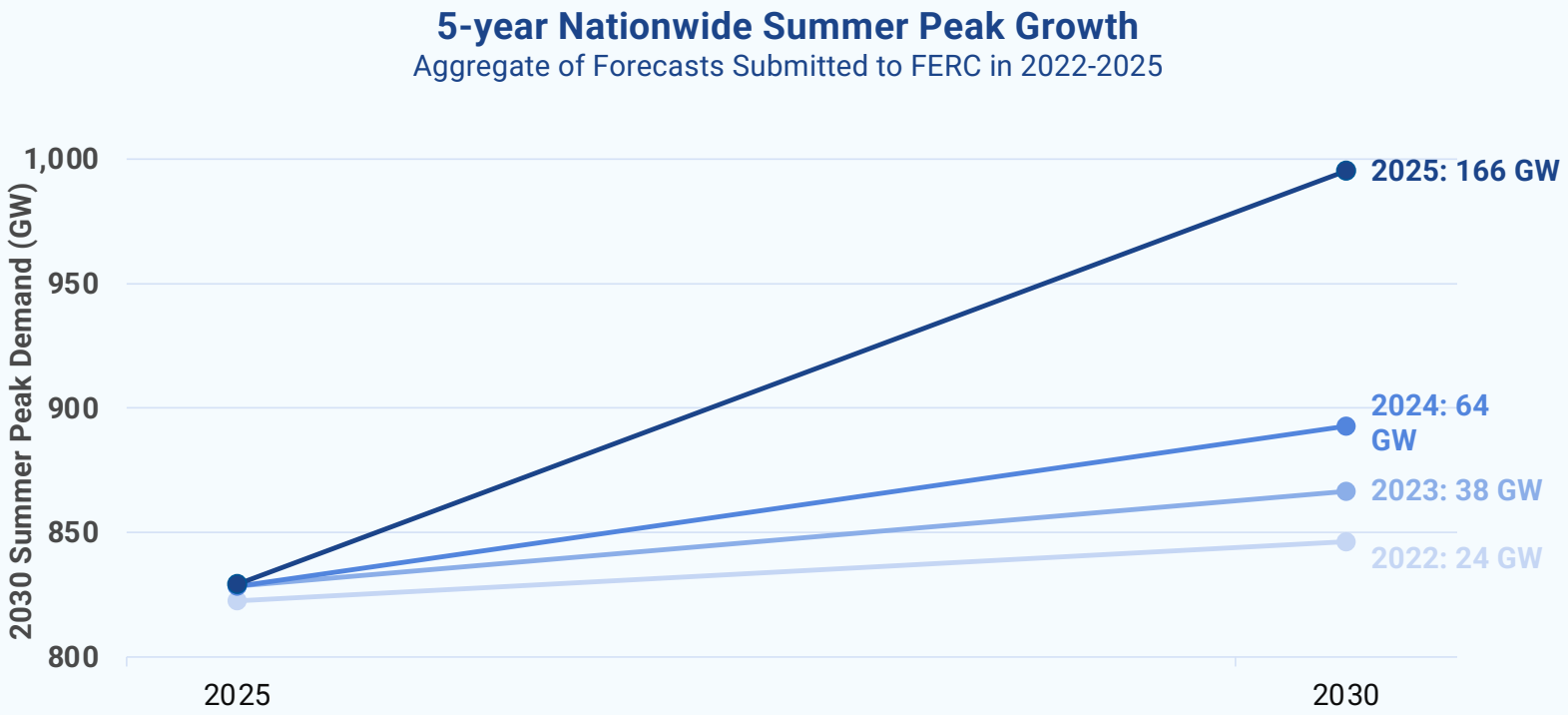
Connected Grid Initiative

https://gridstrategiesllc.com/project/load-growth-forecast/

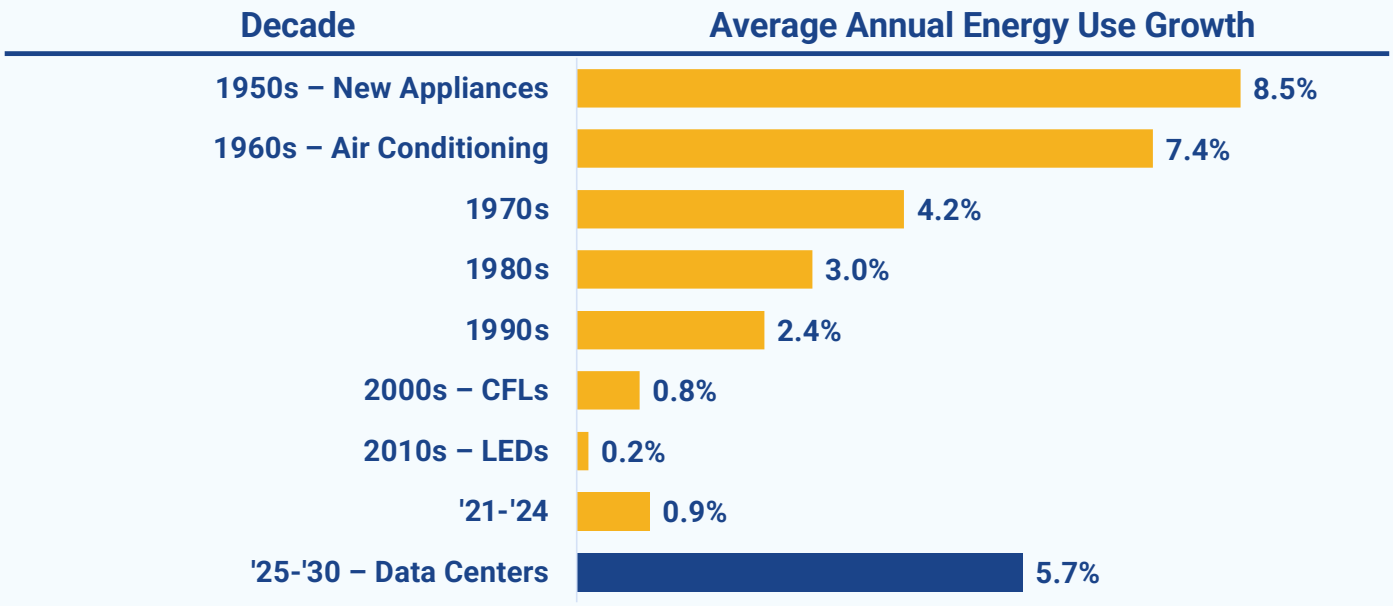
ESIG ENERGY SYSTEMS INTEGRATION GROUP

Grid Strategies

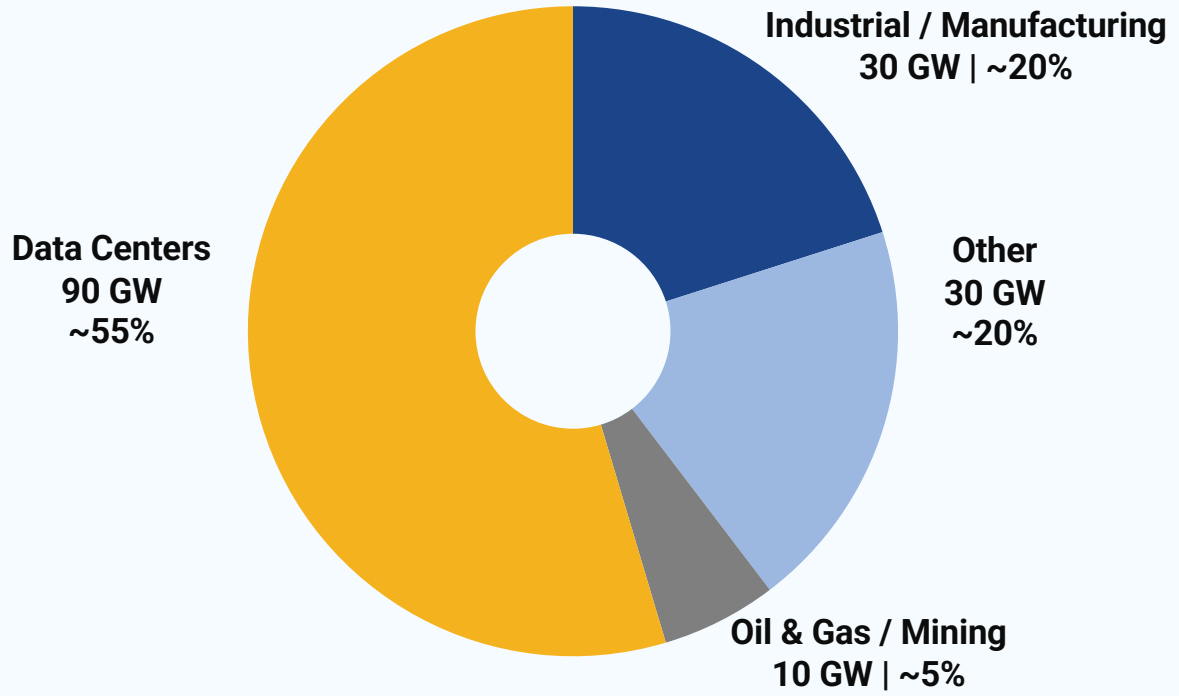
Five-Year Load Growth Up Six-Fold to 166 Gigawatts



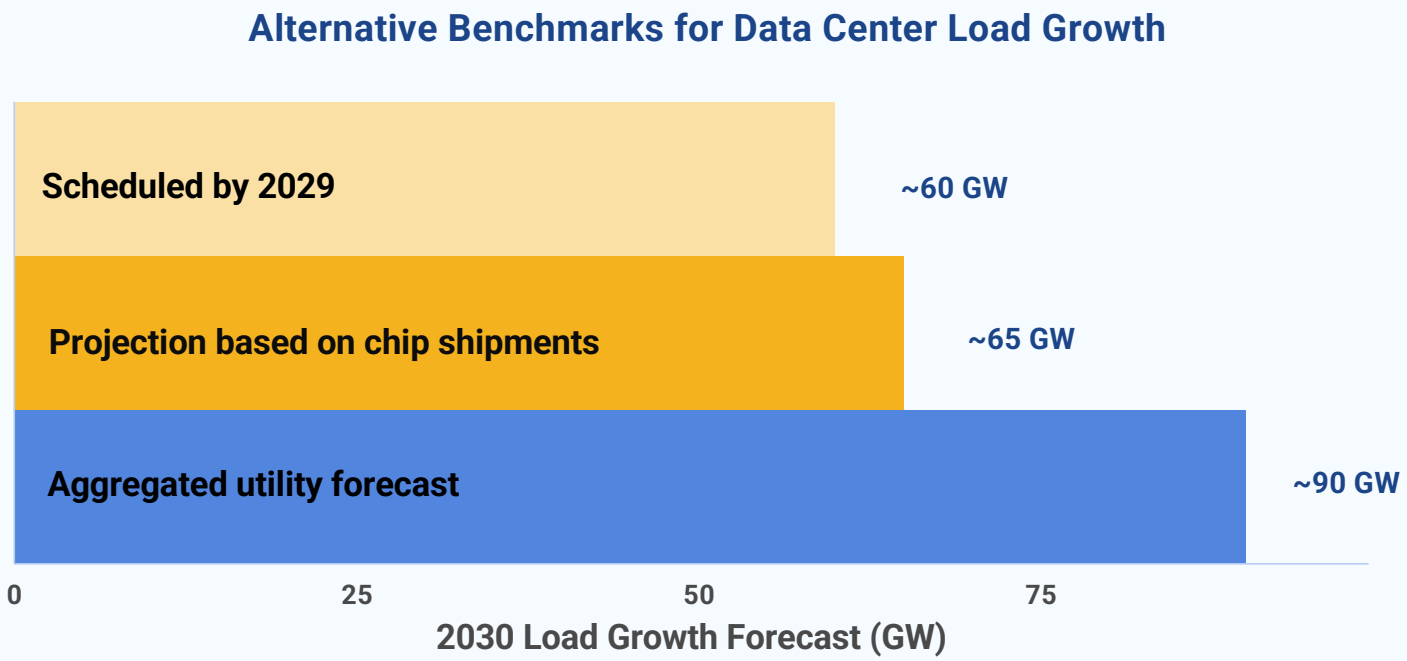
A Scramble to Respond to Growing Energy Demand



Data Center Demand Driving Peak Load Growth

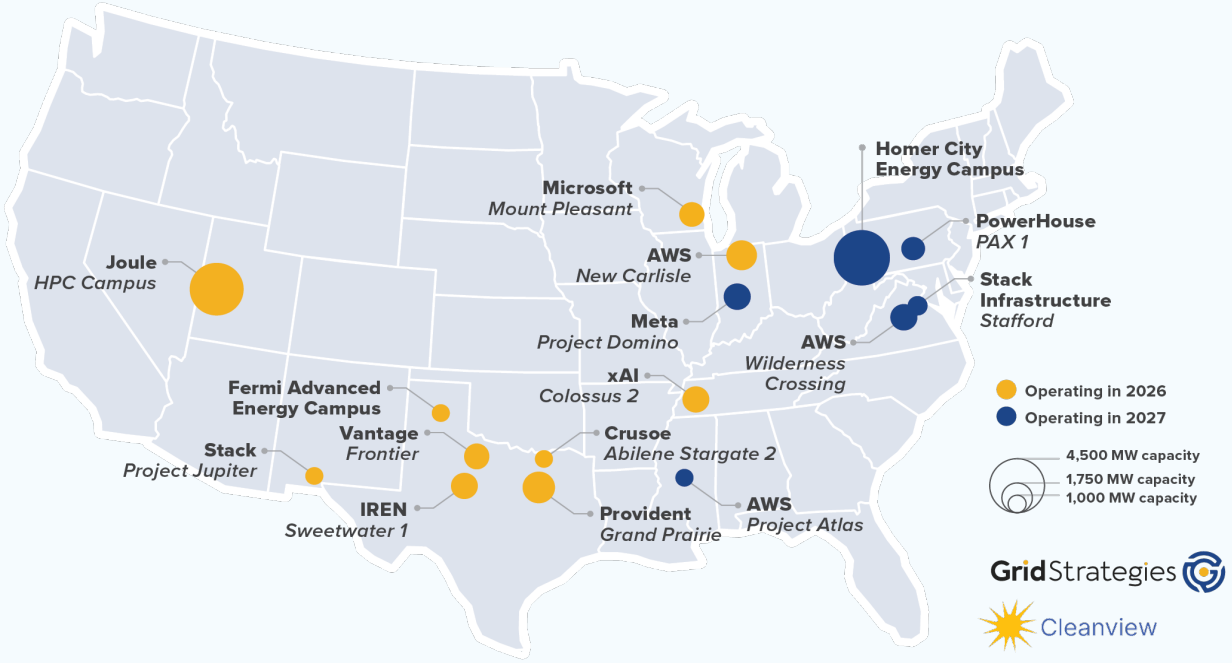


Benchmarks Suggest Data Center Load Forecast Overstated

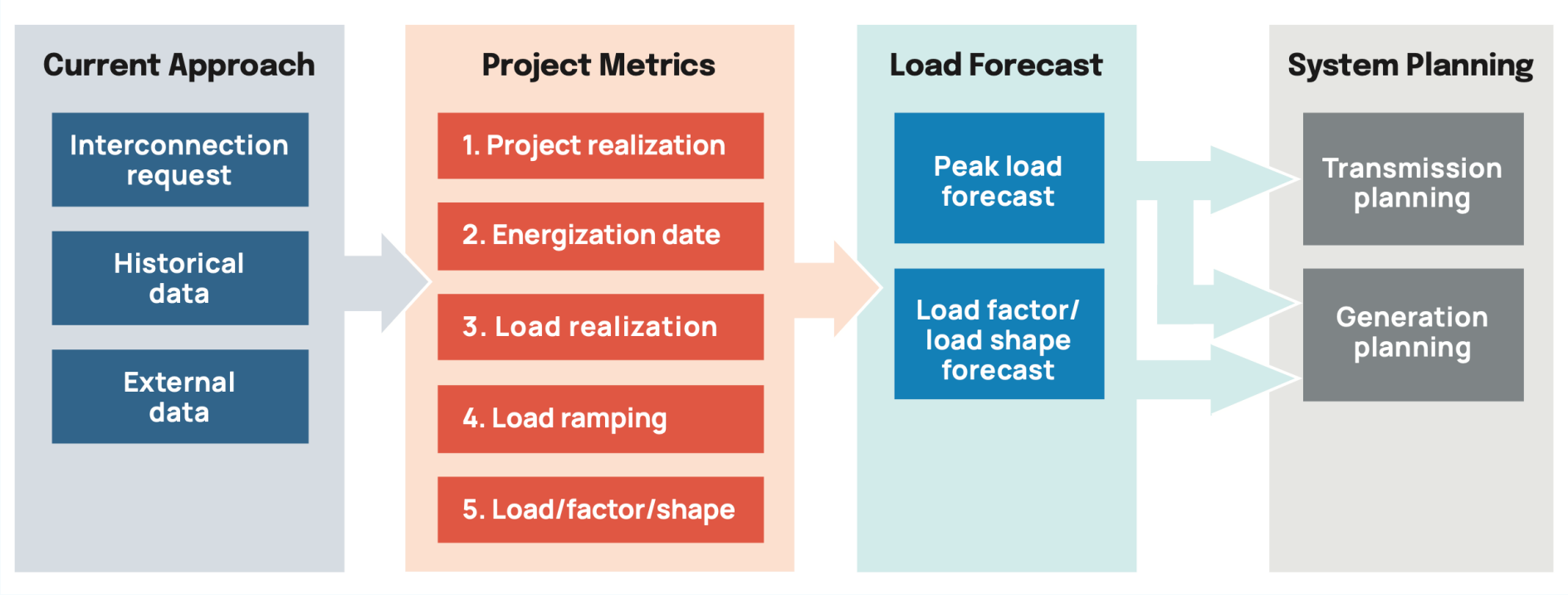


Rise of GW-Scale Data Centers and On-site Generation

GW-Scale Data Centers Expected Online 2026-2027



From Data to Planning



Large Load Characteristics and Forecast Metrics

Project Realization	Energization Date	Load Realization	Load Ramping	Load factor or load shape
The rate at which projects included in the load forecast are placed in service • Often presented as a percentage of project requests expected to come to fruition	The beginning of commercial operation by projects, including anticipated delays	The forecast peak load that the project is expected to require once it's fully scaled up • Often presented as a percentage of requested peak load	The monthly or annual forecast of demand during the startup period of commercial operation • Often presented as a percentage of requested peak load	• **Load factor:** Actual energy use as a proportion of facility capacity • **Load shape:** More detailed information on power needs, for example, an hourly schedule of energy use

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.

Load Forecasting: What's Going Well

Large load forecasts are almost never the same as the large load pipeline

… there may be exceptions at smaller utilities

Large load forecasting practices are almost all under active reform

… new practices, in most cases just a few years old

In many cases, forecast practices are aligned with large load type

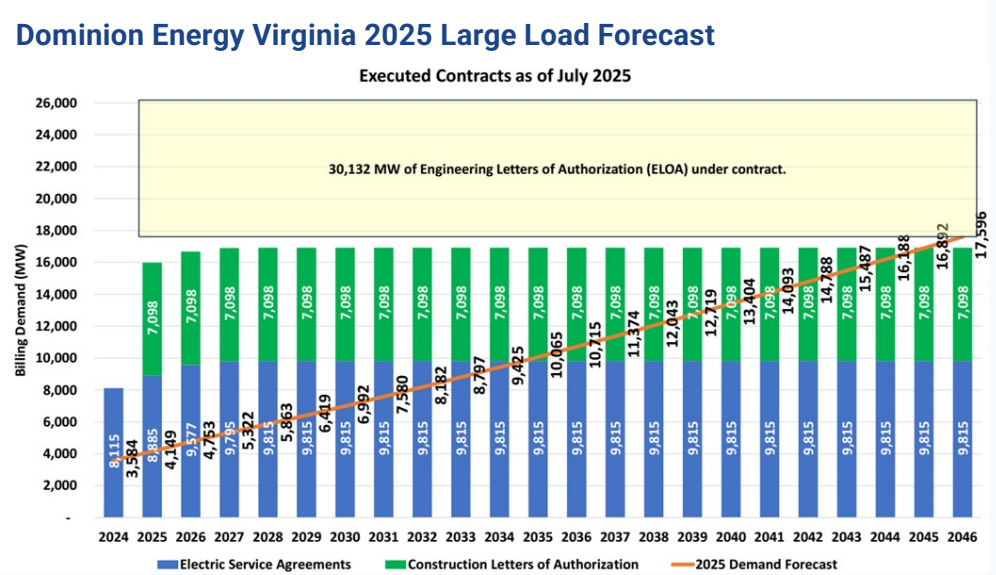
… industrial and data center loads are forecast differently

Substantial investments in studying data center loads

… top priority is operational risk, but front-end planning risk is also a priority

Utility rate tariff reforms are helping to reduce uncertainty

… these reforms do not reduce all sources of risk



Load Forecasting: What's Going Well

Large load forecasts are almost never the same as the large load pipeline

… there may be exceptions at smaller utilities

Large load forecasting practices are almost all under active reform

… new practices, in most cases just a few years old

In many cases, forecast practices are aligned with large load type

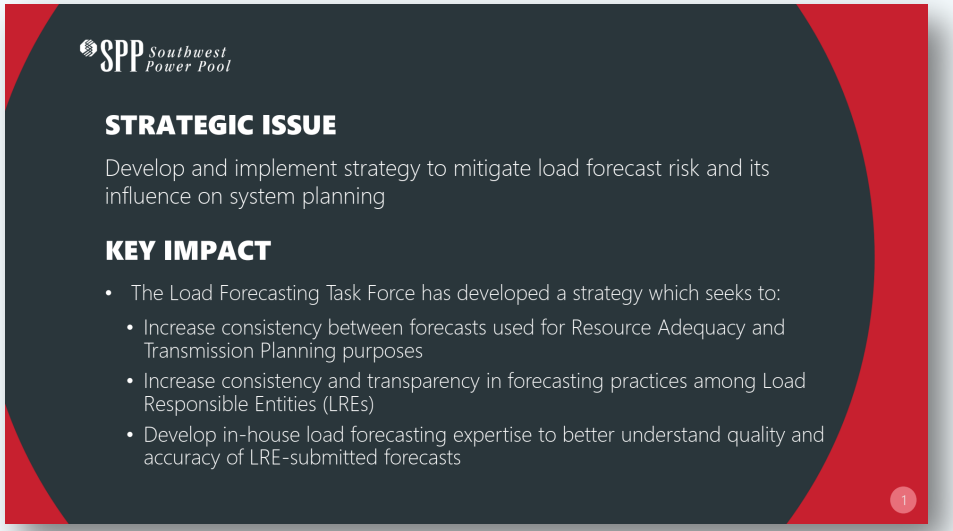
… industrial and data center loads are forecast differently

Substantial investments in studying data center loads

… top priority is operational risk, but front-end planning risk is also a priority

Utility rate tariff reforms are helping to reduce uncertainty

… these reforms do not reduce all sources of risk



Load Forecasting: What's Going Well

Large load forecasts are almost never the same as the large load pipeline

… there may be exceptions at smaller utilities

Large load forecasting practices are almost all under active reform

… new practices, in most cases just a few years old

In many cases, forecast practices are aligned with large load type

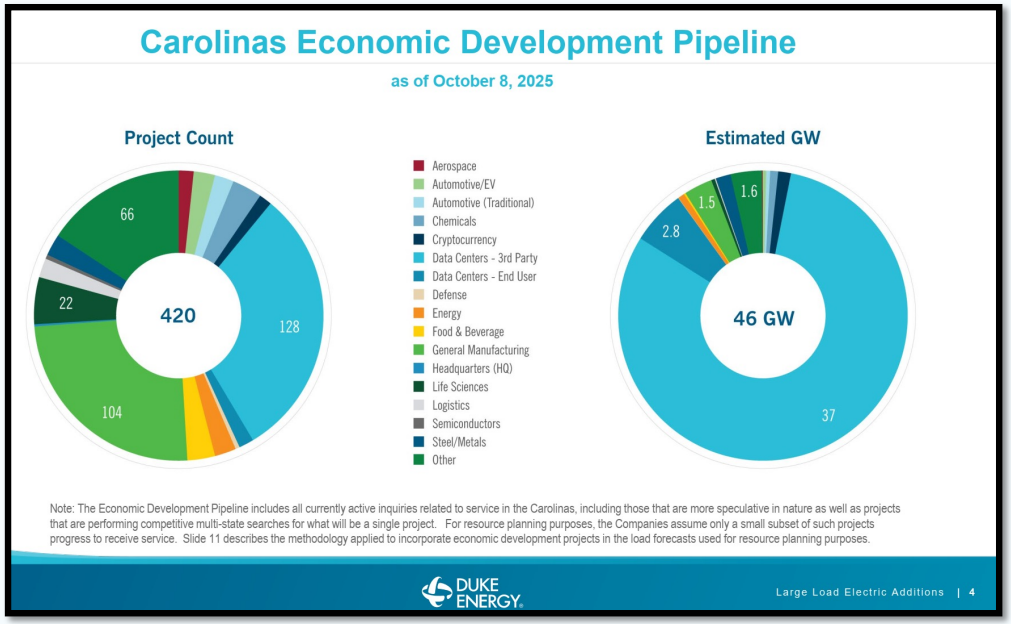
… industrial and data center loads are forecast differently

Substantial investments in studying data center loads

… top priority is operational risk, but front-end planning risk is also a priority

Utility rate tariff reforms are helping to reduce uncertainty

… these reforms do not reduce all sources of risk



Load Forecasting: What's Going Well

Large load forecasts are almost never the same as the large load pipeline

… there may be exceptions at smaller utilities

Large load forecasting practices are almost all under active reform

… new practices, in most cases just a few years old

In many cases, forecast practices are aligned with large load type

… industrial and data center loads are forecast differently

Substantial investments in studying data center loads

… top priority is operational risk, but front-end planning risk is also a priority

Utility rate tariff reforms are helping to reduce uncertainty

… these reforms do not reduce all sources of risk

Load Forecasting: What's Going Well

Large load forecasts are almost never the same as the large load pipeline

… there may be exceptions at smaller utilities

Large load forecasting practices are almost all under active reform

… new practices, in most cases just a few years old

In many cases, forecast practices are aligned with large load type

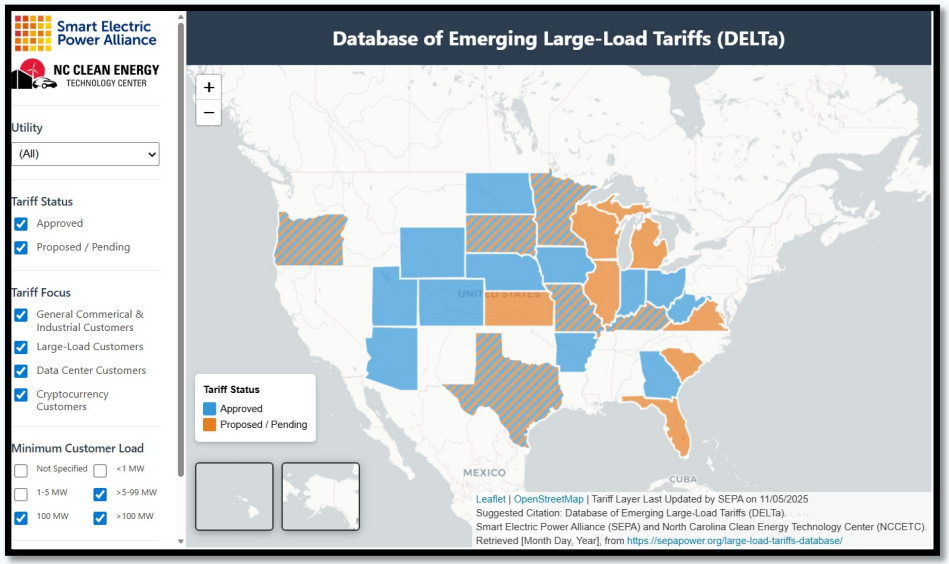
… industrial and data center loads are forecast differently

Substantial investments in studying data center loads

… top priority is operational risk, but front-end planning risk is also a priority

Utility rate tariff reforms are helping to reduce uncertainty

… these reforms do not reduce all sources of risk



Load Forecasting: What Needs Improvement

Transparency and consistency

- Large loads are not described or assessed in a consistent manner in load forecasts.

Insufficient data

- Particularly an issue for data centers – from multi-tenant to AI
- Early-process customer-supplied data are unreliable in certain respects
- Difficult for many utilities to obtain useful historical data, especially if they don't have a strong history with data centers

Alternative site data not shared

- Planners are only beginning to request information on this topic
- Practices for interpreting these data are probably not yet developed.

Load flexibility is not included

- No forecasts include load flexibility for future large loads
- Load flexibility planning practices may be complicated

Thank you!

John D. Wilson
Vice President
jwilson@gridstrategiesllc.com

We offer research and advising on

Founded in 2017, Grid Strategies works on policy to enable decarbonization and an affordable, reliable electricity system.