
Reliability in the West
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Reliability in the West Discussion Series: NERC LTRA and Western Assessment of Resource Adequacy

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March 4, 2026

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Reliability in the West Discussion Series: NERC LTRA and Western Assessment of Resource Adequacy

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March 4, 2026

Panelists

Bill Lamanna

Senior Engineer, Reliability Assessments, NERC

Enoch Davies

Manager, Reliability Modeling, WECC

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Long-Term Reliability Assessment

William Lamanna, Senior Engineer, Reliability Assessments
Reliability in the WEST Presentation
March 4, 2026

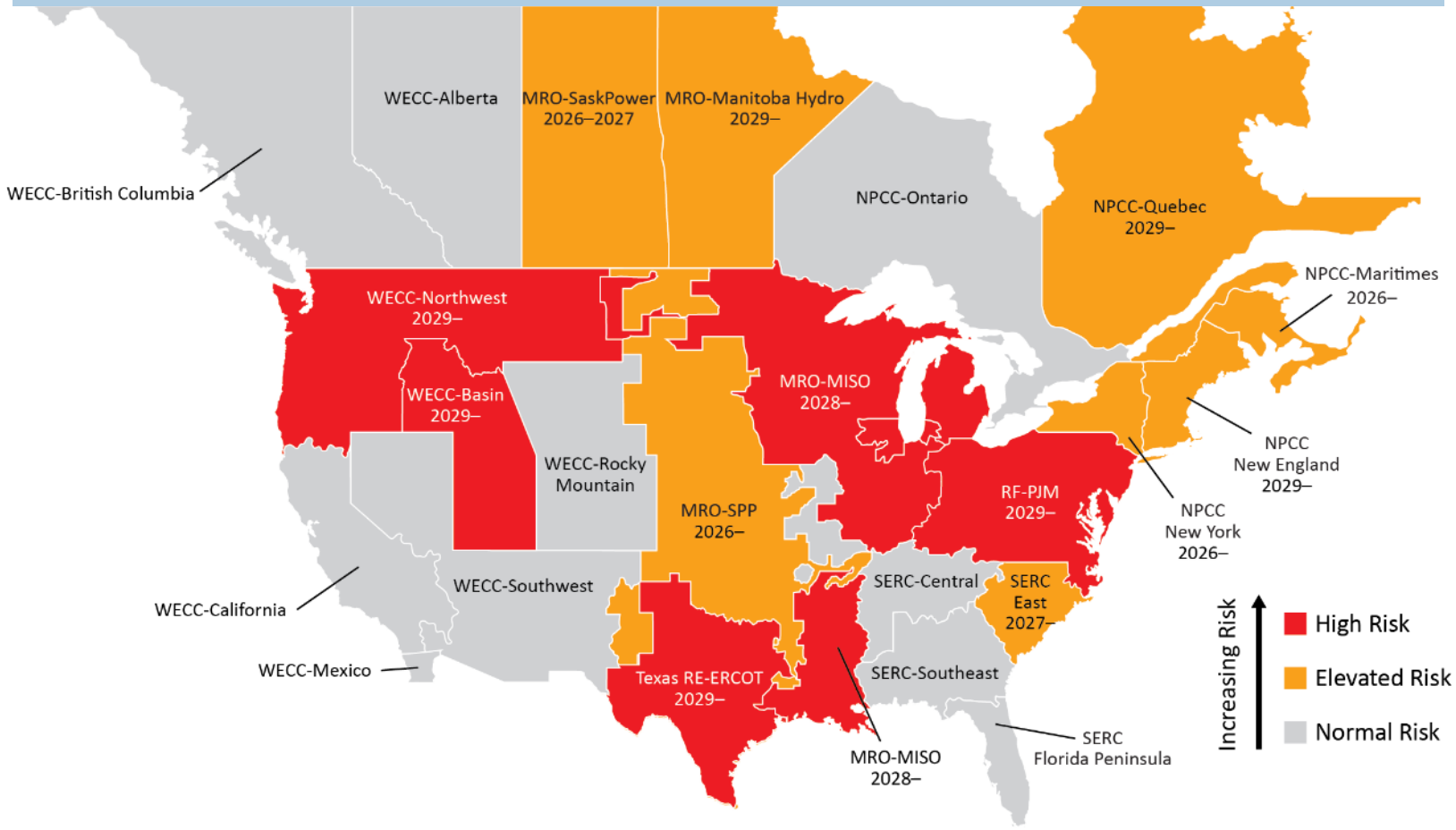
Key Findings

- **Assessment** Resource adequacy concerns are expanding to more areas and growing more acute
- **Assessment** Resource growth projections are marked by uncertainty and fall short of escalating demand and projected generator retirements
- **Assessment** Risk of supply shortfalls is increasing as generators retire and the resource mix becomes more weather dependent
- **Trend** Demand growth is rising rapidly driven by data centers, industrial loads, and electrification
- **Trend** Transmission development is increasing, with more projects in planning

2025 LTRA Risk Summary

Risk Area Summary 2026 – 2030

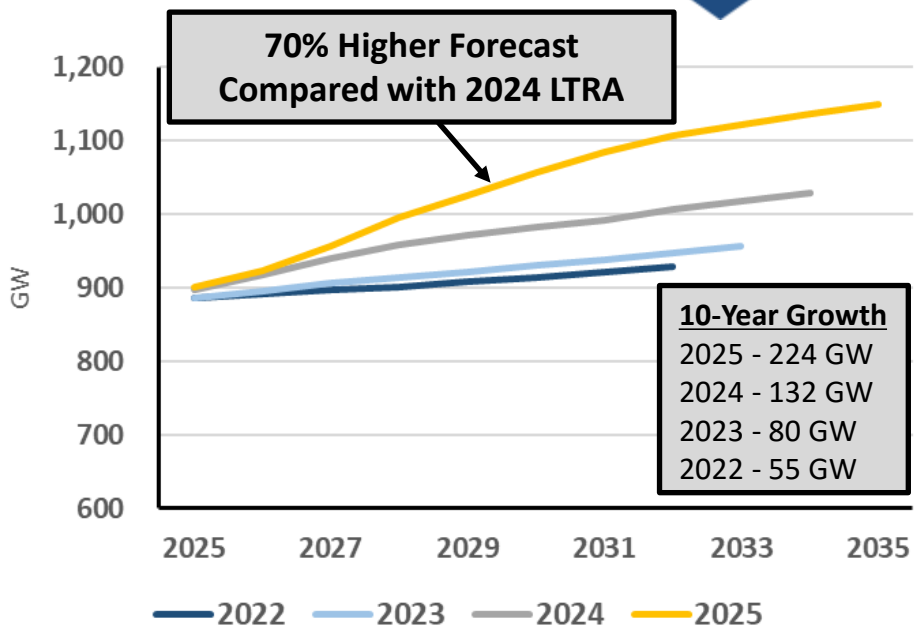
Shows highest risk category in the 5-year period and the year it occurs



Note: Assessment inputs include: 1) Probabilistic assessment (studied years 2027 and 2029) and planning reserve margins (2026 through 2030). Risk determination based on established resource adequacy criteria (1-day-in-10 years) and NERC-National Academy of Engineering Workshop Report criteria for load-loss and unserved energy

Demand Forecasts Continue Rapid Ascent

- Assessment area summer peak demand is forecast to rise by over 224 GW (24% increase from 2025 peak demand)
- New data centers are the main source of load growth followed by other large industrial loads and electrification
- Winter peak demand growth continues to exceed summer growth (Rising 245 GW over 10 years)
- Data centers and large industrial loads drive the demand forecasts and increase forecast volatility



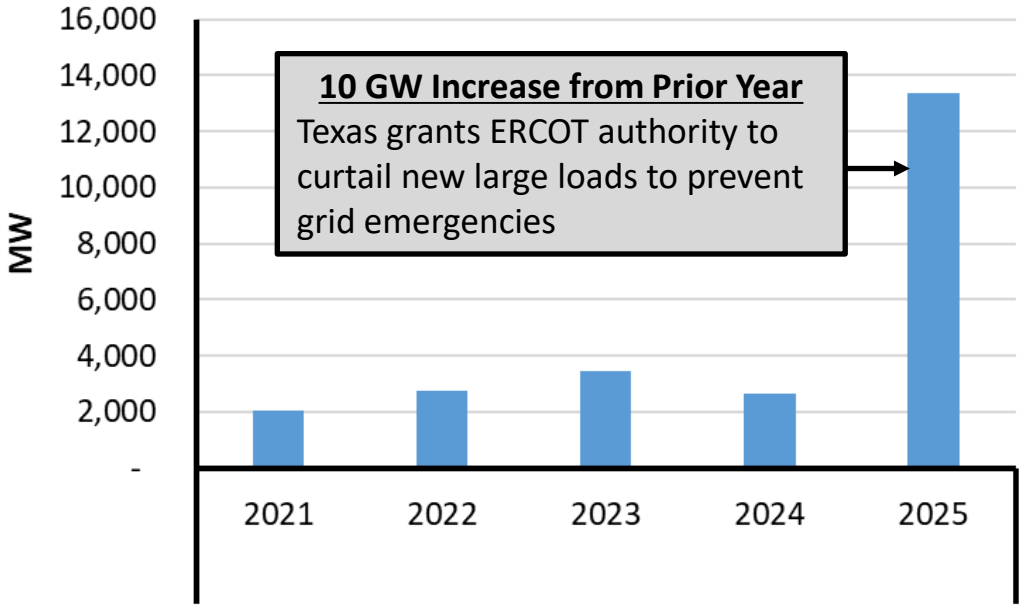
10-year BPS Summer Peak Demand Growth

With 10-year Growth From Previous LTRAs

Load forecasts submitted to NERC for the LTRA are from the first half of 2025. Some newer forecasts are beginning to emerge. In ERCOT and PJM, new load forecasts indicate lower growth projections in the next few years due to data center project delays or cancellations but continued increases in later years.

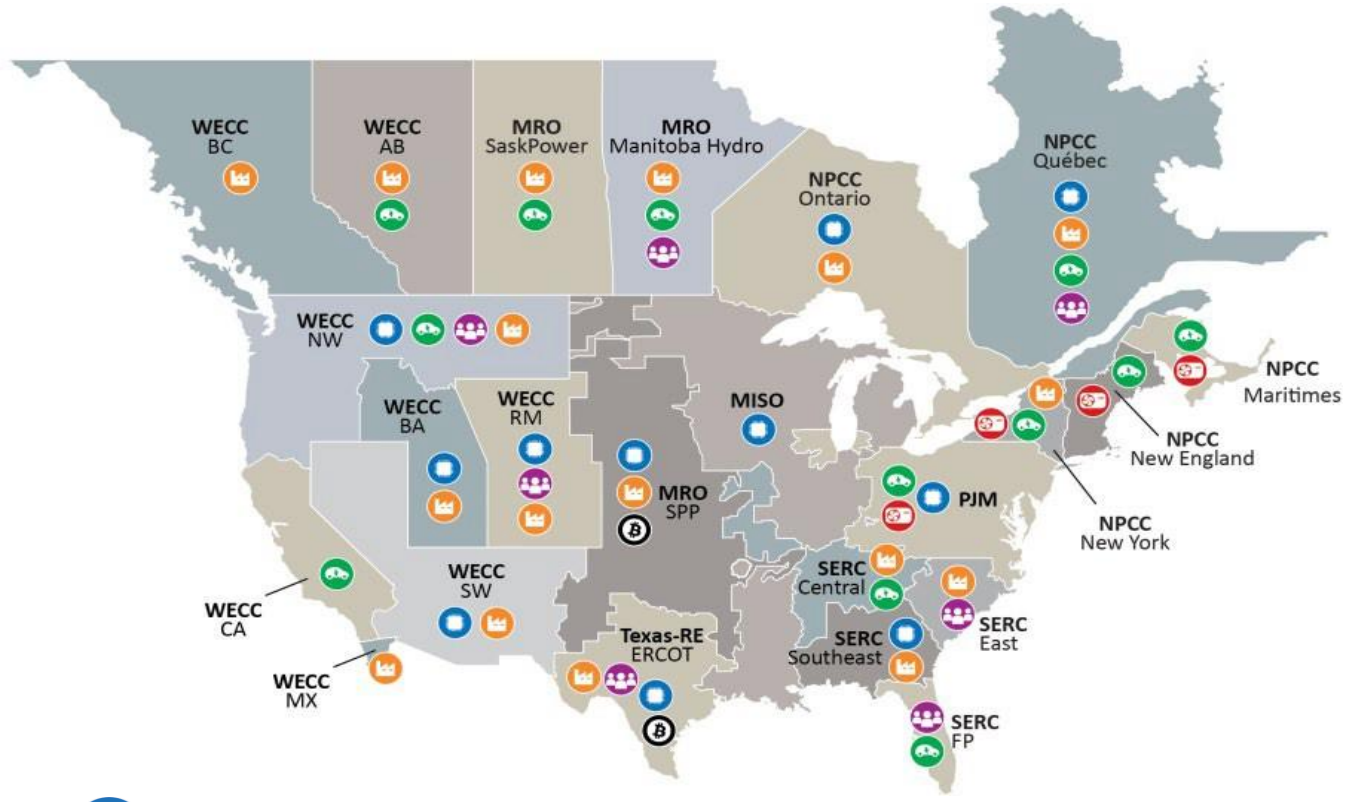
Stakeholders Respond to Growing Risks

- Utilities and regulators are adjusting generator retirement plans to keep resources on-line longer
- Resource planners and market operators are spurring system development to meet reliability needs
  - ISO/RTOs are implementing approved resource accreditation and expedited interconnection programs
  - Utilities and regulators are updating Integrated Resource Plans
- Requirements for data center curtailments are contributing to increased demand response



ERCOT Summer Demand Response Trend in Past Five NERC LTRAs

Demand Forecasts Background



Recommendations

Integrated Resource Planners, market operators, and regulators| **Expedite new resources to meet growing demand and carefully manage generator deactivations**

NERC, industry, and regulators| **Understand and manage reliability risks from large loads and leverage their flexibility during times of grid stress**

NERC, Regional Entities, and industry| **Improve the LTRA with new analysis and criteria to inform stakeholders of future reliability risks**

Regulators and Policymakers| **Streamline siting and permitting to remove barriers to resource and transmission development**

Regulators, electric industry, and gas industry| **Continue implementing solutions for addressing the operating and planning needs of the gas-electric system**

ISOs/RTOs, regulators| **Continue steps to ensure sufficient Essential Reliability Services**


NERC UPGRADES
THE LARGE LOADS
TASK FORCE INTO A
WORKING GROUP

Core Facets of an Evolving Large Loads Action Plan

Technical Understanding

Regulatory Efforts

Industry Education

Active Outreach and Engagement

Effective and Targeted Communication

Current LLTF/LLWG Products

Key 2025/2026 Large Loads Actions

2025

- *Hosted Data Center/Electric Sector Roundtables*

Q1 2026

- *Publish LLTF White Paper #2*
- *Review/Report on NERC Alert Data*
- *Host Technical Conference*

Q2 2026

- *Publish Reliability Guideline*

Q3 2026

- *Publish Data Center Load Modeling Technical Reference*

Q4 2026

- *Host Data Center Load Modeling Workshop*

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Western Assessment of Resource Adequacy

Enoch Davies
Manager, Reliability Modeling, WECC

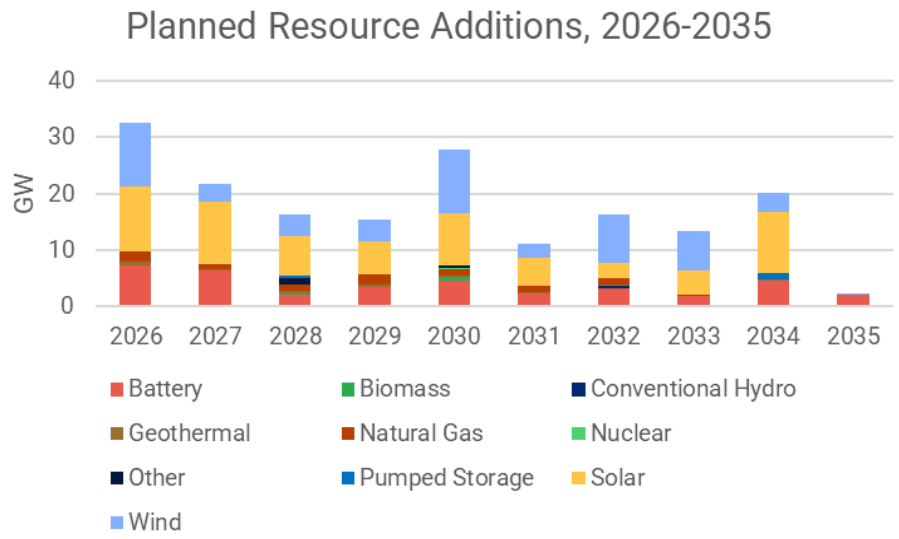
Electric Reliability & Security for the West

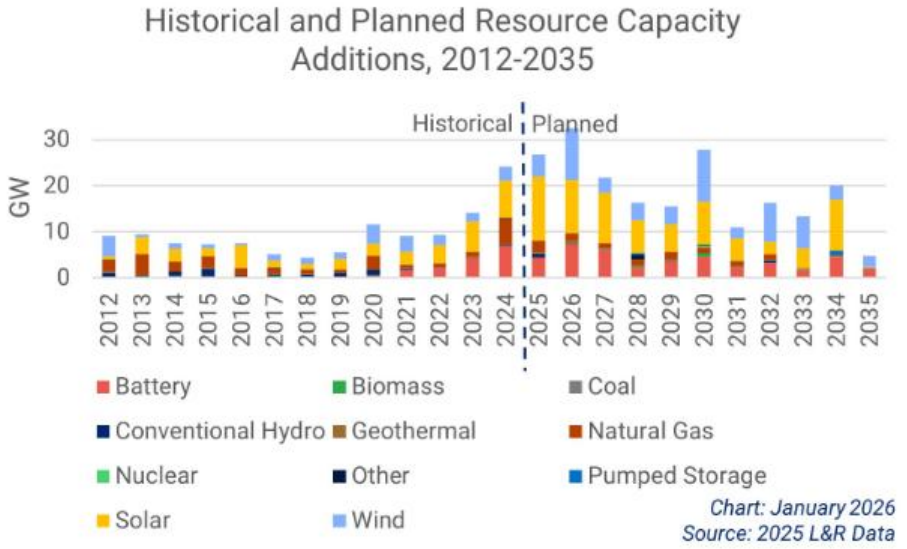
Western Assessment

- Probabilistic analysis of resource adequacy across the interconnection at an hourly level for the next decade
- Uses loads and resources data provided to WECC
  - As of year-end 2024
- Examines several scenarios to identify risks to resource adequacy

Load Growth and Resources

- **10-year demand growth projections, interconnection-wide**
  - 25% demand increase
  - 20% increase in peak demand, from 160 GW–191 GW
- **Planned resource additions**
  - 177 GW, 32 GW in 2026
  - 90% are inverter-based resources (battery, solar, wind)
- **Planned retirements**
  - 22 GW
  - 80% is baseload generation





Scenario Analysis

- Resource Scenario
  - Three scenarios considered
  - If the planned resources are not built, we see a significant amount of potential risk
- Load Scenario
  - Two scenarios
    - Low Scenario: incorporated variance in projected demand growth
    - High Scenario: incorporated known speculative large-load increases

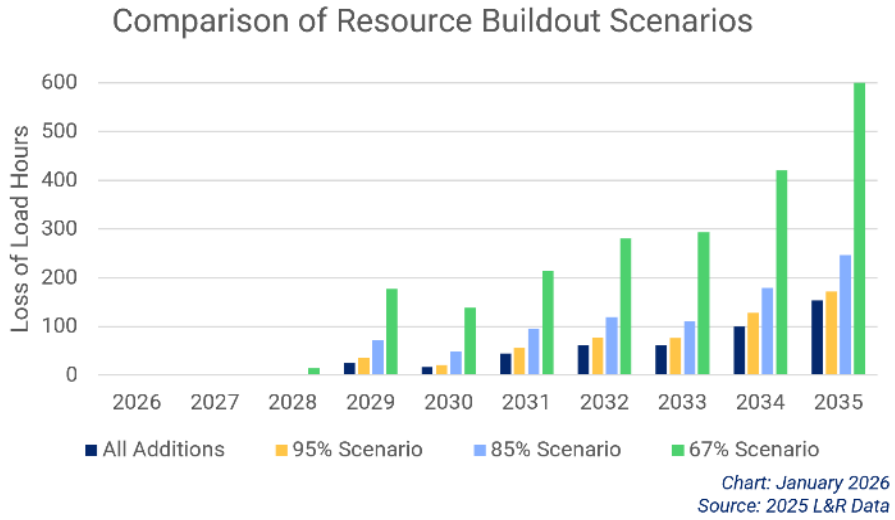


Chart: January 2026
Source: 2025 L&R Data

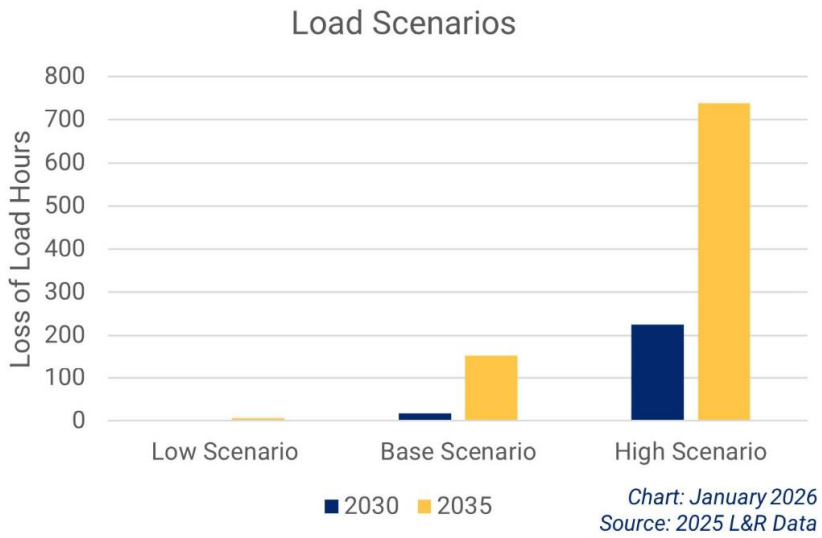


Chart: January 2026
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