December 2025

ERCOT Grid Insights

Addressing issues important to maintaining a reliable and resilient grid

ERCOT FUTURE RESOURCE ADEQUACY

In this issue: The ERCOT System is expected to experience rapid electric demand (load) growth in the next five to seven years. ERCOT recognizes the need to address future resource adequacy and the challenges of meeting the electric demand for Texas in the coming years. The Capacity, Demand, and Reserves (CDR) report is a foundational planning tool that provides insight into future resource adequacy across the ERCOT System and serves as a strategic guide for policymakers, regulators, and Market Participants to maintain reliability while addressing grid needs in an evolving energy landscape. ERCOT continues to work with the Texas Legislature, the Public Utility Commission of Texas (PUCT), and stakeholders on short- and long-term solutions to address future load growth and resource adequacy.

CAPACITY, DEMAND, AND RESERVES (CDR) REPORT

What: The main purpose of the CDR report is to provide forecasted planning reserve margins on a seasonal basis for the next five years. The reserve margin, as a measure of resource adequacy, is the amount of resource capacity that exceeds firm demand, and represents the excess capacity available, on a percentage basis, to serve customers accounting for plant outages, demand uncertainty, and other resource-adequacy risk factors.

How it Works: The CDR report is published twice a year (May and December) and provides seasonal planning reserve margins for the next five years, including both peak load hour and peak net load hour scenarios. Net demand reflects the subtraction of variable renewable generation (solar and wind) and represents the demand that must be served by non-renewable resources. Because peak net demand accounts for the dips in solar availability when daily demand is high (for example, hours during and immediately after sunset in the summer), it is a better indicator of resource adequacy risk than reserve margins based on peak demand.

Grid Significance: The CDR report is a snapshot of expected resource availability and load forecasts of planning reserve margins and is not intended to characterize the risk of capacity scarcity conditions from a real-time operations perspective.

PEAK LOAD AND NET PEAK LOAD FORECAST

What: The **Peak Load** forecast is a central component of the CDR that estimates the highest level of electricity demand during each of the seasons over a five-year horizon. It is used to determine whether the grid will have enough supply to meet demand during the months when electricity use is at its peak. The **Net Peak Load** forecast represents the demand that must be met by dispatchable resources (gas, coal, nuclear, batteries) during the highest stress periods — typically early evening in summer when solar output drops but demand remains high, and winter mornings before solar output ramps up.

How it Works: The **Peak Load** forecast considers historical load trends, the number of premises, economic drivers, temperature variables, expected growth in large loads, and rooftop solar as a load offset. The **Net Peak Load** forecast adds a layer of precision to resource-adequacy planning by accounting for the variable quality of renewable energy generation. It provides a more realistic view of reliability risk.

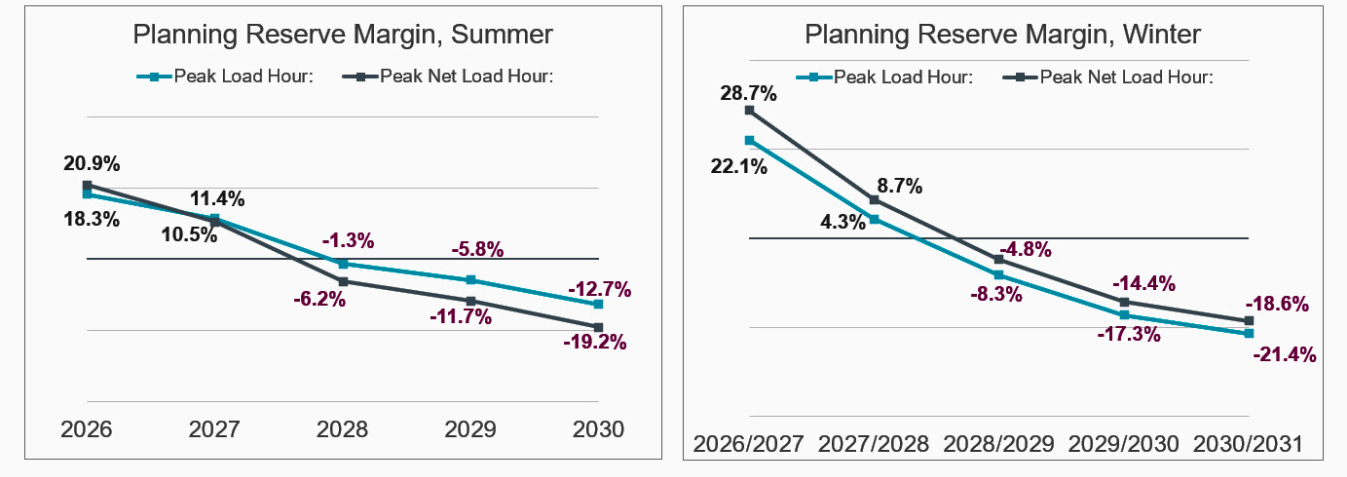
Grid Significance: Providing both **Peak Load** and **Net Peak Load** forecasts allows ERCOT to enhance reliability planning by identifying risks. The forecasts show not just how much electricity Texans might use, but how much firm capacity is truly available when it's needed most. These forecasts can guide decisions on future infrastructure investment and prompt regulatory action and market incentives to ensure grid reliability.

PLANNING RESERVE MARGIN

What: The Planning Reserve Margin (PRM) represents the percentage of resource capacity, in excess of the expected firm peak demand, available to cover uncertainty in future demand, generator availability, and new resource supply.

How it Works: The CDR provides PRM projections based on a current snapshot of:

- Forecasted seasonal firm peak demands assuming normal weather conditions (Firm demand excludes load reductions attributable to interruptible load programs and rooftop solar installations.)
- Generation resource capacity expected to be available during the seasonal peak demand hours



Summer and Winter Planning Reserve Margins – December 2025 CDR report

Grid Significance: The PRM plays a vital role in short- and long-term grid planning. It indicates the quantity of resources ERCOT expects to have to meet peak demand with a buffer. It supports reliability and can inform regulators and stakeholders about needs for improvement.

Additional Note: ERCOT's load forecasting processes were updated following the passage of Texas House Bill (HB) 5066, signed into law in 2023. HB5066 requires ERCOT to include forecasted load data from Transmission Service Providers (TSPs) who are talking directly with large load customers, such as data centers, seeking to connect to the grid. This new load was originally included in the May 2024 CDR report as a forecast scenario. Now, ERCOT is using it as the primary load forecast in resource adequacy and transmission planning. This forecast is driven by continued strong economic and population growth in Texas, as well as growth by large consumers such as data centers, industrial oil and gas production facilities, and cryptocurrency mining operations.