

**NERC**

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# **2025–2026 Winter Reliability Assessment**

**November 2025**



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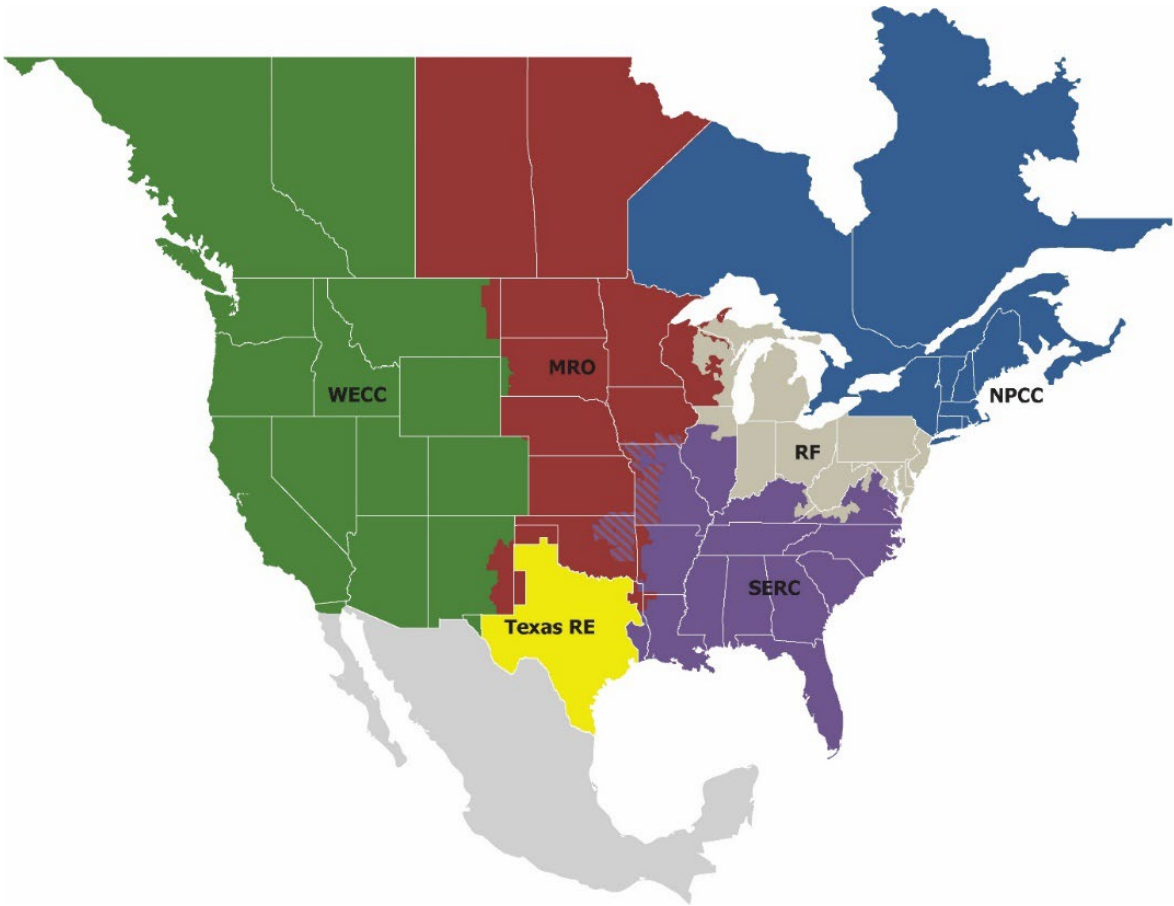
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Preface

Electricity is a key component of the fabric of modern society, and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of NERC and the six Regional Entities, is a highly reliable, resilient, and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security  
*Because nearly 400 million citizens in North America are counting on us*

The North American BPS is made up of six Regional Entities as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Regional Entity while associated Transmission Owners/Operators participate in another.



|          |  |
|----------|--|
| MRO      | Midwest Reliability Organization         |
| NPCC     | Northeast Power Coordinating Council     |
| RF       | ReliabilityFirst                         |
| SERC     | SERC Reliability Corporation             |
| Texas RE | Texas Reliability Entity                 |
| WECC     | Western Electricity Coordinating Council |

## About this Assessment

NERC's *2025–2026 Winter Reliability Assessment* (WRA) identifies, assesses, and reports on areas of concern regarding the reliability of the North American BPS for the upcoming winter season. In addition, the WRA presents peak electricity demand and supply changes and highlights any unique regional challenges or expected conditions that might affect the reliability of the BPS.

The reliability assessment process is a coordinated evaluation between the Reliability Assessment Subcommittee, the Regional Entities, and NERC staff with demand and resource projections obtained from the assessment areas.

This report reflects an independent assessment by the ERO Enterprise (i.e., NERC and the six Regional Entities) and is intended to inform industry leaders, planners, operators, and regulatory bodies so that they are better prepared to ensure BPS reliability. This report also provides an opportunity for industry to discuss plans and preparations to ensure reliability for the upcoming winter period.

## Key Findings

This WRA covers the upcoming three-month (December–February) winter period, providing an evaluation of the generation resource and transmission system adequacy necessary to meet projected winter peak demands and operating reserves. This assessment identifies potential reliability issues of interest and regional risks. The following findings are the ERO Enterprise’s independent evaluation of electricity generation and transmission capacity as well as the potential operational concerns that may need to be addressed for the upcoming winter.

Two trends affecting resource adequacy across the BPS for the upcoming winter are rising electricity demand forecasts and a continued shift in the resource mix characterized by the retirement of thermal generators and growth in battery resources. After years of flat or low (~1%) peak demand growth, the aggregate peak demand for all NERC assessment areas has risen by 20 GW (2.5%) since the previous winter. Nearly all assessment areas are reporting year-on-year demand growth; some are forecasting increases near 10%. Total BPS resources have also increased since last winter, but by a smaller amount of 9.4 GW. This number includes the net change in generating capacity as well as additional demand response. These demand and resource changes are described in [Escalating Winter Demand](#) and [Resource Trends](#) sections.

The following findings are derived from NERC and the ERO Enterprise’s independent evaluation of electricity generation and transmission capacity as well as potential operating concerns that should receive attention for Winter 2025–2026:

1. **All areas are assessed as having adequate resources for normal winter peak-load conditions (i.e., the area’s 50-50 peak forecast). However, more extreme winter conditions extending over a wide area could result in electricity supply shortfalls.** Prolonged, wide-area cold snaps can drive sharp increases in electricity demand and threaten reliable BPS generation and the availability of fuel supplies for natural-gas-fired generation. Four severe arctic storms have descended to cover much of North America since 2021, causing regional demand for electricity and heating fuel to soar and exposing generation and fuel infrastructure in temperate areas to freezing conditions.<sup>1</sup> The following areas face risks of electricity supply shortfalls during periods of more extreme conditions this winter (see [Figure 1](#)):
  - **NPCC-Maritimes:** The peak demand forecast has fallen slightly (-1.6%) in the NPCC-Maritimes assessment area, contributing to higher reserves compared to the 2024–2025 winter. Maritimes is projected to have an Anticipated Reserve Margin (ARM) of 16.9%, which is 270 MW below the area’s Reference Margin Level of 20% . New Brunswick has long-term energy contracts that can be used to mitigate resource adequacy challenges

through the purchase of energy on a day-ahead basis. NPCC’s all-hours probabilistic assessment for the NPCC Region included the simulation of both a base case (i.e., normal 50/50 demand) and highest peak load scenario (having an approximate 7% chance of occurring), for both an expected and a low-likelihood, reduced-resource condition. The preliminary results of this assessment indicate that operators in Maritimes are likely to require emergency operating mitigations and/or energy emergency alerts (EEA) during above-normal demand or low-resource output conditions.

- **NPCC-New England:** A lower peak demand forecast and additional resources from demand response and firm imports offset recent generator retirements, resulting in little change to the NPCC-New England ARM for this winter. New England continues to closely monitor regional energy adequacy, particularly during extended cold snaps where constrained natural gas pipelines contribute to rapid depletion of stored fuel supplies. ISO-NE’s deterministic winter scenario analysis shows limited exposure to energy shortfalls this winter. In New England, winter energy concerns are highest in scenarios when stored fuels are rapidly depleted; during these periods, timely replenishment is critical to minimizing the potential for energy shortfalls.
- **SERC-East:** The winter peak demand forecast has increased by 700 MW (1.6%) since last winter, while winter firm capacity has declined, resulting in lower reserves. SERC-East has changed from a summer-peaking area to potentially peaking during both summer and winter. This is due to the continued addition of solar photovoltaic (PV) generation that shaves off summer peak demand and a trend toward electrification of heating that drives up winter peak demand. All-hours probabilistic analysis from SERC found some load-loss hours (<0.1 hrs) and small amounts of expected unserved energy, with the highest risk occurring during above-normal peak demand and early morning hours when solar output is absent.
- **SERC-Central:** Additional demand response and flat load growth since last winter is offsetting declining resource capacity (down 1,120 MW), resulting in little change to the ARM at 30.5%. There are adequate resources for normal winter peak demand; however, higher levels of demand that can occur during extreme cold temperatures can result in insufficient reserves that operators would need to manage with non-firm imports and potential energy emergencies.
- **Texas RE-ERCOT:** Strong load growth from new data centers and other large industrial end users is driving higher winter electricity demand forecasts and contributing to continued risk of supply shortfalls. For the upcoming winter season, Texas RE-ERCOT is expected to continue facing reserve shortage risks during the peak load hour and high-

<sup>1</sup> See detailed reports on the [January 2024 and January 2025 Arctic Storms, Winter Storm Elliott, and Winter Storm Uri](#).

net-load hours, particularly under extreme load conditions that accompany freezing temperatures. Elevated forced outage of thermal resources and reduced output from intermittent resources during these conditions exacerbates the risk of supply shortfalls. In winter, peak demands typically occur before sunrise and after sunset coinciding with the unavailability of solar generation making the system dependent on wind generation and dispatchable resources. Data centers are altering the daily load shape due to their round-the-clock operating pattern, lengthening peak demand periods. Additional battery storage and demand-response resources since last winter help mitigate shortfall risks. However, with the continued flattening of the load curve, maintaining sufficient battery state of charge will become increasingly challenging for extended periods of high loads, such as a severe multi-day storm like Winter Storm Uri.

- **WECC-Basin:** There is sufficient capacity in the area for expected peak conditions; however, Balancing Authorities (BA) are likely to require external assistance during extreme winter weather that causes thermal plant outages, adverse wind turbine conditions, and natural gas fuel supply issues for area internal resources. External assistance may not be available during region-wide extreme winter conditions. With an expected winter peak demand of 11.1 GW, under an extreme combination of generator derates and outages, the region could be short 1.6 GW before imports. Forecasted net internal demand has increased 1% since last year, with little change in winter capacity. Note that the WECC-Basin assessment area includes Utah, southern Idaho, and a portion of western Wyoming. In prior WRA reports, this part of the BPS was included as part of the WECC-NW assessment area. The 2025–2026 WRA includes a new assessment area map for the Western Interconnection. The new assessment area boundaries provide reliability risk information in more geographic detail for the United States and Mexico.
- **WECC-NW:** Like WECC-Basin, there is sufficient capacity in the area for expected peak conditions; however, BAs are likely to require external assistance during extreme winter weather that causes thermal plant outages and adverse wind turbine conditions for area internal resources. External assistance may not be available during region-wide extreme winter conditions. Winter peak demand for the area is forecast to be 2.9 GW higher (9.3%) compared to last year. Over 3 GW of new resources have been in development for the assessment area this year, primarily battery storage, solar PV, and wind resources. Delays that threaten timely completion of these resource additions will make the area more reliant on imports to meet peak demand.

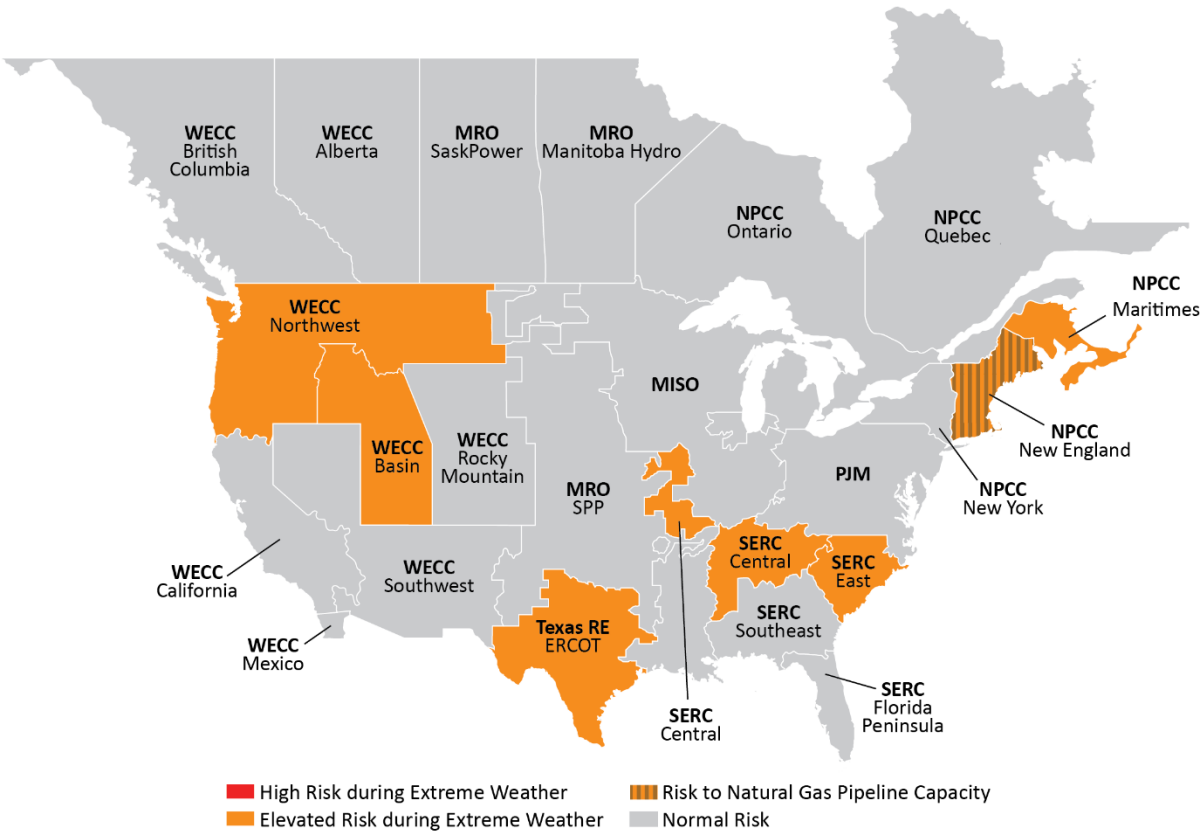


Figure 1: Winter Reliability Risk Area Summary

2. **The performance of natural gas production and supply infrastructure during peak winter conditions will again have a significant effect on BPS reliability.** Natural gas is an essential fuel for electricity generation in winter. Winter fuel supplies for thermal generators must be readily available during the periods of high electricity and natural gas demand that accompany extreme cold weather. Yet these periods are the most challenging for natural-gas-fired Generator Operators to obtain sufficient fuel and delivery. Natural gas production often falls off in extreme winter temperatures as supply infrastructure is affected by freezing issues, and Generator Operators that fail to secure firm fuel delivery are frequently unable to access fully subscribed pipelines. Evidence from the past two winters indicates notable improvement in the delivery of natural gas to BPS generators since winter storms Elliott and Uri with overall less natural gas production decline during cold weather and fewer natural gas infrastructure



force majeures.<sup>2</sup> Still, natural gas infrastructure freeze protection mitigations are voluntary for the natural gas industry in most of North America, resulting in uneven application of protections and continued supply risks during extreme conditions. Furthermore, timing misalignments between the natural gas and electric markets continue to challenge generator fuel procurement in advance of severe winter conditions that occur over winter holiday weekends. As winter approaches, NERC encourages all entities across the gas-electric value chain—from production to the burner tip—to take all necessary preparations for extreme cold and keep natural gas flowing and the lights on.

3. **Cold weather Reliability Standards first introduced in 2023 have been improved prior to the upcoming winter and address recommendations from winter storms Elliott and Uri.** In September 2025, the Federal Energy Regulatory Commission (FERC) approved EOP-012-3 with an effective date of October 1, 2025, concluding the development of Reliability Standards for generator cold weather preparedness.<sup>3</sup> The EOP-012 Reliability Standard contains requirements for generator freeze protection measures, cold weather preparedness plans, and operator training. Among the improvements in the new version are enhanced and expanded requirements to ensure that Generator Owners (GO) are implementing corrective actions to address known issues affecting their ability to operate in cold weather in a timely manner. NERC collects data on the winterization of generating units, which, in conjunction with NERC’s monitoring of BPS performance and analysis of cold weather events, helps determine the effectiveness of Reliability Standards. NERC submitted to FERC its first annual *Cold Weather Data and Analysis* informational filing in October 2025.<sup>4</sup> Based on the data reported this year, 96% of the total net winter capacity reported extreme cold weather temperatures (ECWT) at or below 32 degrees Fahrenheit, triggering winter preparedness measures under the Cold Weather Preparedness Standard, and 99% of total net winter capacity in the continental US reporting the ability to operate at the calculated ECWT. As the first such report, this *Cold Weather Data and Analysis* filing provides a benchmark for future analysis.

## Recommendations

To reduce the risks of energy shortfalls on the BPS this winter, NERC recommends the following:

- Reliability Coordinators (RC), BAs, and Transmission Operators (TOP) in the elevated risk areas identified in the key findings should review seasonal operating plans and the protocols for communicating and resolving potential supply shortfalls in anticipation of potentially high generator outages and extreme demand levels. Operators should review NERC’s Resources on Cold Weather Preparations.
- GOs should complete winter readiness plans and checklists prior to December, deploy weatherization packages well in advance of approaching winter storms, and frequently check and maintain cold weather mitigations while conditions persist.
- BAs should be cognizant of the potential for short-term load forecasts to underestimate load in extreme cold weather events and be prepared to take early action to implement protocols and procedures for managing potential reserve deficiencies. Proactive issuance of winter advisories and other steps directed at generator availability contributed to improved reliability during cold weather events of the past two winters.
- RCs and BAs should implement generator fuel surveys to monitor the adequacy of fuel supplies. They should prepare their operating plans to manage potential supply shortfalls and take proactive steps for generator readiness, fuel availability, load curtailment, and sustained operations in extreme conditions.
- Generator Owners/Operators of natural-gas-fired units should maintain awareness of potential extreme cold weather developing over holiday weekends and the implications for fuel planning and procurement that may result given the natural gas purchase close dates that precede long holiday weekends.
- State and provincial regulators can assist grid owners and operators in advance of and during extreme cold weather by maintaining awareness of BA, natural gas pipeline, and gas local distribution company (LDC) operational public announcements and notices, amplifying public appeals for electricity and natural gas conservation, and supporting requested environmental and transportation waivers.

<sup>2</sup> See [January 2025 Arctic Events | A System Performance Review](#), April 2025

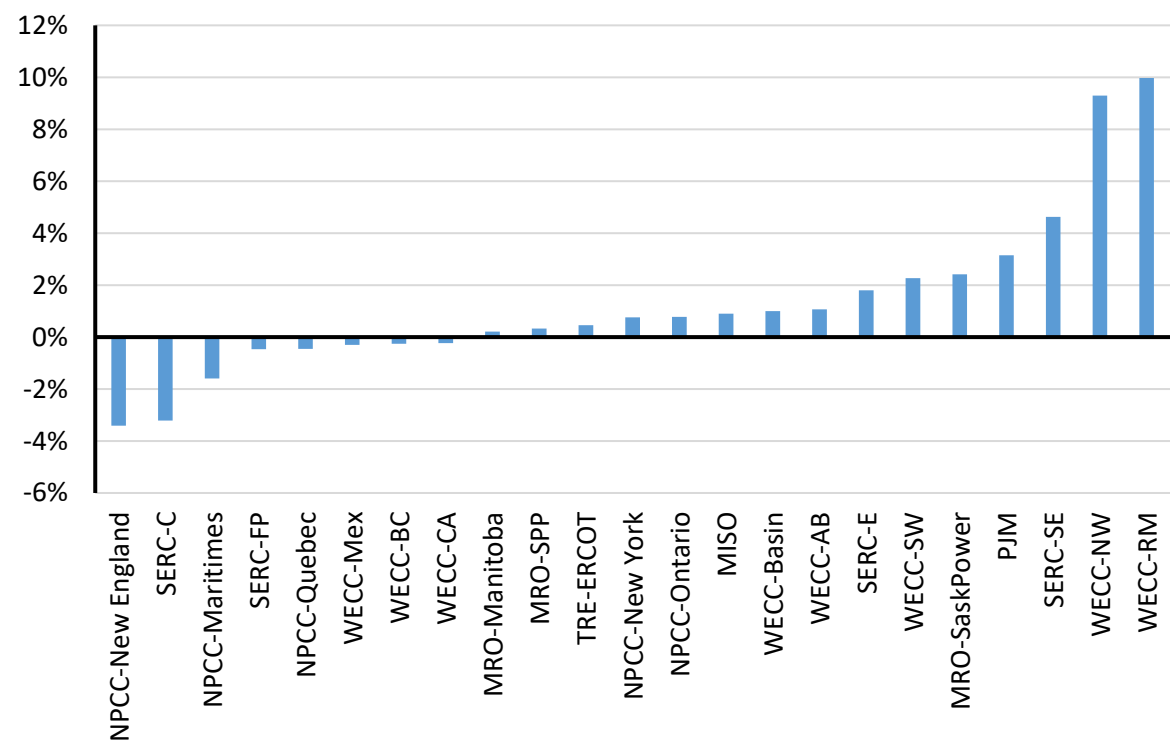
<sup>3</sup> See NERC’s [Statement on FERC September Open Meeting](#) for summary and link to FERC’s order.

<sup>4</sup> See [2025 Cold Weather Data Collection and Analysis Informational Filing](#)

## Risk Highlights

### Escalating Winter Demand

Winter electricity demand is rising at the fastest rate in recent years, particularly in areas where data center development is occurring. After several years of low (~1%) growth, total internal demand for the BPS is forecast to increase by 20.2 GW (2.5%) over last winter’s forecast. The changes in forecasted net internal demand for each assessment area are shown in [Figure 2](#) below.<sup>5</sup> Assessment areas develop these forecasts based on historical load and weather information as well as future projections. Most assessment areas are projecting an increase in peak demand. SaskPower, PJM, the U.S. Southeast, and parts of the U.S. West have the largest increase in peak demand forecasts.



**Figure 2: Change in Net Internal Demand—Winter 2025–2026 Forecast Compared to Winter 2024–2025 Forecast**

<sup>5</sup> See [Data Concepts and Assumptions](#) section for demand definitions.

### Resource Trends

BPS resources are growing, but at a slower rate than demand is rising. Battery and solar facilities were the leading resource types added to the BPS since last winter. Solar resources, however, often do not supply output during hours of peak winter demand. Growth in demand response is also contributing to BPS resources for the upcoming winter. [Table 1](#) shows the total change in BPS resources since last winter. For battery, solar, and wind resources, the table includes change in both nameplate (installed) capacity as well as the change in on-peak demand capacity, which is the capacity that resources are expected to provide in their area during the time of peak demand. For assessment-area specific information see [Variable Energy Resource Contributions](#) section.

| Table 1: BPS Resource Change from Winter 2024–2025 to Winter 2025–2026 |                                    |                                      |
|--|------------------------------------|--------------------------------------|
| Resource   | Net Change Nameplate Capacity (MW) | Net Change Peak Demand Capacity (MW) |
| Total Generator Capacity   |                                    | 1,335                                |
| Battery  | 19,659                             | 11,121                               |
| Solar  | 11,097                             | 1,176                                |
| Wind   | -562                               | -14,238                              |
| Thermal and Hydro  |                                    | 3,276                                |
| Demand Response  |                                    | 8,112                                |
| Total Resources  |                                    | 9,447                                |

Total BPS resources for serving winter peak demand, including generating capacity and demand response, have increased since last winter by 9,447 MW. Sizeable additions in battery resources and some new natural gas-fired generators contribute to the increase in resource capacity. However, the increase is offset by lower on-peak capacity values for wind resources, which are the result of revised valuations of wind resource capability at peak demand hours in some areas.<sup>6</sup> As a result, BPS generator capacity for winter peak demand makes up only a small portion of the total BPS increase. Generation accounts for 1,335 MW of the total 9,445 MW increase, while the larger share comes from demand response programs. Area specific information on demand response is provided in the [Demand and Resource Tables](#).

The recent trend in resource additions is contributing to higher risk of electricity supply shortfalls in winter. BA operators are likely to face higher winter demand without a comparable increase in supply resources. Furthermore, the types of resources that are growing the most-- battery resources and

<sup>6</sup> Since last winter, ERCOT and MISO have implemented new methods for determining capacity contributions that result in lower wind and solar resources contributions at peak demand. See ERCOT’s [Resource Adequacy page](#) and MISO’s [Planning Year 2025-2026 Wind and Solar Capacity Credit Report](#).



demand response—have unique characteristics that operators will need to account for and could limit the use of these resources in extreme winter conditions. Battery energy is reliable when it can be dispatched and has sufficient charge for the period it is needed, yet little time to recharge can be expected during extreme winter weather. System operators will need good visibility on battery state of charge and should anticipate that some extreme winter events will cause these resources to become depleted when needed. Demand response is limited by contract terms, which typically specify how often and for how long the resource may be used. Other resource types are also challenged in winter (see [Thermal Generator Fuel Adequacy and Security](#)). As BAs grapple with higher demand in most parts of the BPS, they will do so with resources that are becoming increasingly complex to dispatch especially in winter.

## Thermal Generator Fuel Adequacy and Security

The performance of the thermal generator fleet remains critical to winter BPS operations. Winter fuel supplies for thermal generators must be readily available during periods of high demand and extreme cold weather. Generally, fuel adequacy for the thermal generating fleet is bolstered through strategic infrastructure investments and fuel stockpiling that increases the certainty of having fuel on hand that can be converted to electricity when needed. Because of this, winter performance of thermal generators is inextricably linked to extraction, processing, storage, and delivery infrastructure for a variety of fuels. Fuel supply risks have been noted in recent years’ WRAs related to coal and natural gas availability and illustrate the interconnected nature of these critical energy infrastructure systems.

BPS stakeholders across North America note multiple fuel-related issues that are being monitored entering the winter season. For example, while coal represents a waning share of the overall resource mix, it continues to play an important role in meeting demand during extreme winter weather events, and oil inventories at dual-fuel gas-oil generators lessen risks related to natural gas deliverability in infrastructure-constrained regions, especially during the winter. Notably, it is infeasible or prohibitively costly to stockpile natural gas locally at power plants, and this exposes the BPS to the risk profile of the constituent systems that comprise the supply and delivery of this just-in-time fuel.

## Natural Gas Generator Fuel Supplies

Natural gas generators remain a crucial part of on-peak resources meant to meet winter electricity demand across much of North America. While many Generator Owners and Operators secure backup fuel supplies at critical gas-fired generators, particularly in the northeastern United States and Florida, large contributions to the on-peak winter resource mix by single-fuel natural-gas-fired generators remain across North America (see [Figure 3](#)).

Natural gas generator performance can be threatened when natural gas supplies are insufficient or when natural gas infrastructure is unable to maintain the flow of fuel to critical generators. Grid operators continue to acknowledge and enhance their winter planning processes to firm up their fuel supplies and guard against natural gas disruptions, but winter storms Uri and Elliott demonstrated that combinations of natural gas flow restrictions and supply insufficiency can occur regardless of whether cold temperatures are common or uncommon in the region and can affect more than one BA area concurrently.

Many BPS areas that regularly experience cold weather events, like New England, have adopted mitigating technologies to lessen the impact of natural gas shortages through generator dual-fuel capability and stored backup fuel. In those areas, prolonged cold weather events present a risk of rapid depletion of stored backup fuel. Robust regional and distributed storage investments and winter planning for timely fuel replenishment are critical to minimizing potential energy shortfalls in the operational time frame in these areas.

Natural gas and electricity infrastructures have the added complexity of interdependence. Electricity is used to power some facilities, such as compressor stations and processing plants that make up natural gas infrastructure. These interdependencies mean that reliability events that originate on one system have the potential to affect the other and worsen the overall event magnitude or duration.

Natural gas infrastructure freeze protection mitigations are voluntary for the natural gas industry in most of North America. Texas is an exception, where the Railroad Commission of Texas adopted rules to require critical natural gas facilities to implement weather-related emergency preparation measures.<sup>7</sup> Lack of consistent standards for natural gas infrastructure protections will result in uneven application of freeze protections and continued supply risks during extreme conditions in many areas.

These considerations have driven higher levels of coordination to ensure sustained reliable operation of the natural gas and electricity systems. While a FERC and ERO staff review of system performance during the January 2025 arctic events<sup>8</sup> details improvements in electric and natural gas coordination since winter storms Uri and Elliott, the review also identifies continuing gaps between the electricity and natural gas industries that remain entering the 2025–2026 Winter season. These include natural gas scheduling challenges during winter holiday weekends, market time frame and process incompatibility, and electric power entities’ lack of visibility into operational impact data from natural gas producers and suppliers.

<sup>7</sup> See [Railroad Commission of Texas weatherization rule](#).

<sup>8</sup> [FERC, NERC Issue Report on System Performance During the January 2025 Arctic Weather | Federal Energy Regulatory Commission](#)

The U.S. Energy Information Administration (EIA)<sup>9</sup> anticipates a slightly milder winter than last year across much of the United States, especially in the Northeast, leading to a projection that households will consume approximately 2% less natural gas than last winter. Working natural gas storage inventories are about 5% above the previous five-year average in the United States heading into the winter season. The EIA attributes this relative surplus in part to robust production this summer and lower-than-expected natural gas consumption by power generators.

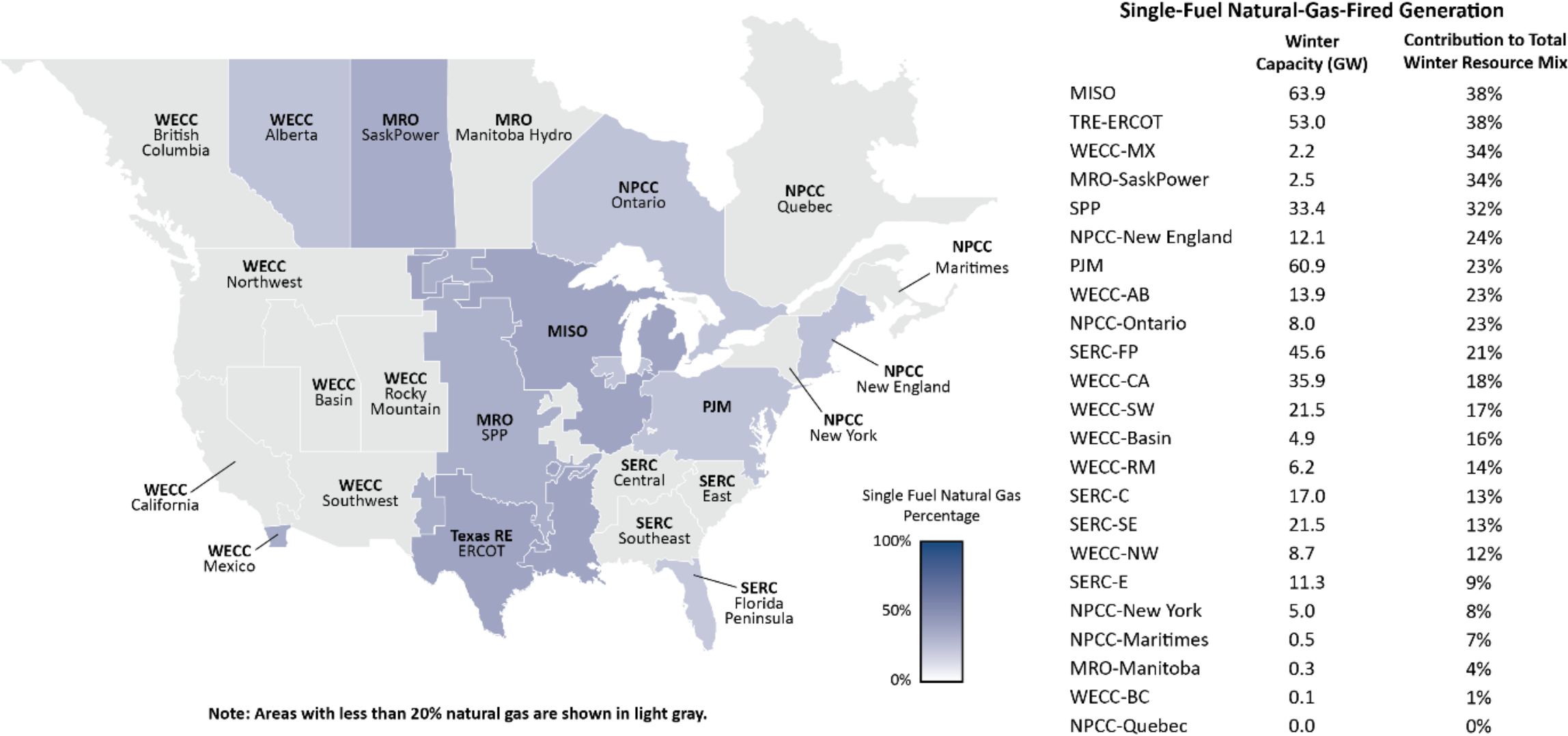


Figure 3: Single-Fuel Natural-Gas-Fired Generation Capacity Contribution to the 2025–2026 Winter Generation Mix

<sup>9</sup> See the U.S. Energy Information Administration’s [Winter Fuels Outlook 2025–26](#)

Risk Assessment Discussion

NERC assesses the risk of electricity supply shortfall in each assessment area for the upcoming season by considering Planning Reserve Margins, seasonal risk scenarios, probability-based risk assessments, and other available risk information. NERC provides an independent assessment of the potential for each assessment area to have sufficient operating reserves under normal conditions as well as above-normal demand and low-resource output conditions selected for the assessment. A summary of the assessment approach is provided in [Table 2](#).

| Table 2: Seasonal Risk Assessment Summary  |   |
|--|---|
| Category   | Criteria <sup>1</sup>   |
| High   | <ul style="list-style-type: none"><li>Planning Reserve Margins do not meet Reference Margin Levels (RML); or</li><li>Probabilistic indices exceed benchmarks, e.g., loss of load hours (LOLH) of 2.4 hours over the season; or</li><li>Analysis of the risk hour(s) indicates resources will not be sufficient to meet operating reserves under <b>normal peak-day demand and outage scenarios</b><sup>2</sup></li></ul>  |
| Potential for insufficient operating reserves in normal peak conditions  |   |
| Elevated   | <ul style="list-style-type: none"><li>Probabilistic indices are low but not negligible (e.g., LOLH above 0.1 hours over the season); or</li><li>Analysis of the risk hour(s) indicates resources will not be sufficient to meet operating reserves under <b>extreme peak-day demand with normal resource scenarios</b> (i.e., typical or expected outage and derate scenarios for conditions);<sup>2</sup> or</li><li>Analysis of the risk hour(s) indicates resources will not be sufficient to meet operating reserves under <b>normal peak-day demand with reduced resources</b> (i.e., extreme outage and derate scenarios)<sup>3</sup></li></ul> |
| Potential for insufficient operating reserves in above-normal conditions   |   |
| Normal   | <ul style="list-style-type: none"><li>Probabilistic indices are negligible</li><li>Analysis of the risk hour(s) indicates resources will be sufficient to meet operating reserves under normal and extreme peak-day demand and outage scenarios<sup>4</sup></li></ul>   |
| Sufficient operating reserves expected   |   |
| Table Notes:<br><sup>1</sup> The table provides general criteria. Other factors may influence a higher or lower risk assessment.<br><sup>2</sup> <b>Normal resource scenarios</b> include planned and typical forced outages as well as outages and derates that are closely correlated to the extreme peak demand.<br><sup>3</sup> <b>Reduced resource scenarios</b> include planned and typical forced outages and low-likelihood resource scenarios, such as extreme low-wind scenarios, low-hydro scenarios during drought years, or high thermal outages when such a scenario is warranted.<br><sup>4</sup> Even in normal risk assessment areas, extreme demand and extreme outage scenarios that are not closely linked may indicate risk of operating reserve shortfall. |   |

Assessment of Planning Reserve Margins and Operational Risk Analysis

Anticipated Reserve Margins (ARM), which provide the Planning Reserve Margins for normal peak conditions, as well as reserve margins with typical forced outage levels and for the most extreme seasonal risk scenarios are provided in [Table 3](#).

| Table 3: Seasonal Risk Scenario On-Peak Reserve Margins |                            |                                     |   |
|---|----------------------------|-------------------------------------|---|
| Assessment Area   | Anticipated Reserve Margin | Reserve Margin with Typical Outages | Reserve Margin with Higher Demand, Outages, Derates in Extreme Conditions |
| MISO  | 49.5%                      | 22.3%                               | 3.7%  |
| MRO-Manitoba  | 13.7%                      | 11.4%                               | 6.1%  |
| MRO-SaskPower   | 35.1%                      | 29.0%                               | 16.1%   |
| MRO-SPP   | 56.5%                      | 29.4%                               | 16.9%   |
| NPCC-Maritimes  | 16.9%                      | 12.5%                               | -4.7%   |
| NPCC-New England  | 58.9%                      | 45.4%                               | 8.7%  |
| NPCC-New York   | 78.2%                      | 52.4%                               | 16.2%   |
| NPCC-Ontario  | 28.6%                      | 21.8%                               | 13.2%   |
| NPCC-Québec   | 15.2%                      | 15.1%                               | 5.0%  |
| PJM   | 35.6%                      | 24.8%                               | 15.6%   |
| SERC-C  | 30.5%                      | 22.4%                               | -0.9%   |
| SERC-E  | 21.9%                      | 17.5%                               | 3.0%  |
| SERC-FP   | 41.7%                      | 28.3%                               | 25.6%   |
| SERC-SE   | 39.7%                      | 24.7%                               | 17.7%   |
| TRE-ERCOT   | 36.0%                      | 25.2%                               | -20.0%  |
| WECC-AB   | 35.2%                      | 32.4%                               | 10.0%   |
| WECC-Basin  | 29.6%                      | 19.7%                               | -21.1%  |
| WECC-BC   | 25.9%                      | 25.8%                               | 15.4%   |
| WECC-CA   | 82.3%                      | 73.7%                               | 57.9%   |
| WECC-Mex  | 83.1%                      | 79.4%                               | 52.9%   |
| WECC-NW   | 30.9%                      | 29.5%                               | -8.5%   |
| WECC-RM   | 61.7%                      | 53.2%                               | 10.0%   |
| WECC-SW   | 104.4%                     | 90.1%                               | 50.1%   |

Seasonal risk scenarios for each assessment area are presented in the [Regional Assessments Dashboards](#) section. The on-peak reserve margin and seasonal risk scenario charts in each dashboard provide potential winter peak demand and resource condition information. The reserve margins on the right side of the dashboard pages provide a comparison to the previous year’s assessment. The seasonal risk scenario charts present deterministic scenarios for further analysis of different demand and resource levels with adjustments for normal and extreme conditions. The assessment areas determined the adjustments to capacity and peak demand based on methods or assumptions that are summarized in the seasonal risk scenario charts; more information about these dashboard charts is provided in the [Data Concepts and Assumptions](#) section.

The seasonal risk scenario charts can be expressed in terms of reserve margins: In [Table 3](#), each assessment area’s ARMs are shown alongside the reserve margins for a typical generation outage scenario (where applicable) and the extreme demand and resource conditions in their seasonal risk scenario.

Areas highlighted in orange in [Figure 1](#) above have been identified as having resource adequacy or energy risks for the winter and are included in the [Key Findings](#) section’s discussion that follows. The typical outage reserve margin includes anticipated resources minus the capacity that is likely to be in maintenance or forced outage at peak demand. If the typical maintenance or forced-outage margin is the same as the ARM, it is because an assessment area has already factored typical outages into the anticipated resources. The extreme conditions margin includes all components of the scenario and represents the most severe operating conditions of an area’s scenario. Note that any reserve margin below zero indicates that the resources fall below demand in the scenario.

In addition to the peak demand and seasonal risk hour scenario charts, the assessment areas provided a resource adequacy risk assessment that was probability-based for the winter season. Results are summarized in [Table 5](#). The risk assessments account for the hour(s) of greatest risk of resource shortfall. For most areas, the hour(s) of risk coincides with the time of forecasted peak demand; however, some areas incur the greatest risk at other times based on the varying demand and resource profiles. Various risk metrics are provided and include loss of load expectation (LOLE), loss of load hours (LOLH), expected unserved energy (EUE), and the probabilities of energy emergency alert (EEA) declarations (see [Table 4](#) for a description of EEA levels).

| Table 4: Energy Emergency Alert Levels |   |   |
|--|---|---|
| EEA Level                              | Description                                       | Circumstances   |
| EEA 1                                  | All available generation resources in use         | <ul style="list-style-type: none"><li>The BA is experiencing conditions in which all available generation resources are committed to meet firm load, firm transactions, and reserve commitments and is concerned about sustaining its required operating reserves.</li><li>Non-firm wholesale energy sales (other than those that are recallable to meet reserve requirements) have been curtailed.</li></ul> |
| EEA 2                                  | Load management procedures in effect              | <ul style="list-style-type: none"><li>The BA is no longer able to provide its expected energy requirements and is an energy-deficient BA.</li><li>An energy-deficient BA has implemented its operating plan(s) to mitigate emergencies.</li><li>An energy-deficient BA is still able to maintain minimum operating reserve requirements.</li></ul>  |
| EEA 3                                  | Firm load interruption is imminent or in progress | <ul style="list-style-type: none"><li>The energy-deficient BA is unable to meet minimum operating reserve requirements.</li></ul>   |

**Energy Emergency Alerts**

The combination of above-normal generation outages, low resource output, and peak loads as occurred during the extreme cold weather events of Winter Storm Uri in 2021 and Winter Storm Elliott in 2022 are ongoing winter reliability risks. When supply resources in an area fall below expected demand and operating reserve requirements, BAs may need to employ EEAs to maintain balance between available capacity and energy and real-time demand. A description of each EEA level is provided above.

Table 5: Probability-Based Risk Assessment

| Area             | Type of Assessment  | Results and Insight from Assessment   |
|------------------|---|---|
| MISO             | Deterministic   | MISO does not provide a probabilistic assessment for the WRA. MISO applies a <u>deterministic</u> look at expected system conditions, looking at generation availability under typical and extreme outages and looking at a typical 50/50 load forecast and an extreme 90/10 load forecast. For the upcoming winter season, under an extreme outage and extreme 90/10 load forecast, this is the riskiest scenario for the MISO footprint. This scenario produces the shortest actual reserve margin for January. |
| MRO-Manitoba     | Probabilistic study for the NERC Probabilistic Assessment (ProbA)   | Probabilistic analysis for the 2024 ProbA summarized in NERC’s 2024 <i>Long-Term Reliability Assessment</i> (LTRA) found no load-loss or unserved energy hours for 2026.  |
| MRO-SaskPower    | Probability-based capacity adequacy assessment  | SaskPower’s probabilistic assessment for the 2025–2026 Winter indicates that risk of shortfalls is lower than the previous winter. LOLH for an elevated risk scenario for the 2025–2026 Winter season is 0.08 hours. The month with the highest LOLH is December (0.05 hours).  |
| MRO-SPP          | NERC 2024 ProbA   | Probabilistic analysis for the 2024 ProbA summarized in NERC’s 2024 LTRA found no load-loss or unserved energy hours for 2026.  |
| NPCC             | NPCC conducted an all-hour probabilistic reliability assessment that included detailed neighbor modeling and consisted of a base case and severe case examining low resources, reduced imports, and higher loads. The assessment evaluates the probabilistic indices of LOLE, LOLH, and EUE. The highest peak load scenario has an approximately 7% probability of occurring. |   |
| NPCC-Maritimes   | The Maritimes Area low-likelihood resource case assumed: wind derated by 50% for every hour in December through February and a 50% natural gas capacity curtailment for December through February (dual-fuel units assumed reverting to oil) and reduced transfer capabilities.   | The preliminary assessment indicates that established operating procedures are not sufficient to maintain a balance between electricity supply and demand. Under highest peak load levels, the Maritimes Area shows a notable likelihood of utilizing its operating procedures such as reducing 30-minute reserves, initiating interruptible loads, and reducing 10-minute reserves to maintain system reliability during the upcoming winter period.   |
| NPCC-New England | The New England Area low-likelihood resource case assumed: 500 MW of additional maintenance outages, ~4,513 MW of gas-fired generation unavailable due to fuel supply constraints, and 50% reduced import capabilities of external ties.  | The preliminary results of this assessment indicate that operating procedures were not needed to maintain a balance between electricity supply and demand   |
| NPCC-New York    | The New York Area low-likelihood resource case assumed: ~500 MW of extended maintenance in southeastern New York, 600 MW of cable transmission reduction across HVdc facilities, and ~5,000 MW of generation unavailable due to fuel delivery issues.   | The preliminary results of this assessment indicate that operating procedures were not needed to maintain a balance between electricity supply and demand. No cumulative LOLE, LOLH or EUE risks were indicated over the December–February winter period, for all the scenarios modeled.  |
| NPCC-Ontario     | An energy assessment for the Ontario Assessment Area was conducted for two scenarios: firm resources and firm demand with expected weather, and planned resources with planned demand with expected weather.  | No cumulative LOLH or EUE risks were identified over the entire November-to-April winter season for both scenarios modeled.   |



Table 5: Probability-Based Risk Assessment

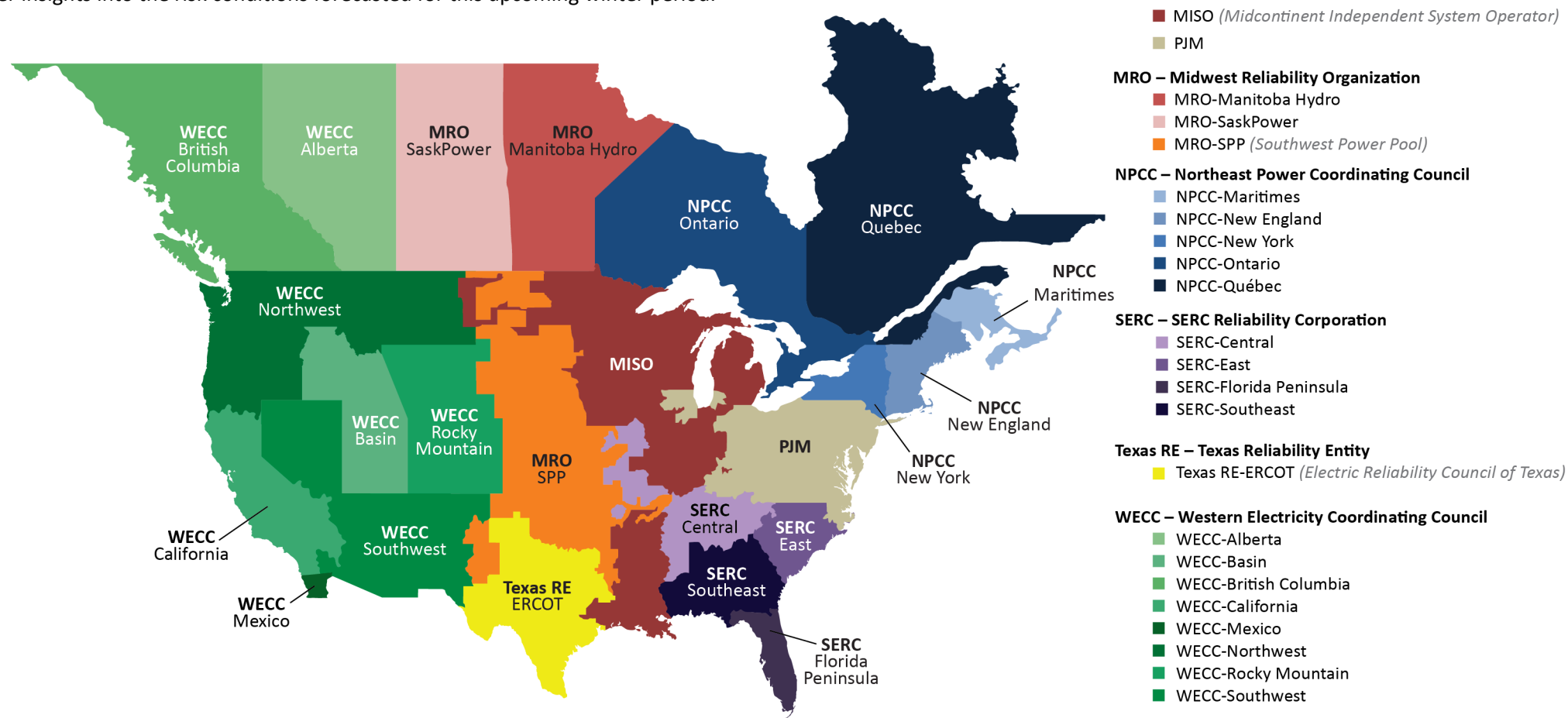
| Area                   | Type of Assessment   | Results and Insight from Assessment   |
|------------------------|--|---|
| NPCC-Québec            | The Québec Area low-likelihood resource case assumed 1,000 MW of generation reductions.  | The preliminary results of this assessment indicate that established operating procedures are sufficient to maintain a balance between electricity supply and demand if needed. No cumulative LOLE, LOLH or EUE risks were indicated over the December–February winter period for all the scenarios modeled   |
| PJM                    | Probabilistic study for the NERC Probabilistic Assessment (ProbA)  | Probabilistic study for 2025–2026 Winter is not provided for the WRA. PJM performed probabilistic analysis for 2026-2027 winter as part of the 2024 ProbA summarized in NERC’s 2024 LTRA. The results of this study indicate risk of load loss (<0.1 hours) and unserved energy during winter months. For the upcoming winter, load-loss hours are expected to be less than this value because forecasted load is lower and anticipated resource capacity is higher than the case studied for the 2024 ProbA. |
| SERC                   | Based on the 2024 NERC Probabilistic Assessment (ProbA) base-case result. SERC’s assessment used 38 years of historical load shapes to assess the resource adequacy of years 2026 and 2028, primarily based on data from the 2024 Long Term Reliability Assessment (LTRA).   |   |
| SERC-Central           |  | Probabilistic analysis for the 2024 ProbA summarized in NERC’s 2024 LTRA found no load-loss or unserved energy hours for 2026.  |
| SERC-East              |  | Probabilistic analysis for the 2024 ProbA summarized in NERC’s 2024 LTRA found a small number of load-loss hours (<0.1) and EUE (61 MWh / 1 ppm) for 2026.  |
| SERC-Florida Peninsula |  | Probabilistic analysis for the 2024 ProbA summarized in NERC’s 2024 LTRA found negligible load-loss hours and EUE.  |
| SERC-Southeast         |  | Probabilistic analysis for the 2024 ProbA summarized in NERC’s 2024 LTRA found no load-loss or unserved energy hours for 2026.  |
| Texas RE-ERCOT         | ERCOT Probabilistic Reserve Risk Model   | ERCOT’s probabilistic risk assessment indicates a 2% probability of having to declare EEAs during the January forecasted winter peak day (which coincides with the highest reserve shortage risk) and a controlled load shed probability of 1.8%. ERCOT defines low-risk hours as when the probability of an EEA is less than 10%.  |
| WECC                   | The resource adequacy work performed at WECC used the Multi-Area Variable Resource Integration Convolution (MAVRIC) model for the 2025 LTRA. The MAVRIC model is a convolution-based probabilistic model and is WECC’s chosen method for developing probability metrics used for assessing demand and variable resource availability in every hour. In the resource adequacy environment, the reports produced support NERC’s seasonal assessments, LTRA, and ProbA. |   |
| WECC-AB                |  | The results of the probabilistic assessment reveal no EUE or LOLH for Winter 2025–2026.   |
| WECC-Basin             |  | The results of the probabilistic assessment reveal no EUE or LOLH for Winter 2025–2026.   |
| WECC-BC                |  | The results of the probabilistic assessment reveal no EUE or LOLH for Winter 2025–2026.   |

Table 5: Probability-Based Risk Assessment

| Area                | Type of Assessment | Results and Insight from Assessment  |
|---------------------|--------------------|--|
| WECC-CA             |                    | The results of the probabilistic assessment reveal no EUE or LOLH for Winter 2025–2026.  |
| WECC-Mexico         |                    | The results of the probabilistic assessment reveal no EUE or LOLH for Winter 2025–2026.  |
| WECC-Rocky Mountain |                    | The results of the probabilistic assessment reveal no EUE or LOLH for Winter 2025–2026.  |
| WECC-NW             |                    | The results of the probabilistic assessment reveal no EUE or LOLH for Winter 2025–2026. Results for a case where new resource additions are not completed for the upcoming winter found some EUE and LOLH. |
| WECC-SW             |                    | The results of the probabilistic assessment reveal no EUE or LOLH for Winter 2025–2026.  |

## Regional Assessments Dashboards

The following assessment area dashboards and summaries were developed based on data and narrative information collected by NERC from the six Regional Entities on an assessment area basis. Guidelines and definitions are in the [Data Concepts and Assumptions](#) table. On-Peak Reserve Margin bar charts show the ARM compared to a reference margin level (RML) that is established for each area to meet resource adequacy criteria. Prospective Reserve Margins can give an indication of additional on-peak capacity but are not used for assessing adequacy. The operational risk analysis shown in the following regional assessments dashboard pages provides a deterministic scenario for understanding how various factors that affect resources and demand can combine to impact overall resource adequacy. For each assessment area, there is a risk-period scenario graphic; the left blue column shows anticipated resources (from the [Demand and Resource Tables](#)), and the two orange columns at the right show the two demand scenarios of the normal peak net internal demand (from the [Demand and Resource Tables](#)) and the extreme winter peak demand determined by the assessment area. The middle red or green bars show adjustments that are applied cumulatively to the anticipated resources. Adjustments may include reductions for typical generation outages (maintenance and forced not already accounted for in anticipated resources) and additions that represent the quantified capacity from operational tools (if any) that are available during scarcity conditions but have not been accounted for in the WRA reserve margins. Resources throughout the scenario are compared against expected operating reserve requirements that are based on peak load and normal weather. The cumulative effects from extreme events are also factored in through additional resource derates or low-output scenarios. In addition, results from a probability-based resource adequacy assessment are shown in the Highlights section of each dashboard. Methods vary by assessment area and provide further insights into the risk conditions forecasted for this upcoming winter period.



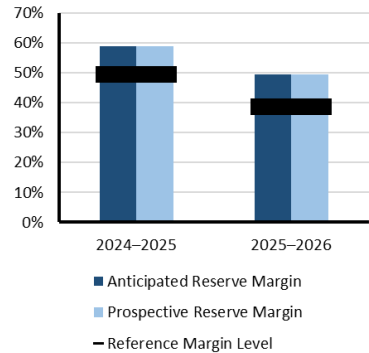


MISO

The Midcontinent Independent System Operator, Inc. (MISO) is an independent, not-for-profit organization responsible for operating the bulk electric power system and administering wholesale electricity markets across 15 U.S. states and the Canadian province of Manitoba. MISO ensures the reliable delivery of electricity to approximately 45 million people by managing regional transmission operations as well as energy and ancillary services markets and advising on long-term resource planning. The MISO footprint includes 39 Local BAs and more than 550 market participants. MISO operates one of the world’s largest organized electricity markets, with its members operating a system that consists of over 77,000 miles of transmission lines and approximately 1,888 generating units. The peak electricity demand on the MISO system currently occurs during the summer season. MISO’s footprint lies across three regional entities (MRO, RF, and SERC), but MRO is responsible for coordinating data and information submitted for NERC’s reliability assessments.

- MISO expects limited risk in the 2025–26 Winter season as MISO was able to procure 6.1% more resources through the annual planning reserve auction than required by its minimum resource adequacy target. A further 3.3 GW of resources were available but not chosen to be committed for the winter season.
- Some risk has been identified for this upcoming winter season. In a high generation outage and high winter load scenario reliability is expected to be maintained by reliance upon operational mitigations that include non-firm energy transfers into the system, energy-only resources not subject to a must-offer requirement that may still offer into the energy markets, load-modifying resources, and internal transfers that exceed the Sub-Regional Import/Export Constraint (SRIC/SREC) between the MISO North/Central and South areas.
- MISO continues to coordinate with neighboring RCs and BAs to improve situational awareness and vet any needs for energy transfers to address extreme system conditions.
- MISO continues to survey and coordinate with its members on winter preparedness and fuel sufficiency.
- MISO has implemented a seasonal resource adequacy construct and seasonal unit accreditation to better affirm adequate supply in all seasons.

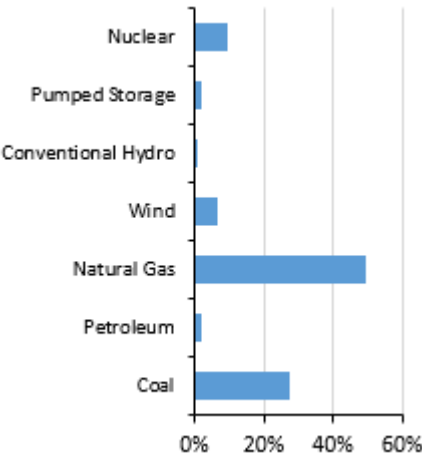
On-Peak Reserve Margin<sup>10</sup>



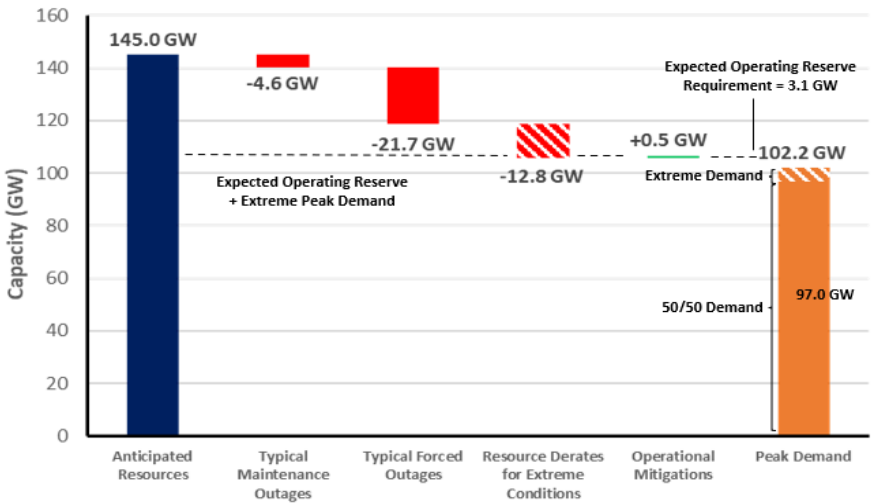
Risk Scenario Summary

Expected resources meet operating reserve requirements under assessed demand scenarios. Above-normal winter peak load combined with generator outages from freezing or fuel supply issues and low wind output result in the need to employ operating mitigations (i.e., demand response and transfers).

On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** 50/50 net internal demand and additional demand during extreme weather conditions (e.g., Winter Storm Enzo) using member submitted data and historical load data

**Typical Maintenance Outages:** Rolling three-year winter average of peak-day maintenance and planned outages

**Typical Forced Outages:** Three-year average of all peak-day outages that were not planned

**Resource Derates for Extreme Conditions:** Represents derates aligning with the most extreme hour of each of the past 3 years,

**Operational Mitigations:** Non-firm energy transfers into the system, energy-only resources that do not have a must-offer requirement, or internal transfers that exceed the SRIC/SREC between the MISO North/Central and South regions

<sup>10</sup> The MISO Risk Scenario Assessment for the 2025-26 Winter Season is not directly comparable to that for the 2024-25 Winter Season as methodology improvements have been implemented.



## MRO-Manitoba Hydro

Manitoba Hydro is a provincial Crown corporation and one of the largest integrated electricity and natural gas distribution utilities in Canada. Manitoba Hydro is a leader in providing renewable energy and clean-burning natural gas. Manitoba Hydro provides electricity to approximately 608,500 electric customers in Manitoba and natural gas to approximately 293,000 customers in southern Manitoba. Its service area is the province of Manitoba, which is 251,000 square miles. Manitoba Hydro is winter-peaking. Manitoba Hydro is its own Planning Coordinator (PC) and Balancing Authority (BA). Manitoba Hydro is a coordinating member of MISO, which is the RC for Manitoba Hydro.

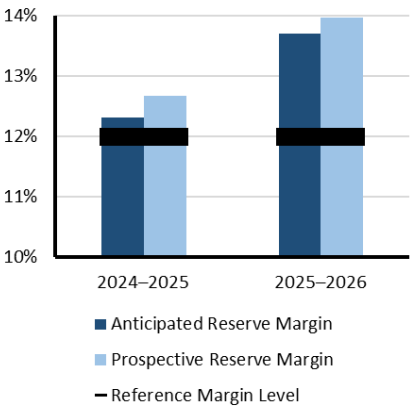
### Highlights

- Manitoba Hydro is not anticipating any operational challenges and/or emerging reliability issues in its assessment area for Winter 2025–2026.
- Manitoba Hydro expects to reliably supply its internal demand and export obligations even under continued drought conditions.
- Manitoba Hydro is experiencing well below-average water supply conditions; however, the Manitoba Hydro system is designed and operated such that reliable operations can be maintained under extreme drought.
- The ARM for Winter 2025–26 exceeds the 12% RML.

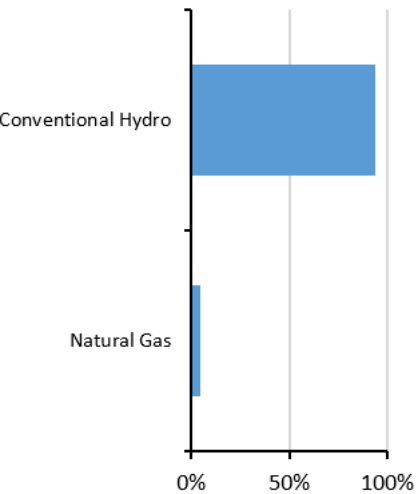
### Risk Scenario Summary

Expected resources meet operating reserve requirements under the assessed scenarios.

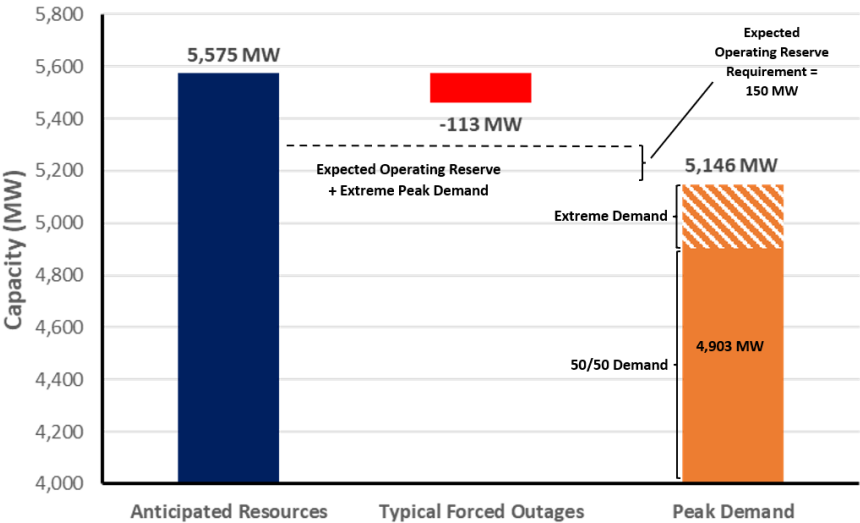
### On-Peak Reserve Margin



### On-Peak Resource Mix



### 2025–2026 Winter Risk Period Scenario



### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Net internal demand (50/50) and (90/10) demand forecast using 30 years of weather data

**Typical Forced Outages:** Accounts for average forced outages





MRO-SaskPower

MRO-SaskPower is an assessment area that covers the Canadian province of Saskatchewan. The province has a geographic area of 651,900 square kilometers (251,700 square miles) and a population of just over 1.1 million people. The Saskatchewan Power Corporation (SaskPower) is the PC and RC for the province of Saskatchewan and is the principal supplier of electricity in the province. SaskPower is a provincial Crown corporation and, under provincial legislation, is responsible for the reliability oversight of the Saskatchewan Bulk Electric System (BES) and its interconnections. Overall, SaskPower operates nearly 14,816 circuit-km of transmission lines, 65 high-voltage switching stations, and 191 distribution substations. Peak electricity demand on the SaskPower system currently occurs during the winter season.

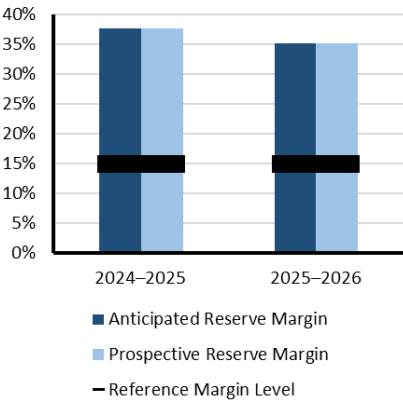
Highlights

- Saskatchewan experiences its peak load during the winter months due to extreme cold weather.
- Based on the planned maintenance, typical forced outages from historical data, and expected renewable generation under the normal and extreme demand conditions, SaskPower does not anticipate any reliability issues during the 2025–2026 Winter.
- During extreme winter conditions, SaskPower would utilize available demand-response programs, short-term power transfers from neighboring utilities, maintenance rescheduling, and/or short-term load interruptions to manage the situation.

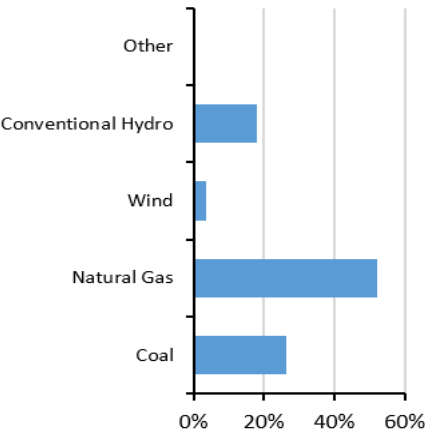
Risk Scenario Summary

Expected resources meet operating reserve requirements under the assessed scenarios.

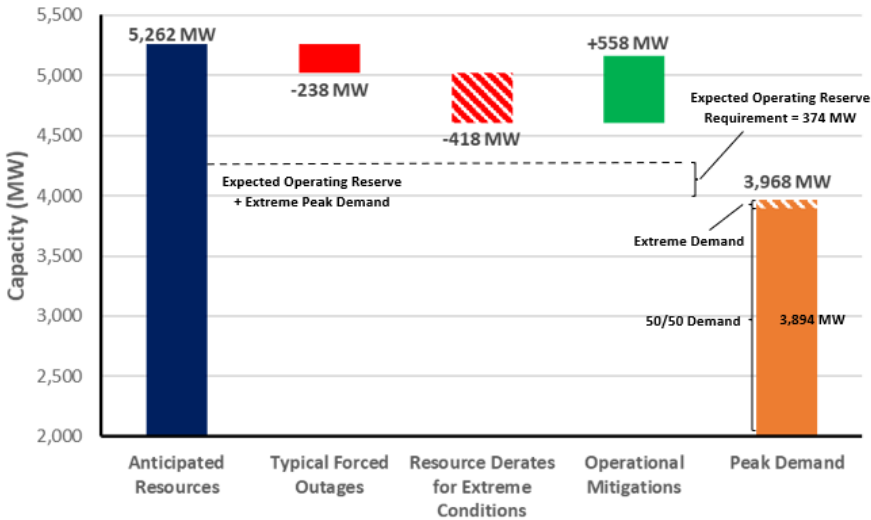
On-Peak Reserve Margin



On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Based on the historical load variability, SaskPower calculates a probability density function for load to simulate various scenarios that include extreme conditions.

**Typical Forced Outages:** Estimated using SaskPower forced outage model

**Resource Derates for Extreme Conditions:** Wind capacity is derated by 96% due to the cut-out of most wind farms below -30°C. Solar generation is expected to be fully unavailable under extreme conditions.

**Operational Mitigations:** Includes the non-firm import capability (360 MW) and generators in layup status (167 MW) that can be brought online with one to five days’ notice; additional demand-side resources are estimated based on other demand response programs and non-firm loads that require 15 minutes to 2 hours of notification



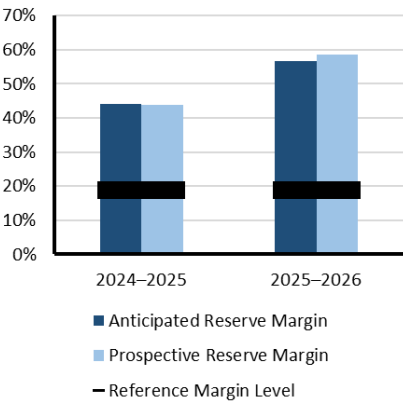
MRO-SPP

SPP’s footprint covers 546,000 square miles and encompasses all or parts of Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming. The SPP long-term assessment is reported based on the PC footprint, which touches parts of the MRO Regional Entity and the WECC Regional Entity. The SPP assessment area footprint has approximately 61,000 miles of transmission lines, 756 generating plants, and 4,811 transmission-class substations, and it serves a population of more than 18 million.

Highlights

- SPP anticipates that planning reserves are adequate for the upcoming winter season even as SPP continues to set new winter season load records.
- SPP does not anticipate any emerging reliability issues impacting the area for the 2025–2026 Winter season but realizes that interruptions to fuel supply combined with higher penetration of variable energy resources could create unique operation challenges.
- SPP continues to work at enhancing communications and operator preparedness with neighboring regions to address potential electric deliverability issues associated with extreme weather events.
- To minimize conservative operations, EEAs, and mid-range forecast error uncertainty response in wind forecasts, SPP implemented several new operational mitigation processes and procedures to deal with high-impact real-time areas of reliability concern.
- SPP has proposed numerous resource adequacy initiatives, including addressing EUE standards, fuel assurance, winter planning reserve margins, outage policies, demand response, and accreditation; all were recently approved by FERC.

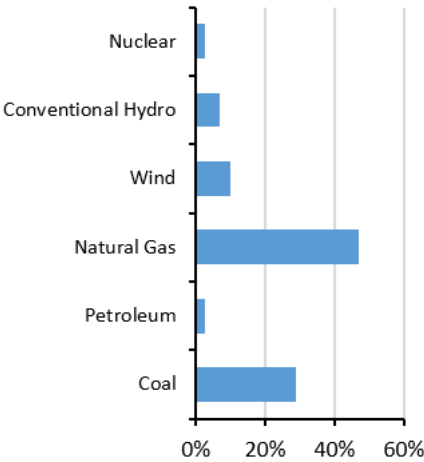
On-Peak Reserve Margin



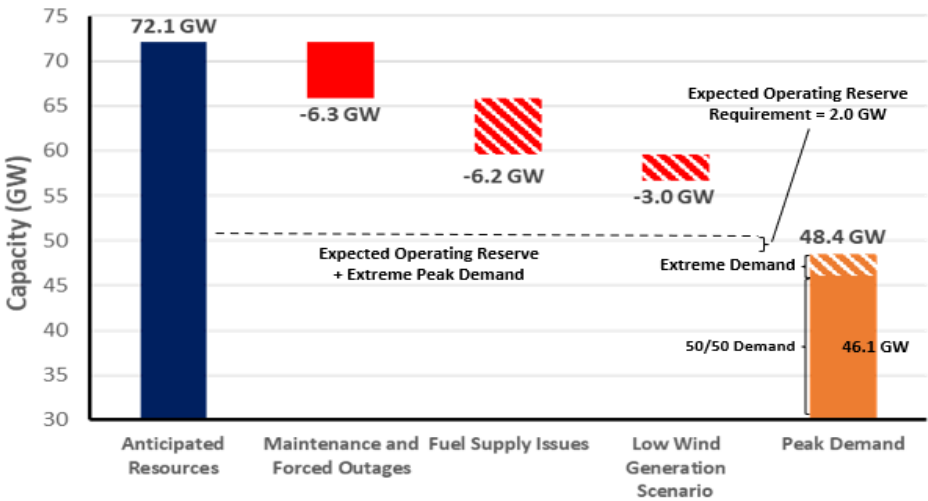
Risk Scenario Summary

Expected resources meet operating reserve requirements under the assessed scenarios.

On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Net internal demand (50/50) and extreme demand forecast using historical data

**Maintenance and Forced Outages:** A capacity derate of 6.3 GW for maintenance outages, forced outages, and performance in extreme weather based on historical data

**Fuel Supply Issues:** BA derate of 6.2 GW based on MW capacity of gas-fired generators experiencing fuel supply issues in winter storm Elliott.

**Low Wind Generation Scenario:** 3 GW of wind potentially off-line when temperatures fall below their cold weather performance packages



### NPCC-Maritimes

NPCC-Maritimes is an assessment area that covers the Canadian Maritime provinces—New Brunswick, Nova Scotia, and Prince Edward Island—and the northernmost portion of the U.S. state of Maine. The area covers approximately 150,000 square kilometers (58,000 square miles) and has a total population of nearly 1.9 million people. The New Brunswick Power Corporation (NB Power) is the balancing authority for New Brunswick, Prince Edward Island, and the northern portion of Maine. Nova Scotia Power Inc. (NSPI) is the balancing authority for Nova Scotia. NB Power’s system is electrically interconnected with NPCC-Québec and NPCC-New England, and the electric systems in the provinces of Nova Scotia and Prince Edward Island have ties with New Brunswick but no direct ties with other assessment areas. Peak electricity demand in NPCC-Maritimes occurs during the winter season.

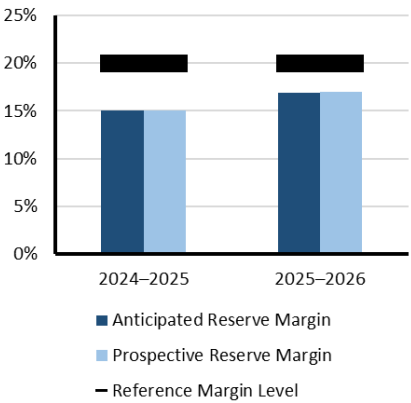
#### Highlights

- The Maritimes has a diversified mix of capacity resources fueled by oil, coal, hydro, nuclear, natural gas, wind, dual-fuel oil/gas, tie benefits, and biomass with no one type making up more than about 27% of the total capacity in the area.
- The Maritimes has long-term energy contracts in place for its winter supply and can purchase additional energy in the day-ahead and in real time as required.
- As part of the winter planning and preparation process, dual-fueled units will have sufficient supplies of heavy fuel oil stored on site to enable sustained operation in the event of natural gas supply interruptions.

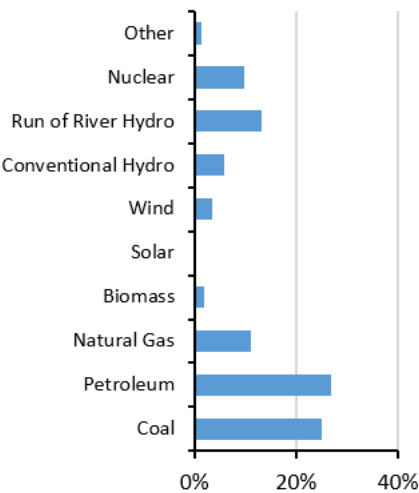
#### Risk Scenario Summary

Expected resources do not meet operating reserve requirements under normal peak-demand scenarios. Normal winter peak load and outage conditions could result in the need for operating mitigations (i.e., demand response, transfers, appeals) and EEAs. NPCC probabilistic analysis indicates some risk of unserved energy and LOLH under high demand or low resource scenarios.

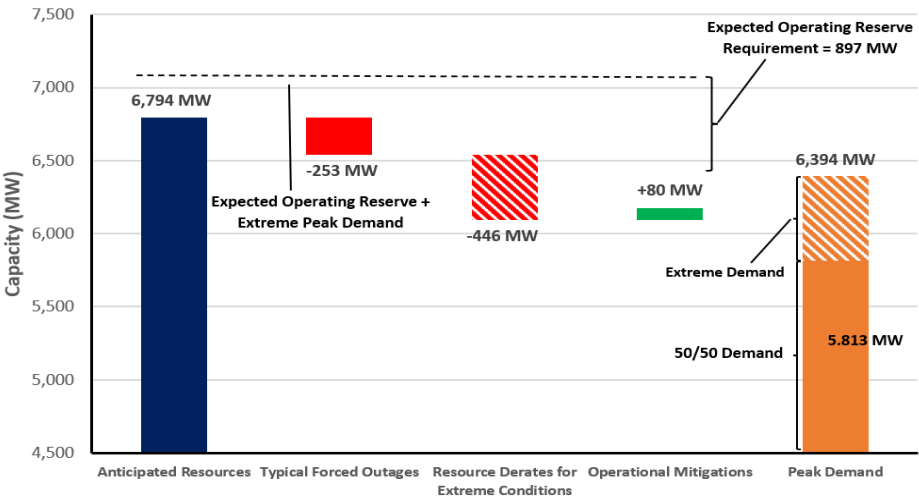
#### On-Peak Reserve Margin



#### On-Peak Resource Mix



#### 2025–2026 Winter Risk Period Scenario



#### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Scenario peak load with adjustment calculated by adding a 10% margin of error to the peak internal demand forecast taken from the *Long-Term Reliability Assessment* (LTRA) for the 2025–2026 Winter period (aligns with the all-time winter peak, which occurred on February 4, 2024)

**Typical Forced Outages:** Based on historical operating experience

**Resource Derates for Extreme Conditions:** Based on ambient temperature thermal derates, wind derated to zero, as well as natural gas capacity derated by 50% due to supply issues

**Operational Mitigations:** Based on emergency operations and planning procedures in place including fuel switching



## NPCC-New England

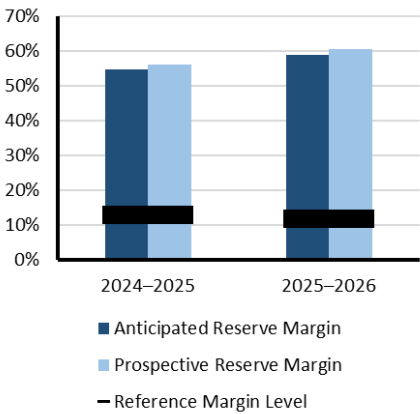
NPCC-New England is an assessment area consisting of the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont that is served by ISO New England (ISO-NE) Inc. ISO-NE is a regional transmission organization that is responsible for the reliable day-to-day operation of New England’s bulk power generation and transmission system, administration of the area’s wholesale electricity markets, and management of the comprehensive planning of the regional BPS.

The New England BPS serves approximately 14.5 million customers over 68,000 square miles.

### Highlights

- ISO-NE expects to meet its regional resource adequacy requirements this 2025–2026 Winter operating period without calling upon operating procedures to maintain a balance between electricity supply and demand.
- A standing concern is whether there will be sufficient energy available to satisfy electricity demand during an extended cold spell given the existing resource mix, fuel delivery infrastructure, and expected fuel arrangements without considerable effort to replenish stored fuels (i.e., fuel oil and liquefied natural gas (LNG)).
- ISO-NE expects to have sufficient capacity resources to meet the 2025–2026 50/50 and 90/10 winter peak demand forecast of 19,616 MW and 21,125 MW, respectively, for the weeks beginning January 10, January 17, and January 24.
- ISO-NE has recently developed the Regional Energy Shortfall Threshold (REST) as an effort to quantify the tolerable risk of energy shortfall during extreme events. Within the 0.25% highest-risk scenarios, the REST thresholds are 3.0% normalized EUE over 72-hour periods and 18.0 hours over 21-day periods.
  - ISO-NE does not anticipate exceeding the REST criteria for Winter 2025–2026.

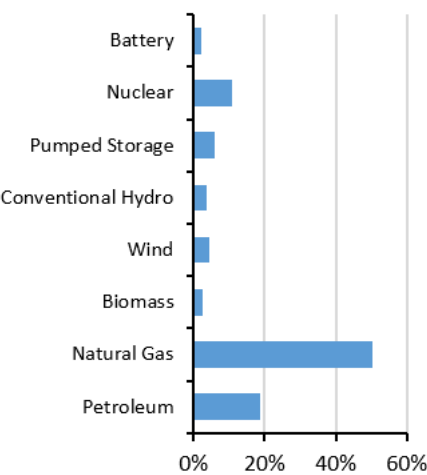
### On-Peak Reserve Margin



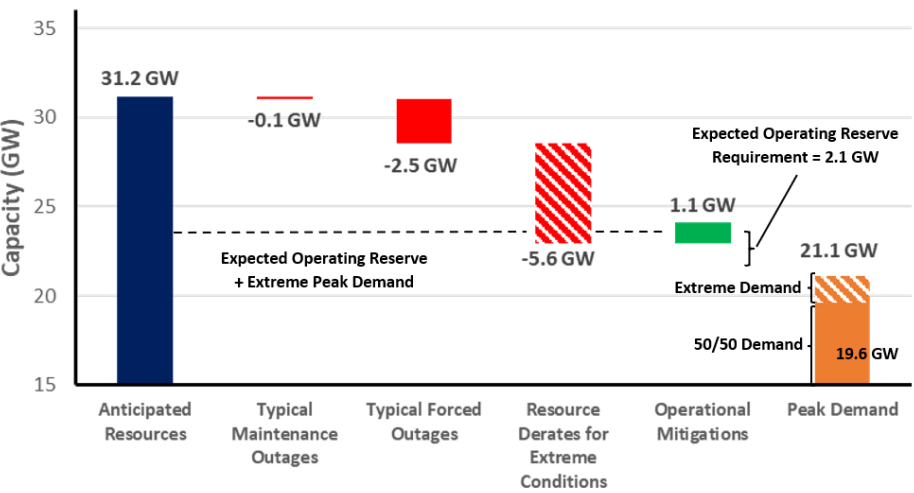
### Risk Scenario Summary

Expected resources meet operating reserve requirements under assessed demand scenarios. Above-normal winter peak load combined with high generator outages could result in the need for operating mitigations (i.e., demand response and transfers). Prolonged extreme cold weather events that result in depletion of stored fuels can lead to resource shortfalls.

### On-Peak Resource Mix



### 2025–2026 Winter Risk Period Scenario



### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Peak net internal demand (50/50) and (90/10) extreme demand forecast capturing the region’s coldest day in the last 30 years using current and future load models

**Typical Maintenance Outages:** Based on historical weekly averages

**Typical Forced Outages:** Based on seasonal capacity of each resource as determined by ISO-NE

**Resource Derates for Extreme Conditions:** Represent a case that is beyond the (90/10) conditions based on historical observation of force outages and additional reductions for generation at risk due to natural gas supply and cold weather-related outages

**Operational Mitigations:** Based on load and capacity relief assumed available from invocation of ISO-NE operating procedures



## NPCC-New York

NPCC-New York is an assessment area consisting of the New York ISO (NYISO) service territory. NYISO is responsible for operating New York’s BPS, administering wholesale electricity markets, and conducting system planning. NYISO is the only BA within the state of New York. The BPS in New York encompasses over 11,000 miles of transmission lines and 760 power generation units and serves 20.2 million customers. For this WRA, the established RML is 15%. Wind, grid-connected solar PV, and run-of-river totals were derated for this calculation. However, New York requires load-serving entities to procure capacity for their loads equal to their peak demand plus an Installed Reserve Margin (IRM). The IRM requirement represents a percentage of capacity above peak load forecast and is approved annually by the New York State Reliability Council. The council approved the 2025–2026 IRM at 24.4%.

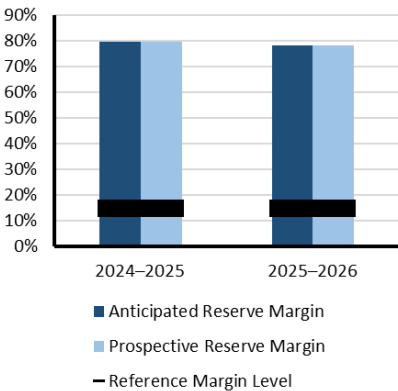
### Highlights

- New York is presently a summer-peaking area, and no emerging reliability issues are anticipated during the 2025–26 Winter assessment period.
- Expected resources meet operating reserve requirements under the assessed demand and resource scenarios. A scenario involving an extended cold snap that causes above-normal demand and diminished natural gas supplies would result in low but sufficient reserves.
- The preliminary results of the NPPCC winter probabilistic assessment indicate that operating procedures are not needed to maintain a balance between electricity supply and demand. No cumulative LOLE, LOLH or EUE risks were indicated over the December–February winter period for all the scenarios modeled.

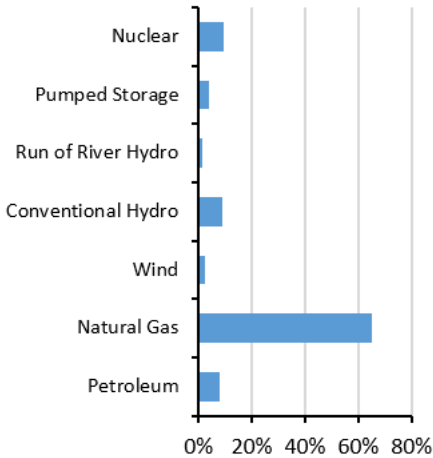
### Risk Scenario Summary

Expected resources meet operating reserve requirements under the assessed demand and resource scenarios.

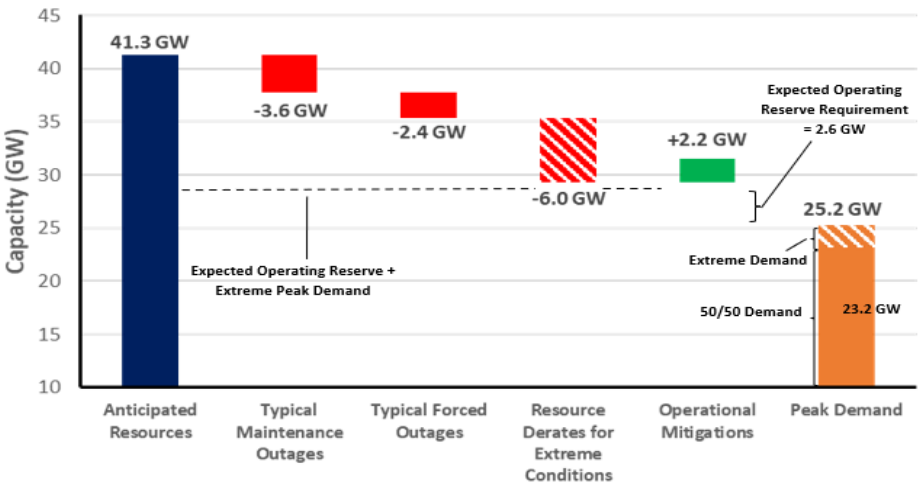
### On-Peak Reserve Margin



### On-Peak Resource Mix



### 2025–2026 Winter Risk Period Scenario



### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Net internal demand (50/50) and (90/10) demand forecast

**Typical Maintenance Outages:** Based on planned scheduled maintenance

**Typical Forced Outages:** Based on 5–year averages from GADS data.

**Resource Derates for Extreme Conditions:** Potential natural gas generation at risk if non-firm supply is unavailable in a period of extended cold weather. Based on a 2025 analysis, approximately 6,307 MW of gas generation with non-firm fuel supplies could be unavailable.

**Operational Mitigations:** Based on NYISO operating procedures





### NPCC-Ontario

NPCC-Ontario is an assessment area that covers the Canadian province of Ontario. The province of Ontario covers more than 1 million square kilometers (415,000 square miles) and has a population of almost 16 million people. The Independent Electricity System Operator (IESO) is the balancing authority for the province of Ontario. NPCC-Ontario is electrically interconnected with NPCC-Québec, MRO-Manitoba, MISO, and NPCC-New York. Peak electricity demand in NPCC-Ontario occurs during the summer season.

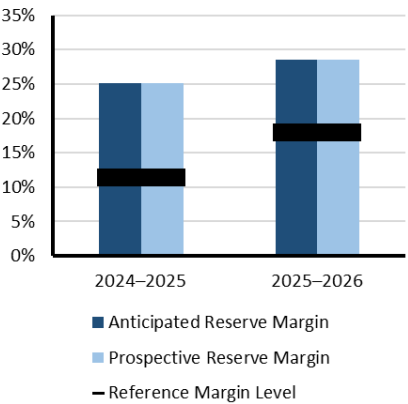
#### Highlights

- As Ontario is a summer-peaking province, there is typically a lower risk of reliability issues during the winter than the summer. However, Ontario regularly experiences extreme cold weather in the winter.
- NPCC-Ontario is well prepared for Winter 2025–2026, and IESO expects that the electric system will remain reliable with reserve margins well above required levels.
- Operators and forecasters in Ontario work closely with neighboring jurisdictions to manage extreme weather events.
- Natural-gas-fired generators in Ontario are supplied by pipelines with access to the Enbridge Gas Dawn Hub and its associated storage facilities, which significantly reduces natural gas deliverability and reliability concerns by connecting those systems to several major gas transportation corridors, enabling access to multiple supply basins.

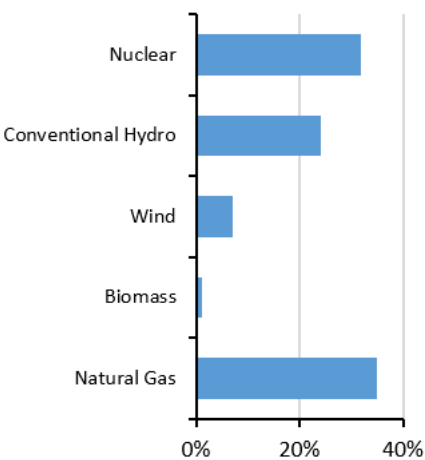
#### Risk Scenario Summary

Expected resources meet operating reserve requirements under the assessed scenarios.

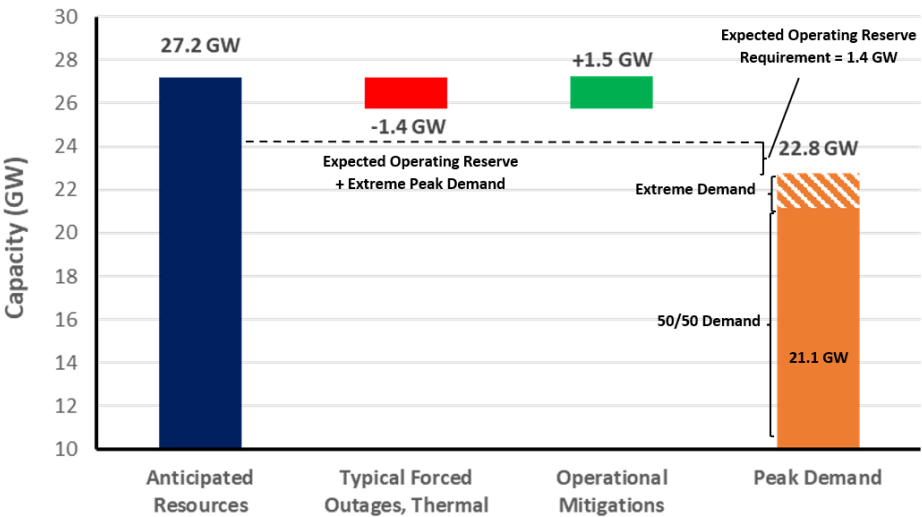
#### On-Peak Reserve Margin



#### On-Peak Resource Mix



#### 2025–2026 Winter Risk Period Scenario



#### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Net internal demand (50/50 forecast) and highest weather-adjusted daily demand from 31 years of winter demand history

**Typical Forced Outages, Thermal:** Based on analysis of a rolling five-year history of actual forced outage data.

**Operational Mitigations:** Imports anticipated from **neighbors** during emergencies



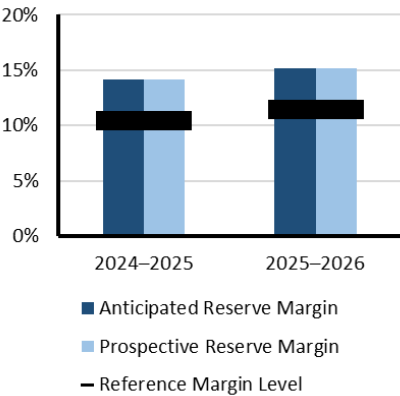
NPCC-Québec

NPCC-Québec is an assessment area that covers the Canadian province of Québec. The province of Québec covers over 1.5 million square kilometers (nearly 600,000 square miles) and has a population of 9 million people. Hydro-Québec is the BA for the province of Québec. The Québec BPS is one of the four electric Interconnections in North America. It is a predominately hydroelectric-generation-based system that is electrically interconnected with NPCC-Ontario, NPCC-New York, NPCC-New England, and NPCC-Maritimes. Peak electricity demand in NPCC-Québec occurs during the winter season.

Highlights

- NPCC-Québec projects adequate capacity margins above its reference reserve requirements and that system resource adequacy will be maintained for the province for the 2025–26 Winter assessment period.
- No hydropower performance issues are expected during extreme cold because of design criteria for cold weather.
- No fuel supply or transportation issues are anticipated for the upcoming winter season.
- While a slight decrease in net firm transfers has occurred since last winter (-89 MW), significant increases in demand-side management programs (+450 MW year-over-year) have been realized over the same period and are expected to compensate for this winter’s modest expected load growth.

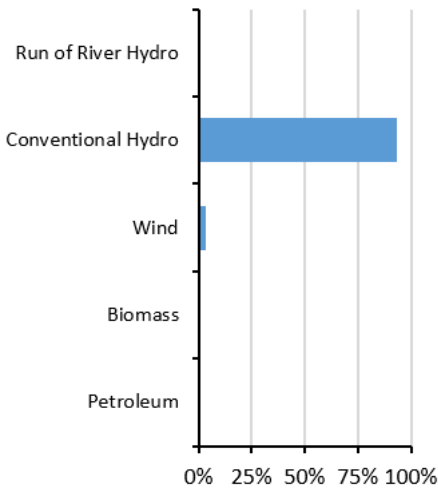
On-Peak Reserve Margin



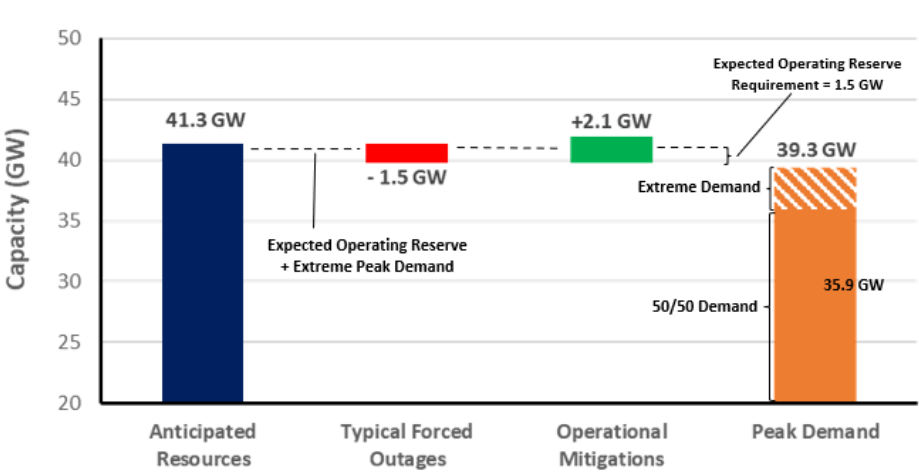
Risk Scenario Summary

Expected resources meet operating reserve requirements under the assessed scenarios.

On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)


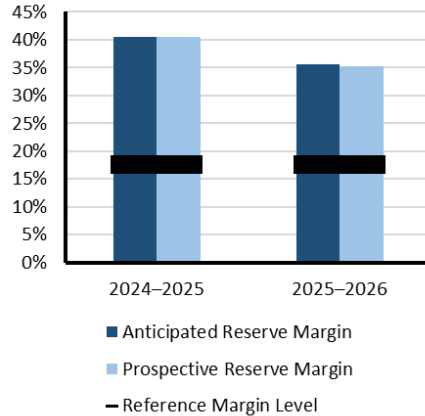
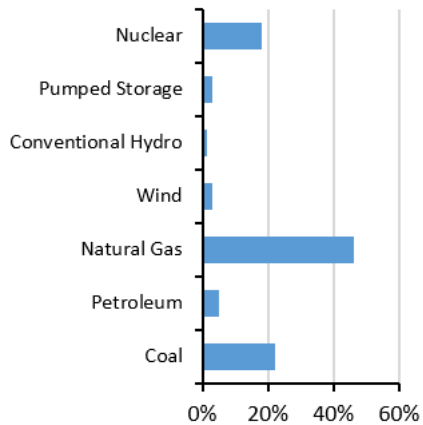
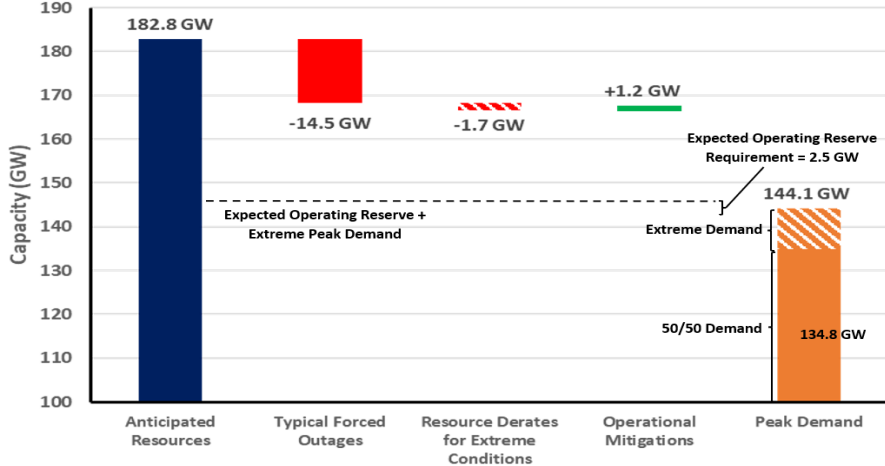
**Risk Period:** Highest risk for unserved energy at hour ending 8:00 a.m.

**Demand Scenarios:** Demand forecasts include demand-side resources. The demand side resources are the same for the 50/50 and extreme demand scenarios. The extreme load forecast is determined at two standard deviations higher than the mean, which has a 6.06% probability of occurrence.

**Extreme Derates:** Maintenance outages and other deratings are already included in existing-certain capacity calculation. Wind capacity is 64% derated

**Typical Forced Outages:** Unplanned outages are 1,500 MW.

**Operational Mitigations:** Operational mitigations include imports from neighboring areas and reduction of reserves

| <div></div> <div><h2>PJM</h2><p>PJM Interconnection is a regional transmission organization that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. PJM’s footprint covers approximately 369,054 square miles and with an approximate population of 67 million people. PJM is the area’s BA, Transmission and Resource Planner, interchange authority, TOP, transmission service provider, and RC. PJM is electrically interconnected with MISO, NPCC-New York, SERC-Central, and SERC-East. Peak electricity demand in PJM occurs during the summer season.</p></div>  |                            |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
|---|----------------------------|--|------------------------|----------------------------|----------------------------|------------------------|--------------------|------|------|-------|-------------|------|-----------|-------|------|------|---|--------------------|------------|-----------------------|-------|------------------------|-------|---|------|-------------------------|------|--|-----|--------------|-------|-------------|-------|---|
| <h3>Highlights</h3> <ul style="list-style-type: none"><li>• Due to the low penetration of limited and variable resources in PJM relative to PJM’s peak load, the hour with highest loss-of-load risk remains the hour with highest forecasted demand.</li><li>• PJM is expecting little capacity adequacy risk during Winter 2025–2026 and expects around 35% installed reserves, which is above the target IRM of 17.7% necessary to meet the 1-day-in-10-years LOLE criterion.</li><li>• Last winter, PJM hit a new all-time winter peak, but generator preparations anticipating congestion and tight capacity projections led to sufficient reserves throughout the demand event and PJM’s transmission system performed well.</li><li>• The decrease in reserves from Winter 2024–2025 is due to load increases and retirement of generation without like (non-solar dispatchable) replacement generation.</li></ul> |                            | <h3>On-Peak Reserve Margin</h3>  <table><tr><th>Period</th><th>Anticipated Reserve Margin</th><th>Prospective Reserve Margin</th><th>Reference Margin Level</th></tr><tr><td>2024–2025</td><td>~40%</td><td>~40%</td><td>17.7%</td></tr><tr><td>2025–2026</td><td>~35%</td><td>~35%</td><td>17.7%</td></tr></table> | Period                 | Anticipated Reserve Margin | Prospective Reserve Margin | Reference Margin Level | 2024–2025          | ~40% | ~40% | 17.7% | 2025–2026   | ~35% | ~35%      | 17.7% |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Period  | Anticipated Reserve Margin | Prospective Reserve Margin   | Reference Margin Level |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| 2024–2025   | ~40%                       | ~40%   | 17.7%                  |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| 2025–2026   | ~35%                       | ~35%   | 17.7%                  |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| <h3>Risk Scenario Summary</h3> <p>Expected resources meet operating reserve requirements under the assessed scenarios.</p>  |                            |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| <h3>On-Peak Resource Mix</h3>  <table><tr><th>Resource</th><th>Percentage</th></tr><tr><td>Nuclear</td><td>~15%</td></tr><tr><td>Pumped Storage</td><td>~2%</td></tr><tr><td>Conventional Hydro</td><td>~2%</td></tr><tr><td>Wind</td><td>~2%</td></tr><tr><td>Natural Gas</td><td>~45%</td></tr><tr><td>Petroleum</td><td>~5%</td></tr><tr><td>Coal</td><td>~20%</td></tr></table>   | Resource                   | Percentage   | Nuclear                | ~15%                       | Pumped Storage             | ~2%                    | Conventional Hydro | ~2%  | Wind | ~2%   | Natural Gas | ~45% | Petroleum | ~5%   | Coal | ~20% | <h3>2025–2026 Winter Risk Period Scenario</h3>  <table><tr><th>Scenario Component</th><th>Value (GW)</th></tr><tr><td>Anticipated Resources</td><td>182.8</td></tr><tr><td>Typical Forced Outages</td><td>-14.5</td></tr><tr><td>Resource Derates for Extreme Conditions</td><td>-1.7</td></tr><tr><td>Operational Mitigations</td><td>+1.2</td></tr><tr><td>Expected Operating Reserve Requirement</td><td>2.5</td></tr><tr><td>50/50 Demand</td><td>144.1</td></tr><tr><td>Peak Demand</td><td>134.8</td></tr></table> | Scenario Component | Value (GW) | Anticipated Resources | 182.8 | Typical Forced Outages | -14.5 | Resource Derates for Extreme Conditions | -1.7 | Operational Mitigations | +1.2 | Expected Operating Reserve Requirement | 2.5 | 50/50 Demand | 144.1 | Peak Demand | 134.8 | <h3>Scenario Description (See Data Concepts and Assumptions)</h3> <p><b>Risk Period:</b> Highest risk for unserved energy at peak demand hour</p> <p><b>Demand Scenarios:</b> Net internal demand (50/50) and (90/10) demand forecast</p> <p><b>Typical Forced Outages:</b> Based on historical data and trending</p> <p><b>Resource Derates for Extreme Conditions:</b> Reduced thermal capacity contributions due to performance in extreme conditions</p> <p><b>Operational Mitigations:</b> accounts for an estimated value based on operational / emergency procedures</p> |
| Resource  | Percentage                 |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Nuclear   | ~15%                       |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Pumped Storage  | ~2%                        |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Conventional Hydro  | ~2%                        |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Wind  | ~2%                        |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Natural Gas   | ~45%                       |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Petroleum   | ~5%                        |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Coal  | ~20%                       |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Scenario Component  | Value (GW)                 |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Anticipated Resources   | 182.8                      |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Typical Forced Outages  | -14.5                      |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Resource Derates for Extreme Conditions   | -1.7                       |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Operational Mitigations   | +1.2                       |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Expected Operating Reserve Requirement  | 2.5                        |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| 50/50 Demand  | 144.1                      |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |
| Peak Demand   | 134.8                      |  |                        |                            |                            |                        |                    |      |      |       |             |      |           |       |      |      |   |                    |            |                       |       |                        |       |   |      |                         |      |  |     |              |       |             |       |   |



## SERC-Central

SERC-Central is an assessment area within the SERC Regional Entity. SERC-Central includes all of Tennessee and portions of Georgia, Alabama, Mississippi, Missouri, and Kentucky. Historically a summer-peaking area, SERC-Central is beginning to have higher peak demand forecasts in winter. SERC is one of the six companies across North America that are responsible for the work under FERC-approved delegation agreements with NERC. SERC-Central is specifically responsible for the reliability and security of the electric grid across the Southeastern and Central areas of the United States. This area covers approximately 630,000 square miles and serves a population of more than 91 million. The SERC Regional Entity includes 36 BAs, 28 planning entities, and 6 RCs.

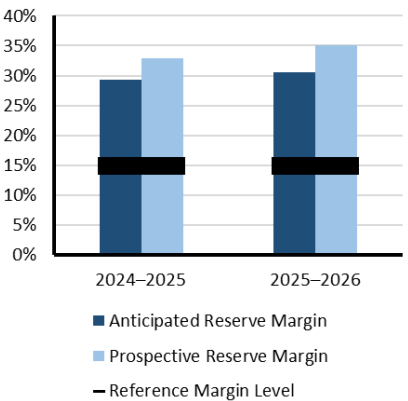
### Highlights

- SERC-Central is transitioning from a summer-peaking area to a dual-peaking system.
- For the 2025–2026 Winter, SERC-Central projects a sufficient level of resources to serve the expected load under median weather and typical system operating conditions, based on the 2024 NERC ProBA base-case results.
- Most entities across SERC-Central report that fuel security is strong since it is supported by firm natural gas contracts, storage resources, and reliable pipeline capacity. Coal inventories are projected to remain within operational ranges necessary to meet winter demand.
- Following lessons from Winter Storm Elliott, one SERC-Central entity raised its winter Planning Reserve Margin target to 26% and updated preparedness programs with improved heat trace capabilities.

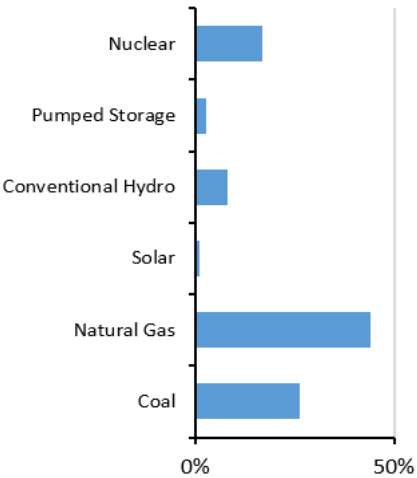
### Risk Scenario Summary

Expected resources meet operating reserve requirements under normal peak demand. A severe cold weather event that extends to the south could lead to energy emergencies as operators face sharp increases in generator forced outages and electricity demand. Above-normal winter peak load and outage conditions could result in the need for operating mitigations (i.e., demand response and transfers) and EEAs. Load shedding is unlikely but may be needed under wide-area cold weather events.

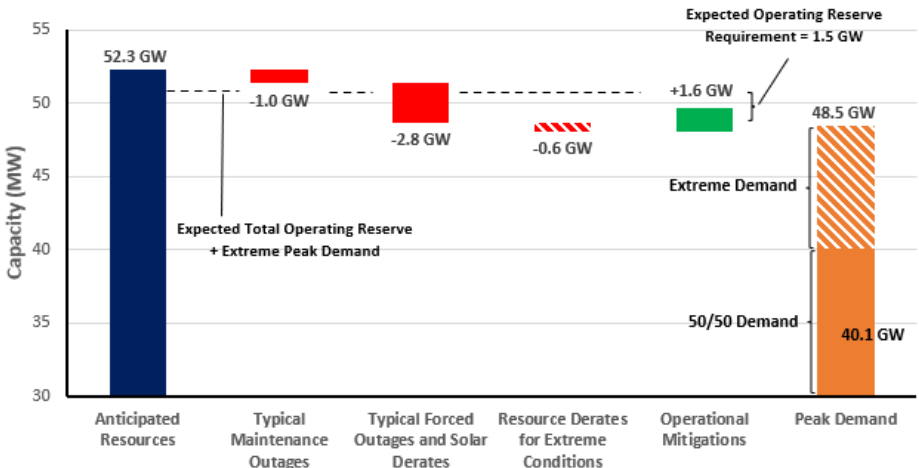
### On-Peak Reserve Margin



### On-Peak Resource Mix



### 2025–2026 Winter Risk Period Scenario



### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Net internal demand (50/50) and (90/10) demand forecast using 30 years of historical data

**Typical Maintenance Outages:** Data collected through a survey of members for expected outages during December through February

**Typical Forced Outages and Solar Derate:** Includes any weighted average forced-outage rates on-peak that are not factored into the anticipated resources calculation. Also, solar resources are derated to account for peak demand occurrence during darkness.

**Resource Derates for Extreme Conditions:** Entity-provided values for low likelihood extreme conditions

**Operational Mitigations:** A total of over 1.6 GW based on operational/emergency procedures



SERC-East

SERC-East is an assessment area within the SERC Regional Entity. SERC-East includes North Carolina and South Carolina. Historically a summer-peaking area, SERC-East is beginning to have higher peak demand forecasts in winter. SERC is one of the six Regional Entities across North America that are responsible for the work under FERC-approved delegation agreements with NERC. SERC is specifically responsible for the reliability and security of the electric grid across the Southeastern and Central United States. The SERC Regional Entity covers approximately 630,000 square miles with a population of more than 91 million. The SERC Regional Entity includes 36 BAs, 28 Planning Authorities (PA), and 6 RCs.

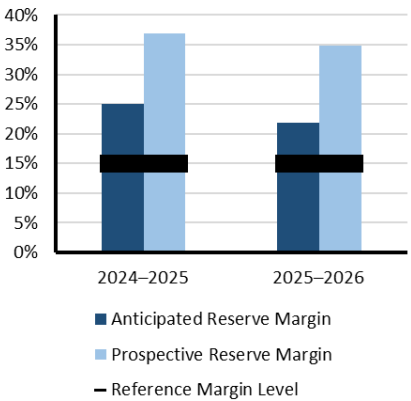
Highlights

- SERC-East is transitioning from a summer-peaking area to potentially peaking during both summer and winter. This shift is attributed to the continued addition of solar PV generation, which reduces summer peak demand, and a trend toward electrification of heating, which drives up winter peak demand.
- For the 2025–2026 Winter, the SERC-East region projects a sufficient level of resources to serve the expected load under median weather and typical system operating conditions, based on the 2024 NERC ProbA base-case results.
- Fuel supplies and transportation remain stable, and entities anticipate maintaining adequate coal and oil inventories with no reported changes to fuel procurement or operator plans for the upcoming winter.
- Probabilistic Base Case Results (Median Weather): EUE is 61.95 MWh and LOLH is 0.06 hours/year. EUE values are likely due to higher winter peaks and/or lower supply of capacity that can meet early winter morning demand.
- Mitigation measures for extreme conditions include voltage reduction (25–50 MW) and load-shedding programs that cover up to 30% of system load.

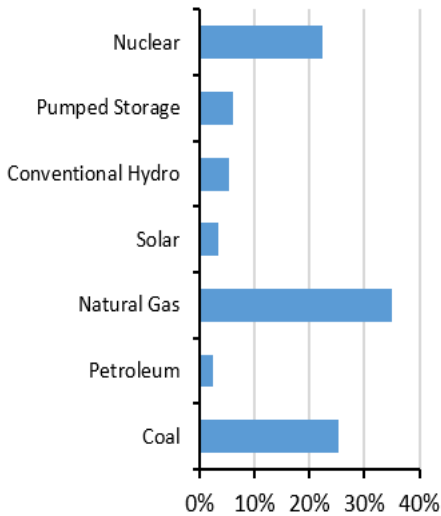
Risk Scenario Summary

Expected resources meet operating reserve requirements under normal demand scenarios. A severe cold weather event extending to the south could lead to energy emergencies as operators face sharp increases in generator forced outages and electricity demand. Above-normal winter peak load and outage conditions could result in the need for operating mitigations (i.e., demand response and transfers) and EEAs. Load shedding is unlikely but may be needed under wide-area cold weather events.

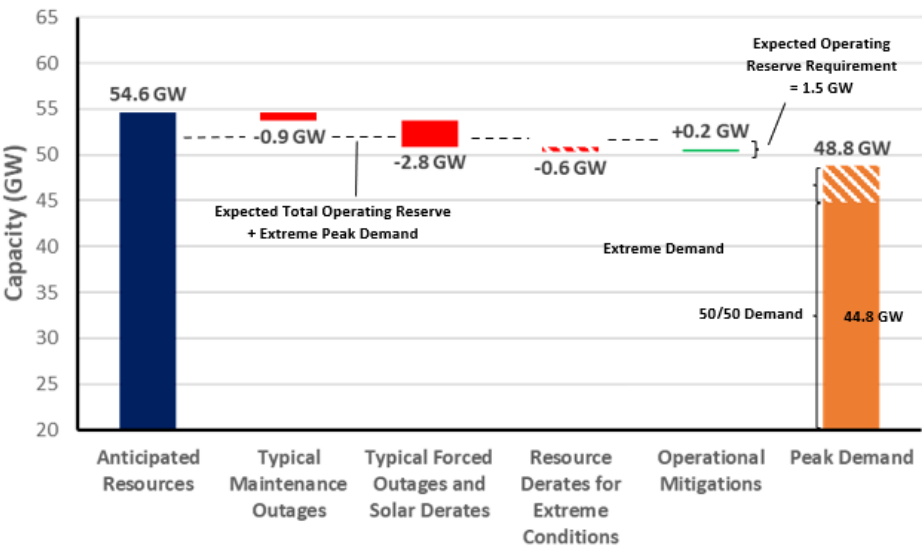
On-Peak Reserve Margin



On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Net internal demand (50/50) and (90/10) demand forecast

**Typical Maintenance Outages:** Data collected through a survey of members for outages during December through February

**Typical Forced Outages and Solar Derate:** Weighted average forced-outage rates on-peak are factored into the anticipated resources calculation. Also, solar resources are derated to account for peak demand occurrence during darkness.

**Resource Derates for Extreme Conditions:** Maximum historical generation outages (excluding 2022–2025)

**Operational Mitigations:** A total of 0.2 GW based on operational/emergency procedures





### SERC-Florida Peninsula

SERC-Florida Peninsula is a summer-peaking assessment area within SERC. SERC is one of the six Regional Entities across North America that is responsible for the work under FERC-approved delegation agreements with NERC. SERC is specifically responsible for the reliability and security of the electric grid across the Southeastern and Central United States. The SERC Regional Entity area covers approximately 630,000 square miles with a population of more than 91 million. The SERC Regional Entity includes 36 BAs, 28 PAs, and 6 RCs.

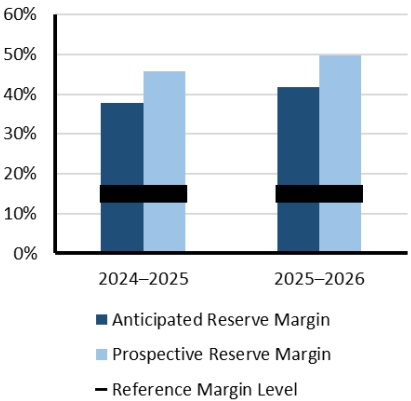
#### Highlights

- SERC-Florida Peninsula is a summer-peaking assessment area.
- Florida Peninsula entities have not identified any emerging reliability issues for the upcoming 2025–26 Winter season with an ARM projected at 39%, well above the RML, while the 2024 NERC ProBA base-case results project a sufficient level of resources to serve the expected load under median weather and typical system operating conditions (EUE is 1.09 MWh and LOLH is 0.00 hours/year).
- Many entities report strong fuel security, supported by firm natural gas contracts, storage resources, reliable pipeline capacity, and actively managed coal and oil inventories, which are projected to remain within operational ranges to meet winter demand.
- Florida Peninsula entities do not assume non-firm external assistance from neighboring areas during extreme conditions.

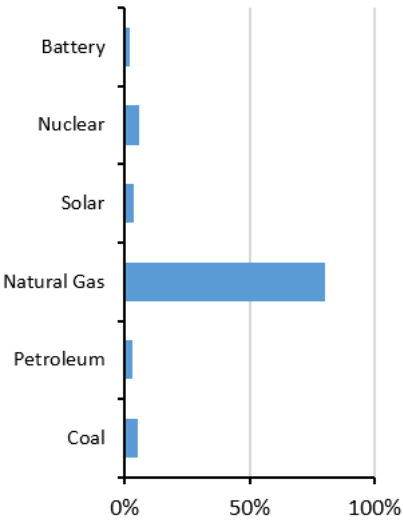
#### Risk Scenario Summary

Expected resources meet operating reserve requirements under the assessed scenarios.

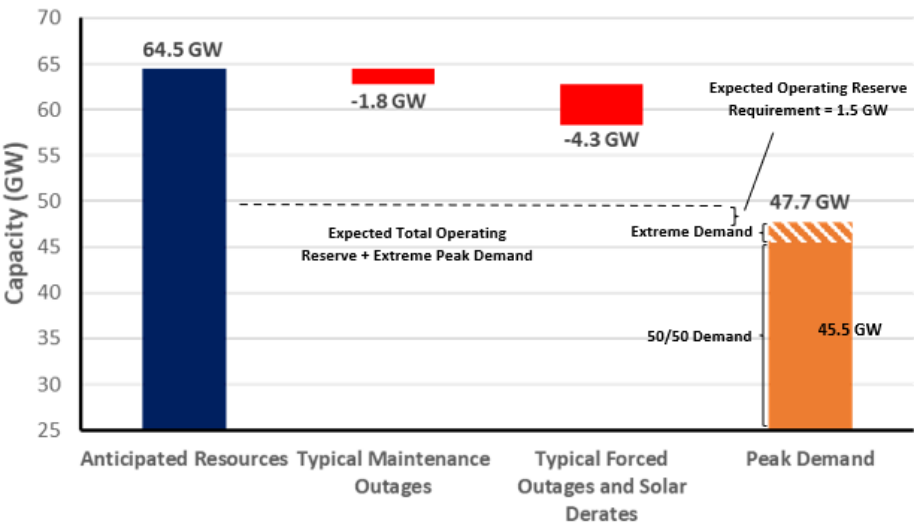
#### On-Peak Reserve Margin



#### On-Peak Resource Mix



#### 2025–2026 Winter Risk Period Scenario



#### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Net internal demand (50/50) and (90/10) demand forecast using 30 years of historical data

**Typical Maintenance Outages:** Data collected through a survey of members for outages during December through February

**Typical Forced Outages and Solar Derate:** Weighted average forced-outage rates on-peak are factored into the anticipated resources calculation. Also, solar resources are derated to account for peak demand occurrence during darkness.

**Resource Derates for Extreme Conditions:** Entity-provided values for low likelihood extreme conditions



SERC-Southeast

SERC-Southeast is a summer-peaking assessment area within the SERC Regional Entity. SERC-Southeast includes all or portions of Georgia, Alabama, and Mississippi. SERC is one of the six Regional Entities across North America that is responsible for the work under FERC-approved delegation agreements with NERC. SERC is specifically responsible for the reliability and security of the electric grid across the Southeastern and Central United States. The SERC Regional Entity covers approximately 630,000 square miles with a population of more than 91 million. The SERC Regional Entity includes 36 BAs, 28 PAs, and 6 RCs.

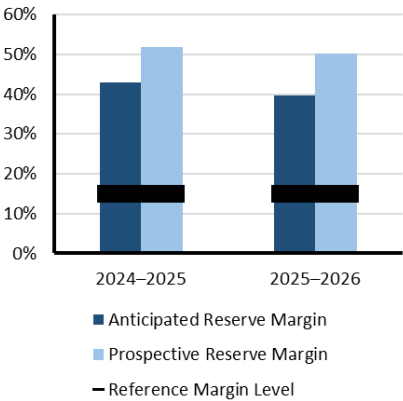
Highlights

- SERC-Southeast is trending towards becoming slightly winter-peaking.
- For the 2025–2026 Winter, SERC-Southeast entities report no emerging reliability concerns and expect to have adequate resources, supported by firm natural gas transportation contracts, diverse fuel portfolios, and sufficient on-site coal inventories to serve the expected load under typical system operating conditions. The 2024 NERC ProbA base-case results in EUE and LOLH are both 0.00.
- While most SERC-Southeast BAs expect to have adequate resources, supported by firm natural gas transportation contracts, diverse fuel portfolios, and sufficient on-site coal inventories, one BA highlights potential risks related to natural gas transportation capacity, citing high pipeline utilization, competition for delivered gas, and ratable flow requirements. Mitigation strategies include securing third-party gas supply, adding dual-fuel capability, and implementing coal inventory management.
- Entities have made refinements such as replacing specific 230 kV circuit breakers and increasing monitoring frequencies for critical plant systems after January 2025 winter events.

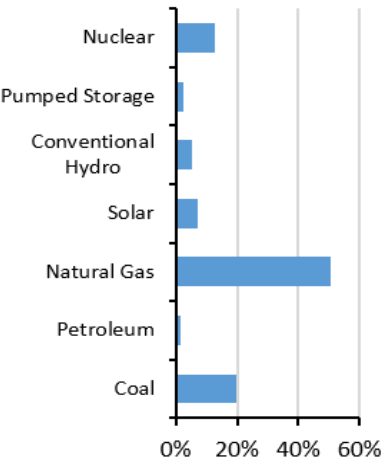
Risk Scenario Summary

Expected resources meet operating reserve requirements under the assessed scenarios.

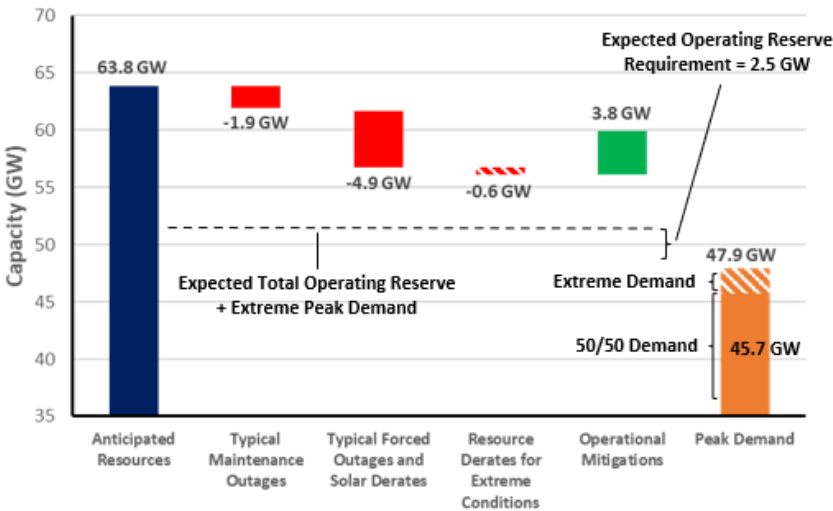
On-Peak Reserve Margin



On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

**Demand Scenarios:** Net internal demand (50/50) and (90/10) demand forecast using 30 years of historical data

**Typical Maintenance Outages:** Data collected through a survey of members for outages during December through February

**Typical Forced Outages and Solar Derate:** Weighted average forced-outage rates on-peak are factored into the anticipated resources calculation. Also, solar resources are derated to account for peak demand occurrence during darkness.

**Resource Derates for Extreme Conditions:** Maximum historical generation outages

**Operational Mitigations:** A total of 3.8 GW based on operational/emergency procedures



## Texas RE-ERCOT

ERCOT is the ISO for the ERCOT Interconnection and is located entirely in the state of Texas; it operates as a single BA. It also performs financial settlement for the competitive wholesale bulk-power market and administers retail switching for nearly 8 million premises in competitive choice areas. ERCOT is governed by a board of directors and subject to oversight by the Public Utility Commission of Texas and the Texas Legislature. ERCOT is summer-peaking and covers approximately 200,000 square miles, connects over 54,100 miles of transmission lines, has over 1,250 generation units, and serves more than 27 million customers. Texas RE is responsible for the Regional Entity functions described in the Energy Policy Act of 2005 for ERCOT. On November 3, 2022, the Public Utility Commission of Texas issued an order directing ERCOT to assume the duties and responsibilities of the reliability monitor for the Texas power grid.

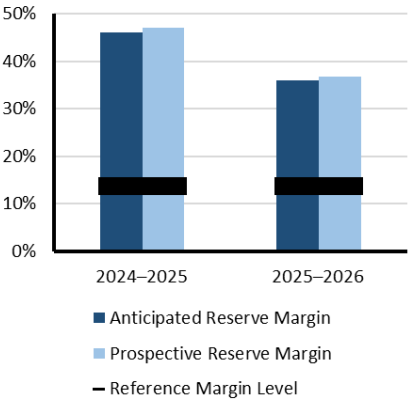
### Highlights

- Given expected system conditions, an ARM of 36% and RML of 13.75%, ERCOT expects to have sufficient operating reserves for the peak hour ending 8:00 a.m.
- ERCOT does not expect any significant fuel supply issues for the winter.
- ERCOT has conducted 2,028 generation resource and transmission service provider (TSP) winter weatherization inspections since Winter 2021–2022.
- Winter peak demands typically occur before sunrise and after sunset when solar generation is not available. Significant battery storage mitigates these risks.
- ERCOT’s probabilistic risk assessment indicates a 2% probability of having to declare EEAs during the January forecasted winter peak day (which coincides with the highest reserve shortage risk) and a controlled load shed probability of 1.8%. ERCOT defines low-risk hours as when the probability of an EEA is less than 10%.
- Increased load growth in west Texas combined with “no solar” and low wind conditions can cause transmission lines into this area to become heavily loaded. ERCOT has introduced improved dynamic line ratings that allow for greater transfers at colder temperatures and periods of low irradiance.

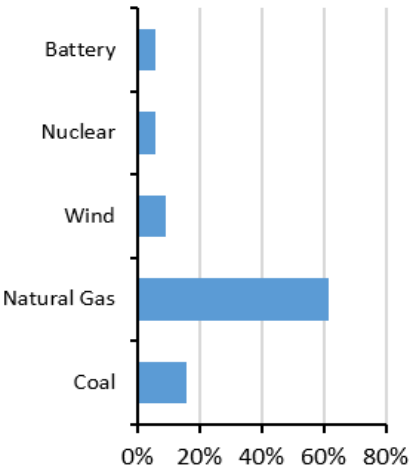
### Risk Scenario Summary

Expected resources meet operating reserve requirements under normal peak-demand scenarios. Above-normal winter peak load and outage conditions could result in the need for operating mitigations (i.e., demand response and transfers) and EEAs. Load shedding is unlikely but may be needed under wide-area cold weather events.

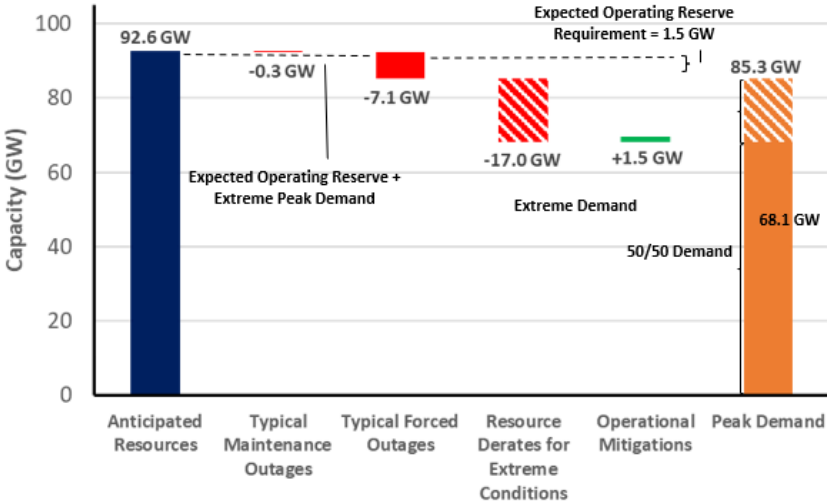
### On-Peak Reserve Margin



### On-Peak Resource Mix



### 2025–2026 Winter Risk Period Scenario



### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy at peak demand hour

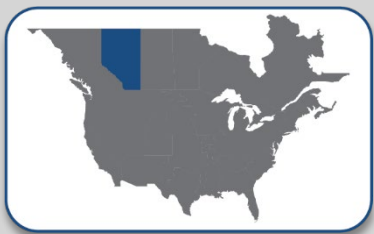
**Demand Scenarios:** Presumes weather conditions comparable to Winter Storm Uri. The adjustment is calculated as the difference between the 100th percentile and 50th percentile values from ERCOT’s Probabilistic Reserve Risk Model (PRRM) simulated load outcome distribution for hour ending 8:00 a.m.

**Typical Maintenance Outages:** Based on historical winter data and consideration of ERCOT’s allowed maximum system daily planned outage capacity

**Typical Forced Outages:** Based on a probability distribution created using historical ERCOT Outage Scheduler data for the last three Januaries.

**Resource Derates for Extreme Conditions:** Weather-related thermal and wind outages based on Winter Storm Uri levels, adjusted for reductions due to weatherization standards. Also includes high non-weather-related outages.

**Operational Mitigations:** Additional potential capacity from switchable generation and imports



WECC-Alberta

WECC-Alberta is an assessment area that covers the Canadian province of Alberta. The province has a geographic area of 661,848 square kilometers (255,541 square miles) and a population of almost 5 million people. The Alberta Electric System Operator (AESO) is the province’s Planning Entity and RC responsible for safe, reliable, and economic operation of the Alberta Interconnected Electric System. AESO is a non-profit corporation that operates a system that includes approximately 26,000 kilometers of transmission lines and connects approximately 426 qualified generating units and nearly 250 market participants through a wholesale market. Alberta’s transmission system has three interties with neighboring areas: Saskatchewan (see MRO-SaskPower), British Columbia (see WECC-British Columbia), and Montana (see WECC-Northwest). Peak electricity demand on the AESO system currently occurs during the winter season.

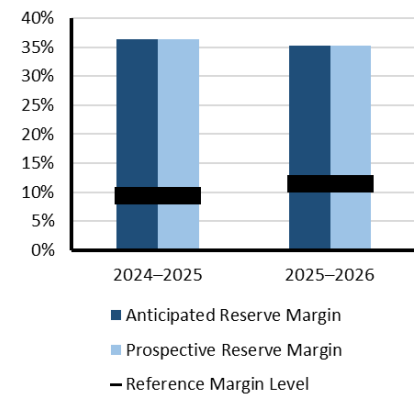
Highlights

- At an extreme winter peak of 12,982 MW, with extreme forced outages at 530 MW and derates for extreme conditions bringing wind energy availability down by 1,800 MW and hydroelectricity by 88 MW, the required reserves are 759 MW and are sufficiently met, even with low availability.
- Demand is expected to increase 1.1% from last winter with the existing-certain installed capacity having increased 23%.
- Solar availability is down because 1,000 MW of PV moved from originally expecting to come on-line in 2024 as Tier 1 resources to Tier 2s mostly anticipated to come on-line in 2025, but with less certainty.

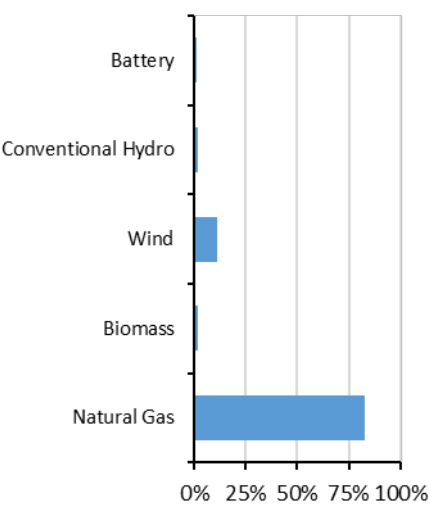
Risk Scenario Summary

Expected resources meet operating reserve requirements under assessed scenarios.

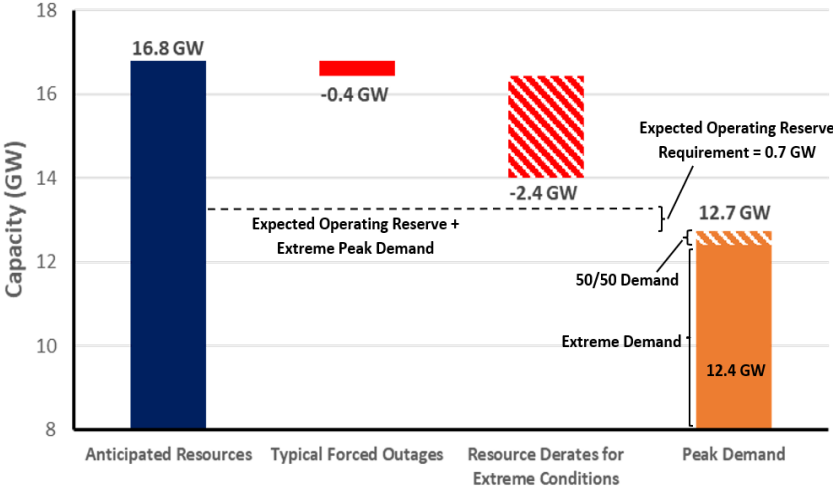
On-Peak Reserve Margin



On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



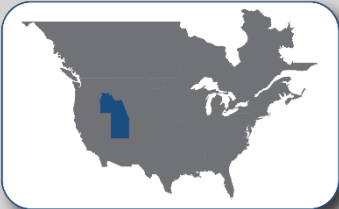
Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy is on the peak demand hour

**Demand Scenarios:** Net internal demand is the expected (50<sup>th</sup> percentile) peak and the 90<sup>th</sup> percentile of peak demand is the extreme forecast

**Typical Forced Outages:** Calculated using historical GADS data

**Resource Derates for Extreme Conditions:** Thermal, wind, and solar are based on the hourly energy availability curves’ probability distributions’ 10th percentiles for the risk period



WECC-Basin

WECC-Basin is a summer-peaking assessment area in the WECC Regional Entity that includes Utah, southern Idaho, and a portion of western Wyoming, covering Idaho Power and PacifiCorp’s eastern BA area. The population of this area is approximately 5.4 million. It has 15,910 miles of transmission. WECC is responsible for coordinating and promoting BES reliability in the Western Interconnection. WECC’s 329 members include 40 BAs, representing a wide spectrum of organizations with an interest in the BES. Serving an area of nearly 1.8 million square miles and more than 84.5 million customers, it is geographically the largest and most diverse Regional Entity. *Note: The 2025-26 WRA includes a new assessment area map for the U.S. Western Interconnection. The new assessment area boundaries provide more geographic detail of reliability risk information. WECC-Basin is a new assessment area in 2025 that was part of WECC-NW in the 2024–25 WRA.*

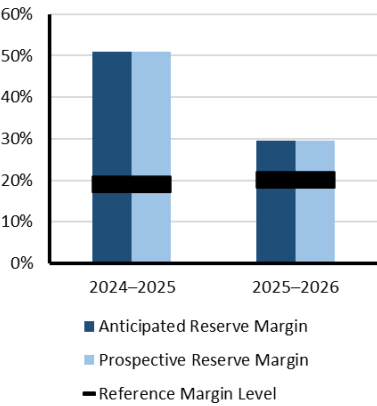
Highlights

- At an extreme winter peak of 11.1 GW under an extreme combination of derates and outages, the region could be short 1.0 GW before imports and is expected to need to rely on transfers.
- Net internal demand is expected to increase 1% since last year, with total internal demand up 1.8% being offset by a doubling of controllable and dispatchable demand response.
- Tier 1 resources have declined and do not appear to be offset by increases in existing-certain generation resource capacity. Nameplate wind has increased by almost 18% and solar by almost 30%. Hydro is also up over 7% in total installed capacity.
- Reliance on imports is expected to be required to maintain resource adequacy during extreme peak demand and extreme derate conditions.

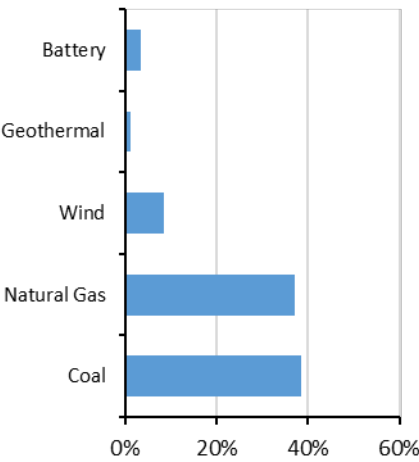
Risk Scenario Summary

Expected resources meet operating reserve requirements under normal peak demand scenarios. Above-normal peak demand combined with high generator outages in extreme conditions results in the need for external assistance to maintain reserves.

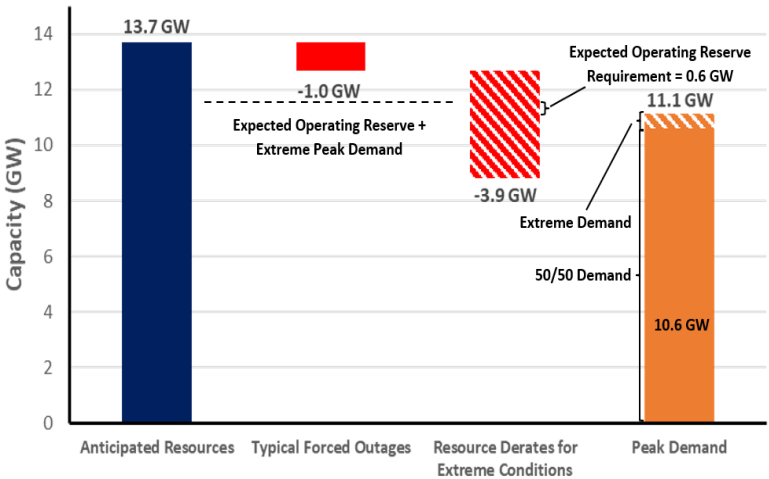
On-Peak Reserve Margin



On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy is on the peak demand hour

**Demand Scenarios:** Net internal demand is the expected (50<sup>th</sup> percentile) peak and the 90<sup>th</sup> percentile of peak demand is the extreme forecast

**Typical Forced Outages:** Calculated using historical GADS

**Extreme Derates:** Thermal, wind, and solar are based on the hourly energy availability curves’ probability distributions’ 10th percentiles for the risk period



WECC-British Columbia

WECC-British Columbia is an assessment area that covers the Canadian province of British Columbia. The province has a geographic area of 944,735 square kilometers (364,764 square miles) and a population of just over 5 million people. BC Hydro is the Planning Entity and RC for the province of British Columbia and is the principal supplier of electricity for the province. BC Hydro is a provincial Crown corporation and, under provincial legislation, is responsible for the oversight of the British Columbia BES and its interconnections. BC Hydro operates an integrated system supported by 30 hydroelectric plants, approximately 80,000 kilometers of transmission and distribution lines, and 125 contracts with independent power producers. BC Hydro’s transmission system has two interties with neighboring areas: the U.S. state of Washington (see WECC-Northwest) and Alberta (see WECC-Alberta). Peak electricity demand on the BC Hydro system currently occurs during winter.

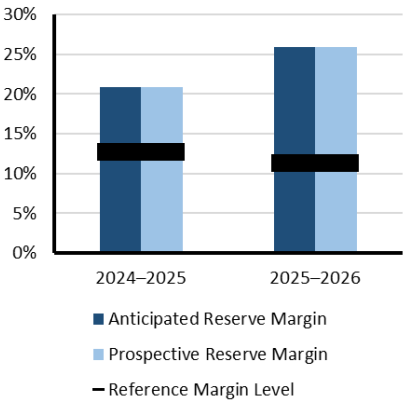
Highlights

- Peak demand is expected to remain about the same as last winter.
- There are about 200 MW more (47%) planned Tier 1 resources for this winter than last.
- Solar nameplate capacity has increased from 2 MW to 17 MW since last winter and hydroelectric nameplate capacity is up more than 5%, or 1,366 MW.

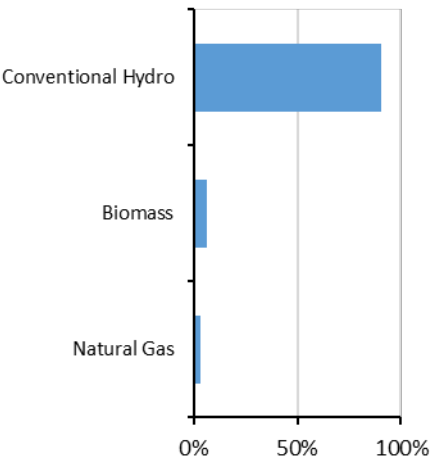
Risk Scenario Summary

Expected resources meet operating reserve requirements under normal and extreme demand scenarios.

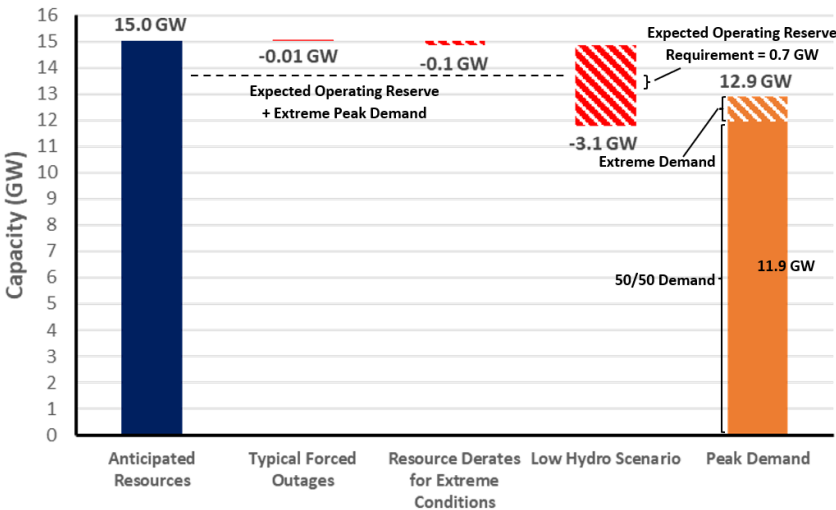
On-Peak Reserve Margin



On-Peak Resource Mix



2025-2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy is on the peak demand hour

**Demand Scenarios:** Net internal demand is the expected (50<sup>th</sup> percentile) peak and the 90<sup>th</sup> percentile of peak demand is the extreme forecast

**Typical Forced Outages:** Calculated using historical GADS

**Resource Derates for Extreme Conditions:** Thermal, wind, and solar are based on the hourly energy availability curves’ probability distributions’ 10th percentiles for the risk period

**Low Hydro Scenario:** Estimated derate for lower hydro output





## WECC-California

WECC-California is a summer-peaking assessment area in the Western Interconnection that includes most of California and a small section of Nevada. The assessment area has a population of over 42.5 million people. The area includes the California ISO, the Los Angeles Department of Water and Power, the Turlock Irrigation District, and the Balancing Area of Northern California. It has 32,712 miles of transmission. WECC is responsible for coordinating and promoting BES reliability in the Western Interconnection. WECC’s 329 members include 40 BAs, representing a wide spectrum of organizations with an interest in the BES. Serving an area of nearly 1.8 million square miles and more than 84.5 million customers, it is geographically the largest and most diverse Regional Entity. *Note: The 2025–26 WRA includes a new assessment area map for the U.S. Western Interconnection. The new assessment area boundaries provide more geographic detail of reliability risk information. WECC-Basin is a new assessment area in 2025 that was part of WECC-NW in the 2024–25 WRA.*

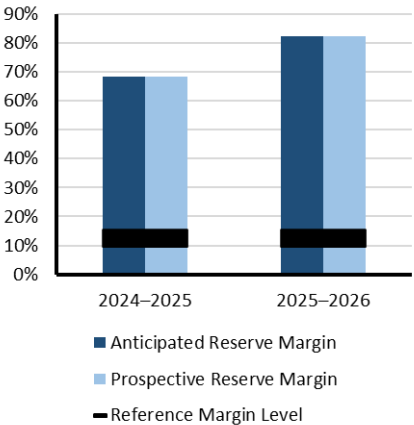
### Highlights

- Operating reserve margins are met before imports in all winter resource availability scenarios.
- On-peak demand is expected to remain about the same as last winter. Demand-side management is down about 10%.
- Existing-certain capacity is up almost 5%, while planned Tier 1 resources are up more than 2 GW. The total wind nameplate capacity is up almost 27% and solar almost 13%. Hydro is down 4%.
- No reliance on imports is expected to be required to maintain resource adequacy for Winter 2025–2026.

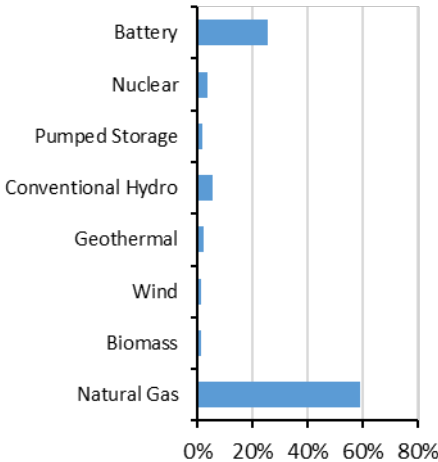
### Risk Scenario Summary

Expected resources meet operating reserve requirements under assessed scenarios.

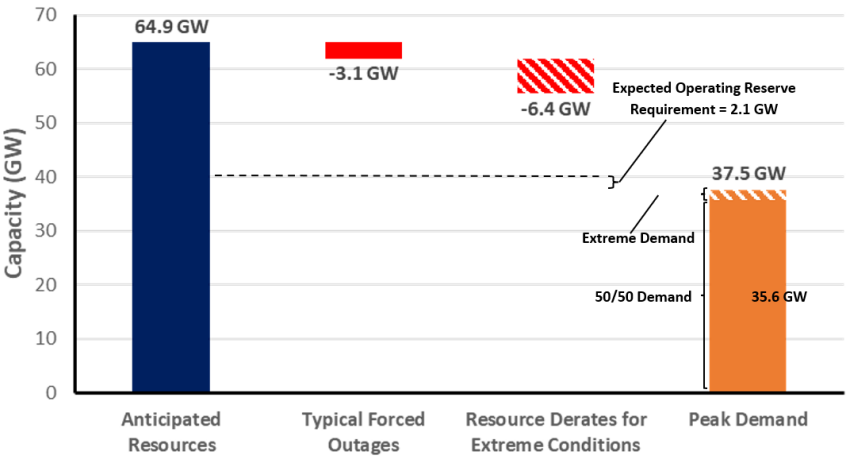
### On-Peak Reserve Margin



### On-Peak Resource Mix



### 2025–2026 Winter Risk Period Scenario



### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy is on the peak demand hour

**Demand Scenarios:** Net internal demand is the expected (50<sup>th</sup> percentile) peak and the 90<sup>th</sup> percentile of peak demand is the extreme forecast

**Typical Forced Outages:** Calculated using historical GADS

**Resource Derates for Extreme Conditions:** Thermal, wind, and solar are based on the hourly energy availability curves’ probability distributions’ 10th percentiles for the risk period



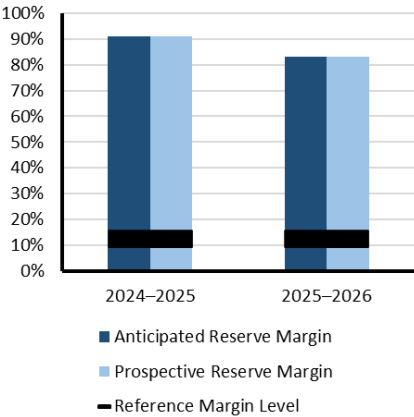
WECC-Mexico

WECC-Mexico is a summer-peaking assessment area in the Western Interconnection that includes the northern portion of the Mexican state of Baja California, which has a population of 3.8 million people and includes CENACE. It has 1,568 miles of transmission. WECC is responsible for coordinating and promoting BES reliability in the Western Interconnection. WECC’s 329 members include 40 BAs, representing a wide spectrum of organizations with an interest in the BES. Serving an area of nearly 1.8 million square miles and more than 84.5 million customers, it is geographically the largest and most diverse Regional Entity. *Note: The 2025–26 WRA includes a new assessment area map for the U.S. Western Interconnection. The new assessment area boundaries provide more geographic detail of reliability risk information. WECC-Basin is a new assessment area in 2025 that was part of WECC-NW in the 2024–25 WRA.*

Highlights

- As a summer-peaking region, operating reserve margins are met before imports in all scenarios.
- Planned Tier 1 resources are down 100% to zero as expected resources have either been brought on-line to move into existing or, in the case of some natural gas, have been delayed until 2026 and moved into Tier 2.
- The existing-certain on peak reserve margin is down by 5.2%, and the anticipated and prospective reserve margins are down by 7.8%; however, since Mexico is heavily summer-peaking, the 83% reserve margin still exceeds the RML of 12.5%, which remains unchanged.

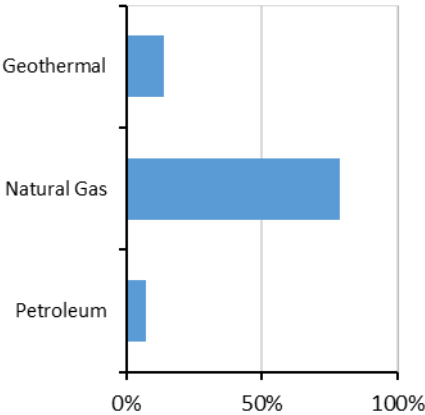
On-Peak Reserve Margin



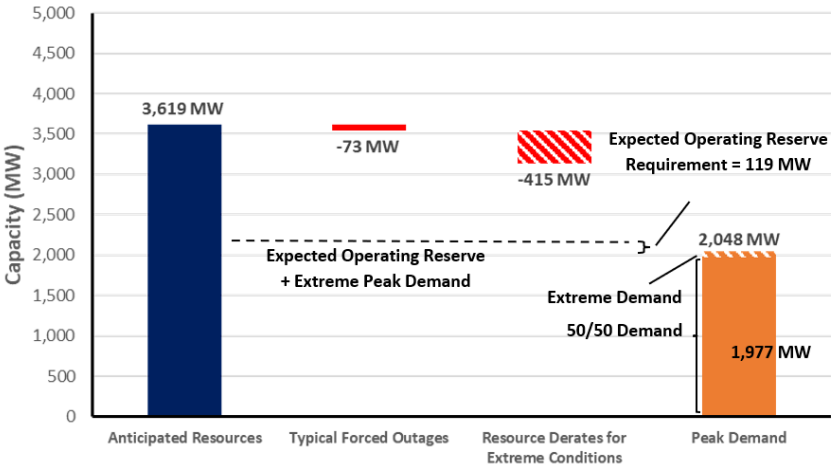
Risk Scenario Summary

Expected resources meet operating reserve requirements under assessed scenarios.

On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy is on the peak demand hour

**Demand Scenarios:** Net internal demand is the expected (50<sup>th</sup> percentile) peak and the 90<sup>th</sup> percentile of peak demand is the extreme forecast

**Typical Forced Outages:** Calculated using historical GADS

**Resource Derates for Extreme Conditions:** Thermal, wind, and solar are based on the hourly energy availability curves’ probability distributions’ 10th percentiles for the risk period



## WECC-Northwest

WECC-Northwest is a winter-peaking assessment area in the WECC Regional Entity. The area includes Montana, Oregon, and Washington and parts of northern California and northern Idaho. The population of the area is approximately 13.6 million. It has 32,751 miles of transmission. WECC is responsible for coordinating and promoting BES reliability in the Western Interconnection. WECC’s 329 members include 40 BAs, representing a wide spectrum of organizations with an interest in the BES. Serving an area of nearly 1.8 million square miles and more than 84.5 million customers, it is geographically the largest and most diverse Regional Entity. *Note: The 2025–26 WRA includes a new assessment area map for the U.S. Western Interconnection. The new assessment area boundaries provide more geographic detail of reliability risk information. WECC-Basin is a new assessment area in 2025 that was part of WECC-NW in the 2024–25 WRA.*

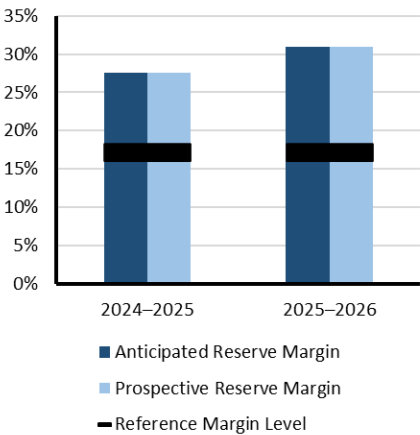
### Highlights

- The Northwest has historically been a mixed season-peaking region.
- Operating reserve margins are expected to be met after imports in all winter scenarios.
- Total and net internal demand are up 9.3% with the primary drivers being data centers, residential electrification, transportation electrification, and semiconductor manufacturing.
- Large coal unit retirements and conventional hydro unit retirements are attributable to the reduction in existing certain capacity of 10.5%; however, planned Tier 1 resources have soared over 580%, from 463 MW to over 3 GW.
- Nameplate wind capacity is up over 3 GW (26%) and solar nameplate capacity is up nearly 2,690 MW (134%), which has also increased the solar availability on the peak hour.
- An increase in firm imports is seen in the model, 6.1 GW, absorbing the reduction in existing certain capacity of 4 GW.

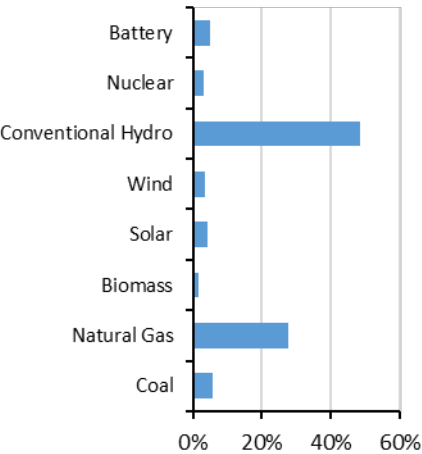
### Risk Scenario Summary

Expected resources meet operating reserve requirements under normal peak demand scenarios. Above-normal peak demand combined with high generator outages in extreme conditions results in the need for external assistance to maintain reserves.

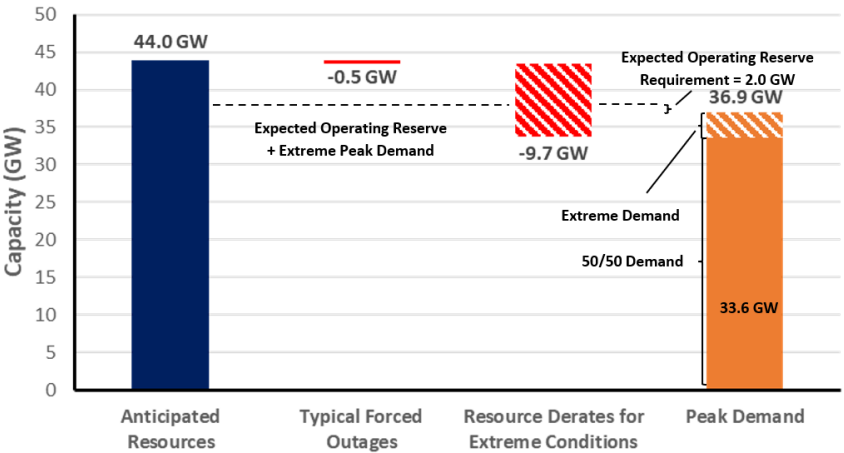
### On-Peak Reserve Margin



### On-Peak Resource Mix



### 2025–2026 Winter Risk Period Scenario



### Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy is on the peak demand hour

**Demand Scenarios:** Net internal demand is the expected (50<sup>th</sup> percentile) peak and the 90<sup>th</sup> percentile of peak demand is the extreme forecast

**Typical Forced Outages:** Calculated using historical GADS

**Resource Derates for Extreme Conditions:** Thermal, wind, and solar are based on the hourly energy availability curves’ probability distributions’ 10th percentiles for the risk period. This value includes 6.8 GW of hydro derates.



WECC-Rocky Mountain

WECC-Rocky Mountain is a summer-peaking assessment area in the Western Interconnection that includes Colorado, most of Wyoming, and parts of Nebraska and South Dakota. The population of the area is approximately 6.7 million. It covers the balancing areas of the Public Service Company of Colorado and the Western Area Power Administration’s Rocky Mountain Region. It has 18,797 miles of transmission. WECC is responsible for coordinating and promoting BES reliability in the Western Interconnection. WECC’s 329 members include 40 BAs, representing a wide spectrum of organizations with an interest in the BES. Serving an area of nearly 1.8 million square miles and more than 84.5 million customers, it is geographically the largest and most diverse Regional Entity. *Note The 2025–26 WRA includes a new assessment area map for the U.S. Western Interconnection. The new assessment area boundaries provide more geographic detail of reliability risk information. WECC-Basin is a new assessment area in 2025 that was part of WECC-NW in the 2024–25 WRA.*

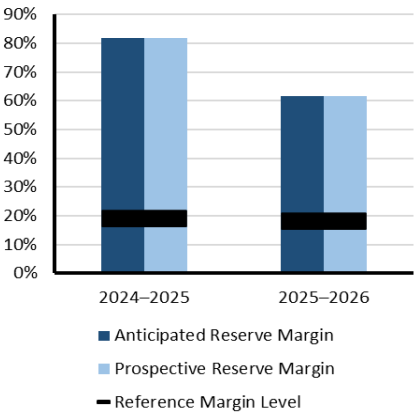
Highlights

- In Rocky Mountain, operating reserve margins are expected to be met before imports in all winter scenarios.
- Total and net internal demand are up almost 1%. The primary drivers are data centers and commercial and industrial customer growth.
- Planned Tier 1 resources are up over 84%, from almost 200 MW to over 365 MW. Solar nameplate capacity is up 27%; however, on-peak solar energy availability is down 100% due to the shift to after sunset. Expected hydro on peak energy availability is also down by around a quarter on the peak hour. Existing-Certain, Anticipated, and Prospective Reserve Margins are all down by over 20% on the peak hour; however, the region still maintains resource adequacy with margins hovering around 60% compared to the RML of 18%.
- No reliance on imports is expected to be required to maintain resource adequacy under combined extreme peak and extreme derated conditions.

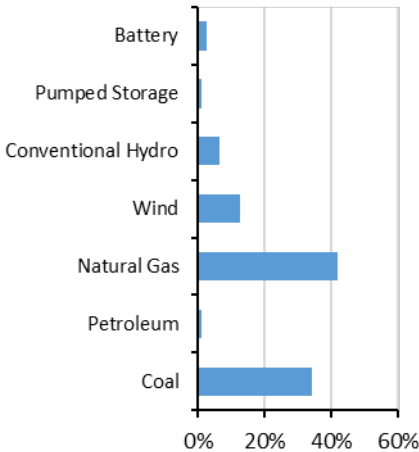
Risk Scenario Summary

Expected resources meet operating reserve requirements under assessed scenarios.

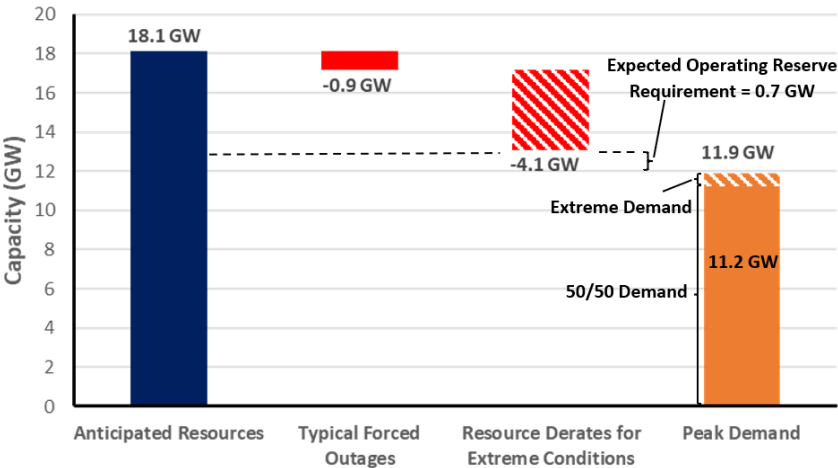
On-Peak Reserve Margin



On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy is on the peak demand hour

**Demand Scenarios:** Net internal demand is the expected (50<sup>th</sup> percentile) peak and the 90<sup>th</sup> percentile of peak demand is the extreme forecast

**Typical Forced Outages:** Calculated using historical GADS

**Resource Derates for Extreme Conditions:** Thermal, wind, and solar are based on the hourly energy availability curves’ probability distributions’ 10<sup>th</sup> percentiles for the risk period



WECC-Southwest

WECC-Southwest is a summer-peaking assessment area in the Western Interconnection that includes all of Arizona and New Mexico, most of Nevada, and small parts of California and Texas. The area has a population of approximately 13.6 million. It has 23,084 miles of transmission. WECC is responsible for coordinating and promoting BES reliability in the Western Interconnection. WECC’s 329 members include 40 BAs, representing a wide spectrum of organizations with an interest in the BES. Serving an area of nearly 1.8 million square miles and more than 84.5 million customers, it is geographically the largest and most diverse Regional Entity. *Note The 2025–26 WRA includes a new assessment area map for the U.S. Western Interconnection. The new assessment area boundaries provide more geographic detail of reliability risk information. WECC-Basin is a new assessment area in 2025 that was part of WECC-NW in the 2024–25 WRA.*

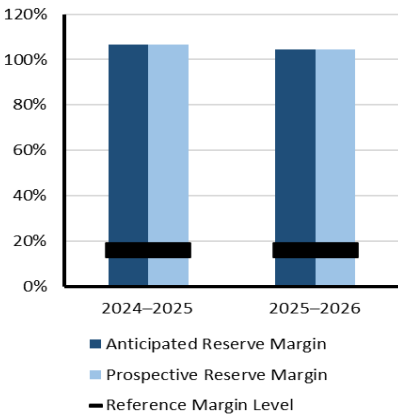
Highlights

- The Southwest is anticipated to be resource adequate under all winter expected and extreme energy availability and demand scenarios before imports.
- Total internal demand is expected to be up 1.5% and net internal demand up 2.3% since last winter. The primary drivers for load growth are data centers and industrial and residential electrification. Controllable and dispatchable demand response is down nearly half, by 163 MW.
- Planned Tier 1 resources are down over 19% as some have moved into existing certain, which is up almost 3%, over 1 GW, and other projects have experienced delays.
- Wind nameplate is up 12%, 470 MW, correlating to on-peak energy availability from wind increasing almost 11%, by 114 MW, while solar nameplate is up 27% or over 2.5 GW.

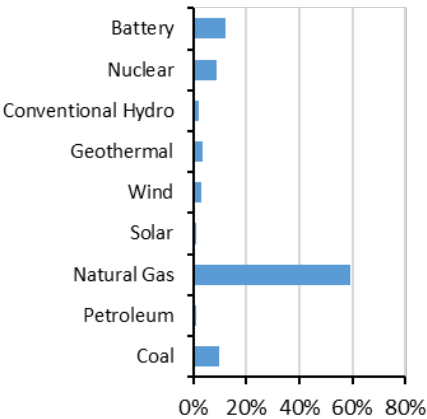
Risk Scenario Summary

Expected resources meet operating reserve requirements under assessed scenarios.

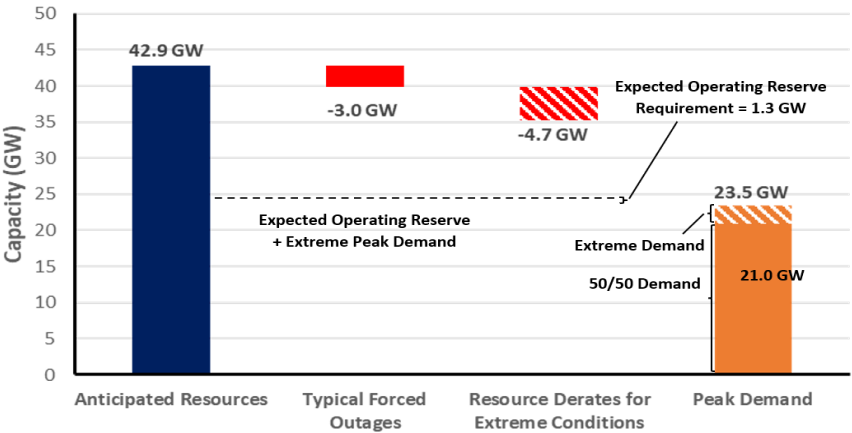
On-Peak Reserve Margin



On-Peak Resource Mix



2025–2026 Winter Risk Period Scenario



Scenario Description (See Data Concepts and Assumptions)

**Risk Period:** Highest risk for unserved energy is on the peak demand hour

**Demand Scenarios:** Net internal demand is the expected (50<sup>th</sup> percentile) peak and the 90<sup>th</sup> percentile of peak demand is the extreme forecast

**Typical Forced Outages:** Calculated using historical GADS

**Resource Derates for Extreme Conditions:** Thermal, wind, and solar are based on the hourly energy availability curves’ probability distributions’ 10th percentiles for the risk period

# Data Concepts and Assumptions

The table below explains data concepts and important assumptions used throughout this assessment.

| General Assumptions  |
|--|
| <ul style="list-style-type: none"><li>Reliability of the interconnected BPS is comprised of both adequacy and operating reliability:<ul style="list-style-type: none"><li>Adequacy is the ability of the electric system to supply the aggregate electric power and energy requirements of the electricity consumers at all times while taking into account scheduled and reasonably expected unscheduled outages of system components.</li><li>Operating reliability is the ability of the electric system to withstand sudden disturbances, such as electric short-circuits or unanticipated loss of system components.</li></ul></li><li>The reserve margin calculation is an important industry planning metric used to examine future resource adequacy.</li><li>All data in this assessment is based on existing federal, state, and provincial laws and regulations.</li><li>Differences in data collection periods for each assessment area should be considered when comparing demand and capacity data between year-to-year seasonal assessments.</li><li>A positive net transfer capability would indicate a net importing assessment area; a negative value would indicate a net exporter.</li></ul> |
| Demand Assumptions   |
| <ul style="list-style-type: none"><li>Electricity demand projections, or load forecasts, are provided by each assessment area.</li><li>Load forecasts include peak hourly load<sup>11</sup> or total internal demand for the summer and winter of each year.<sup>12</sup></li><li>Total internal demand projections are based on normal weather (50/50 distribution)<sup>13</sup> and are provided on a coincident<sup>14</sup> basis for most assessment areas.</li><li>Net internal demand is used in all reserve margin calculations, and it is equal to total internal demand then reduced by the amount of controllable and dispatchable demand response projected to be available during the peak hour.</li></ul>  |
| Resource Assumptions   |
| Resource planning methods vary throughout the North American BPS. NERC uses the categories below to provide a consistent approach for collecting and presenting resource adequacy. Because the electrical output of variable energy resources (VER) (e.g., wind, solar PV) depends on weather conditions, their contribution to reserve margins and other on-peak resource adequacy analysis is less than their nameplate capacity.  |
| <p><b>Anticipated Resources:</b></p> <ul style="list-style-type: none"><li><b>Existing-Certain Capacity:</b> Included in this category are commercially operable generating units or portions of generating units that meet at least one of the following requirements when examining the period of peak demand for the summer season: unit must have a firm capability and have a power purchase agreement with firm transmission that must be in effect for the unit; unit must be classified as a designated network resource; and/or, where energy-only markets exist, unit must be a designated market resource eligible to bid into the market.</li><li><b>Tier 1 Capacity Additions:</b> This category includes capacity that either is under construction or has received approved planning requirements.</li><li><b>Net Firm Capacity Transfers (Imports minus Exports):</b> This category includes transfers with firm contracts.</li></ul>  |
| <p><b>Prospective Resources:</b> Includes all anticipated resources plus the following:</p> <p><b>Existing-Other Capacity:</b> Included in this category are commercially operable generating units or portions of generating units that could be available to serve load for the period of peak demand for the season but do not meet the requirements of existing-certain.</p>   |

<sup>11</sup> [https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary\\_of\\_Terms.pdf](https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf) used in NERC Reliability Standards

<sup>12</sup> The summer season represents June–September and the winter season represents December–February.

<sup>13</sup> Essentially, this means that there is a 50% probability that actual demand will be higher and a 50% probability that actual demand will be lower than the value provided for a given season/year.

<sup>14</sup> Coincident: This is the sum of two or more peak loads that occur in the same hour. Noncoincident: This is the sum of two or more peak loads on individual systems that do not occur in the same time interval; this is meaningful only when considering loads within a limited period of time, such as a day, a week, a month, a heating or cooling season, and usually for not more than one year. SERC calculates total internal demand on a noncoincidental basis.



Reserve Margin Descriptions

**Planning Reserve Margin:** This is the primary metric used to measure resource adequacy; it is defined as the difference in resources (anticipated or prospective) and net internal demand then divided by net internal demand and shown as a percentage.

**Reference Margin Level:** The assumptions and naming convention of this metric vary by assessment area. The RML can be determined using both deterministic and probabilistic (based on a 0.1/year loss-of-load study) approaches. In both cases, this metric is used by system planners to quantify the amount of reserve capacity in the system above the forecasted peak demand that is needed to ensure sufficient supply to meet peak loads. Establishing an RML is necessary to account for long-term factors of uncertainty involved in system planning, such as unexpected generator outages and extreme weather impacts that could lead to increase demand beyond what was projected in the 50/50 load forecasted. In many assessment areas, an RML is established by a state, provincial authority, ISO/Regional Transmission Organization (RTO), or other regulatory body. In some cases, the RML is a requirement. RMLs may be different for the summer and winter seasons. If an RML is not provided by an assessment area, NERC applies 15% for predominantly thermal systems and 10% for predominantly hydro systems.

Seasonal Risk Scenario Chart Description

Each assessment area performed an operational risk analysis that was used to produce the seasonal risk scenario charts in the [Regional Assessments Dashboards](#). The chart presents deterministic scenarios for further analysis of different resource and demand levels: The left **blue** column shows anticipated resources, and the two **orange** columns at the right show the two demand scenarios of the normal peak net internal demand and the extreme summer peak demand—both determined by the assessment area. The middle **red** or **green** bars show adjustments that are applied cumulatively to the anticipated resources, such as the following:

- Reductions for typical generation outages (i.e., maintenance and forced outages that are not already accounted for in anticipated resources)
- Reductions that represent additional outage or performance derating by resource type for extreme, low-probability conditions (e.g., drought condition impacts on hydroelectric generation, low-wind scenario affecting wind generation, fuel supply limitations, or extreme temperature conditions that result in reduced thermal generation output)
- Additional capacity resources that represent quantified capacity from operational procedures, if any, that are made available during scarcity conditions

Not all assessment areas have the same categories of adjustments to anticipated resources. Furthermore, each assessment area determined the adjustments to capacity based on methods or assumptions that are summarized below the chart. Methods and assumptions differ by assessment area and may not be comparable.

The chart enables evaluation of resource levels against levels of expected operating reserve requirement and the forecasted demand. Furthermore, the effects from extreme events can also be examined by comparing resource levels after applying extreme scenario derates and/or extreme summer peak demand.

# Resource Adequacy

The ARM, which is based on available resource capacity, is a metric used to evaluate resource adequacy by comparing the projected capability of anticipated resources to serve forecast peak demand.<sup>15</sup> Large year-to-year changes in anticipated resources or forecast peak demand (net internal demand) can greatly impact Planning Reserve Margin calculations. NPCC-Maritimes marginally does not meet its RML for the upcoming winter. Other than NPCC-Maritimes, all assessment areas have sufficient ARMs to meet or exceed their RML for the 2025 winter as shown in [Figure 4](#).

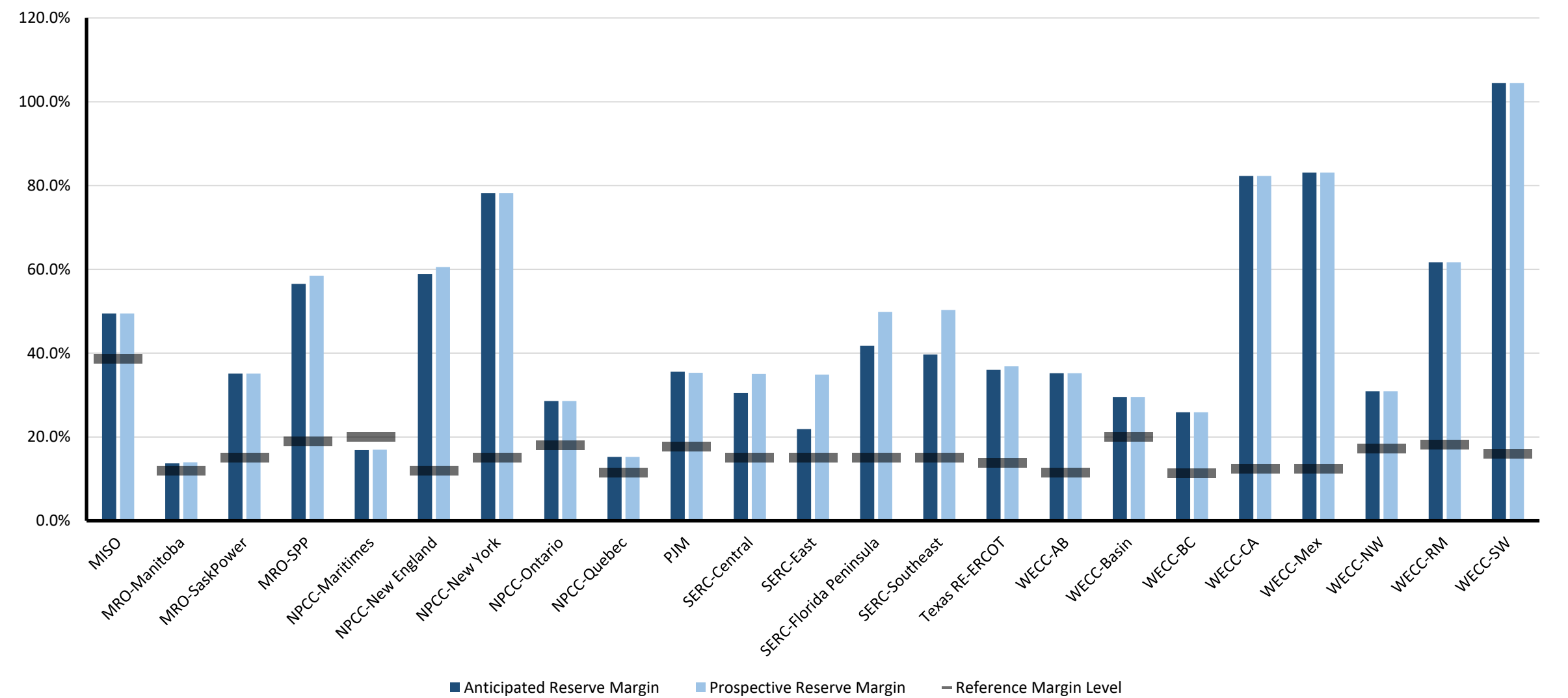


Figure 4: Winter 2025–2026 Anticipated/Prospective Reserve Margins Compared to Reference Margin Level

<sup>15</sup> Generally, anticipated resources include generators and firm capacity transfers that are expected to be available to serve load during electrical peak loads for the season. Prospective resources are those that could be available but do not meet criteria to be counted as anticipated resources. Refer to the [Data Concepts and Assumptions](#) section for additional information on Anticipated/Prospective Reserve Margins, anticipated/prospective resources, and RMLs.

# Changes from Year-to-Year

Figure 5 provides the relative change in the forecast ARMs from the 2024–2025 Winter to the 2025–2026 Winter. All areas except NPCC-Maritimes remain above their RMLs for 2025–2026 Winter. The Canadian winter-peaking systems, which include MRO-Manitoba, MRO-SaskPower, NPCC-Maritimes, NPCC-Québec, WECC-Alberta, and WECC-British Columbia, may have reserve margins that are near RMLs but are unlikely to experience high outage rates from their winterized generators. Additional details are provided in the Data Concepts and Assumptions section.

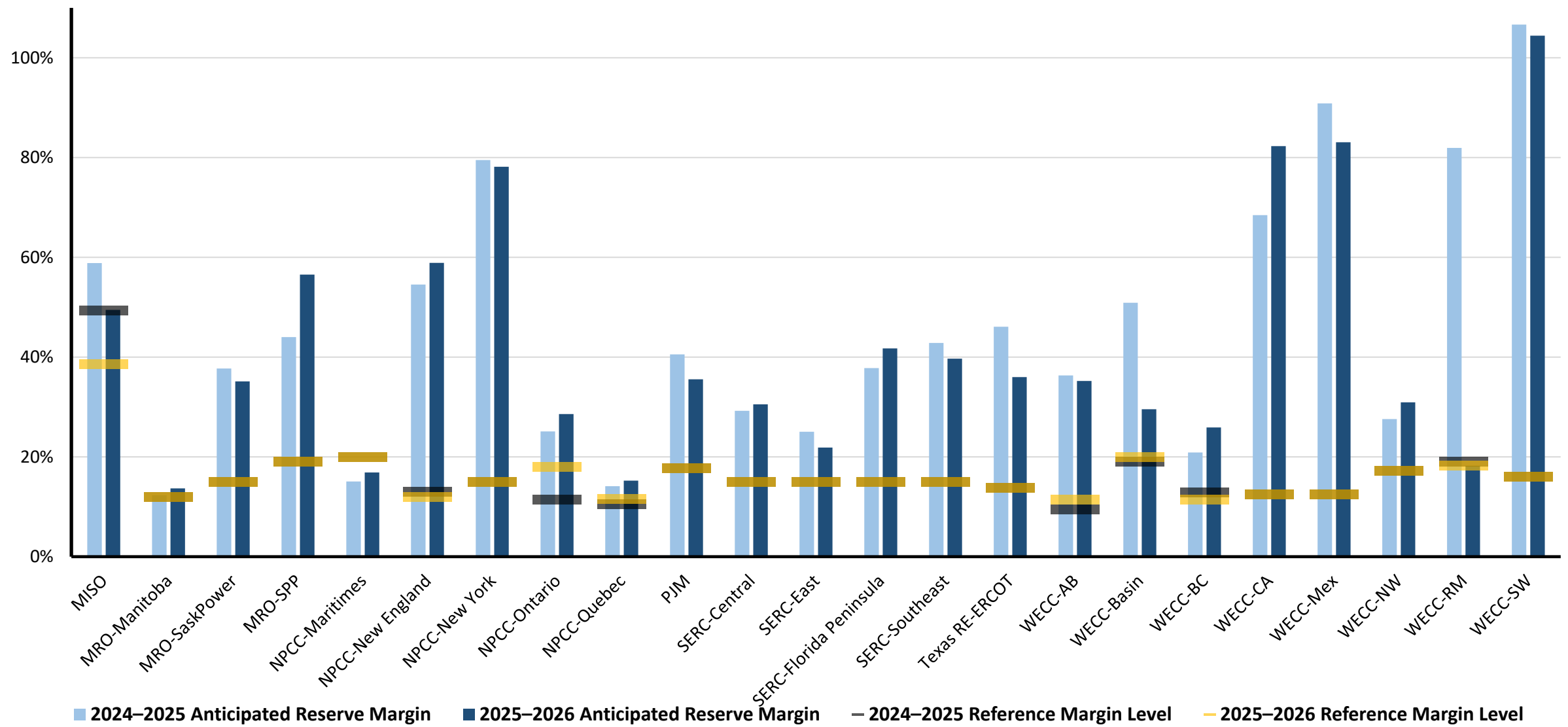


Figure 5: Winter 2024–2025 and Winter 2025–2026 Anticipated Reserve Margins Year-to-Year Change

# Demand and Resource Tables

Peak demand and supply capacity data (i.e., resource adequacy data) for each assessment area are as follows in each table.

| MISO                                  |                             |               |                         |
|---------------------------------------|-----------------------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA <sup>16</sup> | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW                          | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 102,353                     | 105,249       | 2.8%                    |
| Demand Response: Available            | 6,219                       | 8,250         | 32.7%                   |
| Net Internal Demand                   | 96,134                      | 96,999        | 0.9%                    |
| Resource Projections                  | MW                          | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 150,407                     | 142,880       | -5.0%                   |
| Tier 1 Planned Capacity               | 122                         | 0             | 0.0%                    |
| Net Firm Capacity Transfers           | 2,310                       | 2,113         | -8.5%                   |
| Anticipated Resources                 | 152,717                     | 144,993       | -5.1%                   |
| Existing-Other Capacity               | 0                           | 0             | 0.0%                    |
| Prospective Resources                 | 152,839                     | 144,993       | -5.1%                   |
| Reserve Margins                       | Percent (%)                 | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 58.9%                       | 49.5%         | -9.4                    |
| Prospective Reserve Margin            | 59.0%                       | 49.5%         | -9.5                    |
| Reference Margin Level                | 49.4%                       | 38.6%         | -10.8                   |

| MRO-SaskPower                         |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 3,852         | 3,944         | 2.4%                    |
| Demand Response: Available            | 50            | 50            | 0.0%                    |
| Net Internal Demand                   | 3,802         | 3,894         | 2.4%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 4,946         | 4,972         | 0.5%                    |
| Tier 1 Planned Capacity               | 0             | 0             | 0.0%                    |
| Net Firm Capacity Transfers           | 290           | 290           | 0.0%                    |
| Anticipated Resources                 | 5,236         | 5,262         | 0.5%                    |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 5,236         | 5,262         | 0.5%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 37.7%         | 35.1%         | -2.6                    |
| Prospective Reserve Margin            | 37.7%         | 35.1%         | -2.6                    |
| Reference Margin Level                | 15.0%         | 15.0%         | 0.0                     |

| MRO-SPP                               |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 45,788        | 47,168        | 3.0%                    |
| Demand Response: Available            | 1,128         | 1,091         | -3.3%                   |
| Net Internal Demand                   | 45,926        | 46,077        | 0.3%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 67,252        | 71,074        | 5.7%                    |
| Tier 1 Planned Capacity               | 0             | 1087          | 0.0%                    |
| Net Firm Capacity Transfers           | -1,116        | -32           | -97.1%                  |
| Anticipated Resources                 | 66,136        | 72,129        | 9.1%                    |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 66,090        | 73,029        | 10.5%                   |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 44.0%         | 56.5%         | 12.5                    |
| Prospective Reserve Margin            | 43.9%         | 58.5%         | 14.6                    |
| Reference Margin Level                | 19.0%         | 19.0%         | 0.0                     |

| MRO-Manitoba Hydro                    |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 4,814         | 4,903         | 1.8%                    |
| Demand Response: Available            | 0             | 0             | 0.0%                    |
| Net Internal Demand                   | 4,814         | 4,903         | 1.8%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 5,924         | 5,688         | -4.0%                   |
| Tier 1 Planned Capacity               | 10            | 0             | -100.0%                 |
| Net Firm Capacity Transfers           | -527          | -113          | -78.5%                  |
| Anticipated Resources                 | 5,407         | 5,575         | 3.1%                    |
| Existing-Other Capacity               | 18            | 13            | -26.8%                  |
| Prospective Resources                 | 5,425         | 5,588         | 3.0%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 12.3%         | 13.7%         | 1.4                     |
| Prospective Reserve Margin            | 12.7%         | 14.0%         | 1.3                     |
| Reference Margin Level                | 12.0%         | 12.0%         | 0.0                     |

<sup>16</sup> MISO-provided updated data post 2024-25 WRA publication.

| NPCC-Maritimes                        |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 6,167         | 6,061         | -1.7%                   |
| Demand Response: Available            | 259           | 248           | -4.4%                   |
| Net Internal Demand                   | 5,907         | 5,813         | -1.6%                   |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 6,647         | 6,704         | 0.9%                    |
| Tier 1 Planned Capacity               | 6             | 88            | 0.0%                    |
| Net Firm Capacity Transfers           | 145           | 1             | -99.0%                  |
| Anticipated Resources                 | 6,798         | 6,794         | -0.1%                   |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 6,798         | 6,800         | 0.0%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 15.1%         | 16.9%         | 1.8                     |
| Prospective Reserve Margin            | 15.1%         | 17.0%         | 1.9                     |
| Reference Margin Level                | 20.0%         | 20.0%         | 0.0                     |

| NPCC-New York                         |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 23,800        | 24,200        | 1.7%                    |
| Demand Response: Available            | 802           | 1,027         | 28.1%                   |
| Net Internal Demand                   | 22,998        | 23,173        | 0.8%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 40,522        | 40,080        | -1.1%                   |
| Tier 1 Planned Capacity               | 0             | 0             | 0.0%                    |
| Net Firm Capacity Transfers           | 759           | 1,203         | 58.5%                   |
| Anticipated Resources                 | 41,281        | 41,283        | 0.0%                    |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 41,281        | 41,283        | 0.0%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 79.5%         | 78.2%         | -1.3                    |
| Prospective Reserve Margin            | 79.5%         | 78.2%         | -1.3                    |
| Reference Margin Level                | 15.0%         | 15.0%         | 0.0                     |

| NPCC-New England                      |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 20,651        | 20,056        | -2.9%                   |
| Demand Response: Available            | 343           | 440           | 28.2%                   |
| Net Internal Demand                   | 20,308        | 19,616        | -3.4%                   |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 30,030        | 29,935        | -0.3%                   |
| Tier 1 Planned Capacity               | 194           | 0             | -100.0%                 |
| Net Firm Capacity Transfers           | 1,161         | 1,235         | 6.4%                    |
| Anticipated Resources                 | 31,385        | 31,170        | -0.7%                   |
| Existing-Other Capacity               | 306           | 322           | 5.2%                    |
| Prospective Resources                 | 31,691        | 31,492        | -0.6%                   |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 54.5%         | 58.9%         | 4.4                     |
| Prospective Reserve Margin            | 56.1%         | 60.5%         | 4.5                     |
| Reference Margin Level                | 13.0%         | 12.0%         | -1.0                    |

| NPCC-Ontario                          |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 21,898        | 22,013        | 0.7%                    |
| Demand Response: Available            | 915           | 868           | -5.2%                   |
| Net Internal Demand                   | 20,982        | 21,146        | 0.9%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 26,652        | 27,319        | 2.5%                    |
| Tier 1 Planned Capacity               | 0             | 294           | #DIV/0!                 |
| Net Firm Capacity Transfers           | -450          | -420          | -6.7%                   |
| Anticipated Resources                 | 26,202        | 27,193        | 3.8%                    |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 26,202        | 27,193        | 3.8%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 25.1%         | 28.6%         | 3.5                     |
| Prospective Reserve Margin            | 25.1%         | 28.6%         | 3.5                     |
| Reference Margin Level                | 11.5%         | 18.0%         | 6.5                     |

| NPCC-Québec                           |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 40,512        | 40,799        | 0.8%                    |
| Demand Response: Available            | 4,451         | 4,902         | 10.9%                   |
| Net Internal Demand                   | 36,061        | 35,897        | -0.4%                   |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 41,560        | 41,698        | 0.3%                    |
| Tier 1 Planned Capacity               | 73            | 61            | 0.0%                    |
| Net Firm Capacity Transfers           | -479          | -390          | -18.6%                  |
| Anticipated Resources                 | 41,154        | 41,368        | 0.5%                    |
| Existing-Other Capacity               | -479          | 0             | 0.0%                    |
| Prospective Resources                 | 41,154        | 41,368        | 0.5%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 14.1%         | 15.2%         | 1.1                     |
| Prospective Reserve Margin            | 14.1%         | 15.2%         | 1.1                     |
| Reference Margin Level                | 10.5%         | 11.5%         | 1.0                     |

| PJM                                   |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 136,328       | 140,827       | 3.3%                    |
| Demand Response: Available            | 5,616         | 5,998         | 6.8%                    |
| Net Internal Demand                   | 130,712       | 134,829       | 3.1%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 179,216       | 178,335       | -0.5%                   |
| Tier 1 Planned Capacity               | 0             | 0             | 0.0%                    |
| Net Firm Capacity Transfers           | 4,502         | 4,448         | -1.2%                   |
| Anticipated Resources                 | 183,718       | 182,783       | -0.5%                   |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 183,718       | 182,452       | -0.7%                   |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 40.6%         | 35.6%         | -5.0                    |
| Prospective Reserve Margin            | 40.6%         | 35.3%         | -5.2                    |
| Reference Margin Level                | 17.7%         | 17.7%         | -12.3                   |

| SERC-Central                          |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 42,895        | 42,875        | 0.0%                    |
| Demand Response: Available            | 1,497         | 2,809         | 87.6%                   |
| Net Internal Demand                   | 41,397        | 40,067        | -3.2%                   |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 51,578        | 50,454        | -2.2%                   |
| Tier 1 Planned Capacity               | 0             | 0             | 0%                      |
| Net Firm Capacity Transfers           | 1,922         | 1,847         | -3.9%                   |
| Anticipated Resources                 | 53,500        | 52,301        | -2.2%                   |
| Existing-Other Capacity               | 1,498         | 1,810         | 20.8%                   |
| Prospective Resources                 | 54,998        | 54,111        | -1.6%                   |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 29.2%         | 30.5%         | 1.3                     |
| Prospective Reserve Margin            | 32.9%         | 35.1%         | 2.2                     |
| Reference Margin Level                | 15.0%         | 15.0%         | 0.0                     |

| SERC-East                             |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 45,005        | 45,703        | 1.6%                    |
| Demand Response: Available            | 982           | 888           | -9.6%                   |
| Net Internal Demand                   | 44,023        | 44,815        | 1.8%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 54,379        | 54,460        | 0.1%                    |
| Tier 1 Planned Capacity               | 72            | 11            | -84.3%                  |
| Net Firm Capacity Transfers           | 593           | 150           | -74.7%                  |
| Anticipated Resources                 | 55,045        | 54,622        | -0.8%                   |
| Existing-Other Capacity               | 5,209         | 5,832         | 12.0%                   |
| Prospective Resources                 | 60,254        | 60,453        | 0.3%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 25.0%         | 21.9%         | -3.2                    |
| Prospective Reserve Margin            | 36.9%         | 34.9%         | -2.0                    |
| Reference Margin Level                | 15.0%         | 15.0%         | 0.0                     |



| SERC-Florida Peninsula                |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 48,494        | 48,628        | 0.3%                    |
| Demand Response: Available            | 2,780         | 3,127         | 12.5%                   |
| Net Internal Demand                   | 45,714        | 45,501        | -0.5%                   |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 62,579        | 63,502        | 1.5%                    |
| Tier 1 Planned Capacity               | 15            | 692           | 4510.0%                 |
| Net Firm Capacity Transfers           | 400           | 300           | -25.0%                  |
| Anticipated Resources                 | 62,994        | 64,494        | 2.4%                    |
| Existing-Other Capacity               | 3,673         | 3,671         | 0.0%                    |
| Prospective Resources                 | 66,667        | 68,165        | 2.2%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 37.8%         | 41.7%         | 3.9                     |
| Prospective Reserve Margin            | 45.8%         | 49.8%         | 4.0                     |
| Reference Margin Level                | 15.0%         | 15.0%         | 0.0                     |

| SERC-Southeast                        |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 45,308        | 47,056        | 3.9%                    |
| Demand Response: Available            | 1,638         | 1,365         | -16.7%                  |
| Net Internal Demand                   | 43,670        | 45,691        | 4.6%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 62,805        | 63,339        | 0.9%                    |
| Tier 1 Planned Capacity               | 765           | 0             | -100.0%                 |
| Net Firm Capacity Transfers           | -1,192        | 489           | -141.0%                 |
| Anticipated Resources                 | 62,378        | 63,828        | 2.3%                    |
| Existing-Other Capacity               | 3,920         | 4,847         | 23.7%                   |
| Prospective Resources                 | 66,298        | 68,675        | 3.6%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 42.8%         | 39.7%         | -3.1                    |
| Prospective Reserve Margin            | 51.8%         | 50.3%         | -1.5                    |
| Reference Margin Level                | 15.0%         | 15.0%         | 0.0                     |

| Texas RE-ERCOT                        |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 73,193        | 77,387        | 5.7%                    |
| Demand Response: Available            | 5,447         | 9,330         | 71.3%                   |
| Net Internal Demand                   | 67,746        | 68,057        | 0.5%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 98,712        | 89,977        | -8.8%                   |
| Tier 1 Planned Capacity               | 239           | 1351          | 464.9%                  |
| Net Firm Capacity Transfers           | 20            | 1,235         | 6075.0%                 |
| Anticipated Resources                 | 98,971        | 92,562        | -6.5%                   |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 99,691        | 93,137        | -6.6%                   |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 46.1%         | 36.0%         | -10.1                   |
| Prospective Reserve Margin            | 47.2%         | 36.9%         | -10.3                   |
| Reference Margin Level                | 13.75%        | 13.8%         | 0.0                     |

| WECC-AB                               |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 12,280        | 12,411        | 1.1%                    |
| Demand Response: Available            | 0             | 0             | 0.0%                    |
| Net Internal Demand                   | 12,280        | 12,411        | 1.1%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 13,535        | 16,658        | 23.1%                   |
| Tier 1 Planned Capacity               | 3206          | 124           | -96.1%                  |
| Net Firm Capacity Transfers           | 0             | 0             | 0.0%                    |
| Anticipated Resources                 | 16,740        | 16,782        | 0.3%                    |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 16,740        | 16,782        | 0.3%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 36.3%         | 35.2%         | -1.1                    |
| Prospective Reserve Margin            | 36.3%         | 35.2%         | -1.1                    |
| Reference Margin Level                | 9.5%          | 11.5%         | 2.0                     |

| WECC-Basin                            |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 10,568        | 10,758        | 1.8%                    |
| Demand Response: Available            | 85            | 170           | 100.0%                  |
| Net Internal Demand                   | 10,483        | 10,588        | 1.0%                    |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 13,213        | 13,183        | -0.2%                   |
| Tier 1 Planned Capacity               | 2,605         | 533           | -79.5%                  |
| Net Firm Capacity Transfers           | 0             | 0             | 0%                      |
| Anticipated Resources                 | 15,817        | 13,717        | -13.3%                  |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 15,817        | 13,717        | -13.3%                  |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 50.9%         | 29.6%         | -21.3                   |
| Prospective Reserve Margin            | 50.9%         | 29.6%         | -21.3                   |
| Reference Margin Level                | 19.0%         | 20.0%         | 1.0                     |

| WECC-BC                               |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 11,966        | 11,936        | -0.3%                   |
| Demand Response: Available            | 0             | 0             | 0.0%                    |
| Net Internal Demand                   | 11,966        | 11,936        | -0.3%                   |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 13,870        | 14,389        | 3.7%                    |
| Tier 1 Planned Capacity               | 433           | 637           | 47.0%                   |
| Net Firm Capacity Transfers           | 164           | 0             | -100.0%                 |
| Anticipated Resources                 | 14,467        | 15,026        | 3.9%                    |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 14,467        | 15,026        | 3.9%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 20.9%         | 25.9%         | 5.0                     |
| Prospective Reserve Margin            | 20.9%         | 25.9%         | 5.0                     |
| Reference Margin Level                | 12.8%         | 11.4%         | -1.5                    |

| WECC-CA                               |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 36,441        | 36,281        | -0.4%                   |
| Demand Response: Available            | 743           | 666           | -10.4%                  |
| Net Internal Demand                   | 35,698        | 35,615        | -0.2%                   |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 55,380        | 57,923        | 4.6%                    |
| Tier 1 Planned Capacity               | 4,757         | 6,997         | 47.1%                   |
| Net Firm Capacity Transfers           | 0             | 0             | 0.0%                    |
| Anticipated Resources                 | 60,138        | 64,920        | 8.0%                    |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 60,138        | 65,920        | 8.0%                    |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 68.5%         | 82.3%         | 13.8                    |
| Prospective Reserve Margin            | 68.5%         | 82.3%         | 13.8                    |
| Reference Margin Level                | 12.5%         | 12.5%         | 0.0                     |

| WECC-Mexico                           |               |               |                         |
|---------------------------------------|---------------|---------------|-------------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–2025 vs. 2025–2026 |
| Demand Projections                    | MW            | MW            | Net Change (%)          |
| Total Internal Demand (50/50)         | 1,983         | 1,977         | -0.3%                   |
| Demand Response: Available            | 0             | 0             | 0%                      |
| Net Internal Demand                   | 1,983         | 1,977         | -0.3%                   |
| Resource Projections                  | MW            | MW            | Net Change (%)          |
| Existing-Certain Capacity             | 3,733         | 3,619         | -3.0%                   |
| Tier 1 Planned Capacity               | 52            | 0             | -100.0%                 |
| Net Firm Capacity Transfers           | 0             | 0             | 0%!                     |
| Anticipated Resources                 | 3,784         | 3,619         | -4.4%                   |
| Existing-Other Capacity               | 0             | 0             | 0.0%                    |
| Prospective Resources                 | 3,784         | 3,619         | -4.4%                   |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference       |
| Anticipated Reserve Margin            | 90.8%         | 83.1%         | -7.8                    |
| Prospective Reserve Margin            | 90.8%         | 83.1%         | -7.8                    |
| Reference Margin Level                | 12.5%         | 12.5%         | 0                       |

| WECC-Northwest                        |               |               |                     |
|---------------------------------------|---------------|---------------|---------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–25 vs. 2025–26 |
| Demand Projections                    | MW            | MW            | Net Change (%)      |
| Total Internal Demand (50/50)         | 30,748        | 33,604        | 9.3%                |
| Demand Response: Available            | 30            | 30            | 0.0%                |
| Net Internal Demand                   | 30,718        | 33,574        | 9.3%                |
| Resource Projections                  | MW            | MW            | Net Change (%)      |
| Existing-Certain Capacity             | 38,729        | 34,671        | -10.5%              |
| Tier 1 Planned Capacity               | 463           | 3,152         | 581.5%              |
| Net Firm Capacity Transfers           | 0             | 6,136         | 100%!               |
| Anticipated Resources                 | 39,192        | 43,959        | 12.2%               |
| Existing-Other Capacity               | 0             | 0             | 0.0%                |
| Prospective Resources                 | 39,192        | 43,959        | 12.2%               |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference   |
| Anticipated Reserve Margin            | 27.6%         | 30.9%         | 3.3                 |
| Prospective Reserve Margin            | 27.6%         | 30.9%         | 3.3                 |
| Reference Margin Level                | 17.2%         | 17.2%         | 0.0                 |

| WECC-Southwest                        |               |               |                     |
|---------------------------------------|---------------|---------------|---------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–25 vs. 2025–26 |
| Demand Projections                    | MW            | MW            | Net Change (%)      |
| Total Internal Demand (50/50)         | 20,844        | 21,147        | 1.5%                |
| Demand Response: Available            | 340           | 177           | -47.9%              |
| Net Internal Demand                   | 20,504        | 20,970        | 2.3%                |
| Resource Projections                  | MW            | MW            | Net Change (%)      |
| Existing-Certain Capacity             | 38,991        | 40,135        | 2.9%                |
| Tier 1 Planned Capacity               | 3,381         | 2,733         | -19.2%              |
| Net Firm Capacity Transfers           | 0             | 0             | 0.0%                |
| Anticipated Resources                 | 42,372        | 42,868        | 1.2%                |
| Existing-Other Capacity               | 0             | 0             | 0.0%                |
| Prospective Resources                 | 42,372        | 42,868        | 1.2%                |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference   |
| Anticipated Reserve Margin            | 106.6%        | 104.4%        | -2.2                |
| Prospective Reserve Margin            | 106.6%        | 104.4%        | -2.2                |
| Reference Margin Level                | 16.0%         | 16.0%         | 0.0                 |

| WECC-Rocky Mountain                   |               |               |                     |
|---------------------------------------|---------------|---------------|---------------------|
| Demand, Resource, and Reserve Margins | 2024–2025 WRA | 2025–2026 WRA | 2024–25 vs. 2025–26 |
| Demand Projections                    | MW            | MW            | Net Change (%)      |
| Total Internal Demand (50/50)         | 10,481        | 11,501        | 9.7%                |
| Demand Response: Available            | 282           | 285           | 1.1%                |
| Net Internal Demand                   | 10,199        | 11,216        | 10.0%               |
| Resource Projections                  | MW            | MW            | Net Change (%)      |
| Existing-Certain Capacity             | 18,356        | 17,768        | -3.2%               |
| Tier 1 Planned Capacity               | 199           | 366           | 84.3%               |
| Net Firm Capacity Transfers           | 0             | 0             | 0%                  |
| Anticipated Resources                 | 18,555        | 18,134        | -2.3%               |
| Existing-Other Capacity               | 0             | 0             | 0.0%                |
| Prospective Resources                 | 18,555        | 18,134        | -2.3%               |
| Reserve Margins                       | Percent (%)   | Percent (%)   | Annual Difference   |
| Anticipated Reserve Margin            | 81.9%         | 61.7%         | -20.3               |
| Prospective Reserve Margin            | 81.9%         | 61.7%         | -20.3               |
| Reference Margin Level                | 19.0%         | 18.2%         | -0.8                |

## Variable Energy Resource Contributions

Because the electrical output of VERs (e.g., wind, solar PV) depends on weather conditions, on-peak capacity contributions are less than nameplate capacity and may vary widely year to year based on the identified risk hour. In many areas, winter demand peaks in the early morning hours or early evening resulting in little or no electrical resource output from solar PV resources and wide variability in wind availability. The following table shows the capacity contribution of existing wind and solar PV resources at the identified risk hour for each assessment area. Resource contributions are also aggregated by Interconnection and across the entire BPS.

| BPS Variable Energy Resources On-Peak Capacity Contributions by Assessment Area |                        |                       |                                    |                            |                        |                                    |                         |                        |                                    |
|---|------------------------|-----------------------|------------------------------------|----------------------------|------------------------|------------------------------------|-------------------------|------------------------|------------------------------------|
|   | Wind                   |                       |                                    | Solar                      |                        |                                    | Run of River Hydro      |                        |                                    |
| Assessment Area/ <a href="#">Interconnection</a><br>(* - includes all hydro)    | Nameplate Wind<br>(MW) | Expected Wind<br>(MW) | Expected Share<br>of Nameplate (%) | Nameplate Solar<br>PV (MW) | Expected Solar<br>(MW) | Expected Share of<br>Nameplate (%) | Nameplate Hydro<br>(MW) | Expected<br>Hydro (MW) | Expected Share of<br>Nameplate (%) |
| MISO  | 30,247                 | 8,772                 | 29%                                | 13,726                     | 686                    | 5%                                 | 2,351                   | 1,404                  | 60%                                |
| MRO-Manitoba Hydro  | 259                    | 52                    | 20%                                | 0                          | 0                      | 0%                                 | 202                     | 0                      | 0%                                 |
| MRO-SaskPower   | 816                    | 433                   | 53%                                | 30                         | 0                      | 13%                                | 884                     | 703                    | 80%                                |
| MRO-SPP   | 35,714                 | 7,198                 | 20%                                | 1,197                      | 457                    | 38%                                | 114                     | 72                     | 63%                                |
| NPCC-Maritimes  | 1,635                  | 241                   | 15%                                | 155                        | 10                     | 6%                                 | 1,357                   | 1,283                  | 95%                                |
| NPCC-New England  | 2,675                  | 455                   | 17%                                | 3,620                      | 0                      | 0%                                 | 3,742                   | 1,453                  | 39%                                |
| NPCC-New York   | 2,586                  | 737                   | 29%                                | 627                        | 0                      | 0%                                 | 974                     | 596                    | 61%                                |
| NPCC-Ontario  | 4,943                  | 1,971                 | 40%                                | 478                        | 0                      | 0%                                 | 0                       | 0                      | 0%                                 |
| NPCC-Québec   | 4,024                  | 1,426                 | 35%                                | 10                         | 0                      | 0%                                 | 445                     | 445                    | 100%                               |
| PJM*  | 13,318                 | 5,463                 | 41%                                | 15,732                     | 1                      | 0%                                 | 8,134                   | 7,900                  | 97%                                |
| SERC-Central  | 1,324                  | 370                   | 28%                                | 1,576                      | 455                    | 29%                                | 4,991                   | 4,027                  | 81%                                |
| SERC-East   | 0                      | 0                     | 0%                                 | 7,068                      | 1,792                  | 25%                                | 3,010                   | 2,951                  | 98%                                |
| SERC-Florida Peninsula  | 0                      | 0                     | 0%                                 | 12,058                     | 2,151                  | 18%                                | 0                       | 0                      | 0%                                 |
| SERC-Southeast  | 0                      | 0                     | 0%                                 | 8,670                      | 4,461                  | 51%                                | 3,258                   | 3,258                  | 100%                               |
| Texas RE-ERCOT  | 40,629                 | 7,833                 | 19%                                | 35,609                     | 660                    | 2%                                 | 579                     | 566                    | 98%                                |
| WECC-AB*  | 5,712                  | 1,919                 | 34%                                | 2,206                      | 0                      | 0%                                 | 894                     | 285                    | 32%                                |
| WECC-Basin*   | 5,932                  | 1,148                 | 19%                                | 3,853                      | 62                     | 2%                                 | 2,667                   | 1,473                  | 55%                                |
| WECC-BC*  | 747                    | 85                    | 11%                                | 17                         | 0                      | 0%                                 | 17,752                  | 13,560                 | 76%                                |
| WECC-CA*  | 9,382                  | 682                   | 7%                                 | 28,328                     | 0                      | 0%                                 | 15,740                  | 4,572                  | 29%                                |
| WECC-Mex  | 40                     | 4                     | 11%                                | 350                        | 0                      | 0%                                 | 0                       | 0                      | 0%                                 |
| WECC-NW*  | 14,744                 | 1,319                 | 9%                                 | 4,695                      | 1,556                  | 33%                                | 32,915                  | 18,502                 | 56%                                |
| WECC-RM*  | 5,681                  | 2,265                 | 40%                                | 3,521                      | 0                      | 0%                                 | 3,251                   | 1,327                  | 41%                                |
| WECC-SW*  | 4,303                  | 1,182                 | 27%                                | 12,139                     | 391                    | 3%                                 | 3,117                   | 948                    | 30%                                |
| EASTERN INTERCONNECTION   | 93,517                 | 25,692                | 27%                                | 64,937                     | 10,013                 | 15%                                | 29,017                  | 23,647                 | 81%                                |
| QUÉBEC INTERCONNECTION  | 4,024                  | 1,426                 | 35%                                | 10                         | 0                      | 0%                                 | 445                     | 445                    | 100%                               |
| TEXAS INTERCONNECTION   | 40,629                 | 7,833                 | 19%                                | 35,609                     | 660                    | 2%                                 | 579                     | 566                    | 98%                                |
| WECC INTERCONNECTION  | 46,541                 | 8,605                 | 19%                                | 55,108                     | 2,008                  | 4%                                 | 76336                   | 40667                  | 53%                                |
| INTERCONNECTION TOTAL:  | 184,711                | 43,556                | 23%                                | 155,664                    | 12,685                 | 8%                                 | 106,377                 | 65,325                 | 61%                                |

## Review of Winter 2024–2025 Capacity and Energy Performance

The [meteorological winter](#) across the contiguous United States had an average temperature of 34.1 degrees F—1.9 degrees above average—ranking in the warmest third of NOAA’s historical record. Total winter precipitation in the US was 5.87 inches, 0.92 of an inch below average, ranking in the driest third of the December–February climate record.<sup>17</sup> Most of Canada experienced temperatures at least 2°C above the baseline average with the Maritime provinces, southern Ontario, and the Canadian west coast recording temperature departures nearer the baseline average while a small region in southern Saskatchewan recorded temperatures just slightly below the baseline average.<sup>18</sup>

In February 2025, FERC and NERC and its Regional Entities launched a joint review of the BPS’ performance during the January 2025 arctic events, which comprised Winter Storms Blair, Cora, Demi, and Enzo.<sup>19</sup> The week of January 19–25, 2025 was the third coldest winter week (spanning Sunday through Saturday) across the United States since 2000. Between January 21 and 22, 2025, natural gas demand peaked at 150 Bcf/day, electric demand peaked at 683 GW, and unplanned outages peaked at 71,022 MW. Nevertheless, during the January 2025 arctic events, manual load shed was not required. The January 2025 arctic events had lower observed hourly wind chill temperatures in pockets of the Northeast, the Louisiana Gulf, California, and the Southwest compared to Winter Storms Uri, Elliott, Gerri, and Heather. During the January 2025 arctic events, the most extreme storm relative to typical weather was Winter Storm Enzo—a Gulf and Southern storm. On January 20, 2025, a burst of snow, sleet, and freezing rain developed across Texas and Louisiana late in the day. A mixture of sleet and freezing rain fell from Austin to San Antonio and to the southernmost point of Texas. By the early morning hours of January 21, 2025, for the first time in history, a blizzard warning was issued for southwest Louisiana and the southeastern-most point of Texas. Snow fell in Gulf cities in Texas, southern Mississippi, southern Alabama, and western Florida. On January 21, 2025, Baton Rouge recorded 7.6 inches of snowfall, making it the city’s snowiest day since recordkeeping began in 1892, while New Orleans saw its snowiest day on record, with a total of 8.0 inches. Temperatures plunged to single digits in Louisiana. Temperatures in some parts of the state fell to levels not seen in more than 125 years.

The review team engaged with 10 electric entities across the Eastern and Texas Interconnections to gather the information necessary to provide a high-level overview of the BPS’ performance during the cold weather events. Based on the data and interviews that the team reviewed, electric generators appear to have performed better during the January 2025 arctic events because of additional generator commitments, improved preparedness, increased situational awareness, and the implementation of lessons learned from previous extreme cold weather events and prior report recommendations. The natural gas system also performed better overall, serving record levels of natural gas demand and experiencing only minor production declines and short-duration force majeure events.

On October 1, 2025, NERC submitted to the Federal Energy Regulatory Commission its first *Cold Weather Data Annual Report*. This report includes a review of forced outage data from GADS for the winter 2024–2025 period indicating performance consistent with historical performance as reported in NERC’s annual *State of Reliability* report. This is within the normal range of capacity that occurs across the fleet. During the Winter 2024–2025 period, the highest amount of capacity in a forced outage state for all reasons occurred on January 20, 2025, with 68,519 MW across all regions. The outages occurring over January 20, 2025, were analyzed as part of the joint FERC, NERC, and Regional Entity *2025 System Performance Review*. The joint FERC, NERC, and Regional Entity *2025 System Performance Review* found a reduction in peak coincident unplanned generator outages for the four 2025 winter storms reviewed compared to past winter storms; however, this review also noted that it was not an exact comparison due to prior winter storms having different characteristics.

### Eastern Interconnection–Canada and Québec Interconnection

No EEAs were needed during the previous winter season. One entity plans to make a slight increase to the demand-response program based on last winter’s operations.

<sup>17</sup> [Despite Arctic air outbreaks, U.S. had warm, dry winter on average | National Oceanic and Atmospheric Administration](#)

<sup>18</sup> [Climate Trends and Variations Bulletin – Winter 2024/2025 - Canada.ca](#)

<sup>19</sup> <https://www.ferc.gov/media/report-january-2025-arctic-events-system-performance-review-ferc-nerc-and-its-regional>

## Eastern Interconnection–United States

Several entities indicated that generators performed better during the January 2025 arctic events than in previous winter storms. For example, TVA stated that generator performance within its footprint was stable, with minimal natural gas delivery issues. Southeastern RC detailed that no major fuel-related outages occurred. FRCC noted that generator performance was strong during this period. The significant characteristics of Winter Storm Enzo in the Southern and Gulf states were freezing precipitation and snow accumulation, especially in regions where those conditions rarely occur. In FRCC, only the northern portion of Florida experienced severe arctic weather including freezing precipitation and snowfall (record-setting, in some cities) that were abnormal for the region even though certain northern cities have faced cold temperatures in the past. In Florida, entities experienced energy emergencies caused by extended generation outages from hurricanes Milton and Helene, compounded by unusually high loads from cold weather. Entities were able to serve native load and firm delivery obligations, though non-firm sales were curtailed during certain events. ISO-NE, NYISO, and PJM all generally described the January 2025 arctic events as having cold temperatures but overall weather conditions that were similar to a winter without a major storm.

MISO emerged from Winter 2024–2025 without turning to emergency procedures despite the wide-ranging winter storms from January 6 to 9 and again from January 20 to 22. Generators continue to prioritize scheduling planned or maintenance outages to the shoulder seasons of fall and spring to maximize unit availability for the winter season. Also, extreme cold weather outage adders were added to the LOLE model to make sure that winter storm risks are included in planning. In PJM, demand reached a new all-time winter peak on January 22, 2025, of 143,714 MW with sufficient reserves. PJM did call an EEA1 on January 22, 2025, however reserves remained adequate. PJM had less than 3% load forecast error over the peak days of the January cold weather events. Reliability cases were conducted, and units with extended start times were evaluated and started early to ensure units were on-line before extreme cold weather settled in. PJM had a 9.24% forced outage rate on the peak day, a relatively low forced outage rate for the weather experienced. There were also very few gas production problems; however, market issues prevented proper scheduling because of the four-day holiday weekend.

In SERC-Central, entities reported only limited impacts from Winter 2024–2025 coldest weather and made minor adjustments. One entity declared conservative operations ahead of peak conditions but experienced no emergencies. One entity raised its winter Planning Reserve Margin target to 26% following lessons learned from Winter Storm Elliott. Corrective actions were implemented due to isolated equipment issues, including improved heat trace capabilities and adding heat trace equipment to the cold weather critical component list. During the previous winter season, some SERC-Florida Peninsula entities experienced energy emergencies caused by extended generation outages from hurricanes Milton and Helene, compounded by unusually high loads from cold weather. Despite these challenges, entities were able to serve native load and firm delivery obligations, though non-firm sales were curtailed during certain events.

## Texas Interconnection–ERCOT

There were no energy emergencies for the Texas RE-ERCOT region last winter and no conditions that prompted changes in operating procedures. Winter Storm Kingston, which occurred in February 2025, was the only storm where ERCOT utilized firm fuel supply service resources (FFSS), a firm-fuel product that provides additional grid reliability and resiliency during extreme cold weather and compensates generation resources that meet a higher resiliency standard. A maximum FFSS deployment of 470 MW occurred on February 19 between the hours 13:10 and 17:02. Two other storms, Enzo and Cora, impacted ERCOT in January 2025, but these storms did not cause any system reliability issues.

## Western Interconnection

Between January 11 and 17, 2024, a prolonged Arctic outbreak impacted British Columbia, Alberta, and the U.S. Pacific Northwest, driving record electricity demand and widespread reliability challenges. Four U.S. Northwest BAs and one Canadian BA declared energy emergencies, underscoring two core vulnerabilities: Inadequate capacity during evening peak hours (4 to 8 p.m.) and Insufficient fuel supply (limited hydro availability) across multiple days.

Although temperatures were comparable to the December 2022 cold snap, WECC-Northwest peak demand rose two percentage points to 6% over then, with BC Hydro and AESO both setting new all-time records. The U.S. Northwest relied heavily on imports—averaging 4,745 MW during peaks and 5,241 MW across all hours, mostly from the Southwest and Rockies. California remained a net importer, providing little relief. Market prices in the Northwest reached or neared caps across most hours, indicating persistent scarcity rather than short-term peaks. Overall, the January 2024 event illustrated capacity alone does not ensure resilience. Sustained energy availability with interregional flexibility (both physical and market-based) will be key to maintaining reliability through the 2025–2026 and future winter seasons.



| 2024–2025 Winter Demand and Generation Summary at Peak Demand |                  |                  |                          |   |                               |                             |                                  |                                   |                                   |                                    |  |
|---|------------------|------------------|--------------------------|---|-------------------------------|-----------------------------|----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|--|
| Assessment Area   | Peak Demand Date | Peak Demand Hour | Demand <sup>1</sup> (MW) | WRA Peak Demand Scenarios <sup>2</sup> (MW) | Generation <sup>1</sup> (MWh) | Transfers <sup>1</sup> (MW) | Wind – Actual <sup>1</sup> (MWh) | Wind – Expected <sup>3</sup> (MW) | Solar – Actual <sup>1</sup> (MWh) | Solar – Expected <sup>3</sup> (MW) | Forced Outages Summary <sup>4</sup> (MW) |
| MISO  | Jan. 21          | 18:00            | 108,888*                 | 96,134                                      | 101,655                       | -977                        | 18,468                           | 16,761                            | 0                                 | 519                                | 17,010                                   |
|   |                  |                  |                          | 100,395                                     |                               |                             |                                  |                                   |                                   |                                    |  |
| MRO-<br>Manitoba<br>Hydro                                     | Jan. 20          | 08:00            | 5.132                    | 4,814                                       | 5,292                         | -277                        | 142                              | 52                                | N/A                               | 0                                  | 146                                      |
|   |                  |                  |                          | 5,060                                       |                               |                             |                                  |                                   |                                   |                                    |  |
| MRO-<br>SaskPower   | Dec. 18          | 18:00            | 3,785                    | 3,802                                       | 3,641                         | -231                        | 664                              | 368                               | 0                                 | 3                                  | 0  |
|   |                  |                  |                          | 3,897                                       |                               |                             |                                  |                                   |                                   |                                    |  |
| MRO-SPP   | Feb. 20          | 08:00            | 47,981                   | 45,926                                      | 40,898                        | -1,424                      | 4,886                            | 4,783                             | 255                               | 36                                 | 9,272                                    |
|   |                  |                  |                          | 47,054                                      |                               |                             |                                  |                                   |                                   |                                    |  |
| NPCC-<br>Maritimes  | Jan. 22          | 07:00            | 5,810                    | 5,907                                       | 4,266                         | -1,174                      | 368                              | 261                               | 3                                 | 5                                  | *  |
|   |                  |                  |                          | 6,498                                       |                               |                             |                                  |                                   |                                   |                                    |  |
| NPCC-New<br>England   | Jan. 21          | 18:00            | 19,607                   | 20,308                                      | 17,686                        | -1,896                      | 285                              | 329                               | 4                                 | 23                                 | 624                                      |
|   |                  |                  |                          | 21,814                                      |                               |                             |                                  |                                   |                                   |                                    |  |
| NPCC-New<br>York  | Jan. 22          | 19:00            | 23,521                   | 22,998                                      | 18,932                        | -4,589                      | 654                              | 728                               | 0                                 | 0                                  | 4,835                                    |
|   |                  |                  |                          | 24,023                                      |                               |                             |                                  |                                   |                                   |                                    |  |

| 2024–2025 Winter Demand and Generation Summary at Peak Demand |                  |                  |                          |   |                               |                             |                                  |                                   |                                   |                                    |  |
|---|------------------|------------------|--------------------------|---|-------------------------------|-----------------------------|----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|--|
| Assessment Area   | Peak Demand Date | Peak Demand Hour | Demand <sup>1</sup> (MW) | WRA Peak Demand Scenarios <sup>2</sup> (MW) | Generation <sup>1</sup> (MWh) | Transfers <sup>1</sup> (MW) | Wind – Actual <sup>1</sup> (MWh) | Wind – Expected <sup>3</sup> (MW) | Solar – Actual <sup>1</sup> (MWh) | Solar – Expected <sup>3</sup> (MW) | Forced Outages Summary <sup>4</sup> (MW) |
| NPCC-Ontario  | Jan. 22          | 18:00            | 21,940                   | 20,951                                      | 24,250                        | 2,990                       | 3,693                            | 1,914                             | 0                                 | 0                                  | *  |
|   |                  |                  |                          | 22,179                                      |                               |                             |                                  |                                   |                                   |                                    |  |
| NPCC-Québec   | Jan. 22          | 08:00            | 37,178                   | 36,061                                      | 39,514                        | -766                        | 1,463                            | 1,449                             | 0                                 | 0                                  | *  |
|   |                  |                  |                          | 39,545                                      |                               |                             |                                  |                                   |                                   |                                    |  |
| PJM   | Jan. 22          | 09:00            | 144,420                  | 130,712                                     | 152,142                       | 7,731                       | 3,704                            | 3,620                             | 3,076                             | 1                                  | 8,663                                    |
|   |                  |                  |                          | 144,939                                     |                               |                             |                                  |                                   |                                   |                                    |  |
| SERC-C  | Jan. 22          | 08:00            | 47,815                   | 41,397                                      | 40,898                        | -6,921                      | 563                              | 176                               | 214                               | 455                                | 1,538                                    |
|   |                  |                  |                          | 47,062                                      |                               |                             |                                  |                                   |                                   |                                    |  |
| SERC-E  | Jan. 23          | 08:00            | 47,130                   | 44,023                                      | 41,810                        | -5,323                      | 0                                | 0                                 | 145                               | 2,526                              | 1,830                                    |
|   |                  |                  |                          | 47,662                                      |                               |                             |                                  |                                   |                                   |                                    |  |
| SERC-FP   | Jan. 25          | 08:00            | 43,974                   | 45,714                                      | 41,702                        | -557                        | 0                                | 0                                 | 362                               | 1,684                              | 2,824                                    |
|   |                  |                  |                          | 54,239                                      |                               |                             |                                  |                                   |                                   |                                    |  |
| SERC-SE   | Jan. 22          | 08:00            | 46,490                   | 43,670                                      | 48,227                        | 1,741                       | 0                                | 0                                 | 592                               | 3,861                              | 2,210                                    |
|   |                  |                  |                          | 45,116                                      |                               |                             |                                  |                                   |                                   |                                    |  |

| 2024–2025 Winter Demand and Generation Summary at Peak Demand |                  |                  |   |   |                               |                             |  |                                   |   |                                    |  |
|---|------------------|------------------|---|---|-------------------------------|-----------------------------|--|-----------------------------------|---|------------------------------------|--|
| Assessment Area   | Peak Demand Date | Peak Demand Hour | Demand <sup>1</sup> (MW)  | WRA Peak Demand Scenarios <sup>2</sup> (MW) | Generation <sup>1</sup> (MWh) | Transfers <sup>1</sup> (MW) | Wind – Actual <sup>1</sup> (MWh)   | Wind – Expected <sup>3</sup> (MW) | Solar – Actual <sup>1</sup> (MWh)   | Solar – Expected <sup>3</sup> (MW) | Forced Outages Summary <sup>4</sup> (MW)                       |
| TRE-ERCOT   | Feb. 20          | 08:00            | 80,560  | 73,193 <sup>5</sup>                         | 79,960                        | -191                        | 9,397  | 15,697                            | 1,586   | 15                                 | 5,742  |
|   |                  |                  |   | 90,405 <sup>5</sup>                         |                               |                             |  |                                   |   |                                    |  |
| WECC-AB   | Dec. 18          | 17:00            | 12,241  | 12,280                                      | 12,711                        | -470                        | 3,175  | 1,867                             | 4   | 0                                  | *  |
|   |                  |                  |   | 12,635                                      |                               |                             |  |                                   |   |                                    |  |
| WECC-BC   | Feb 3            | 18:00            | 11,359  | 11,996                                      | 11,415                        | 44                          | 70   | 279                               | 0   | 0                                  | 839  |
|   |                  |                  |   | 12,749                                      |                               |                             |  |                                   |   |                                    |  |
| WECC-CA/MX  | Dec. 12          | 15:00            | 35,555  | 35,359                                      | 31,925                        | -4,669                      | 4,021  | 569                               | 11,547  | 0                                  | 1,627  |
|   |                  |                  |   | 36,823                                      |                               |                             |  |                                   |   |                                    |  |
| WECC-NW   | Feb. 12          | 08:00            | 54,278  | 58,001                                      | 48,437                        | -920                        | 2,607  | 7,876                             | 1,494   | 2,198                              | 3,281  |
|   |                  |                  |   | 62,230                                      |                               |                             |  |                                   |   |                                    |  |
| WECC-SW   | Feb. 13          | 16:00            | 22,969  | 16,177                                      | 25,087                        | 2,117                       | 2,741  | 1,065                             | 1,599   | 182                                | 1,496  |
|   |                  |                  |   | 17,777                                      |                               |                             |  |                                   |   |                                    |  |
| Highlighting Notes:   |                  |                  | Actual peak demand in the highlighted areas met or exceeded extreme scenario levels |   |                               |                             | Actual wind output in highlighted areas was significantly below seasonal forecast. |                                   | Actual solar output in highlighted areas was significantly below seasonal forecast. |                                    | Actual forced outages above or below forecast by factor of two |

| 2024–2025 Winter Demand and Generation Summary at Peak Demand   |                  |                  |                          |   |                               |                             |                                  |                                   |                                   |                                    |  |
|---|------------------|------------------|--------------------------|---|-------------------------------|-----------------------------|----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|--|
| Assessment Area   | Peak Demand Date | Peak Demand Hour | Demand <sup>1</sup> (MW) | WRA Peak Demand Scenarios <sup>2</sup> (MW) | Generation <sup>1</sup> (MWh) | Transfers <sup>1</sup> (MW) | Wind – Actual <sup>1</sup> (MWh) | Wind – Expected <sup>3</sup> (MW) | Solar – Actual <sup>1</sup> (MWh) | Solar – Expected <sup>3</sup> (MW) | Forced Outages Summary <sup>4</sup> (MW) |
| <div>Table Notes:</div> <div><sup>1</sup> Actual demand, wind, and solar values for the hour of peak demand in U.S. areas were obtained from <a href="#">EIA From 930 data</a>. For areas in Canada, this data was provided to NERC by system operators and utilities.</div> <div><sup>2</sup> See NERC 2024–2025 WRA demand scenarios for each assessment area. Values are the normal winter peak demand forecast and an extreme peak demand forecast that represents a 90/10, or once-per-decade, peak demand. Some areas use other basis for extreme peak demand.</div> <div><sup>3</sup> Expected values of wind and solar resources from the 2024–2025 WRA.</div> <div><sup>4</sup> Values from NERC Generator Availability Data System for the 2024–2025 winter hour of peak demand in each assessment area. Highlighted areas had actual forced outages that were more than twice the value for typical forced outage rates used in the 2024–2025 winter risk period scenarios in the 2024–2025 WRA.</div> <div><sup>5</sup> Texas RE-ERCOT peak demand scenarios are obtained by adding expected demand response (5.4 GW for winter 2024-2025) to the demand scenarios found on p. 29 of the 2024-2025 WRA.</div> <div>*Canadian assessment areas report to the NERC Generator Availability Data System on a voluntary basis, which can contribute to the absence of some values in certain assessment areas.</div> |                  |                  |                          |   |                               |                             |                                  |                                   |                                   |                                    |  |

# Errata

## December 2025

- Corrections made to the VER Table (page 50): Hydro values for WECC NW, Western Interconnection Total, and Total