



## **Item 5.1: ERCOT Recommendation regarding 2025 ERCOT Methodologies for Determining Minimum Ancillary Service Requirements**

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ERCOT Public

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# Overview

- **Purpose**

- Provide an overview of ERCOT's proposed changes to the Ancillary Services Methodology for 2025
- Under ERCOT Protocol Section 3.16 the Board shall review and recommend approval of ERCOT's methodology. Any such recommendations require approval by the Public Utility Commission of Texas before implementation

- **Voting Items / Requests**

- ERCOT requests the Board recommend approval of the 2025 Ancillary Services Methodology

- **Key Takeaway(s)**

- ERCOT is proposing changes to the Ancillary Services Methodology for 2025. The quantities of Ancillary Services increase in some hours and decrease in other hours (based on system need) with an average decrease of 48 MW in 2025 when compared to 2024.
- Absent ERCOT's proposed changes, average hourly Ancillary Services quantities would have increased due to an increase in net load forecast errors driven by increases in wind and solar generation.
- The proposed changes to the Ancillary Services Methodology are due to better accounting of risks and improvements to the Security Constrained Economic Dispatch (SCED) tool. The proposed changes do not decrease system reliability.

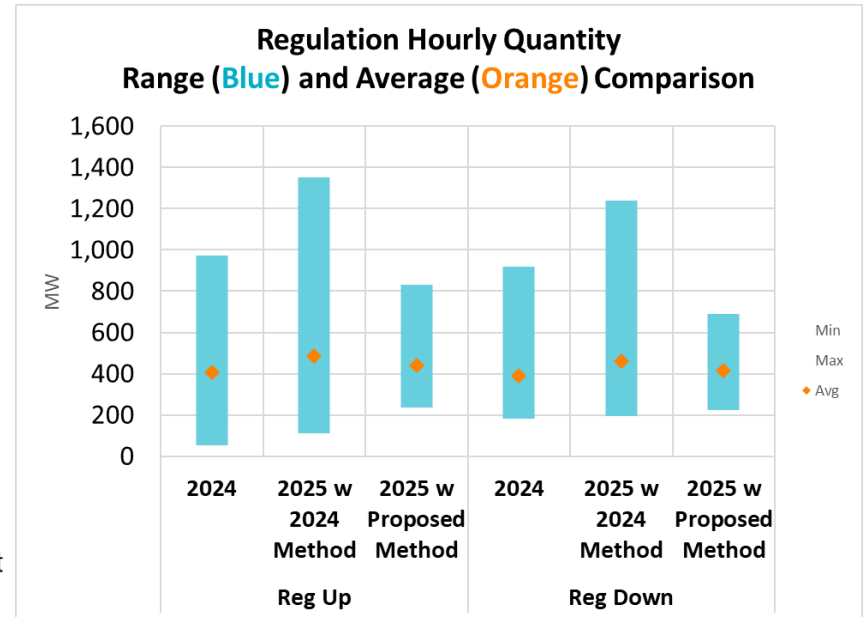
## Background

- Ancillary Services are needed to maintain reliability when the system experiences forecast errors and/or the loss of generation
- Drivers that influence the quantity calculations include:
  - MWs of intermittent resources serving load,
  - Load, wind, and solar forecast accuracy,
  - Probability of the loss of supply,
  - System inertia, and
  - MW size of the largest resource
- In general, as the percentage of load that is served by intermittent resources increases, more Ancillary Services are needed to protect reliability in real-time
- However, ERCOT is continuing to improve its tools for managing variability and risk assessment methodologies, which better align Ancillary Service quantities to each hour's risk profile
- These risk modeling improvements have lowered the increases for Regulation and Non-Spin and have lowered the total amount of ECRS needed in 2025 when compared to 2024 quantities

# Proposed Changes to Regulation Up and Down

**Regulation Up and Down** = Services where Resources respond every 4 seconds to balance load and generation between 5-minute SCED runs.

- What is changing?
  - Compute Regulation Service quantities using historic 5-minute net load forecast error instead of 5-minute total variability
- Why?
  - Improvements in the SCED tool permit it to better see and manage generation ramping, so Regulation now only needs to cover the risk of forecast errors instead of covering all variability
- Other Factors
  - Increases in wind and solar generation are leading to increases in net load forecast error
- Result (based on January-July 2024 data)
  - Regulation Up average hourly quantities are **increasing 34 MW** (8.3%) but would have increased 77 MW (18.9%) absent the proposed changes
  - Regulation Down average hourly quantities are **increasing 23 MW** (5.9%) but would have increased 68 MW (17.5%) absent the proposed changes

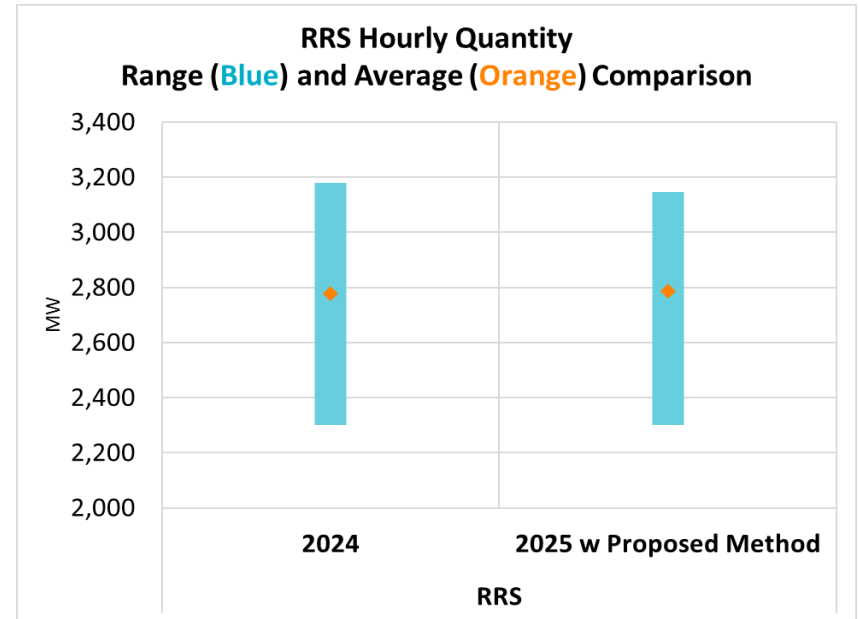


**Key Takeaway:** Regulation Service quantities are increasing in 2025 vs. 2024 due to increasing intra-hour net load forecast errors but would have been higher without the proposed methodology changes.

# Proposed Changes to RRS

**Responsive Reserve Service** = Reserved capacity from Resources that respond quickly to arrest the frequency decline following the trip of a large generator.

- What is changing?
  - Change the minimum Responsive Reserve Service Primary Frequency Response (RRS-PFR) limit from 1,185 MW to 1,365 MW based on the historic performance of the ERCOT generation fleet
- Why?
  - This is a routine update based on NERC Reliability Standard BAL-003
- Other Factors
  - None
- Result (based on January-July 2024 data)
  - RRS average hourly quantities are **increasing 9 MW** (0.3%)

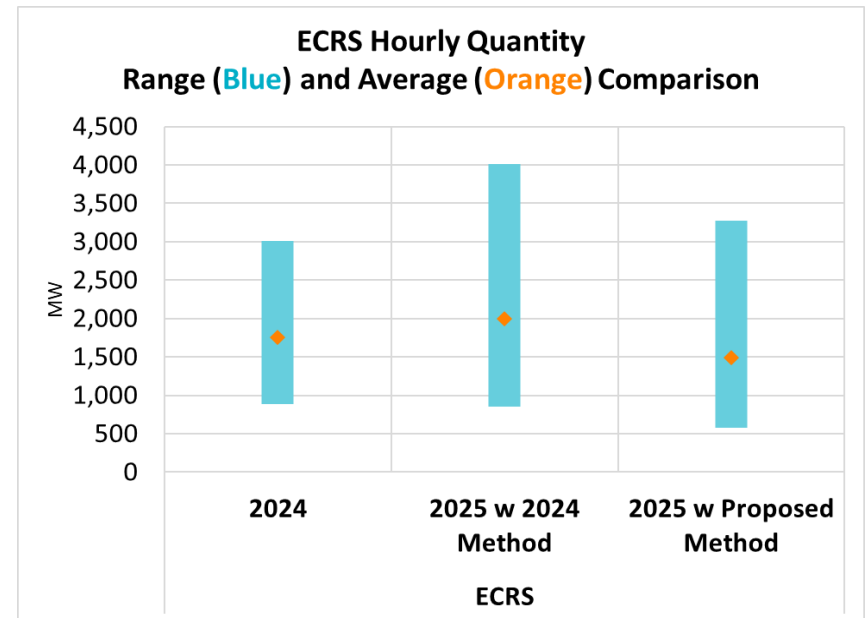


**Key Takeaway:** The RRS methodology changes in 2025 are limited to routine changes that are made to align with NERC obligations. RRS quantities in 2025 are similar to 2024.

# Proposed Changes to ECRS

**ERCOT Contingency Reserve Service** = Reserved capacity from Resources that respond within 10 minutes to (1) restore the frequency following the trip of a large generator and/or (2) provide supply during intra-hour net load forecast errors.

- What is changing?
  - Compute quantities as the higher of (1) quantity needed to restore frequency following a large generator trip or (2) quantity needed to respond to intra-hour net load forecast errors, rather than the sum of these two factors
  - Risk factor updates based on the above change
- Why?
  - Based on analysis since ECRS implementation, it is unlikely that both risk factors occur simultaneously, and the control room has manual tools to maintain reliability in the unlikely event both risks manifest in Real-Time
- Other Factors
  - Increases in wind and solar generation are leading to increases in net load forecast error
- Result (based on January-July 2024 data)
  - ECRS average hourly quantities are **decreasing 271 MW** (15.4%) but would have increased 246 MW (14.0%) absent the proposed changes

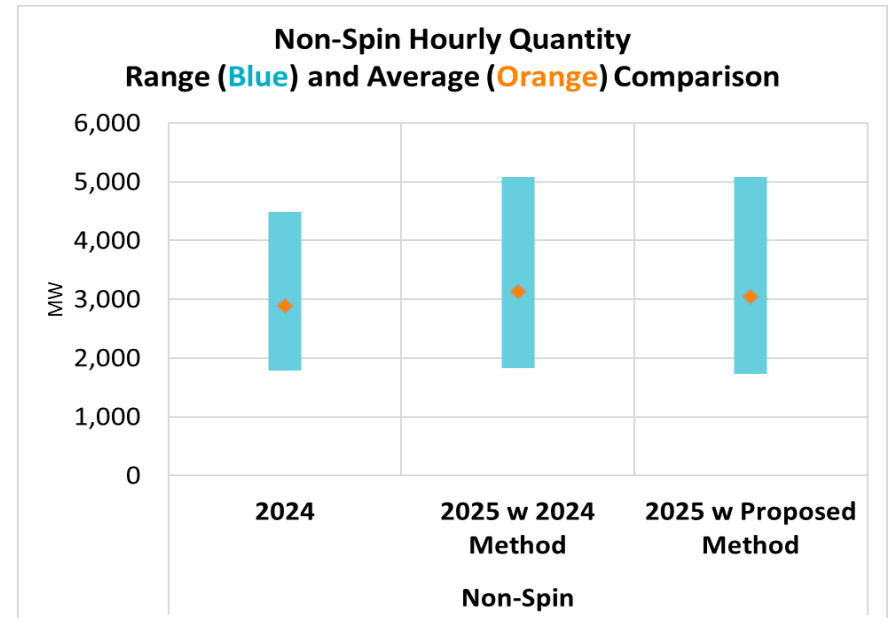


**Key Takeaway:** ECRS quantities are notably decreasing in 2025 vs. 2024 due to proposed changes in the methodology that include accounting for the low likelihood of both of the primary risks ECRS addresses occurring simultaneously.

# Proposed Changes to Non-Spin

**Non-Spinning Reserve Service** = Reserved capacity from Resources that respond within 30 minutes to provide supply during longer-duration net load forecast errors and loss of generation capacity events until the event subsides or other generation can provide energy.

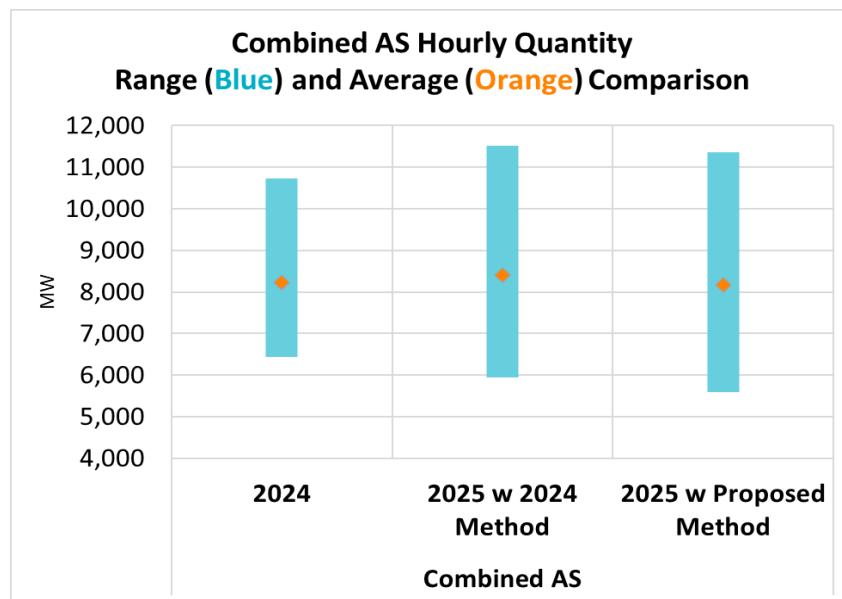
- What is changing?
  - Compute quantities for 10 pm to 6 am based on historic 4-hour ahead net load forecast error instead of 6-hour ahead
- Why?
  - During daytime hours on higher risk days, ERCOT would need to rely on offline generators that have a start-up time of 6 hours. However, during nighttime hours, ERCOT can rely on offline generators that have a start-up time of 4 hours or less. Hence, the forecast-error risk is different at night than during the day.
- Other Factors
  - Increases in wind and solar generation are leading to increases in net load forecast error
- Result (based on January-July 2024 data)
  - Non-Spin average hourly quantities are **increasing 158 MW** (5.5%) but would have increased 246 MW (8.5%) absent the proposed changes



**Key Takeaway:** Non-Spin quantities are increasing in 2025 vs. 2024 due to increasing net load forecast errors but would have been higher without the proposed changes in the methodology.

# 2025 Ancillary Services Methodology Summary

- To fulfill requirements in ERCOT Protocols Section 3.16, the Ancillary Services Methodology is reviewed annually. The ERCOT Protocols now require PUC approval of any changes to the methodology.
- ERCOT has reviewed the Ancillary Services Methodology and is proposing several changes for 2025, based on operational experience, forecasted resource mix changes, and better accounting of risks. The changes do not decrease system reliability.
- ERCOT requests the Reliability and Markets Committee recommend the Board recommend approval of the 2025 Ancillary Services Methodology as proposed by ERCOT staff. Following ERCOT Board recommendation, ERCOT will seek the PUC's approval.



Preliminary assessments of January through July 2024 data show a 48 MW (~0.6%) decrease in average hourly quantities vs. 2024. The average hourly requirement would have been 187 MW (~2.3%) higher vs. 2024 if the 2024 methodology was retained.

**Key Takeaway:** ERCOT is seeking the Board's recommendation to approve the 2025 Ancillary Services Methodology. Following the Board recommendation, ERCOT expects to seek PUC approval before the end of 2024 so that the new methodology can be effective on January 1, 2025.

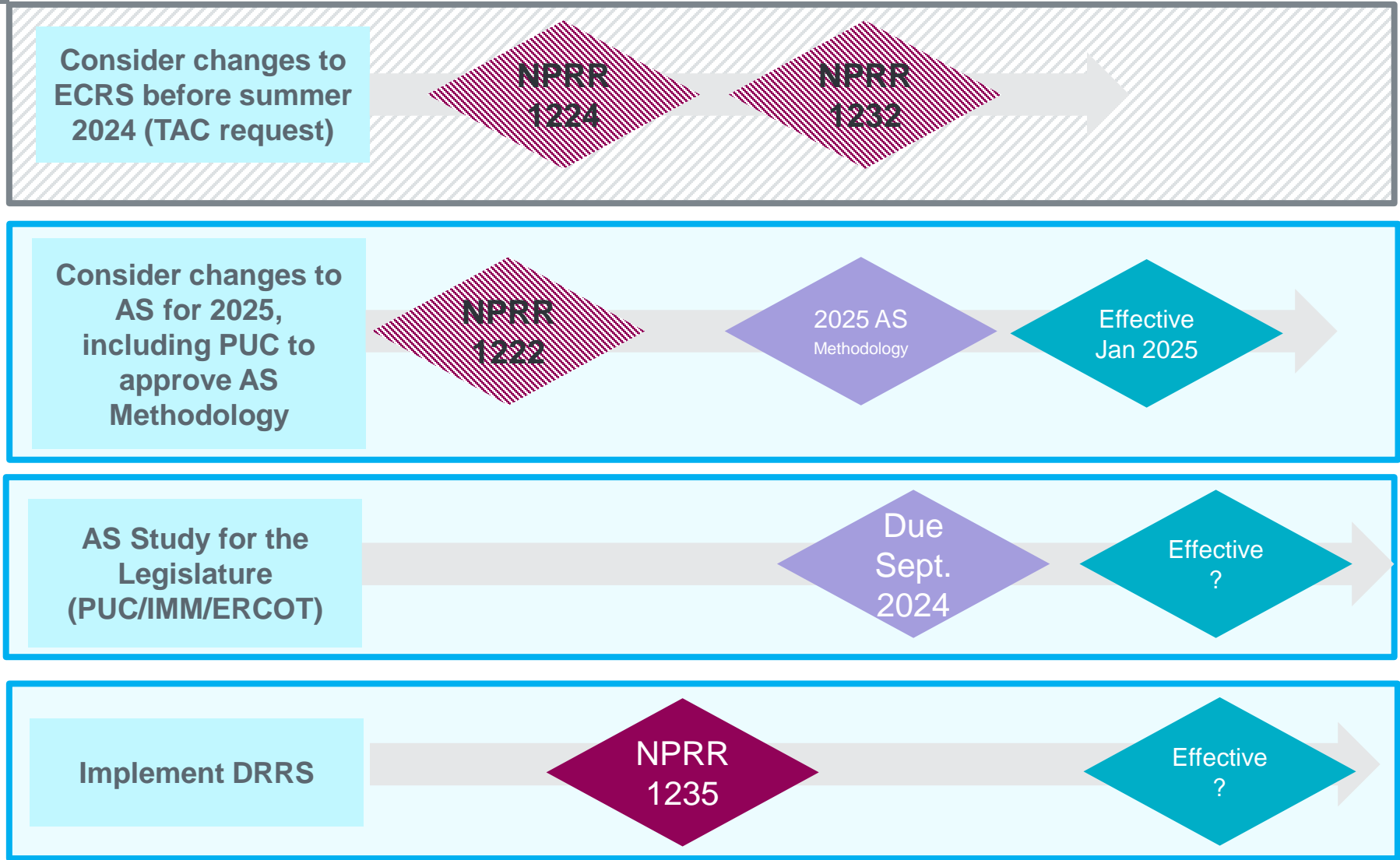


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# APPENDIX

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# Ancillary Services Initiatives



# AS Methodology Evolution Road Map

