



## **Item 8.2: System Operations Update**

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Reliability and Markets Committee Meeting

ERCOT Public

April 22, 2024

# Overview

- **Purpose**

- Provide an update on key operational metrics to the Reliability and Markets (R&M) Committee
- Provide information on recent Ancillary Services performance
- Provide information on hot topics

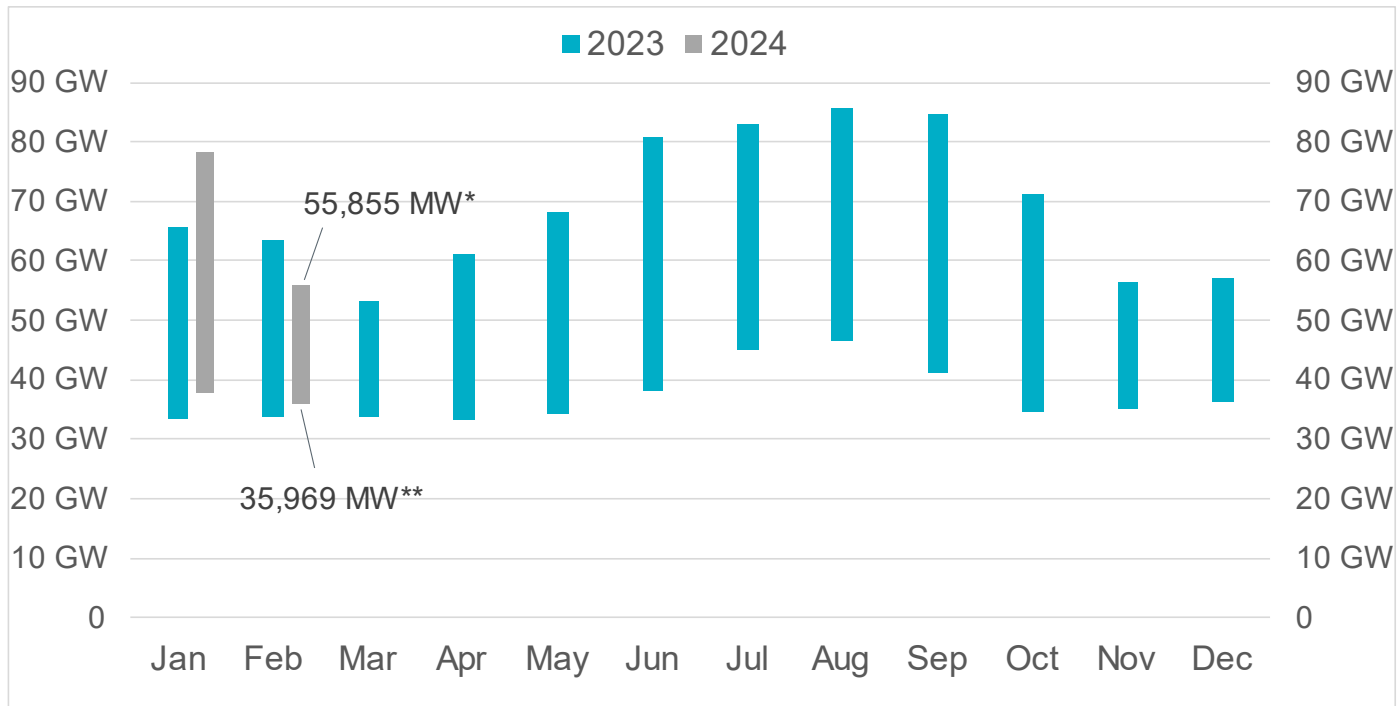
- **Voting Items / Requests**

- No action is requested of the R&M Committee; for discussion only

- **Key Takeaways**

- All key operational metrics are trending well, and all Ancillary Services are performing well
- ERCOT was able to successfully operate through the solar eclipse
- Stakeholders are currently considering options identified by ERCOT for the earlier release of ECRS capacity during near-scarcity conditions identified by ERCOT to address IMM feedback on ECRS

# Demand



\*Based on the maximum net system hourly value from March release of Demand and Energy 2024 report.

\*\*Based on the minimum net system 15-minute interval value from March release of Demand and Energy 2024 report.

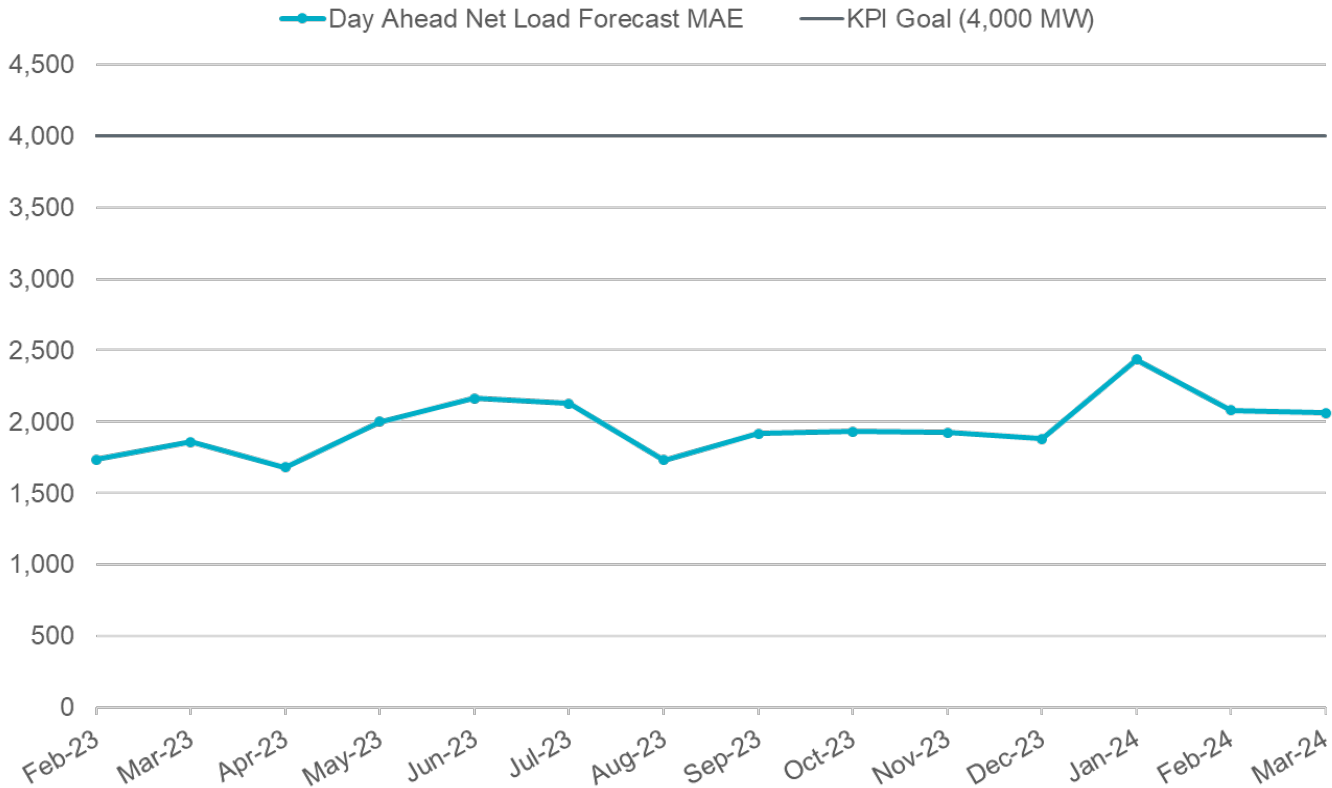
Data for latest two months are based on preliminary settlements.

**Key Takeaway:** ERCOT set a new all-time winter peak record of 78,314 MW\* on 1/16/2024; This is 12,682 MW more than previous January record of 65,632 MW (which occurred in 2023) and 3,789 MW more than the previous all-time winter peak on December 23, 2022.



# Forecast Performance

Day Ahead Net Load Forecast - Mean Absolute Forecast Error



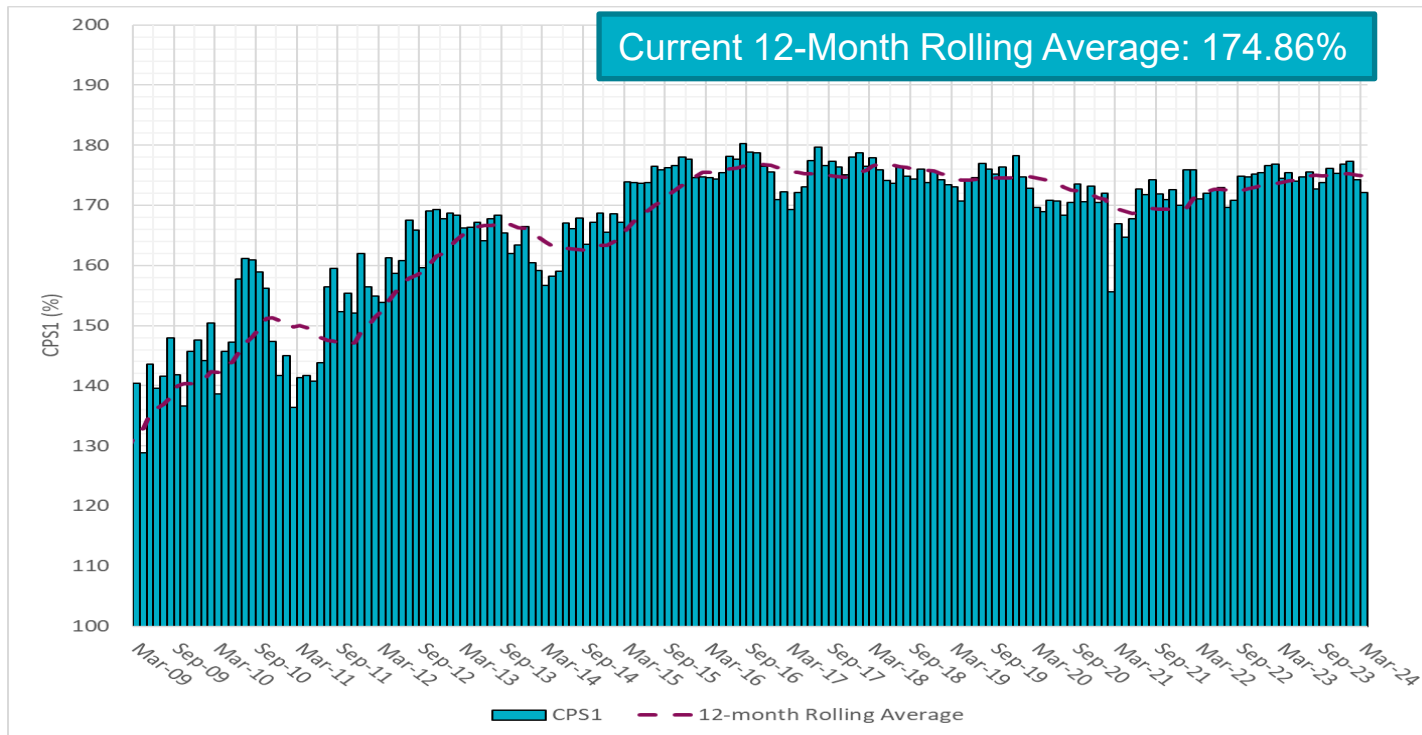
**Key Takeaway:** Day Ahead Net Load Forecast Mean Absolute Forecast Error is a new Key Performance Indicator from 2023. This metric has met the target and has been trending well.



# Frequency Control

- Control Performance Standard 1 (CPS-1) is a measure of the frequency control on a power system, pursuant to NERC Standard BAL-001. The 12-month rolling-average of this measure is required to stay above 100%.

12 Month Rolling Average CPS1 KPI  
Target > 140 % | Stretch > 150%



**Key Takeaway:** Frequency control has been performing extremely well.

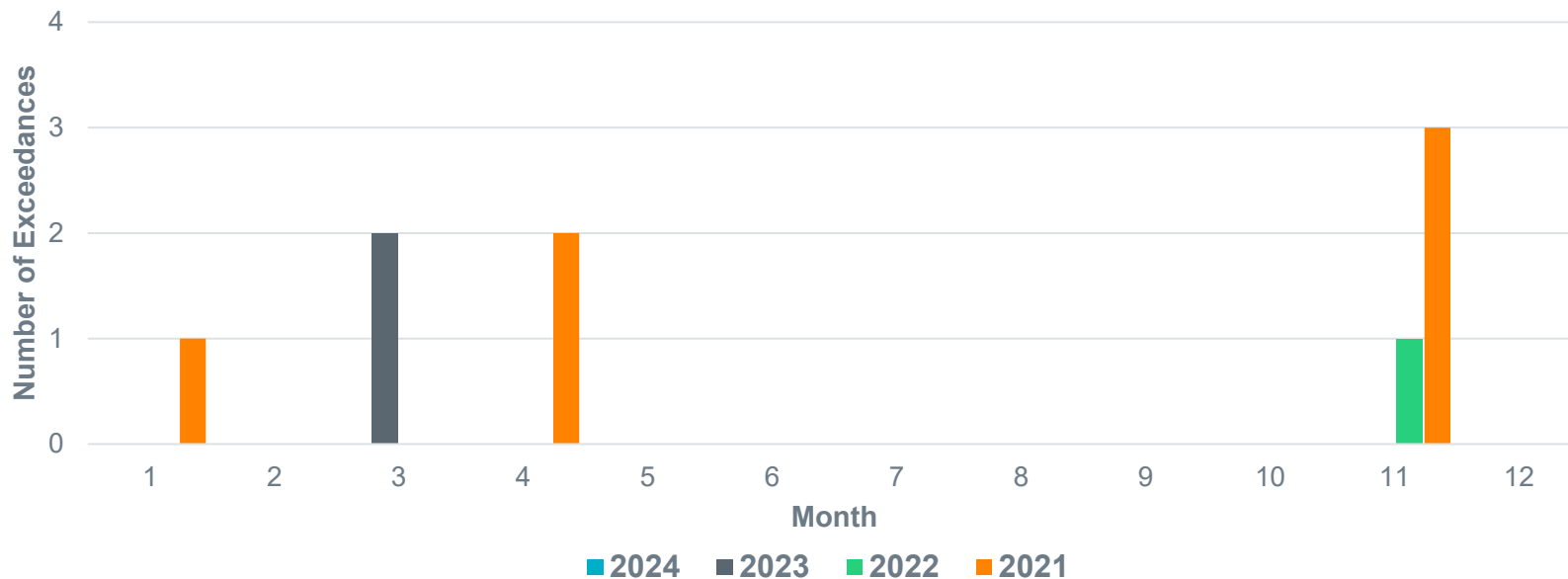
# Transmission Limit Control

- The most-recent Interconnection Reliability Operating Limit (IROL) exceedance occurred in March 2023.

## Monthly IROL Exceedances (Jan 2021 to March 2024)

All exceedances had the duration between 10 second and 10 minutes.

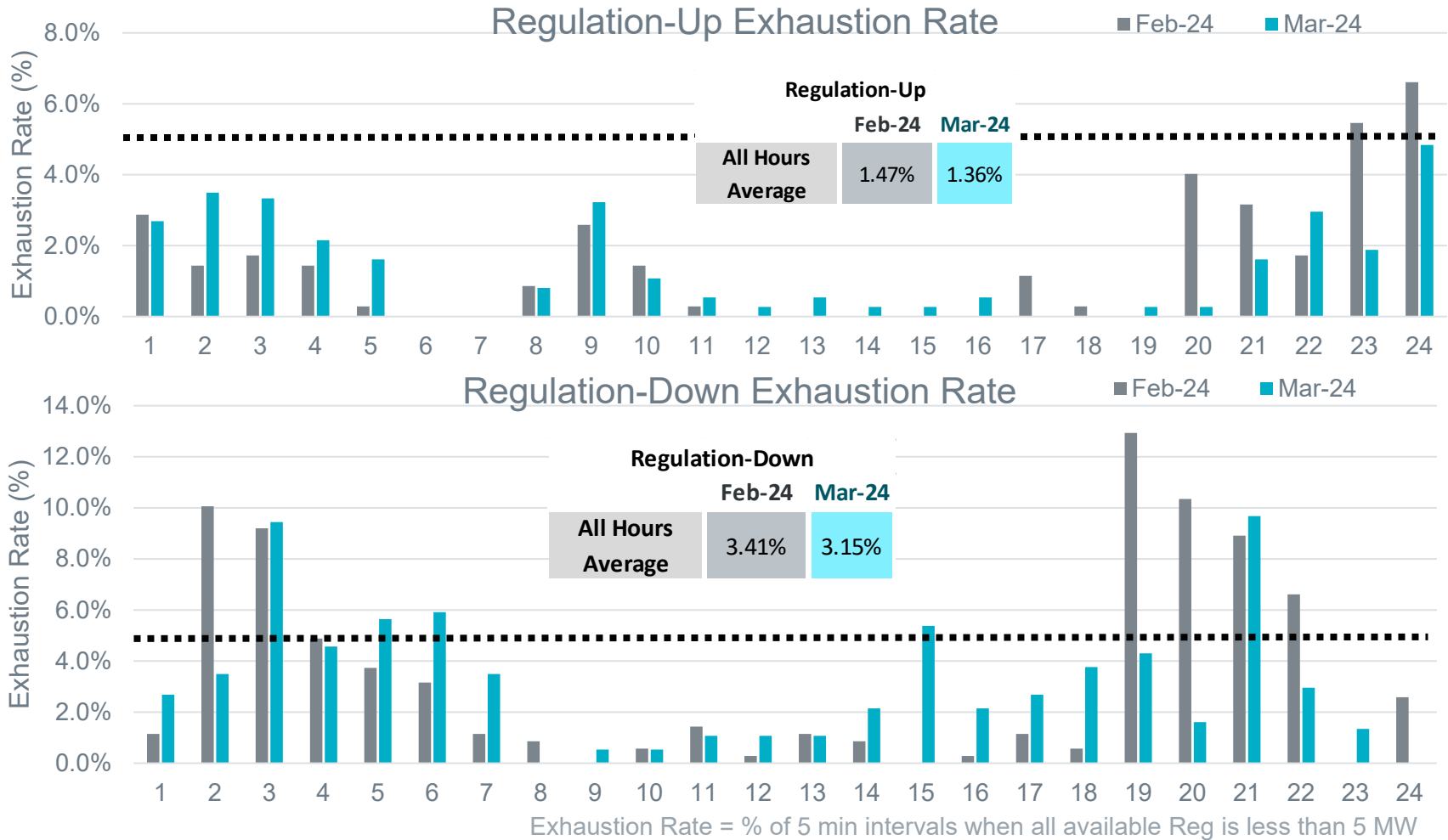
There were no exceedances which lasted for more than 10 minutes.



**Key Takeaway:** ERCOT has not experienced significant reliability risks associated with exceeding IROLs.

# Ancillary Services Performance

# Regulation Service Deployments for Feb 2024 to Mar 2024



**Key Takeaway:** Average Regulation Up and Down exhaustion rates were similar in 2022 and 2023.

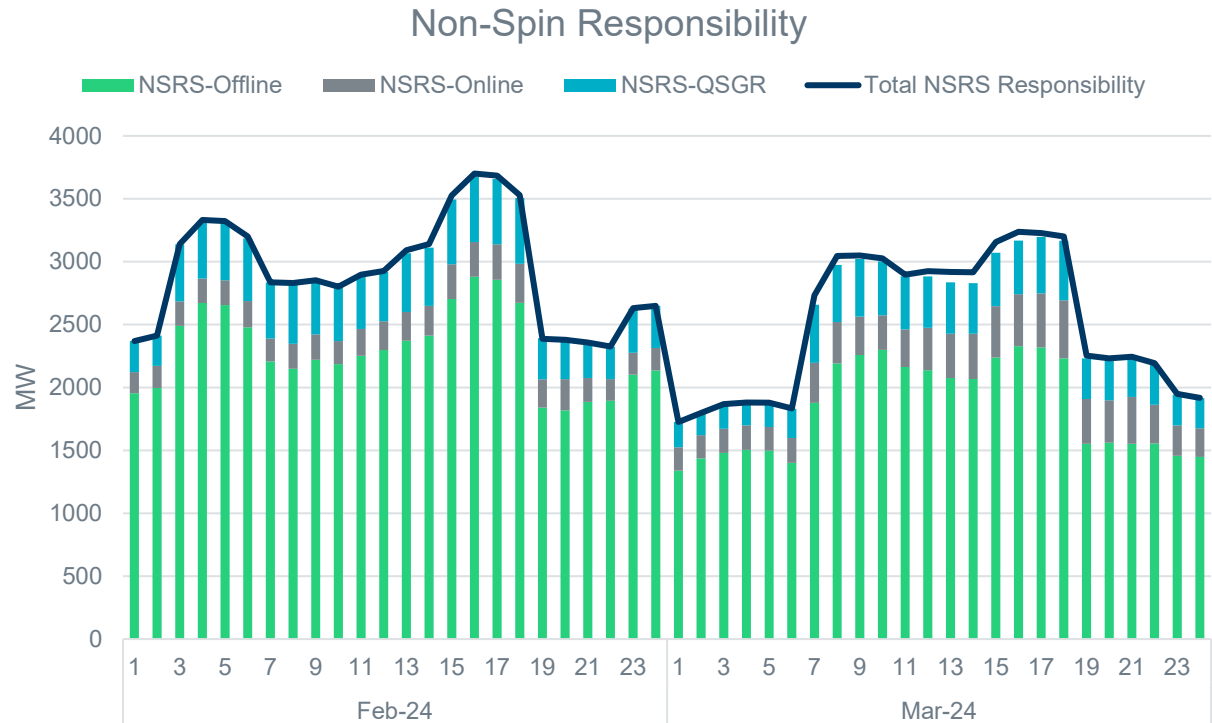




# Non-Spinning Reserve Service (Non-Spin) Deployments for Feb 2024 to Mar 2024

Between Feb 2024 and Mar 2024, there were 2 events that resulted in deployment of offline Non-Spin. During this time, an average of ~24% of Non-Spin was provided using online capacity and by Quick Start Generation Resources. This type of Non-Spin is always available to SCED to dispatch (with an offer floor of \$75) and no operator action is needed to deploy this capacity.

Deployment Start Time	Deployment Duration	Max Deployment (MW)
2/19/2024 5:46	1:04:01	1389.9
3/18/2024 19:24	1:04:36	1302.2



**Key Takeaway:** All recent Non-Spin deployments were to meet 30-minute ramping needs. Non-Spin performed well in all deployments.

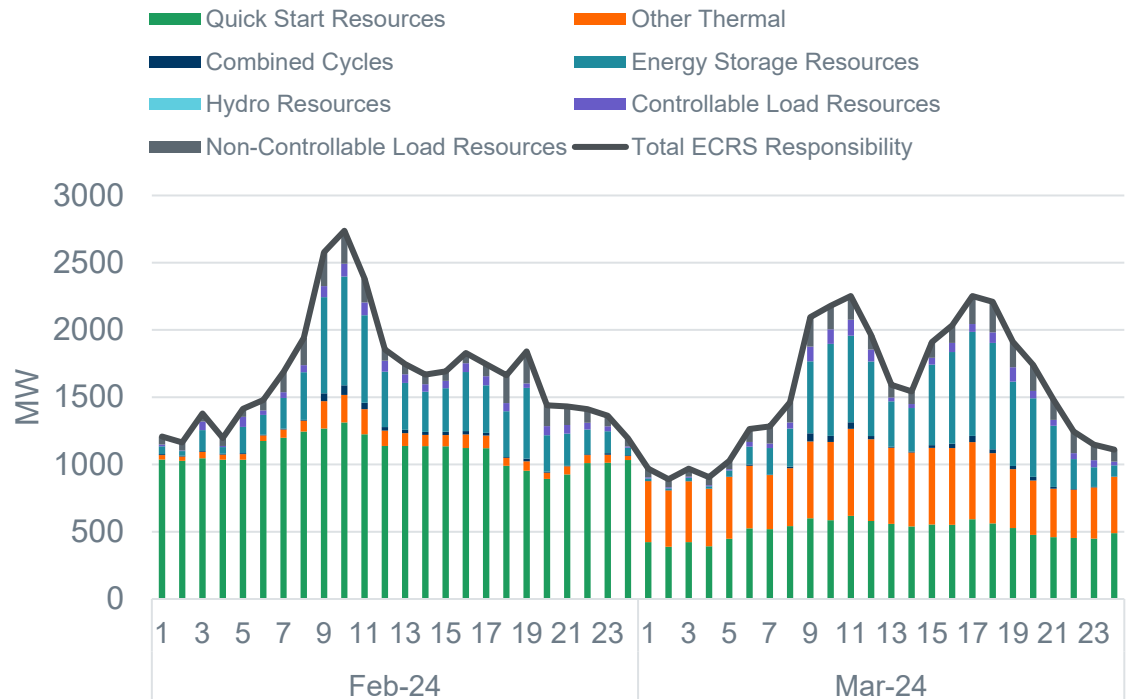


# ERCOT Contingency Reserve Service (ECRS) Release for Feb 2024 to Mar 2024

Between Feb 2024 and Mar 2024, there were 5 events that resulted in release of SCED dispatchable ECRS. 4 releases were for frequency trigger while 1 release was to meet 10-minute projected net load.

Deployment Start Time	Deployment Duration	Maximum SCED Dispatchable MW Released	Reason
2/27/2024 9:21	0:07:11	779	Frequency below 59.91Hz
2/28/2024 10:16	0:03:08	329	
3/12/2024 8:16	0:07:44	550	
3/17/2024 15:16	0:03:13	852	
3/4/2024 18:31	0:49:40	820	Available capacity not sufficient for projected Net Load

ECRS Average Responsibility by Resource Type



**Key Takeaway:** ECRS performed well in all deployments and helped recover from the events that triggered deployment.



## Responsive Reserve Service (RRS) Released for Feb 2024 to Mar 2024

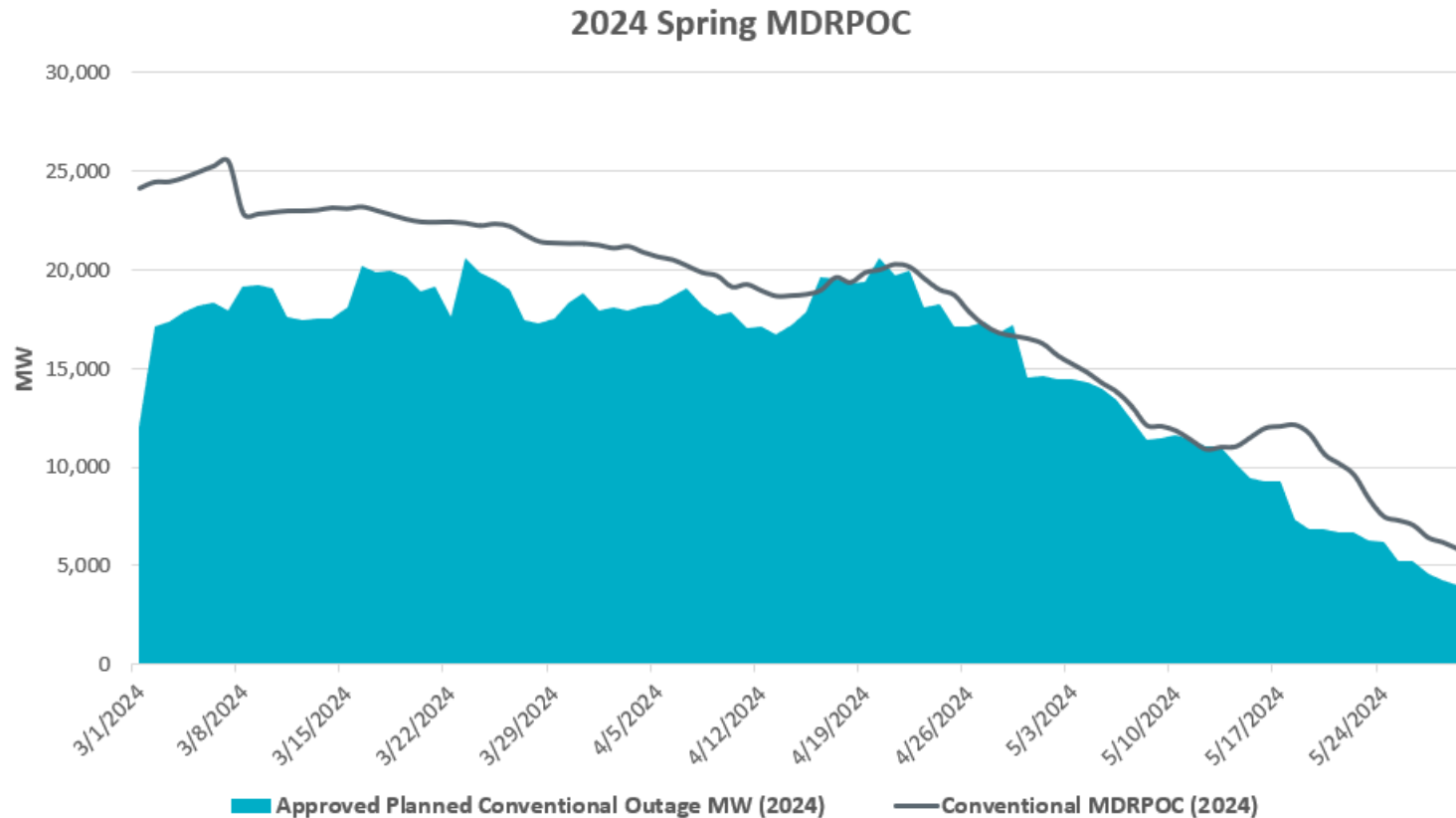
- From Feb 2024 to Mar 2024 there were no manual release of RRS
- With the implementation of ECRS, RRS capacity autonomously deploys when frequency exceeds the frequency dead-band. RRS may be manually released to SCED during scarcity events when additional capacity is needed.

**Key Takeaway:** No Manual RRS Release from Feb 2024 to Mar 2024.

# Hot Topics

- Resource Outages
- April 8 Solar Eclipse
- Release of ECRS

# Currently Approved Planned Outages versus Maximum Daily Resource Planned Outage Capacity (MDRPOC)

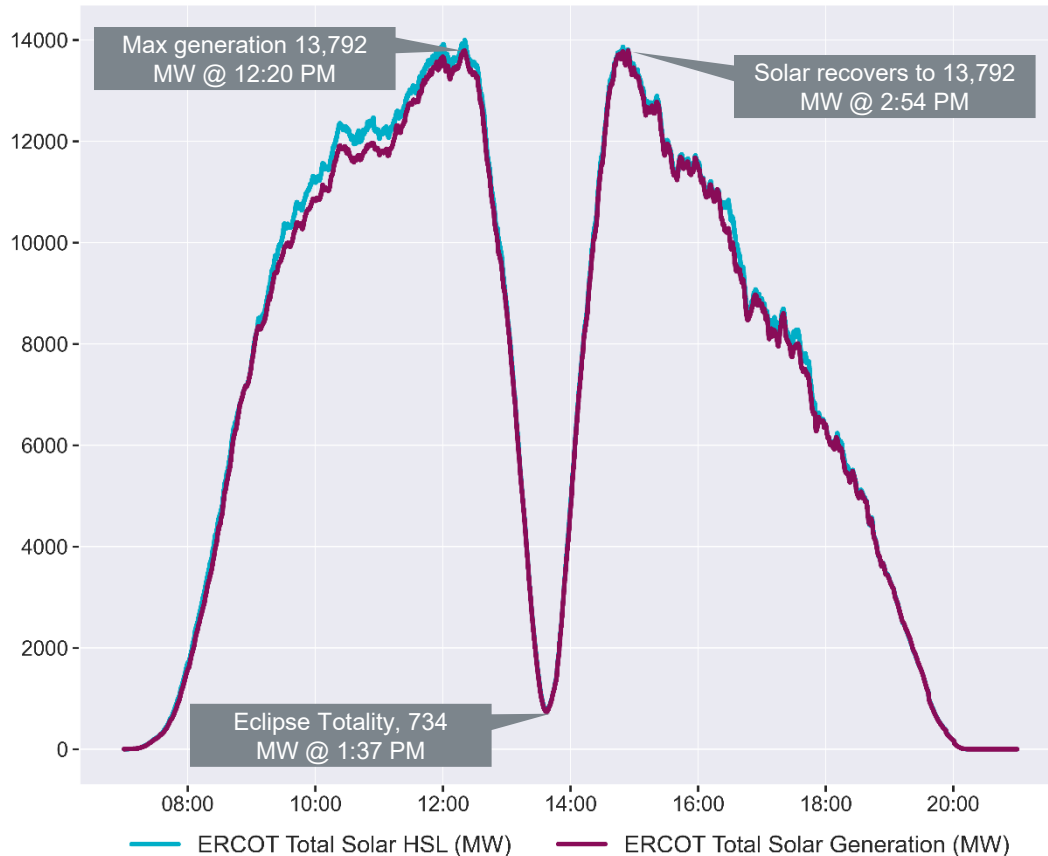


**Key Takeaway:** MDRPOC has provided sufficient margin to accommodate planned resource outages. Tight capacity days can still occur when actual conditions differ from the assumptions used to derive the MDRPOC.



# Total Solar Eclipse – Monday, April 8, 2024

Monday, April 8 2024 ERCOT Total Solar Generation

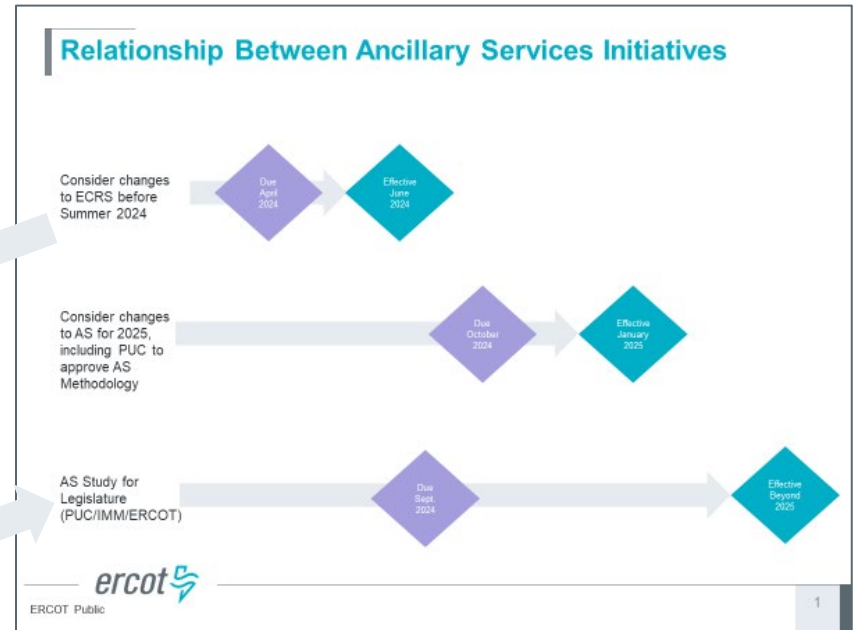


- On Monday, April 8, 2024, a total solar eclipse passed over Texas from the southwest to northeast direction.
- Solar generation was reduced during the eclipse, dropping from an instantaneous peak of 13.8 GW at the beginning of the eclipse to a low output of 0.7 GW at 1:36 p.m., and then rising to approximately 13.8 GW by 3:10 p.m.
- ERCOT procured additional Ancillary Services (AS), committed additional generation, took manual actions to increase ramping capability, and deployed AS to maintain reliability.

**Key Takeaway:** On April 8<sup>th</sup>, 2024, a total solar eclipse passed over Texas impacting solar generation. ERCOT used available tools to balance the system.

# ECRS Release

- During review of Ancillary Services (AS) Methodology for 2024, ERCOT committed to revisit ERCOT Contingency Reserve Service (ECRS) prior to summer, based on feedback from IMM
  - Already reduced quantity during review of AS for 2024; not planning to reduce further – will discuss quantity criteria later in the year as part of other AS efforts
  - Instead, current focus for this summer is on whether to release ECRS “earlier” on tight days



- ERCOT has worked with IMM to develop potential mechanisms to release ECRS earlier during near-scarcity conditions, while still meeting system reliability requirements
  - One option is a continuous release of the portion of ECRS that is not used for frequency recovery behind an offer floor – however this option requires Protocol and system changes by ERCOT and Market Participants and, therefore, will not be implemented before this summer
  - The quicker option is to release blocks of ECRS automatically when SCED is short of capacity by a given amount

## ECRS Release

- ERCOT proposed NPRR 1224 to formalize the mechanism to be used to release ECRS when SCED is short
  - Worked with the IMM to propose a trigger level at which this release would occur to start the stakeholder discussion
  - Expected that the ultimate trigger would be determined through the NPRR approval process, which would balance the impacts of this change on various stakeholders
- The Protocol Revision Subcommittee tabled NPRR 1224 at its April meeting
  - This makes a decision on NPRR 1224 unlikely before summer
  - Without this guidance on an appropriately-balanced trigger, ERCOT intends to release ECRS in a similar manner to last year until such guidance is received
- ERCOT will, in parallel, be filing a separate NPRR to implement the “offer floor” option so that it can be considered

