



Item 7.2: System Operations Update

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Reliability and Markets Committee Meeting

ERCOT Public

June 17, 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 or Board; for discussion only

- **Key Takeaways**

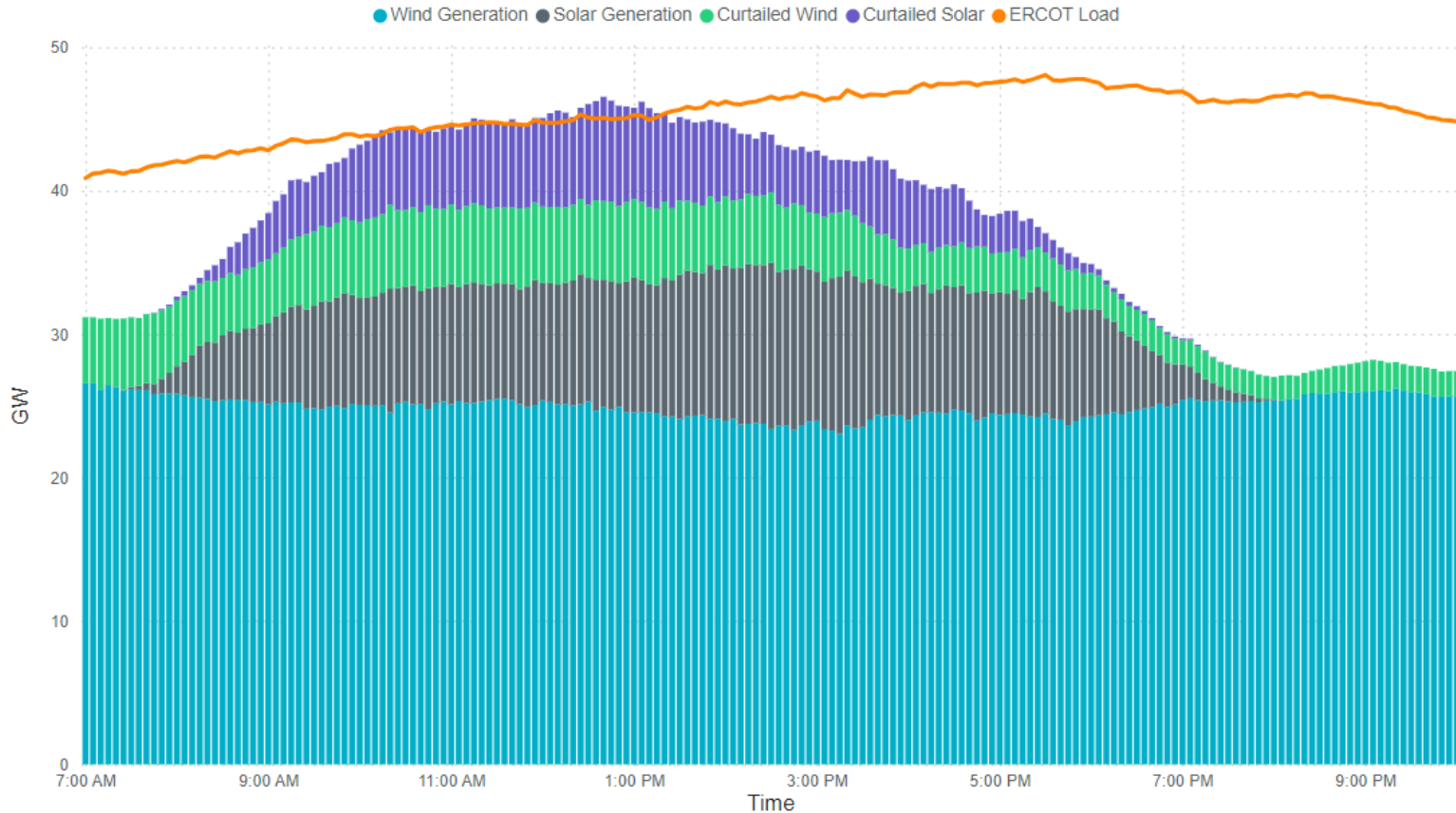
- All key operational metrics are trending well, and all Ancillary Services are performing well.
- Renewable Penetration Record of 75.67% (34,958 MW) on March 29, 2024.
- Non-IRR Forced Outage was slightly higher in 2024 Spring.
- Expected 4CP Response is up to 5.7 GW for 2024 Summer.

Hot Topics

- March 29th Renewable Record
- Spring Outage Comparison
- Demand Response Impact

New Renewable Penetration Record: March 29, 2024

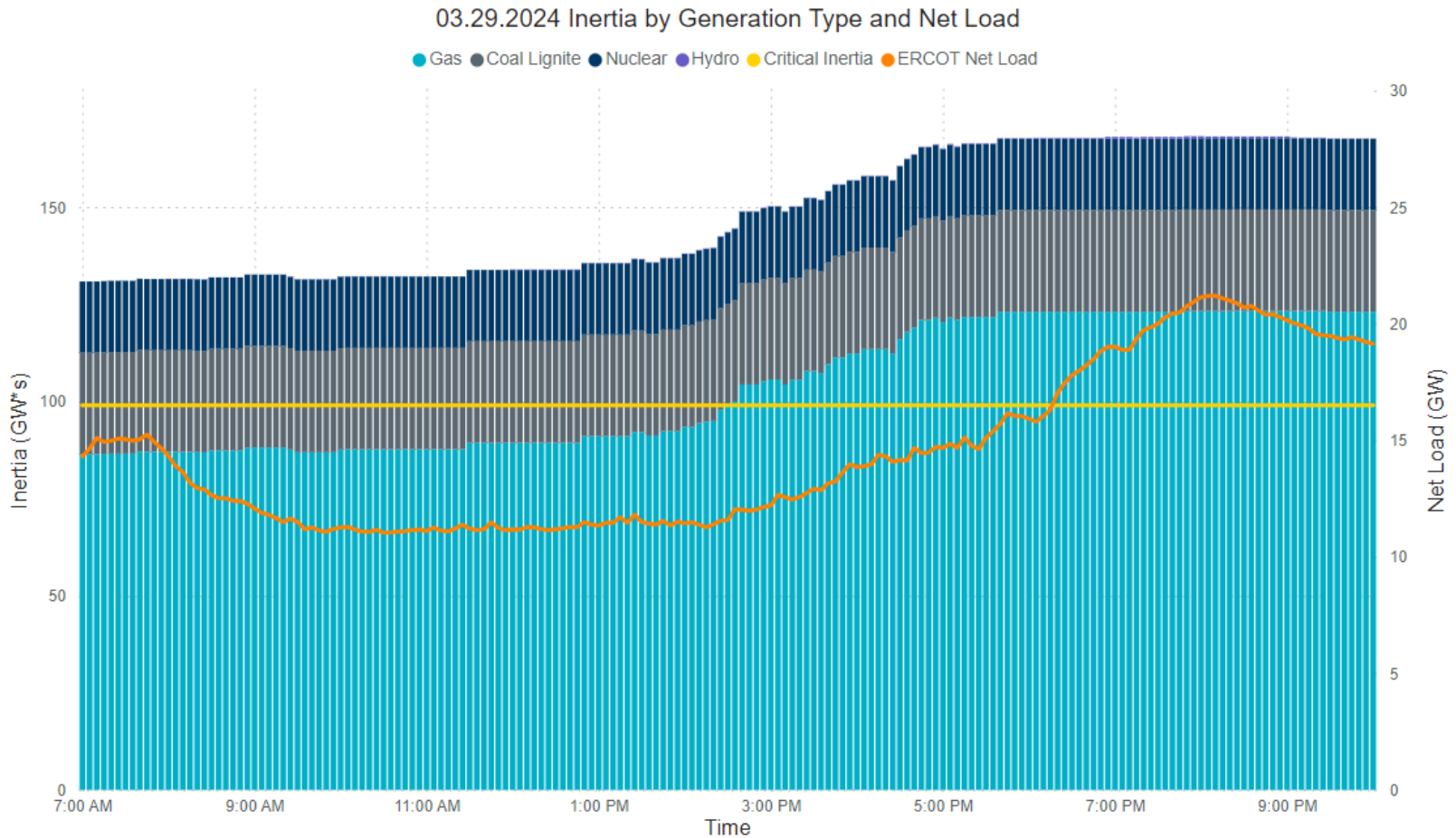
03.29.2024 IRR Generation and Curtailment



Key Takeaway: New Renewable Penetration Record

- 75.67% (34,958 MW) at 2:13 PM
- Renewable Penetration could have been higher without curtailment due to power balance and transmission constraints.

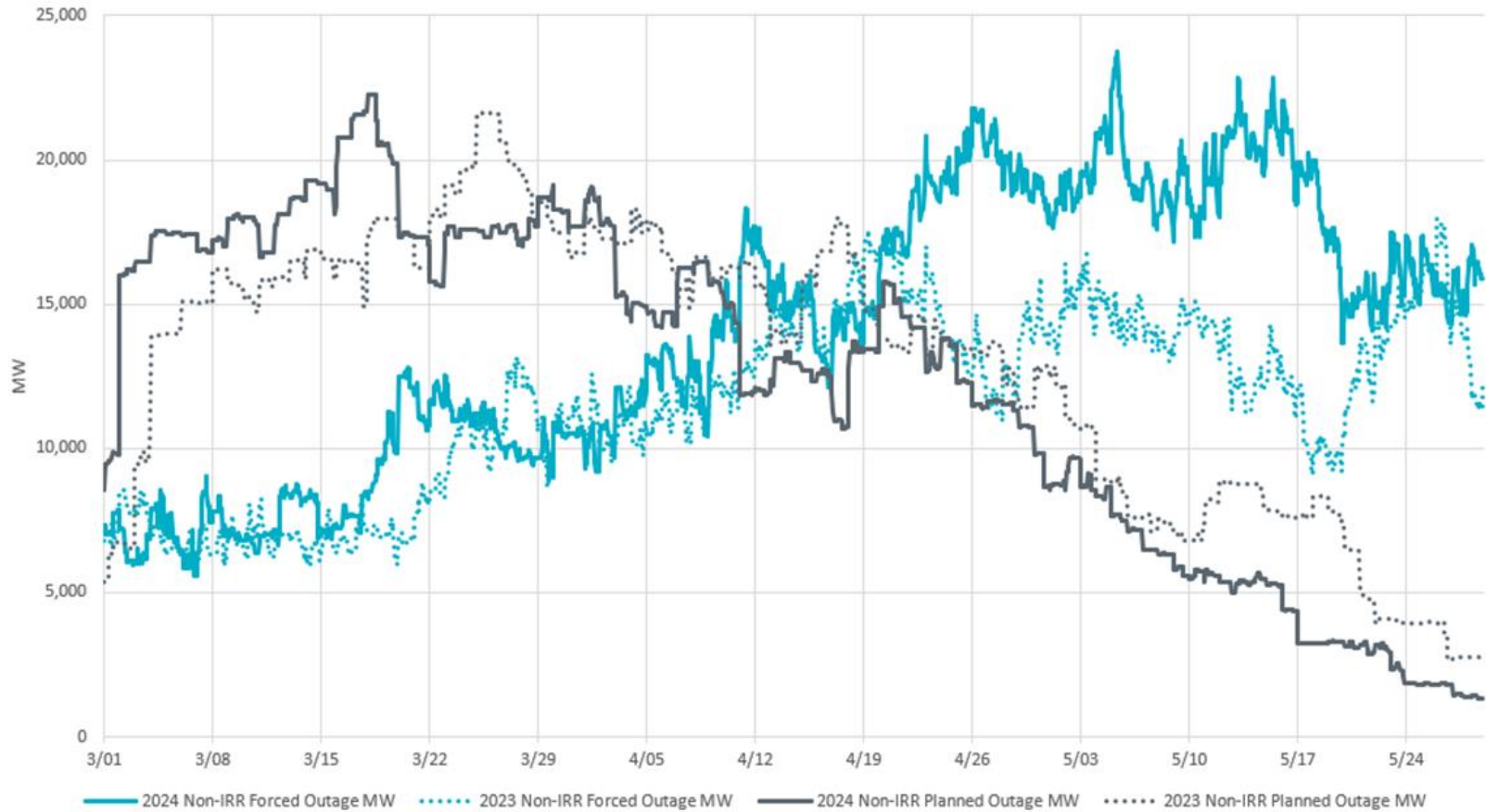
New Renewable Penetration Record: March 29, 2024



Key Takeaway: System Inertia was not a concern during this high IRR period

Spring Outage Comparison

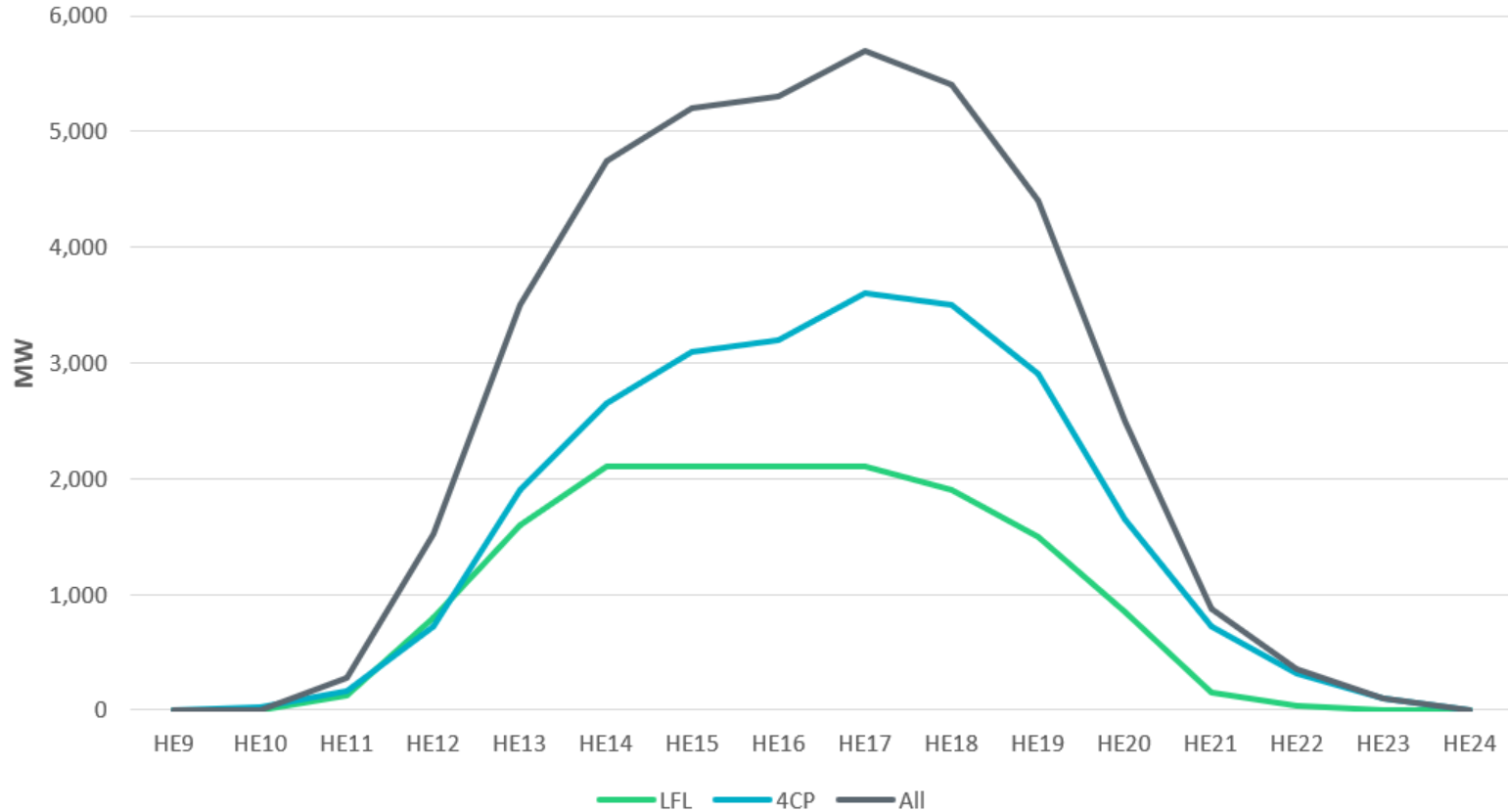
Spring Non-IRR Outage MW (2023 and 2024)



Key Takeaway: Amount of Non-IRR Forced Outages was slightly higher in 2024 between mid-April and mid-May.

Expected Demand Response (2024 Summer)

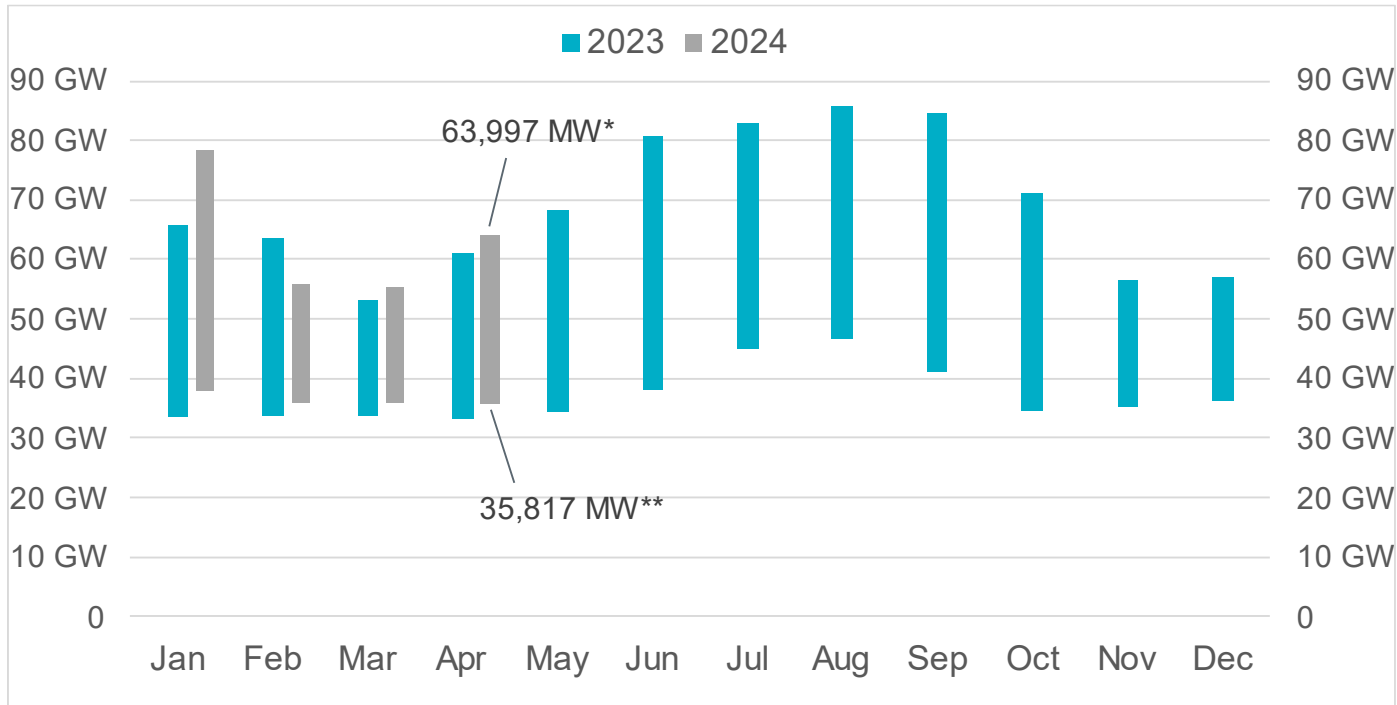
Expected 4CP Reduction For Summer 2024 Peak Day



Key Takeaway: Expected 4CP Response is similar on each of the four summer months up to 5.7 GW which includes price sensitive demand.

Appendix

Demand



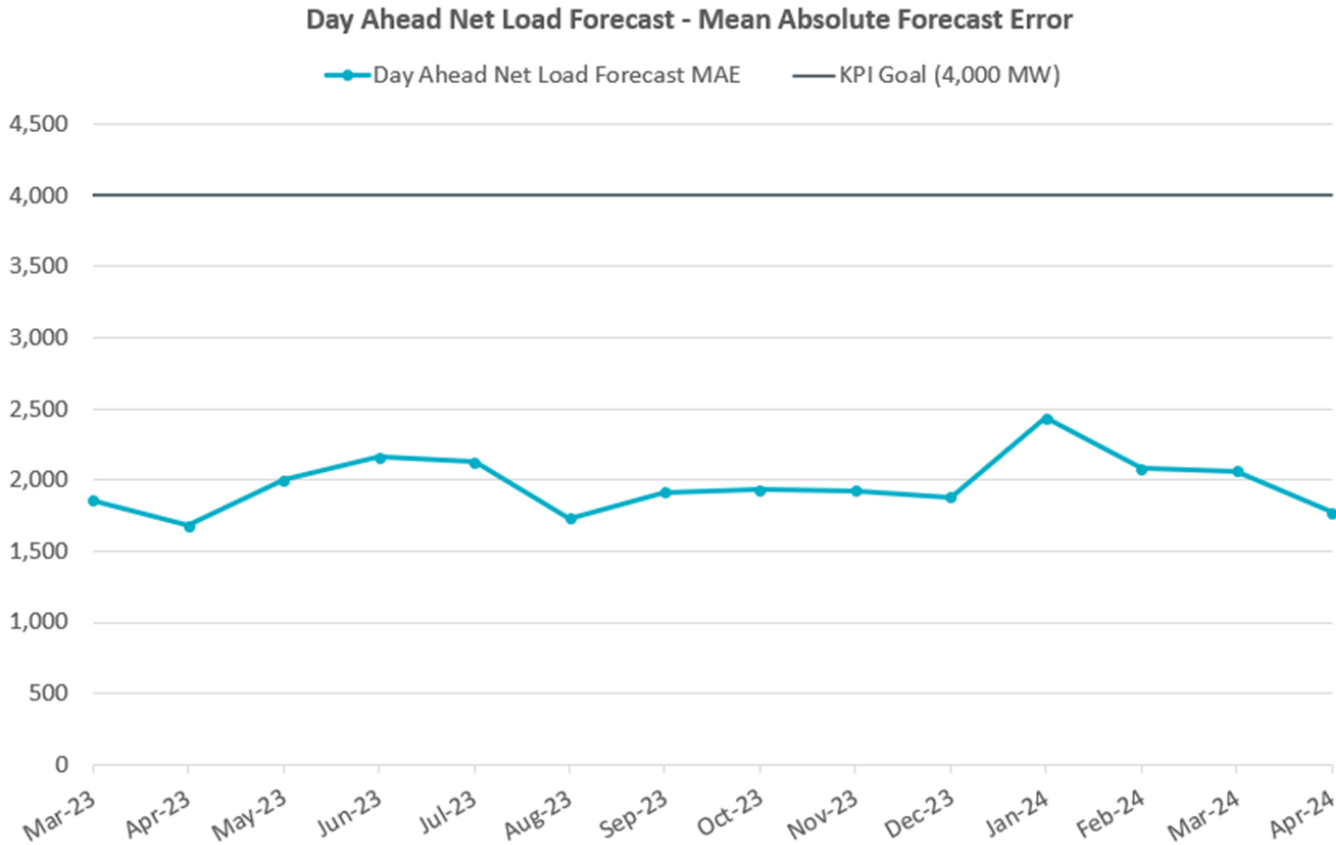
*Based on the maximum net system hourly value from May release of Demand and Energy 2024 report.

**Based on the minimum net system 15-minute interval value from May 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 record of 63,997 MW* for the month of April on 4/30/2024; This is 3,002 MW more than the April 2023 demand of 60,995 MW.

Forecast Performance



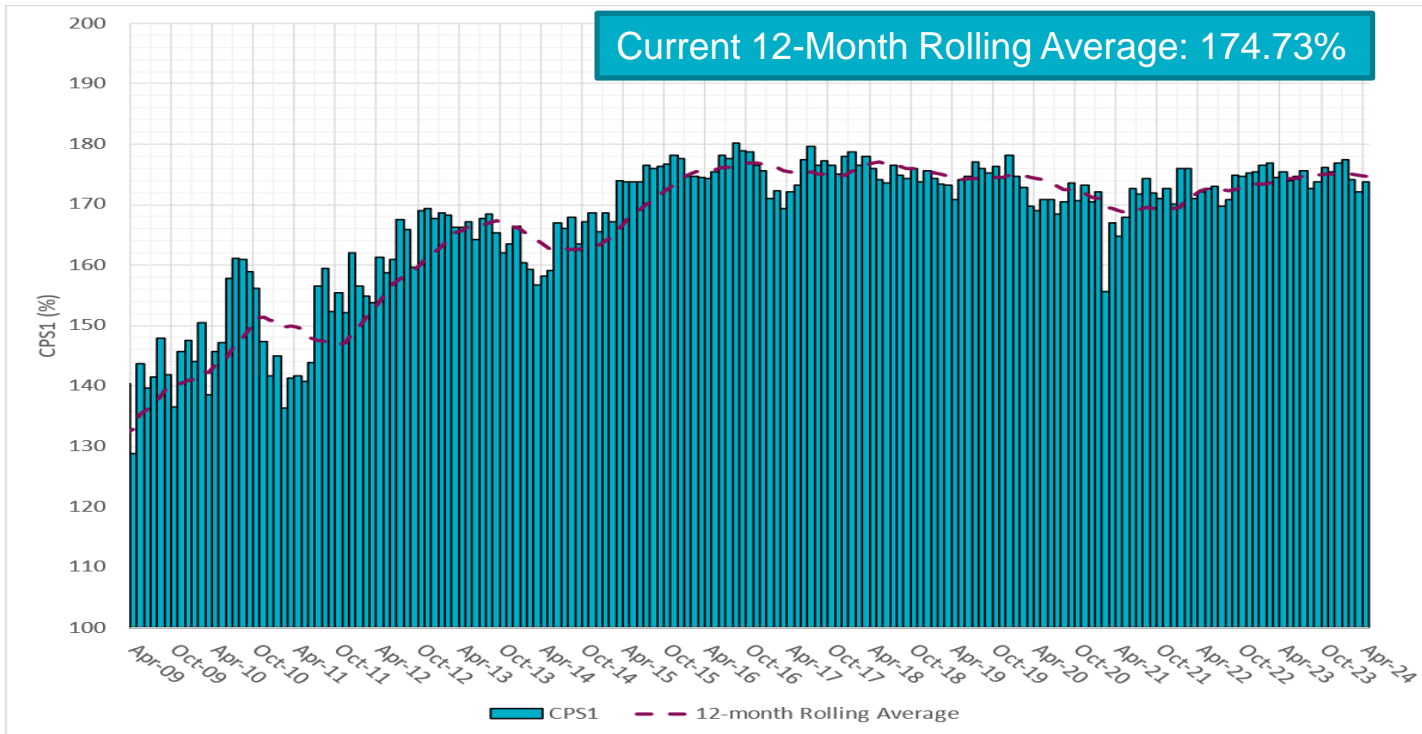
Key Takeaway: Day Ahead Net Load Forecast Mean Absolute Forecast Error is a new Key Performance Indicator from 2023. This metric has met the target and has been trending well.



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%



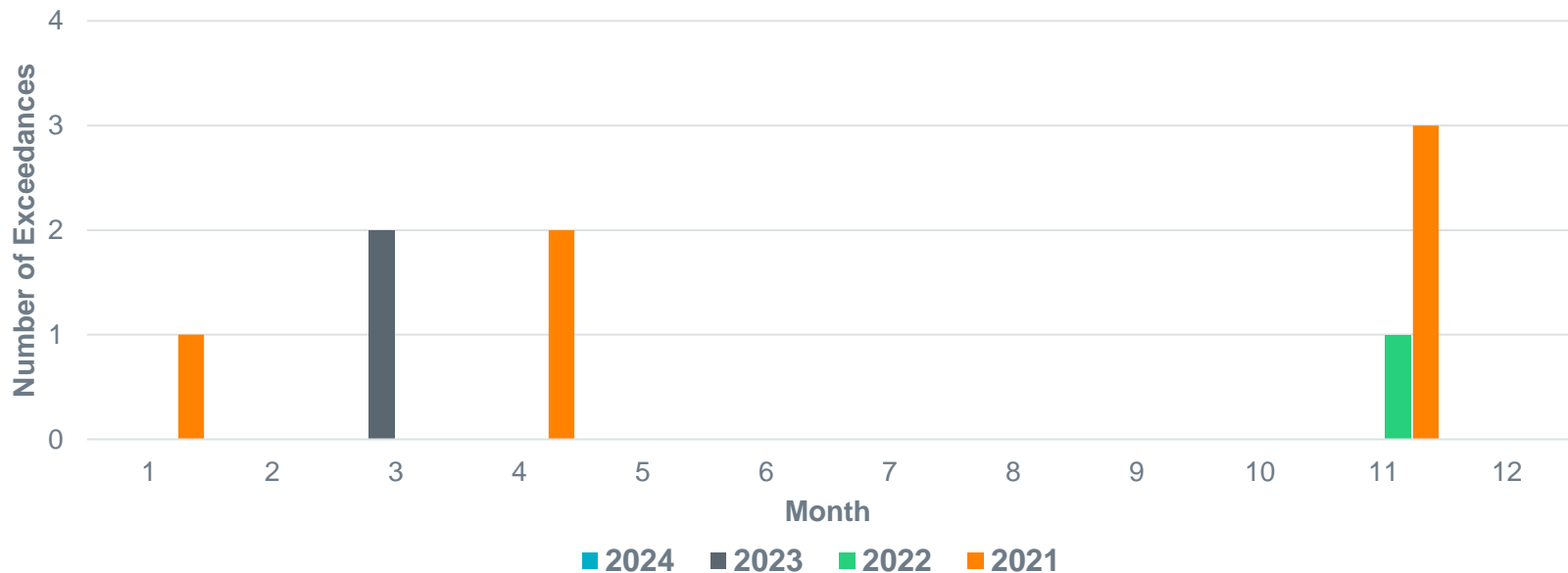
Key Takeaway: Frequency control has been performing extremely well.

Transmission Limit Control

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

Monthly IROL Exceedances (Jan 2021 to April 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.



Regulation Service Deployments for Apr 2024



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

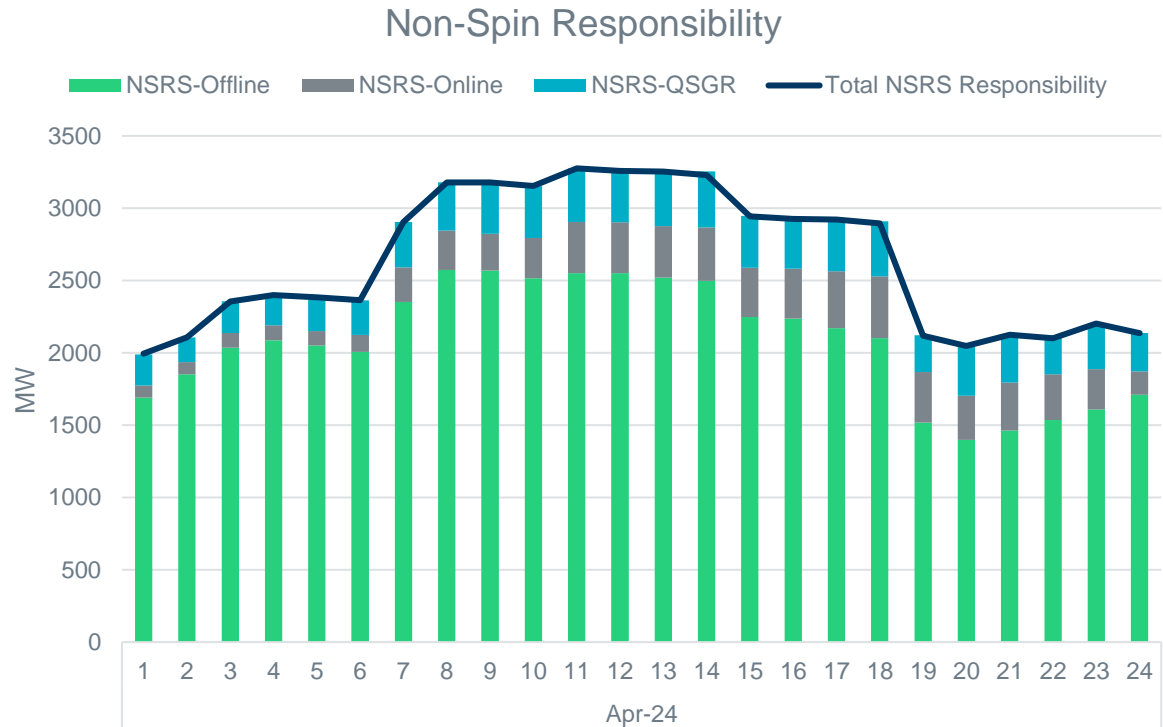


Non-Spinning Reserve Service (Non-Spin) Deployments for Apr 2024

In April 2024, there were 3 events that resulted in deployment of offline Non-Spin.

During this time, an average of ~21% 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)
4/4/2024 18:26	1:33:35	1341.5
4/8/2024 12:46	1:02:35	2434.2
4/28/2024 19:05	2:15:38	356.1



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

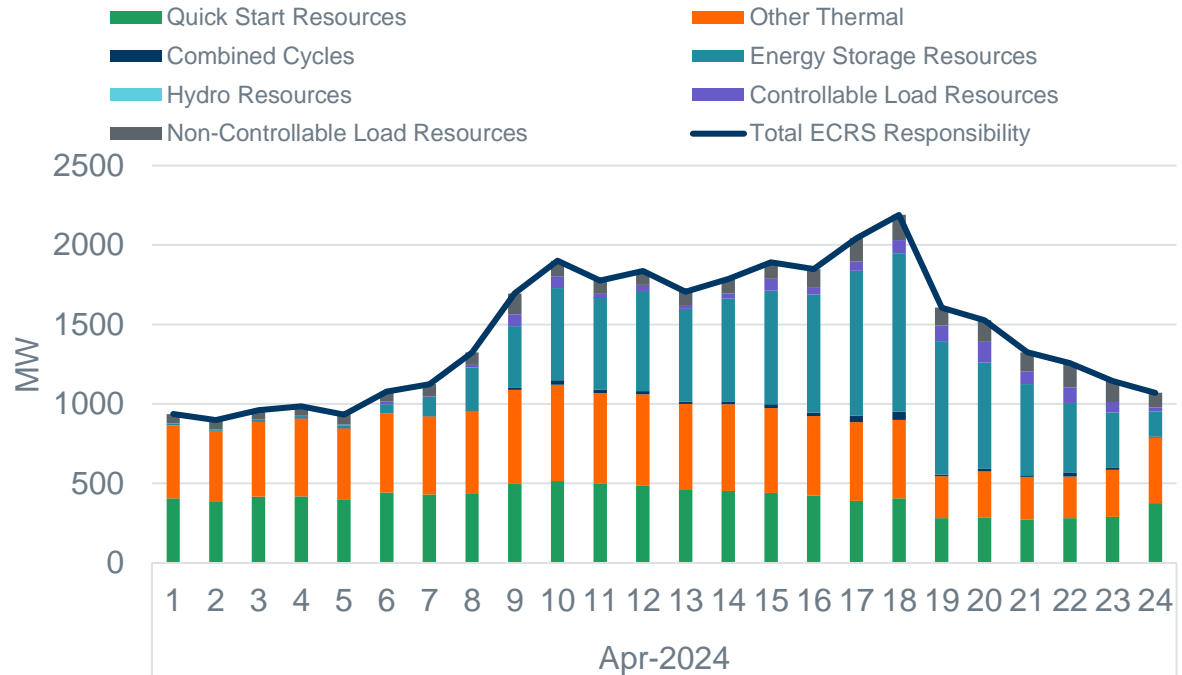


ERCOT Contingency Reserve Service (ECRS) Release for Apr 2024

In April 2024, there were 2 events that resulted in release of SCED dispatchable ECRS. Both releases were to meet 10-minute projected net load.

Deployment Start Time	Deployment Duration	Maximum SCED Dispatchable MW Released	Reason
4/16/2024 19:58	0:34:24	200	Available capacity not sufficient for projected Net Load
4/28/2024 19:47	1:23:24	1200	

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 Apr 2024

- In April 2024, there was 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 Apr 2024.