



Item 8.2: System Operations Update

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Vice President, System Operations

Reliability and Markets Committee Meeting

ERCOT Public

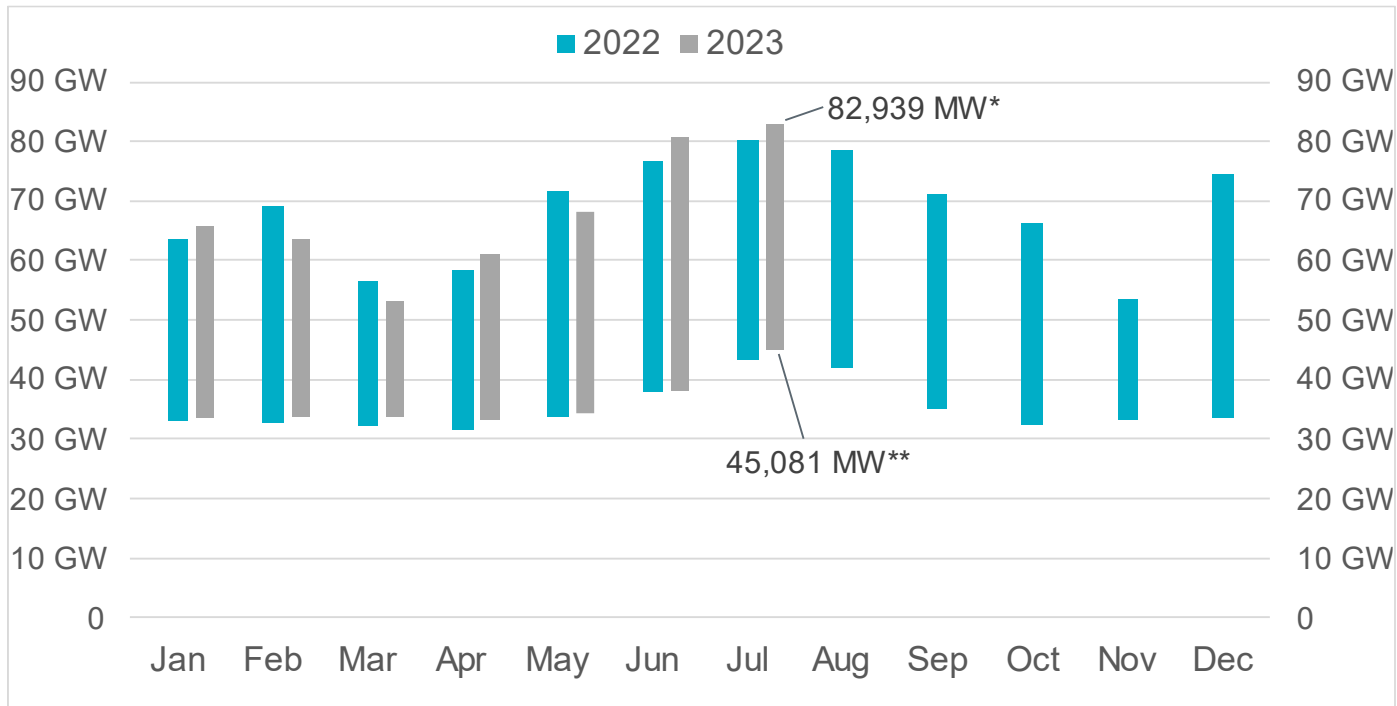
August 30, 2023

Overview

- **Purpose**
 - Provide an update on key operational metrics to the 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
 - Increase in peak demand since last year is due to both economic growth and hotter temperatures
 - ERCOT is preparing for solar eclipse on October 14

Demand



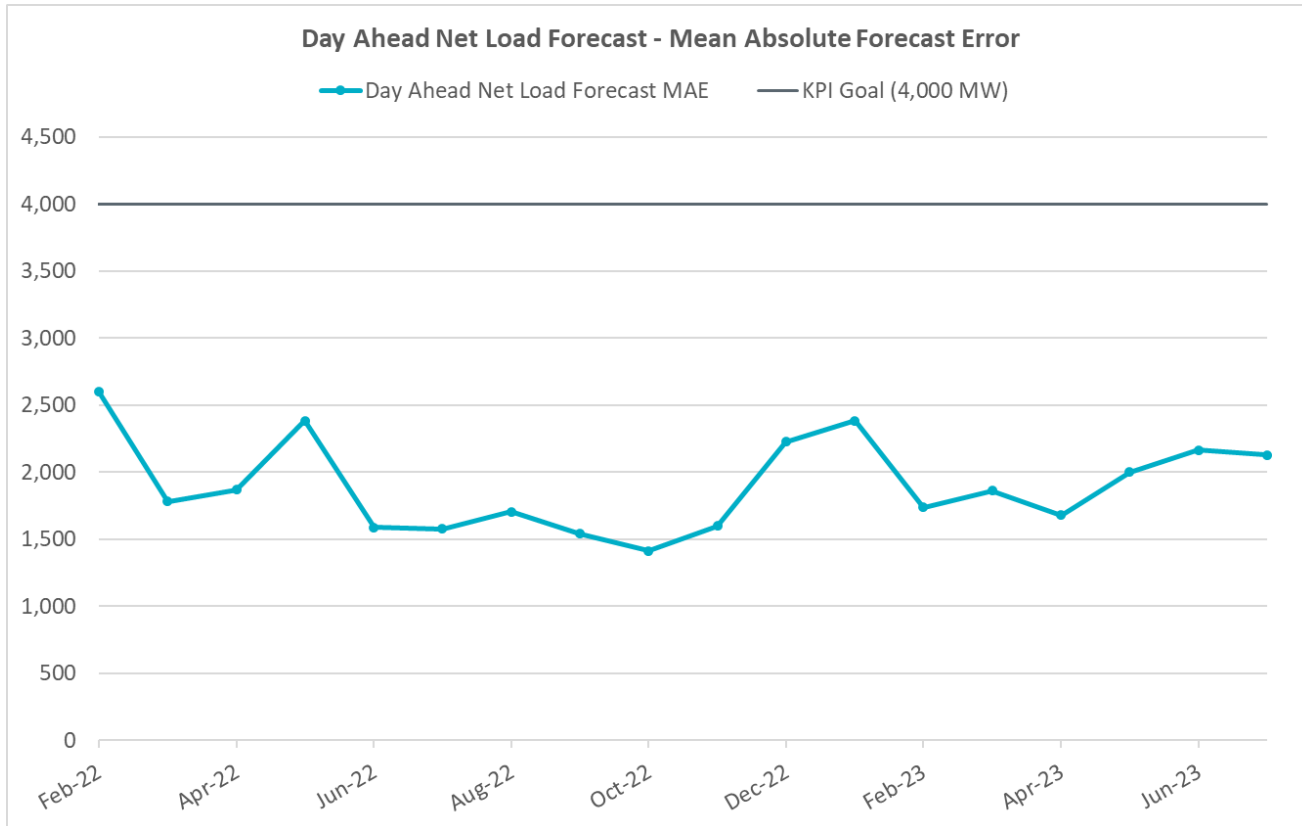
*Based on the maximum net system hourly value from July release of Demand and Energy 2023 report.

**Based on the minimum net system 15-minute interval value from July release of Demand and Energy 2023 report.

Data for latest two months are based on preliminary settlements.

Key Takeaway: ERCOT set a new all-time record of 82,939 MW* for the month of July on 7/31/2023; this was 2,152 MW more than the previous all-time record of 80,787 MW set on 6/27/2023. This is 2,791 MW more than the July 2022 demand of 80,148 MW.

Forecast Performance

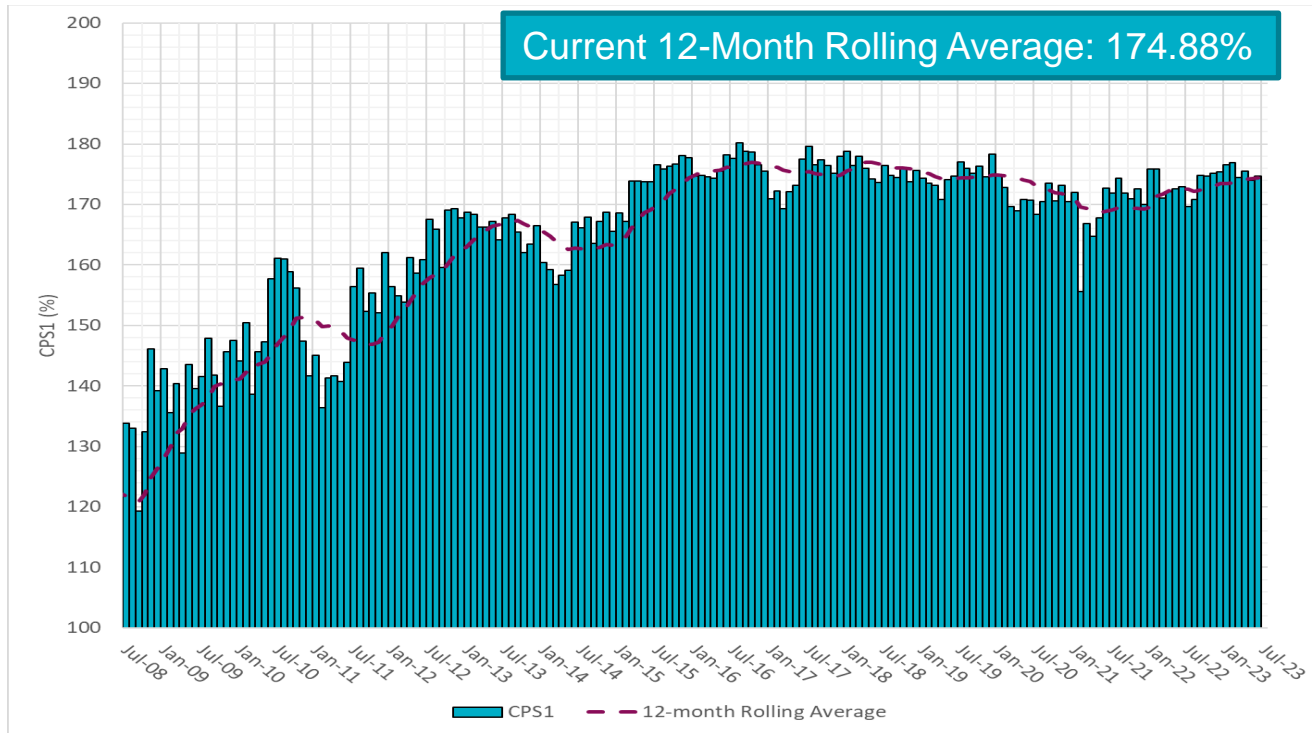


Key Takeaway: Day Ahead Net Load Forecast Mean Absolute Forecast Error is a new Key Performance Indicator for 2023. This metric has met the target and has been trending well.

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%.

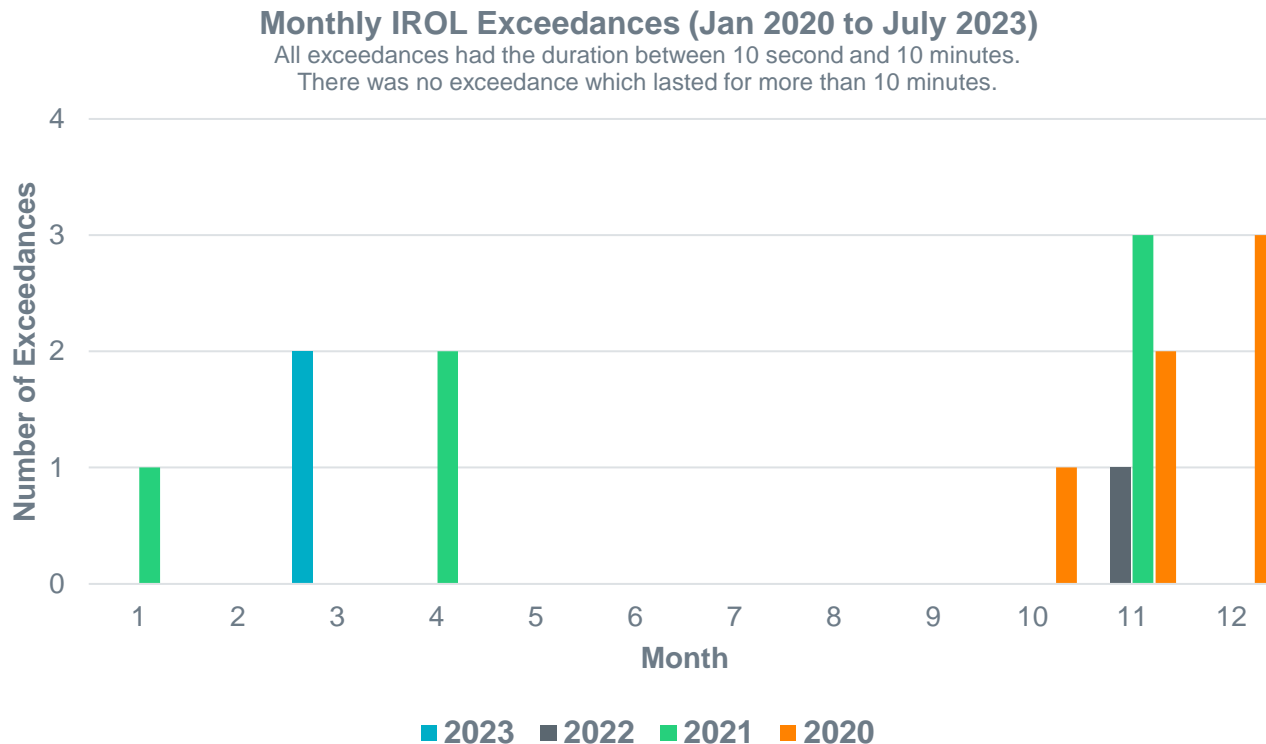
12 Month Rolling Average CPS1 KPI
Target > 140 % | Stretch > 150%



Key Takeaway: Frequency control has been performing extremely well.

Transmission Limit Control

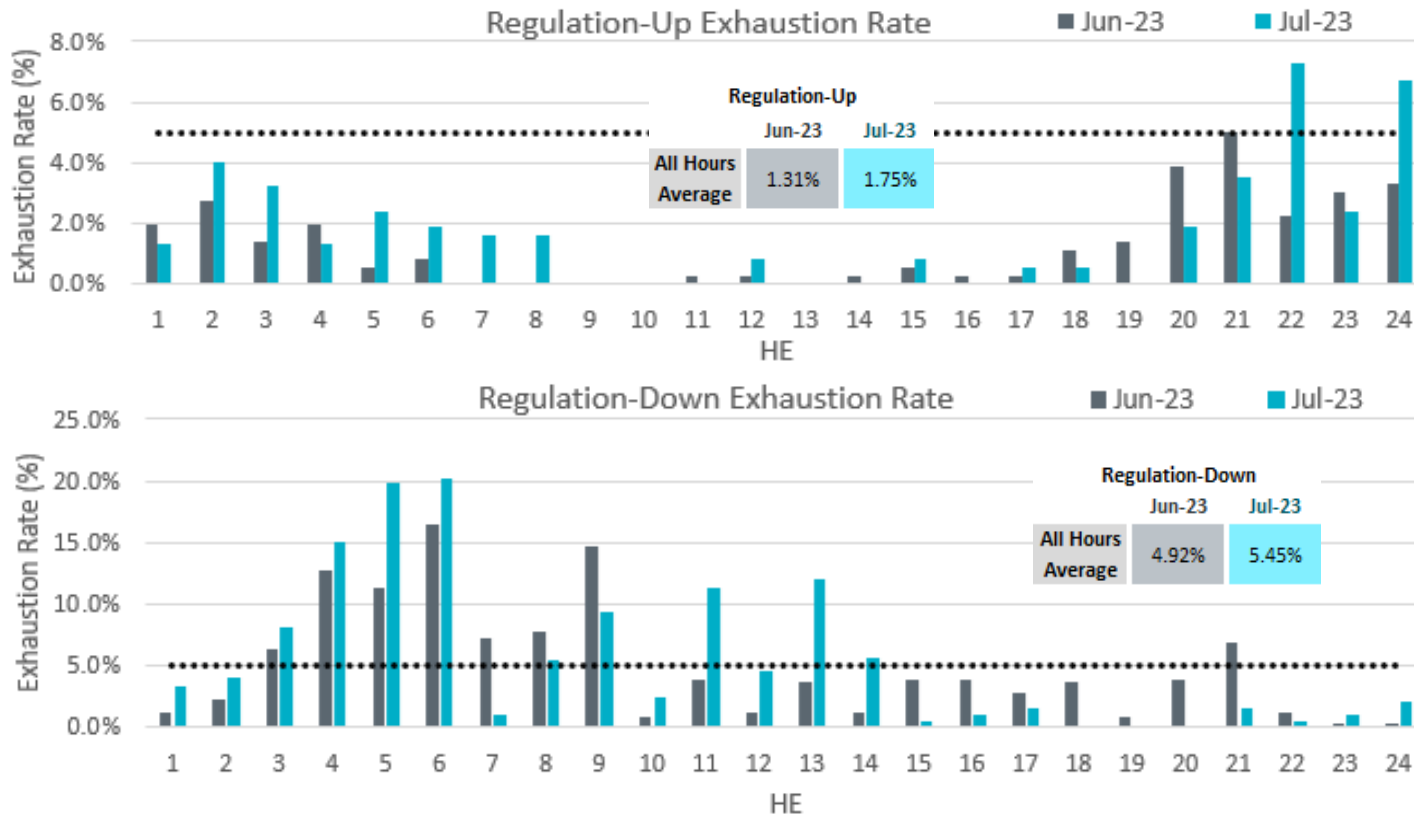
- The most-recent Interconnection Reliability Operating Limit (IROL) exceedance occurred in March 2023.



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

Ancillary Services Performance

Regulation Service Deployments between June and July 2023



Exhaustion Rate = % of 5 min intervals when all available Reg is less than 5 MW

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



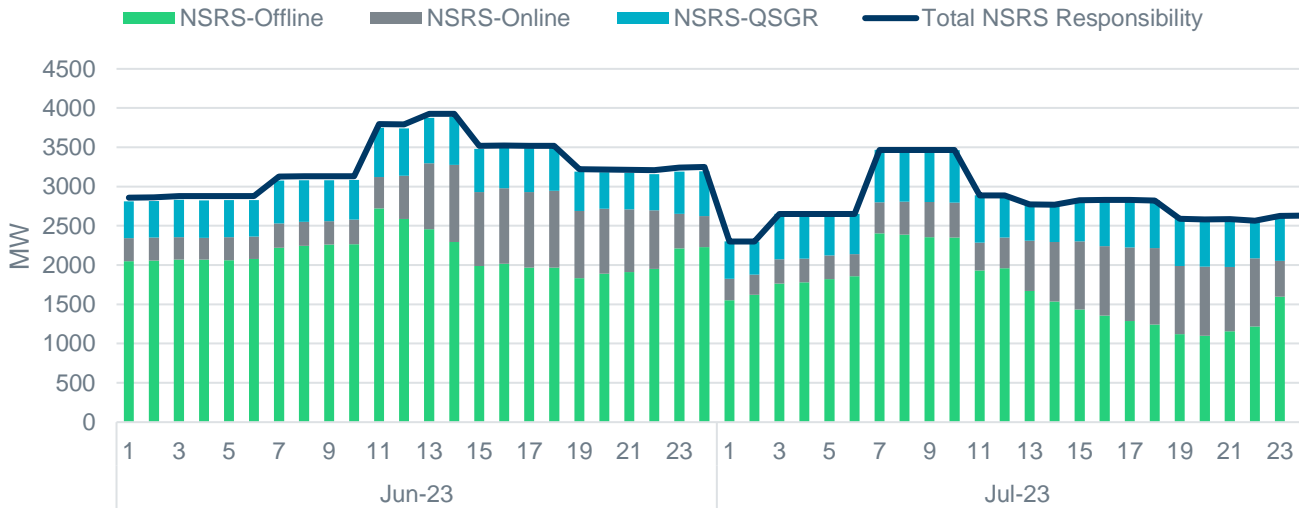
Non-Spinning Reserve Service (Non-Spin) Deployments in Jun and Jul 2023

Deployment Start Time	Deployment End Time	Deployment Duration	Max Deployment (MW)	Reason
6/10/2023 19:16	6/10/2023 20:32	01:16:00	328	Available Headroom not sufficient for projected 30-minutes net load ramp
6/18/2023 19:36	6/18/2023 20:22	00:46:00	447.5	
6/20/2023 16:24	6/20/2023 21:09	04:45:00	378.7	
7/10/2023 19:21	7/10/2023 20:23	01:02:00	1080.9	

Between Jun 2023 and Jul 2023, there were 4 events that resulted in deployment of offline Non-Spin.

Note that, between Jun 2023 and Jul 2023, an average ~36 % 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.

Non-Spin Responsibility



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



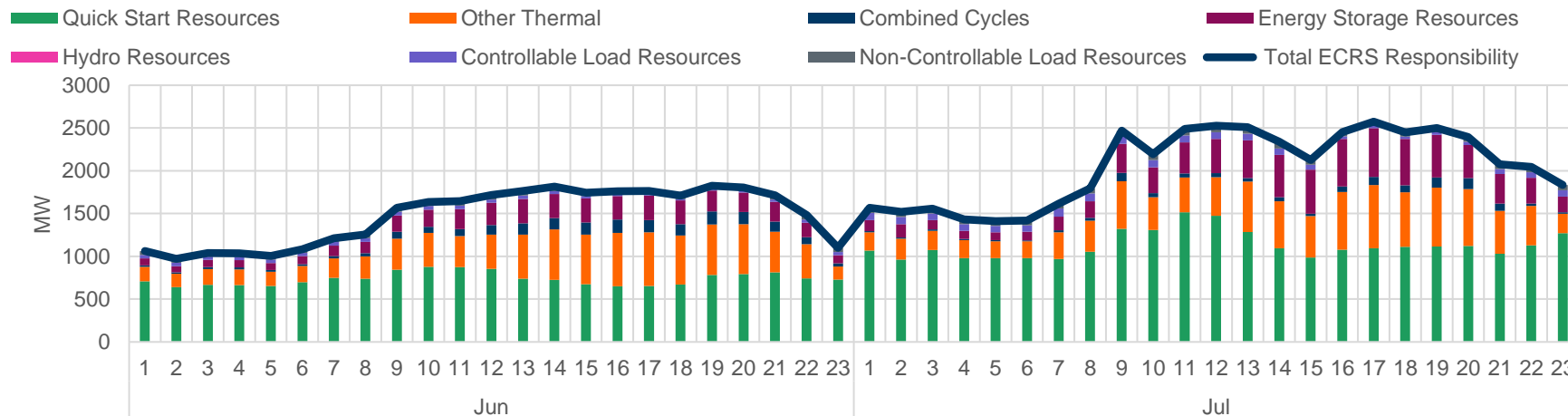
ERCOT Contingency Reserve Service (ECRS) Deployments in Jun and Jul 2023

Deployment Start Time	Deployment End Time	Deployment Duration	Maximum SCED Dispatchable MW Released	Reason
6/16/2023 18:31	6/16/2023 18:36	0:04:40	430	Frequency below 59.91Hz
7/6/2023 21:05	7/6/2023 21:12	0:07:20	724	
7/16/2023 10:41	7/16/2023 10:45	0:04:20	133	
7/31/2023 18:35	7/31/2023 18:44	0:08:08	809	
6/14/2023 19:20	6/14/2023 19:33	0:12:28	600	Available capacity not sufficient for projected Net Load
6/18/2023 19:20	6/18/2023 19:45	0:25:24	200	
6/20/2023 16:21	6/20/2023 21:01	4:39:56	1900	
7/8/2023 19:57	7/8/2023 20:04	0:06:36	500	
7/10/2023 19:21	7/10/2023 19:43	0:22:20	700	
7/31/2023 19:35	7/31/2023 20:32	0:56:08	400	

From the implementation of ECRS on Jun 10 through July, there were 10 events that resulted in deployment of SCED dispatchable ECRS.

Note that, between Jun 2023 and Jul 2023, an average ~96.6 % of ECRS was provided by SCED dispatchable Resources.

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) Deployments in June and July 2023

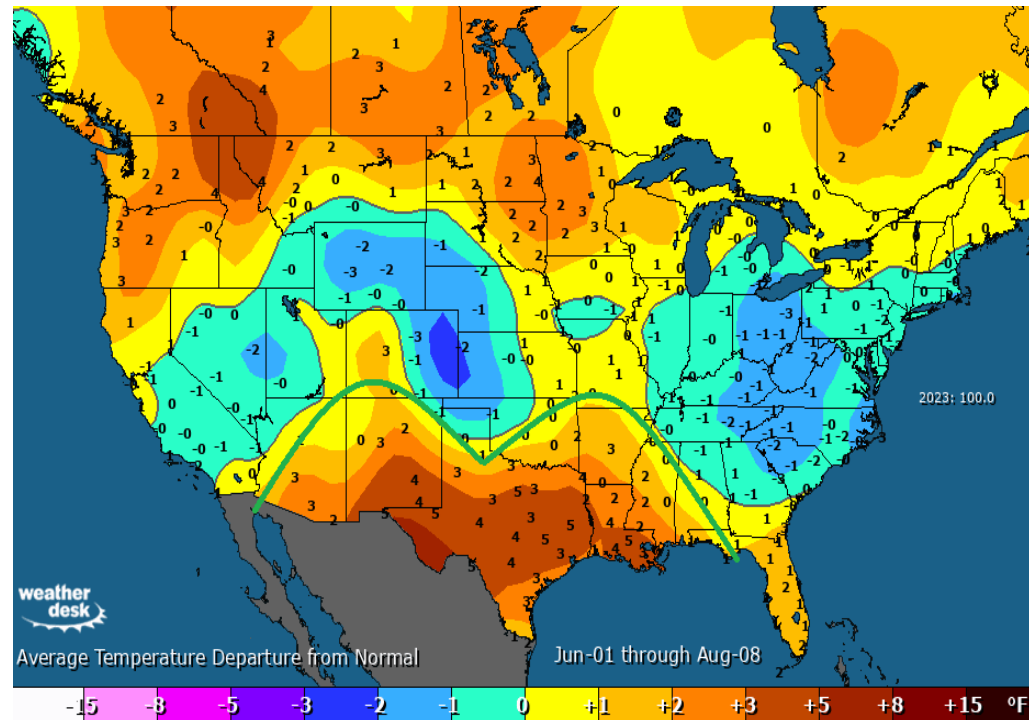
- In June 2023 and July 2023 there were no manual deployment of RRS.
- With implementation of ECRS, deployment approach of RRS has changed. RRS is either autonomously deployed when frequency is outside the frequency dead-band or manually deployed.

Key Takeaway: No manual RRS Deployments in June and July 2023.

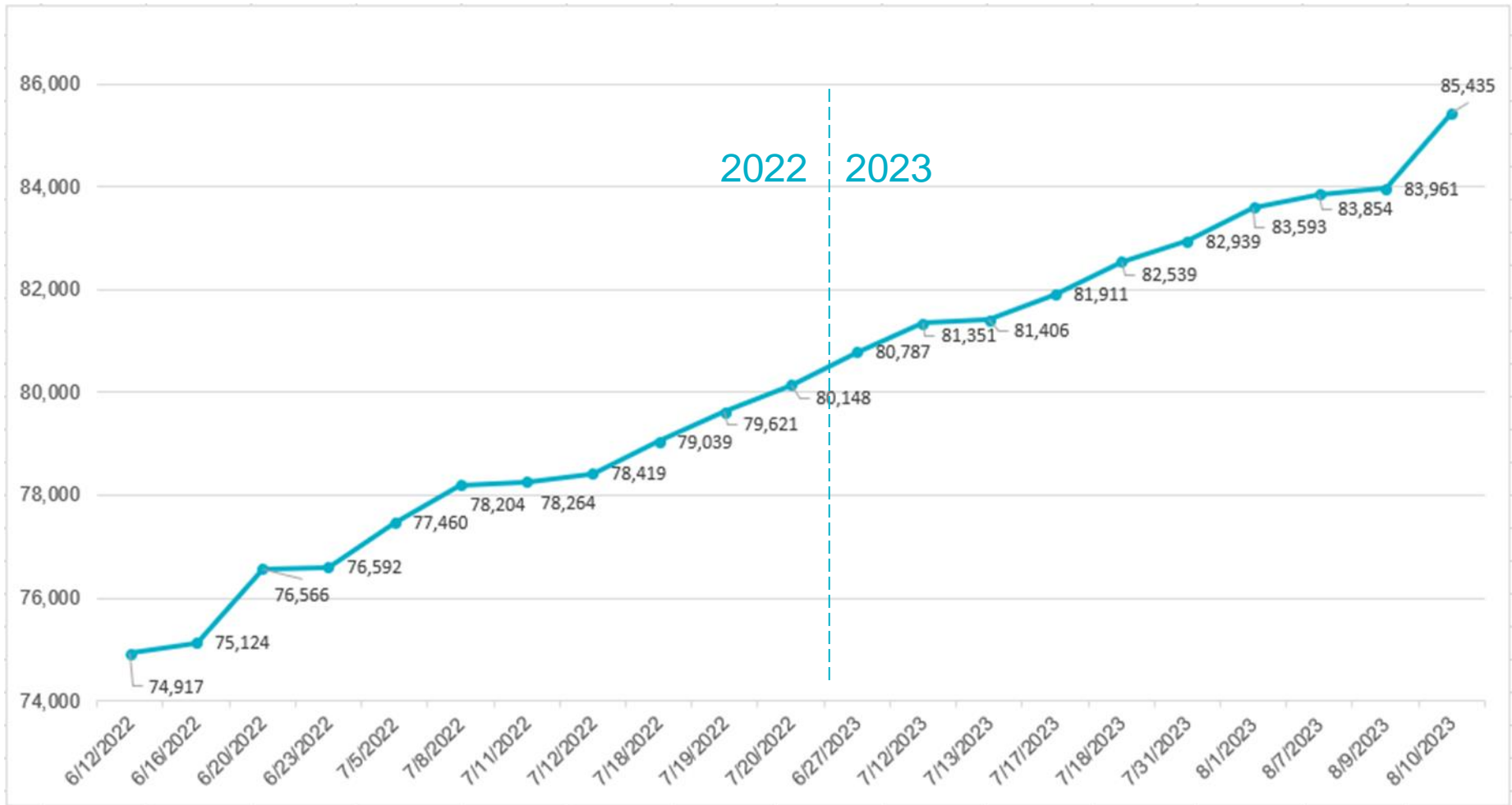
Hot Topics

Weather Dominated by “Heat Dome”

- A blocking upper-level ridge that has suppressed the seasonal showers along the coast and blocked frontal activity in the NCENT region. This pattern has added to the drought conditions and allowed temperatures to remain well above normal for a record stretch this summer.



All Time Peak Demand 2022-2023 (MW)



Solar Eclipse - October 14, 2023

- On Saturday, October 14, 2023, an annular solar eclipse will pass through the ERCOT region.
- The eclipse will impact PhotoVoltaic Generation Resources (PVGR) in ERCOT between 10:15AM and 1:40PM CDT. PVGRs will experience a maximum coverage of sun ranging from 76% to 90%, with the system total PVGR clear sky capability reducing to a minimum of 13% at the time of maximum impact at 11:50AM CDT.
- ERCOT is working with solar forecast vendors to ensure the forecasting models account for the impact of the eclipse. ERCOT will pre-posture the system as necessary to meet both the down and up solar ramps and use Ancillary Services for additional balancing needs.

Key Takeaway: ERCOT is planning for the annular solar eclipse on October 14, 2023, and will use available tools to balance the system.

