ERCOT Monthly Operational Overview
(March 2024)

ERCOT Public
April 17, 2024

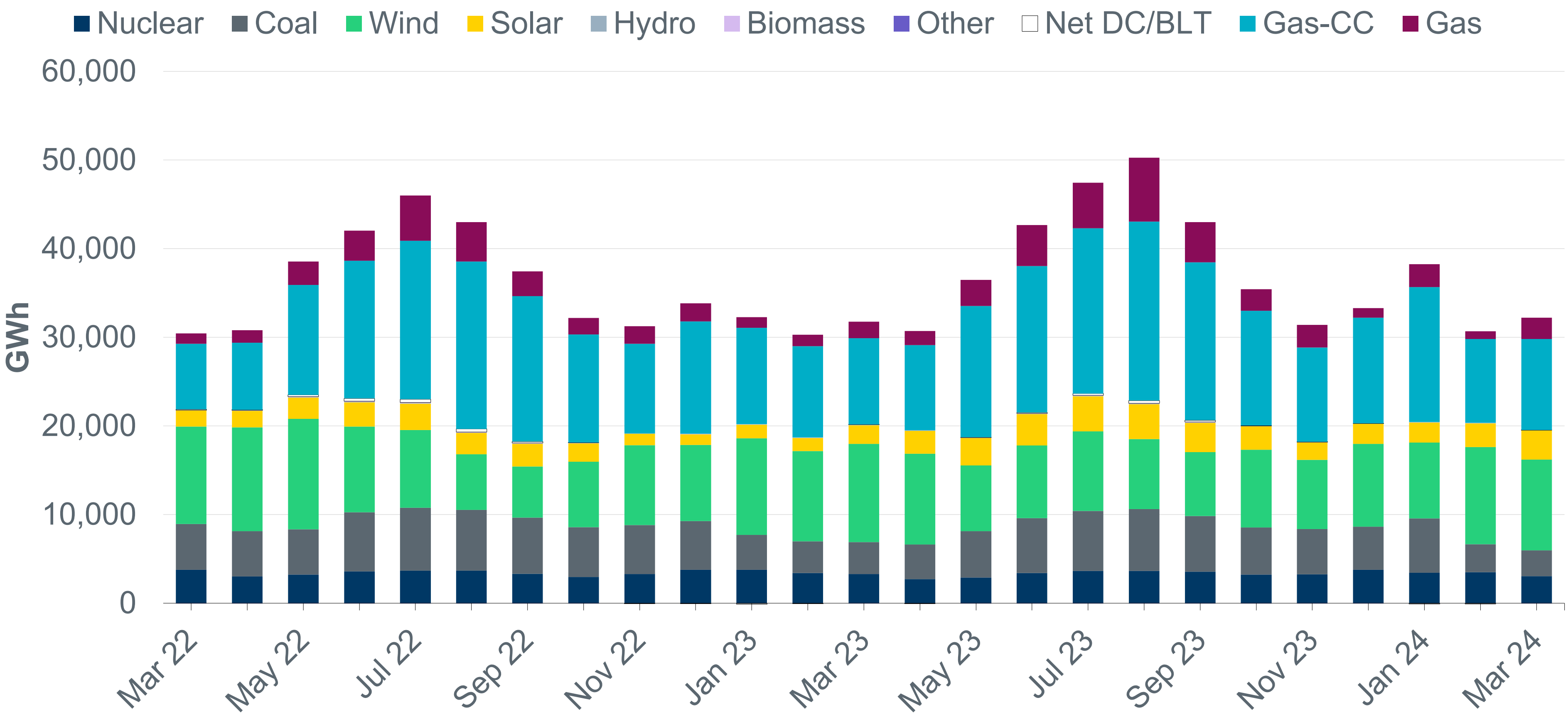
Highlights, Records and Notifications

- ERCOT's maximum peak demand for the month of March was 55,298 MW*; this is 2,204 MW more than the March 2023 peak demand of 53,094 MW.

- ERCOT issued 3 notifications:
  - 1 Advisory due to a geomagnetic disturbance
  - 2 DC Tie Curtailment Notice for DC_R due to a planned or unplanned outage

* Preliminary value from April Demand and Energy 2024 report.

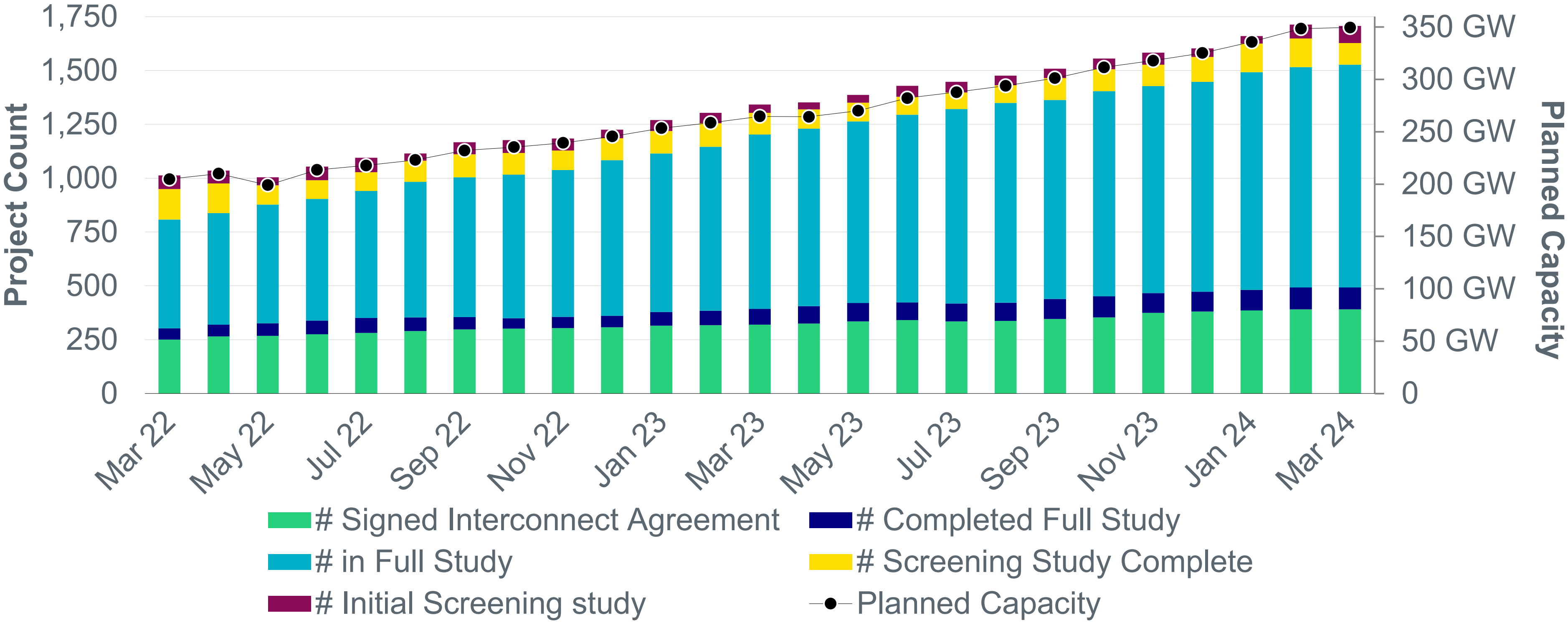
Monthly energy generation increased by 1.4% year-over-year to 32,201 GWh in March 2024, compared to 31,763 GWh in March 2023



Data for latest two months are based on preliminary settlements.

Generation Interconnection activity by project phase

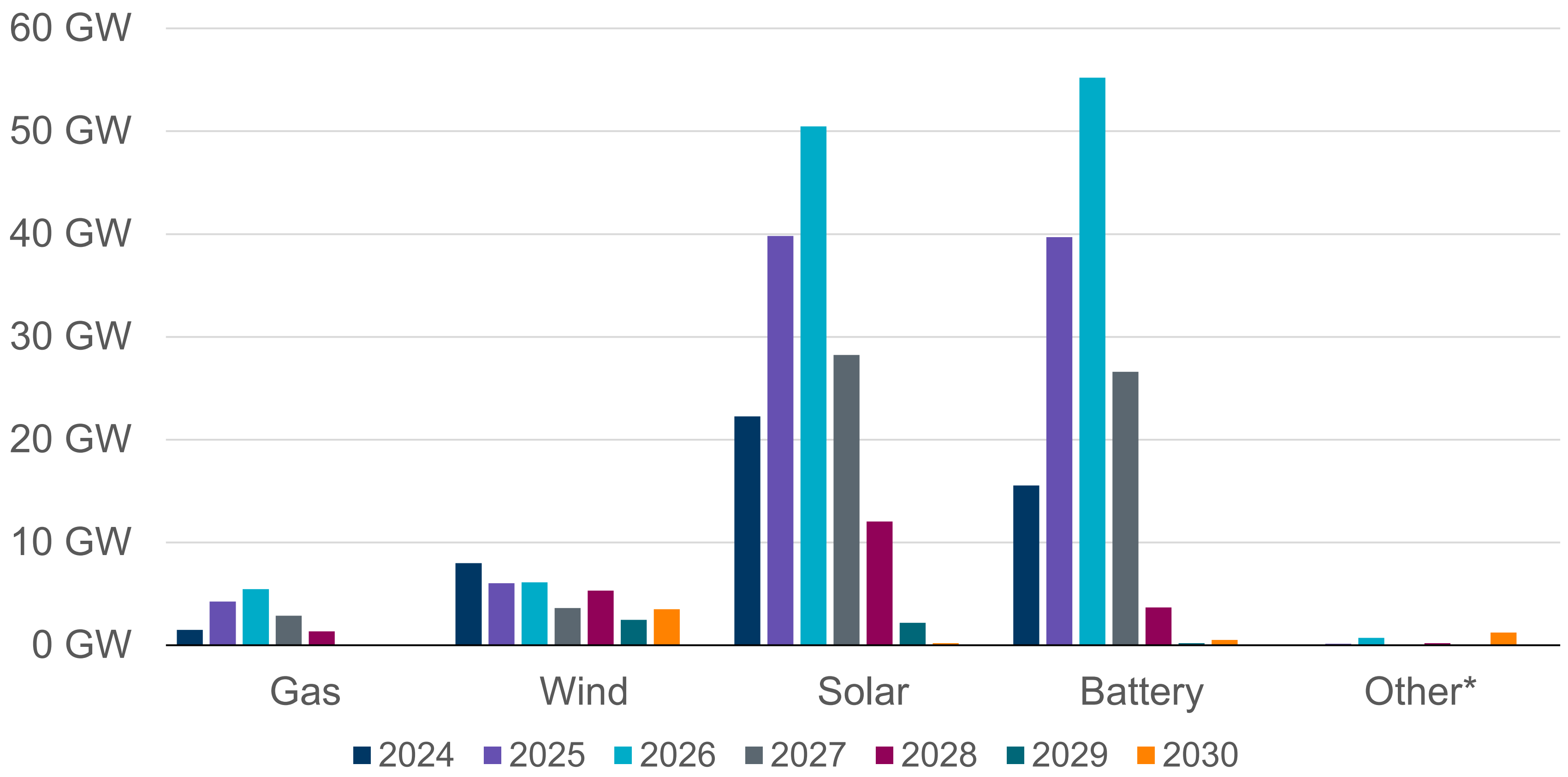
(Excludes capacity associated with projects designated as Inactive per Planning Guide Section 5.7.6)



- There are an additional 29 “Small Generator” projects totaling 266 MW that are going through the simplified interconnection process.
- A break-out by fuel type can be found in the monthly Generator Interconnection Status (GIS) reports available on the ERCOT Resource Adequacy Page: http://www.ercot.com/gridinfo/resource

Interconnection Queue Capacity by Fuel Type

Queue totals: Solar 155 GW (44.4%), Wind 35 GW (10%), Gas 15 GW (4.4%), Battery 141 GW (40.5%)
(Excludes capacity associated with projects designated as Inactive per Planning Guide Section 5.7.6)



A break-out by zone can be found in the monthly Generator Interconnection Status (GIS) reports available on the ERCOT Resource Adequacy Page: http://www.ercot.com/gridinfo/resource

* Other includes petroleum coke (pet coke), hydroelectric, fuel oil, geothermal energy, other miscellaneous fuels reported by developers, and fuel cells that use fuels other than natural gas.

Planning Summary

- ERCOT is tracking 1,775 active generation interconnection requests totaling 349,637 MW as of March 31. This includes 155,273 MW of solar, 35,120 MW of wind, 141,484 MW of battery, and 15,429 MW of gas projects; 86 projects were categorized as inactive, up from 75 inactive projects in February 2024.

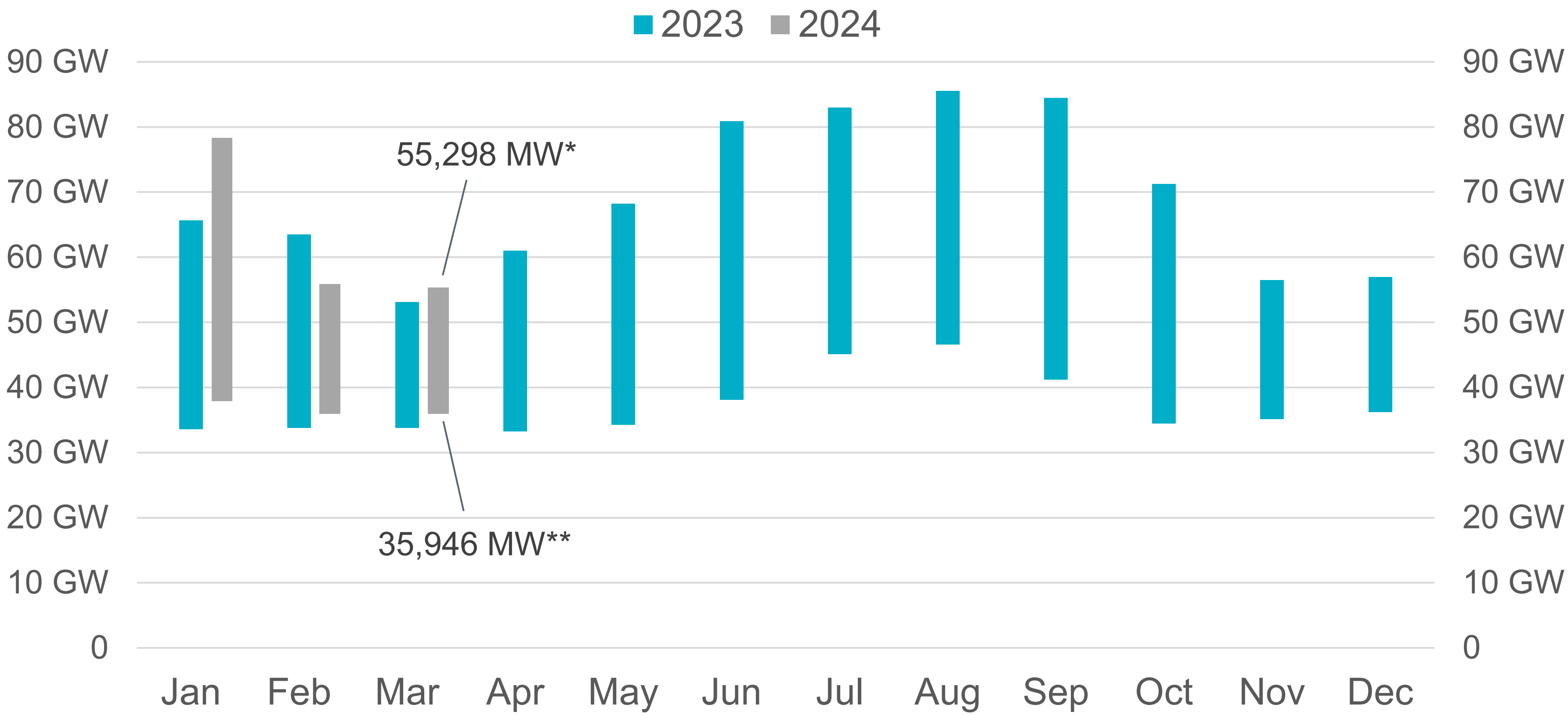
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of $2.423 billion as of March 31, 2024.

- Transmission Projects endorsed in 2024 total $373.30 million as of March 31, 2024.

- All projects (in engineering, routing, licensing and construction) total approximately $13.933 billion as of February 1, 2024.

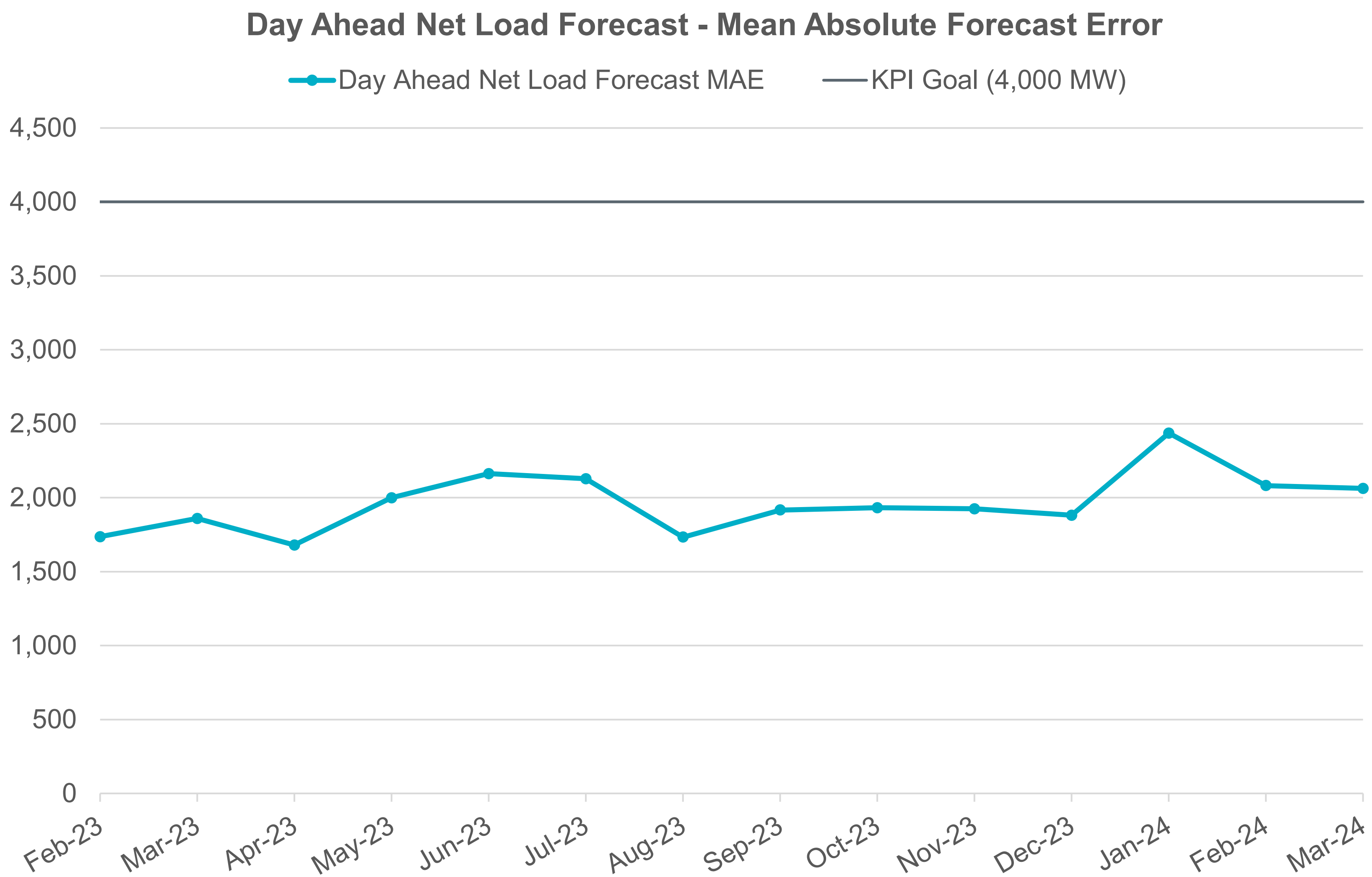
- Transmission Projects energized in 2024 total approximately $789.5 million as of February 1, 2024.

ERCOT's maximum peak demand for the month of March was 55,298 MW*; this is 2,204 MW more than the March 2023 peak demand of 53,094 MW.

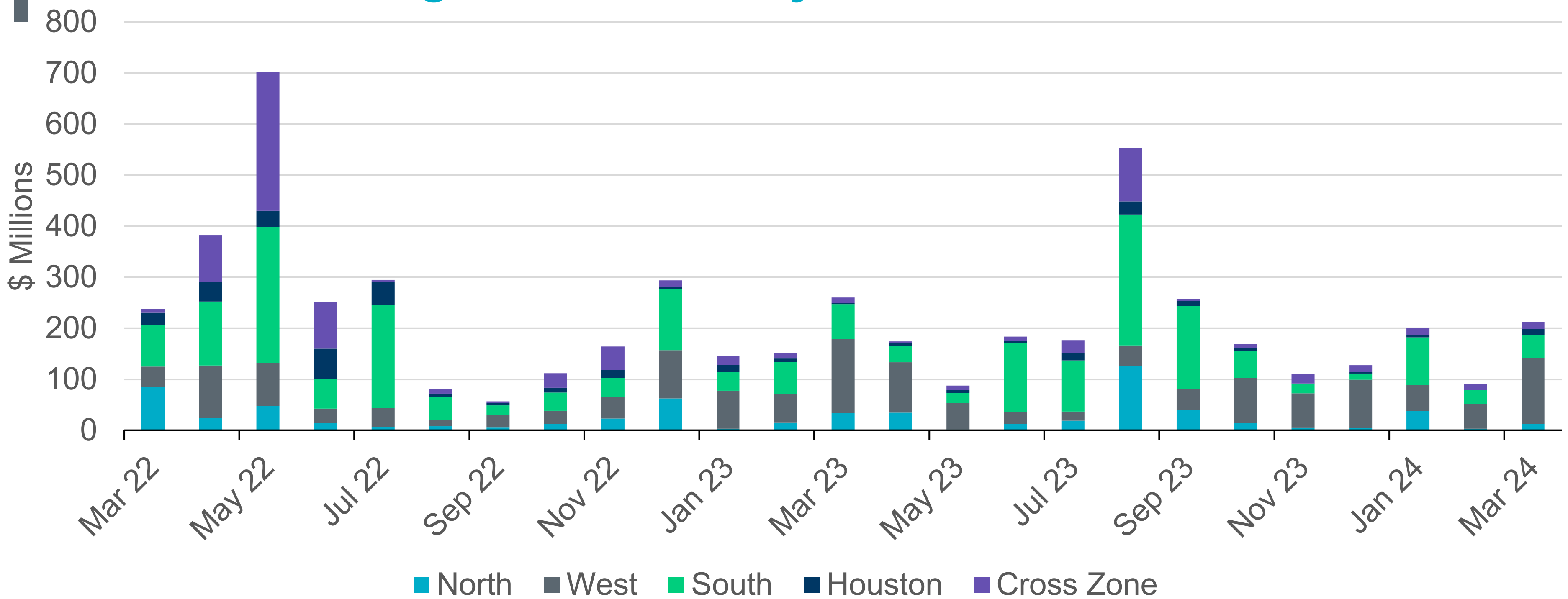


*Based on the maximum net system hourly value from the March 2024 Demand and Energy report.
**Based on the minimum net system 15-minute interval value from the March 2024 Demand and Energy report.
Data for latest two months are based on preliminary settlements.

Net Load Forecast Performance

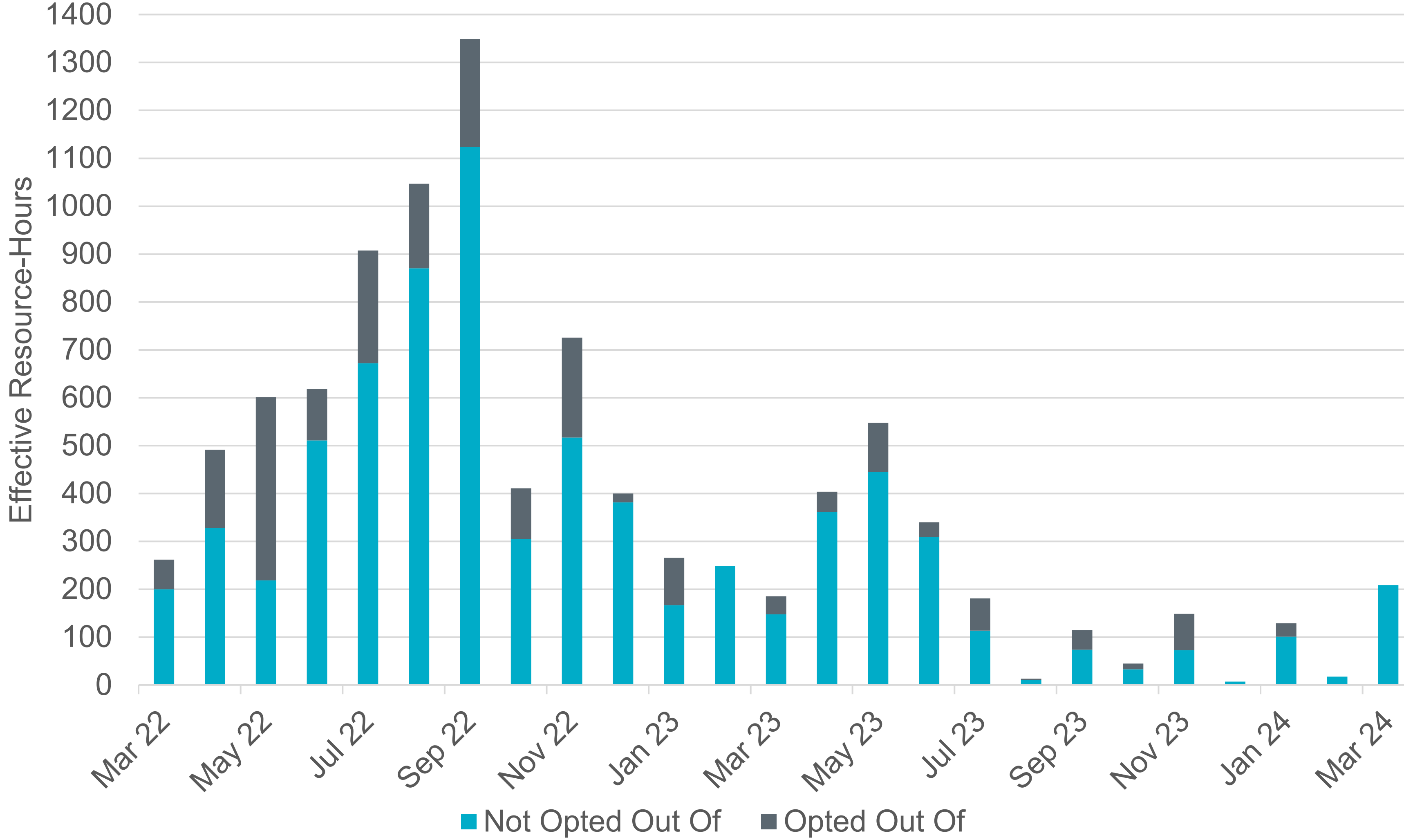


Real-Time Congestion Rent by Zone



- Congestion Rent is determined using the shadow prices and MW flows for individual constraints in SCED as well as the duration of congested SCED intervals.
- In March, total Real-Time congestion rent increased compared to February, with the highest congestion rent observed in the West and South Zones.
  - West Zone congestion rent was due to overloads on the 345kV line from Tonkawa Switch to Morgan Creek, caused by the loss of two 345kV circuits and compounded by high gas and wind generation and several planned outages.
  - Congestion rent in the South Zone was mainly due to the loss of the 138kV line from Laredo VFT North to Las Cruces and its associated Fowlerton 345/138 auto transformer, leading to overloads.
- The “Cross Zone” category consists of cases in which the substations on either end of the constraint are in different zones.

Ten Resources were Committed March for Capacity and Congestion

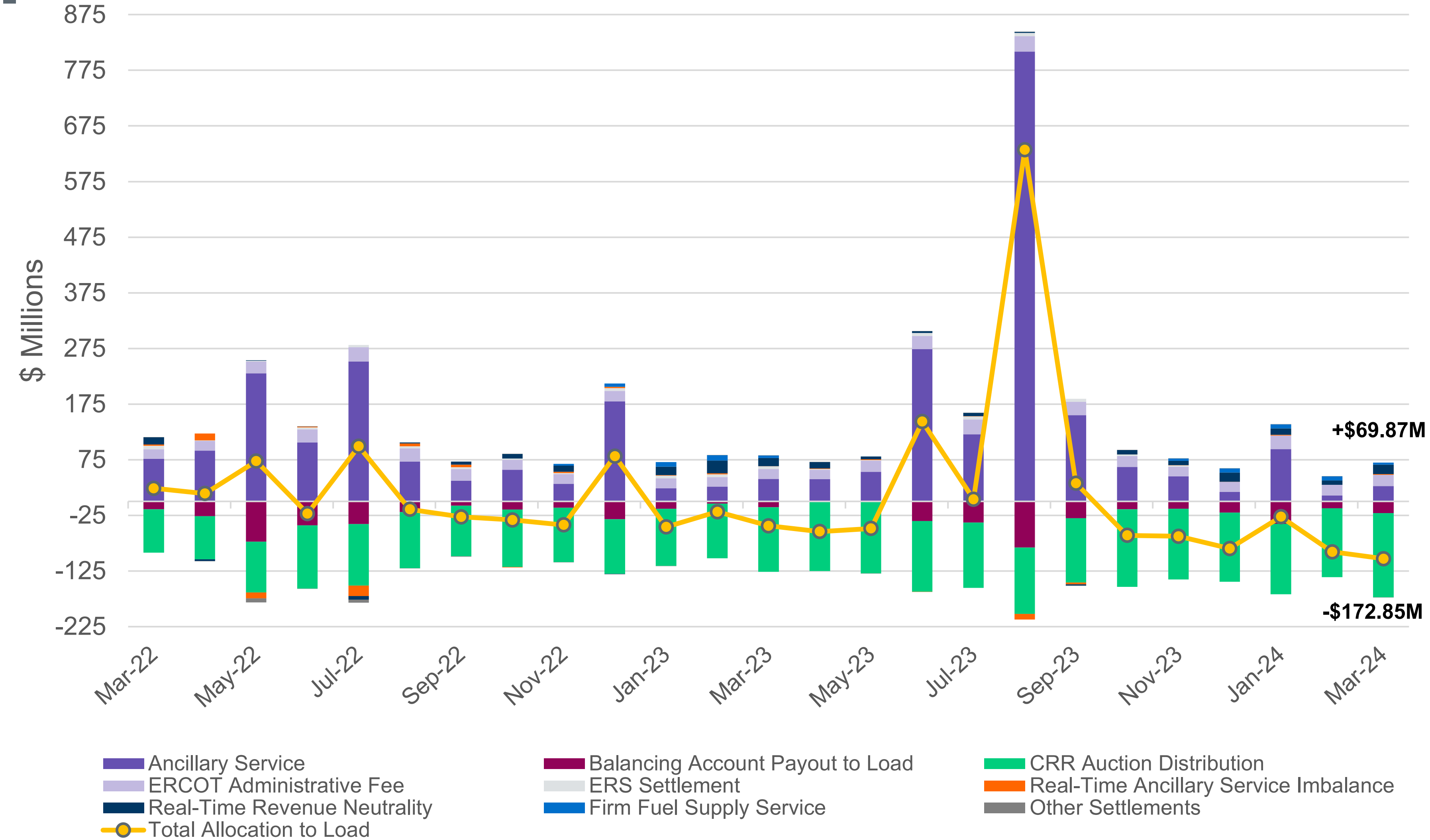


“Effective Resource-Hours” excludes any period during a Reliability Unit Commitment hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.

Ten Resources were Committed March for Capacity and Congestion

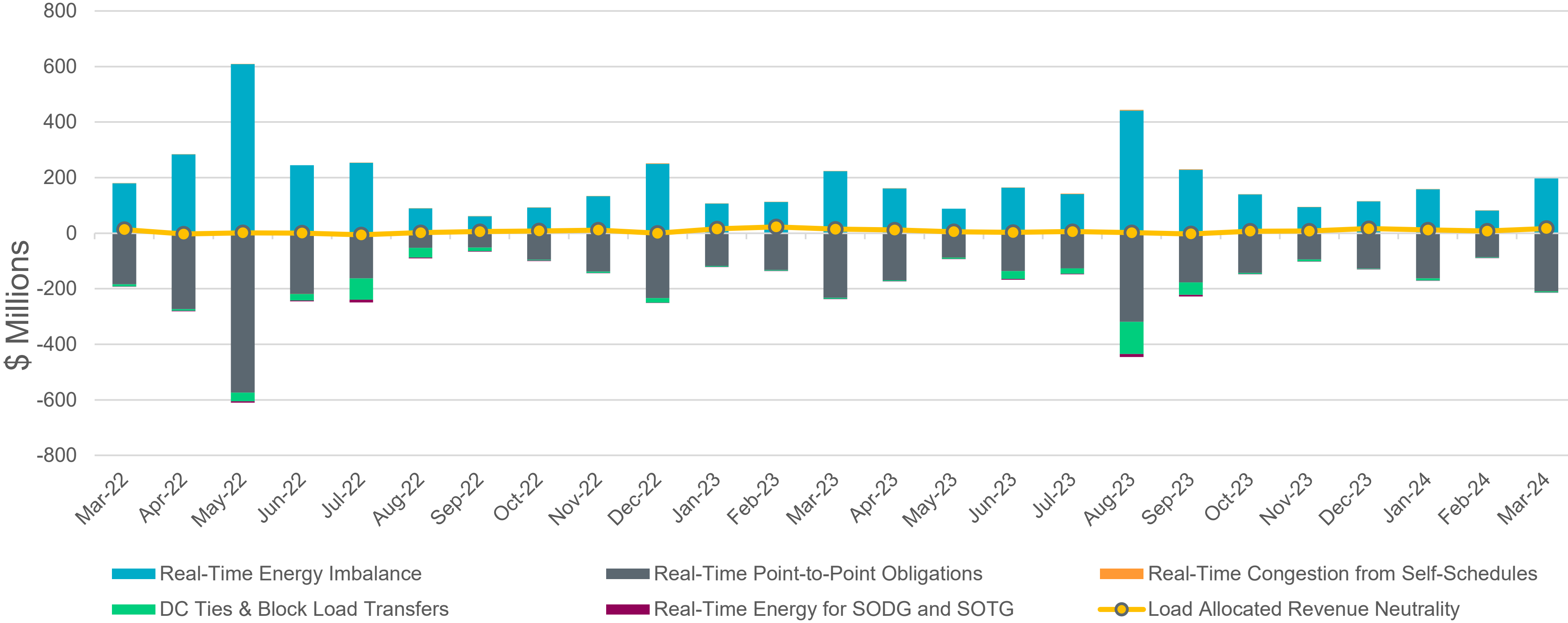
Resource #	Effective Resource-hours	Non-Opt Out (Effective Hours)	Opt Out (Effective Hours)
1	6.0	6.0	0.0
2	6.0	6.0	0.0
3	49.3	49.3	0.0
4	3.0	3.0	0.0
5	7.9	7.9	0.0
6	4.8	4.8	0.0
7	9.8	9.8	0.0
8	4.8	4.8	0.0
9	4.0	4.0	0.0
10	113.4	113.4	0.0
Total	**209.0**	**209.0**	**0.0**

Net Allocation to Load in March 2024 was ($102.98) Million



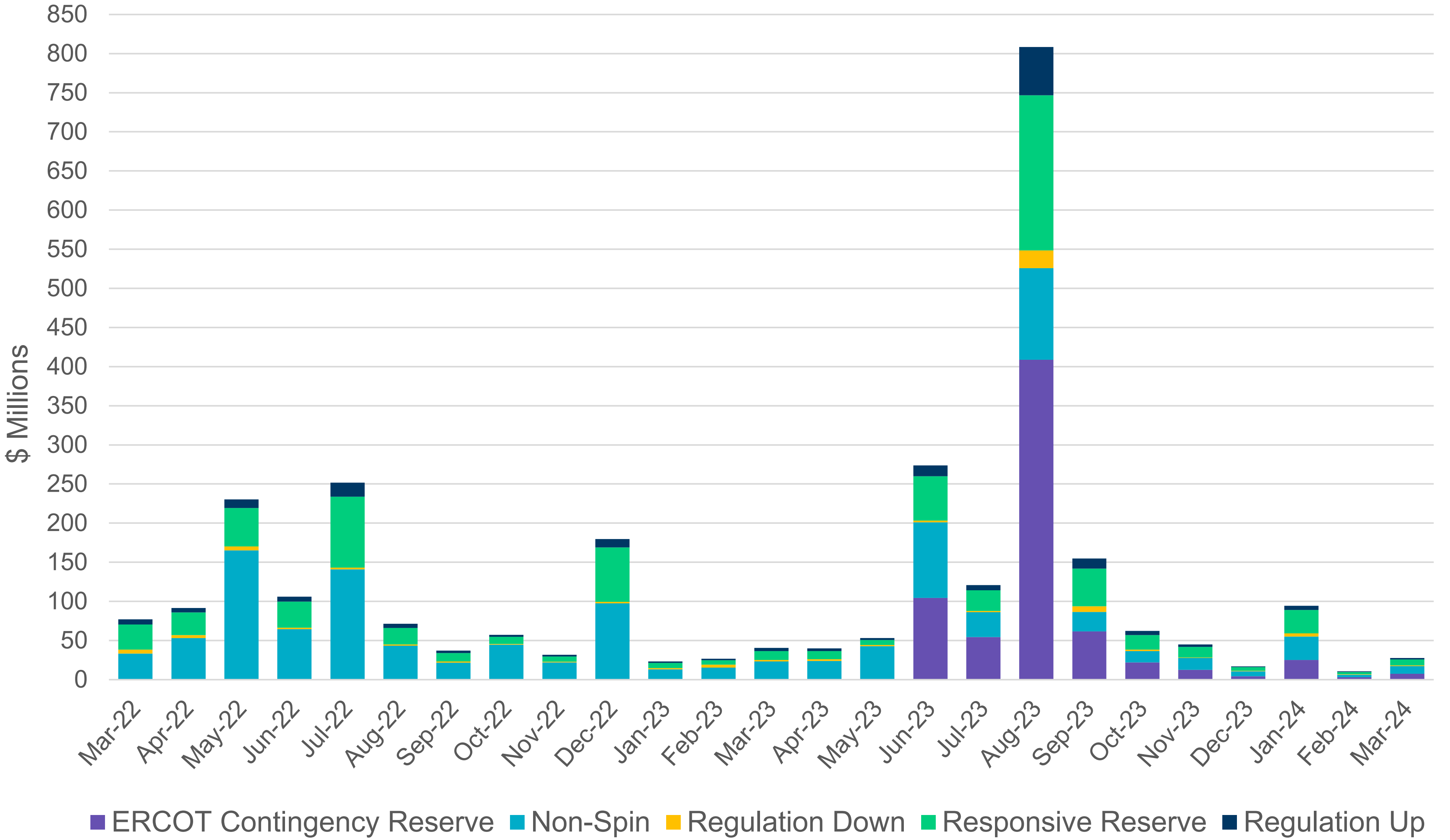
This information is available in tabular form in the Settlement Stability Report presented quarterly to the Wholesale Market Subcommittee

Real-Time Revenue Neutrality Allocated to Load was $16.91M for March 2024

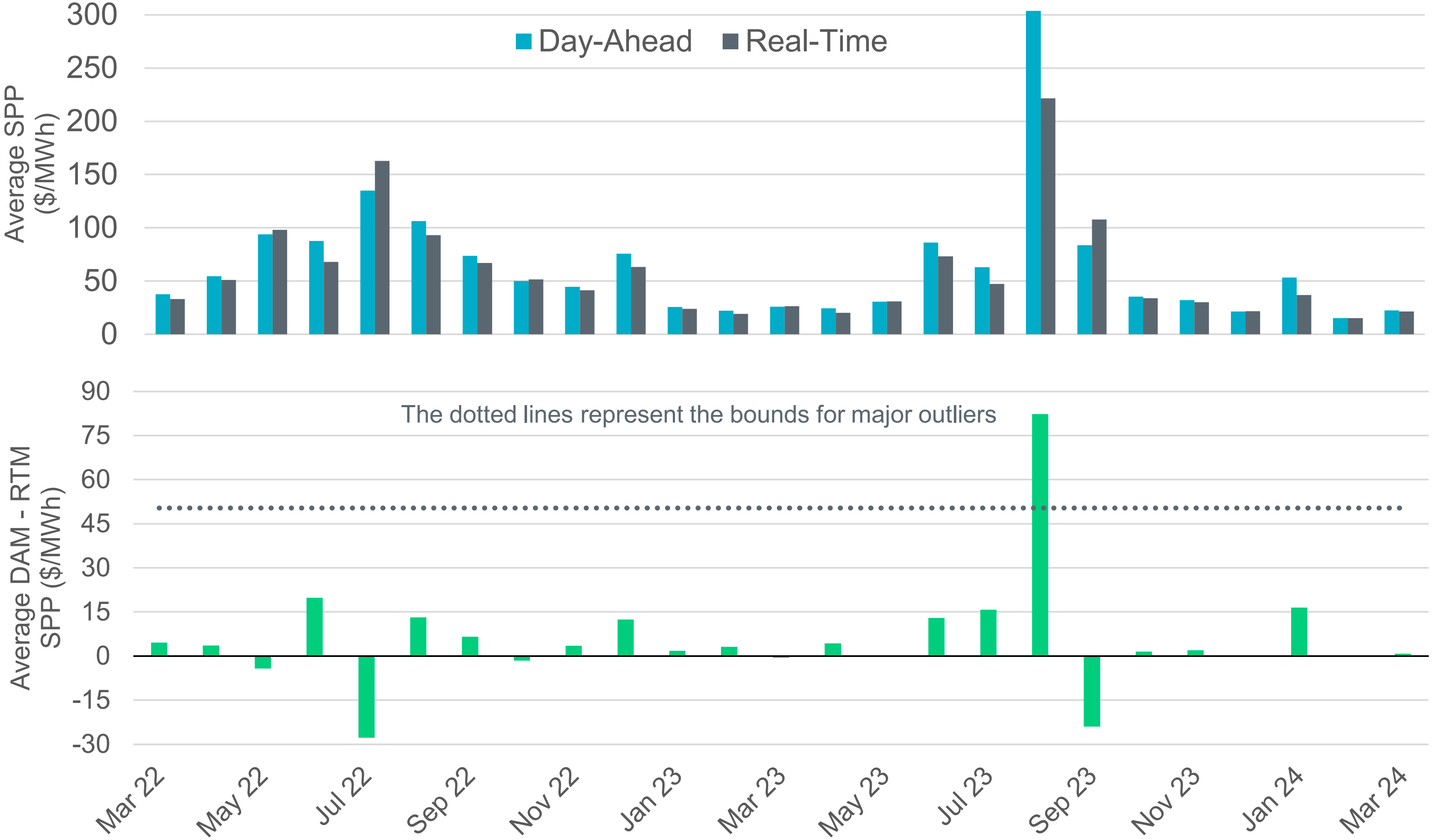


	March 2024 ($M)
Real-Time Energy Imbalance	$197.13
Real-Time Point-to-Point Obligation	($209.66)
Real-Time Congestion from Self-Schedules	($0.22)
DC Tie & Block Load Transfer	($3.83)
Real-Time Energy for SODG and SOTG	($0.34)
Load Allocated Revenue Neutrality	**$16.91**

Ancillary Services for March 2024 totaled $27.52M

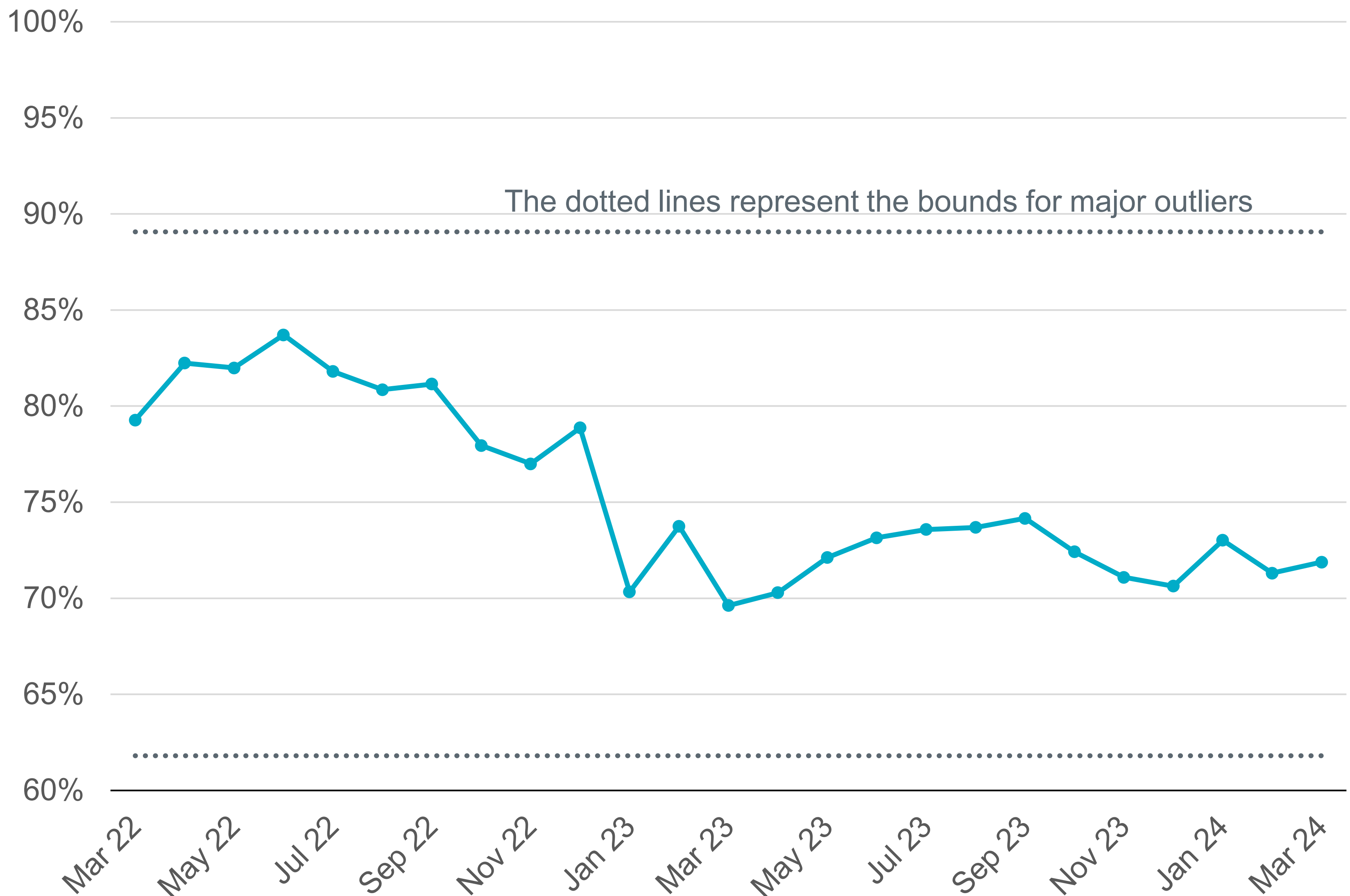


Day-Ahead and Real-Time Market Price Differences



*Averages are weighted by Real-Time Market Load

Percentage of Real-Time Load Transacted in the Day-Ahead Market

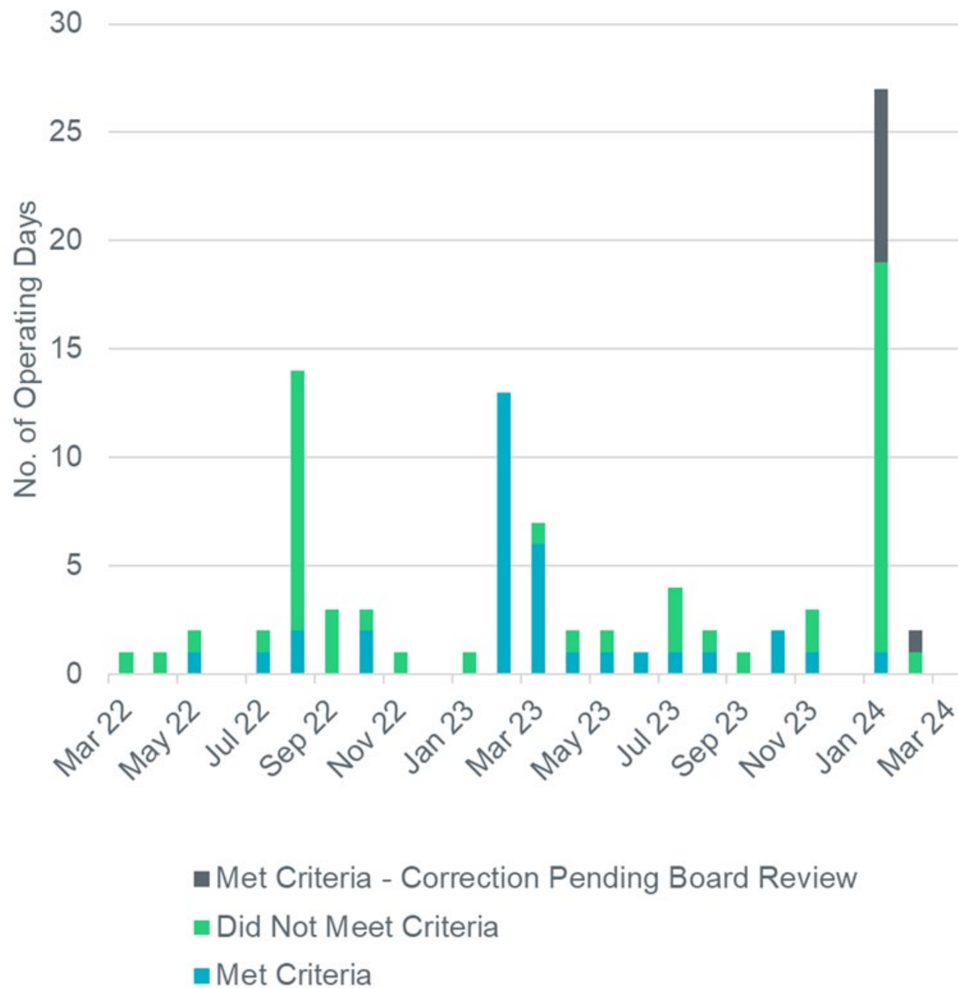


CRR Value and Cost Differences

Price Issues and the Impact of Nodal Protocol Revision Request (NPRR) 1024 on Price Corrections

This graph shows the recent history of price issues in the RTM or DAM and breaks the impacted Operating Days into three categories:

- Days that met the criteria for “significance” under NPRR1024 and were corrected;
- Days that met the criteria for "significance" under NPRR1024 and are pending Board Review; and
- Days that were not corrected because they did not meet the criteria for “significance” under NPRR1024.



Details for February Price Correction Review

On February 28, 2024, an issue occurred during routine maintenance which resulted in the Energy Management System sending incorrect constraint data for Generic Transmission Constraints to the Market Management System. Security-Constrained Economic Dispatch was impacted between 15:50 and 16:25. Given the complexity of the analysis, ERCOT was not be able to meet the deadline to correct prices before they become final at 16:00 on 3/1/24. Further analysis was performed, and it was determined that the impact to Counter-Parties met the criteria for significance. The market was notified of the impact analysis and ERCOT's intent to pursue review by the ERCOT Board of Directors. See Market Notice M-B031824-01.

ERCOT Protocols Section 6.3(7)(b) requires that the absolute value impact to any single Counter-Party meet one of the following two criteria before seeking approval from the Board.

- 2% and also greater than $20,000; or
- 20% and also greater than $2,000.

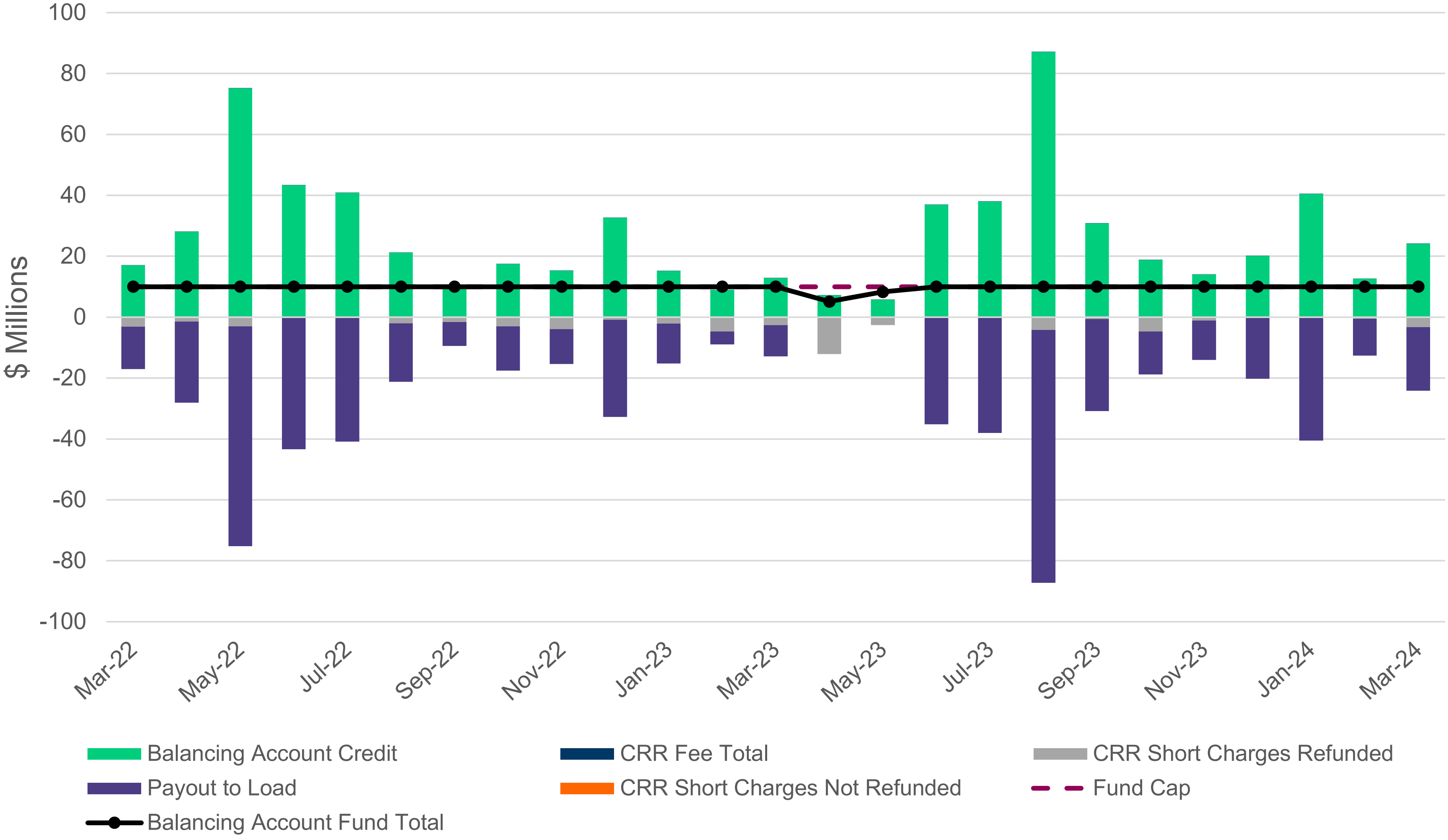
Operating Day	Counter-Parties meeting criteria in Protocol Section 6.3(7)(b)(i)	Counter-Parties meeting criteria in Protocol Section 6.3(7)(b)(ii)
2/28/2024	7	9

Note – There are additional Operating Days for January and February that are under review for price correction. This issue was noted in last month's report.

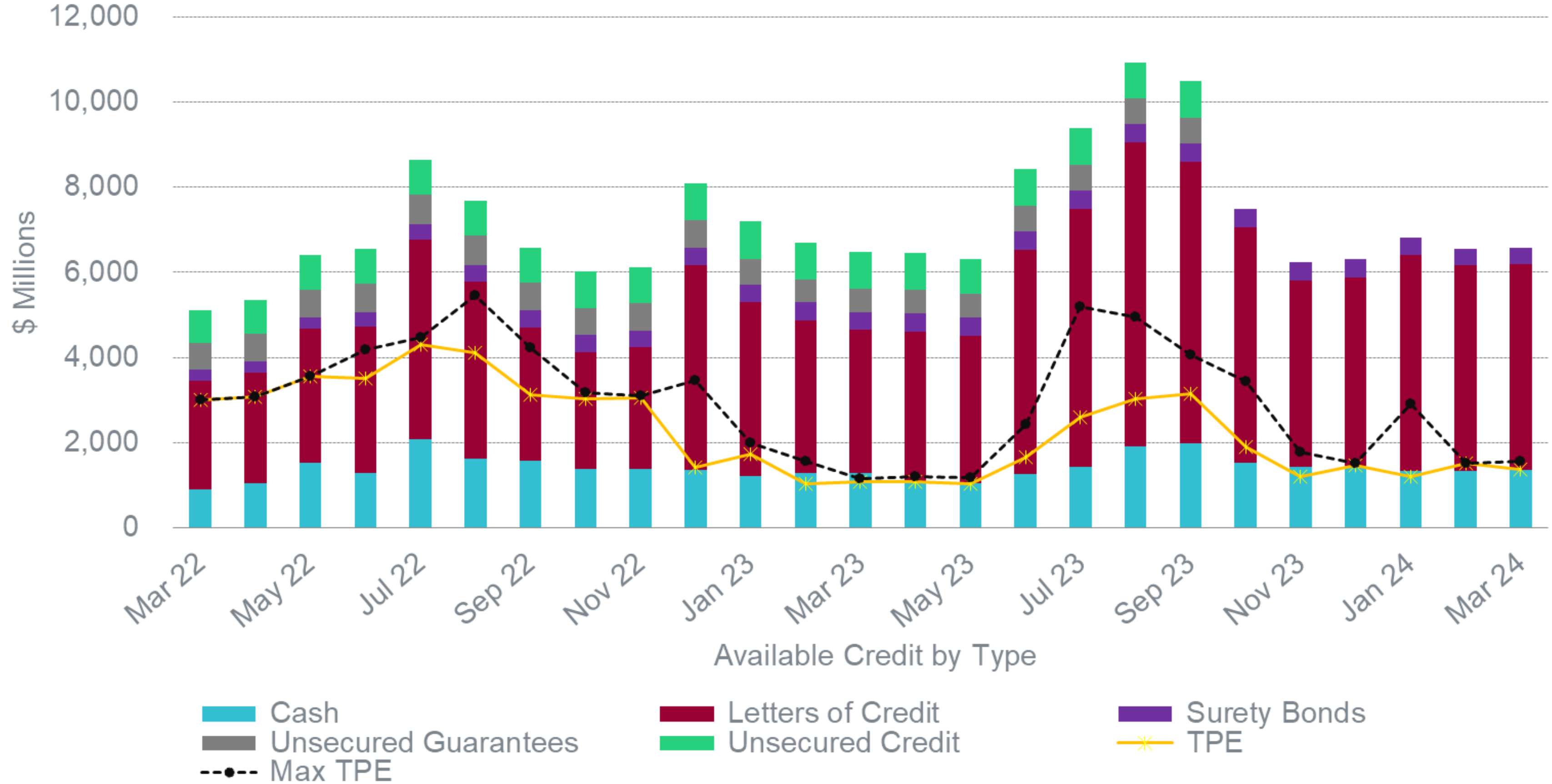
Details for March Price Corrections Review

There were no price impact events for the month of March.

The CRR Balancing Account was fully-funded and excess amounts were allocated to Load



Available Credit by Type Compared to Total Potential Exposure (TPE)



*Numbers are as of month end except for Max TPE

Retail Transaction Volumes – Summary – March 2024

	Year-To-Date		Transactions Received	
Transaction Type	March 2024	March 2023	March 2024	March 2023
Switches	305,692	303,777	115,446	96,905
Acquisitions	0	0	0	0
Move - Ins	847,626	766,421	252,603	281,040
Move - Outs	333,123	329,250	113,802	119,201
Continuous Service Agreements (CSA)	90,646	106,719	37,638	27,663
Mass Transitions	0	0	0	0
Total	**1,577,087**	**1,506,167**	**519,489**	**524,809**