



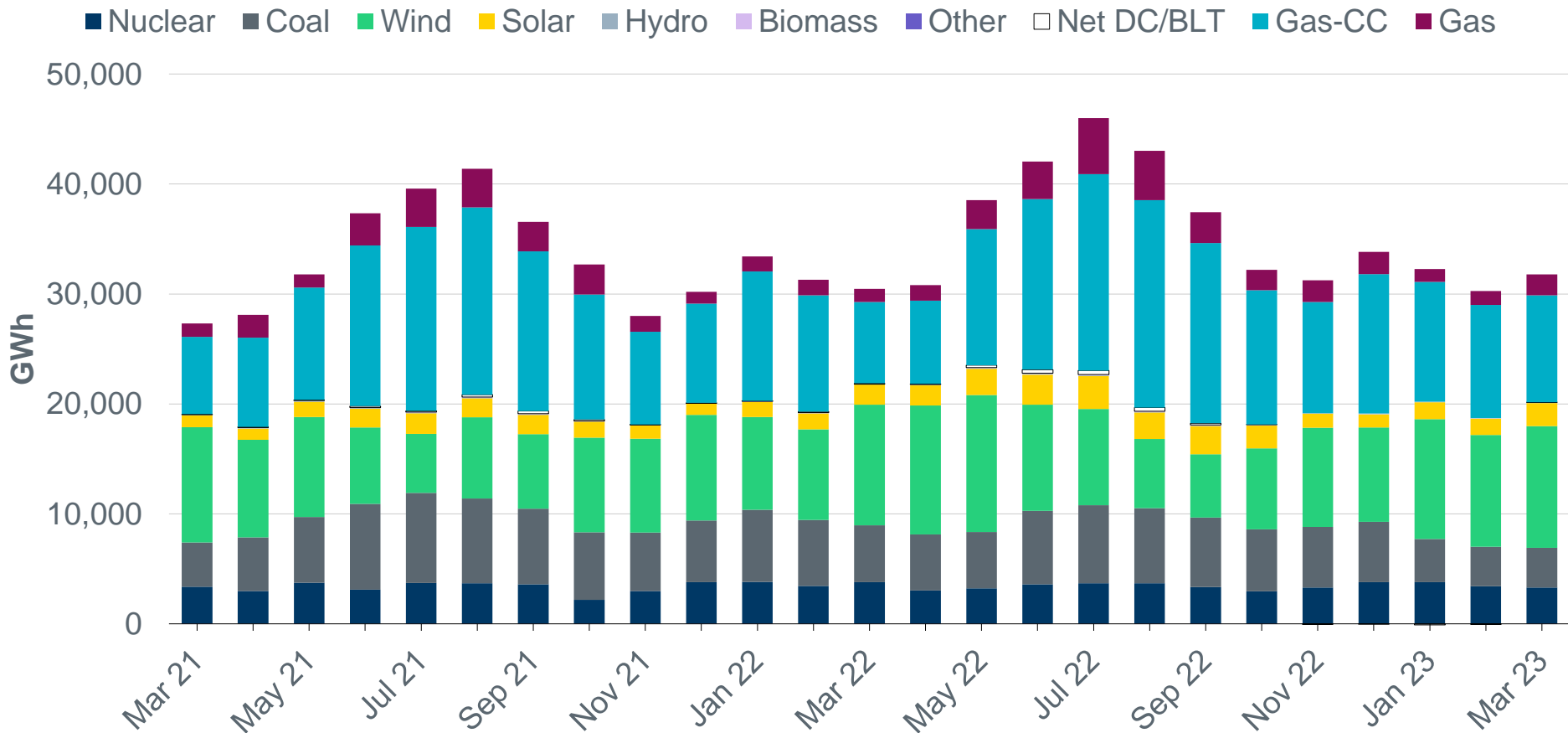
ERCOT Monthly Operational Overview (March 2023)

ERCOT Public
April 18, 2023

Highlights, Records and Notifications

- ERCOT's maximum peak demand for the month of March was 53,006 MW*; this was 7,750 MW less than the record of 60,756 MW set on 03/05/2019, and 3,457 MW less than the March 2022 demand of 56,463 MW.
- ERCOT issued 9 notifications:
 - 3 DC Tie Curtailment Notice for the DC_L due to a planned or unplanned outage.
 - 2 AANs issued due to a possible future Emergency Condition of reserve capacity deficiency.
 - 3 Advisories issued for a geomagnetic disturbance Alert of K-7.
 - 1 Watch issued due to the failure of SCED.

Monthly energy generation increased by 4% year-over-year to 31,753 GWh in March 2023, compared to 30,457 GWh in March 2022

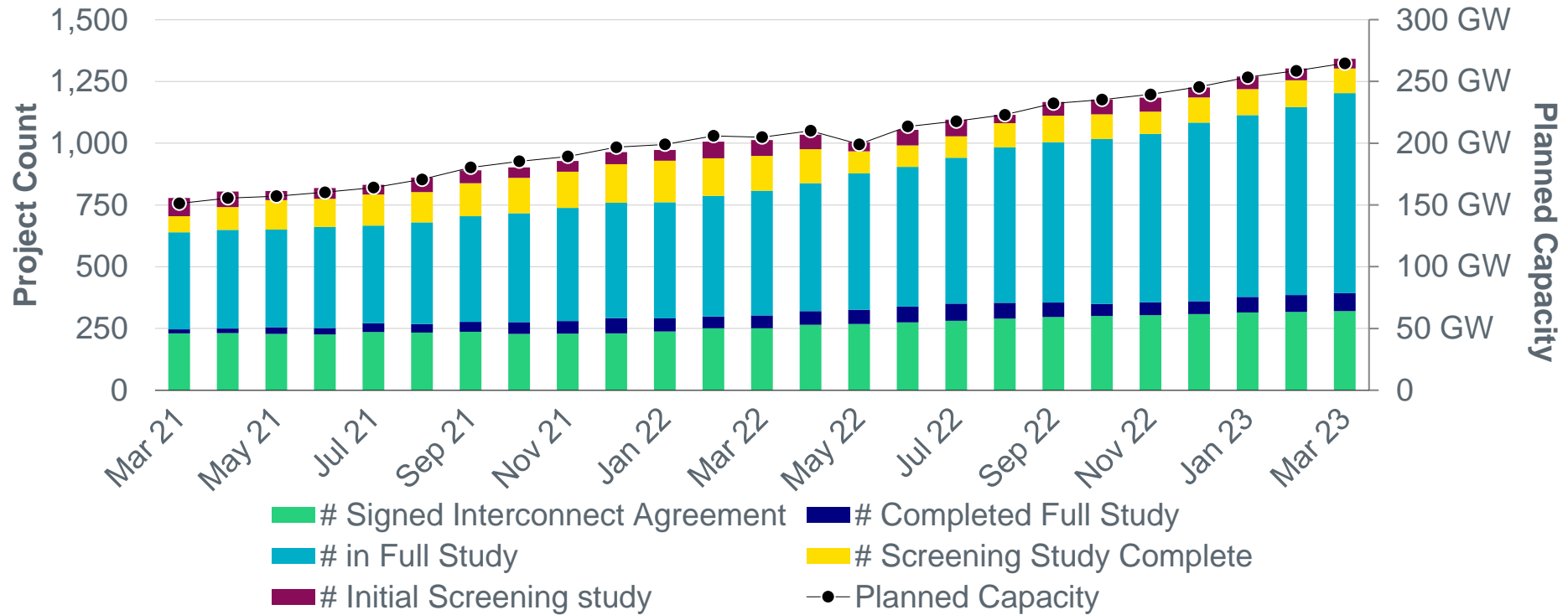


Data for latest two months are based on preliminary settlements.



Generation Interconnection activity by project phase

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

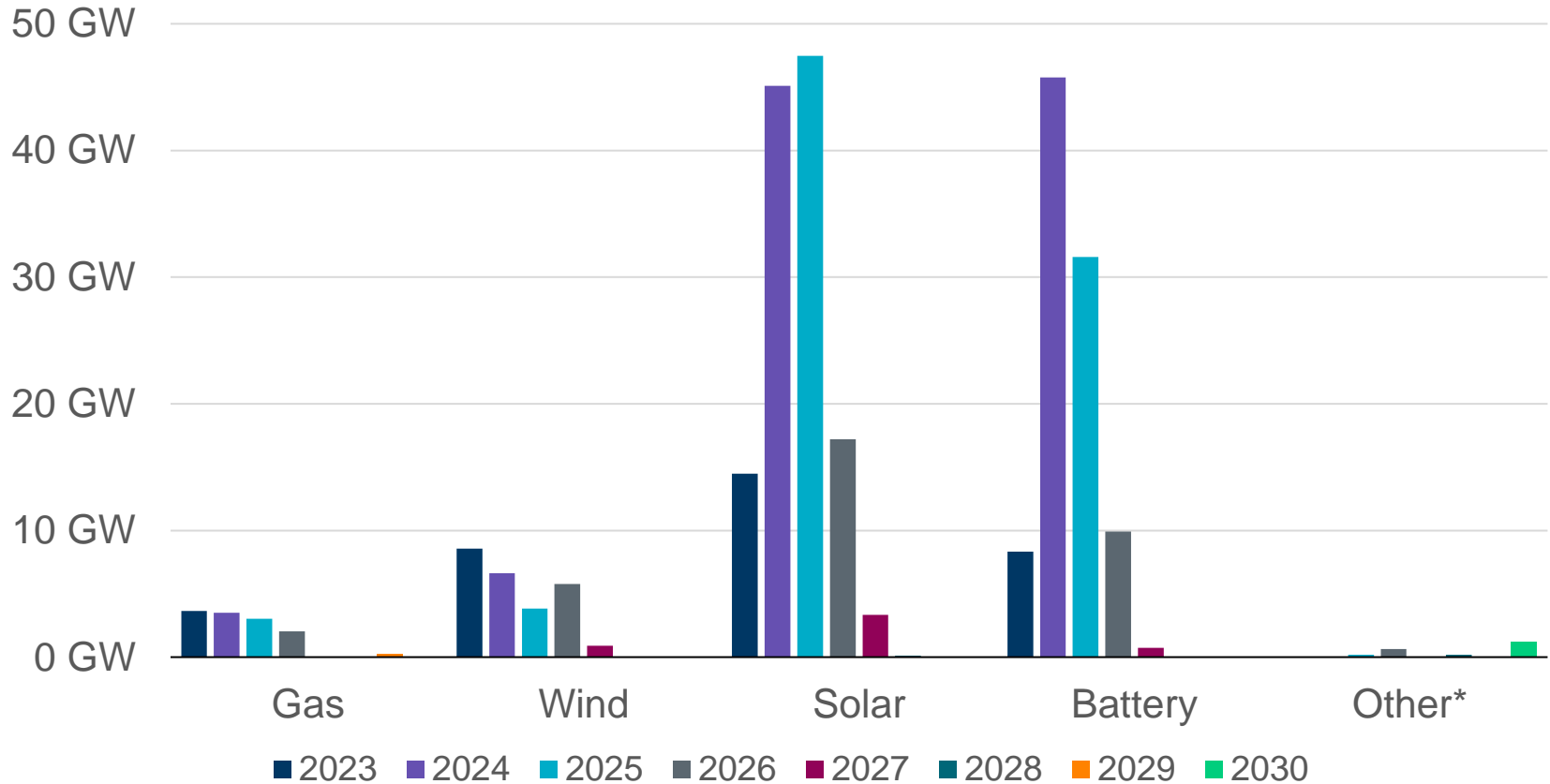


- There are an additional 17 “Small Generator” projects totaling 160 MW that are going through the simplified interconnection process.

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 128 GW (48.3%), Wind 26 GW (9.7%), Gas 13 GW (4.7%), Battery 96 GW (36.4%)
 (Excludes capacity associated with projects designated as Inactive per Planning Guide Section 5.7.6)



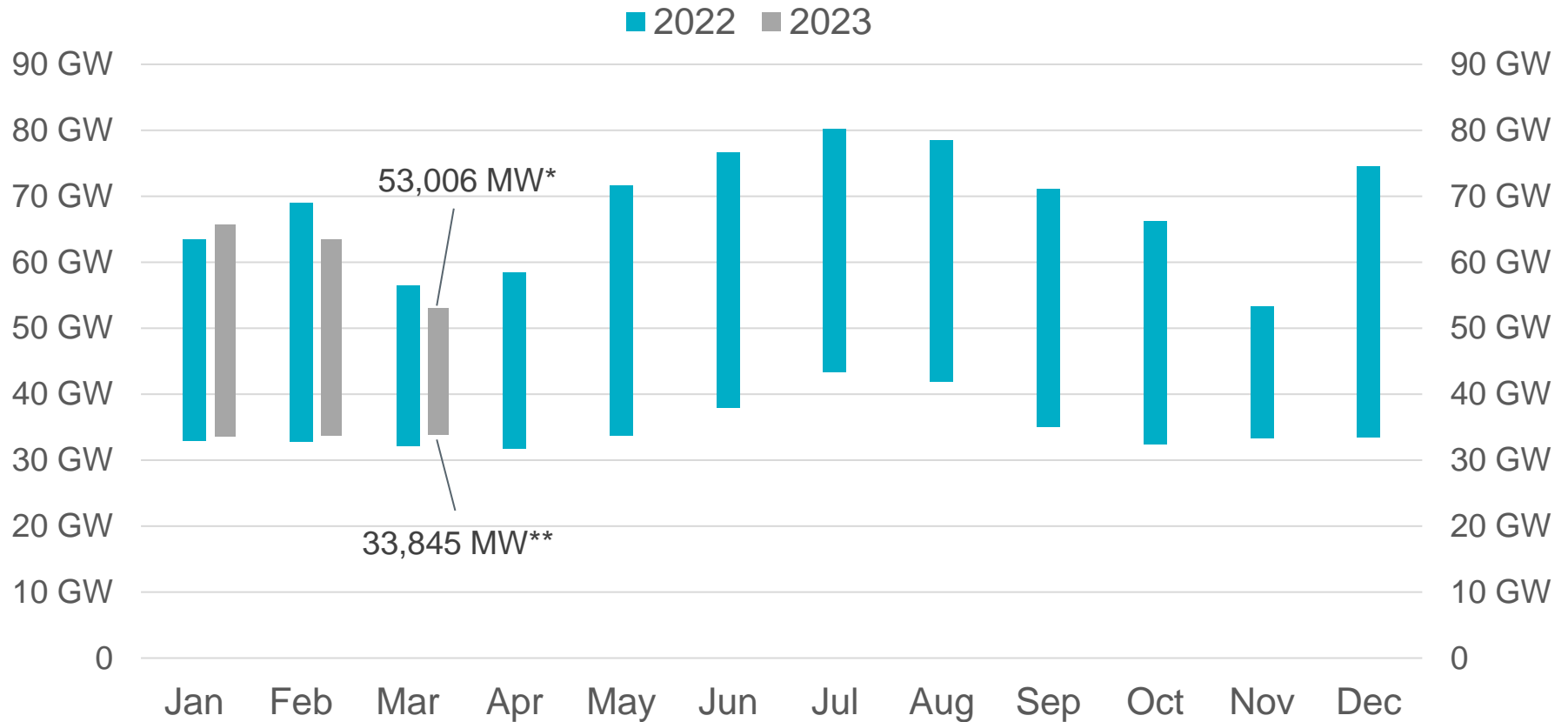
A break-out by zone can be found in the monthly Generator Interconnection Status (GIS) reports available on the ERCOT Resource Adequacy Page: <http://www.ercot.com/gridinfo/resource>

* 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 1,373 active generation interconnection requests totaling 264,695 MW as of March 31. This includes 127,765 MW of solar, 25,742 MW of wind, 96,356 MW of battery, and 12,544 MW of gas projects; 61 projects were categorized as inactive, down from 66 inactive projects in February 2023.
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of \$317.20 million as of March 31, 2023.
- Transmission Projects endorsed in 2023 total \$555.15 million as of March 31, 2023.
- All projects (in engineering, routing, licensing and construction) total approximately \$11.643 billion as of February 1, 2023.
- Transmission Projects energized in 2023 total about \$149 million as of February 1, 2023.

ERCOT's maximum peak demand for the month of March was 53,006 MW*; this was 3,457 MW less than the March 2022 demand of 56,463 MW.



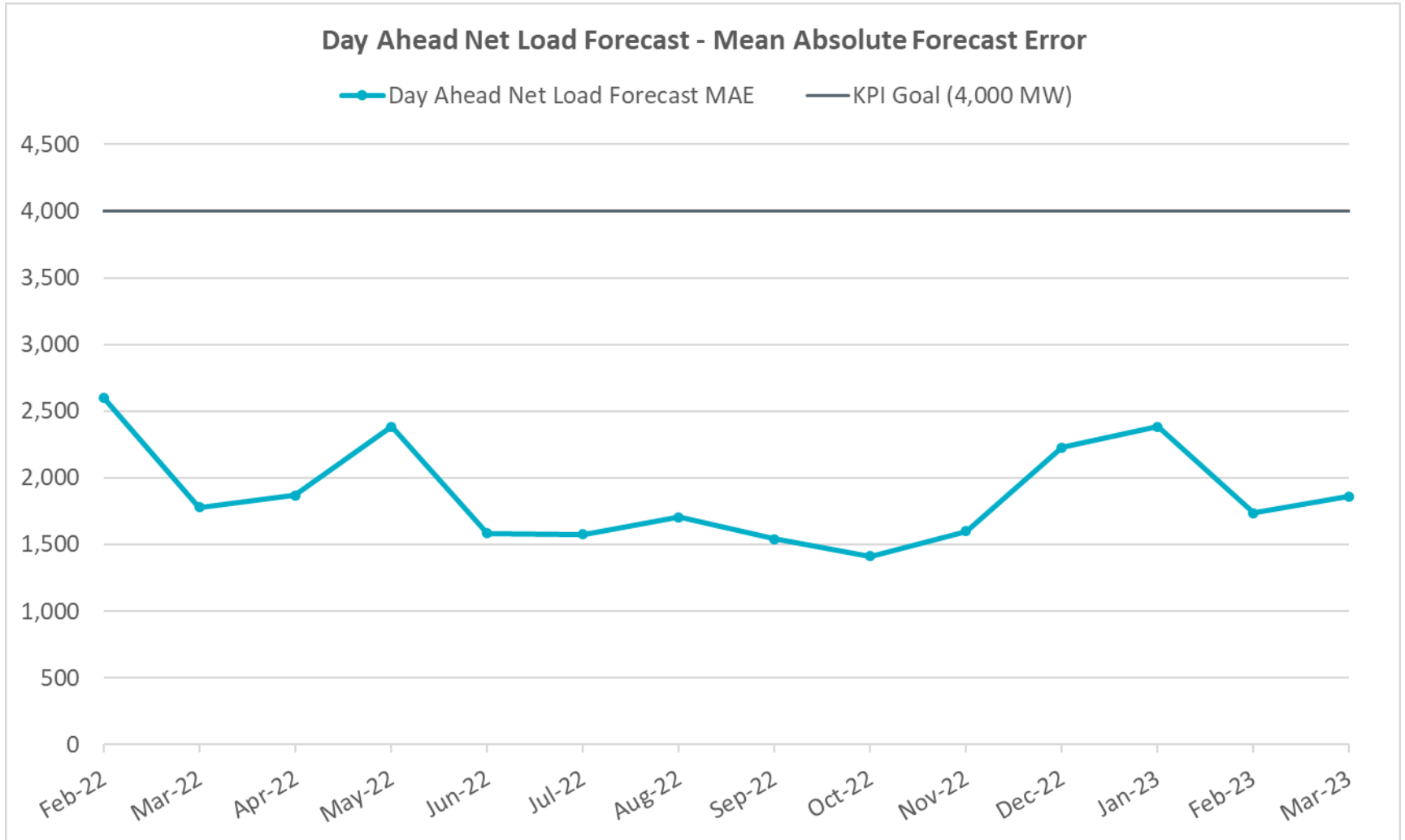
*Based on the maximum net system hourly value from April release of Demand and Energy 2023 report.

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

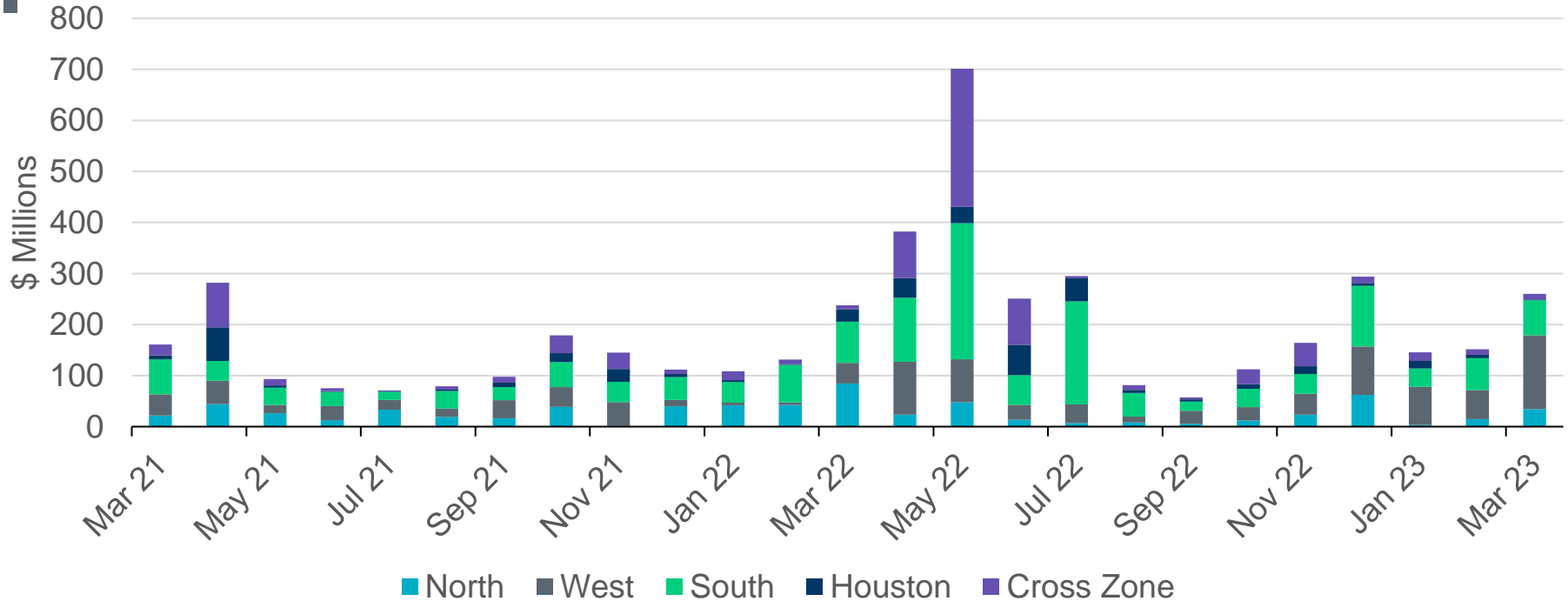
Data for latest two months are based on preliminary settlements.



Net Load Forecast Performance

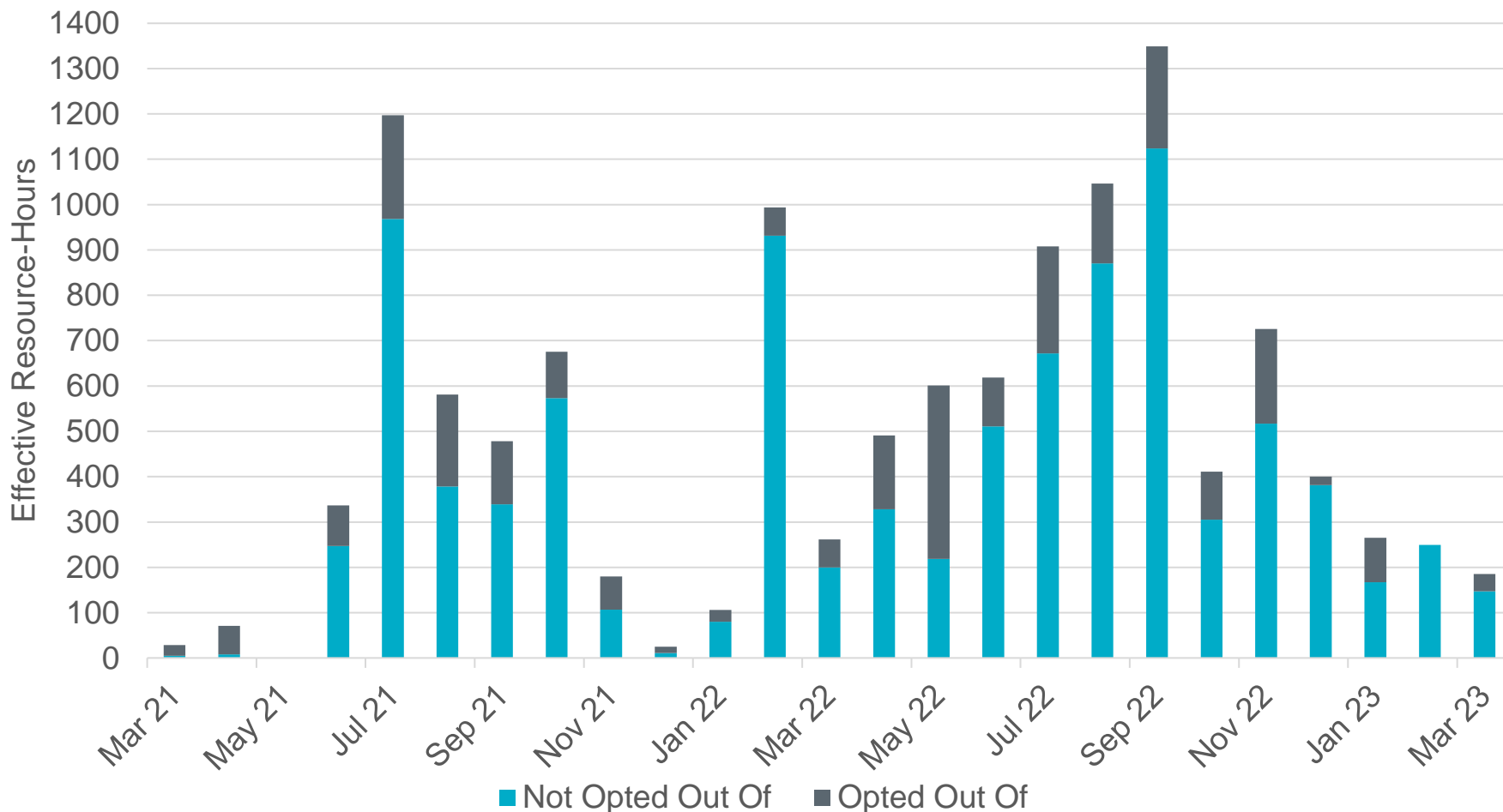


Real-Time Congestion Rent by Zone



- Congestion rent increased in the North, West, and South Zones in March compared to February.
- The two zones with the highest congestion rent were the West and South Zones.
 - Congestion rent in the West Zone was primarily driven by the loss of the double circuit 345 kV manual contingency from Morgan Creek to Quail Switch overloading the Midessa South SW substation.
 - Congestion rent in the South Zone was primarily driven by the North Edinburg to Lobo Generic Transmission Constraint.
- Congestion Rent is determined using the shadow prices and MW flows for individual constraints in Security-Constrained Economic Dispatch (SCED) as well as the length in time of SCED intervals.
- The “Cross Zone” category consists of cases in which the substations on either end of the constraint are in different zones.

Twenty-three Resources were Committed in March for Capacity or Congestion



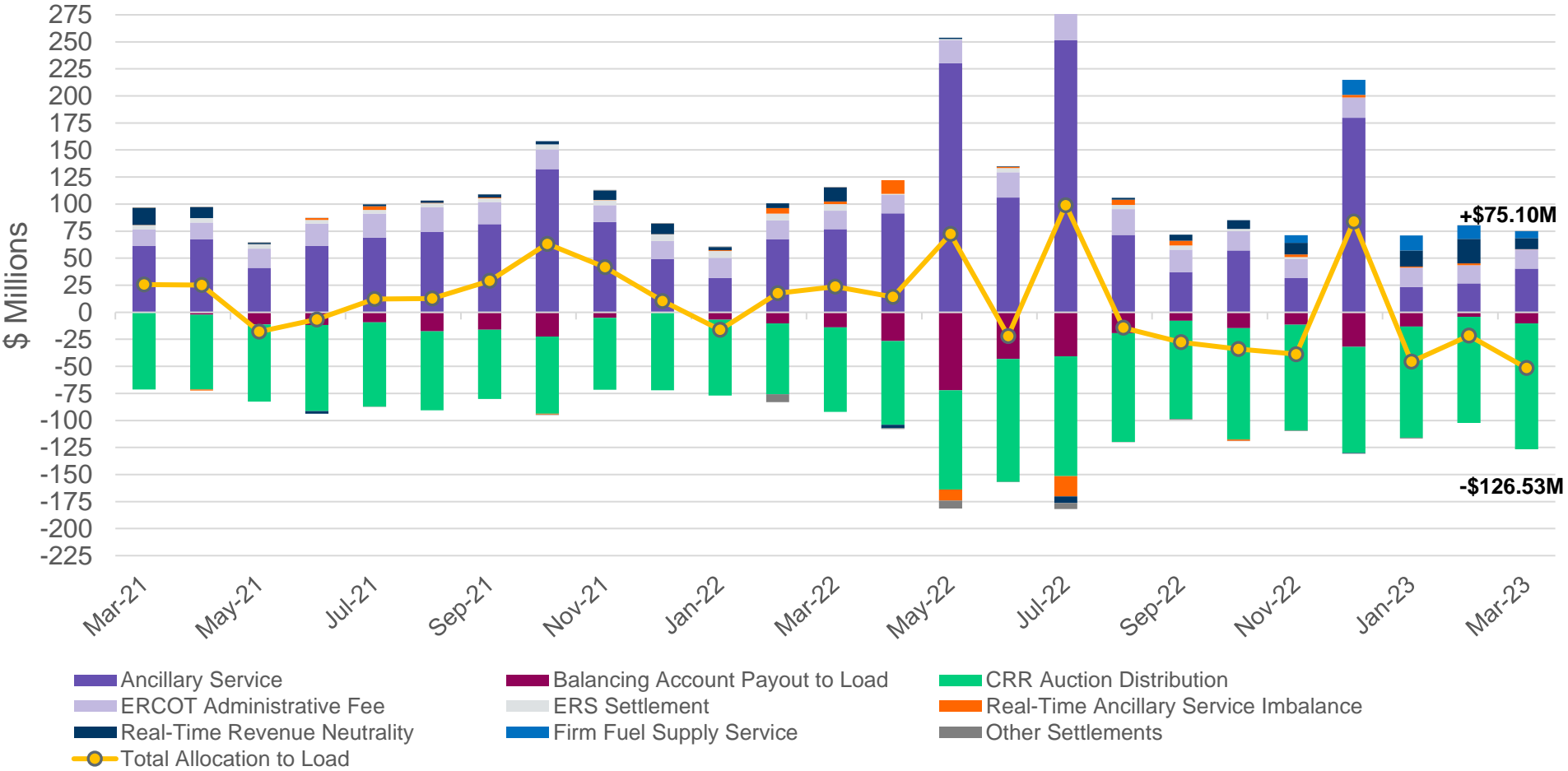
“Effective Resource-Hours” excludes any period during a Reliability Unit Commitment (RUC) hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.



Twenty-three Resources were Committed in March for Capacity or Congestion

Resource #	Effective Resource-hours	Non Opt Out (Effective Hours)	Opt Out (Effective Hours)
1	0.1	0.1	0.0
2	12.0	0.0	12.0
3	8.0	8.0	0.0
4	5.9	5.9	0.0
5	3.0	3.0	0.0
6	8.0	8.0	0.0
7	8.0	0.0	8.0
8	24.0	17.8	6.2
9	23.0	23.0	0.0
10	5.8	5.8	0.0
11	8.0	8.0	0.0
12	15.8	15.8	0.0
13	1.0	1.0	0.0
14	3.0	3.0	0.0
15	3.0	3.0	0.0
16	11.0	4.0	7.0
17	2.0	2.0	0.0
18	9.8	5.1	4.8
19	11.2	11.2	0.0
20	8.0	8.0	0.0
21	2.9	2.9	0.0
22	7.9	7.9	0.0
23	3.9	3.9	0.0
Total	185.3	147.4	37.9

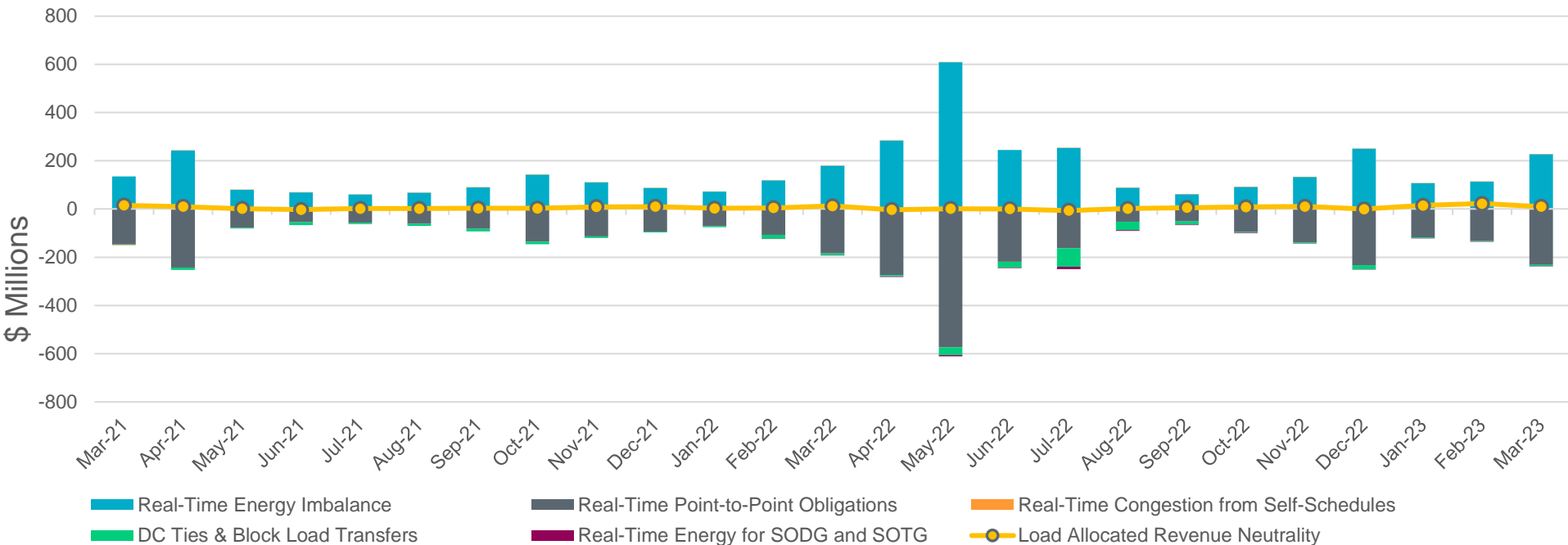
Net Allocation to Load in March 2023 was (\$51.44) Million



This information is available in tabular form in the Settlement Stability Report presented quarterly to the [Wholesale Market Subcommittee](#)



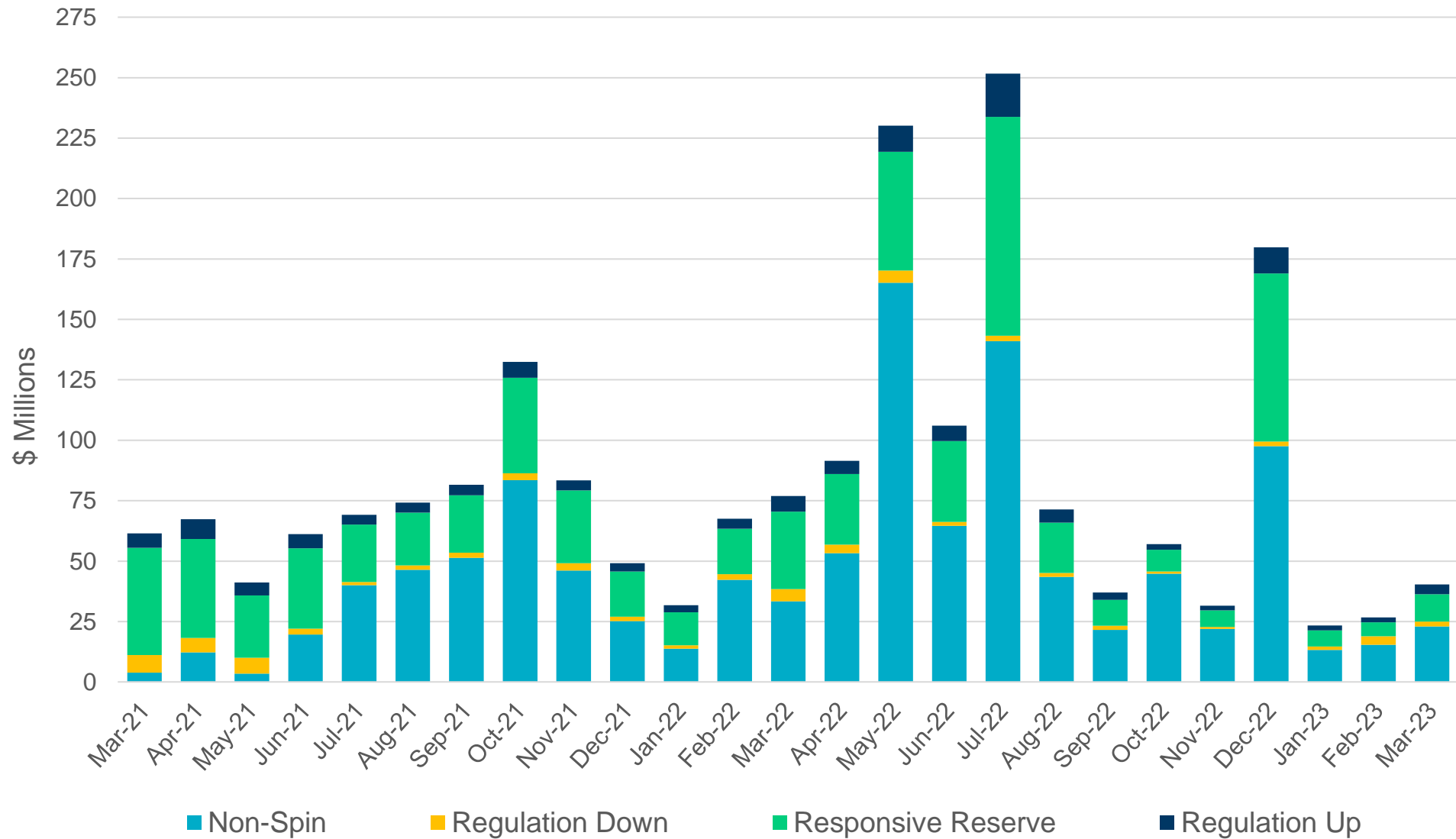
Real-Time Revenue Neutrality Allocated to Load was \$10.30M for March 2023



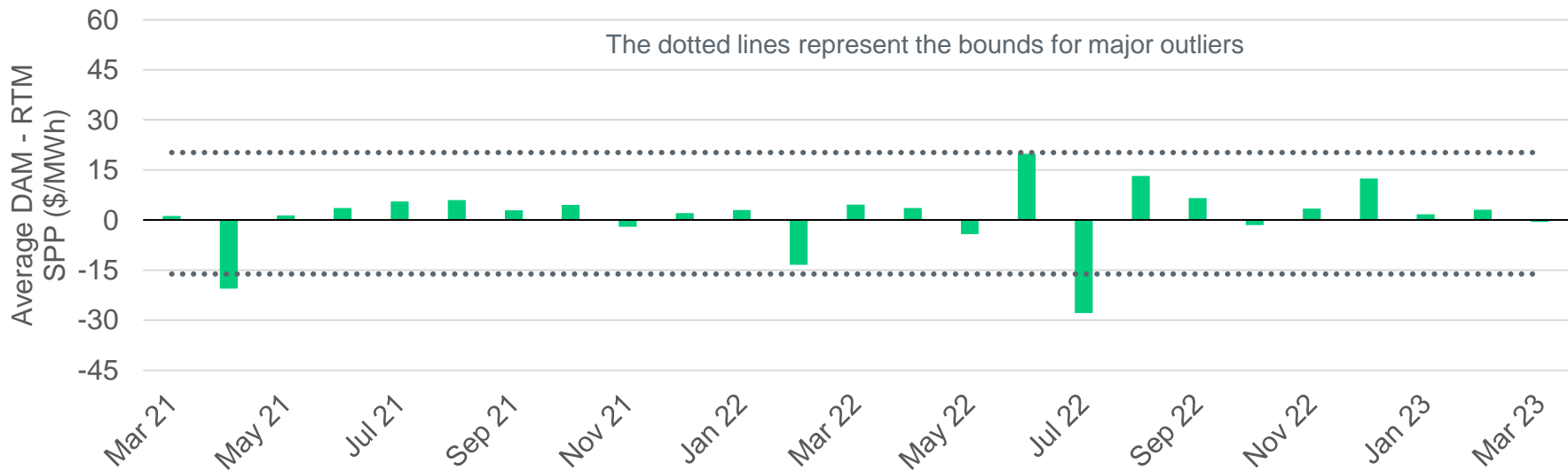
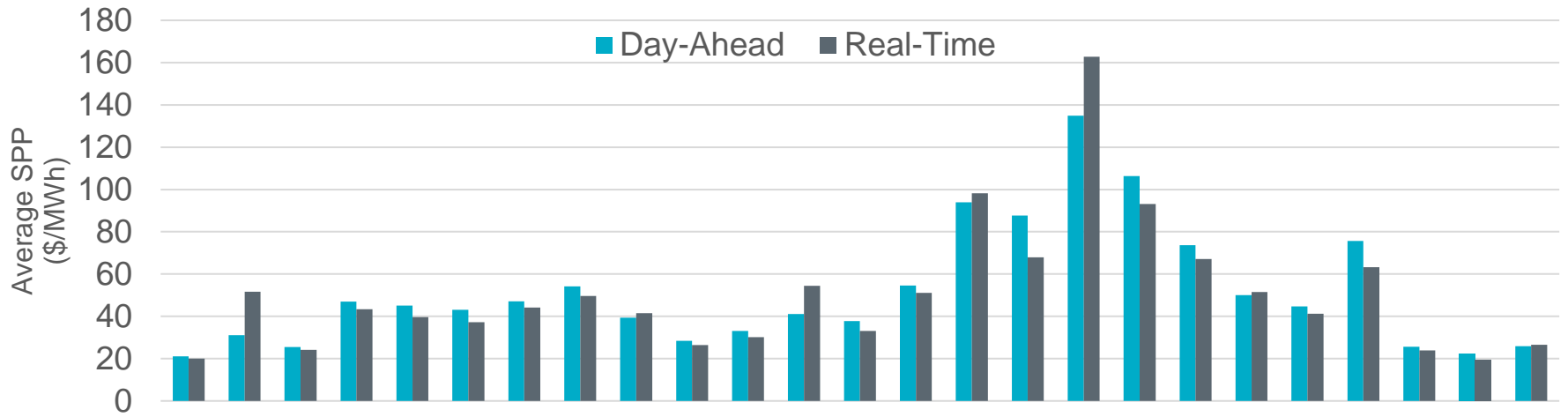
March 2023 (\$M)	
Real-Time Energy Imbalance	\$227.58
Real-Time Point-to-Point Obligation	(\$232.32)
Real-Time Congestion from Self-Schedules	\$0.04
DC Tie & Block Load Transfer	(\$4.76)
Real-Time Energy for SODG and SOTG	(\$0.85)
Load Allocated Revenue Neutrality	\$10.30



Ancillary Services for March 2023 totaled \$40.38M

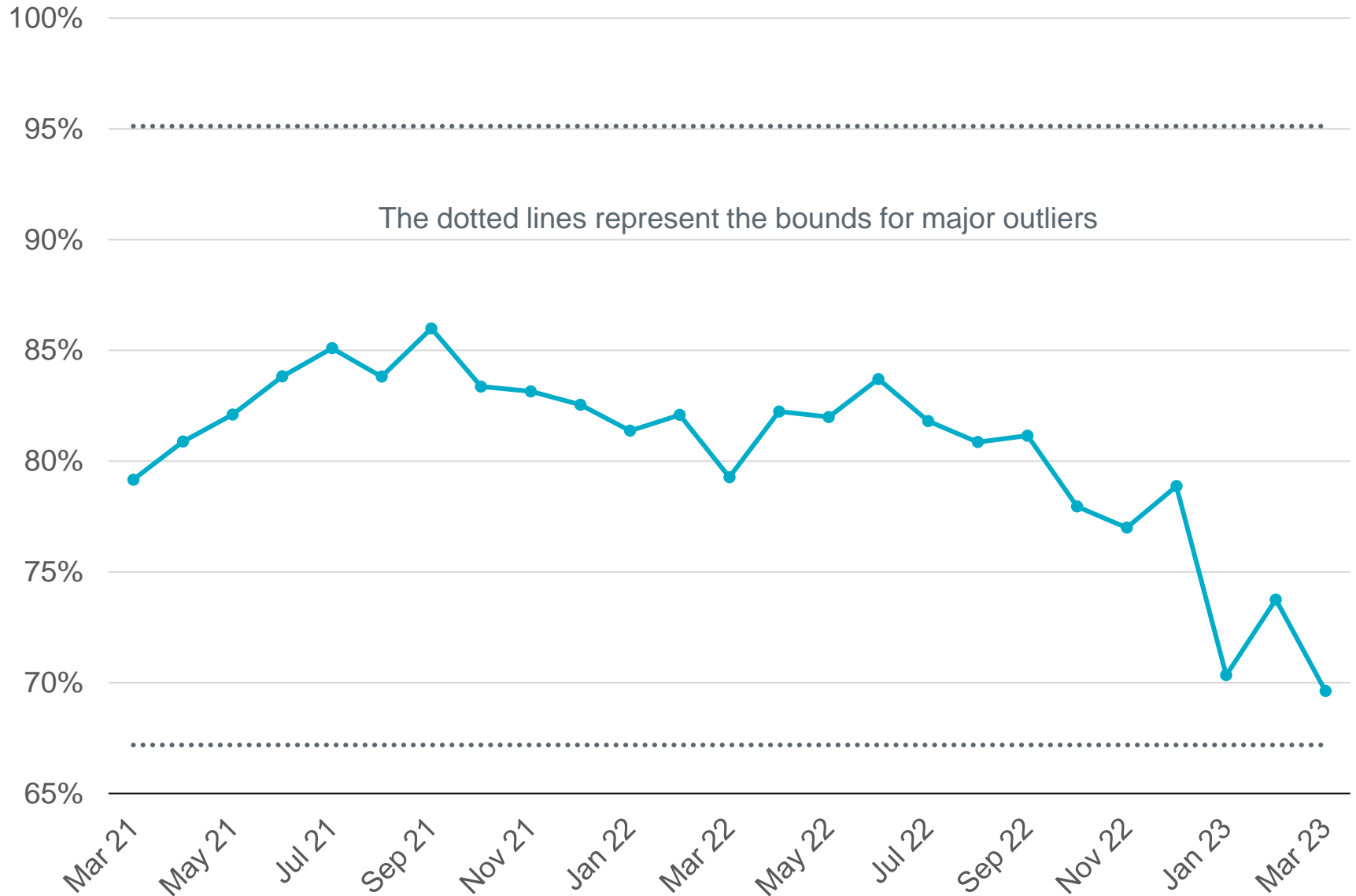


Day-Ahead and Real-Time Market (DAM and RTM) Price Differences

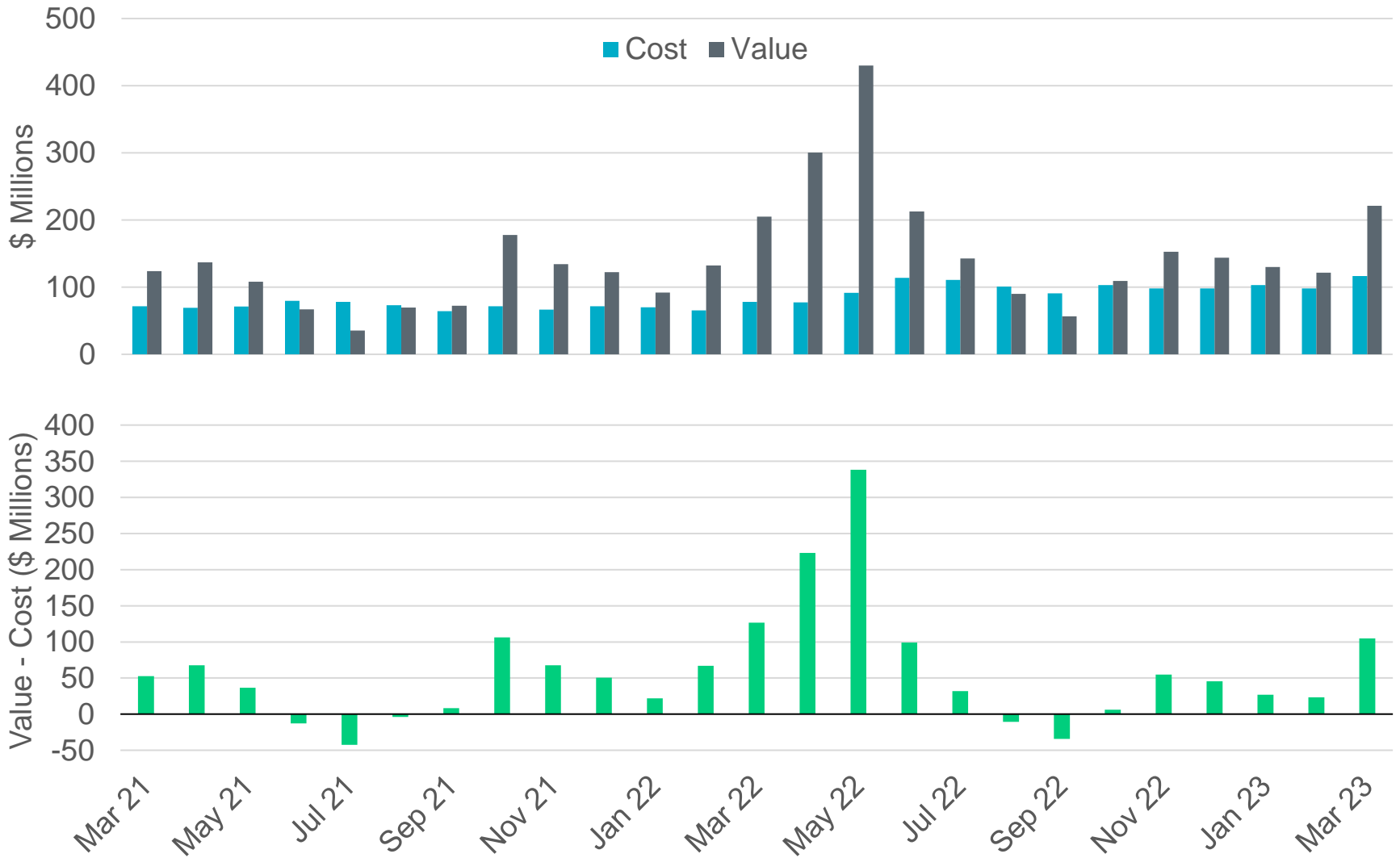


*Averages are weighted by Real-Time Market Load

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



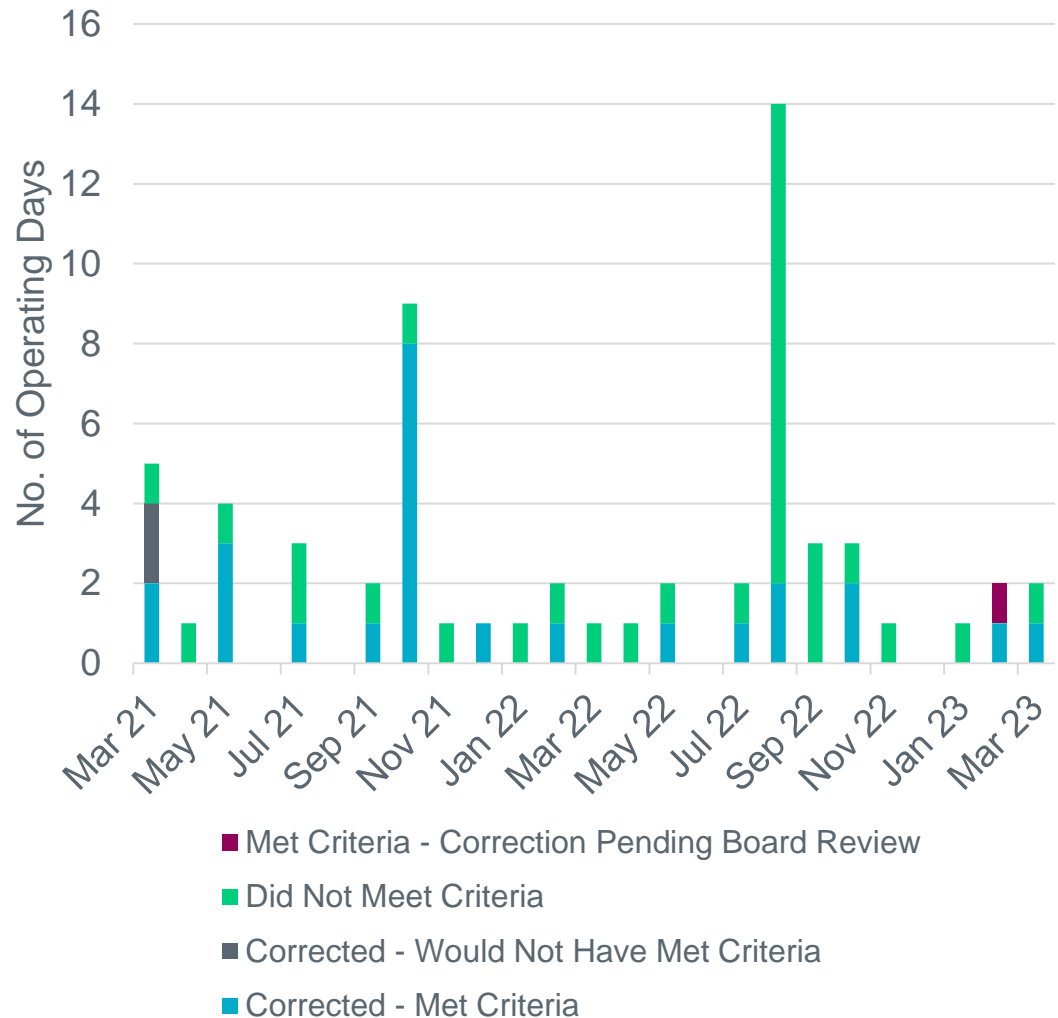
Congestion Revenue Right (CRR) Value and Cost Differences



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

This graph looks at 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 would not have met the criteria for “significance” under NPRR1024, but were corrected because NPRR1024 was not yet in place; and
- Days that were not corrected because they did not meet the criteria for “significance” under NPRR1024.



Details for Price Corrections Reviews

Operating Day Not Meeting Significance Criteria

- On March 13, 2023, routine maintenance resulted in the need for a price impact analysis. The analysis was finished before the two business-day period for initial review had passed. Impacts were specific to Real-Time Prices for Energy Metered for Resources (RTRMPRs) and were determined to not meet criteria for price correction, with the total impact estimated at less than \$1.

Operating Day Meeting Significance Criteria

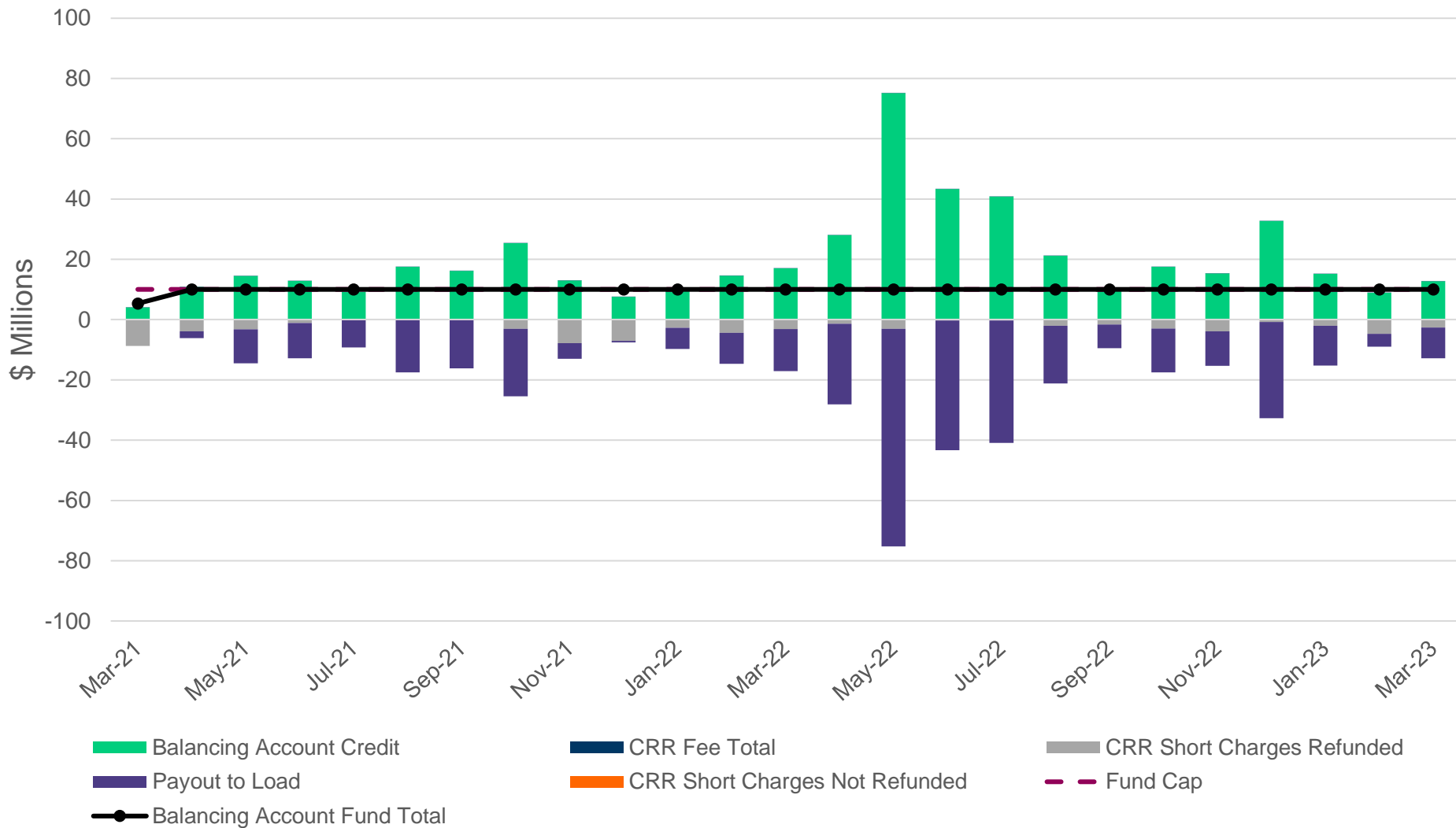
- On March 28, 2023, routine maintenance resulted in SCED failing to run for multiple intervals. For the impact analysis, the Locational Marginal Prices (LMPs) from the last valid SCED run were held for 15 minutes starting from the first valid SCED run following the SCED failure, in accordance with ERCOT Protocols section 6.5.9.2(2). The resulting analysis showed that criteria was met for price correction, specifically looking at Real-Time Settlement Point Prices (RTSPPs) and RTRMPRs.

	RTSPP	RTRMPR
Change Count	1668	2015
Max Pos. Change	\$26.12	\$27.09
Max Neg. Change	(\$21.59)	(\$21.83)

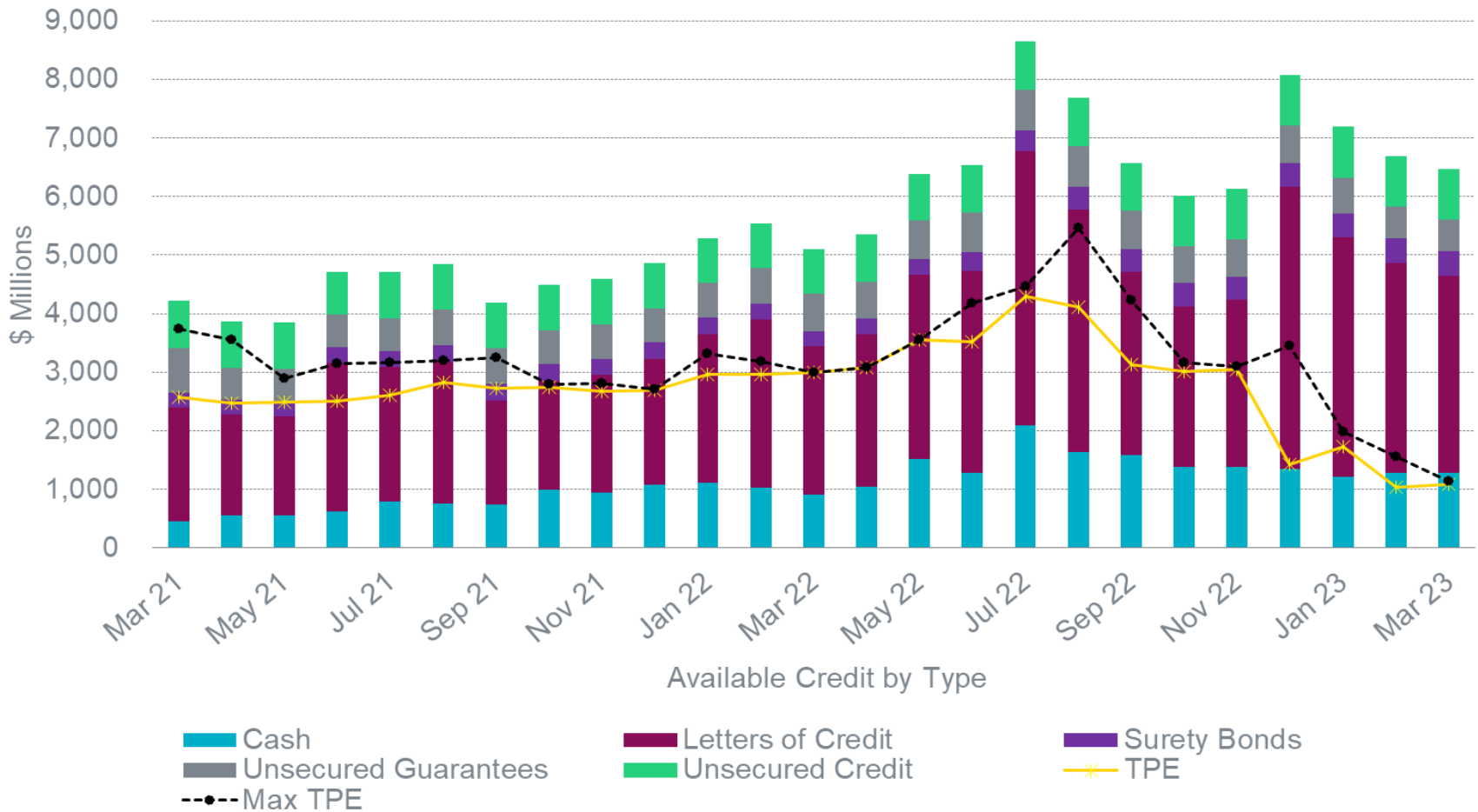
Price Correction Investigation in Progress

- On March 8th, 2023, ERCOT identified an error in the ERCOT Market Management System (MMS) where loads associated with Energy Storage Resources (ESRs) were being considered in Load Zone calculations. The impacted Operating Days (ODs) are February 8th, 2023 through March 8th, 2023. ERCOT is currently performing impact analysis to determine if any of the impacted ODs meet criteria to bring to the ERCOT Board of Directors for approval for price correction. Once analysis is complete, ERCOT will issue a notice with further information.

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 2023

Transaction Type	Year-To-Date		Transactions Received	
	March 2023	March 2022	March 2023	March 2022
Switches	303,777	322,241	96,905	112,865
Acquisitions	0	0	0	0
Move - Ins	766,421	699,238	281,040	269,490
Move - Outs	329,250	306,186	119,201	117,899
Continuous Service Agreements (CSA)	106,719	152,031	27,663	63,198
Mass Transitions	0	0	0	0
Total	1,506,167	1,479,696	524,809	563,452