



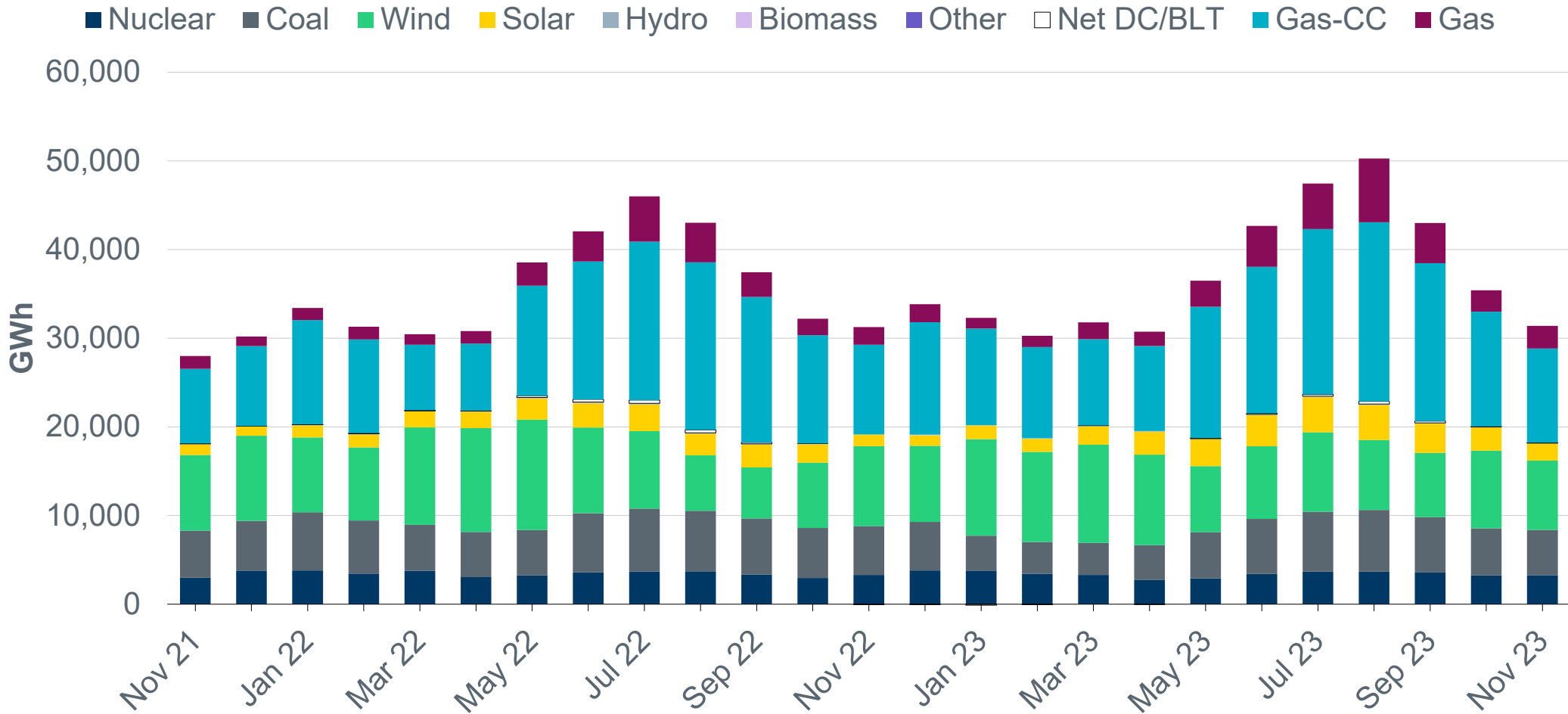
ERCOT Monthly Operational Overview (November 2023)

ERCOT Public
December 15, 2023

Highlights, Records and Notifications

- ERCOT set a new record of 56,515 MW* for the month of November on 11/08/2023; This is 3,179 MW more than the November 2022 demand of 53,336 MW.
- ERCOT issued 6 notifications:
 - 3 OCNs for PANHANDLE IROL due to planned outage and topology change.
 - 1 OCN for WESTEX IROL due to planned outage and topology change.
 - 1 Advisory issued for geomagnetic disturbance of G7.
 - 1AAN due to possible future Emergency Condition of reserve capacity deficiency.

Monthly energy generation increased by 0.5% year-over-year to 31,368 GWh in November 2023, compared to 31,209 GWh in November 2022

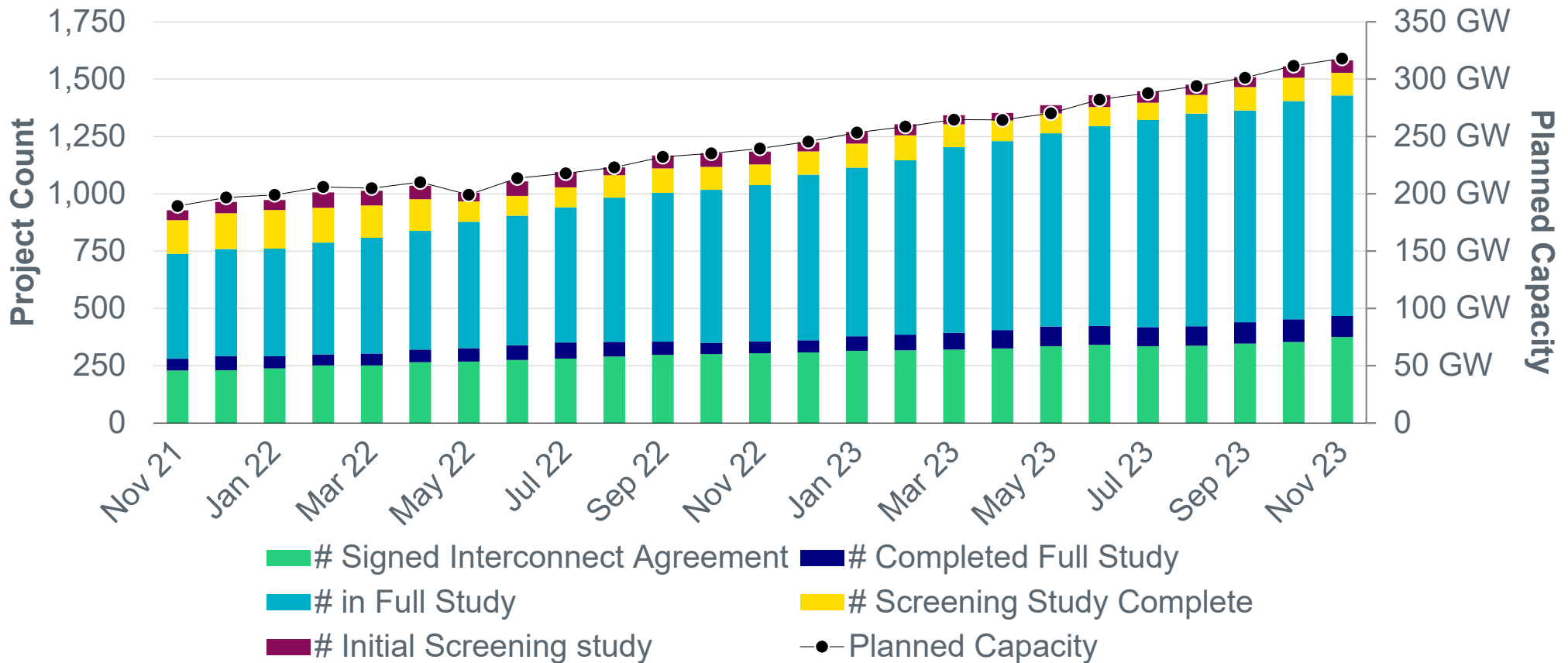


Data for latest two months are based on preliminary settlements.



Generation Interconnection activity by project phase

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

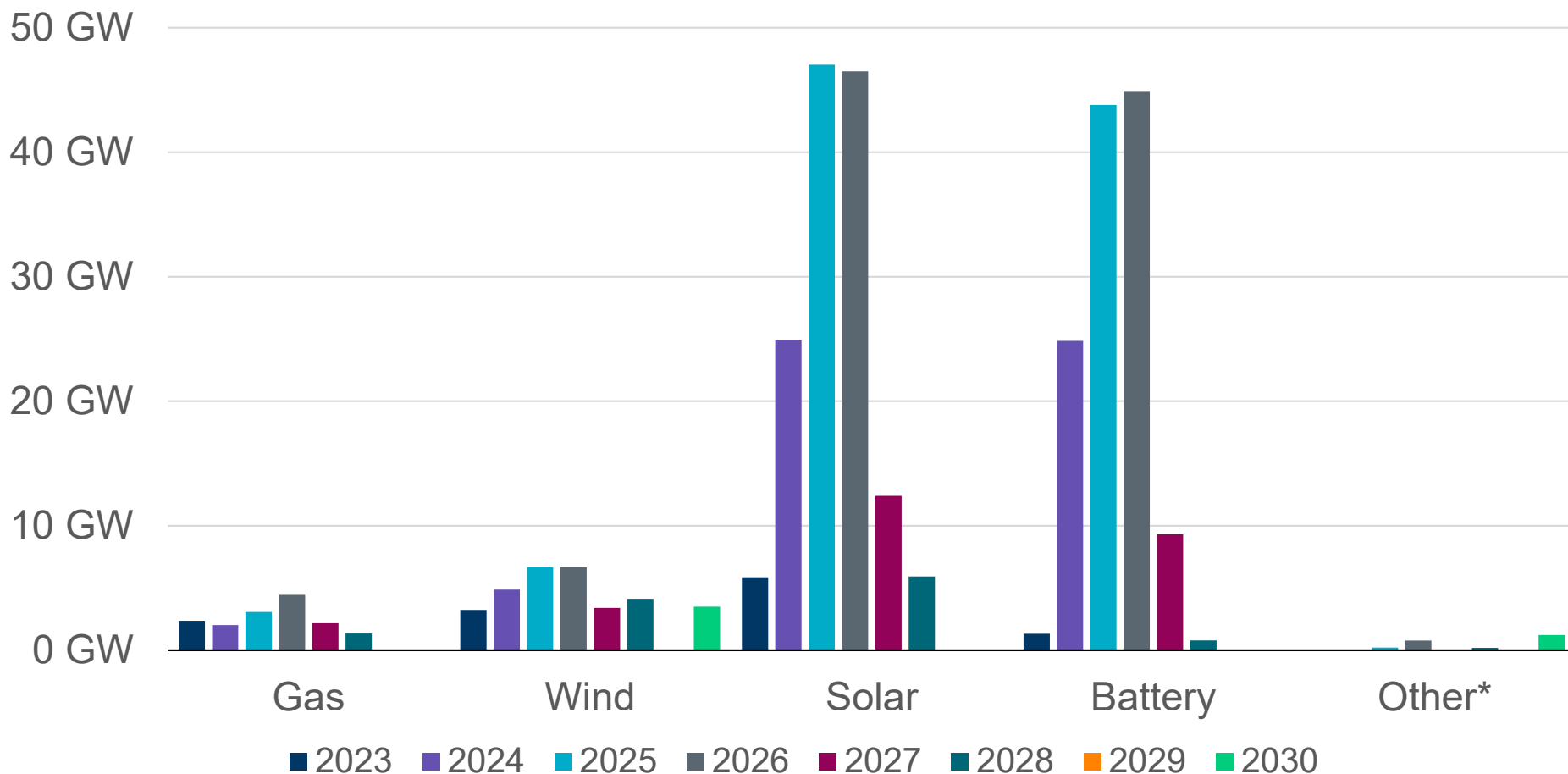


- There are an additional 30 “Small Generator” projects totaling 284 MW that are going through the simplified interconnection process.

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 143 GW (44.9%), Wind 33 GW (10.2%), Gas 15 GW (4.9%), Battery 125 GW (39.3%)
 (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>

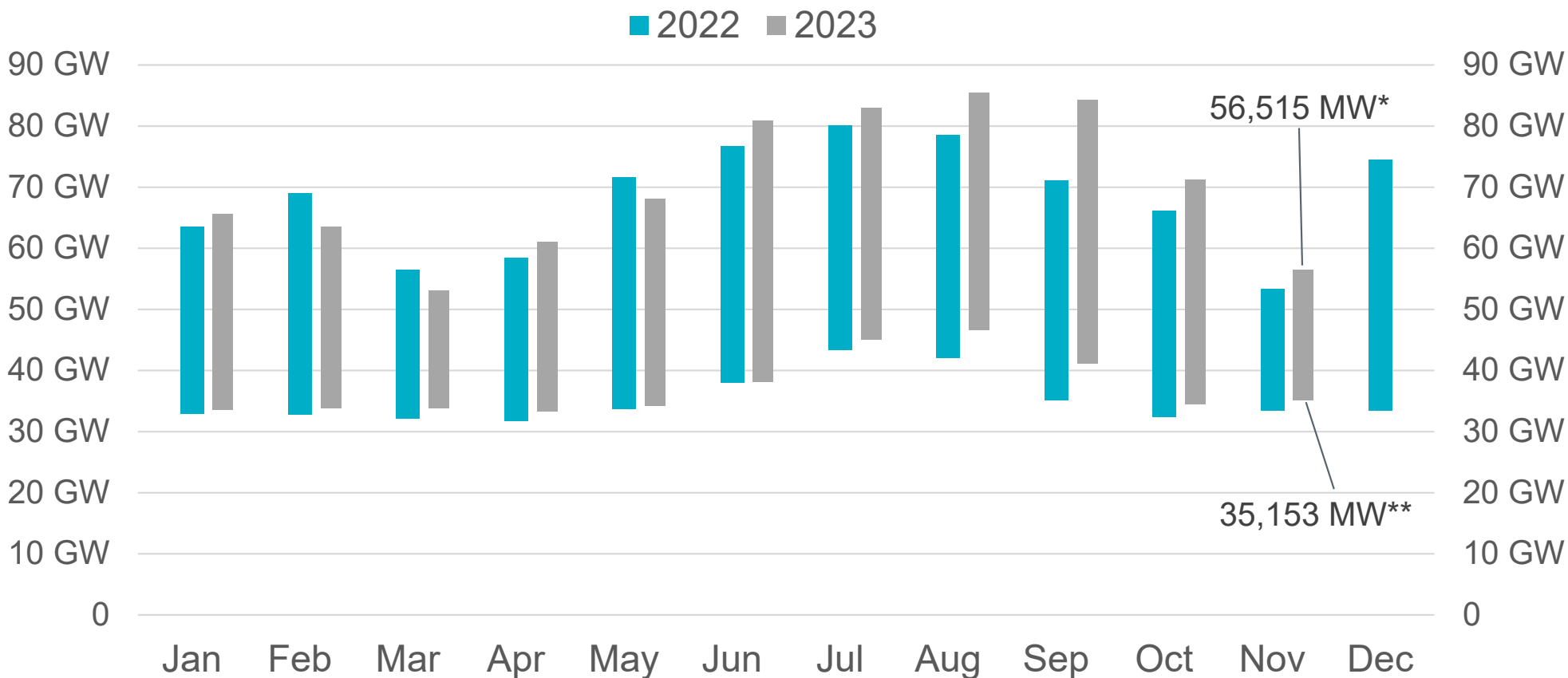
* Other includes petroleum coke (pet coke), hydroelectric, fuel oil, geothermal energy, other miscellaneous fuels reported by developers, and fuel cells that use fuels other than natural gas.



Planning Summary

- ERCOT is tracking 1,656 active generation interconnection requests totaling 317,952 MW as of November 30. This includes 142,606 MW of solar, 32,510 MW of wind, 124,941 MW of battery, and 15,457 MW of gas projects; 85 projects were categorized as inactive, up from 80 inactive projects in October 2023.
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of \$2.789 billion as of November 30, 2023.
- Transmission Projects endorsed in 2023 total \$1.992 billion as of November 30, 2023.
- All projects (in engineering, routing, licensing and construction) total approximately \$13.537 billion as of October 12, 2023.
- Transmission Projects energized in 2023 total approximately \$1.553 billion October 12, 2023.

ERCOT set a new all-time record of 56,515 MW* for the month of November on 11/08/2023; This is 3,179 MW more than the November 2022 demand of 53,336 MW.



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

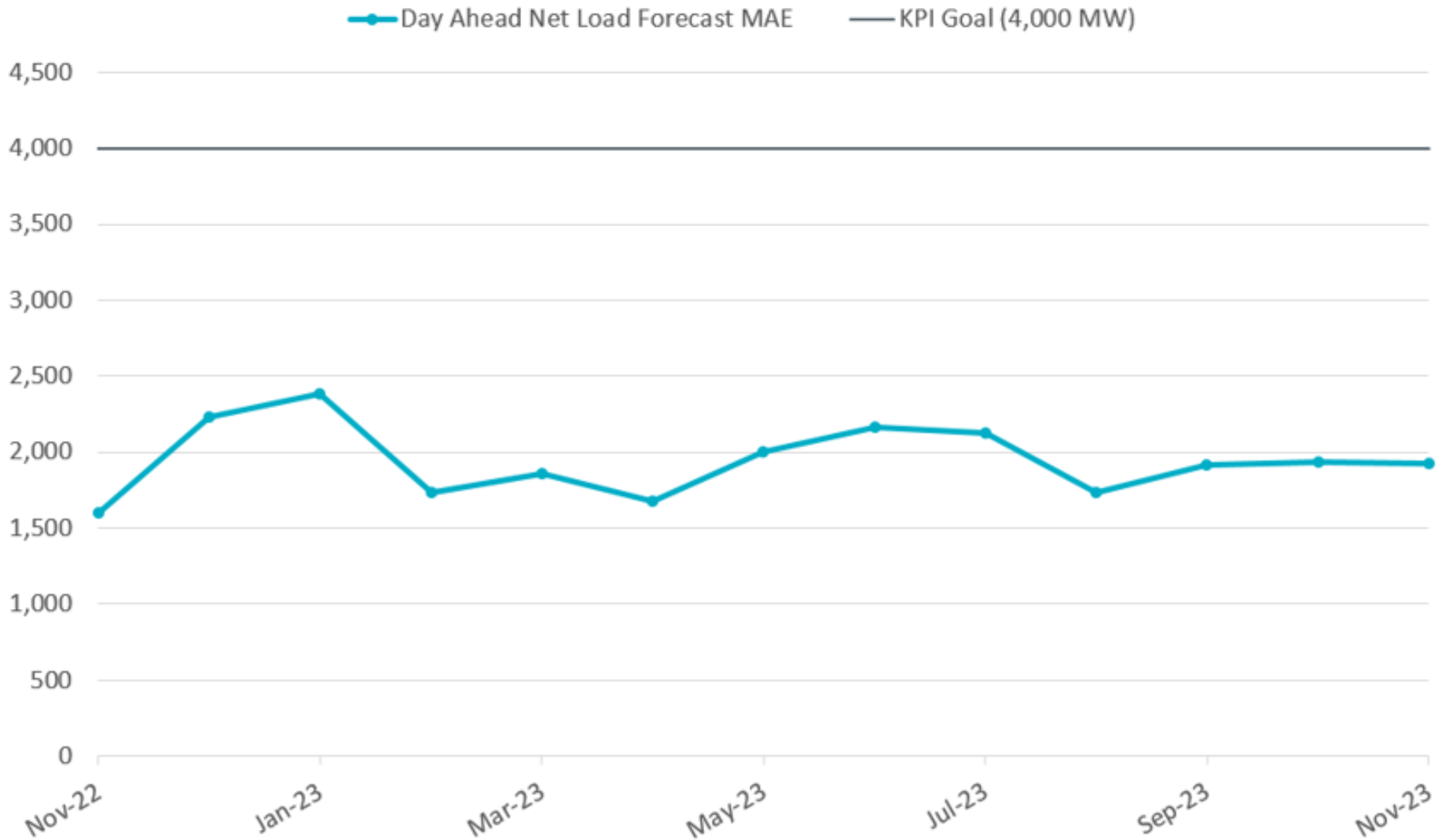
**Based on the minimum net system 15-minute interval value from the November Demand and Energy 2023 report.

Data for latest two months are based on preliminary settlements.

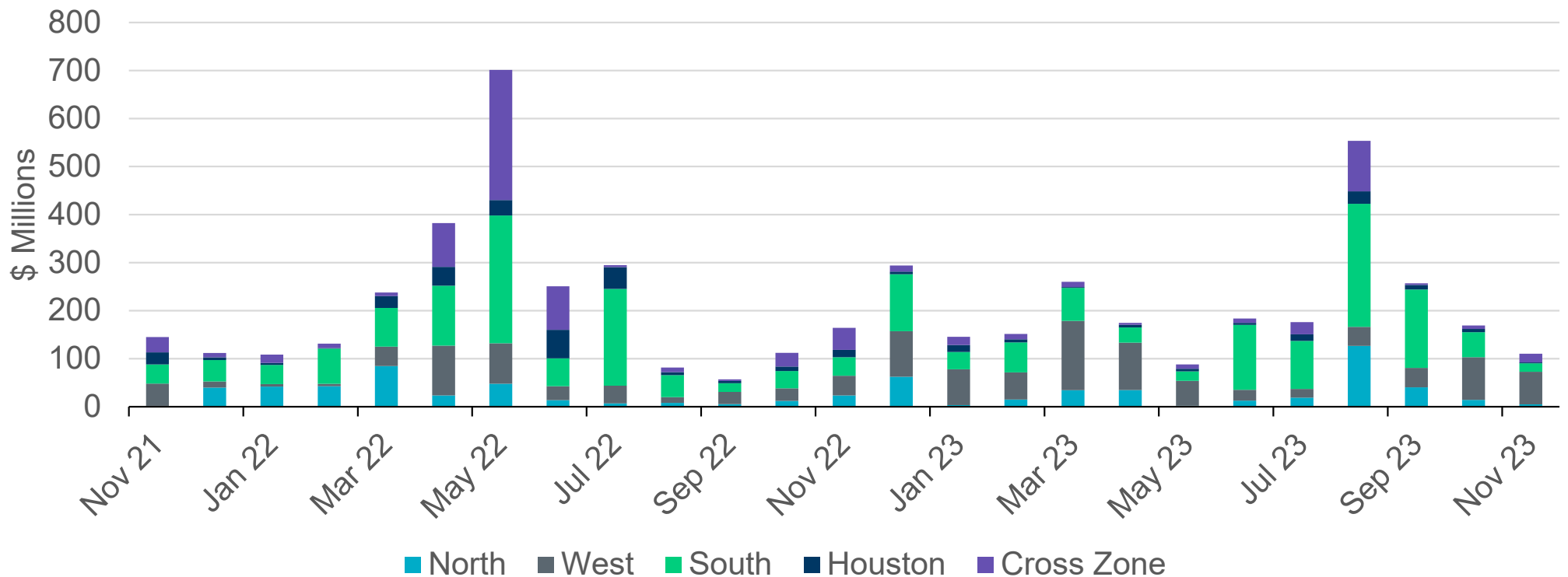


Net Load Forecast Performance

Day Ahead Net Load Forecast - Mean Absolute Forecast Error

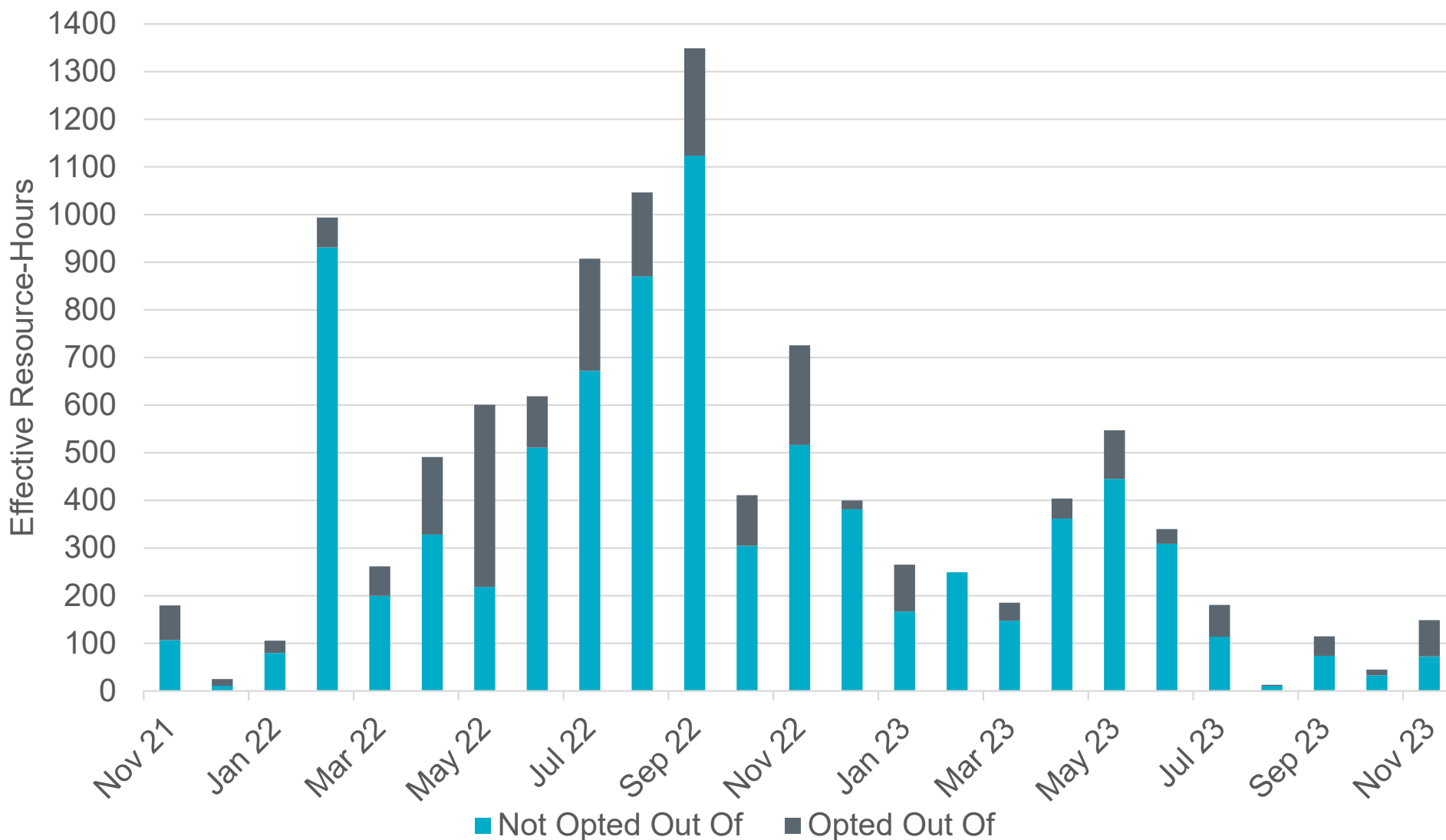


Real-Time Congestion Rent by Zone



- Overall congestion rent decreased in November compared to October.
- The two zones with the highest congestion rent were the West and Cross Zones.
 - Congestion rent in the West Zone was primarily driven by the loss of the 345 kV contingency from Morgan Creek to Champion Creek and Bitter Creek to Morgan Creek overloading the 345 kV transmission line from Morgan Creek to Tonkawa Switch.
 - Congestion rent in the Cross Zone was primarily driven by the West Texas Generic Transmission Constraint.
- Congestion Rent is determined using the shadow prices and MW flows for individual constraints in 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.

Fourteen Resources were Committed in November for Capacity



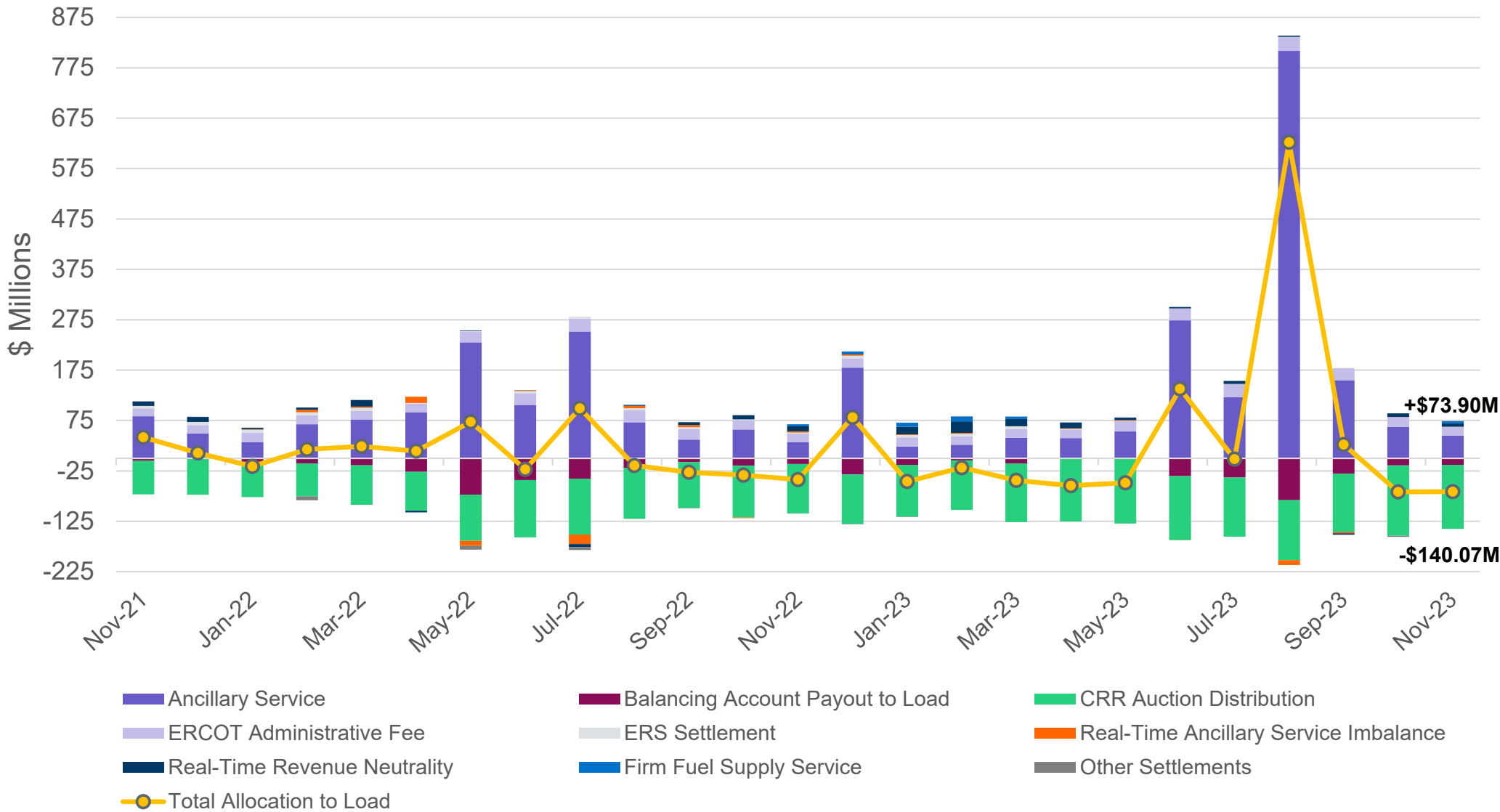
“Effective Resource-Hours” excludes any period during a Reliability Unit Commitment hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.



Fourteen Resources were Committed in November for Capacity

Resource #	Effective Resource-hours	Non-Opt Out (Effective Hours)	Opt Out (Effective Hours)
1	6.0	0.0	6.0
2	42.0	0.0	42.0
3	6.0	0.0	6.0
4	5.0	5.0	0.0
5	1.0	1.0	0.0
6	4.0	4.0	0.0
7	2.0	2.0	0.0
8	16.0	16.0	0.0
9	15.8	15.8	0.0
10	24.0	19.0	5.0
11	3.4	0.0	3.4
12	8.0	4.0	4.0
13	9.7	0.0	9.7
14	6.0	6.0	0.0
Total	148.9	72.8	76.1

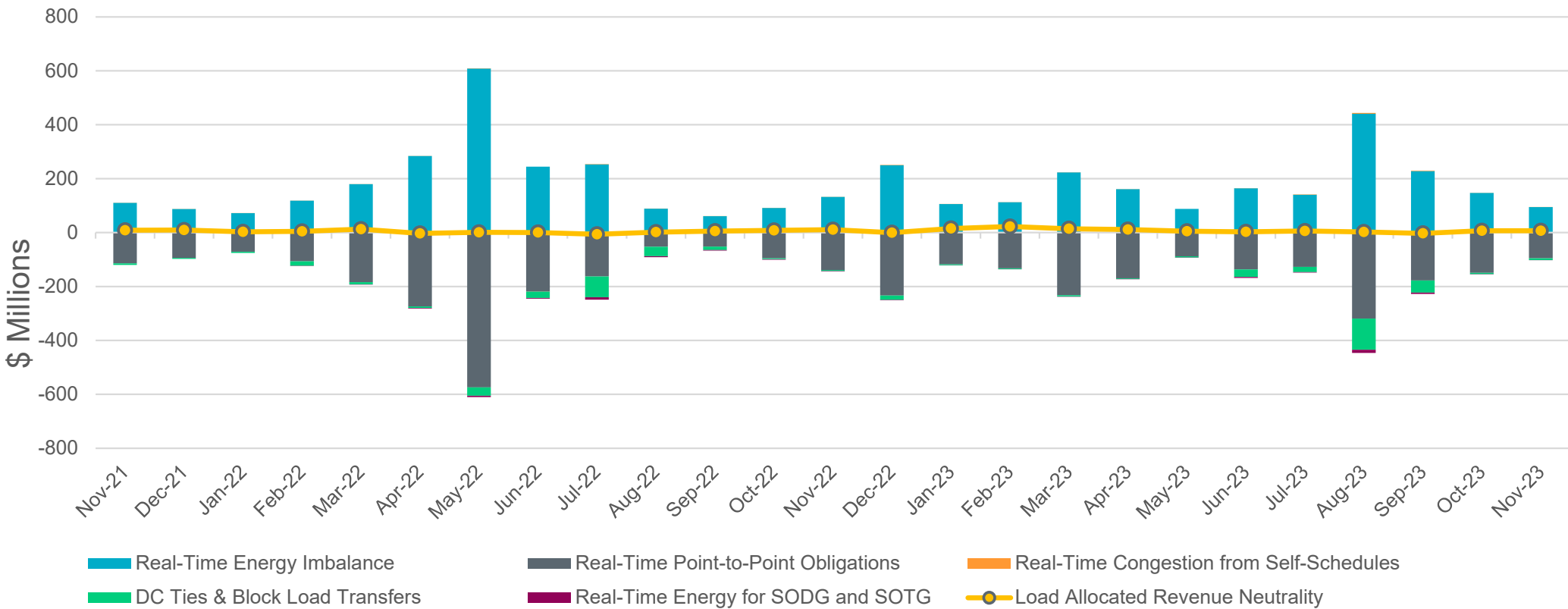
Net Allocation to Load in November 2023 was (\$66.17) Million



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



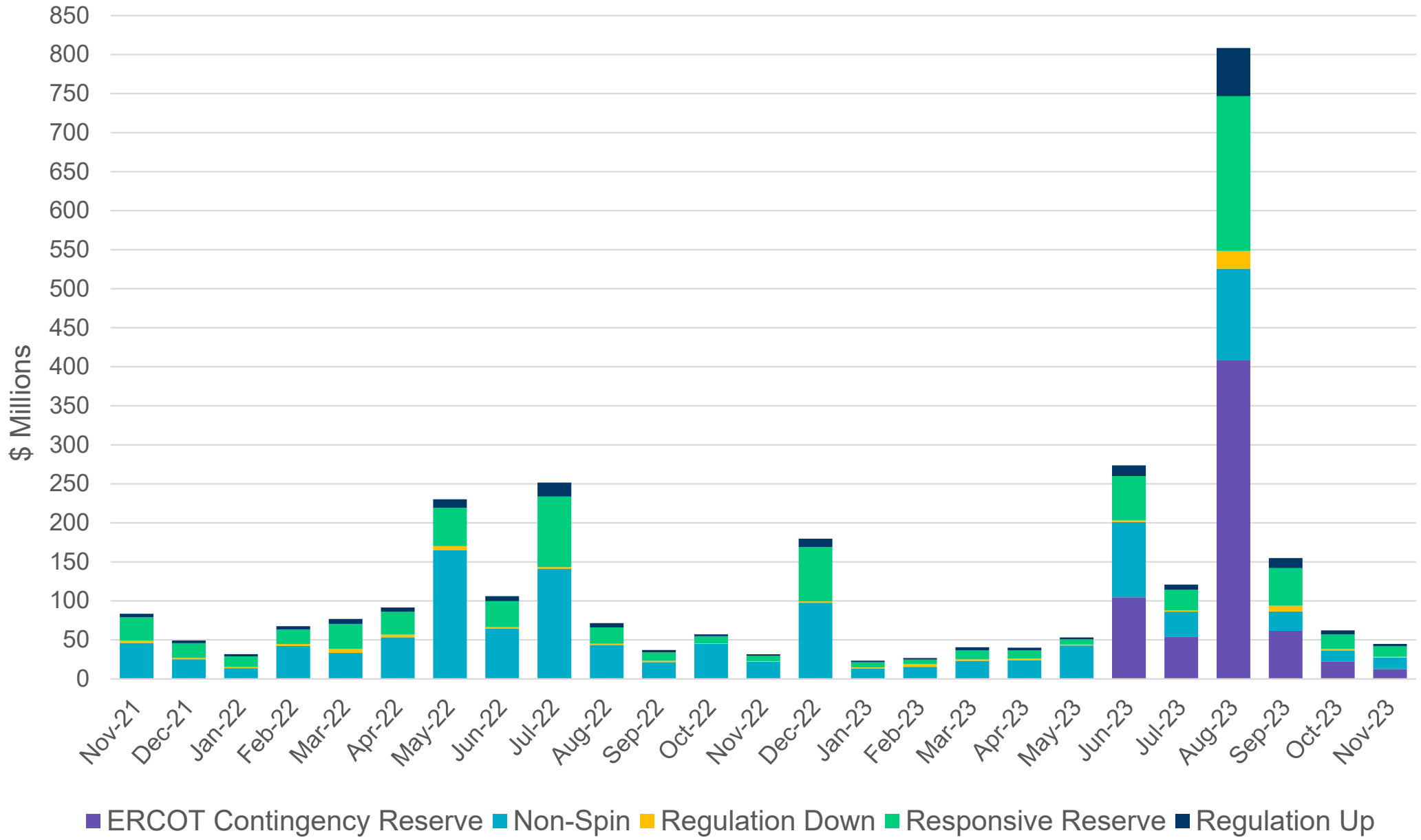
Real-Time Revenue Neutrality Allocated to Load was \$7.00M for November 2023



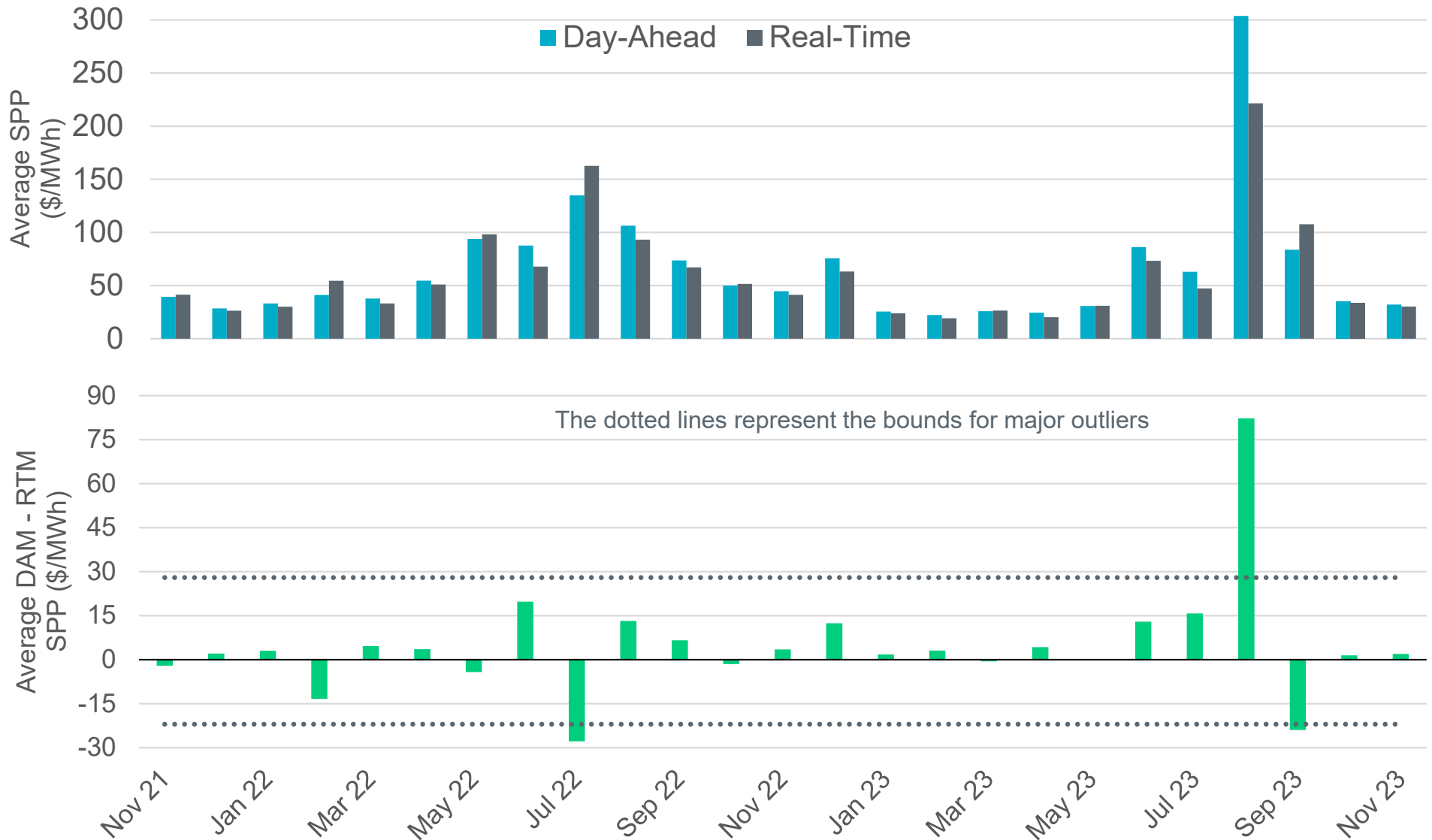
	November 2023 (\$M)
Real-Time Energy Imbalance	\$94.83
Real-Time Point-to-Point Obligation	(\$94.97)
Real-Time Congestion from Self-Schedules	\$0.44
DC Tie & Block Load Transfer	(\$6.78)
Real-Time Energy for SODG and SOTG	(\$0.52)
Load Allocated Revenue Neutrality	\$7.00



Ancillary Services for November 2023 totaled \$44.82M



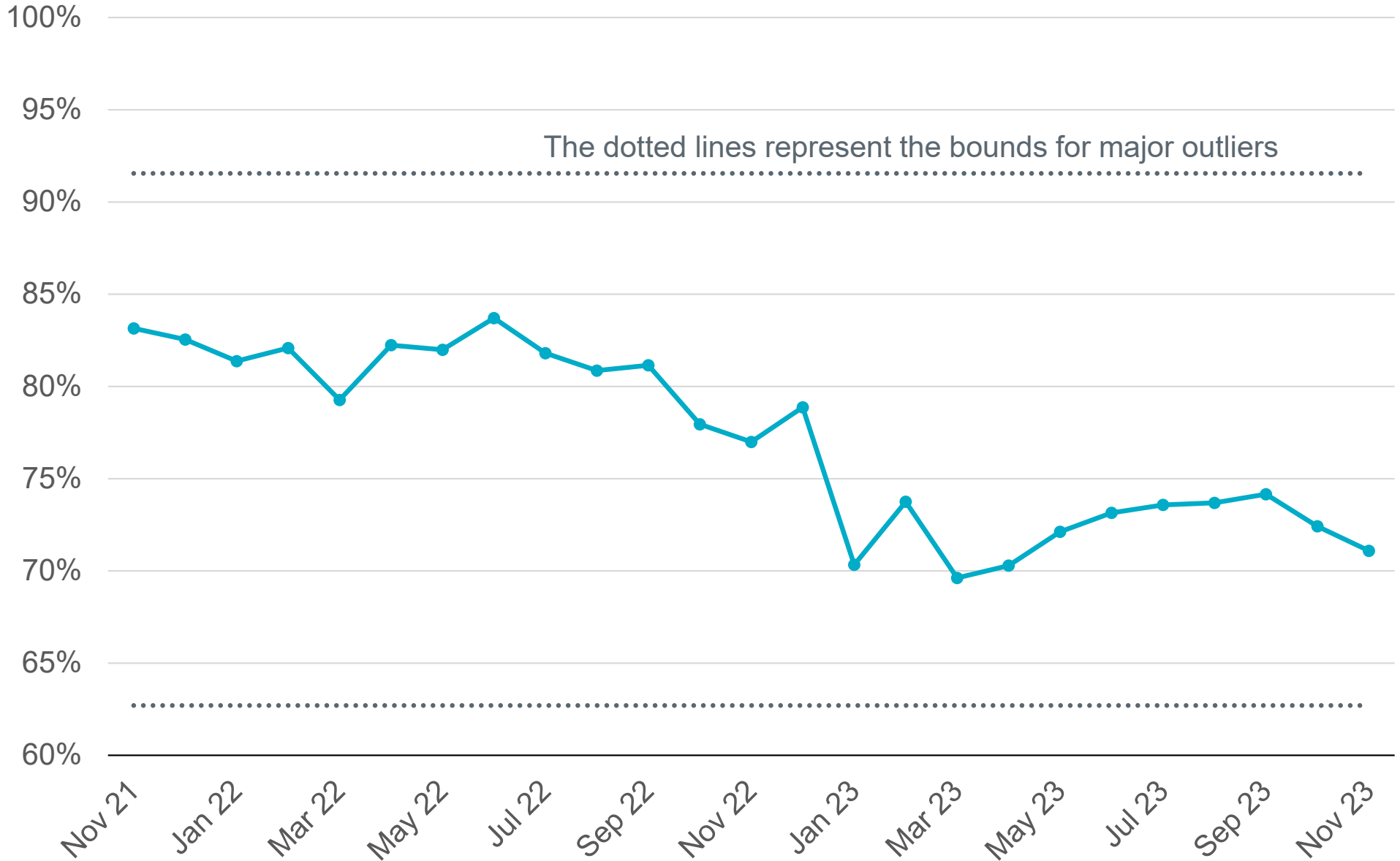
Day-Ahead and Real-Time Market Price Differences



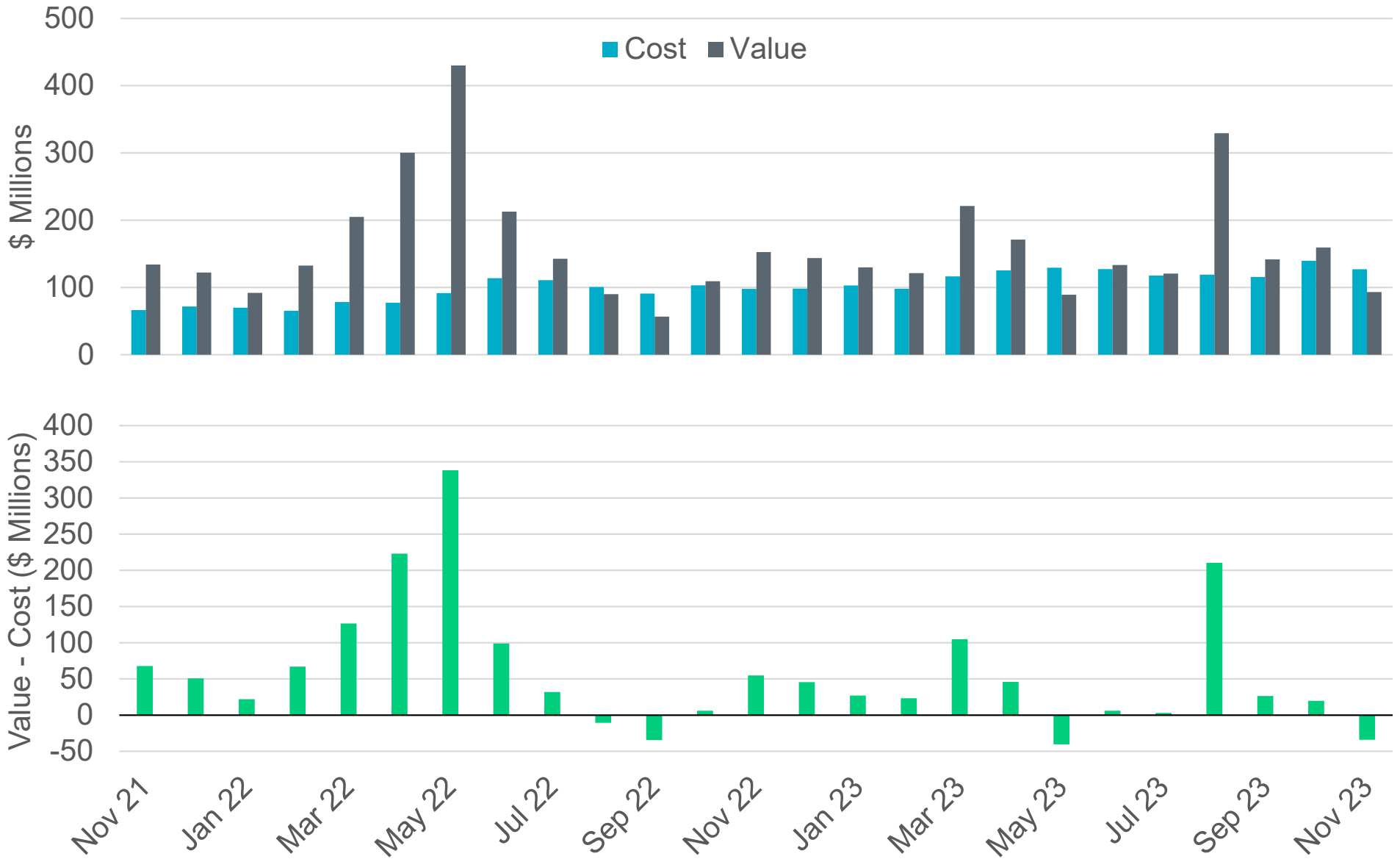
*Averages are weighted by Real-Time Market Load



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



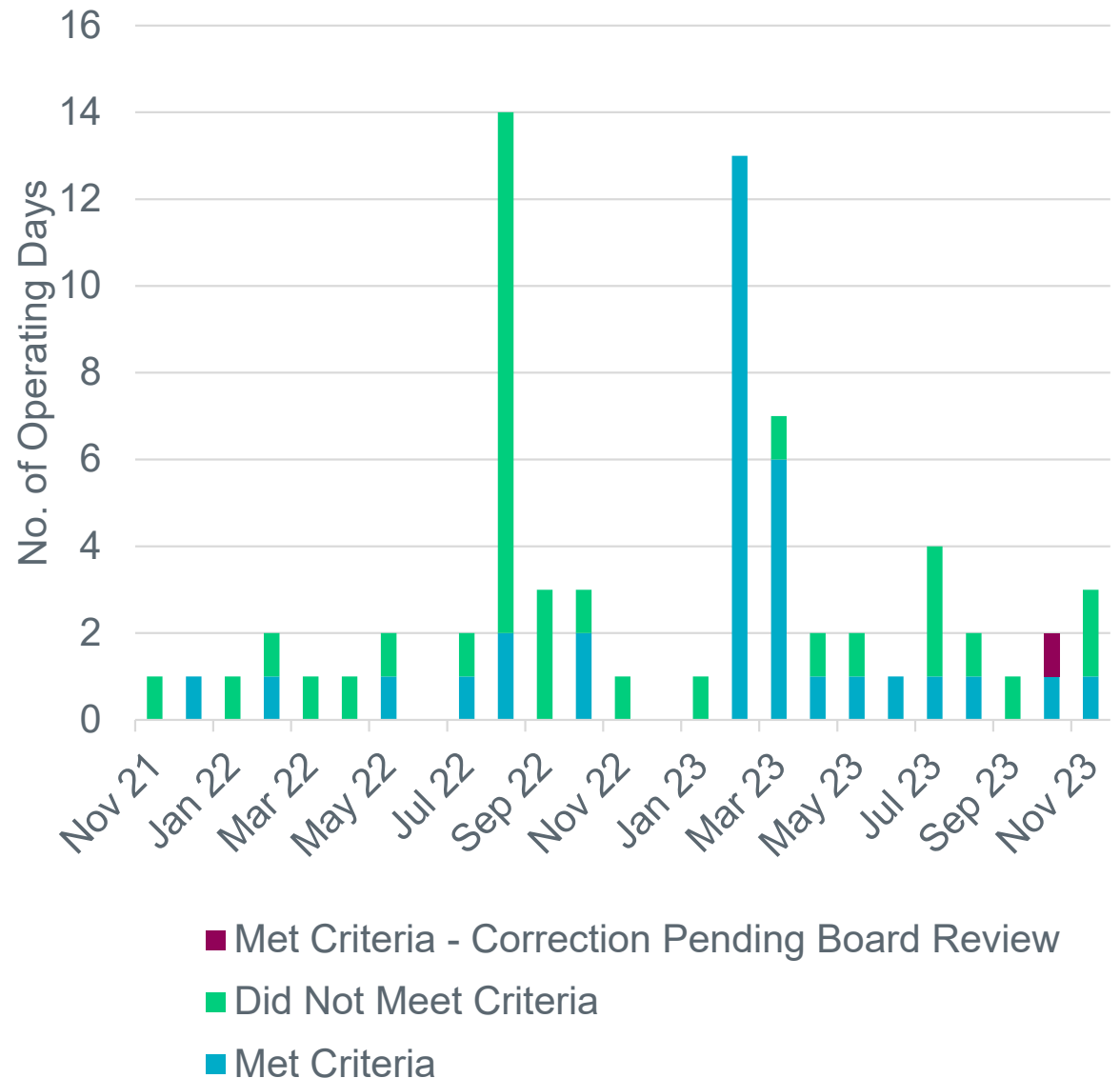
CRR Value and Cost Differences



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

This graph 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 Review

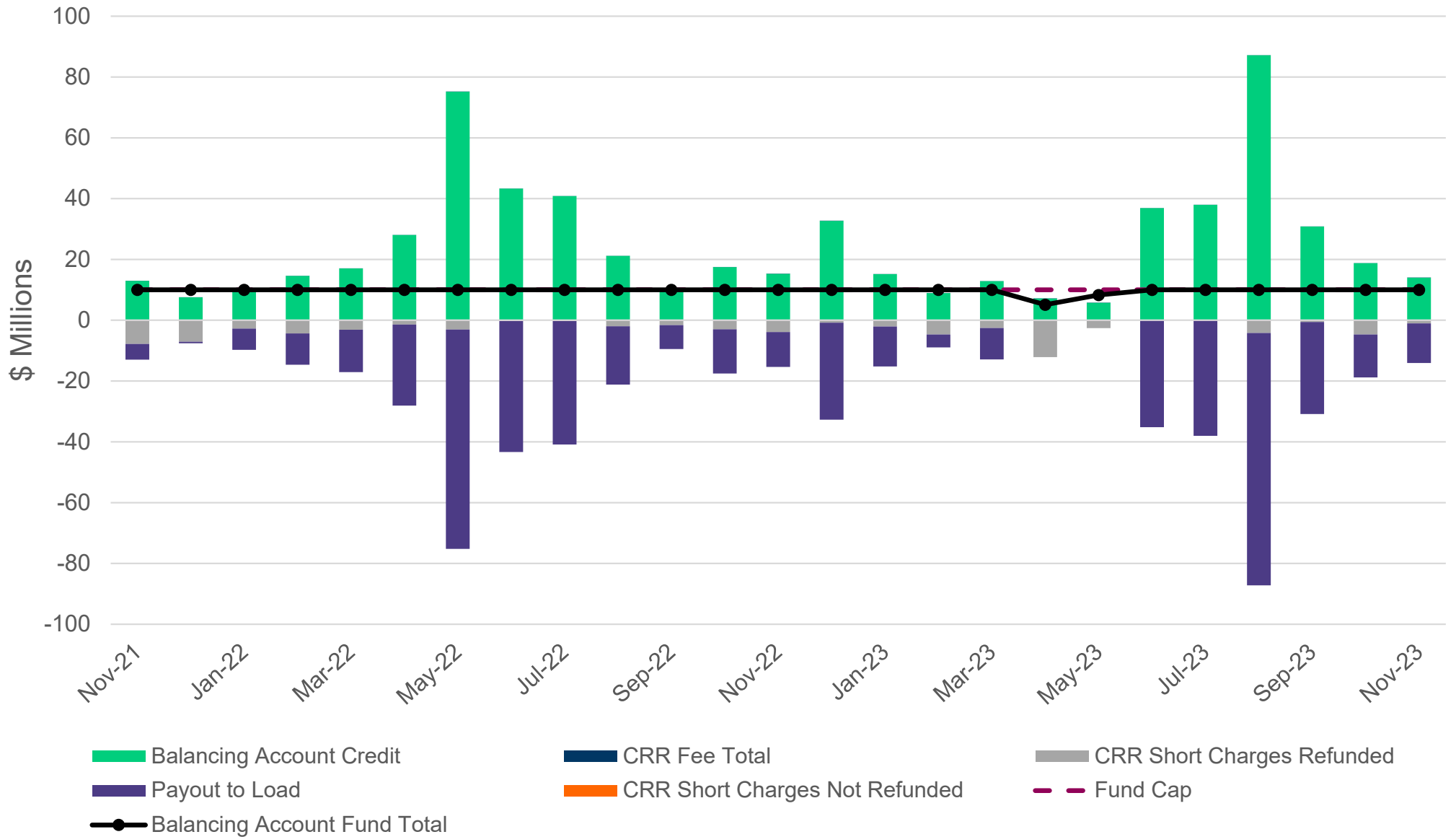
Operating Days Not Meeting Significance Criteria

- On November 2, 2023, Emergency Basepoints were activated during a planned upgrade to the EMS system. The resulting impact analysis showed that this day had not met criteria for price correction, with an estimated total dollar impact of \$45.26.
- On November 6, 2023, Emergency Basepoints were activated during a planned site failover. The resulting impact analysis showed that this day had not met criteria for correction, with an estimated total dollar impact of \$4.80.

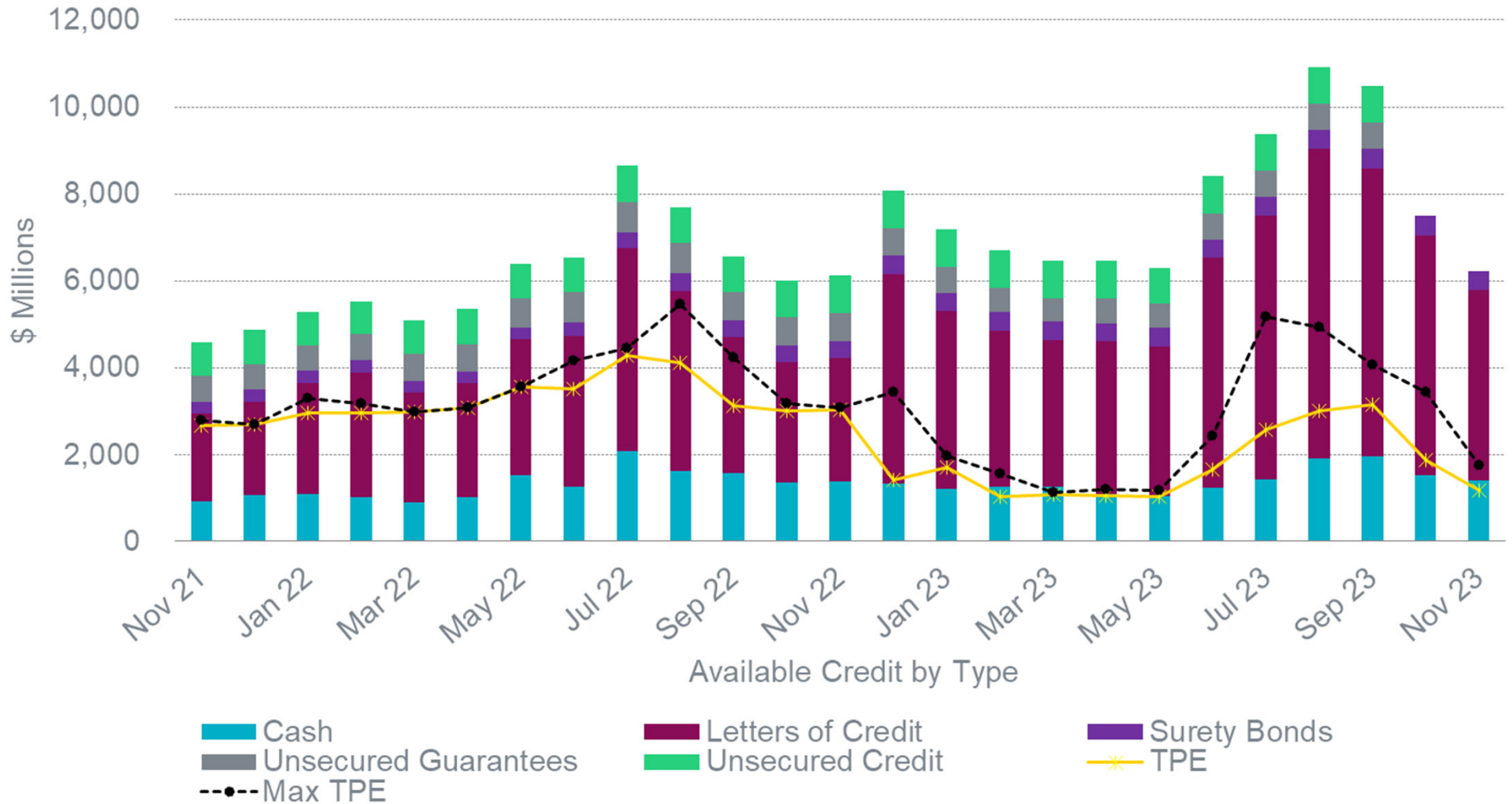
Operating Days Meeting Significance Criteria

- On November 9, 2023, a software issue resulted in some Market Submissions not being considered during the execution of a SASM. This was related to the October 22, 2023 issue where Market Submissions were not able to be processed. The resulting analysis showed that this SASM met the criteria for price correction, with the largest absolute value change to an MCPC of \$35.25.

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 – November 2023

Transaction Type	Year-To-Date		Transactions Received	
	November 2023	November 2022	November 2023	November 2022
Switches	1,030,463	1,111,972	73,169	70,446
Acquisitions	0	0	0	0
Move - Ins	2,862,042	2,865,233	226,549	231,597
Move - Outs	1,305,563	1,285,822	109,588	100,741
Continuous Service Agreements (CSA)	395,714	642,366	17,589	28,034
Mass Transitions	0	24,463	0	0
Total	5,593,782	5,929,856	426,895	430,818