



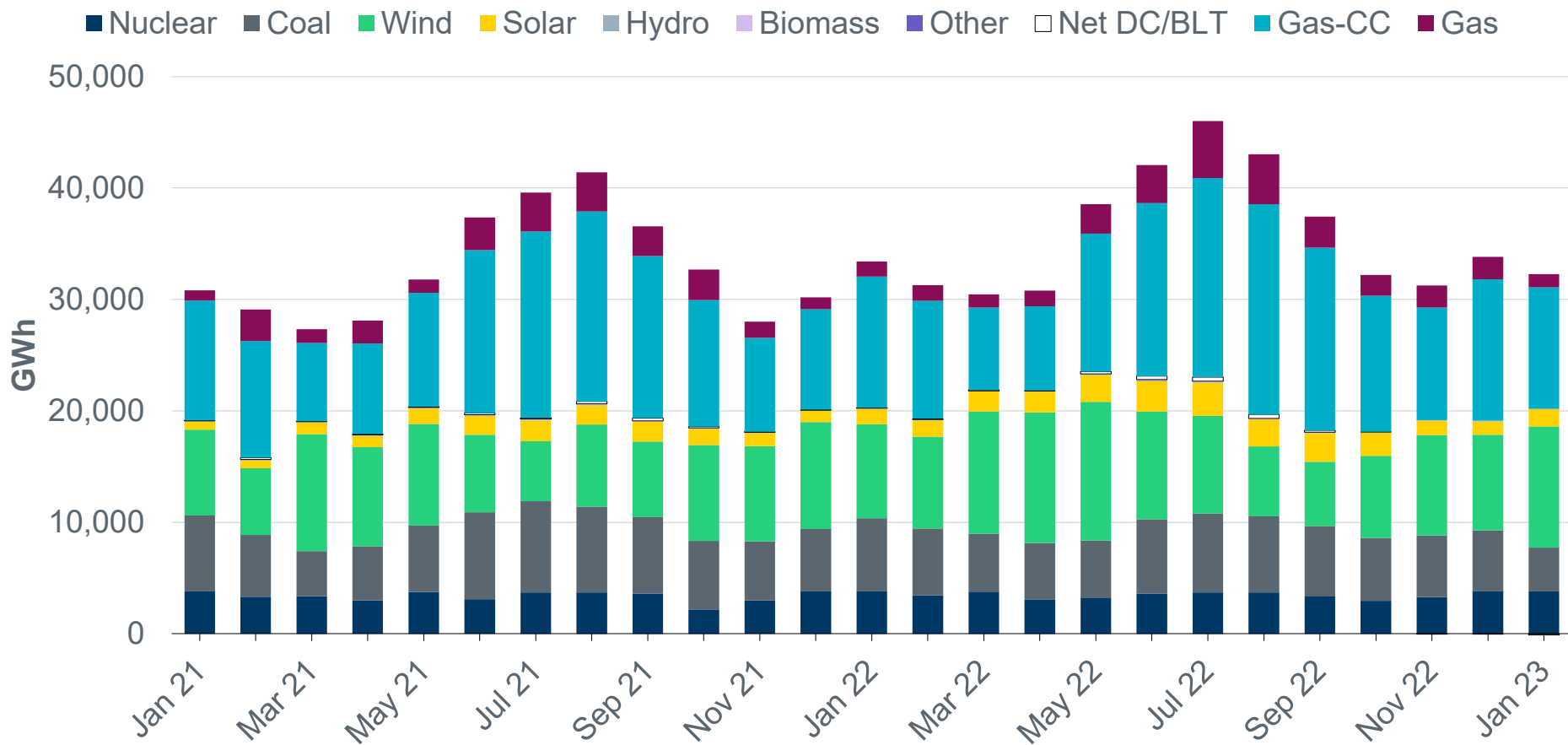
ERCOT Monthly Operational Overview (January 2023)

ERCOT Public
February 17, 2023

Highlights, Records and Notifications

- ERCOT set a maximum peak demand of 65,632 MW* in the month of January on 01/31/2023; this was 283 MW less than previous record of 65,915 MW set on 01/17/2018. This is 2,091 MW more than the January 2022 demand of 63,541 MW.
- ERCOT issued 7 notifications:
 - 1 DC Tie Curtailment Notice for the DC_L due to forced or unplanned outages.
 - 1 DC Tie Curtailment Notice for the DC_R due to forced or unplanned outages.
 - 2 OCNs issued for potential freezing precipitation event for the Panhandle, North, and West areas of the ERCOT Region.
 - 1 OCN issued for the Panhandle IROL due to a topology change.
 - 1 Advisory issued for potential freezing precipitation event for the Panhandle, North, West, and Central areas of the ERCOT Region.
 - 1 Watch issued for potential freezing precipitation event for the Panhandle, North, West, and Central areas of the ERCOT Region.

Monthly energy generation decreased by 4% year-over-year to 32,160 GWh in January 2023, compared to 33,400 GWh in January 2022

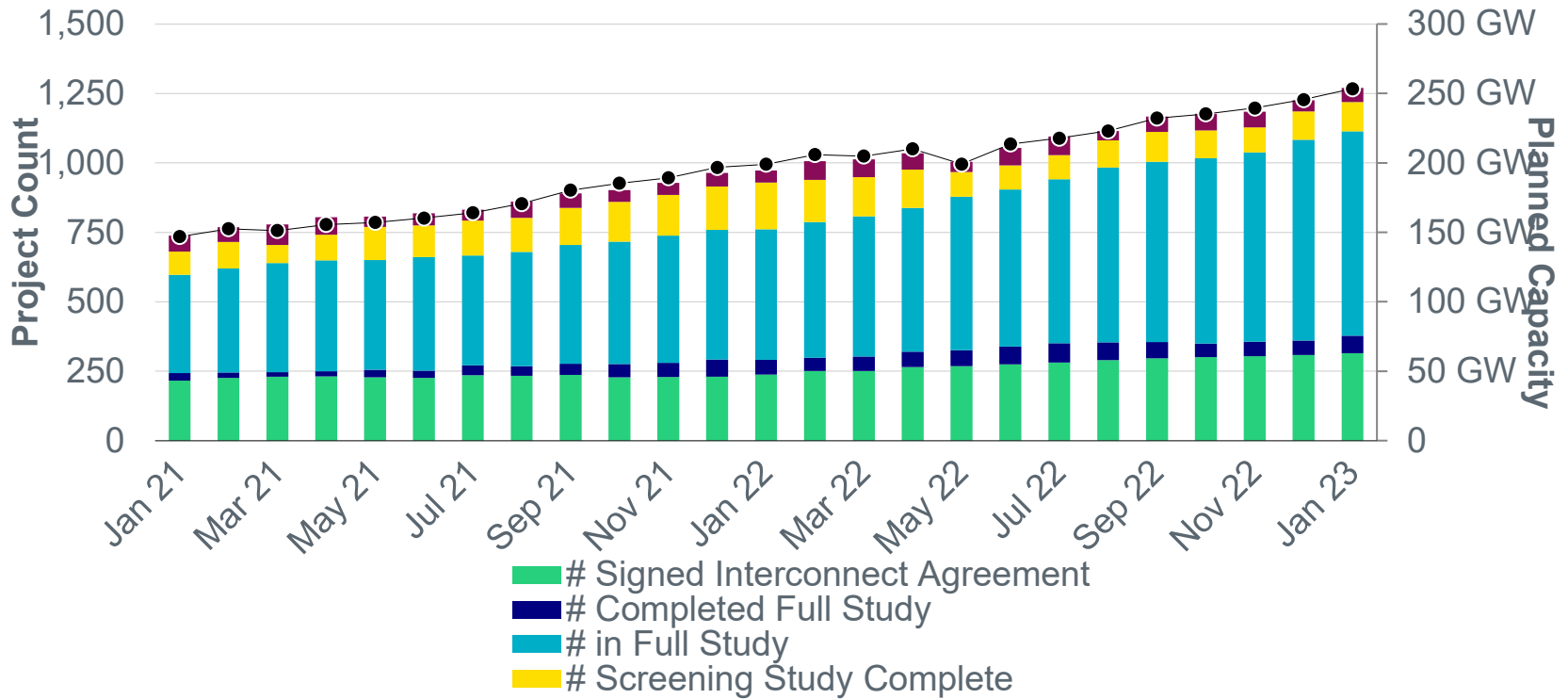


Data for latest two months are based on preliminary settlements.



Generation Interconnection activity by project phase

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



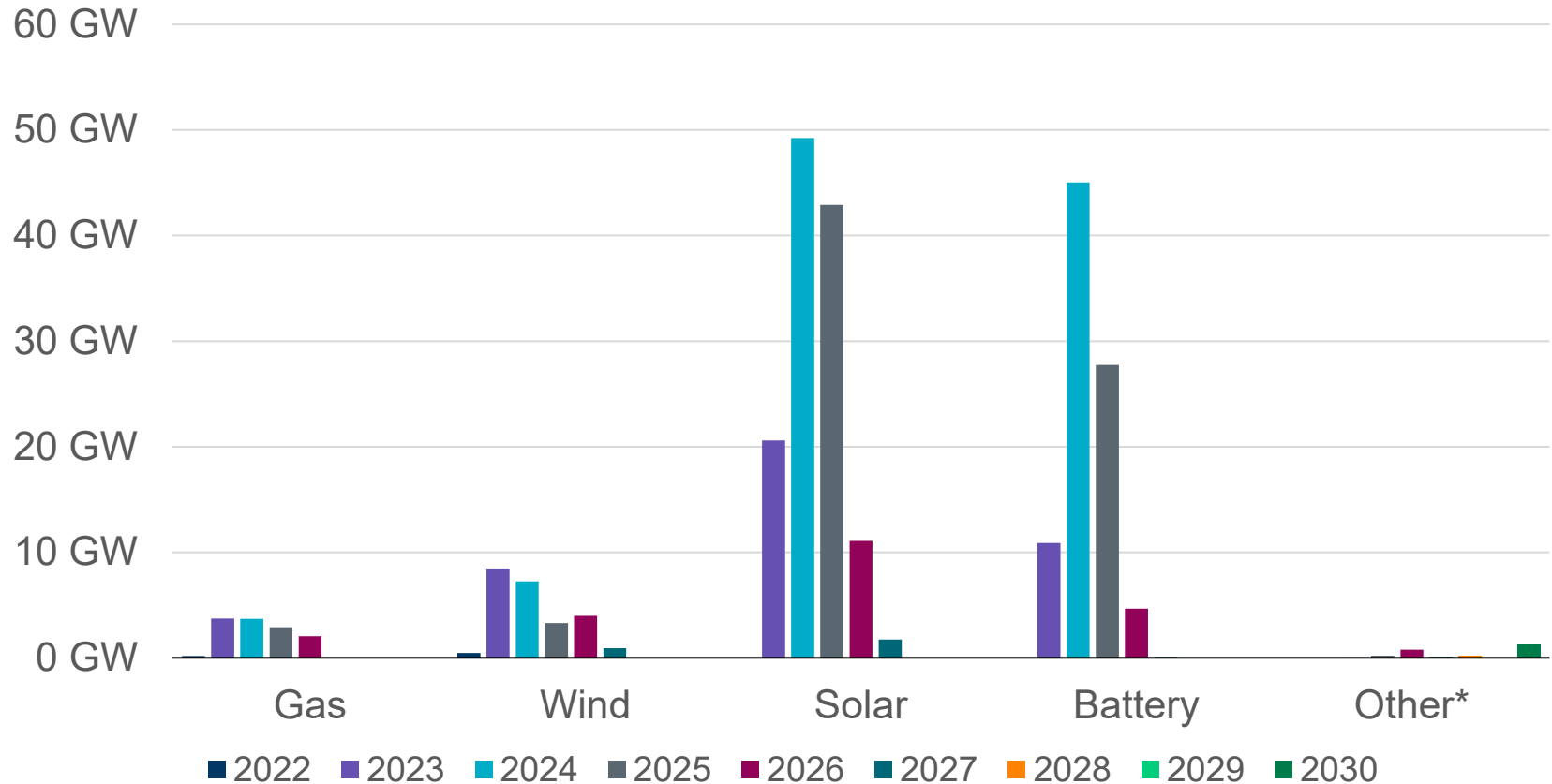
- There are an additional 5 “Small Generator” projects totaling 47 MW that are going through the simplified interconnection process.

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 126 GW (49.5%), Wind 24 GW (9.6%), Gas 13 GW (4.9%), Battery 88 GW (34.9%)
 (Excludes capacity associated with projects designated as Inactive per Planning Guide Section 5.7.6)



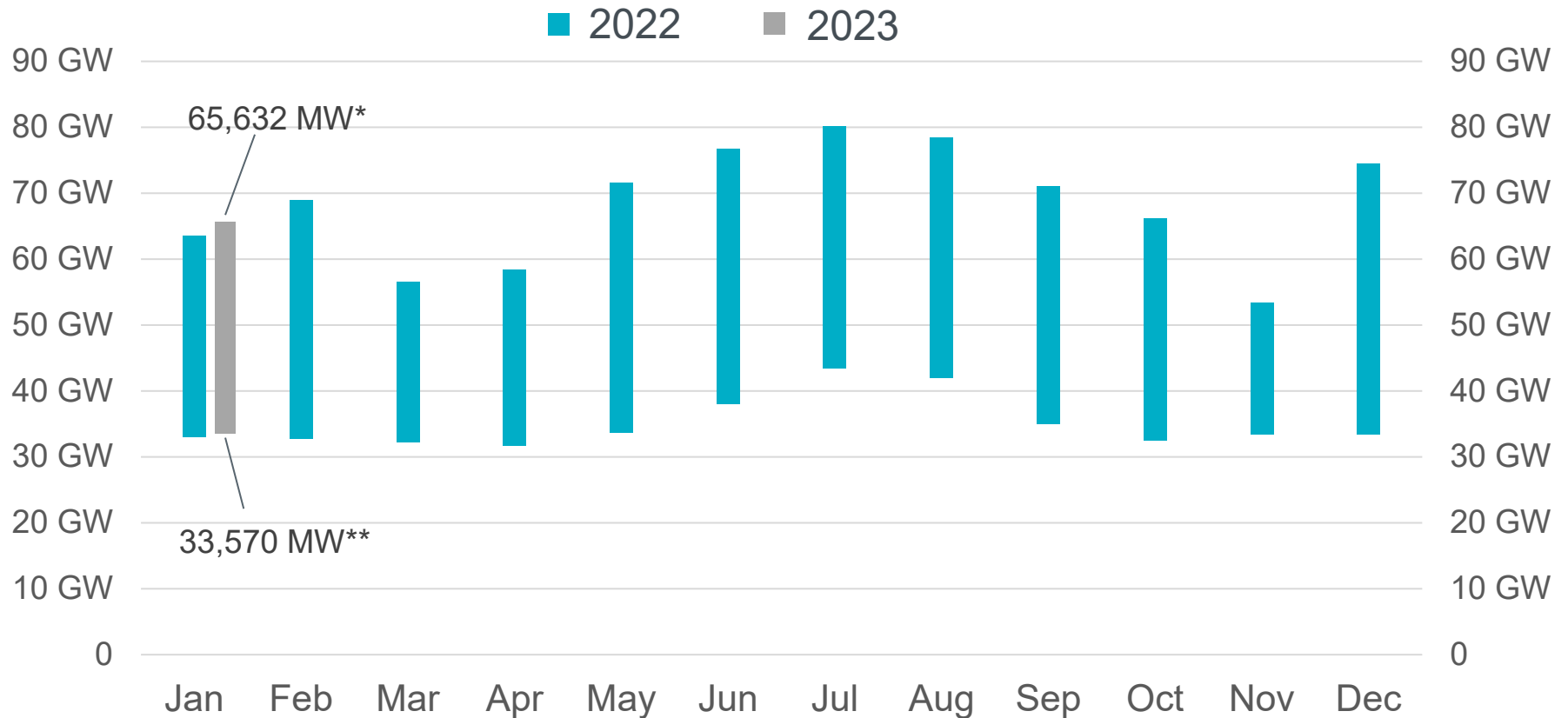
A break-out by zone can be found in the monthly Generator Interconnection Status (GIS) reports available on the ERCOT Resource Adequacy Page: <http://www.ercot.com/gridinfo/resource>

* 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 1,298 active generation interconnection requests totaling 253,431 MW as of January 31. This includes 125,569 MW of solar, 24,351 MW of wind, 88,430 MW of battery, and 12,542 MW of gas projects; 64 projects were categorized as inactive, down from 69 inactive projects in December 2022.
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of \$479.28 million as of January 31, 2023.
- Transmission Projects endorsed in 2023 total \$201.2 million as of January 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 January was 65,632 MW*; this was 2,091 MW more than the January 2022 demand of 63,541 MW.



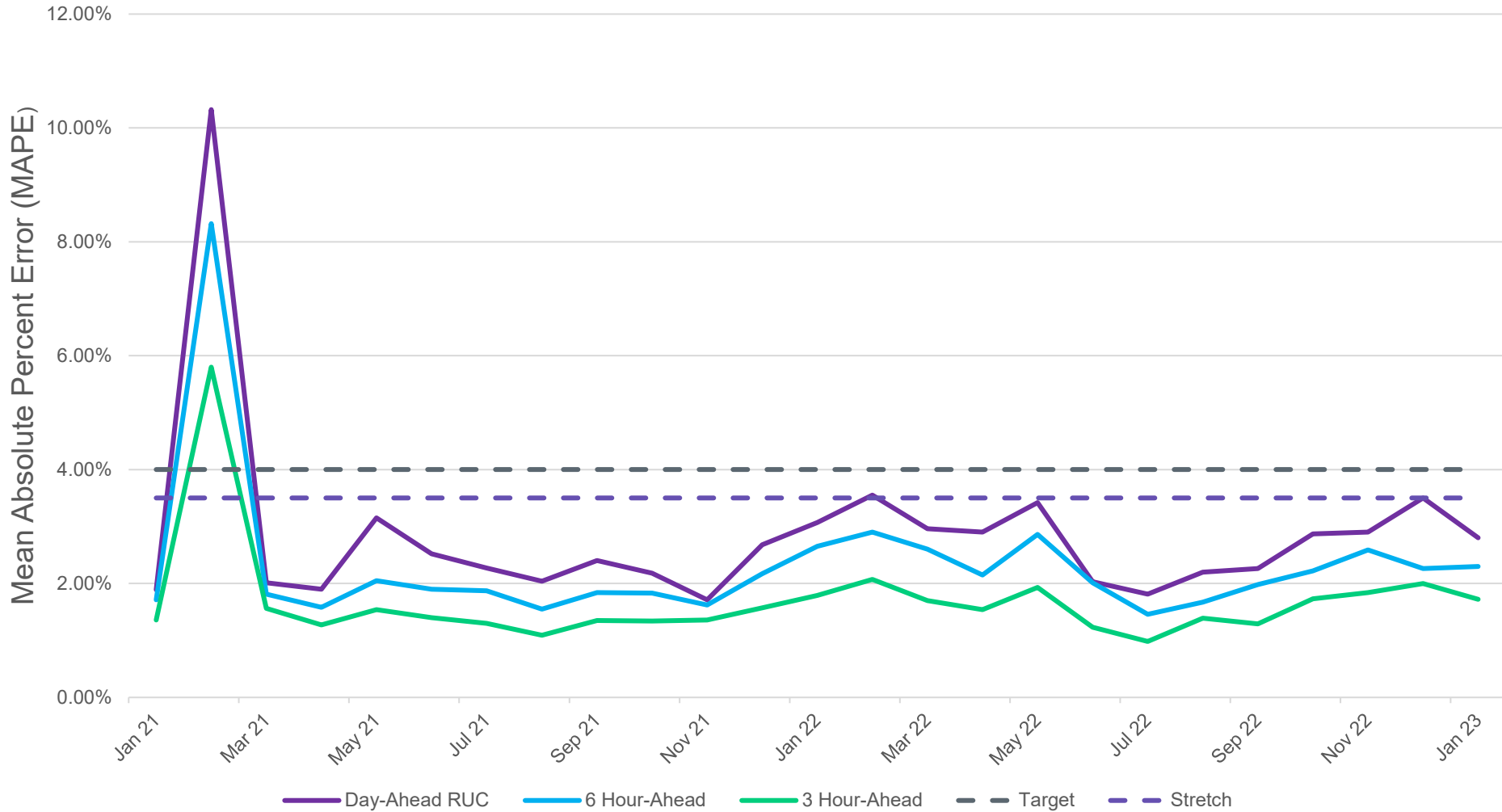
*Based on the maximum net system hourly value from February release of Demand and Energy 2022 report.

**Based on the minimum net system 15-minute interval value from February release of Demand and Energy 2022 report.

Data for latest two months are based on preliminary settlements.



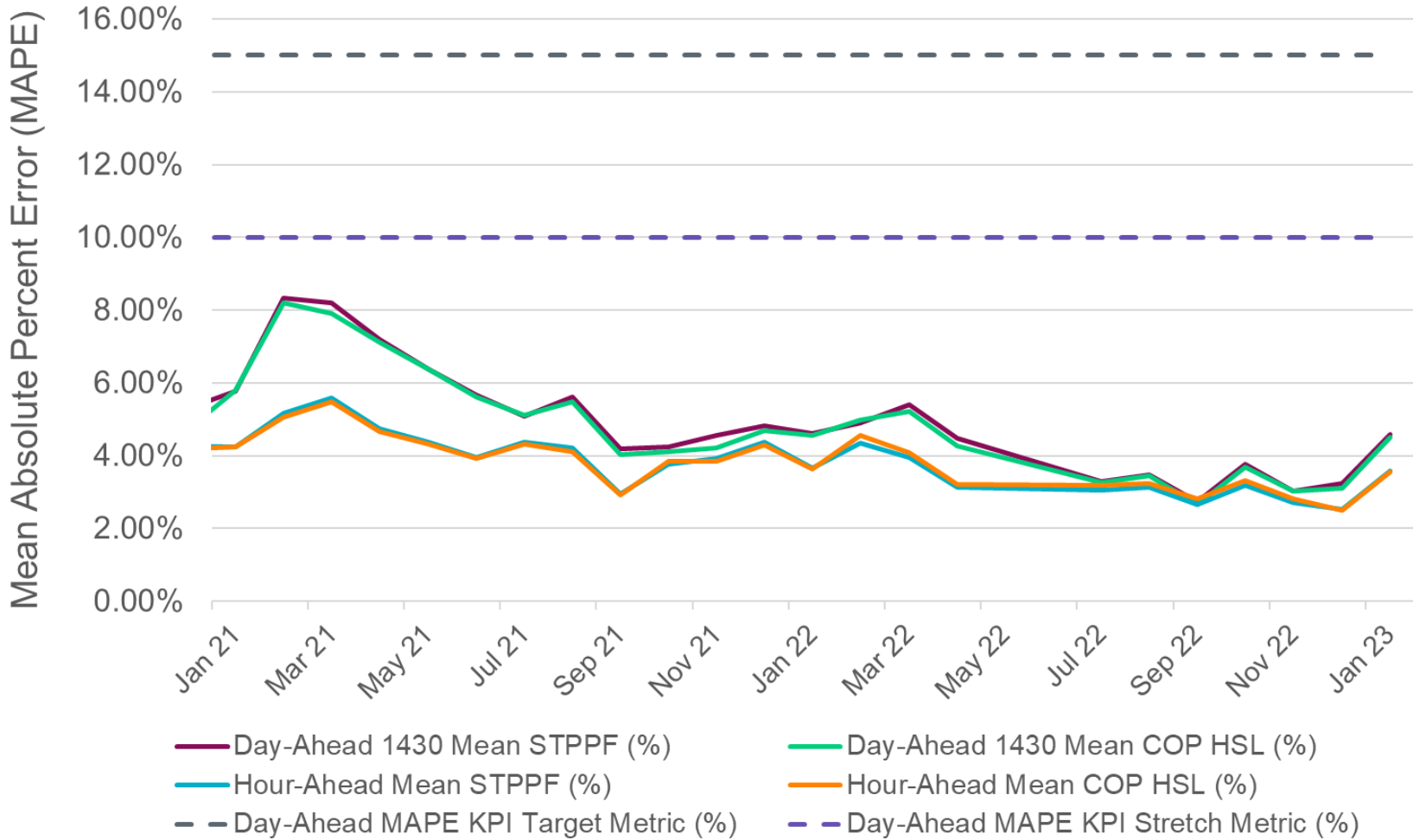
Mid-Term Load Forecast Performance



The Mid-Term Load Forecast is an hourly forecast that looks 7 days into the future



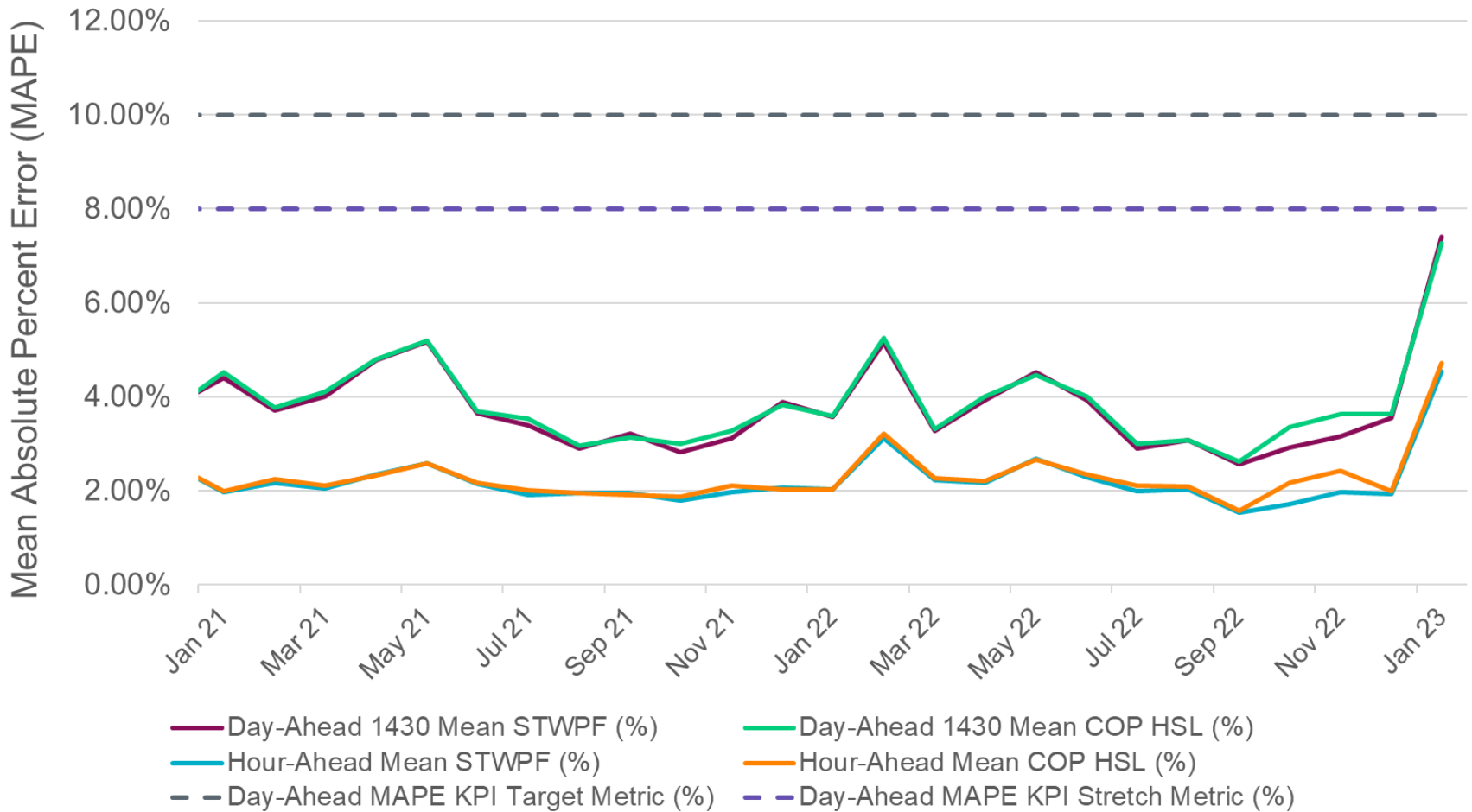
Solar Forecast Performance



The Short-Term Photovoltaic Power Forecast (STPPF) is an ERCOT-produced hourly 50% probability of exceedance forecast of the generation in MWh per hour from each PVGR.



Wind Forecast Performance

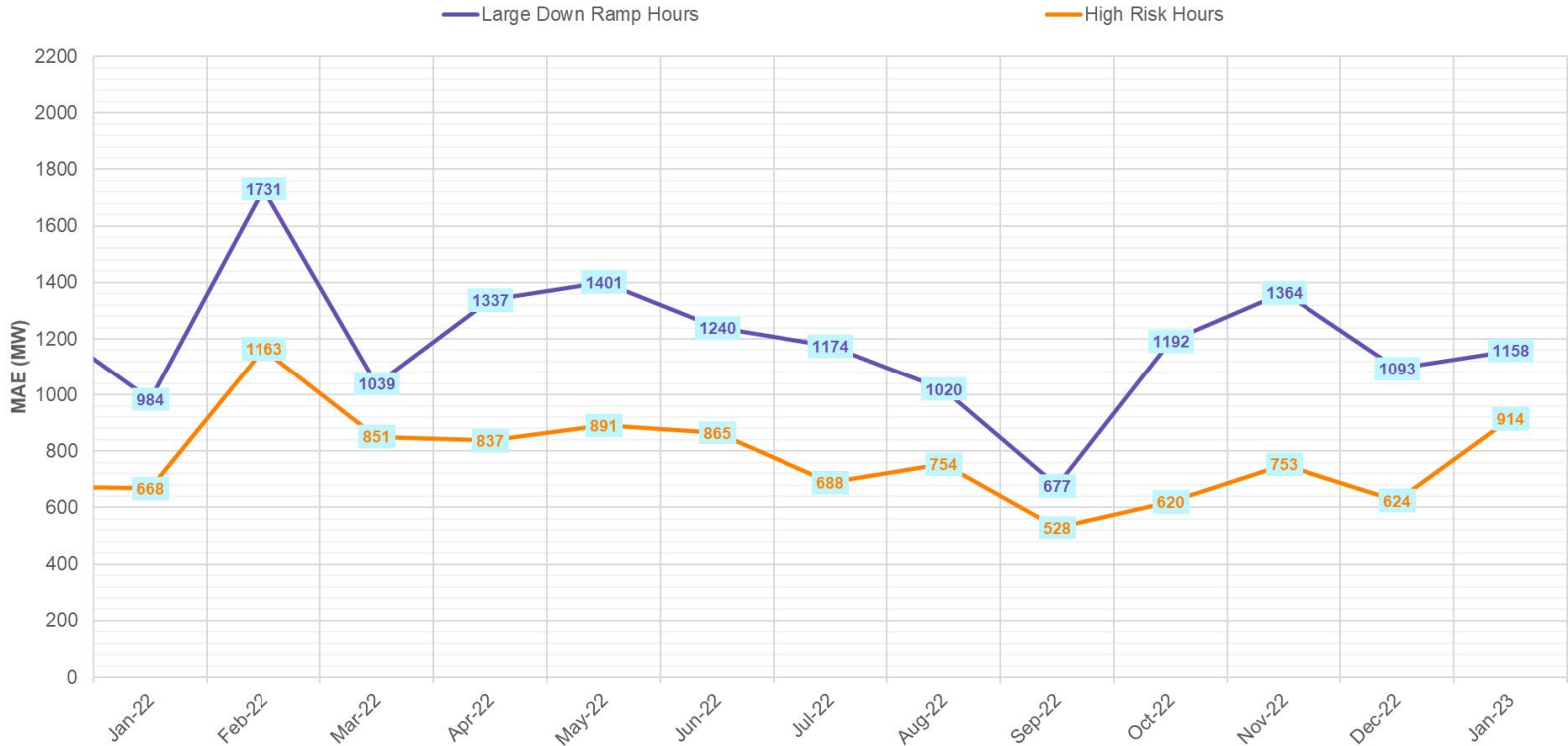


The Short-Term Wind Power Forecast (STWPF) is an ERCOT produced hourly 50% probability of exceedance forecast of the generation in MWh per hour from each Wind Generation Resource.



Hour-Ahead Wind Forecast Performance

Hour-Ahead Mean Absolute Error (MAE) During Large Down Ramp (> 2000 MW) and High Risk Hours*

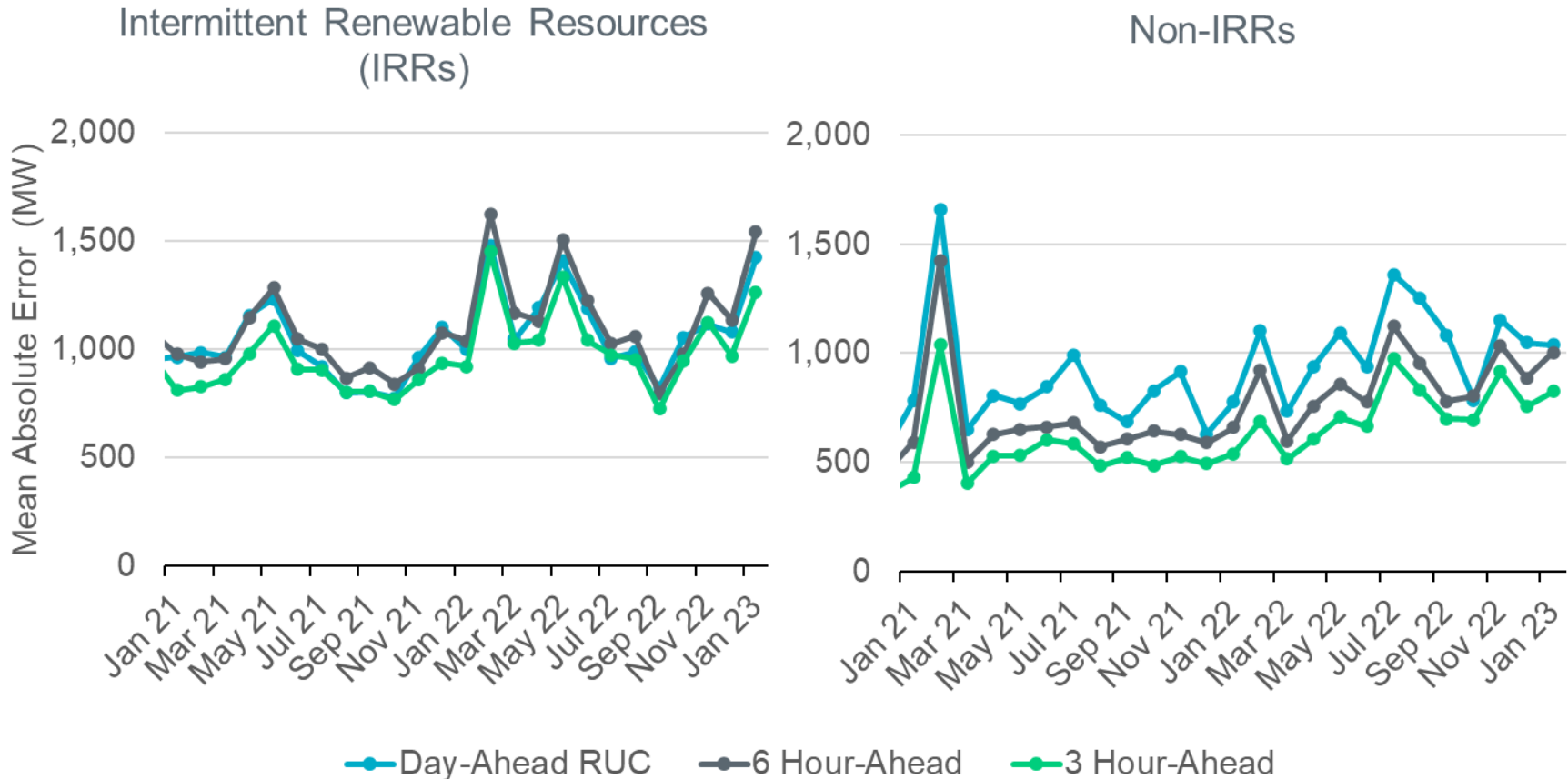


*ERCOT's performance-based payment structure for Wind Forecasts with both vendors incentivizes improvements in forecast performance during hours that are of more importance to operational reliability. This approach is a paradigm shift from the "traditional" methodology of measuring wind forecast performance as a singular monthly average metric.

Forecast performance during large down ramp (wind ramp > 2000 MW) hours and high risk hours (historic risk of load ramping up and wind ramping down is high) is focused upon. Note that for the purposes of forecast performance measurement every hour in a month is classified as either a large down ramp hour or a high risk hour or something else. Any hour that is a high risk hour wherein a large down ramp was experienced will be tracked as a large down ramp hour.

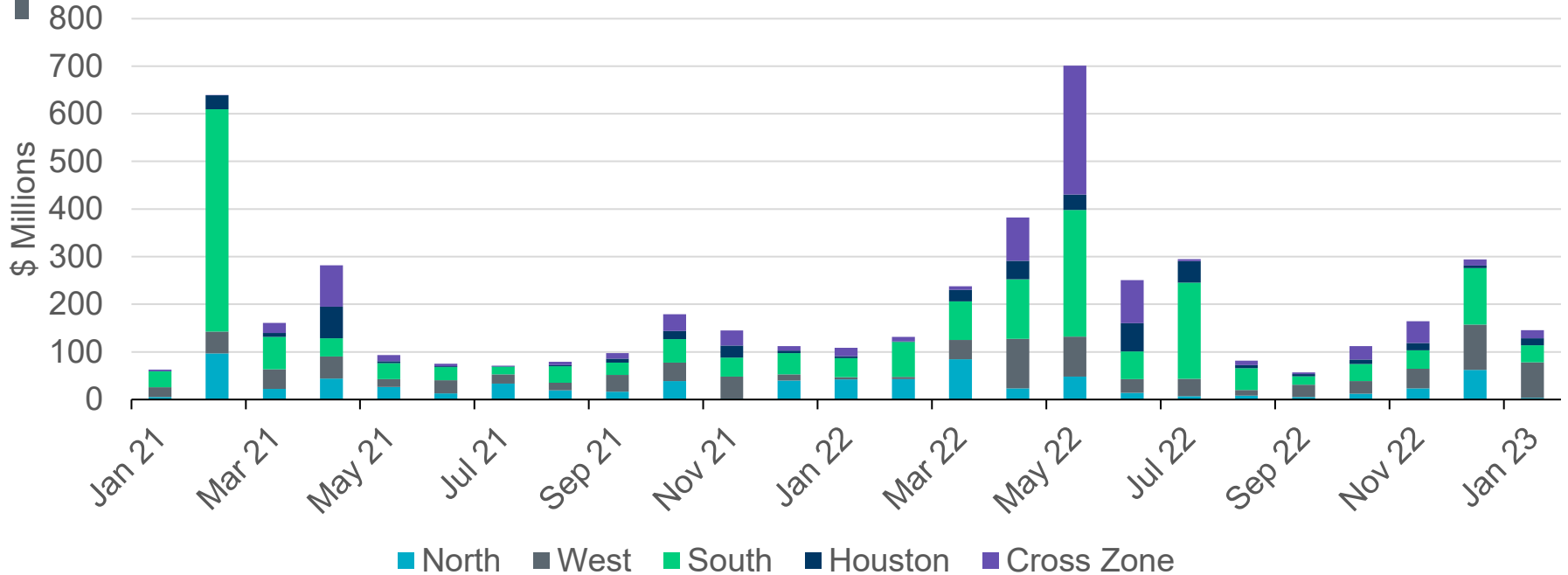


Current Operating Plan (COP) Performance



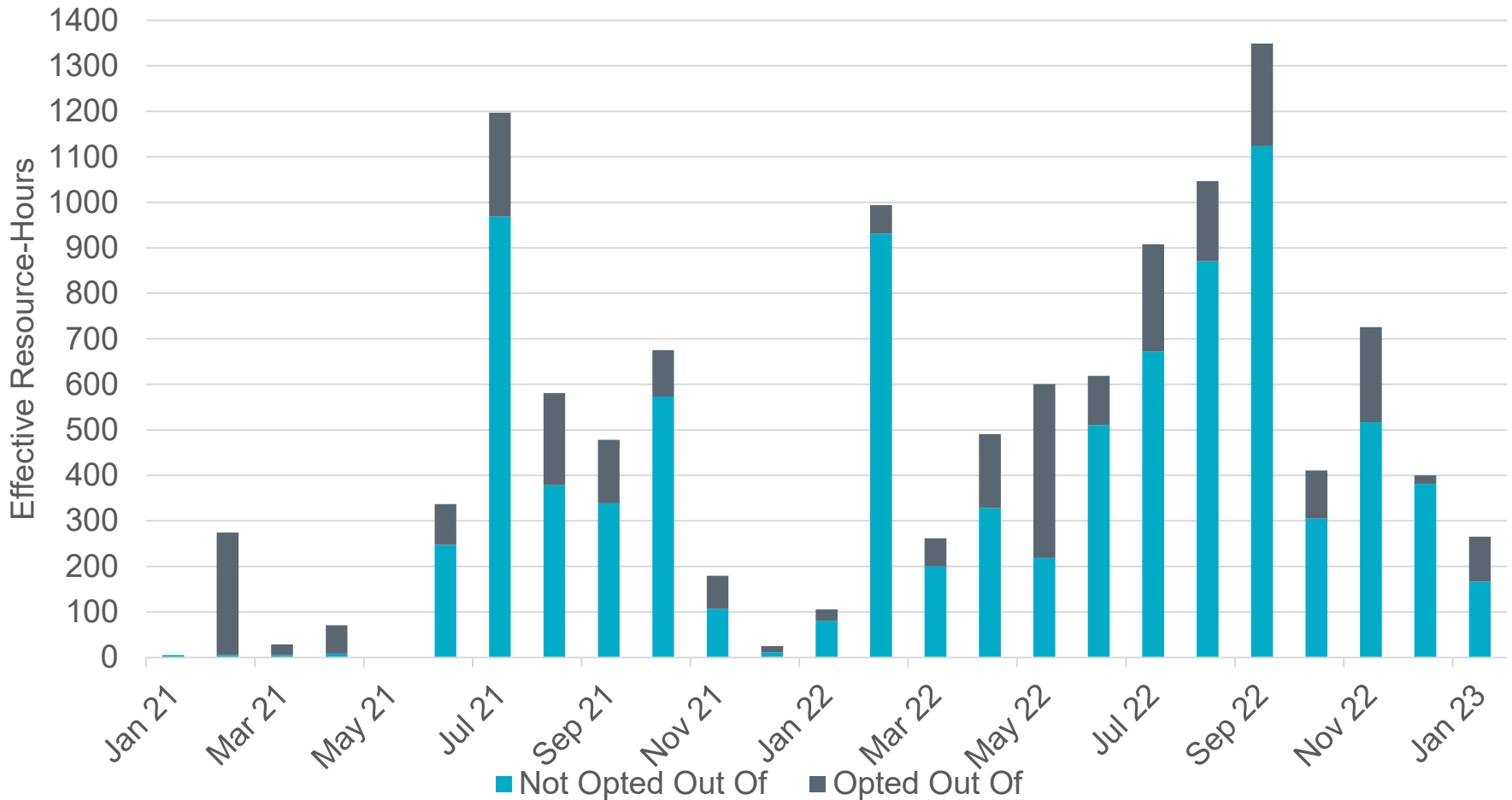
- COPs for IRRs are derived from wind and solar forecasts from ERCOT with any adjustments from Qualified Scheduling Entities.
- The installed capacity of approved Wind Units is 37,396 MW (as of January 31, 2023).
- The installed capacity of approved Solar Units is 14,249 MW (as of January 31, 2023).

Real-Time Congestion Rent by Zone



- Congestion rent increased in the Houston and Cross Zones in January 2023 compared to December 2022.
- 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 Skywest to Spraberry switch 138 kV contingency overloading the 138 kV line from Cottonfield station to Consavvy switch.
 - Congestion rent in the South Zone was primarily driven by the loss of the Fowlernton to Lobo 345 kV contingency overloading the 138 kV line from Catarina to Piloncillo.
- 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.

Twenty-nine Resources were Committed in January for Capacity or 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.

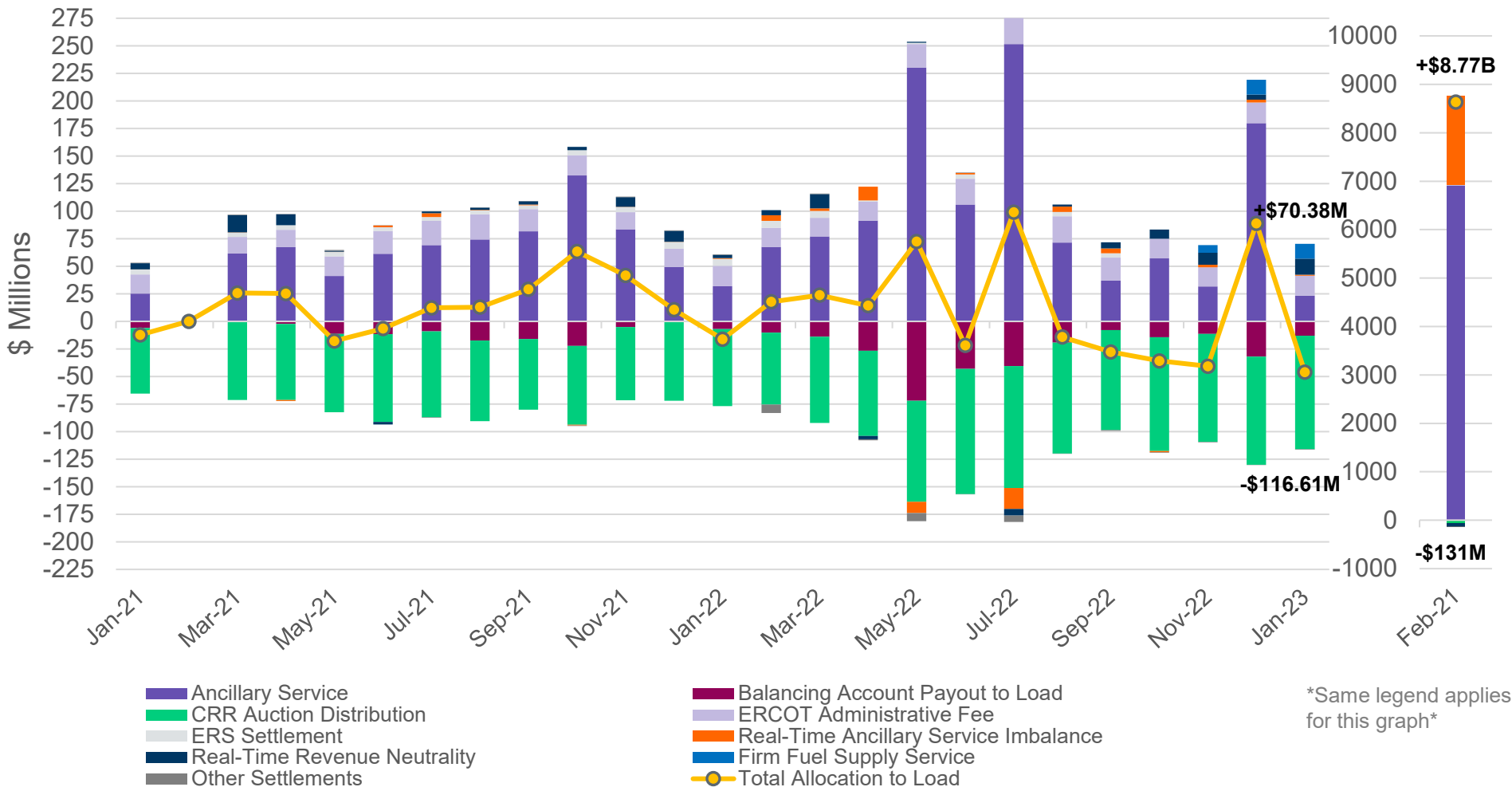


Twenty-nine Resources were Committed in January for Capacity or Congestion

Resource #	Effective Resource-hours	Non Opt Out (Effective Hours)	Opt Out (Effective Hours)
1	8.0	0.0	8.0
2	15.0	15.0	0.0
3	9.3	9.3	0.0
4	2.0	0.0	2.0
5	16.0	16.0	0.0
6	15.0	0.0	15.0
7	8.0	0.0	8.0
8	6.0	0.0	6.0
9	11.0	5.0	6.0
10	7.0	0.0	7.0
11	4.0	0.0	4.0
12	15.0	15.0	0.0
13	4.1	2.0	2.1
14	9.6	9.6	0.0
15	6.9	0.0	6.9
16	0.5	0.0	0.5
17	6.0	6.0	0.0
18	14.4	14.4	0.0
19	6.0	0.0	6.0
20	6.0	0.0	6.0
21	10.0	4.0	6.0
22	9.0	9.0	0.0
23	12.4	12.4	0.0
24	12.1	12.1	0.0
25	5.0	5.0	0.0
26	5.0	0.0	5.0
27	4.0	0.0	4.0
28	10.0	4.0	6.0
29	28.0	28.0	0.0
Total	265.4	166.9	98.5



Net Allocation to Load in January 2023 was (\$46.23) Million

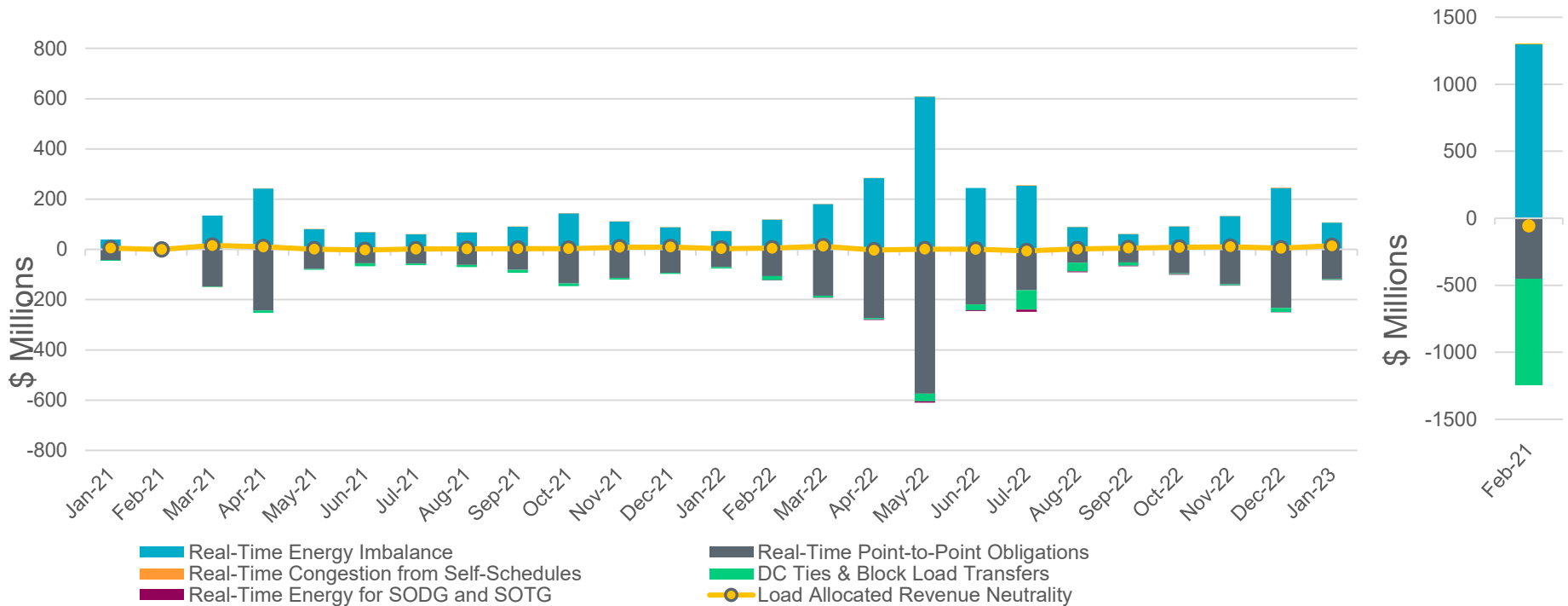


This information is available in tabular form in the Settlement Stability Report presented quarterly to the [Wholesale Market Subcommittee](#)

Note: For visual purposes, February 2021 has been separated into its own graph with different scaling. The legend applies for both graphs.



Real-Time Revenue Neutrality Allocated to Load was \$14.51M for January 2023

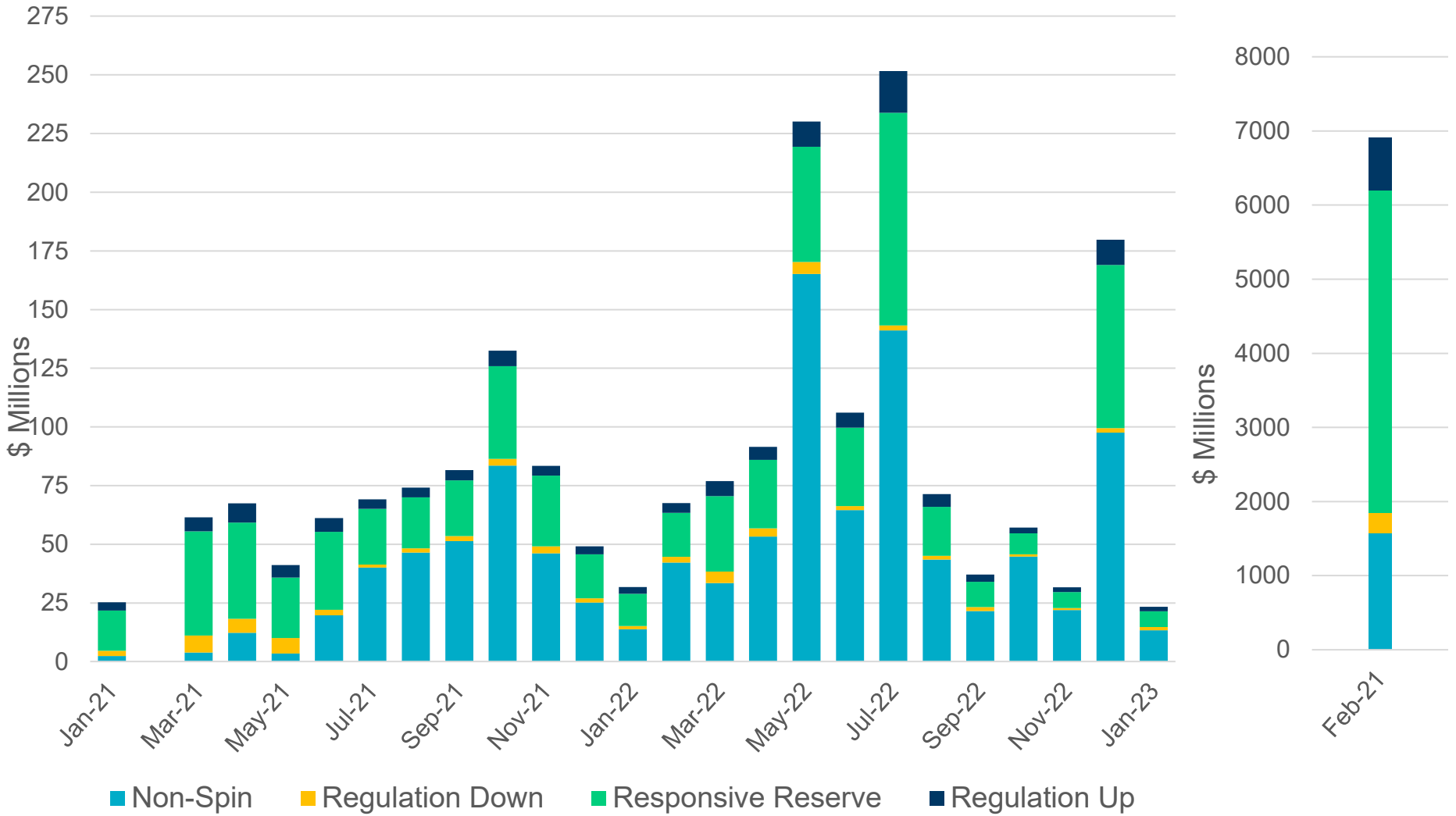


January 2023 (\$M)	
Real-Time Energy Imbalance	\$107.02
Real-Time Point-to-Point Obligation	(\$117.73)
Real-Time Congestion from Self-Schedules	\$0.32
DC Tie & Block Load Transfer	(\$3.61)
Real-Time Energy for SODG and SOTG	(\$0.51)
Load Allocated Revenue Neutrality	\$14.51

Note: For visual purposes, February 2021 has been separated into its own graph with different scaling. The legend applies for both graphs.



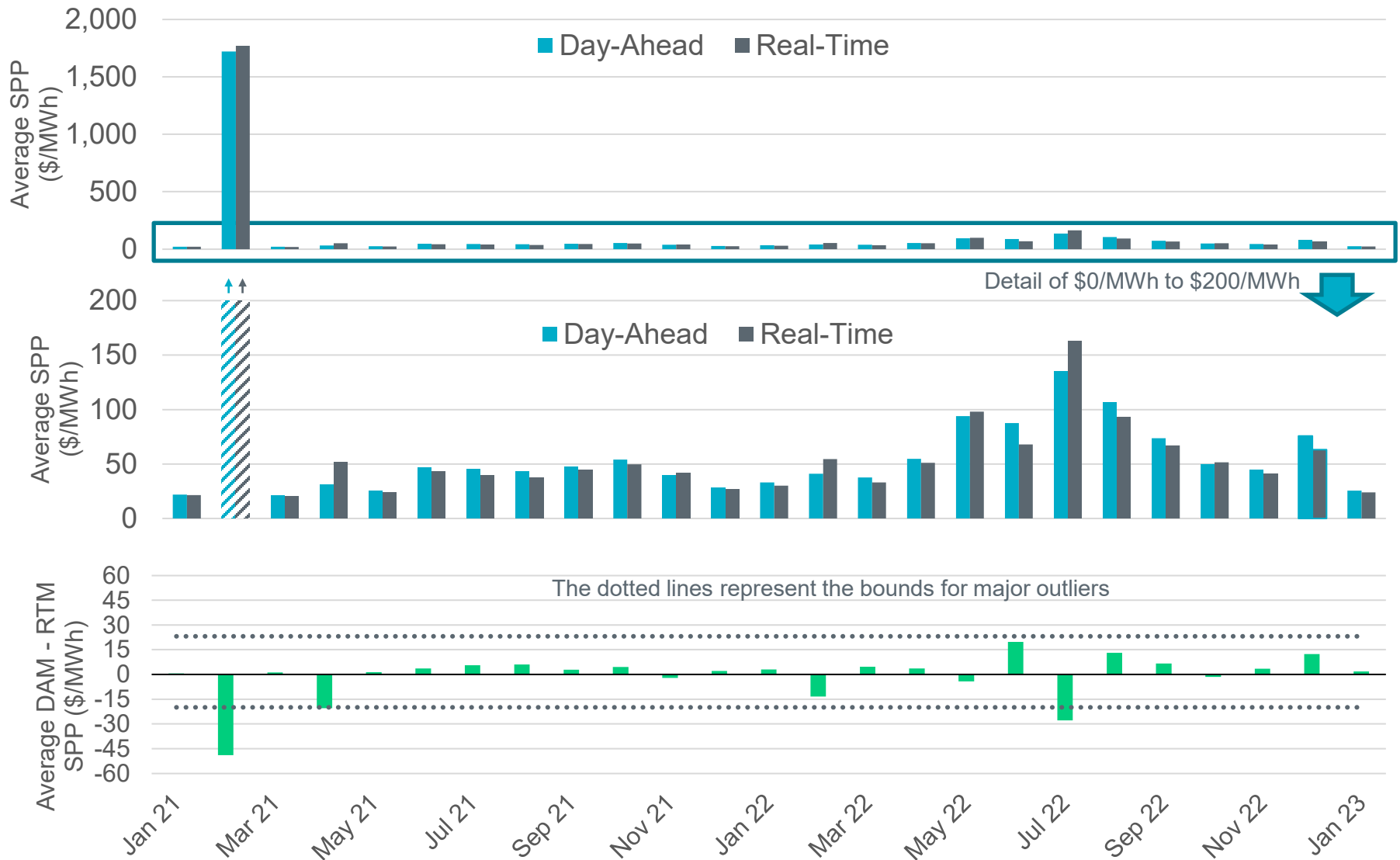
Ancillary Services for January 2023 totaled \$23.36M



Note: For visual purposes, February 2021 has been separated into its own graph with different scaling. The legend applies for both graphs.



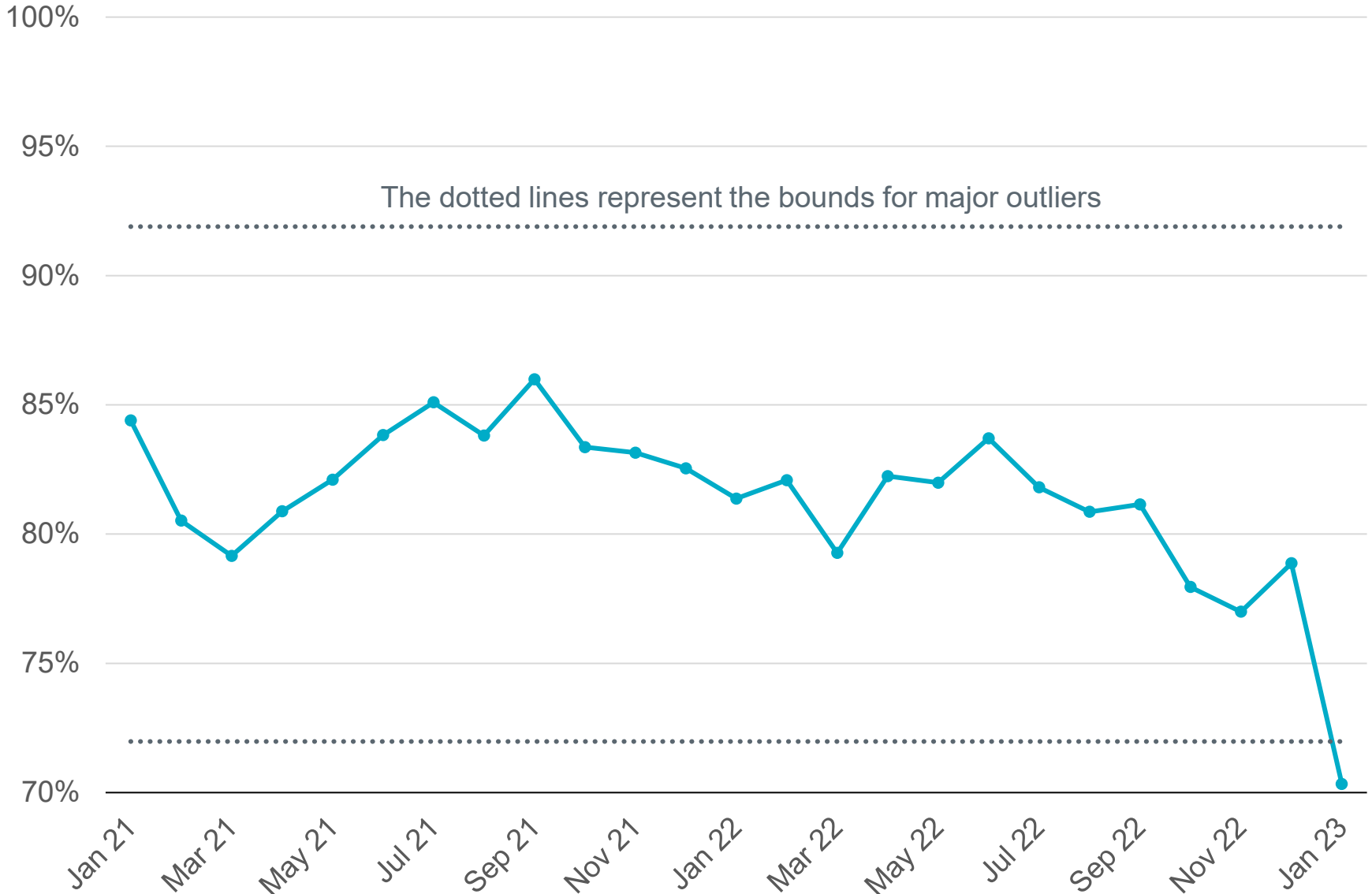
Day-Ahead and Real-Time Market Price Differences



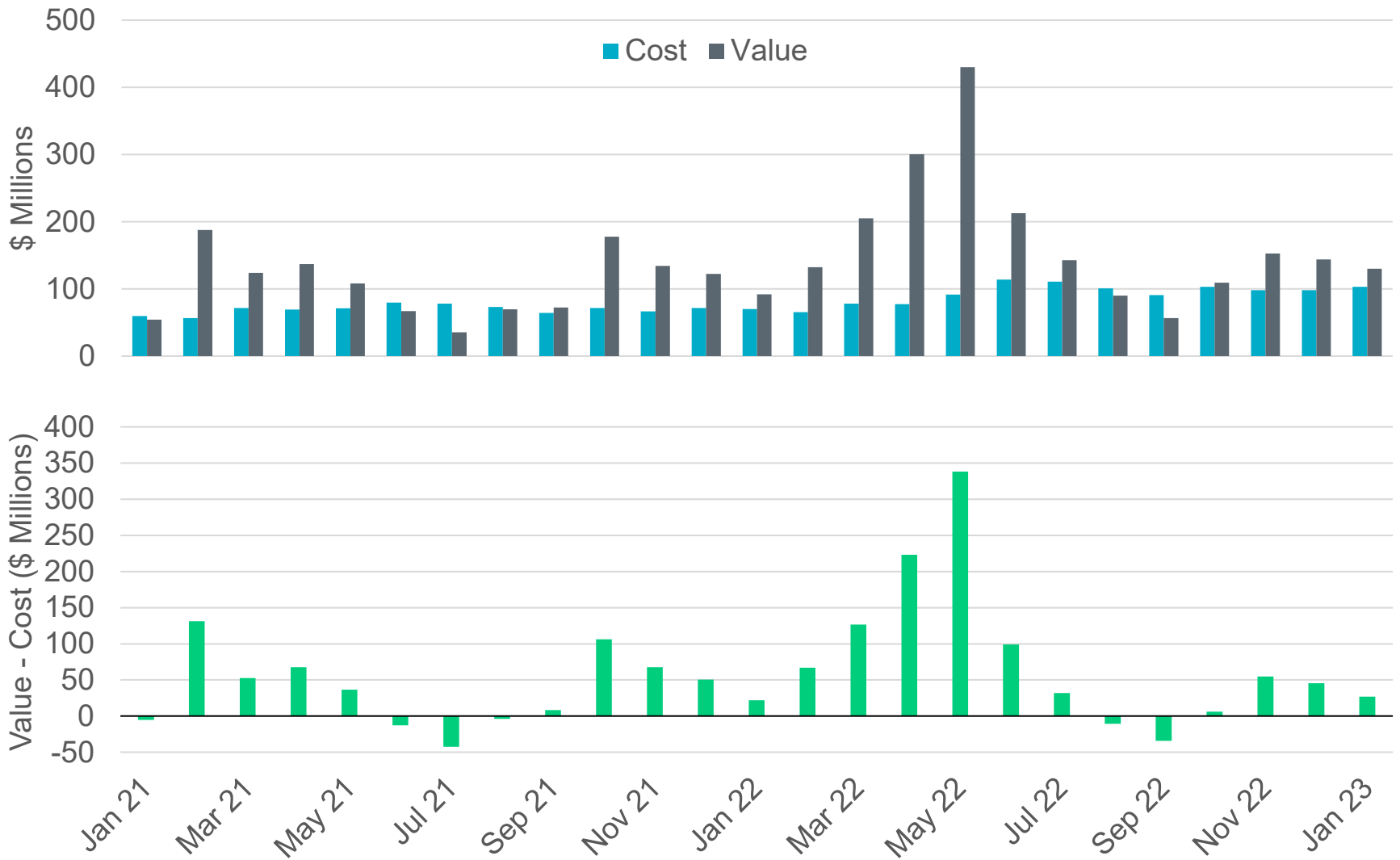
*Averages are weighted by Real-Time Market Load



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:

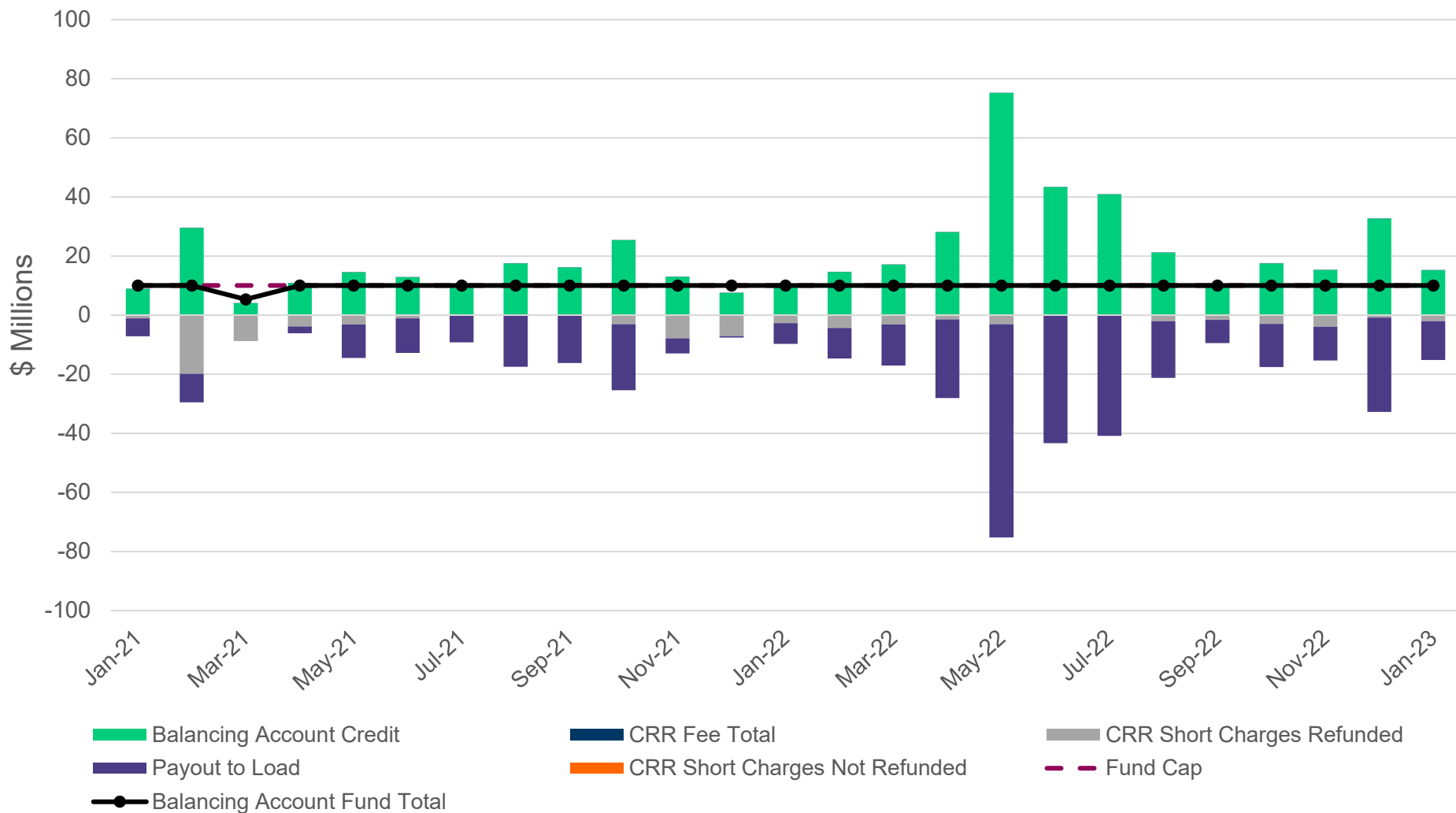
- Days that met the criteria for “significance” under NPRR1024 and were corrected;
- Days that would not have met the criteria for “significance” under NPRR1024, but were corrected because NPRR1024 was not yet in place; and
- Days that were not corrected because they did not meet the criteria for “significance”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



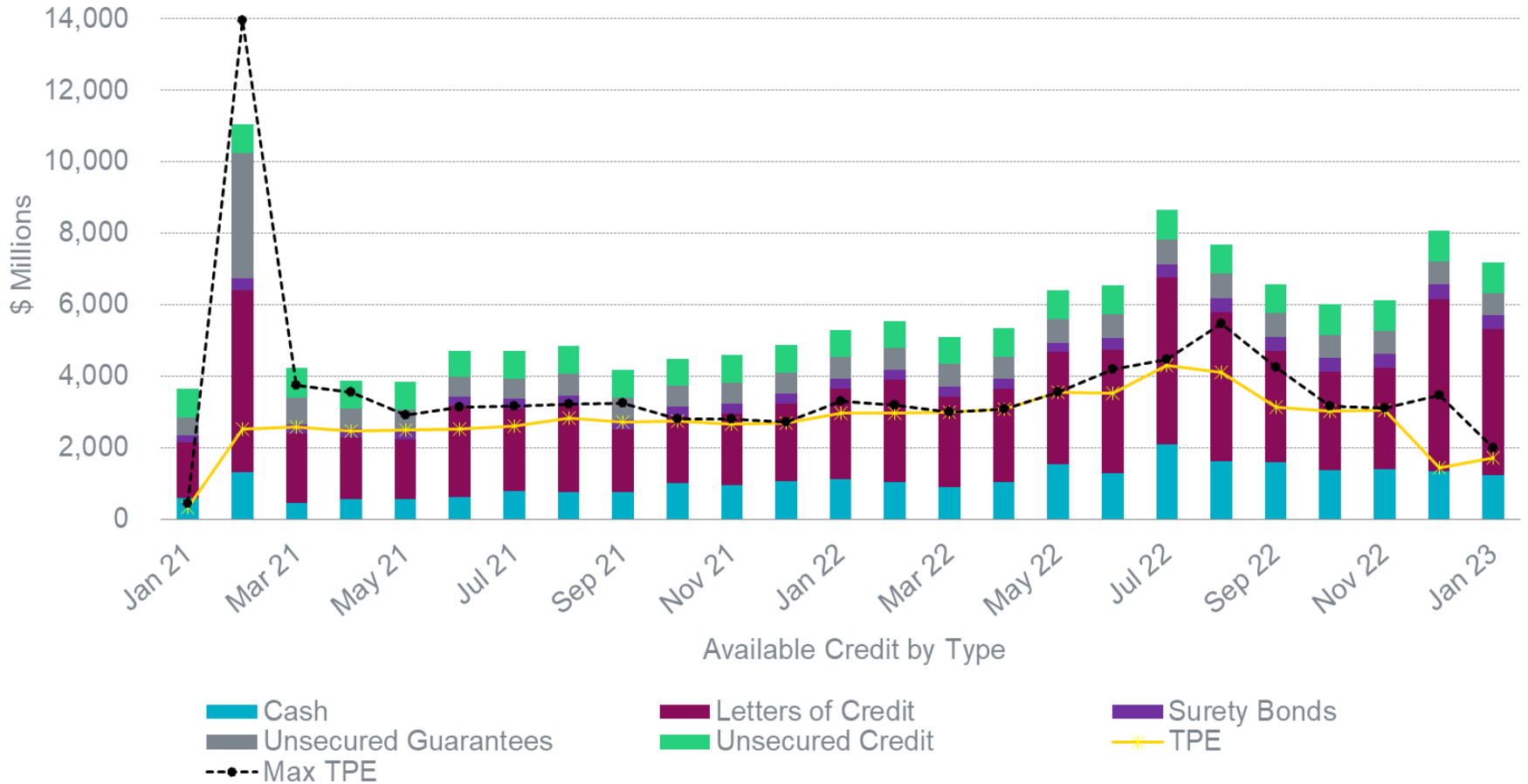
Details for Operating Days not Meeting the Criteria for Significance

- For January 17, the Operating Day was evaluated before the two business-day period for initial price correction had passed. Impacts were specific to Real-Time Prices for Energy Metered for Resources and were determined to not meet criteria for a price correction. The total dollar impact was estimated as less than \$6.

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 – January 2023

Transaction Type	Year-To-Date		Transactions Received	
	January 2023	January 2022	January 2023	January 2022
Switches	79,563	104,313	79,563	104,313
Acquisitions	0	0	0	0
Move - Ins	245,413	221,439	245,413	221,439
Move - Outs	108,022	96,360	108,022	96,360
Continuous Service Agreements (CSA)	38,440	45,214	38,440	45,214
Mass Transitions	0	0	0	0
Total	471,438	467,326	471,438	467,326