ERCOT Monthly Operational Overview
(March 2022)

ERCOT Public
April 25, 2022

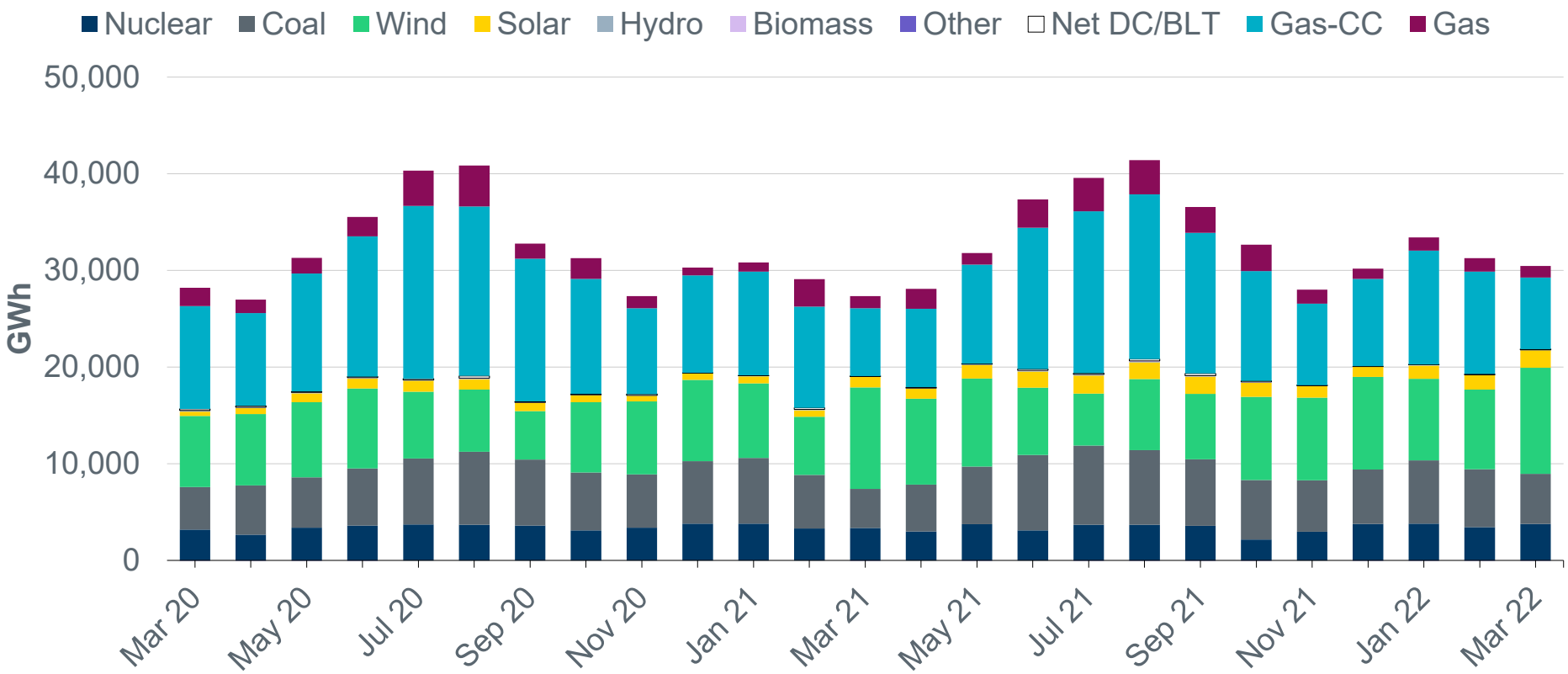
Highlights, Records and Notifications

- ERCOT maximum peak demand was 56,449 MW* for the month of March, which is 11,069 MW more than the March 2021 demand of 45,380 MW.

- ERCOT issued 3 notifications:
  - 1 AAN for possible future emergency condition.
  - 1 OCN issued for the potential severe weather of high wind and tornadoes in the Central, North Central, and East Texas areas.
  - 1 DC Tie Curtailment Notice for DC_R (Railroad) DC Tie due to a planned or unplanned outage.

* Preliminary value from April release of Demand and Energy 2022 report.

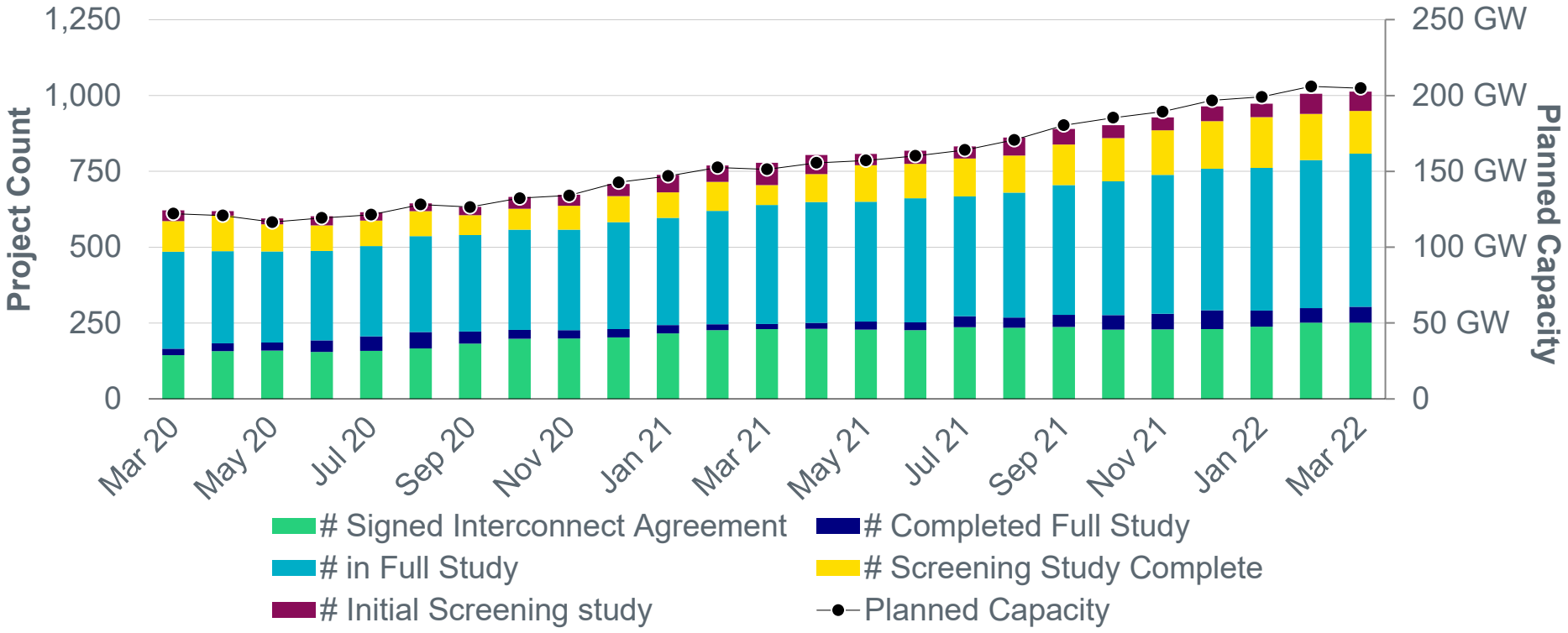
Monthly energy generation increased by 11.4% year-over-year to 30,445 GWh in March 2022, compared to 27,328 GWh in March 2021



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)

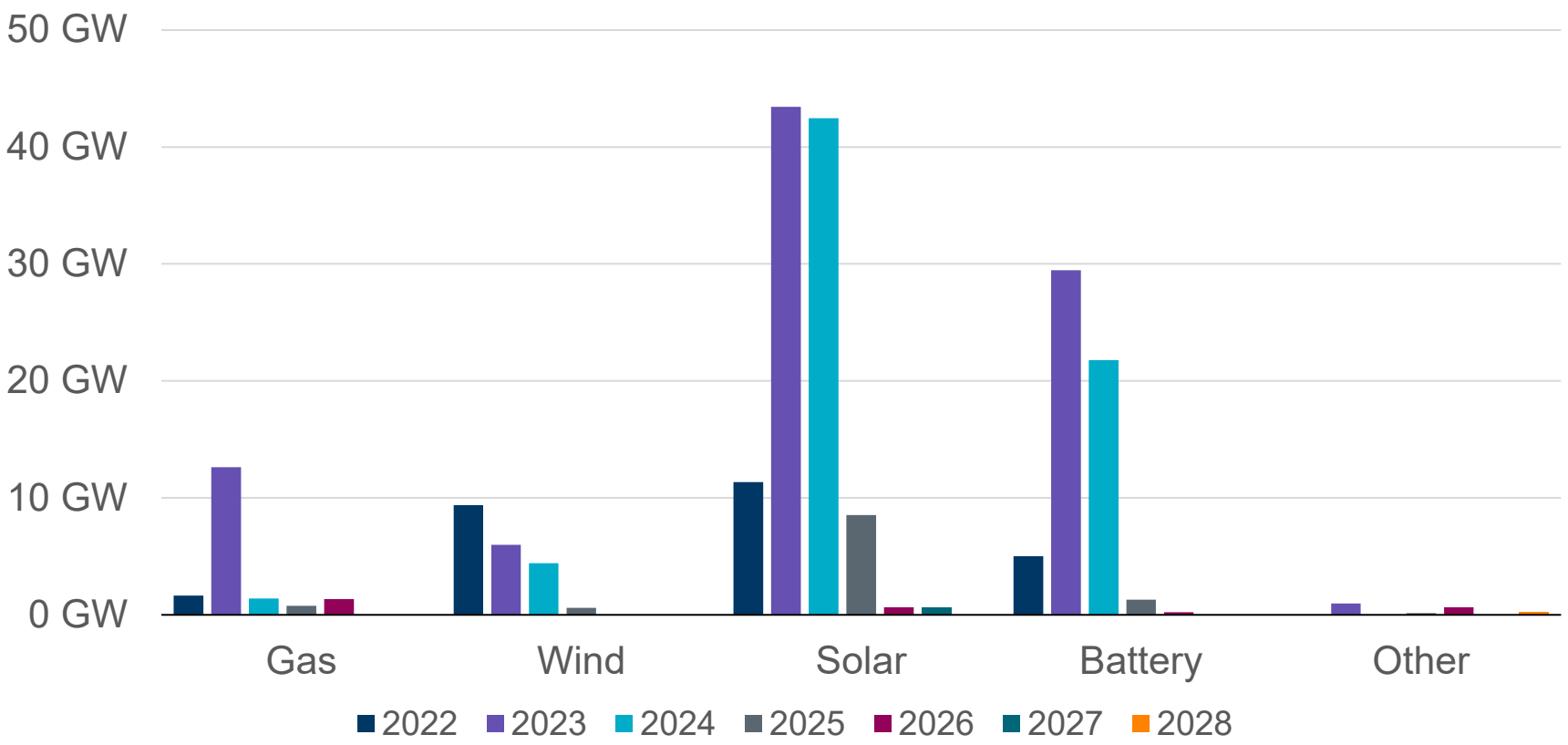


- There is an additional 11 “Small Generator” projects (110 MW) that go through a simplified interconnection process.

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 107 GW (52.3%), Wind 20 GW (9.9%), Gas 18 GW (8.7%), Battery 58 GW (28.2%)
(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

Planning Summary

- ERCOT is tracking 1,024 active generation interconnection requests totaling 204,868 MW as of March 31. This includes 107,046 MW of solar, 20,364 MW of wind, 57,742 MW of battery, and 17,764 MW of gas projects; 60 projects are categorized as inactive, up from 55 inactive projects in February 2022.

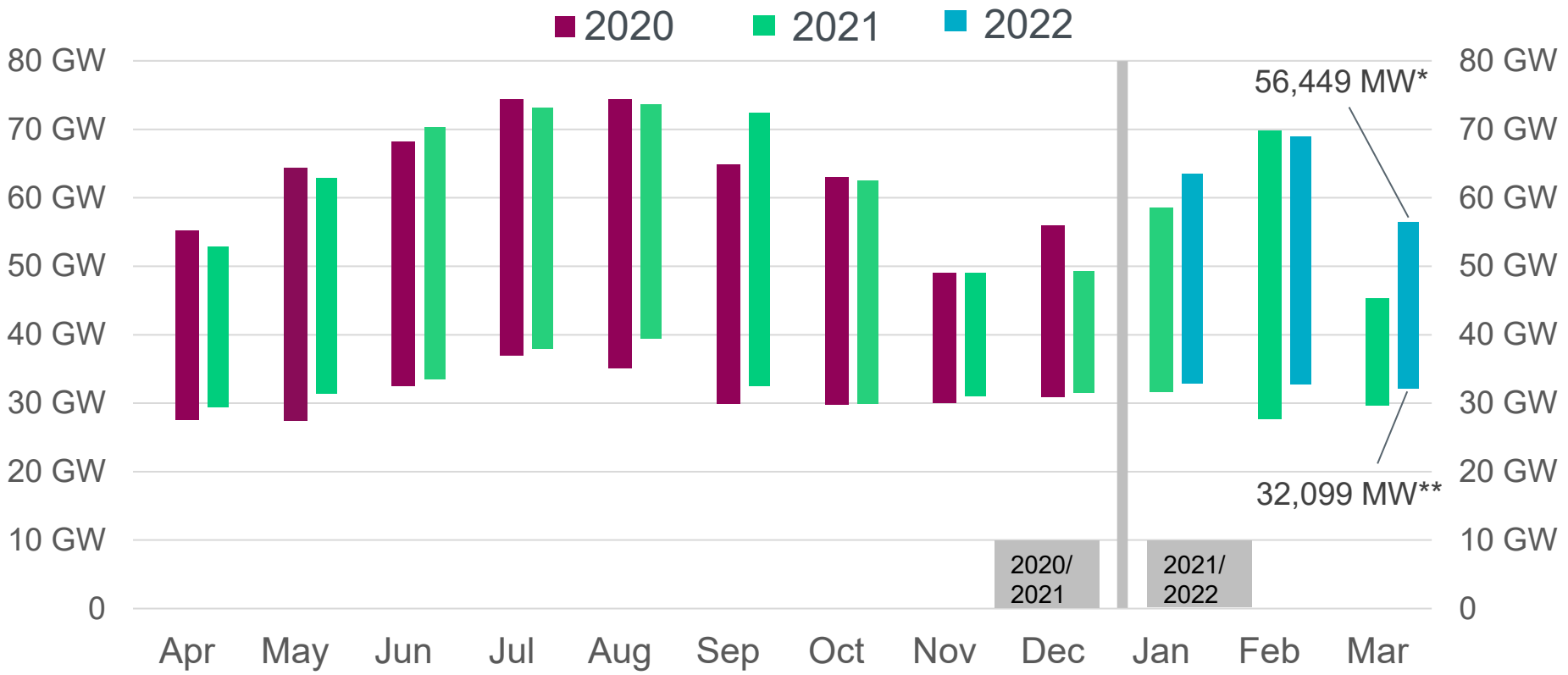
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of $939.46 Million as of March 31, 2022.

- Transmission Projects endorsed in 2022 total $352.60 Million as of March 31, 2022.

- All projects (in engineering, routing, licensing and construction) total approximately $8.00 Billion as of October 1, 2021.

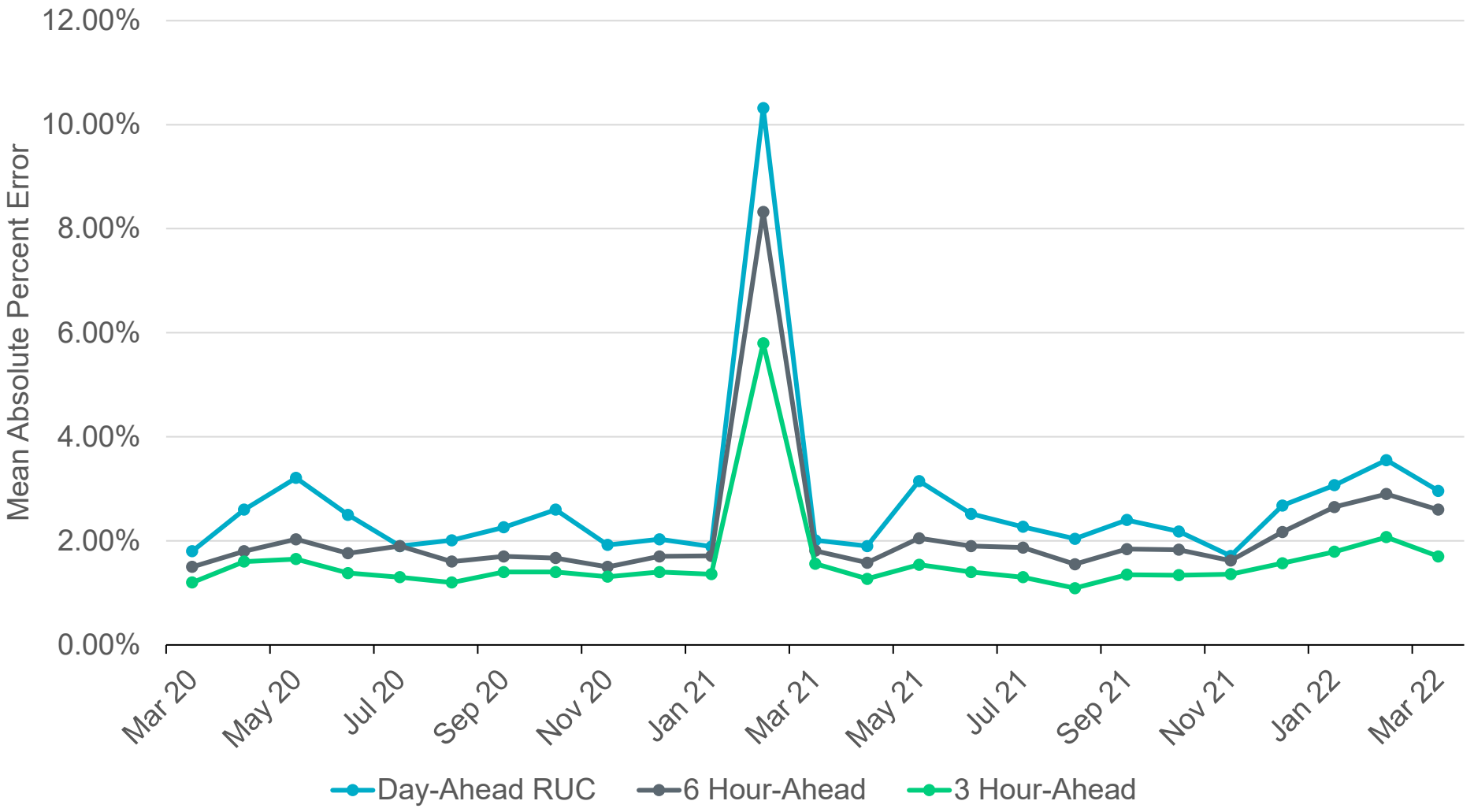
- Transmission Projects energized in 2021 total about $1.438 Billion as of October 1, 2021.

ERCOT maximum peak demand was 56,449 MW* for the month of March, which is 11,069 MW more than the March 2021 demand of 45,380 MW



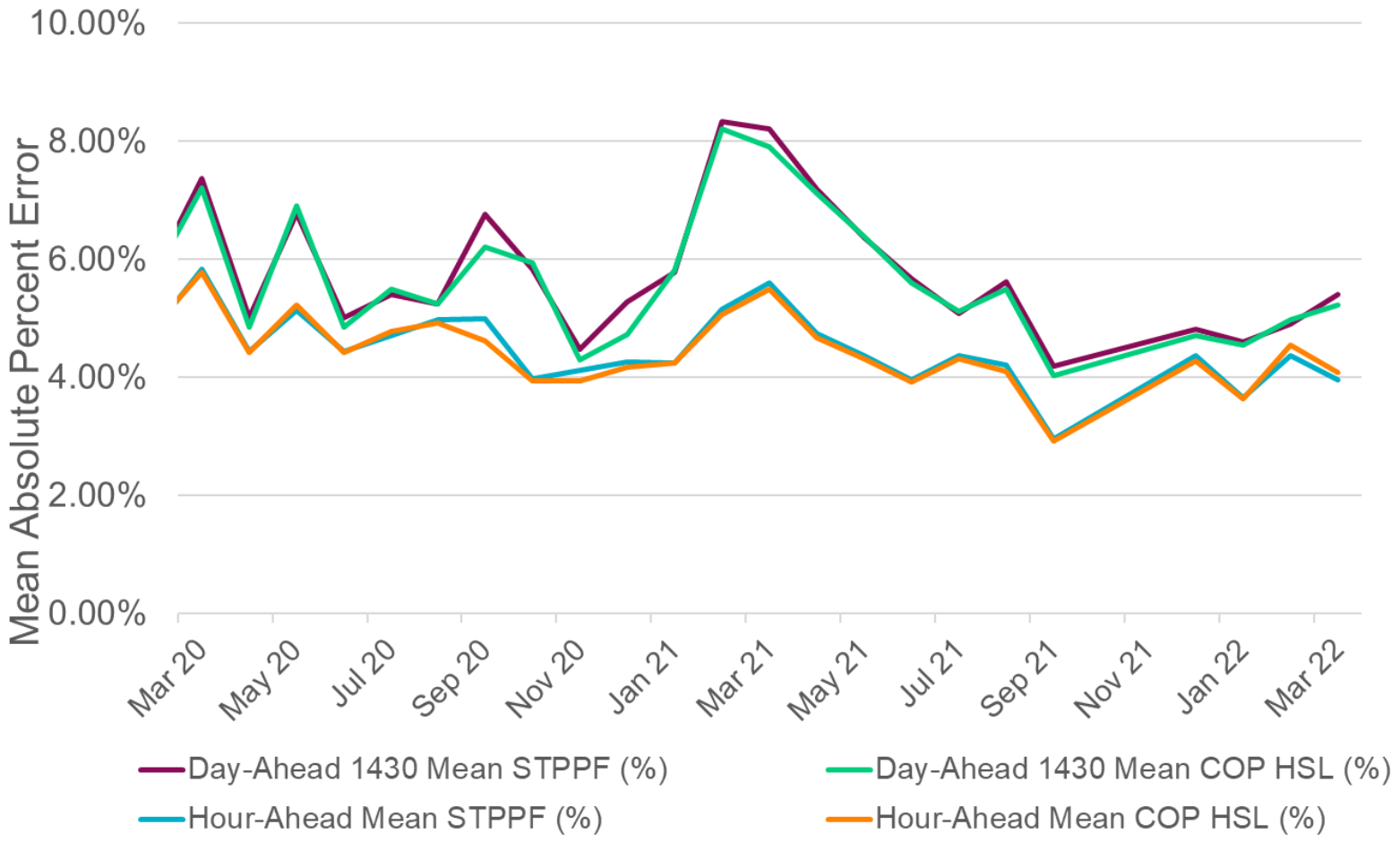
*Based on the maximum net system hourly value from April release of Demand and Energy 2022 report.
**Based on the minimum net system 15-minute interval value from April release of Demand and Energy 2022 report.
Data for latest two months are based on preliminary settlements.

Mid-Term Load Forecast Performance



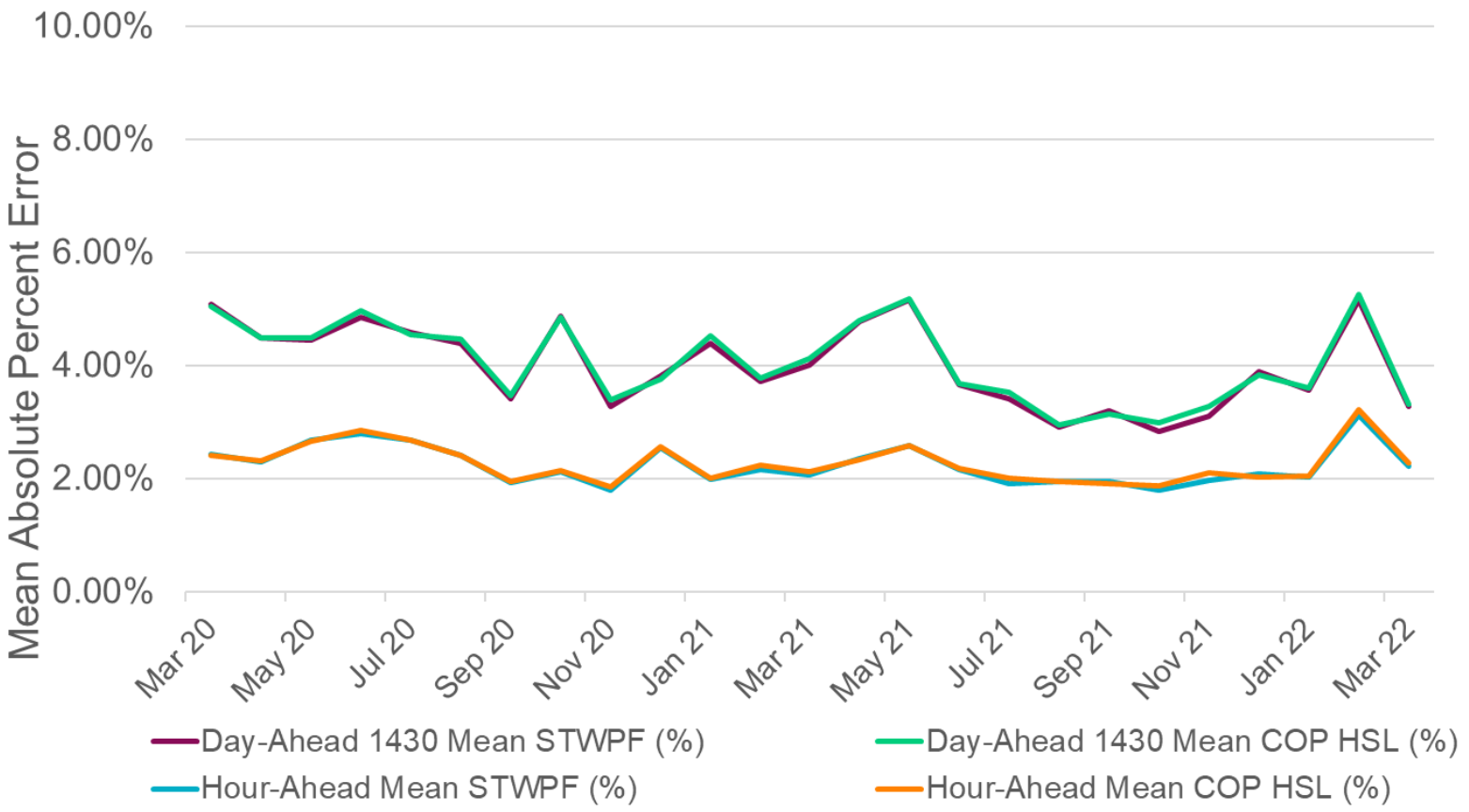
The Mid-Term Load Forecast is an hourly forecast that looks 7 days into the future

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.

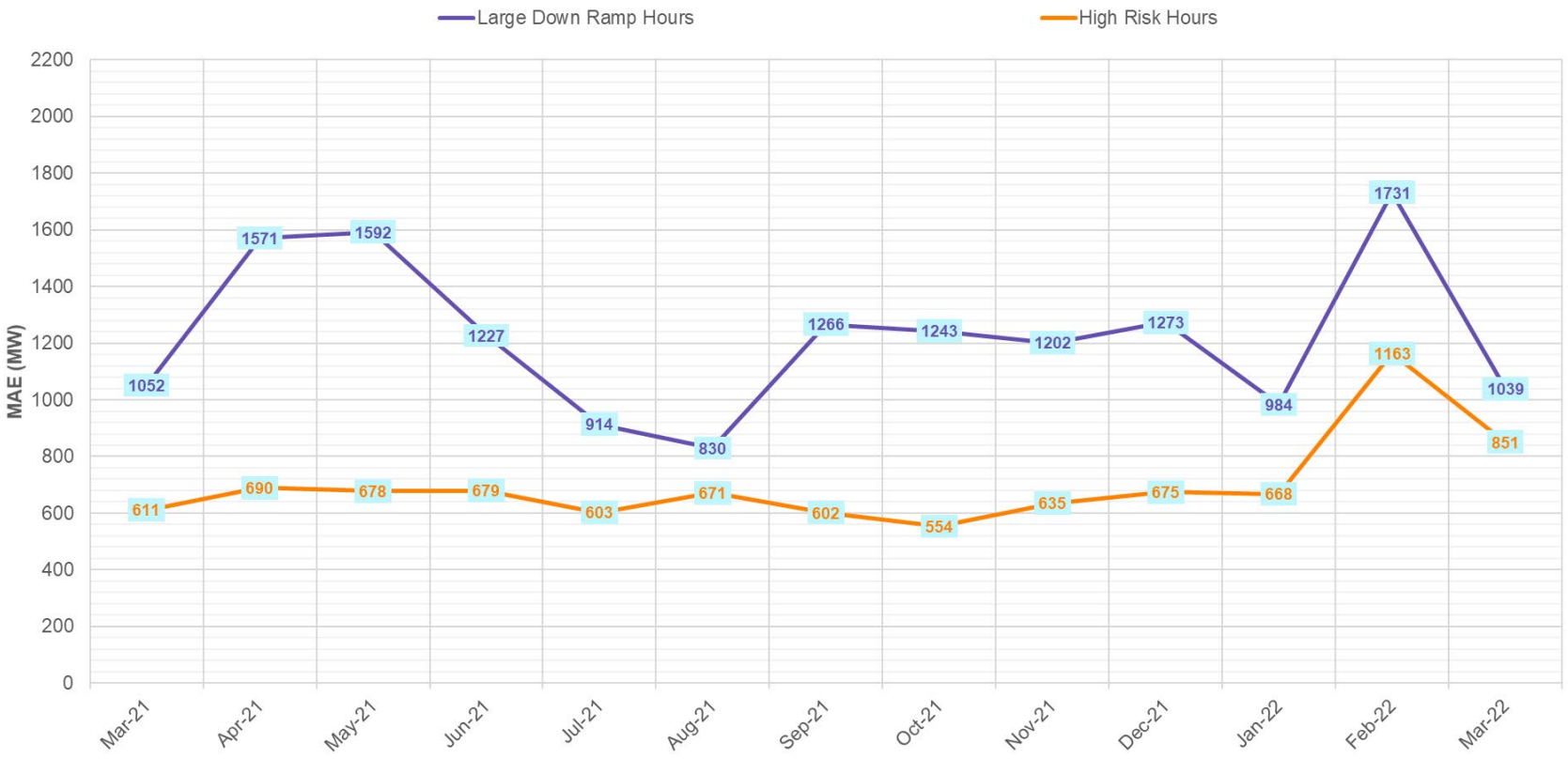
Wind Forecast Performance



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

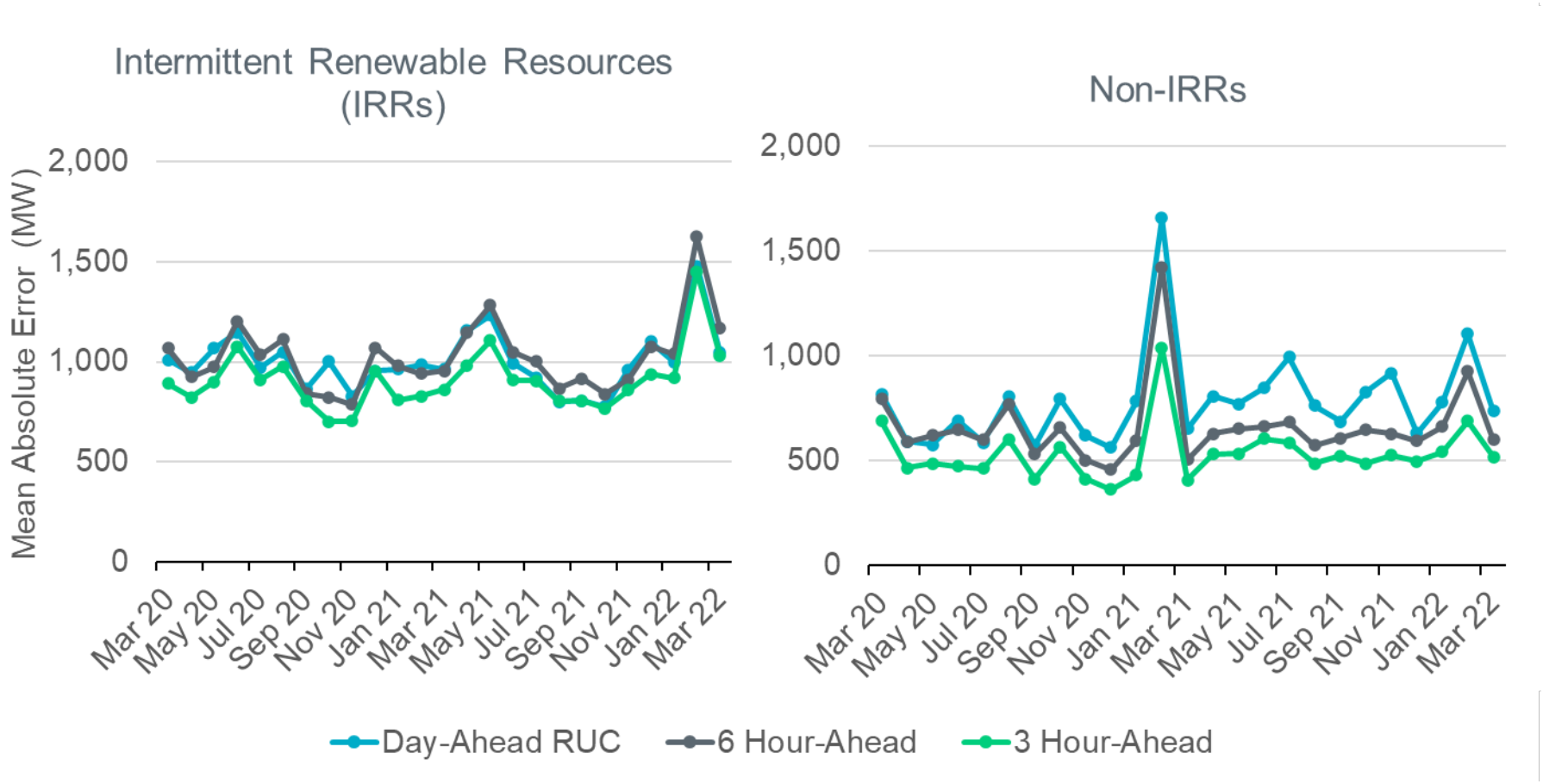
Hour-Ahead Mean Absolute Error (MAE) During Large Down Ramp (> 2000 MW) and High Risk Hours*



**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.*

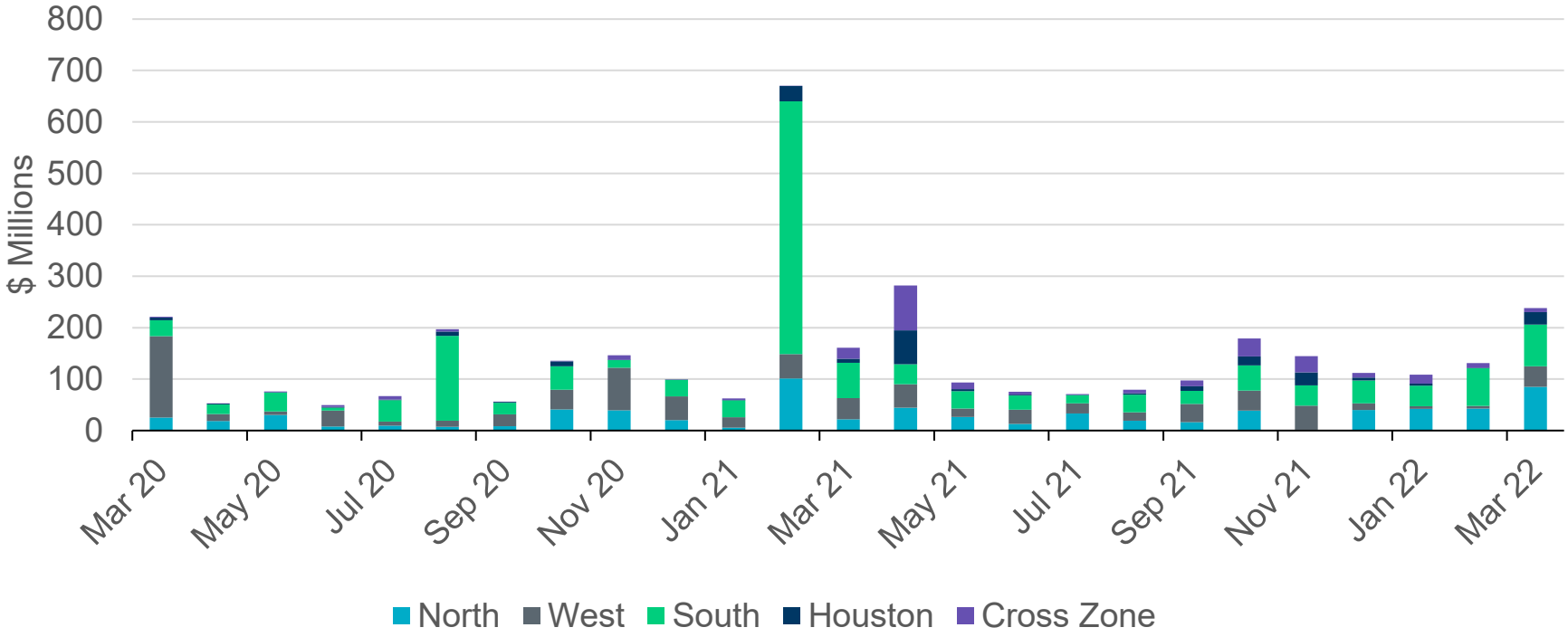
Forecast performance during large down ramp (wind ramp > 2000 MW) hours and high risk hours (historic risk of load ramping up and wind ramping down is high) is focused upon. Note that for the purposes of forecast performance measurement every hour in a month is classified as either a large down ramp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



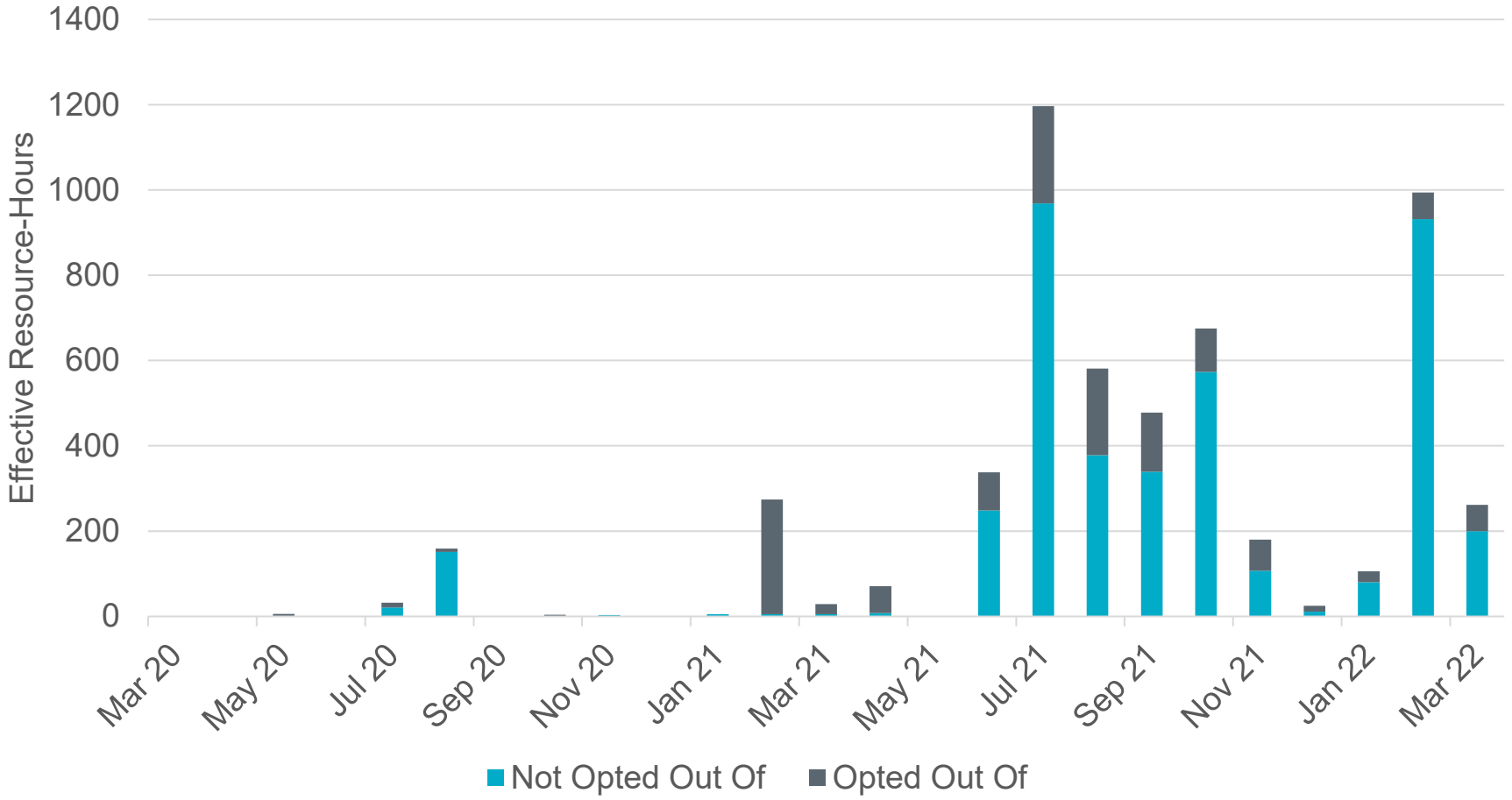
- COPs for IRRs are derived from wind and solar forecasts from ERCOT with any adjustments from Qualified Scheduling Entities.
- The installed capacity of approved Wind Units is 35,644 MW (as of March 31, 2022).
- The installed capacity of approved Solar Units is 10,178 MW (as of March 31, 2022).

Real-Time Congestion Rent by Zone



- Congestion rent in the North, West, South and Houston Zones increased in March 2022 compared to February 2022.
- Congestion rent in the North Zone was primarily driven by the constraint DSALKLN5: KLNSW_MR2H. Congestion rent in the West Zone was primarily driven by the constraint DFLCMGS5: MGSES_MR1H.
- 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.

Thirty-Four Resources were Committed in March for Capacity, Minimum Run Time, and Congestion

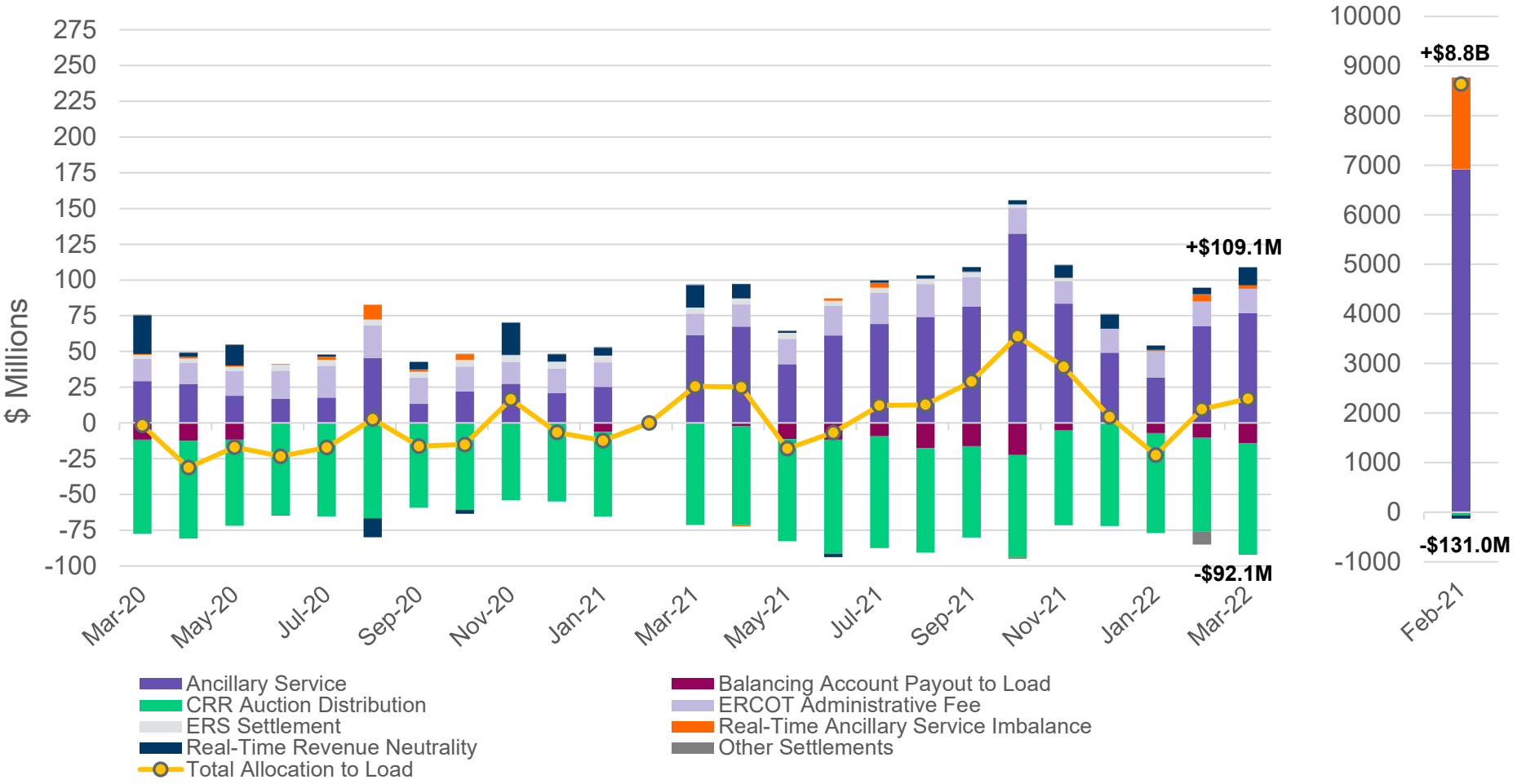


"Effective Resource-Hours" excludes any period during a Reliability Unit Commitment hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.

Thirty-Four Resources were Committed in March for Capacity, Minimum Run Time, and Congestion

Resource #	Effective Resource-hours	Non Opt Out (Effective Hours)	Opt Out (Effective Hours)
1	12.0	12.0	0.0
2	18.0	18.0	0.0
3	8.0	8.0	0.0
4	13.0	13.0	0.0
5	16.0	8.0	8.0
6	6.0	2.0	4.0
7	0.0	0.0	0.0
8	7.0	0.0	7.0
9	16.2	16.2	0.0
10	2.0	0.0	2.0
11	1.0	0.0	1.0
12	6.0	0.0	6.0
13	10.0	10.0	0.0
14	8.0	0.0	8.0
15	11.8	8.0	3.8
16	4.0	4.0	0.0
17	5.4	5.4	0.0
18	6.2	5.2	1.0
19	6.0	0.0	6.0
20	23.5	23.5	0.0
21	5.0	5.0	0.0
22	11.5	11.5	0.0
23	6.4	6.4	0.0
24	6.0	6.0	0.0
25	6.0	6.0	0.0
26	6.0	6.0	0.0
27	6.0	6.0	0.0
28	9.5	9.5	0.0
29	4.8	1.9	2.9
30	3.0	0.0	3.0
31	3.0	0.0	3.0
32	6.0	0.0	6.0
33	4.0	4.0	0.0
34	4.3	4.3	0.0
Total	261.6	199.9	61.7

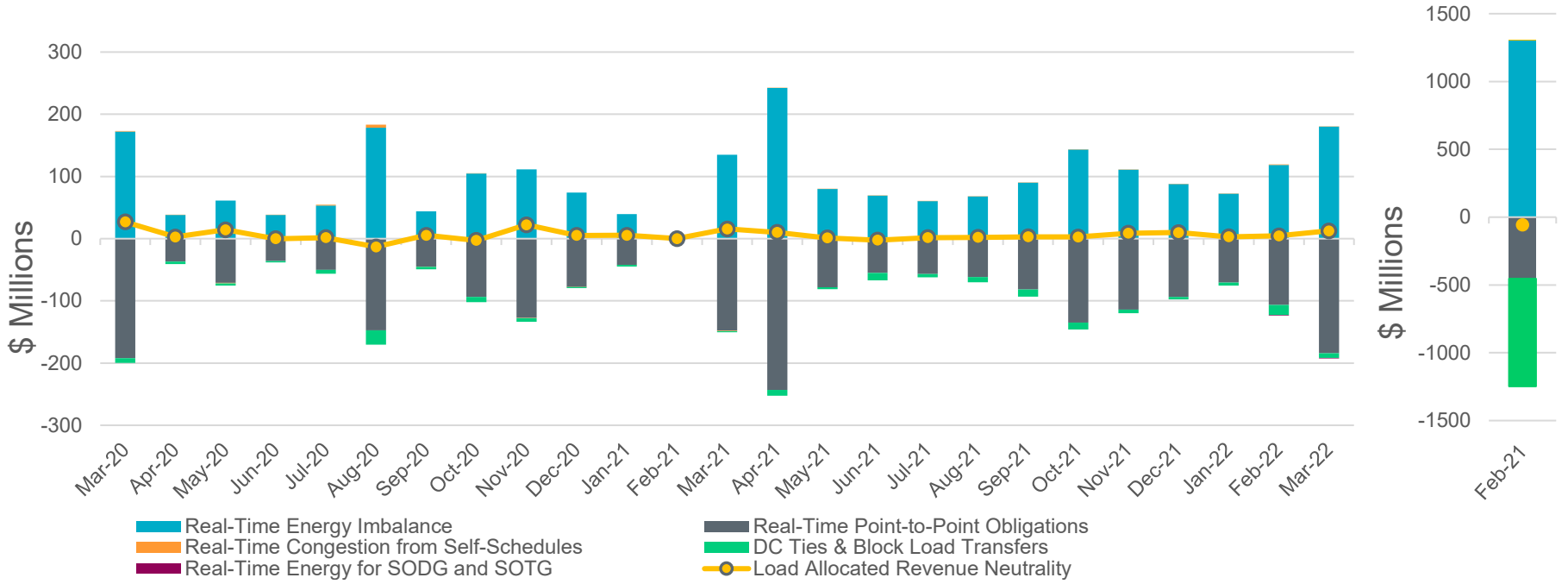
Net Allocation to Load in March 2022 was $17 Million



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.

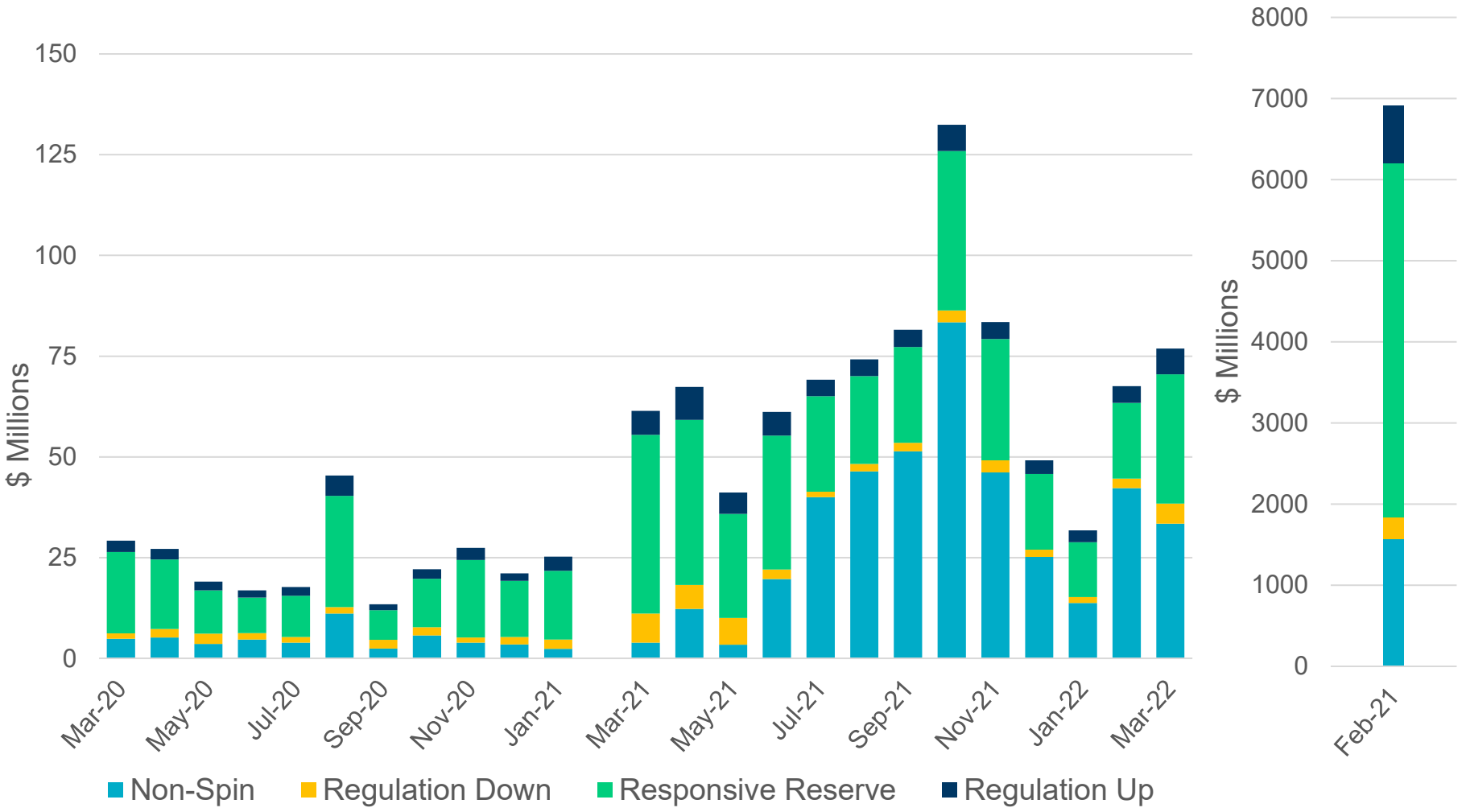
Real-Time Revenue Neutrality Allocated to Load was $12.49M for March 2022



	March 2022 ($M)
Real-Time Energy Imbalance	$180.09
Real-Time Point-to-Point Obligation	($184.01)
Real-Time Congestion from Self-Schedules	$0.19
DC Tie & Block Load Transfer	($7.85)
Real-Time Energy for SODG and SOTG	($0.91)
Load Allocated Revenue Neutrality	**$12.49**

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 March 2022 totaled $76.91M



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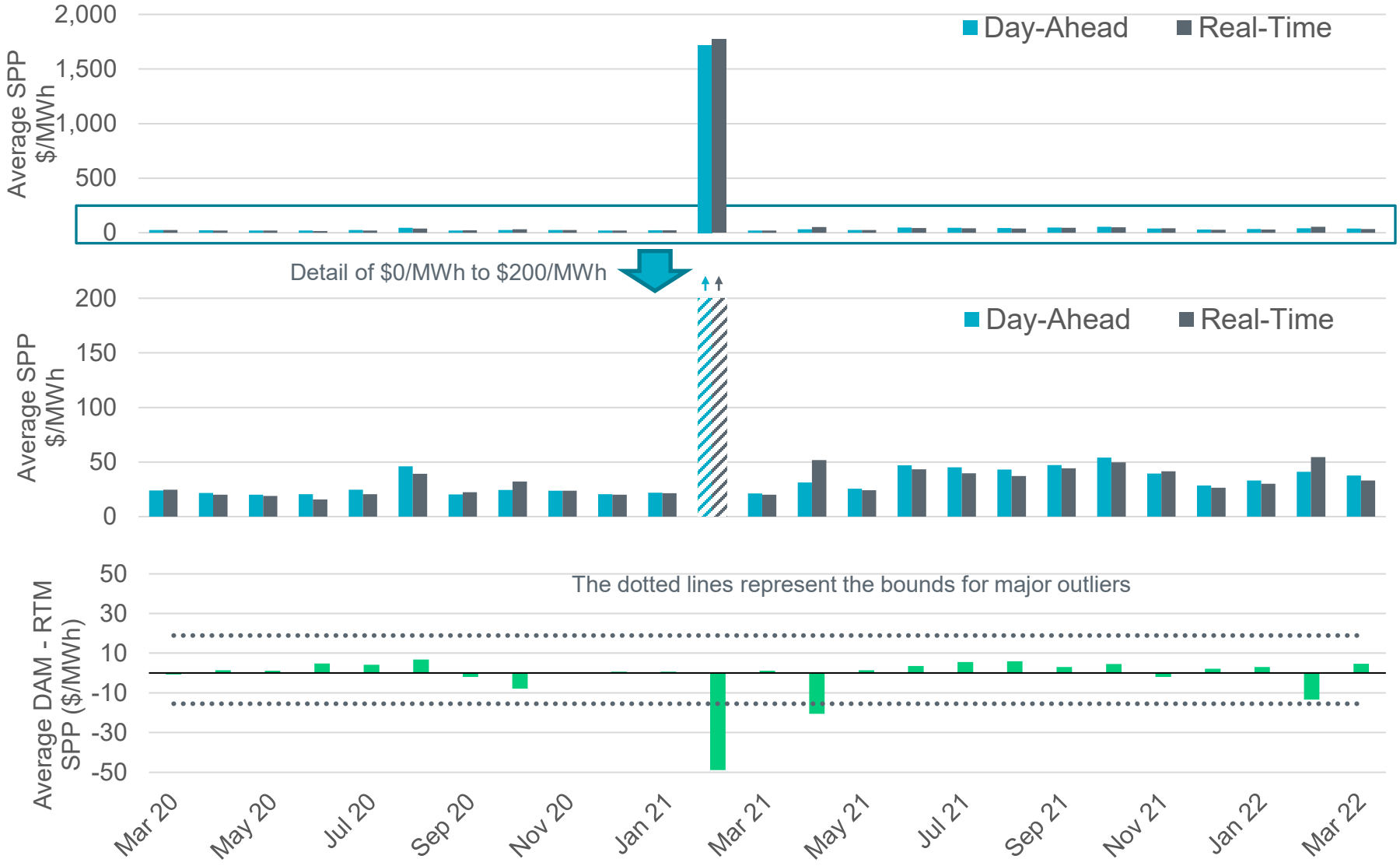
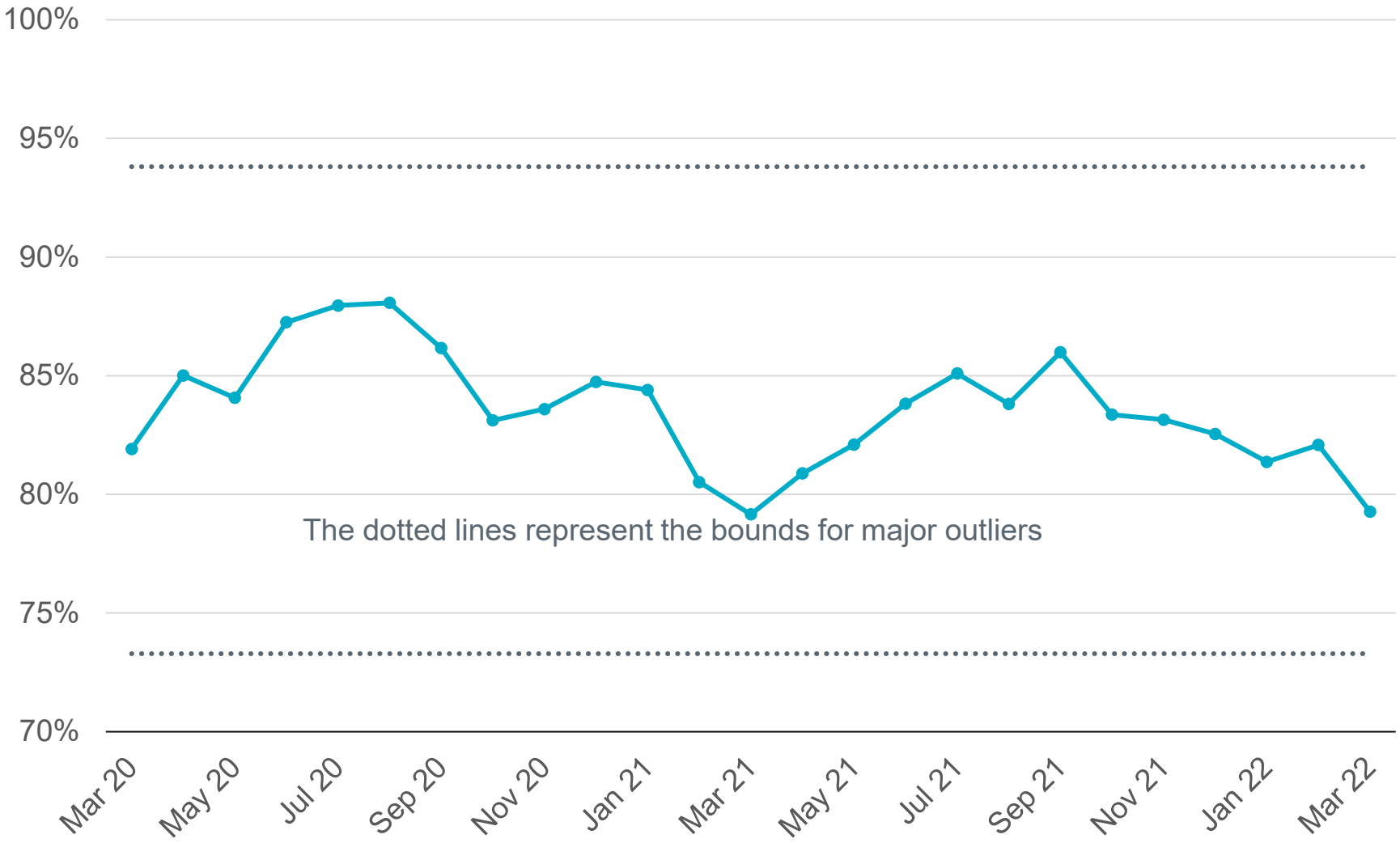
Day-Ahead and Real-Time Market Price Differences



*Averages are weighted by Real-Time Market Load

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

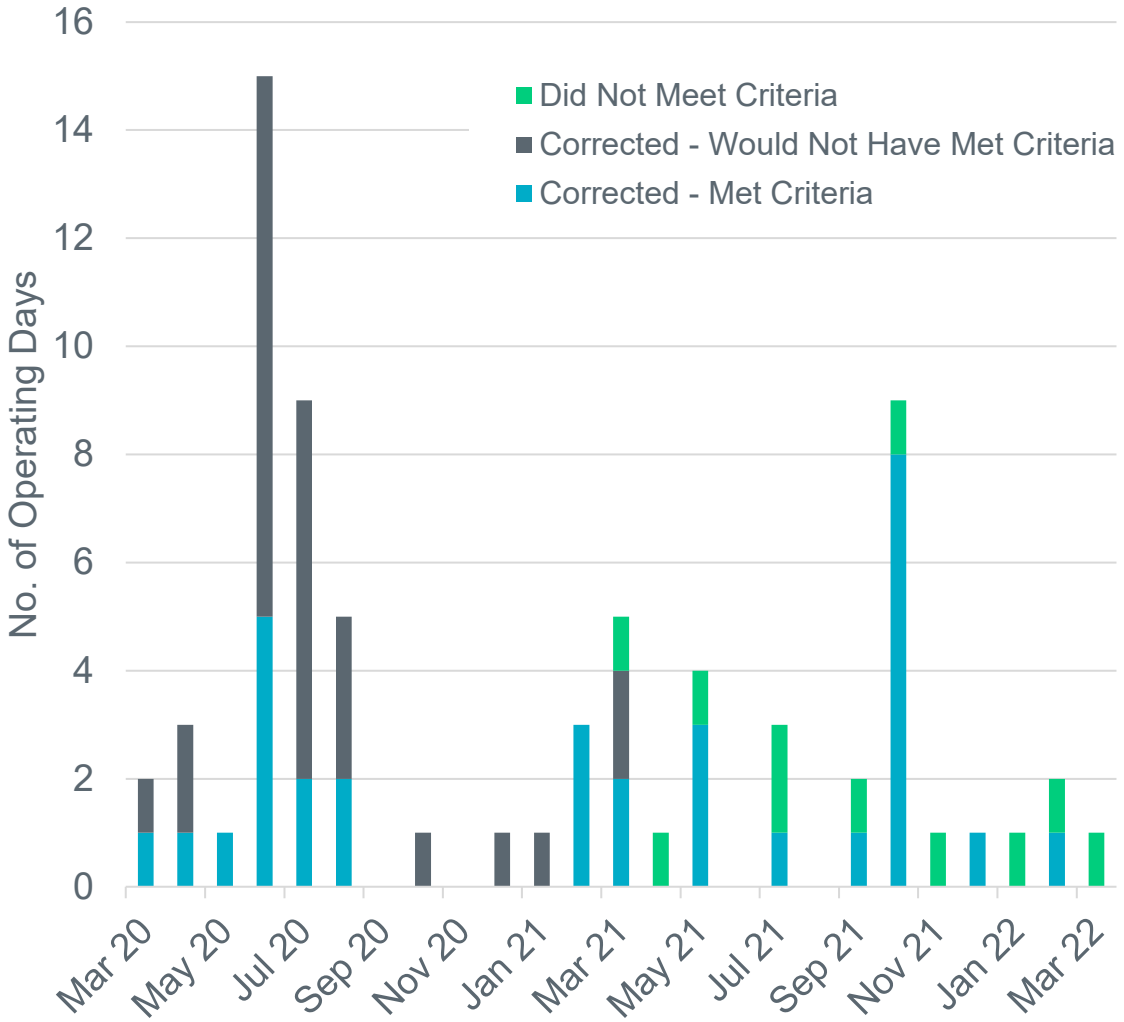


CRR Value and Cost Differences

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.



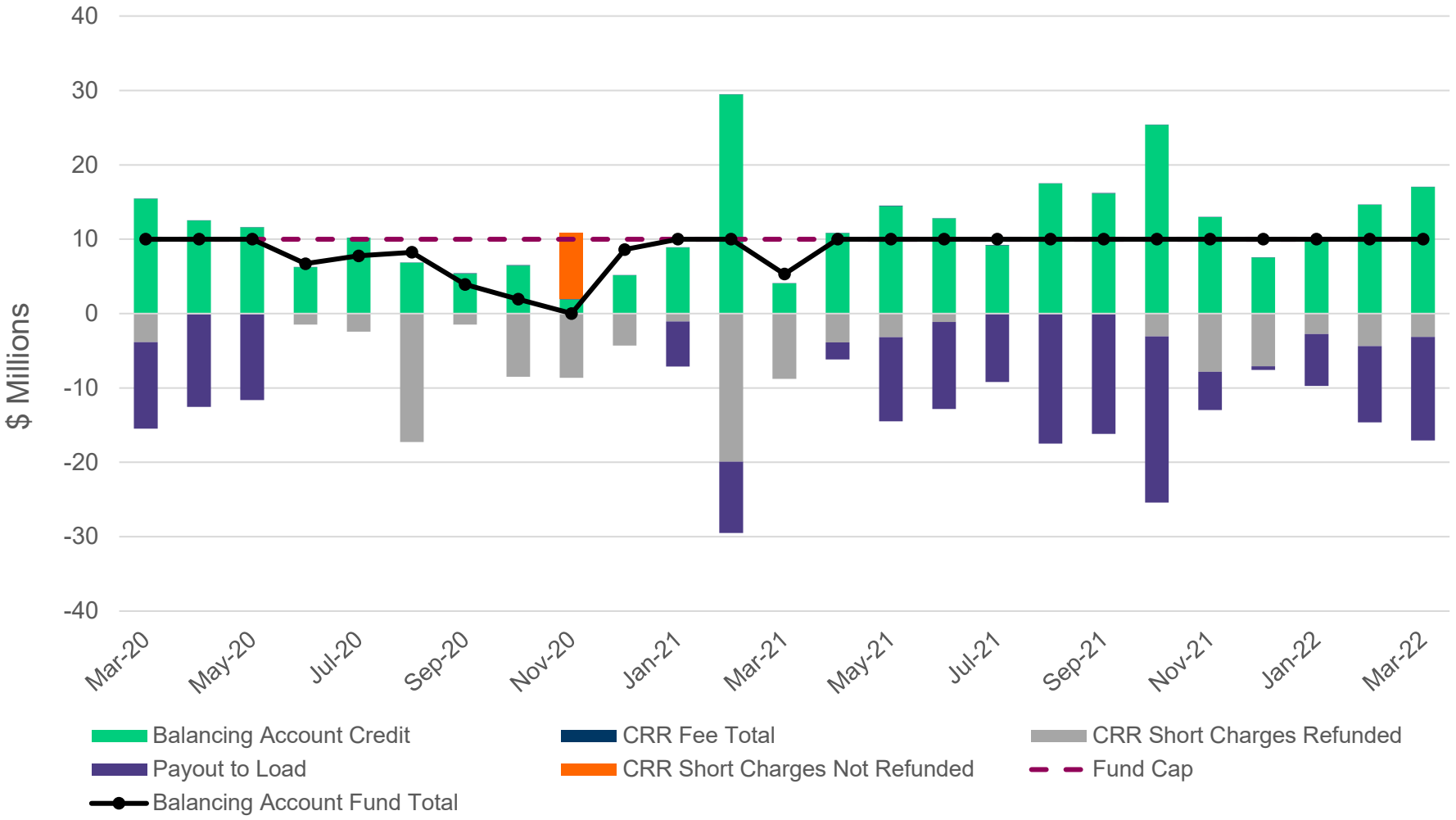
Details on Price Issues not Meeting the Criteria for Significance

Operating Day March 8, 2022

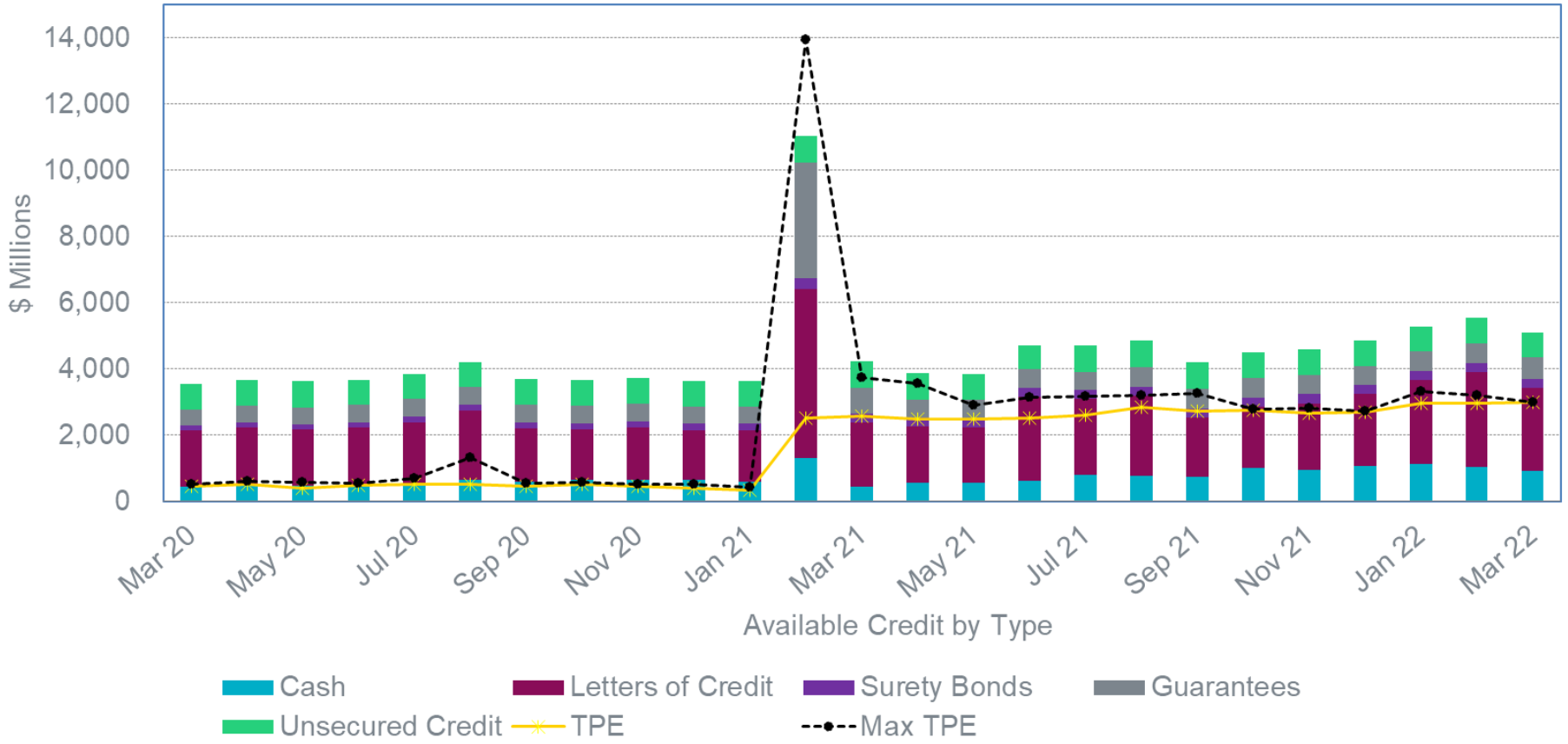
- The price issue was driven by SCED executions that were missed during a planned software maintenance.

- Impacts were minor and specific to Real-Time Prices for Energy Metered for Resources (RTRMPRs).
  - The total dollar impact was estimated as less than $40.

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 2022

	Year-To-Date		Transactions Received	
Transaction Type	March 2022	March 2021	March 2022	March 2021
Switches	322,241	417,635	112,865	187,648
Acquisitions	0	48,862	0	0
Move - Ins	699,238	648,552	269,490	241,361
Move - Outs	306,186	297,369	117,899	110,816
Continuous Service Agreements (CSA)	152,031	208,831	63,198	165,326
Mass Transitions	0	20,412	0	11,286
Total	1,479,696	1,641,661	563,452	716,437