ERCOT Monthly Operational Overview
(June 2022)

ERCOT Public
July 20, 2022

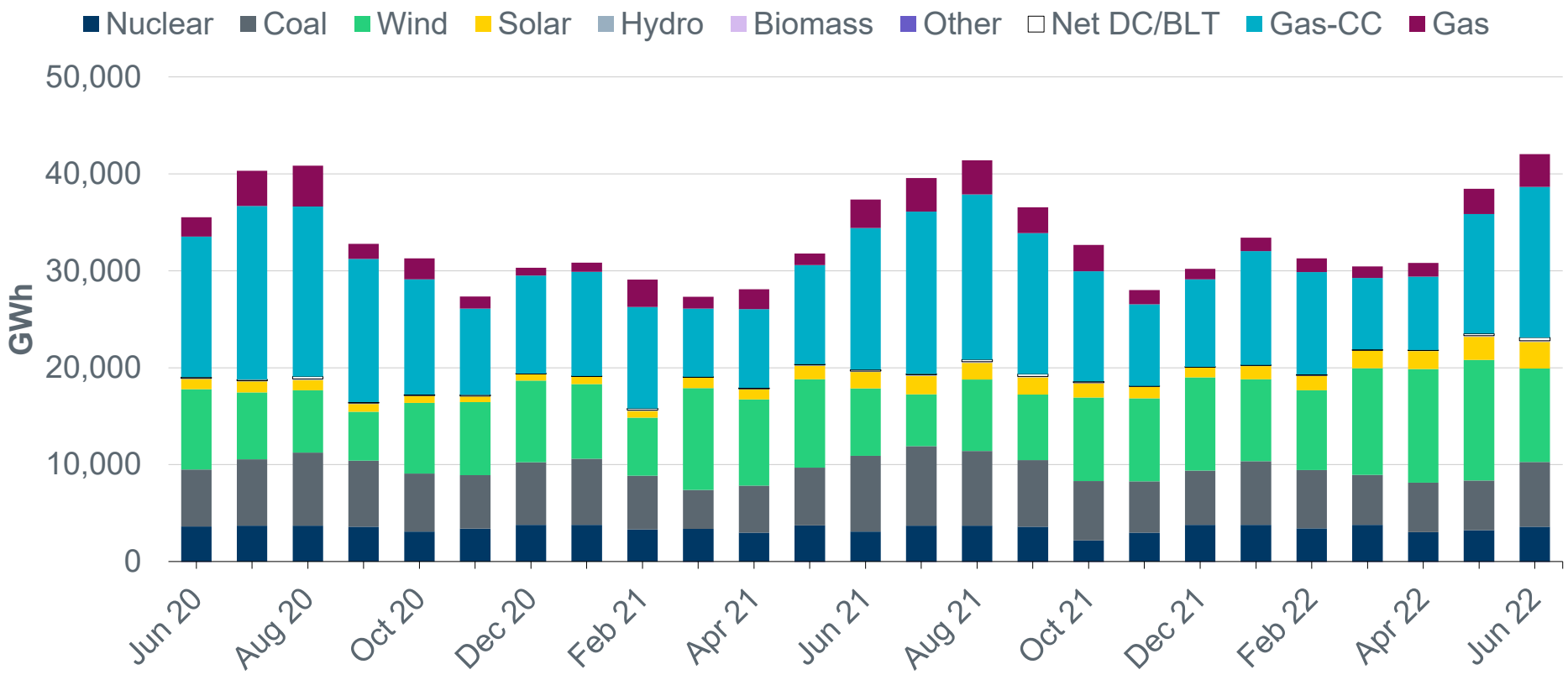
Highlights, Records and Notifications

- ERCOT set an all-time maximum peak demand record of 76,681 MW* for the system on 6/23/2022, this was 1,861 MW more than the previous all-time record of 74,820 MW set on 8/12/2019. The June record demand is also 6,424 MW more than the 6/23/2021 demand of 70,257 MW.

- ERCOT issued 4 notifications:
  - 1 Advisory for postponing the deadline for the posting of the DAM solution, due to delayed DAM start time.
  - 2 OCNs issued for extreme hot weather with forecasted temperatures above 103 degrees in the North Central and South Central weather zones.
  - 1 DC Tie Curtailment Notices for DC_R (Railroad) DC Tie due to a planned or unplanned outage.

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

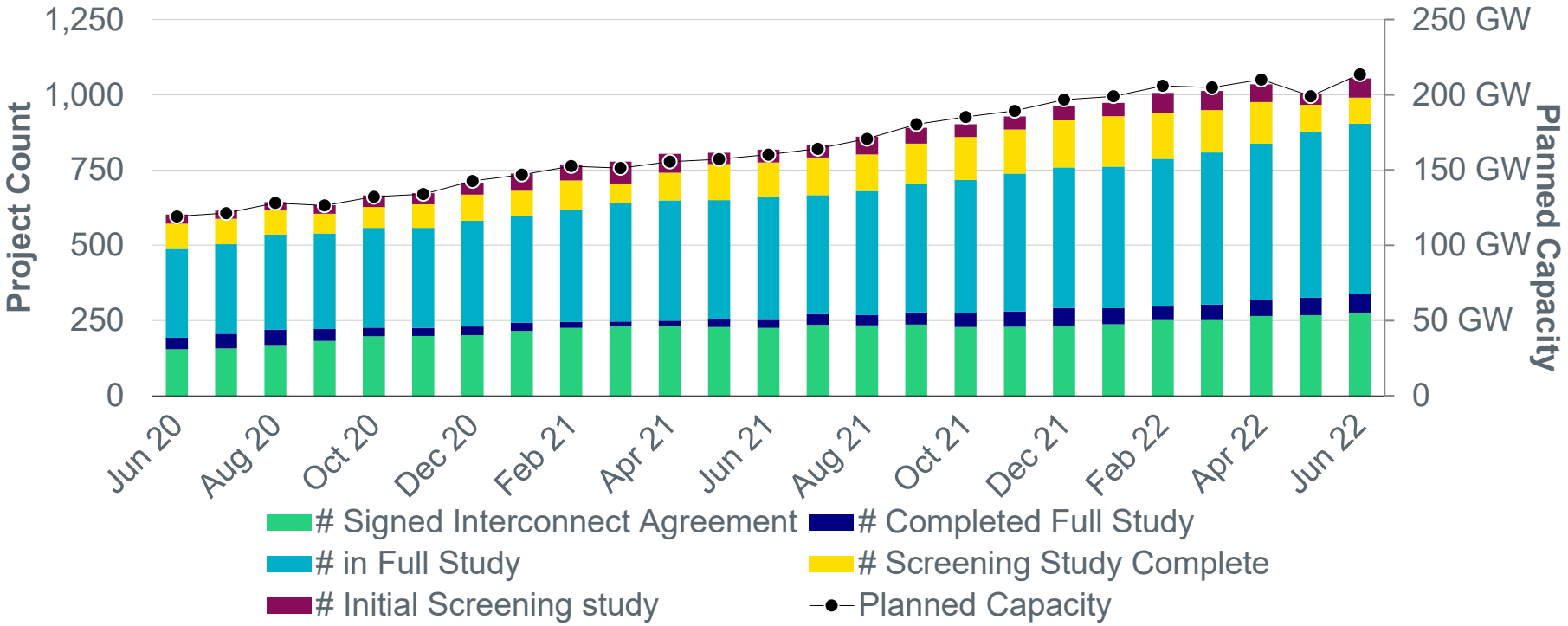
Monthly energy generation increased by 13% year-over-year to 42,031 GWh in June 2022, compared to 37,346 GWh in June 2021



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)

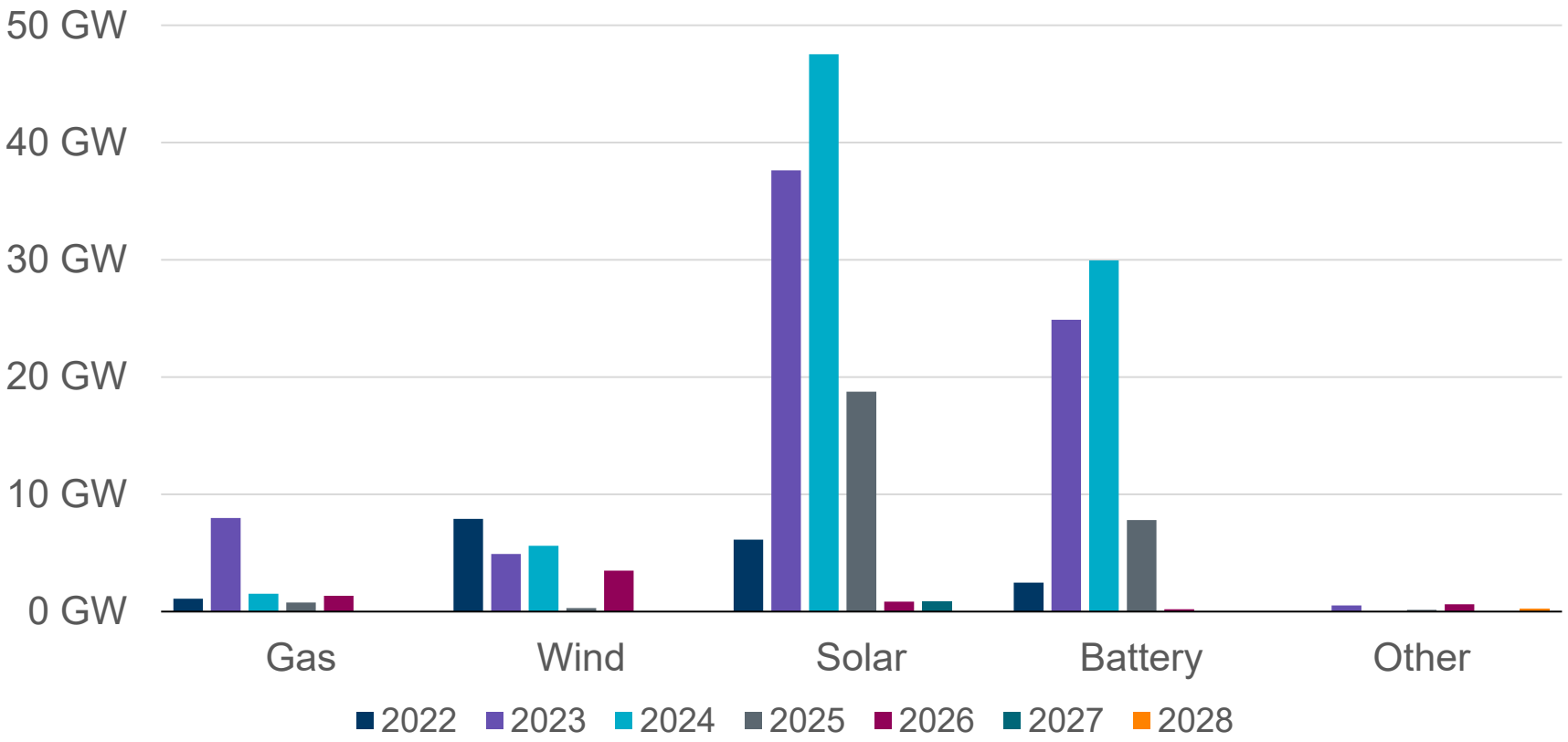


- There are an additional 7 “Small Generator” projects (67 MW) that are going through a simplified interconnection process.

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 112 GW (52.3%), Wind 22 GW (10.4%), Gas 13 GW (6.0%), Battery 65 GW (30.6%)
(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 1,065 active generation interconnection requests totaling 213,604 MW as of June 30. This includes 111,731 MW of solar, 22,243 MW of wind, 65,366 MW of battery, and 12,744 MW of gas projects; 59 projects were categorized as inactive, down from 64 inactive projects in May 2022.

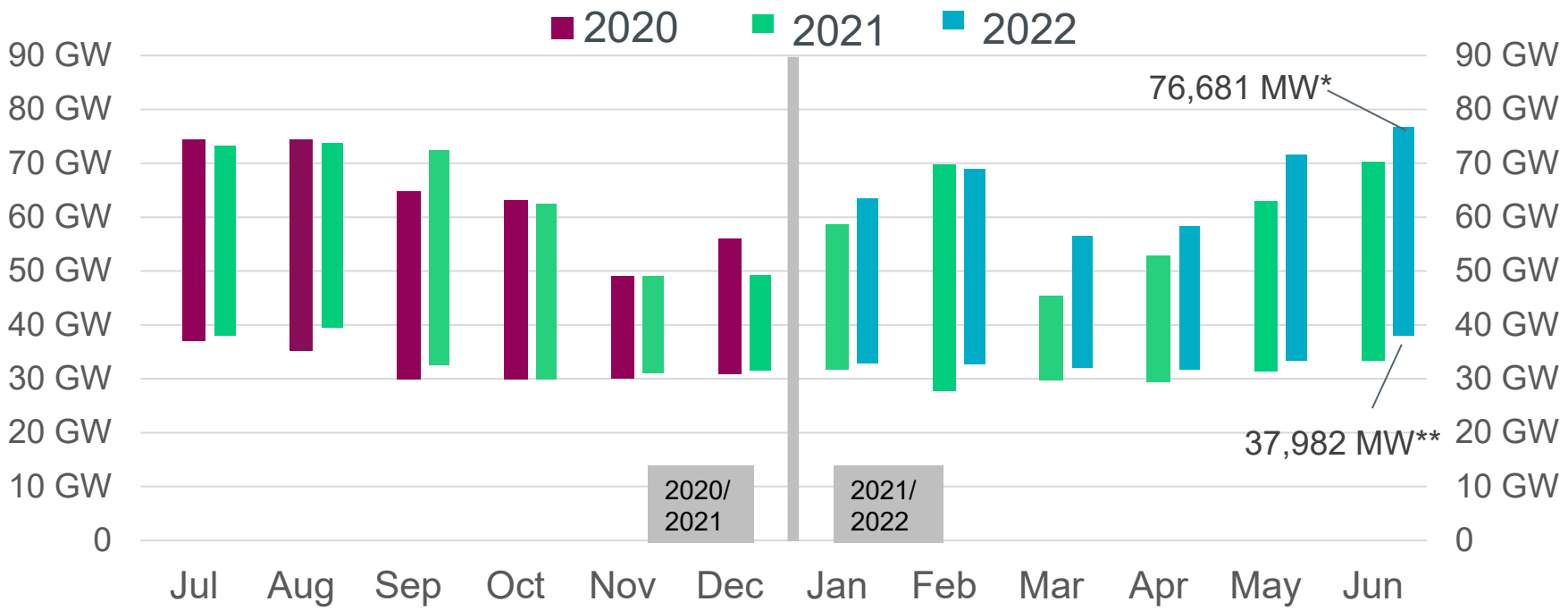
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of $1.319 Billion as of June 30, 2022.

- Transmission Projects endorsed in 2022 total $927.67 Million as of June 30, 2022.

- All projects (in engineering, routing, licensing and construction) total approximately $9.275 Billion as of June 1, 2022.

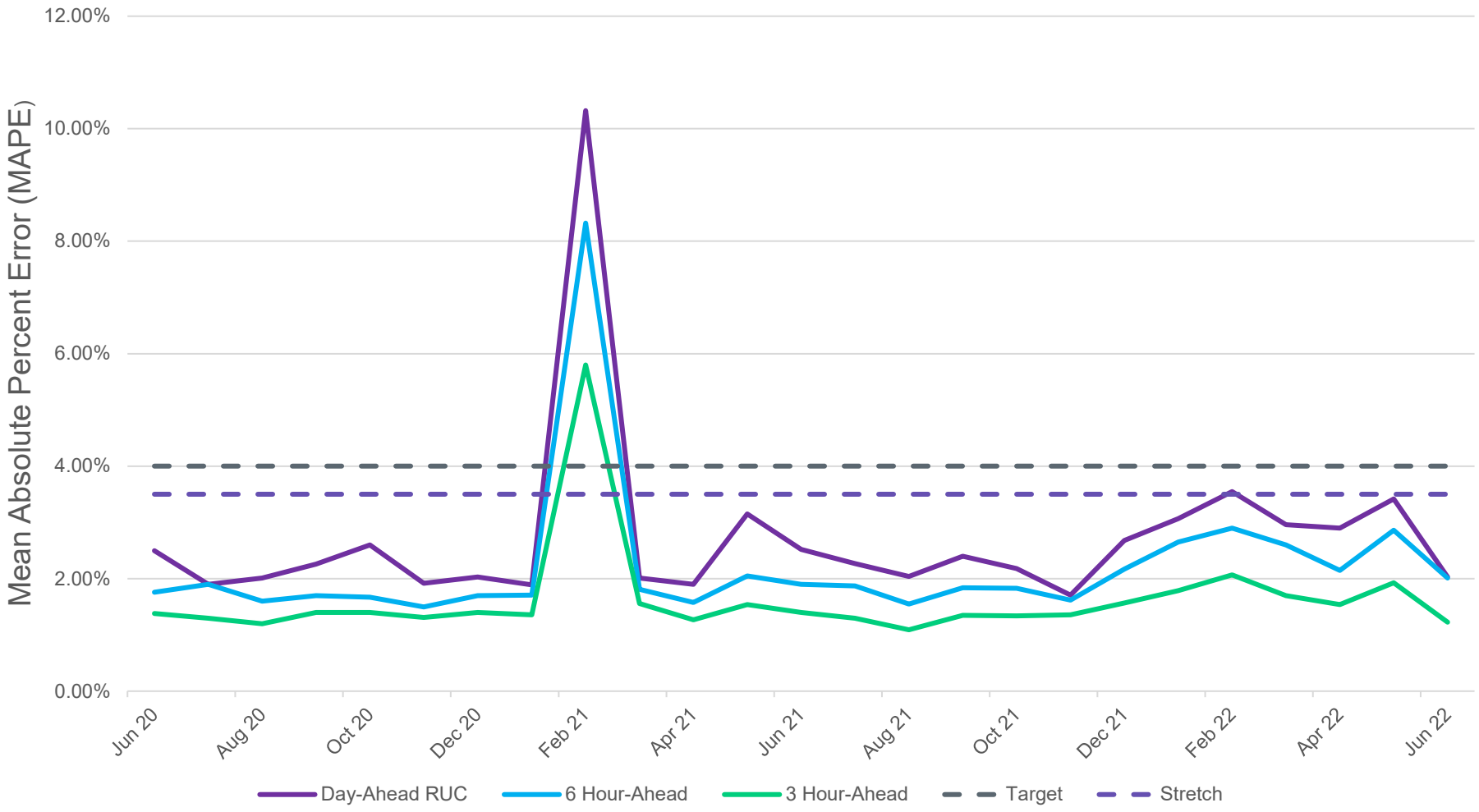
- Transmission Projects energized in 2022 total about $1.523 Billion as of February 1, 2022.

ERCOT set an all-time maximum peak demand record of 76,681 MW* for the system on 6/23/2022, this was 1,861 MW more than the previous all-time record of 74,820 MW set on 8/12/2019. The June record demand is also 6,424 MW more than the 6/23/2021 demand of 70,257 MW.



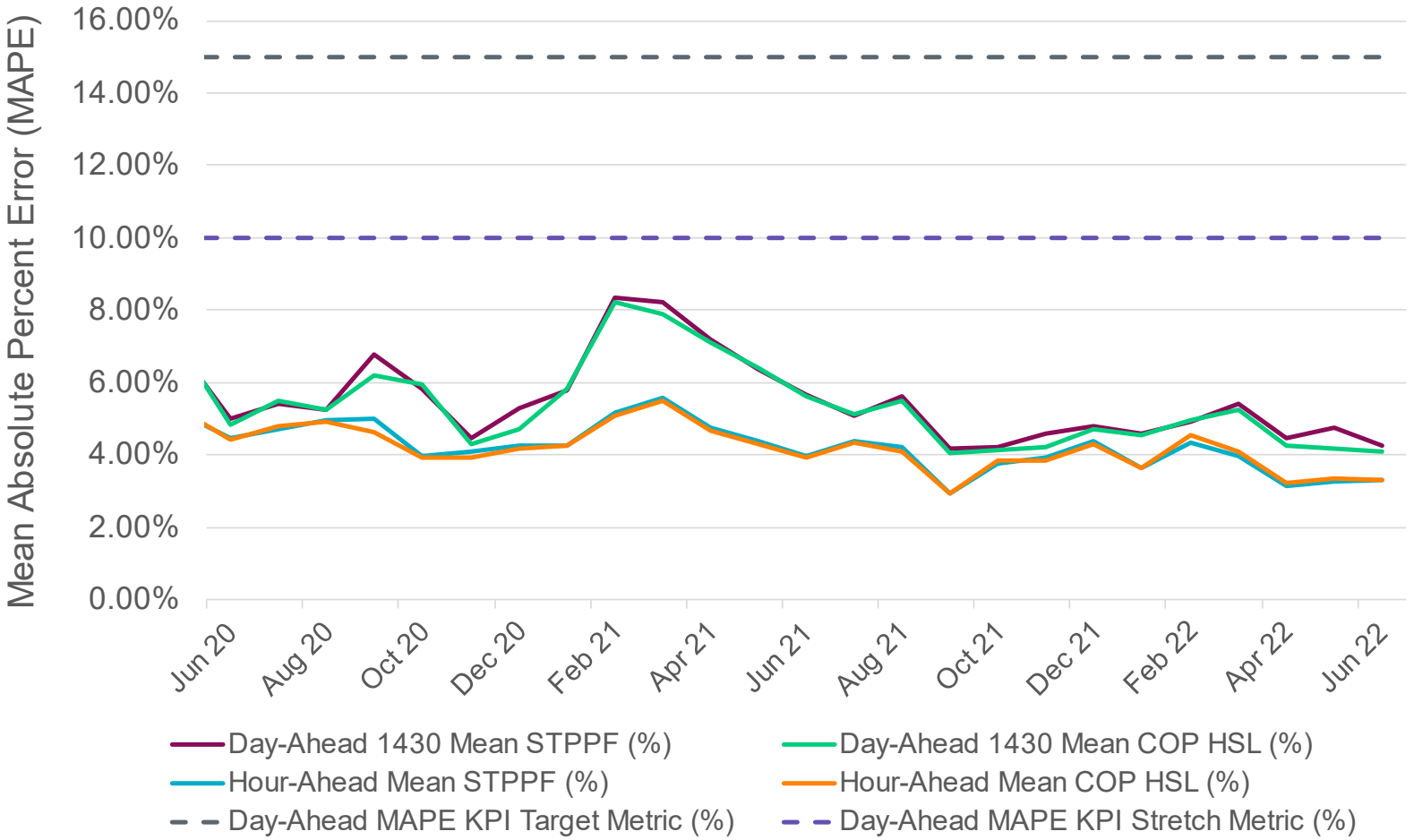
*Based on the maximum net system hourly value from July release of Demand and Energy 2022 report.
**Based on the minimum net system 15-minute interval value from July release of Demand and Energy 2022 report.
Data for latest two months are based on preliminary settlements.

Mid-Term Load Forecast Performance



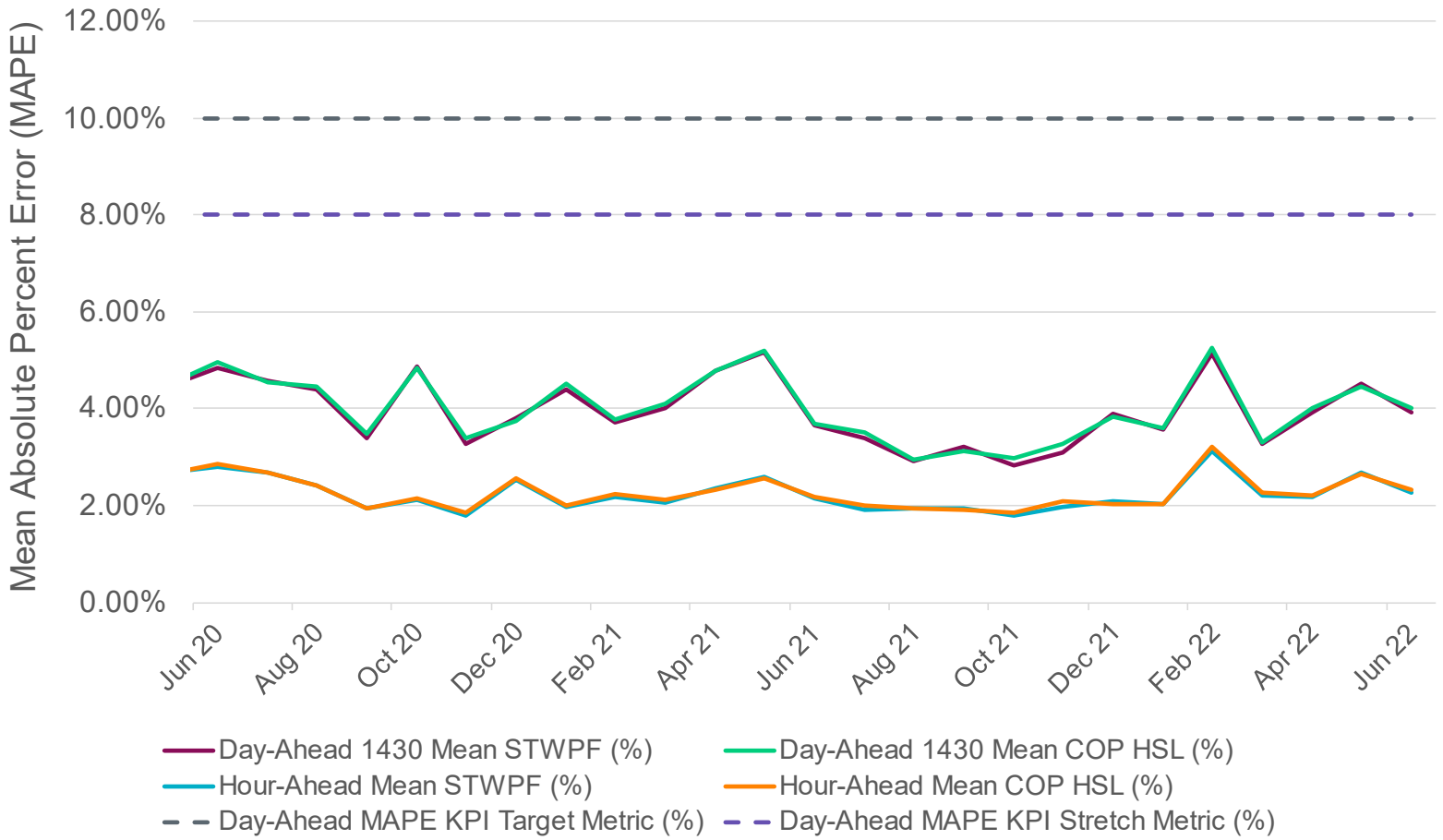
The Mid-Term Load Forecast is an hourly forecast that looks 7 days into the future

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.

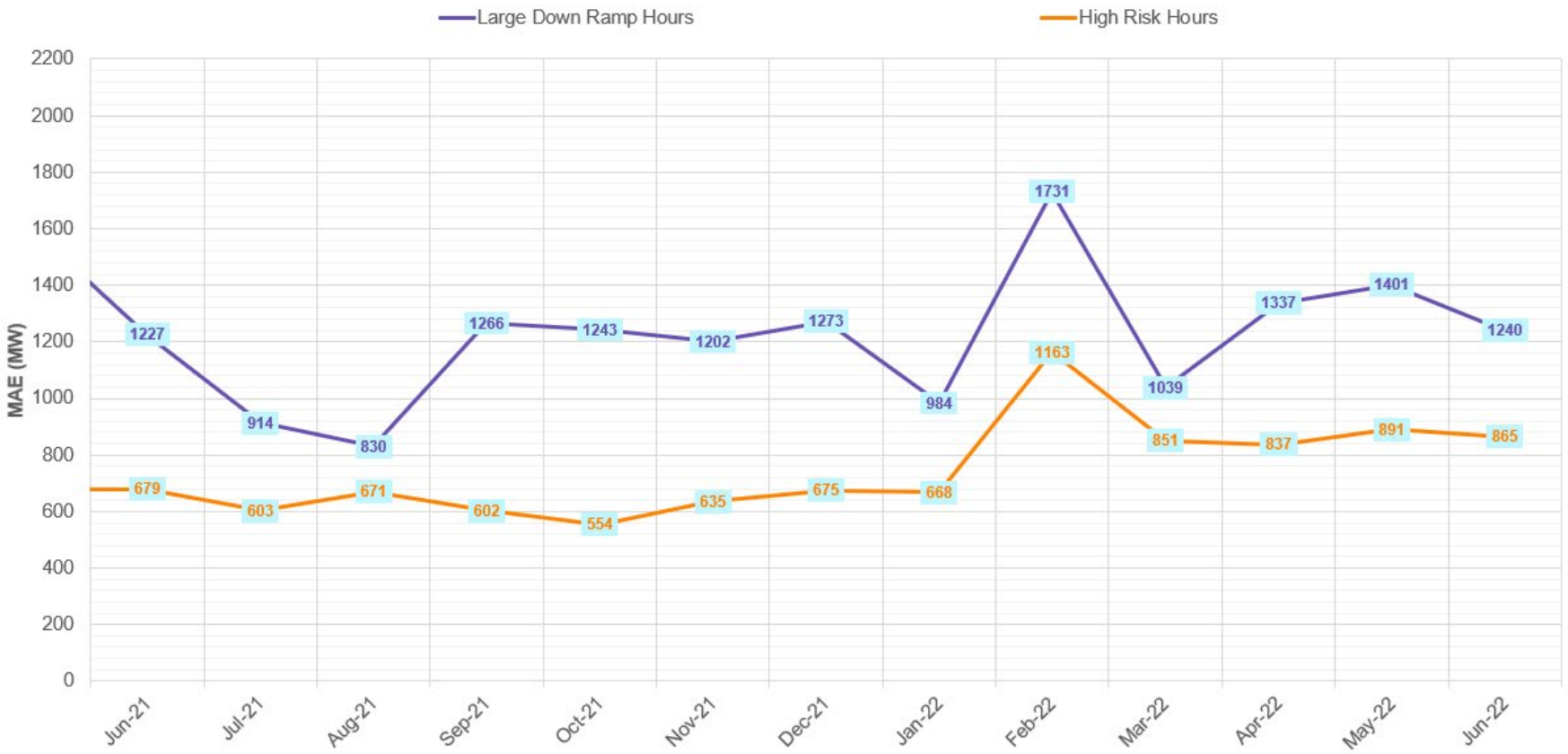
Wind Forecast Performance



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

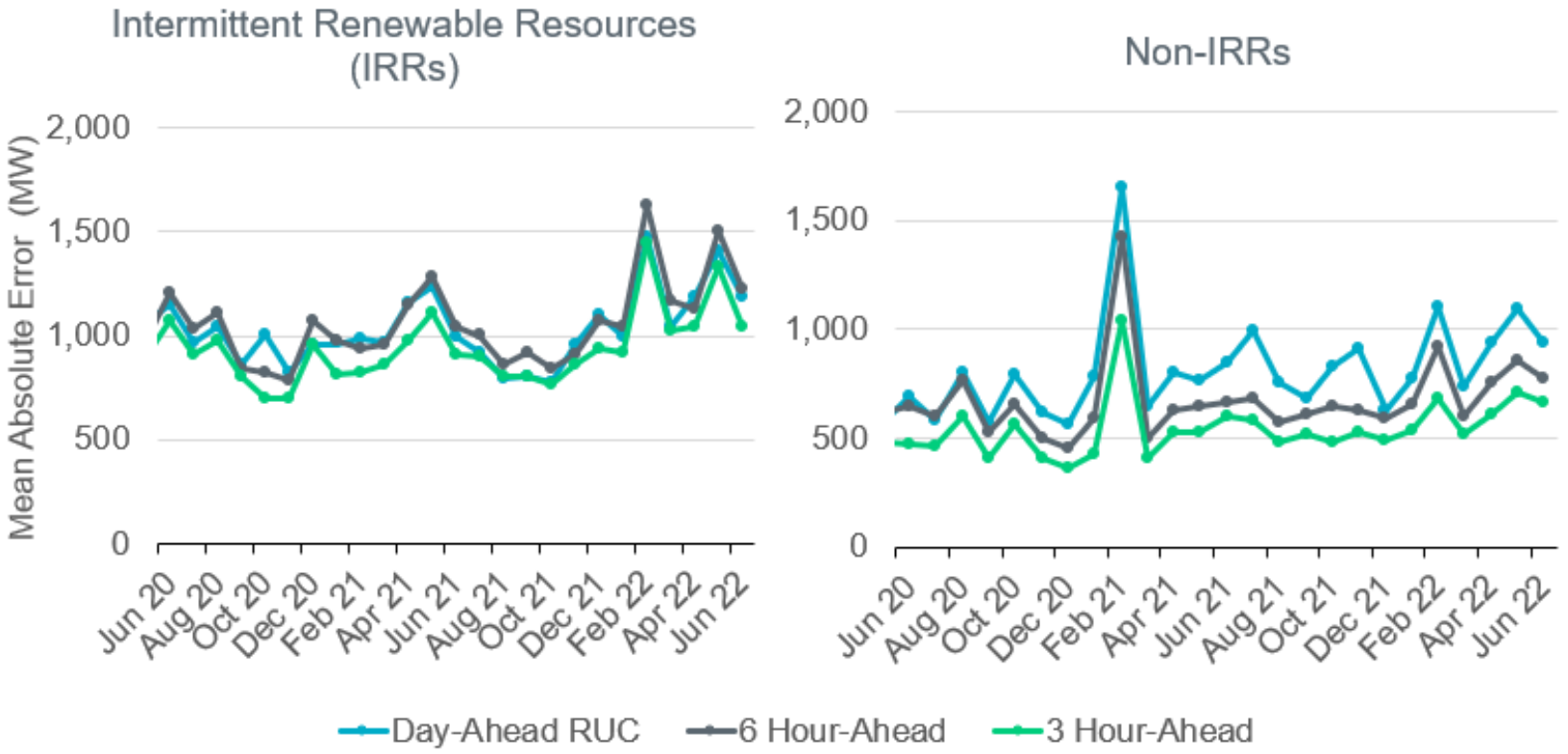
Hour-Ahead Mean Absolute Error (MAE) During Large Down Ramp (> 2000 MW) and High Risk Hours*



**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.*

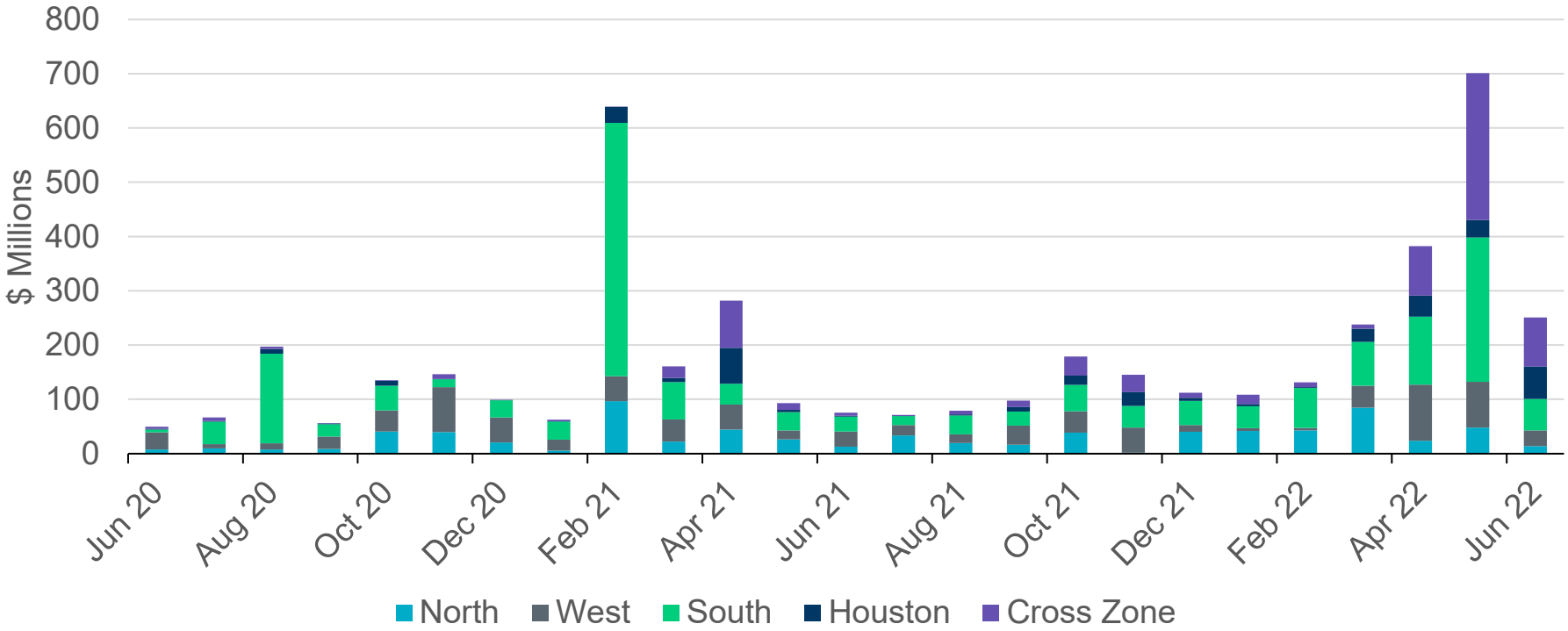
Forecast performance during large down ramp (wind ramp > 2000 MW) hours and high risk hours (historic risk of load ramping up and wind ramping down is high) is focused upon. Note that for the purposes of forecast performance measurement every hour in a month is classified as either a large down ramp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



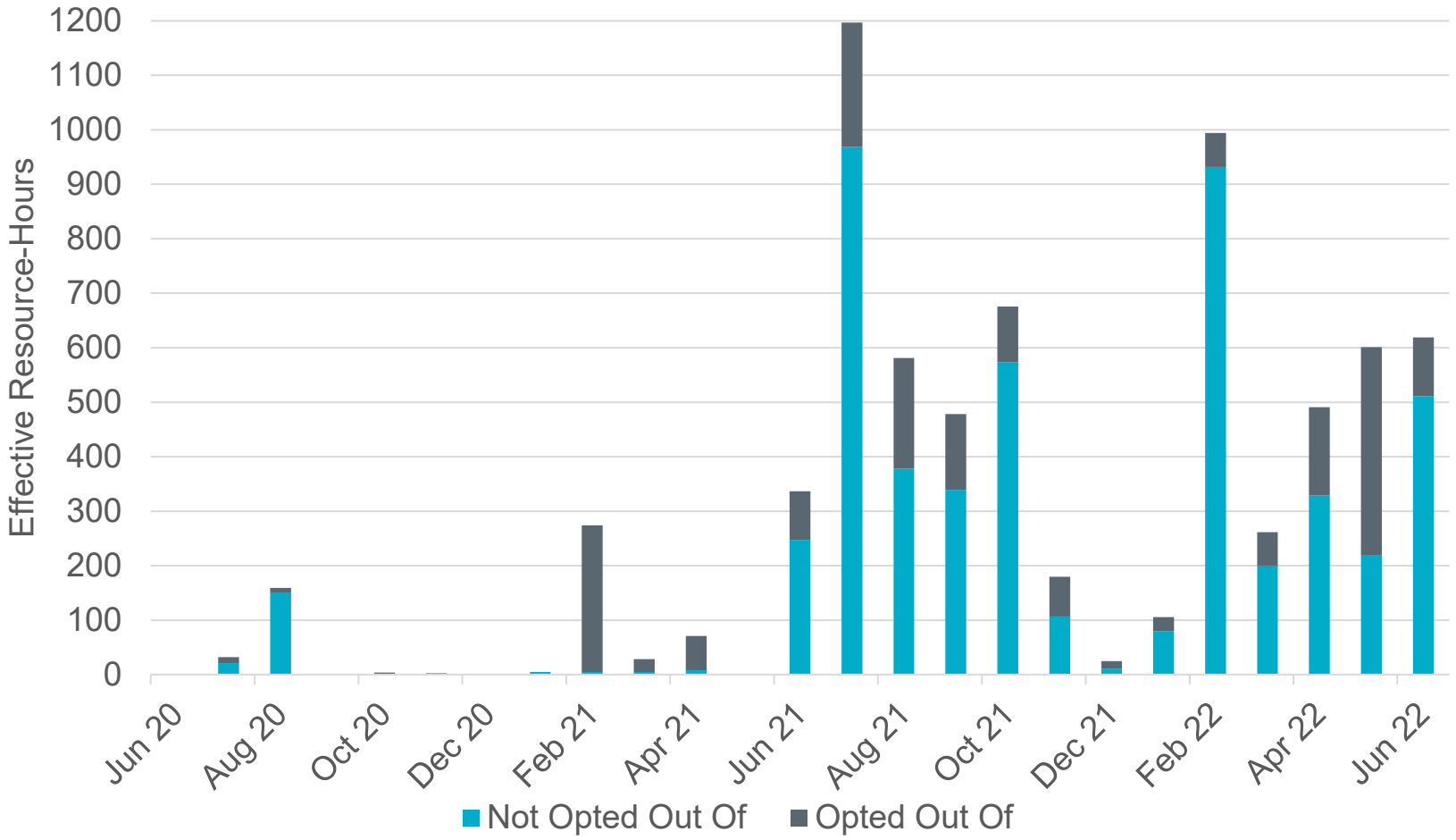
- COPs for IRRs are derived from wind and solar forecasts from ERCOT with any adjustments from Qualified Scheduling Entities.
- The installed capacity of approved Wind Units is 35,644 MW (as of June 30, 2022).
- The installed capacity of approved Solar Units is 11,887 MW (as of June 30, 2022).

Real-Time Congestion Rent by Zone



- Congestion rent in the Houston Zone increased in June 2022 compared to May 2022.
- Congestion rent in the Houston Zone was primarily driven by the loss of the single circuit 345 kV line from Oasis to Meadow overloading the 138 kV line from Grant to Plaza. Congestion rent in the Cross Zone was primarily driven by the West Texas Export Generic Transmission Constraint (GTC) and the loss of the 345 kV lines from Twin Oak Switch to Gibbons Creek and Twin Oaks Switch to Jack Creek overloading the 345 kV line from Jewett to Singleton.
- 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-Seven Resources were Committed in June for Capacity, Minimum Run Time, and Congestion

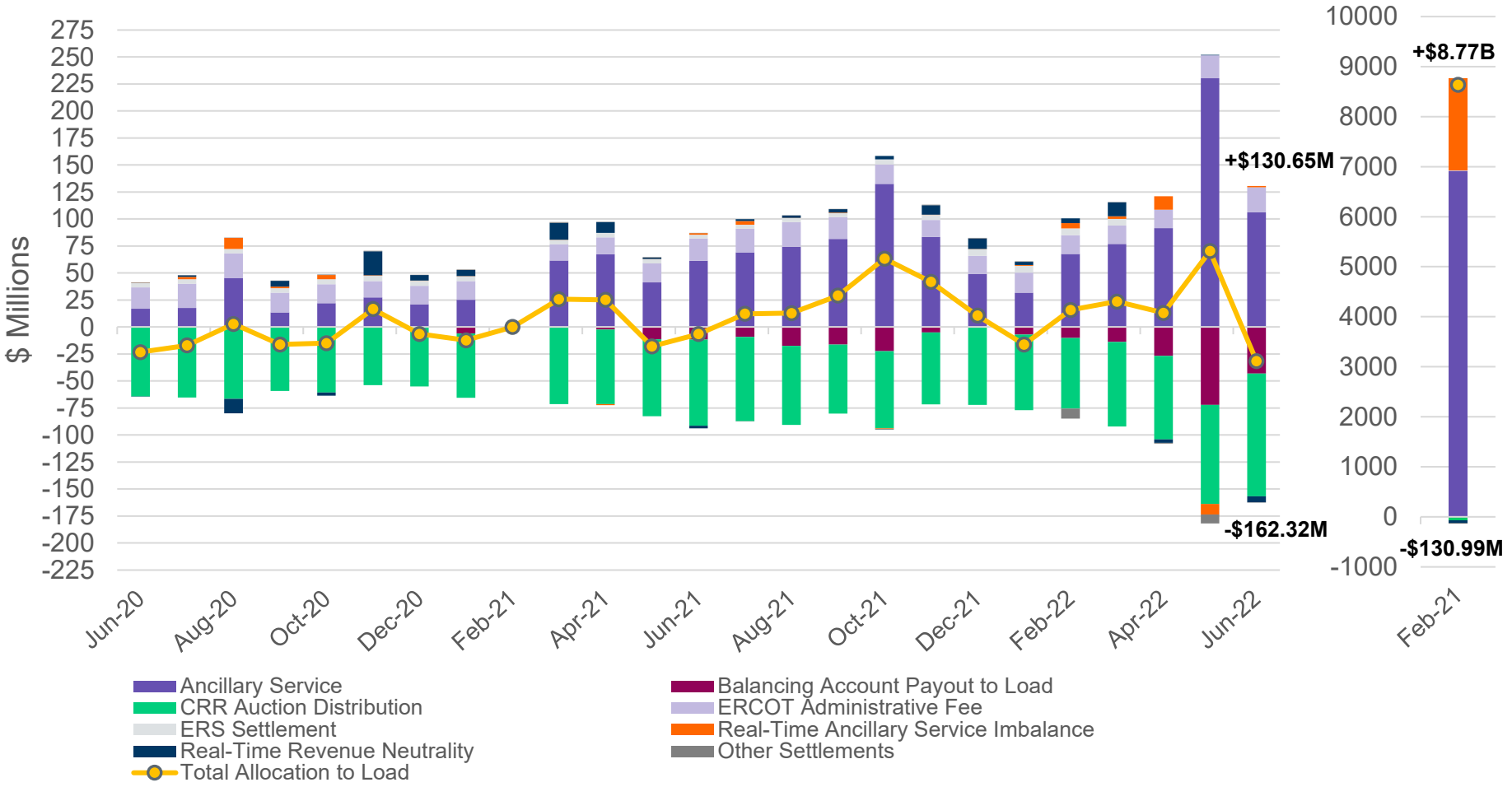


"Effective Resource-Hours" excludes any period during a Reliability Unit Commitment hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.

Twenty-Seven Resources were Committed in June for Capacity, Minimum Run Time, and Congestion

Resource #	Effective Resource-hours	Non Opt Out (Effective Hours)	Opt Out (Effective Hours)
1	31.9	25.9	6.0
2	38.9	38.9	0.0
3	10.0	5.0	5.0
4	10.0	5.0	5.0
5	5.0	5.0	0.0
6	64.9	64.9	0.0
7	53.0	53.0	0.0
8	6.0	6.0	0.0
9	6.0	6.0	0.0
10	8.0	0.0	8.0
11	8.0	8.0	0.0
12	70.9	28.9	42.0
13	31.9	31.9	0.0
14	35.0	35.0	0.0
15	33.9	33.9	0.0
16	66.1	58.1	8.0
17	12.9	12.9	0.0
18	12.9	12.9	0.0
19	4.4	4.4	0.0
20	18.8	18.8	0.0
21	10.9	0.0	10.9
22	28.3	28.3	0.0
23	15.0	15.0	0.0
24	11.0	0.0	11.0
25	6.0	0.0	6.0
26	12.0	6.0	6.0
27	7.0	7.0	0.0
Total	618.8	510.8	107.9

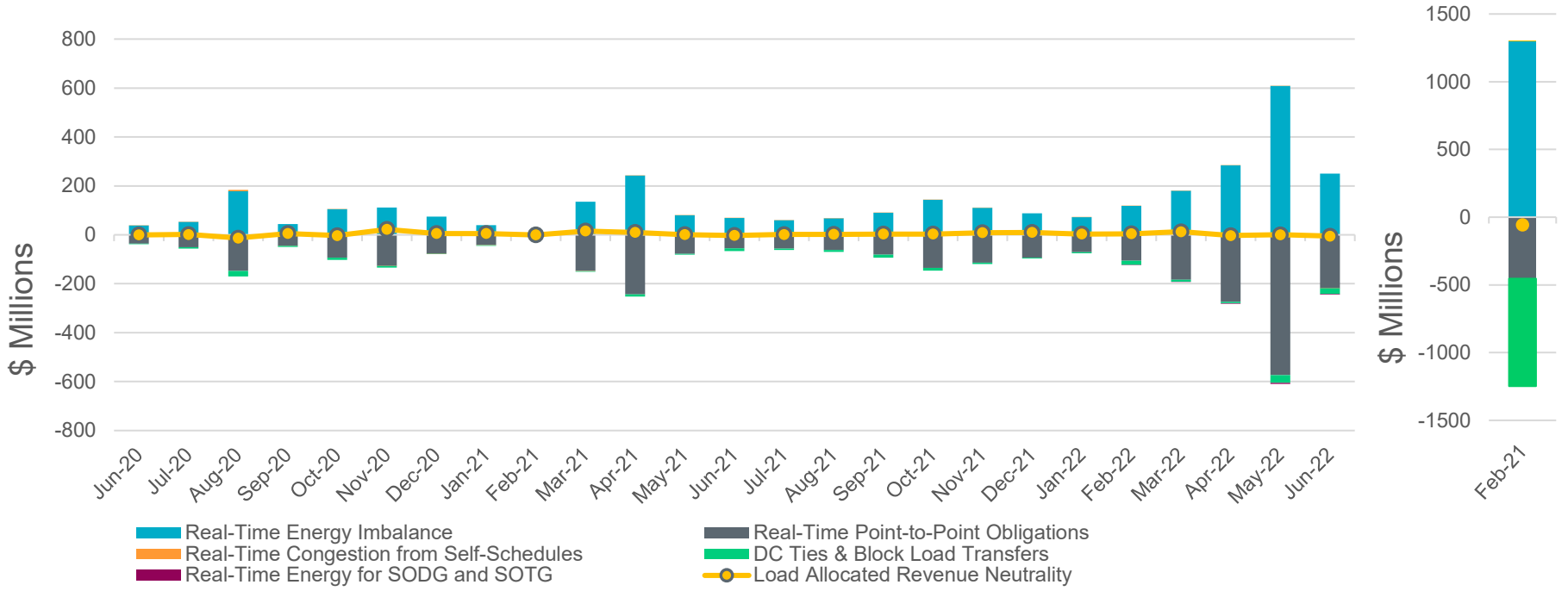
Net Allocation to Load in June 2022 was $31.67 Million



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.

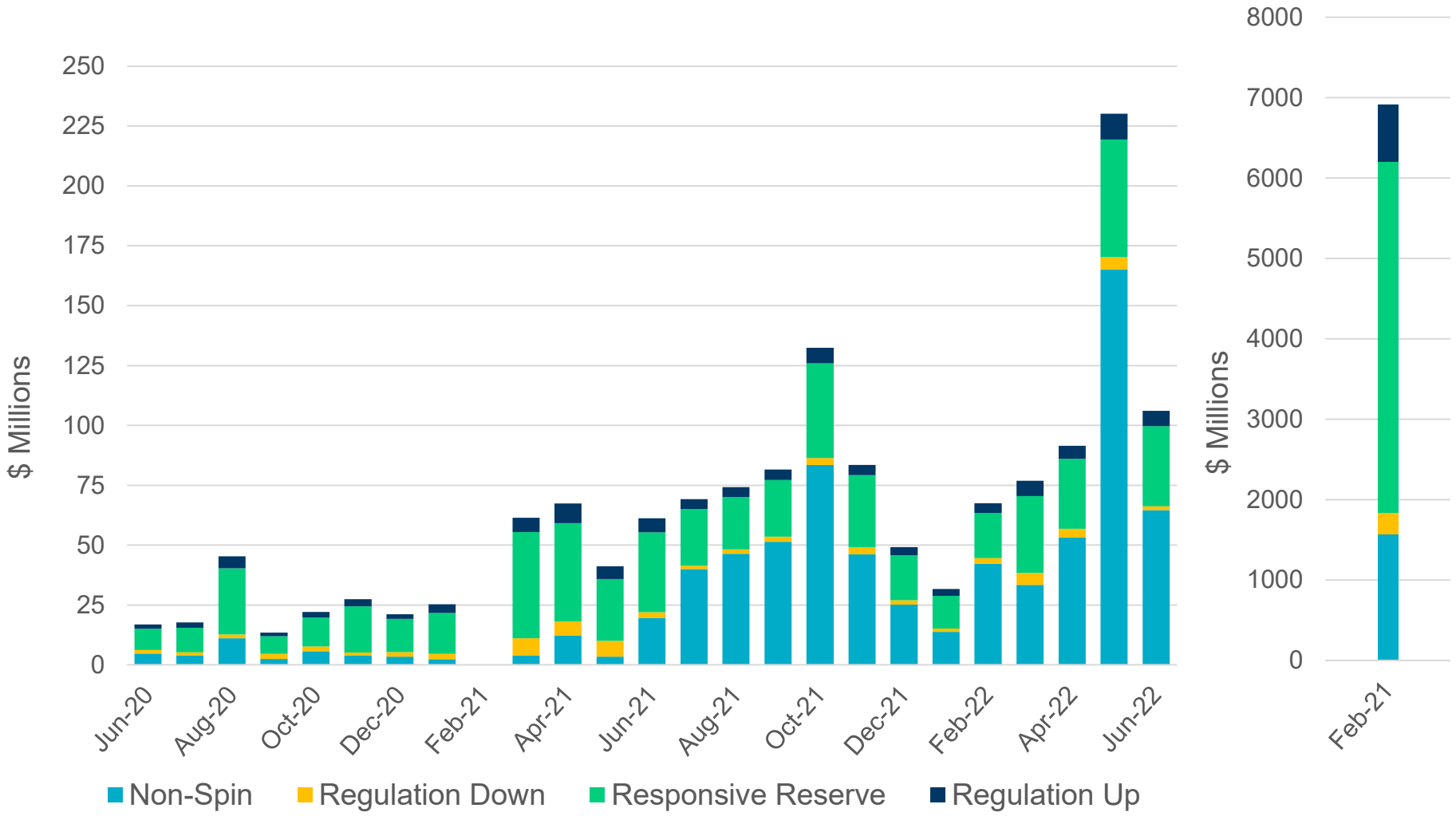
Real-Time Revenue Neutrality Allocated to Load was ($5.48M) for June 2022



	June 2022 ($M)
Real-Time Energy Imbalance	$250.23
Real-Time Point-to-Point Obligation	($218.94)
Real-Time Congestion from Self-Schedules	($0.09)
DC Tie & Block Load Transfer	($23.37)
Real-Time Energy for SODG and SOTG	($2.34)
Load Allocated Revenue Neutrality	**($5.48)**

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 June 2022 totaled $106.03M



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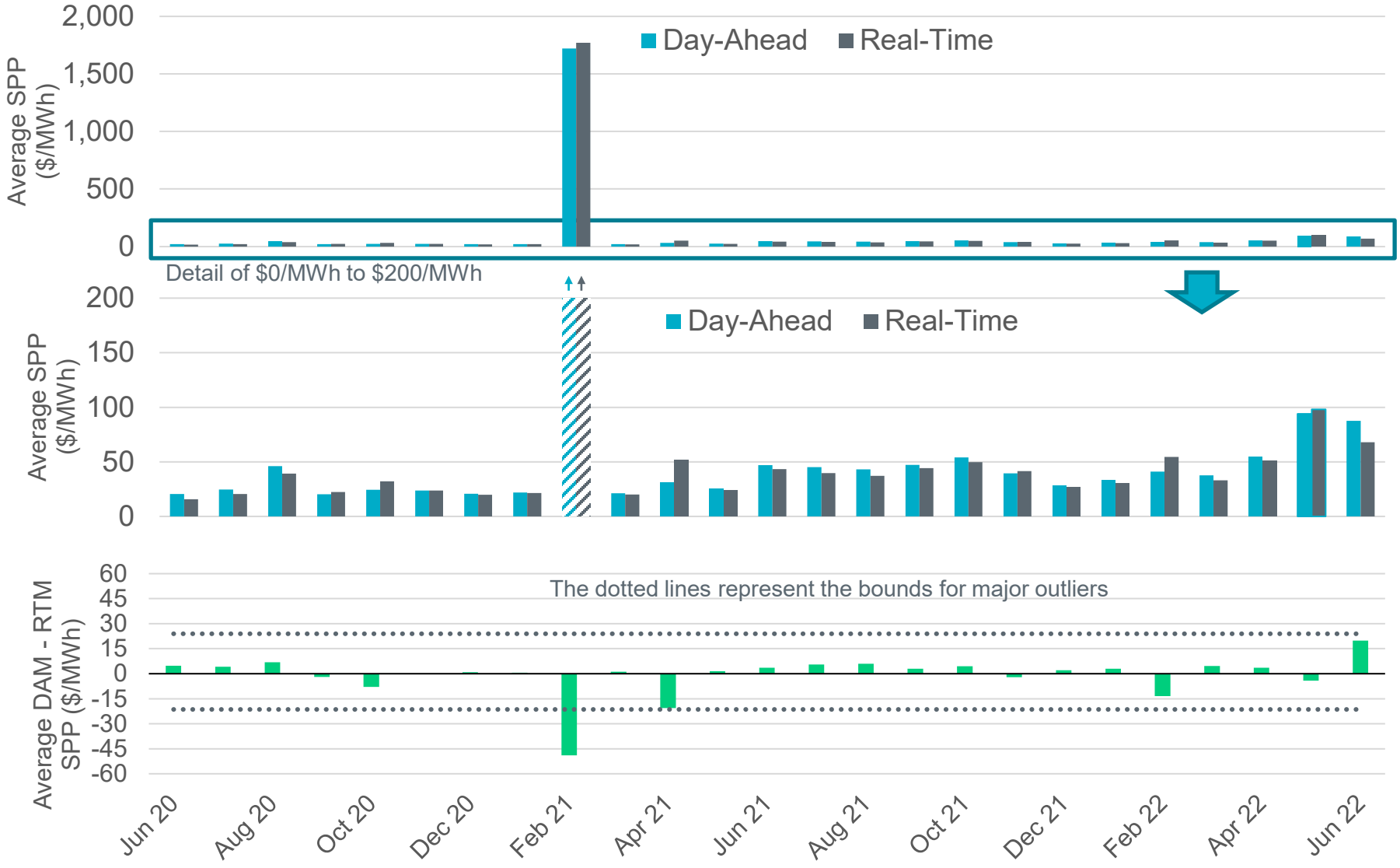
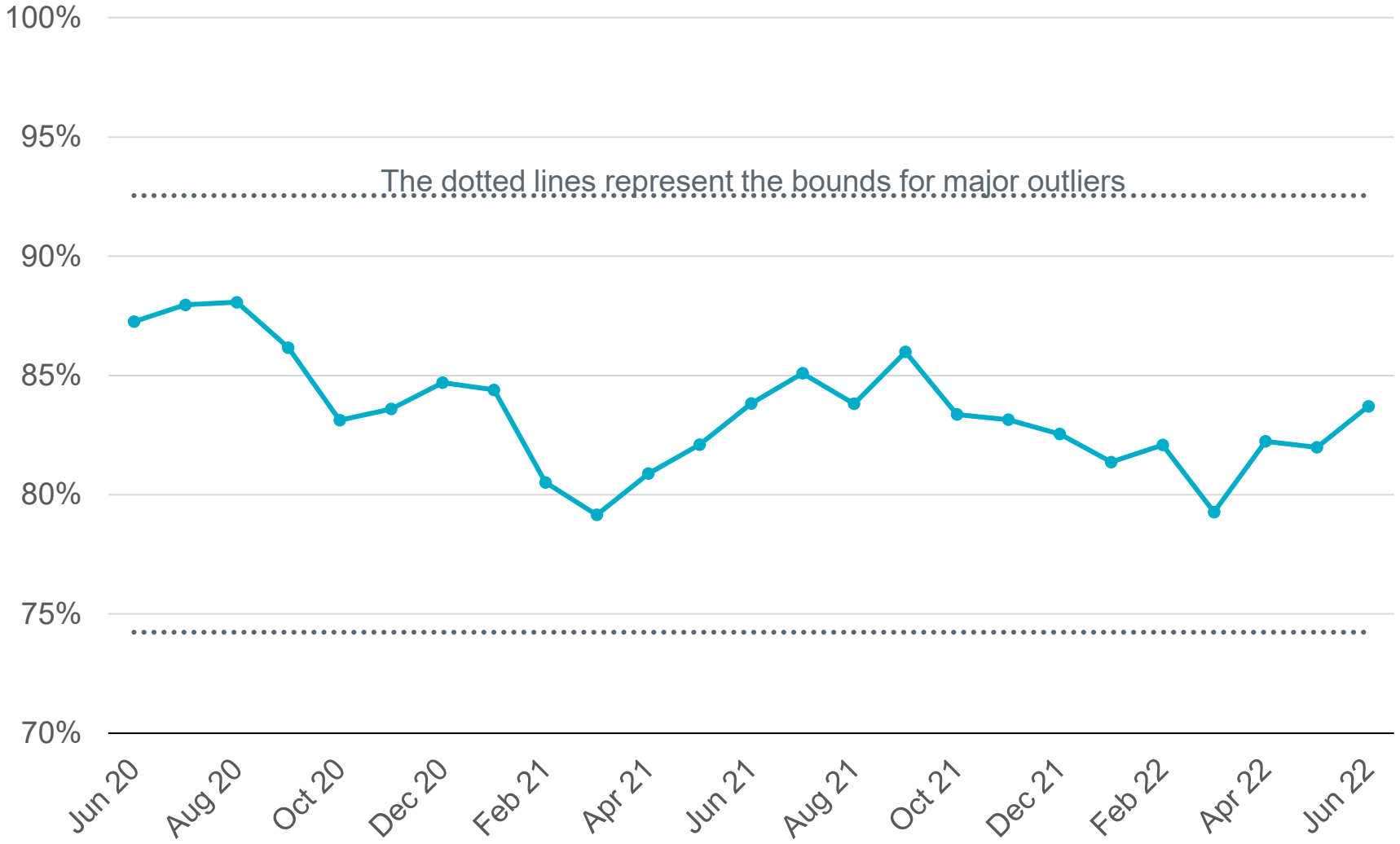
Day-Ahead and Real-Time Market Price Differences

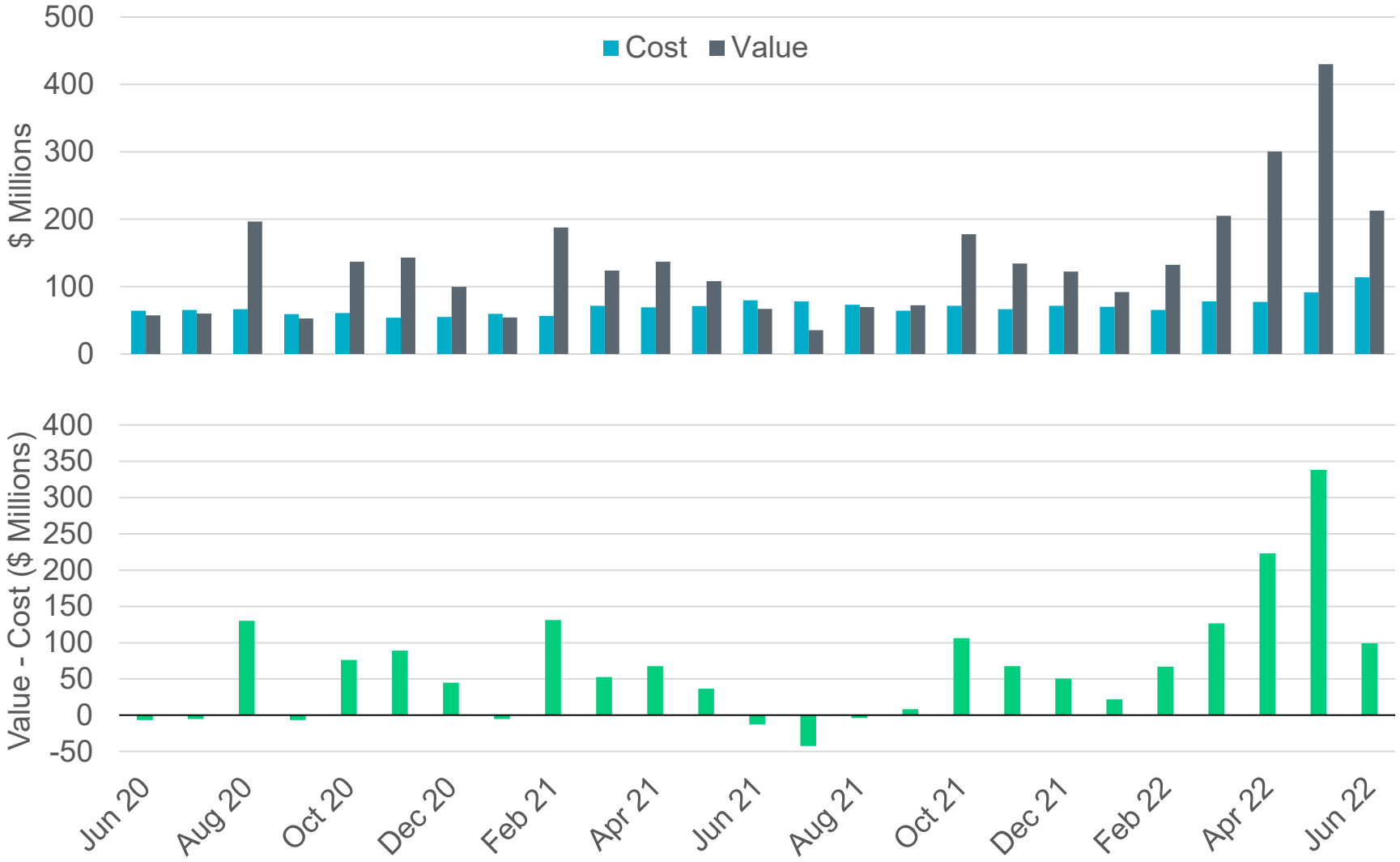


*Averages are weighted by Real-Time Market Load

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



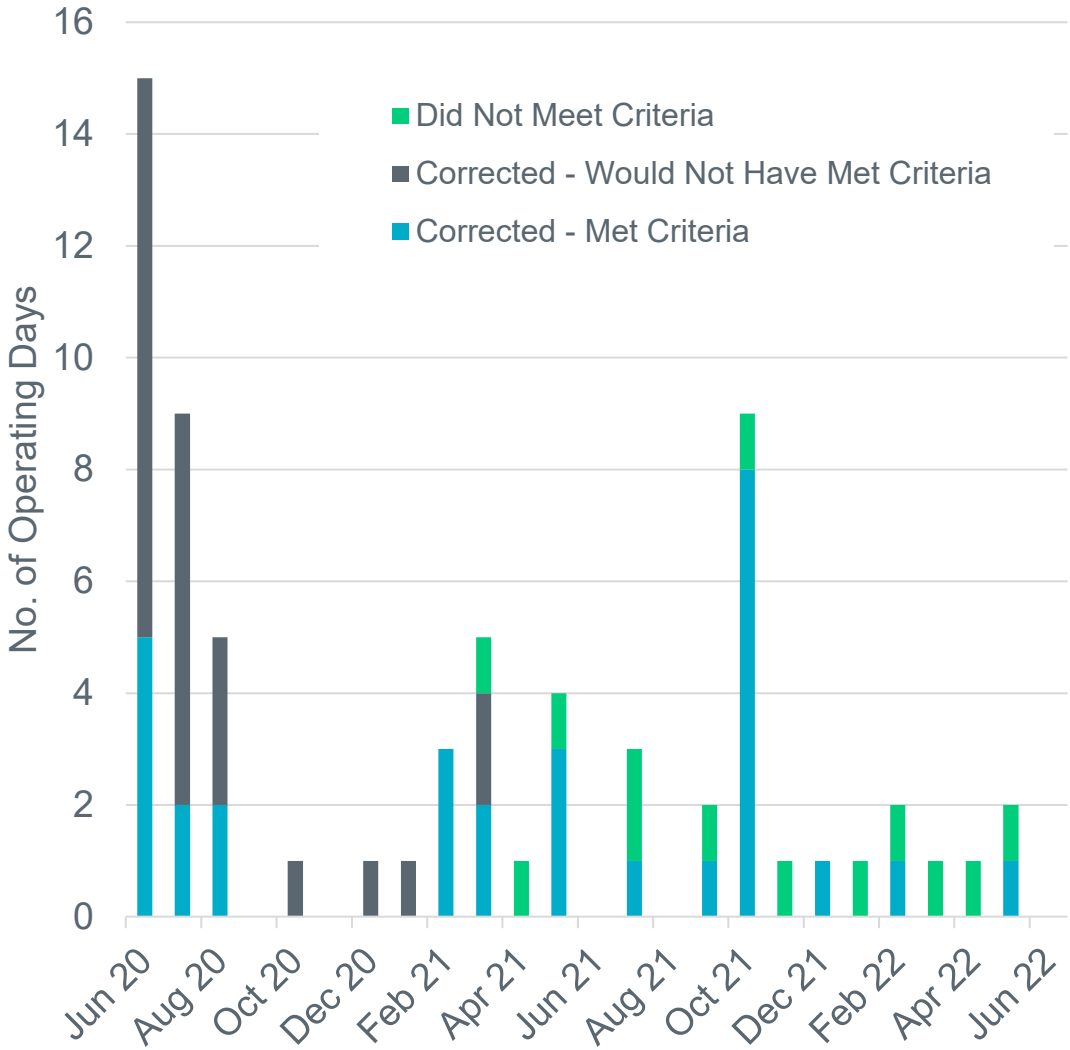
CRR Value and Cost Differences



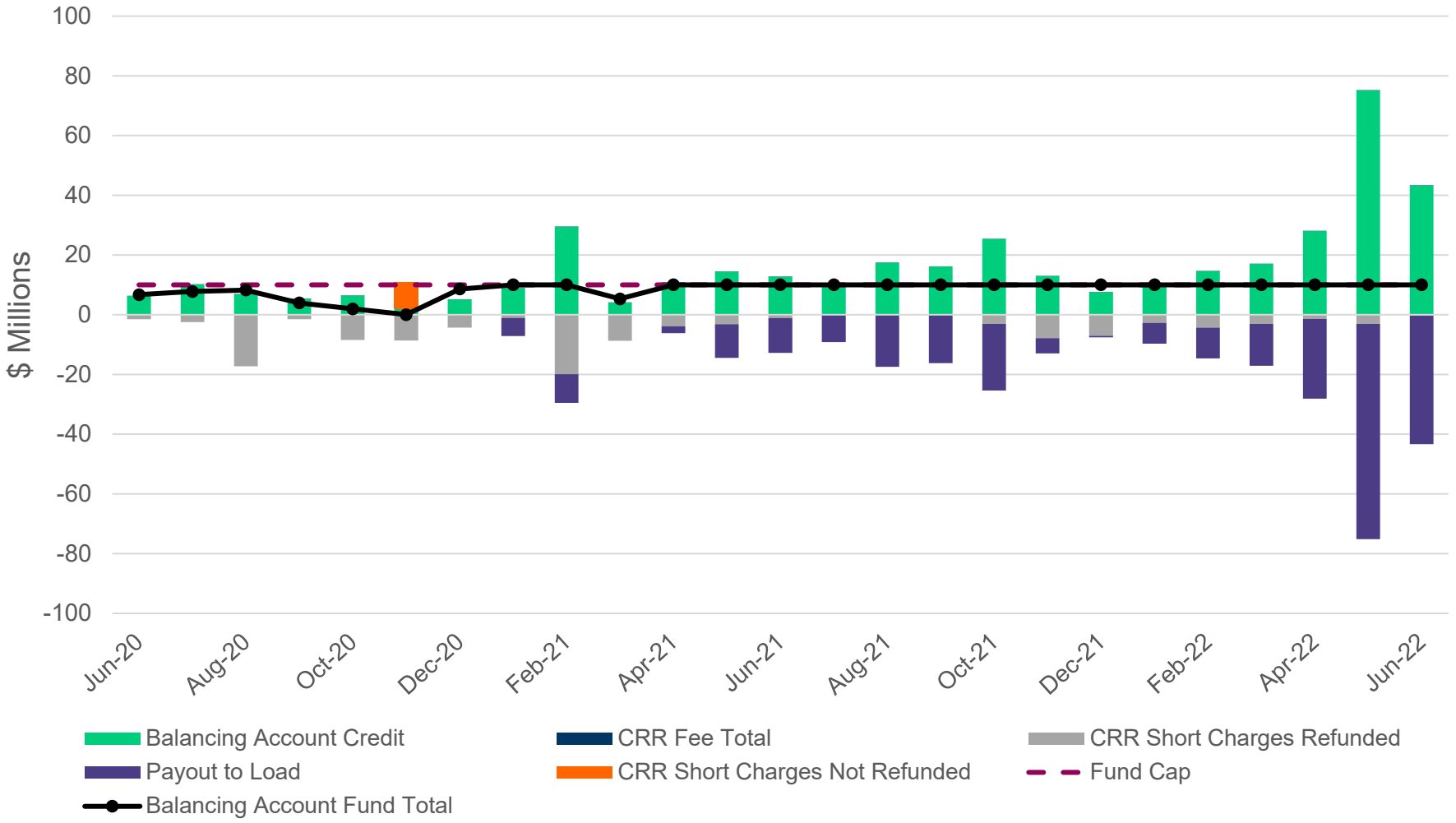
Price Issues and the Impact of Nodal Protocol Revision Request (NPRR) 1024 on Price Corrections

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

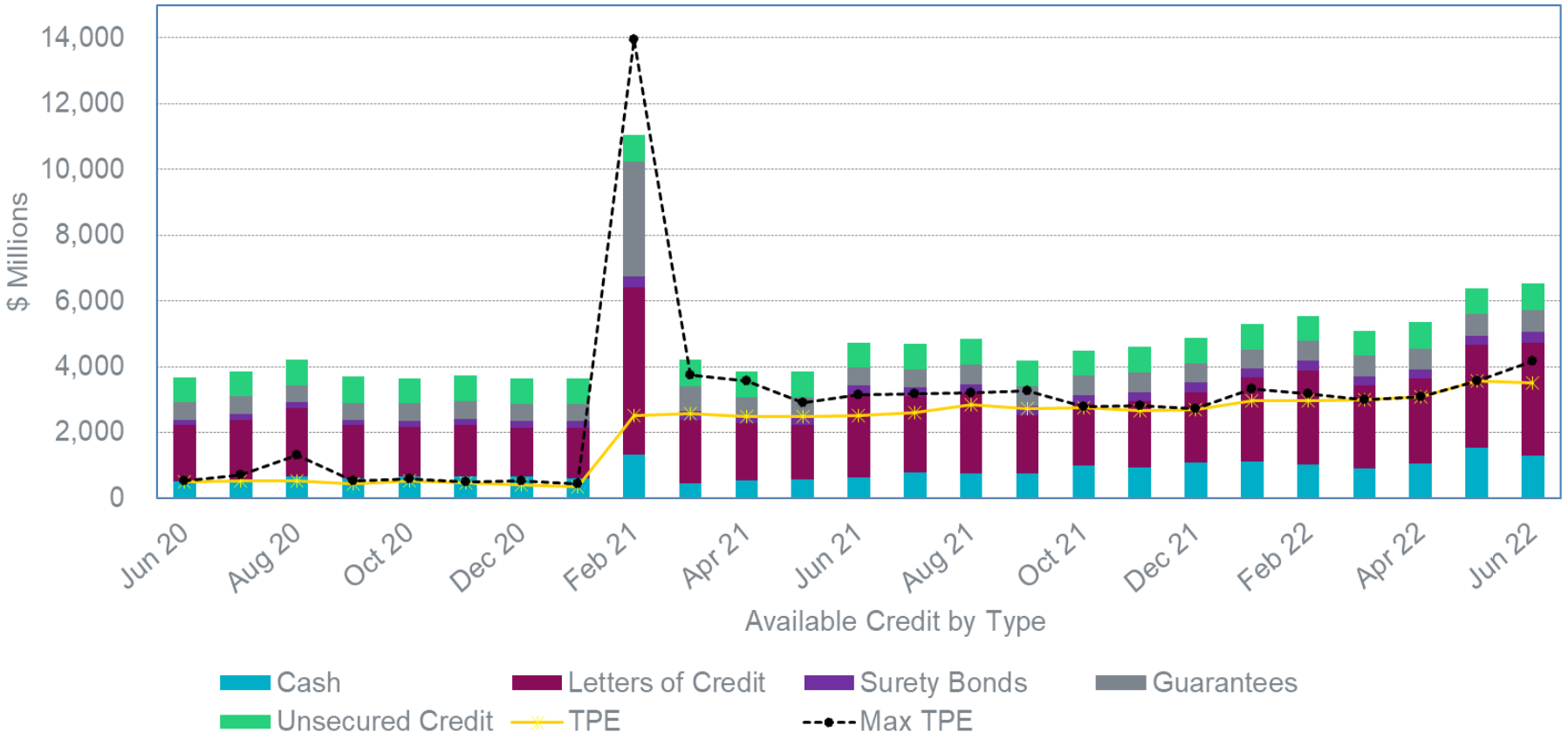
- Days that met the criteria for “significance” under NPRR1024 and were corrected;
- Days that would not have met the criteria for “significance” under NPRR1024, but were corrected because NPRR1024 was not yet in place; and
- Days that were not corrected because they did not meet the criteria for “significance”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



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 – June 2022

	Year-To-Date		Transactions Received	
Transaction Type	June 2022	June 2021	June 2022	June 2021
Switches	686,066	788,003	103,647	136,150
Acquisitions	0	48,862	0	0
Move - Ins	1,490,412	1,320,771	286,099	243,969
Move - Outs	680,331	615,005	134,662	115,390
Continuous Service Agreements (CSA)	412,573	348,949	92,753	48,525
Mass Transitions	23,435	26,584	0	0
Total	3,292,817	3,148,174	617,161	544,034