ERCOT Monthly Operational Overview
(October 2022)

ERCOT Public
November 18, 2022

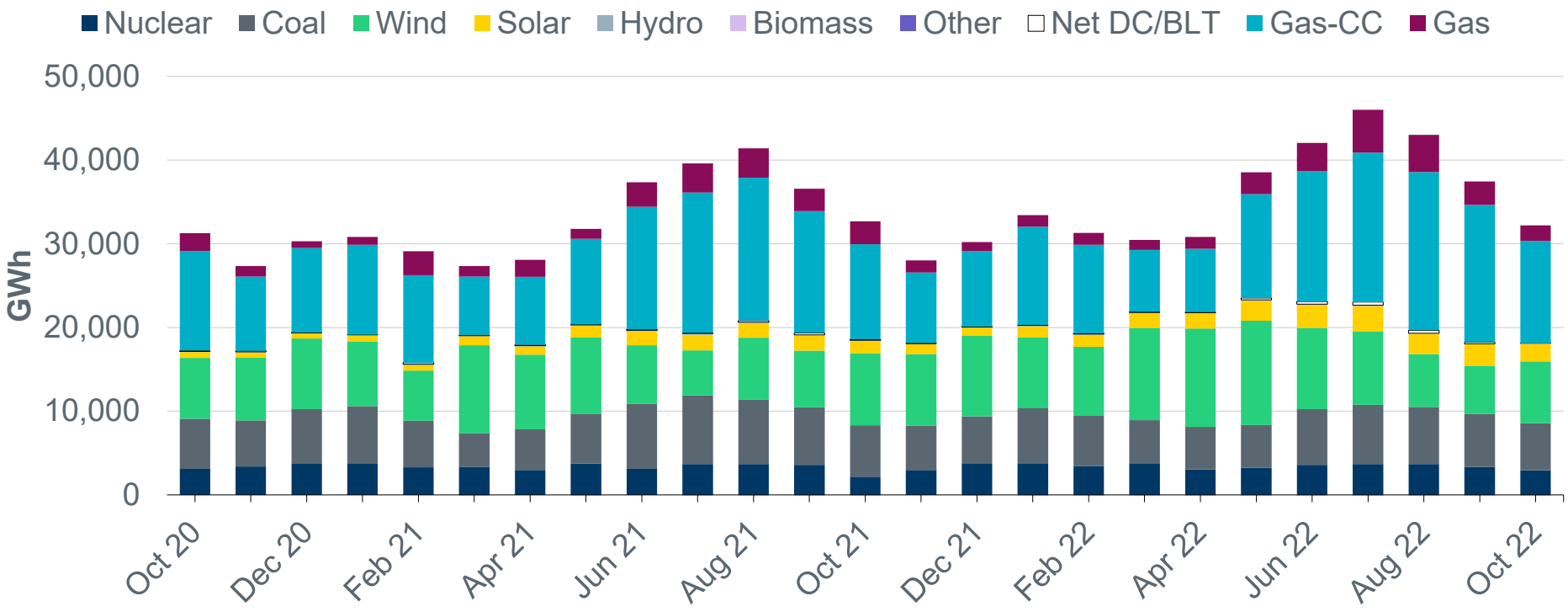
Highlights, Records and Notifications

- ERCOT set a new all-time record for the month of October of 66,110 MW* on 10/12/2022; this was 806 MW more than the previous record of 65,304 MW set on 10/2/2019. This is 3,634 MW more than the October 2021 demand of 62,476 MW.

- ERCOT issued 7 notifications:
  - 4 OCNs issued for taking manual action on the following IROLs due to topology changes: 2 OCNs issued for the WESTEX IROL and 2 OCNs issued for the Panhandle IROL.
  - 2 Advisories issued for the Day-Ahead Market (DAM): 1 Advisory issued for DAM submission extension due to potential submission issues and 1 Advisory for postponing the deadline for the posting of the DAM solution due to long running solution.
  - 1 DC Tie Curtailment Notice for the DC_L (Laredo VFT) DC Tie due to forced or unplanned outages.

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

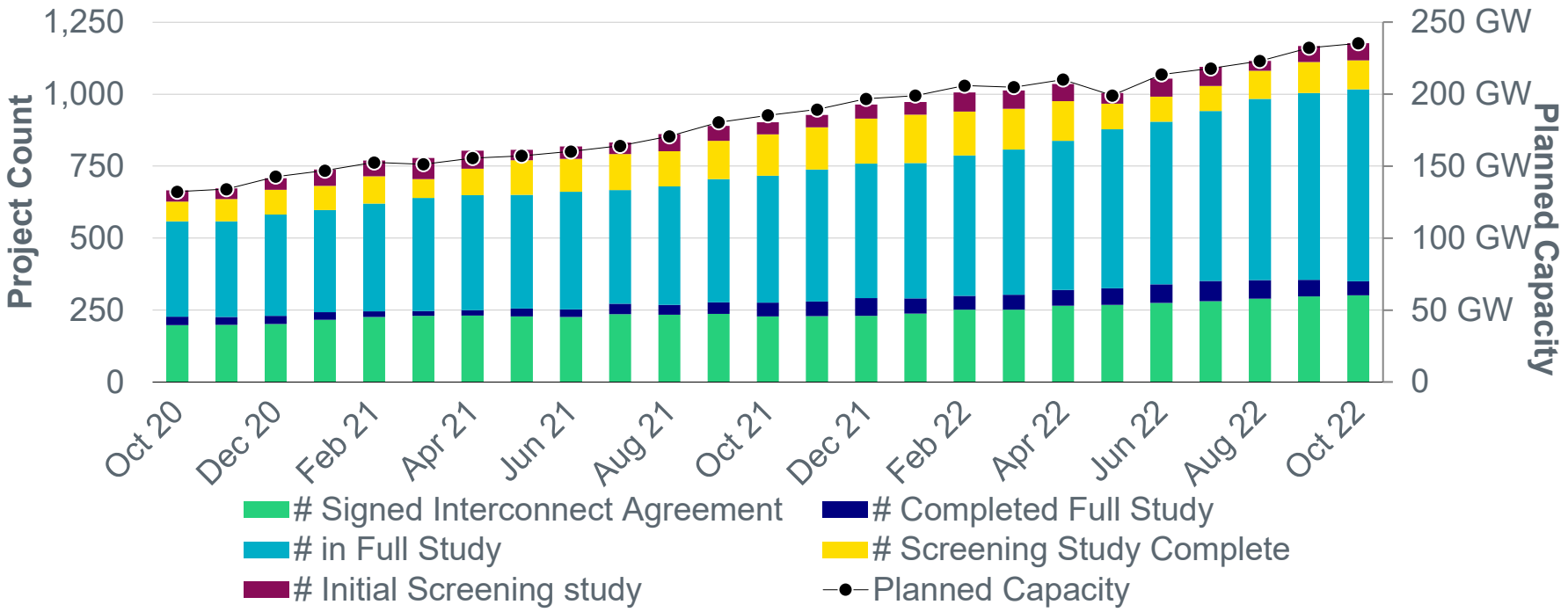
Monthly energy generation decreased by 2% year-over-year to 32,168 GWh in October 2022, compared to 32,670 GWh in October 2021



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)

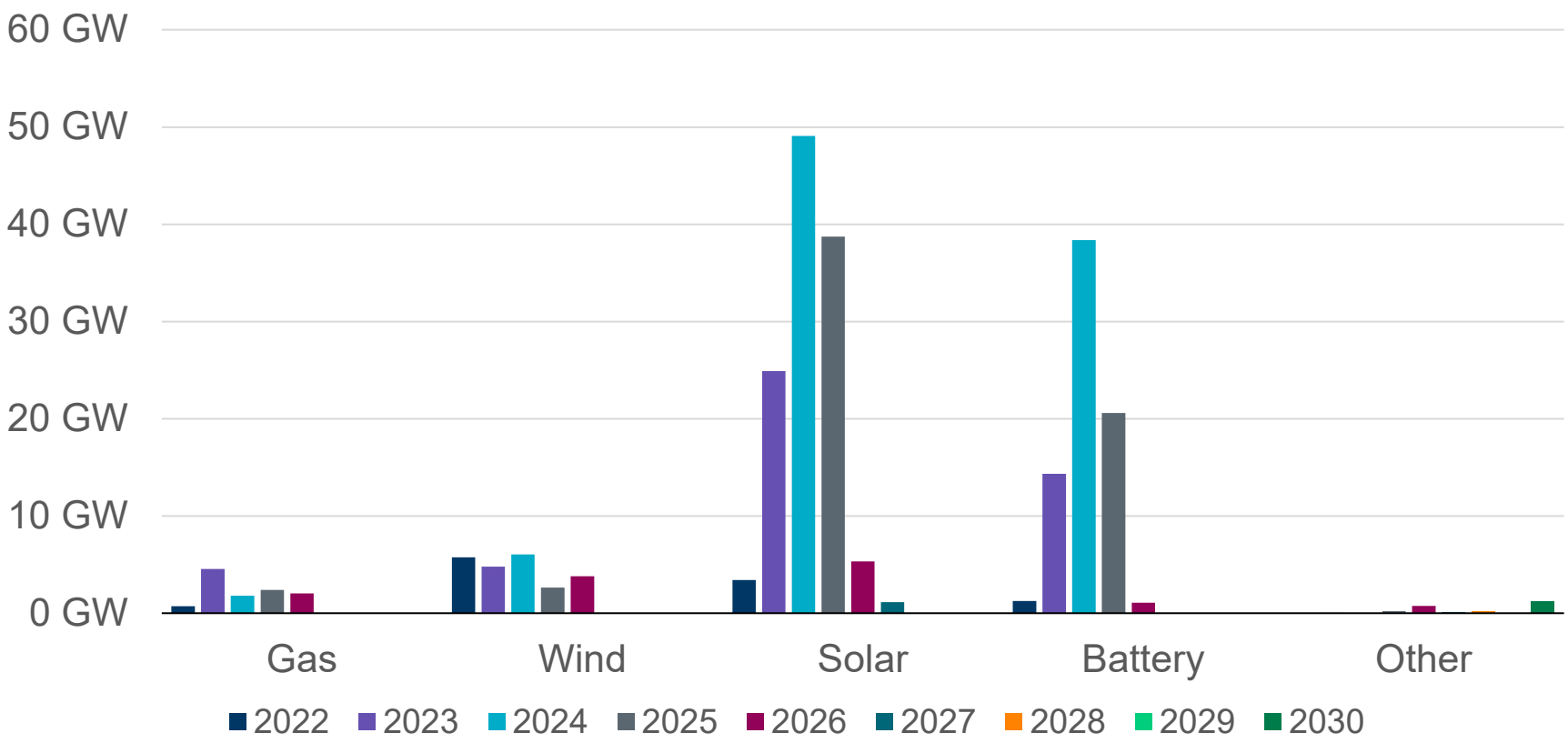


- There are an additional 6 “Small Generator” projects totaling 57 MW that are going through the simplified interconnection process.

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 123 GW (52.1%), Wind 23 GW (9.8%), Gas 12 GW (4.9%), Battery 76 GW (32.1%)
(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 1,205 active generation interconnection requests totaling 235,291 MW as of October 31. This includes 122,585 MW of solar, 23,025 MW of wind, 75,630 MW of battery, and 11,513 MW of gas projects; 62 projects were categorized as inactive, up from 53 inactive projects in September 2022.

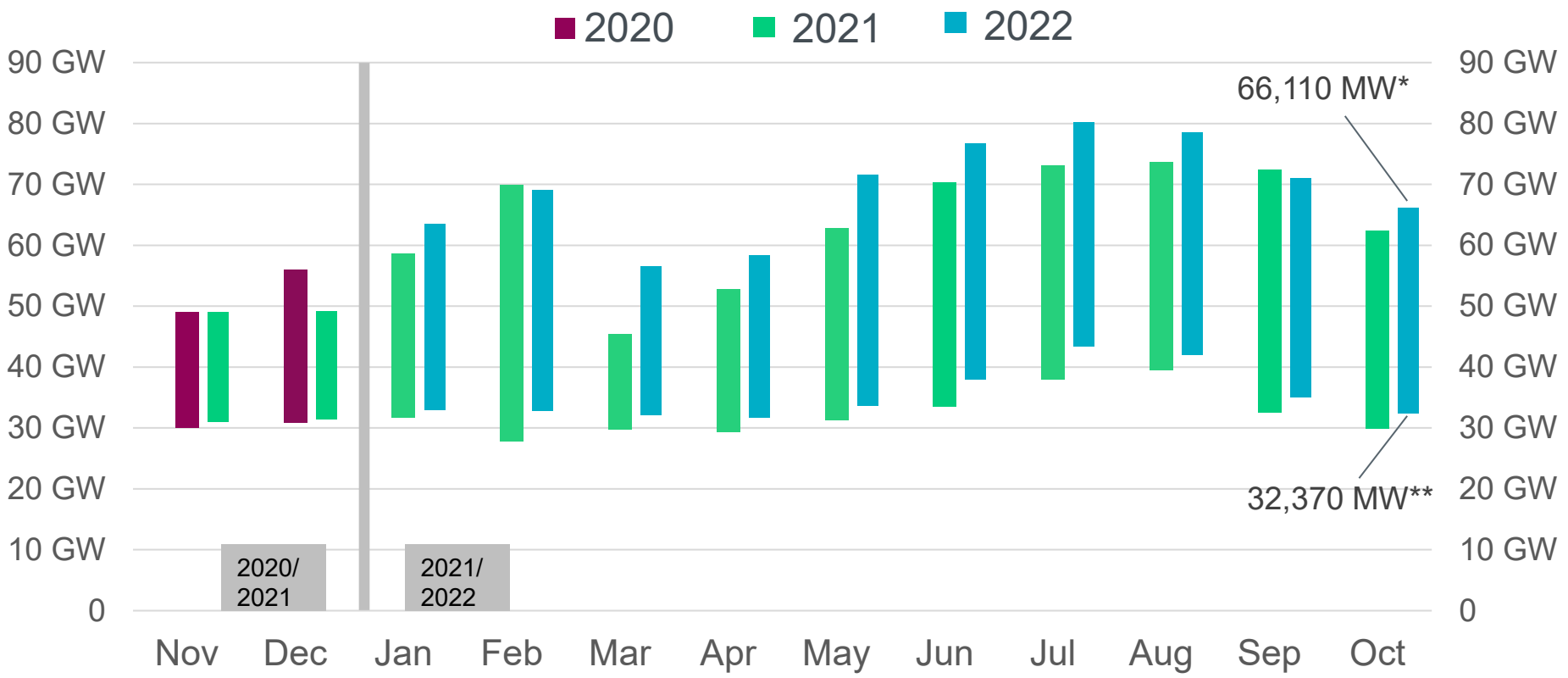
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of $533.54 Million as of October 31, 2022.

- Transmission Projects endorsed in 2022 total $2.565 Billion as of October 31, 2022.

- All projects (in engineering, routing, licensing and construction) total approximately $11.093 Billion as of October 1, 2022.

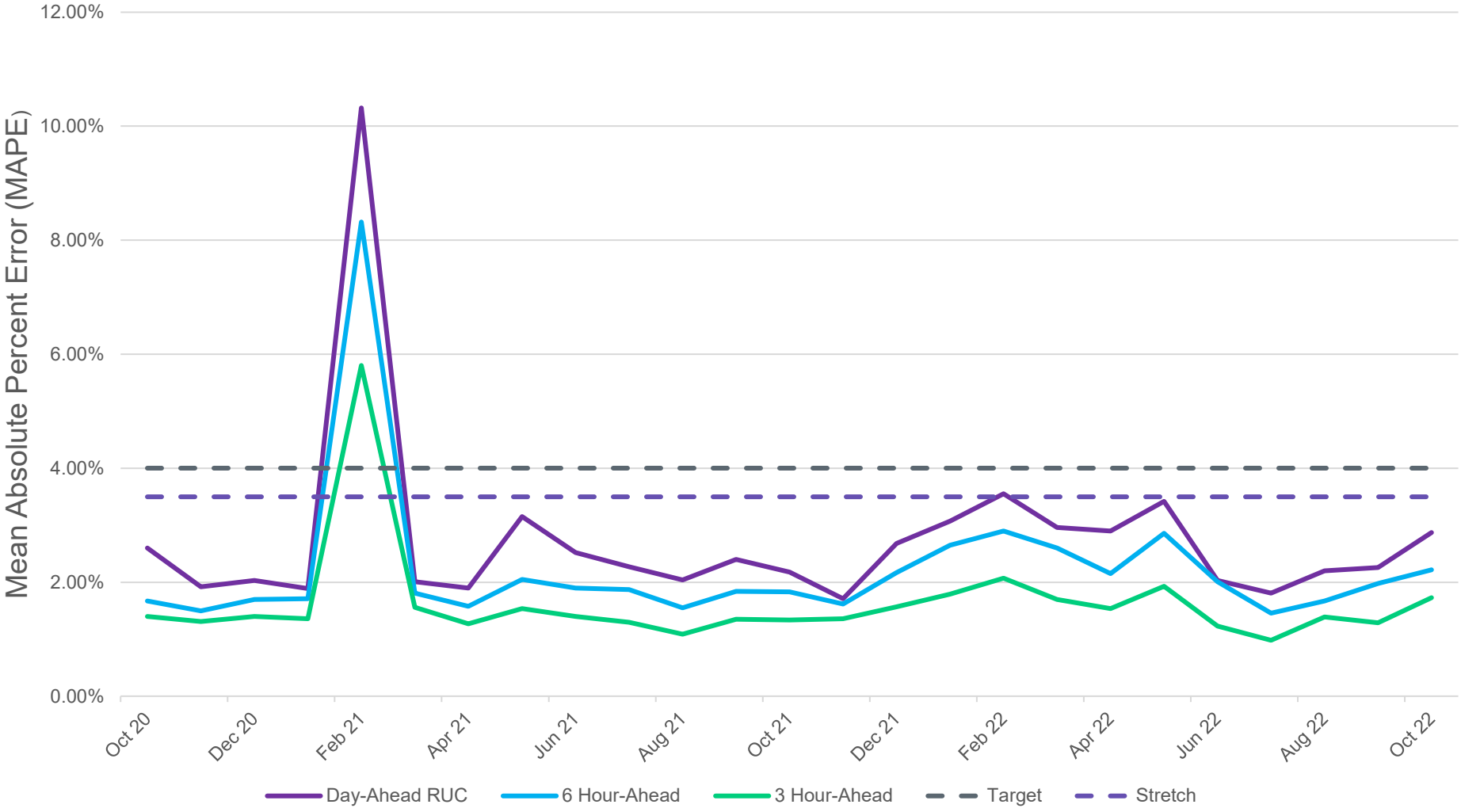
- Transmission Projects energized in 2022 total about $1.198 Billion as of October 1, 2022.

ERCOT set a new all-time record for the month of October of 66,110 MW* on 10/12/2022; this was 806 MW more than the previous record of 65,304 MW set on 10/2/2019.



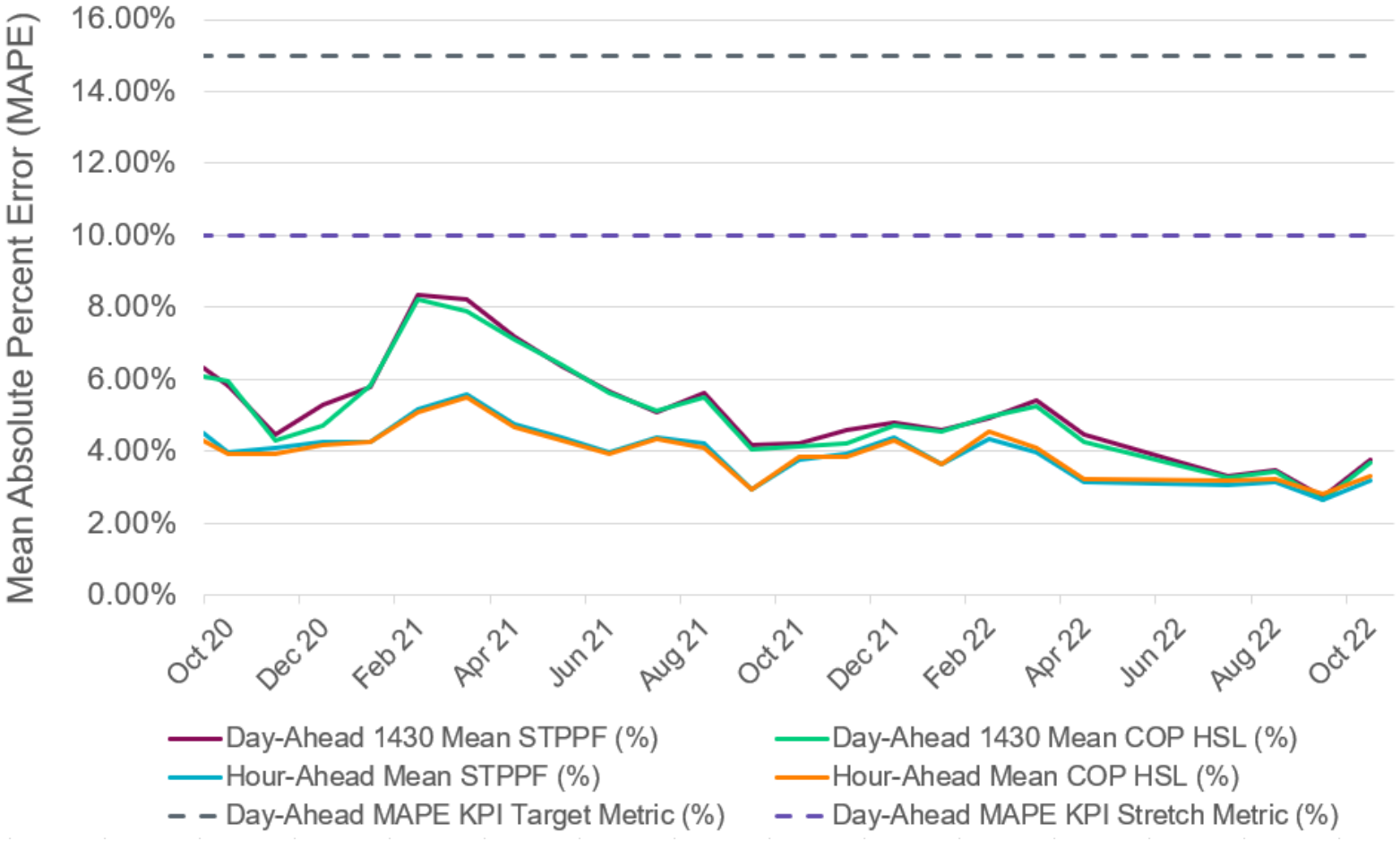
*Based on the maximum net system hourly value from November release of Demand and Energy 2022 report.
**Based on the minimum net system 15-minute interval value from November release of Demand and Energy 2022 report.
Data for latest two months are based on preliminary settlements.

Mid-Term Load Forecast Performance



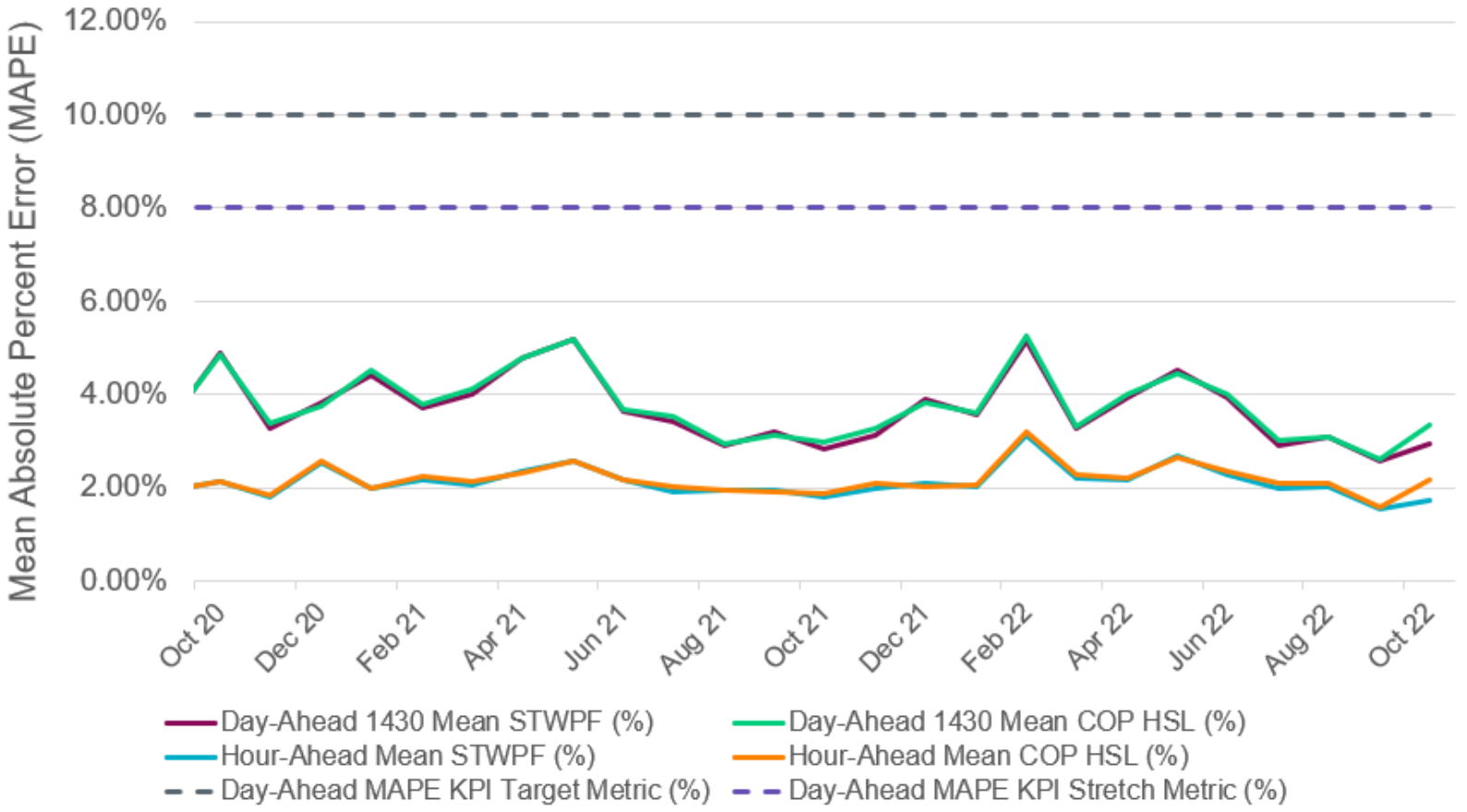
The Mid-Term Load Forecast is an hourly forecast that looks 7 days into the future

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.

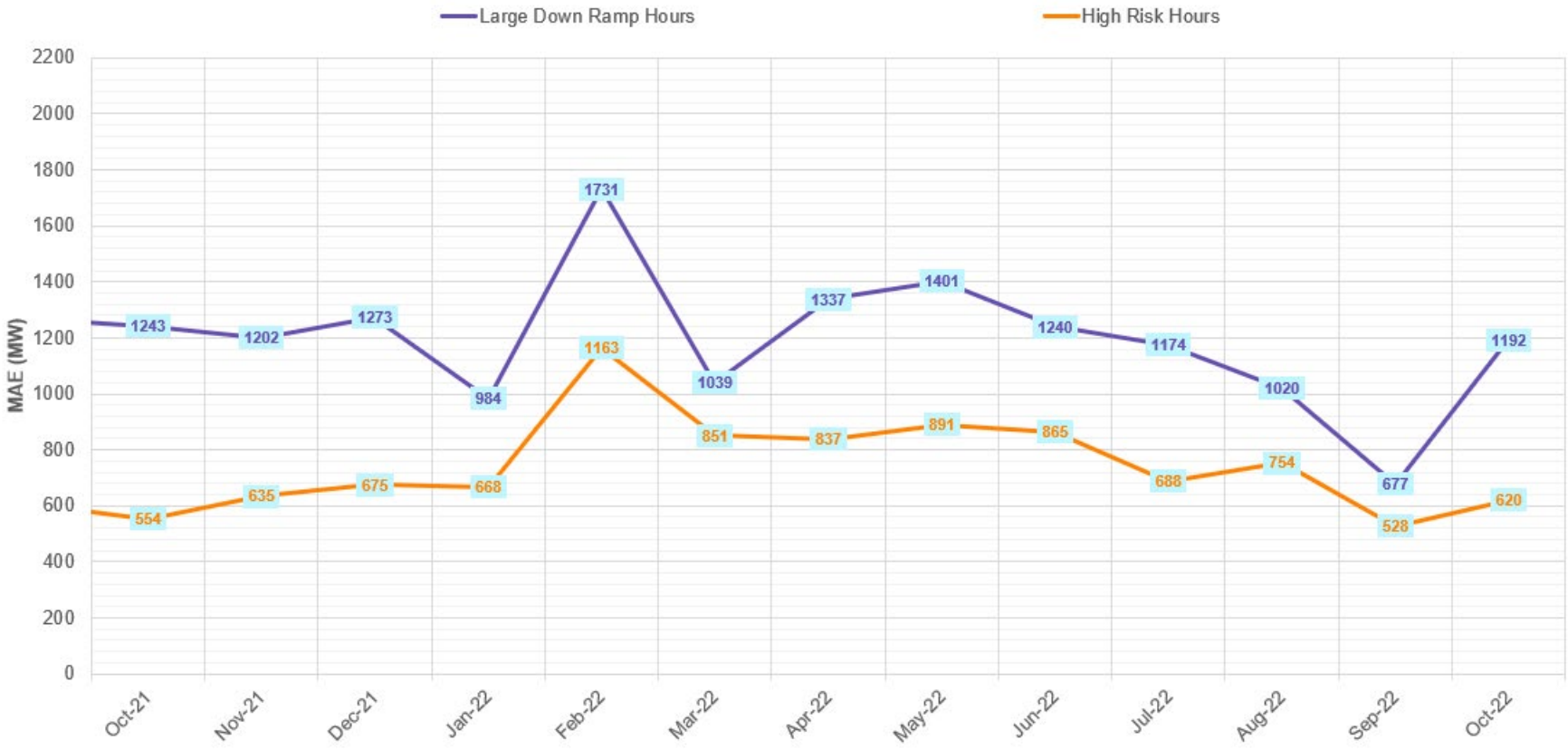
Wind Forecast Performance



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

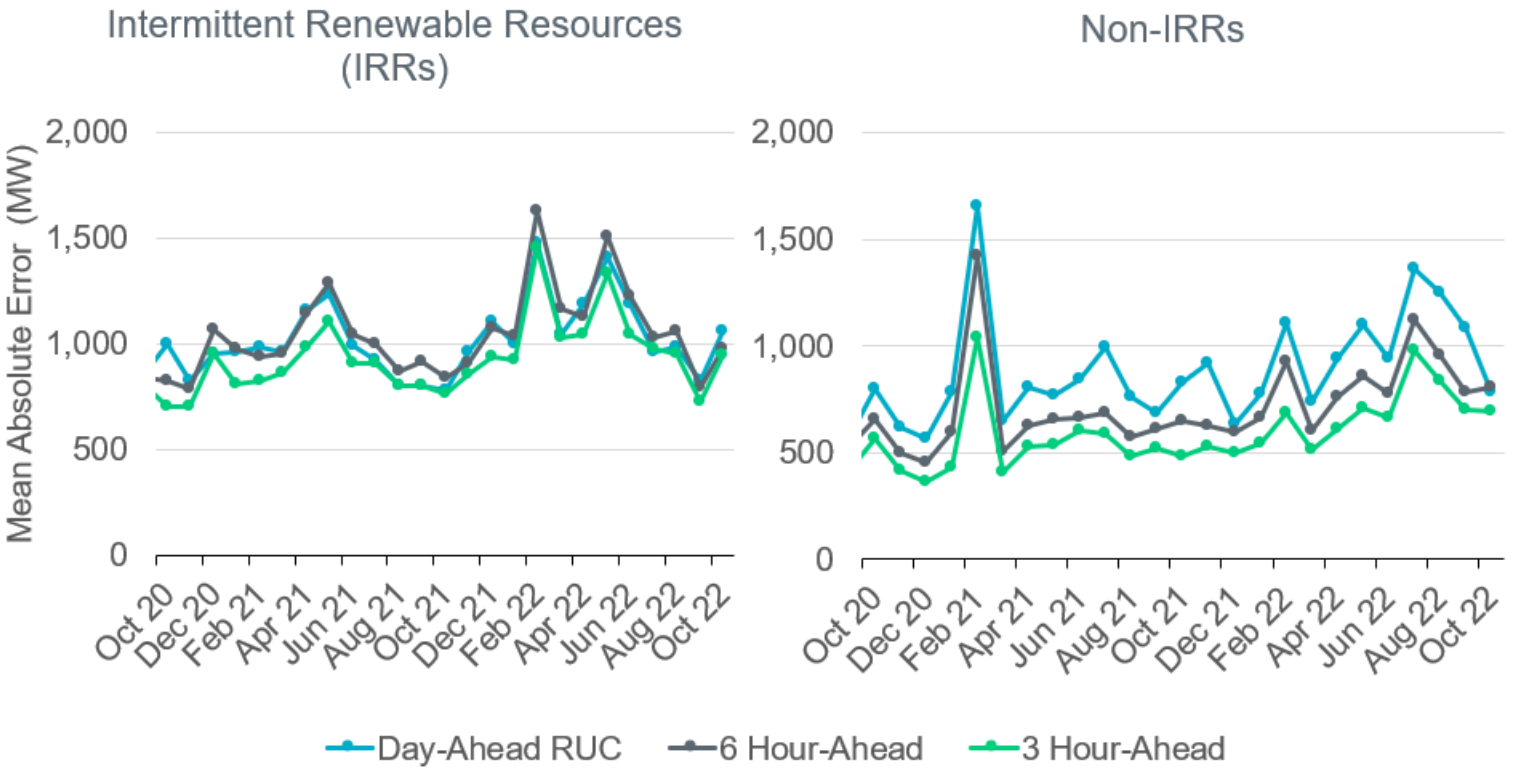
Hour-Ahead Mean Absolute Error (MAE) During Large Down Ramp (> 2000 MW) and High Risk Hours*



**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.*

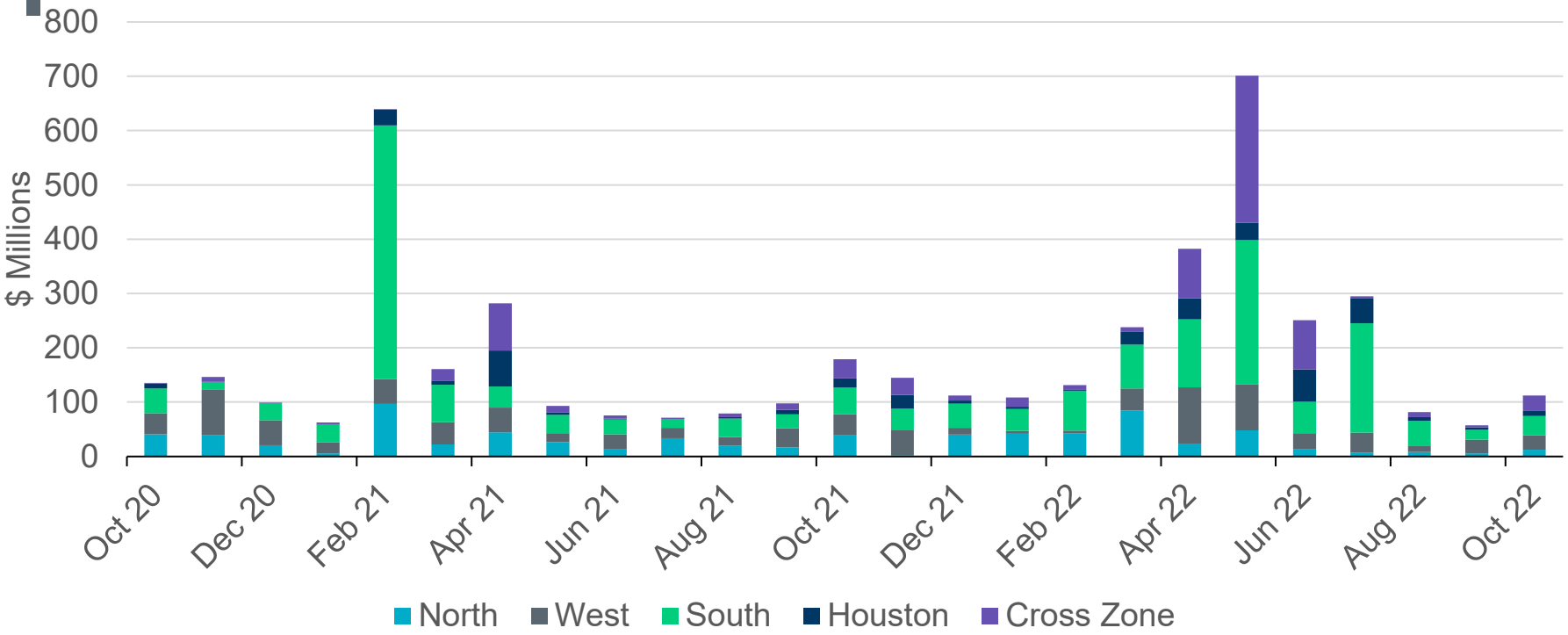
Forecast performance during large down ramp (wind ramp > 2000 MW) hours and high risk hours (historic risk of load ramping up and wind ramping down is high) is focused upon. Note that for the purposes of forecast performance measurement every hour in a month is classified as either a large down ramp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



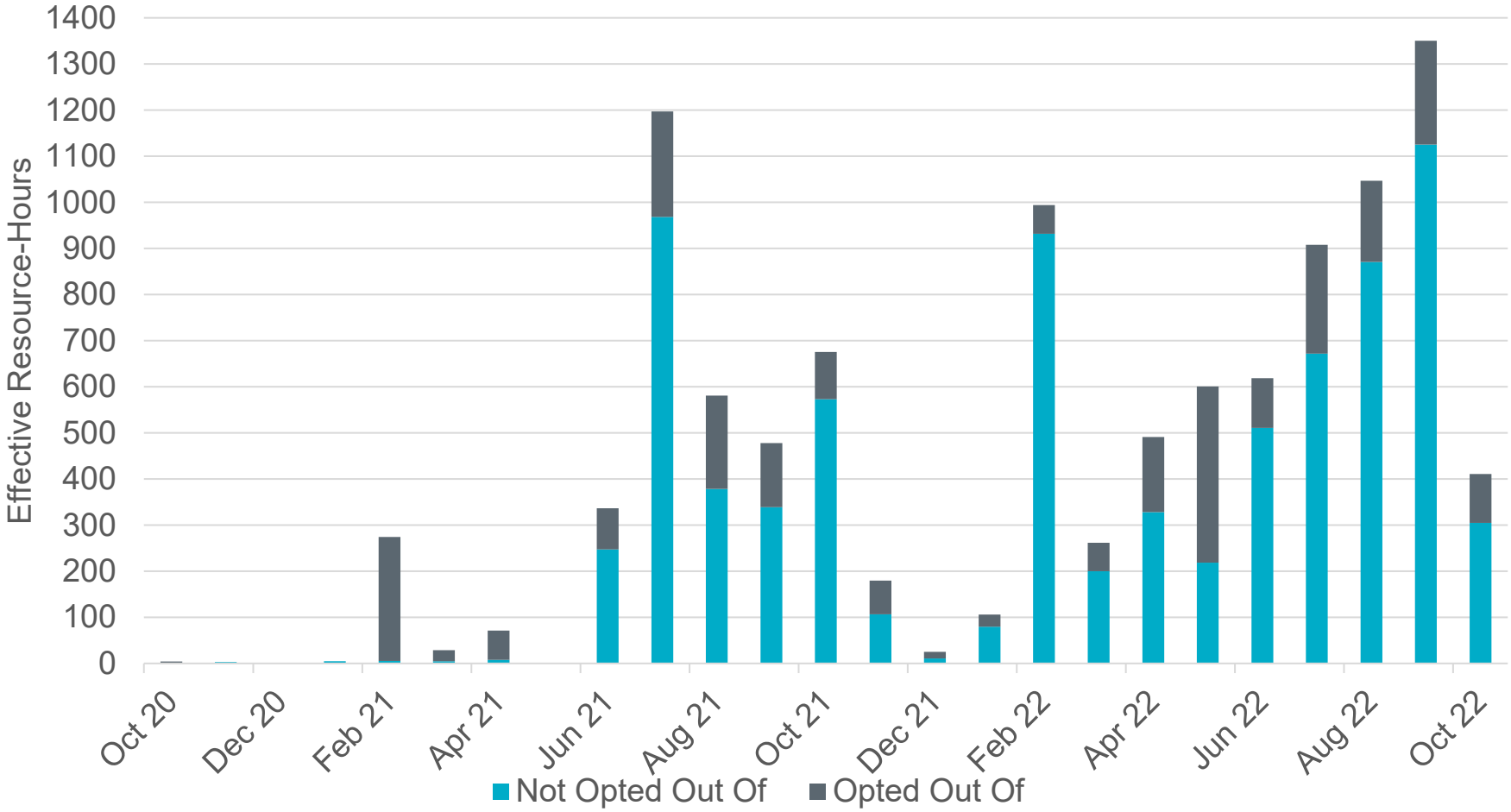
- COPs for IRRs are derived from wind and solar forecasts from ERCOT with any adjustments from Qualified Scheduling Entities.
- The installed capacity of approved Wind Units is 35,914 MW (as of October 31, 2022).
- The installed capacity of approved Solar Units is 12,646 MW (as of October 31, 2022).

Real-Time Congestion Rent by Zone



- Congestion rent increased in all zones in October 2022 compared to September 2022.
- The two zones with the highest congestion rent were the South and Cross Zones.
  - Congestion rent in the South Zone was primarily driven by the loss of the Whitepoint to Angstrom & Lon Hill 345 kV double circuit contingency overloading the 138 kV line from Coleto to Victoria station.
  - Congestion rent in the Cross Zone was primarily driven by the West Texas Export 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.

Twenty-two Resources were Committed in October either for Capacity, Congestion, or Minimum Run Time

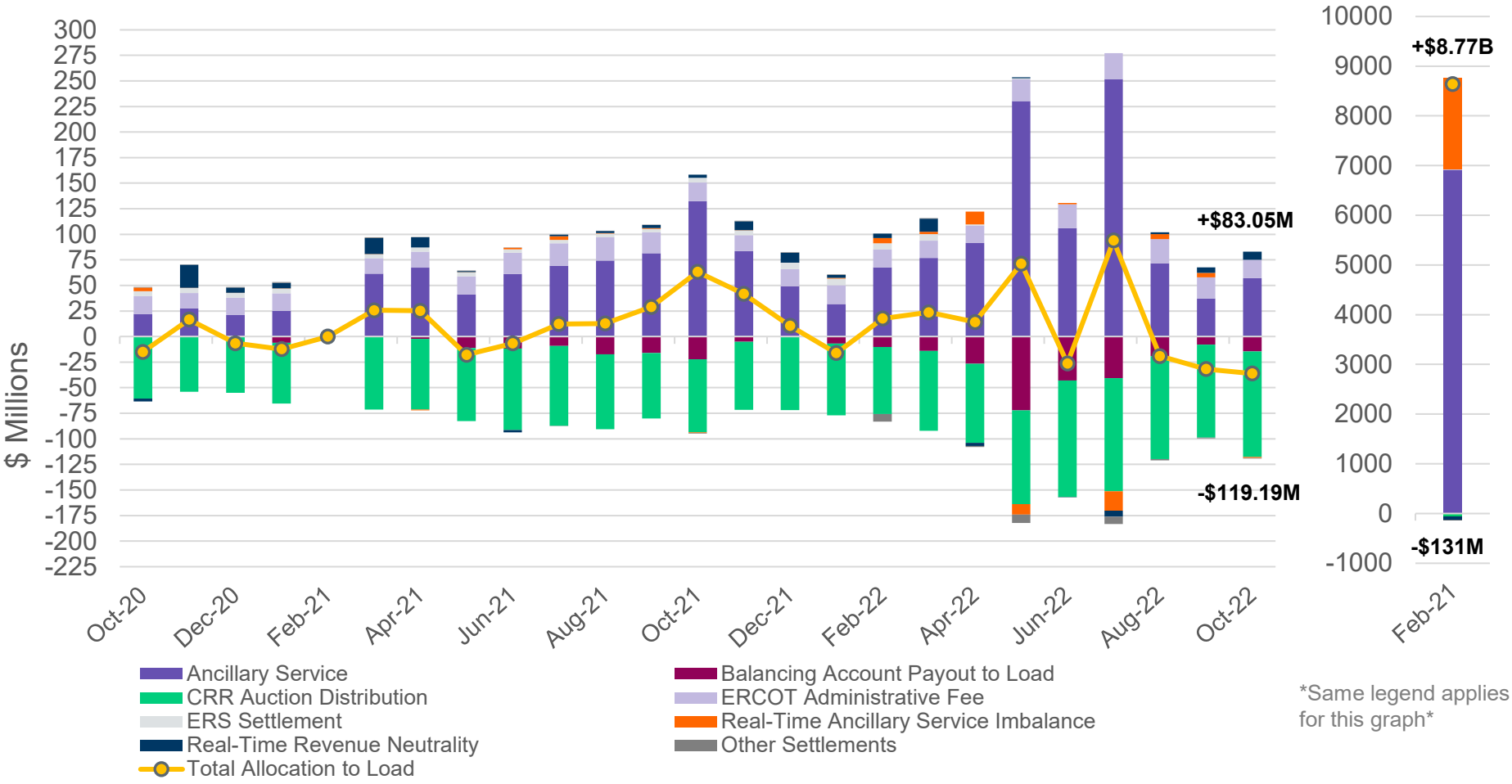


"Effective Resource-Hours" excludes any period during a Reliability Unit Commitment hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.

Twenty-two Resources were Committed in October either for Capacity, Congestion, or Minimum Run Time

Resource #	Effective Resource-hours	Non Opt Out (Effective Hours)	Opt Out (Effective Hours)
1	6.0	0.0	6.0
2	12.0	12.0	0.0
3	8.0	8.0	0.0
4	29.6	13.6	16.0
5	1.3	1.3	0.0
6	5.0	5.0	0.0
7	23.0	23.0	0.0
8	41.9	41.9	0.0
9	5.0	5.0	0.0
10	11.8	11.8	0.0
11	14.1	14.1	0.0
12	24.0	16.0	8.0
13	7.9	7.9	0.0
14	21.9	6.0	15.9
15	28.6	25.6	3.0
16	12.9	12.9	0.0
17	5.9	5.9	0.0
18	23.0	23.0	0.0
19	15.0	7.0	8.0
20	35.9	21.0	14.9
21	31.9	8.9	23.0
22	46.1	35.0	11.1
Total	**410.8**	**304.9**	**105.9**

Net Allocation to Load in October 2022 was ($36.14) Million

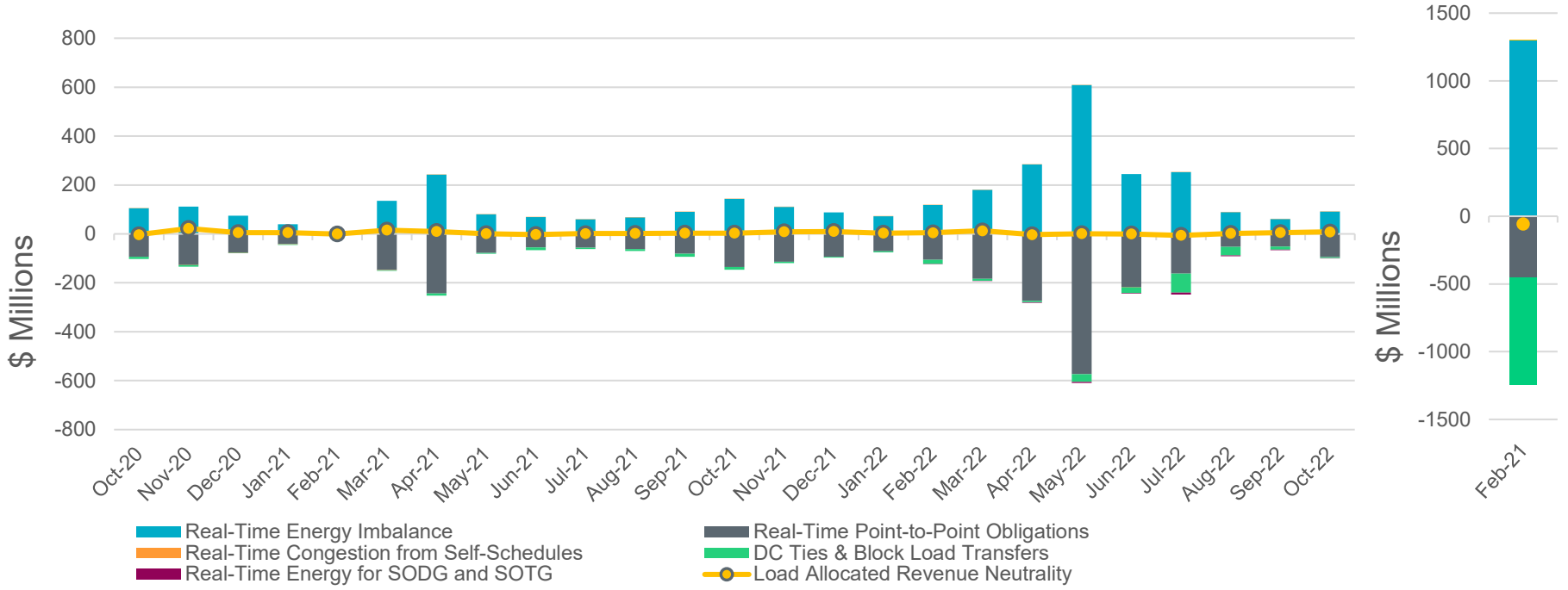


Same legend applies for this graph

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.

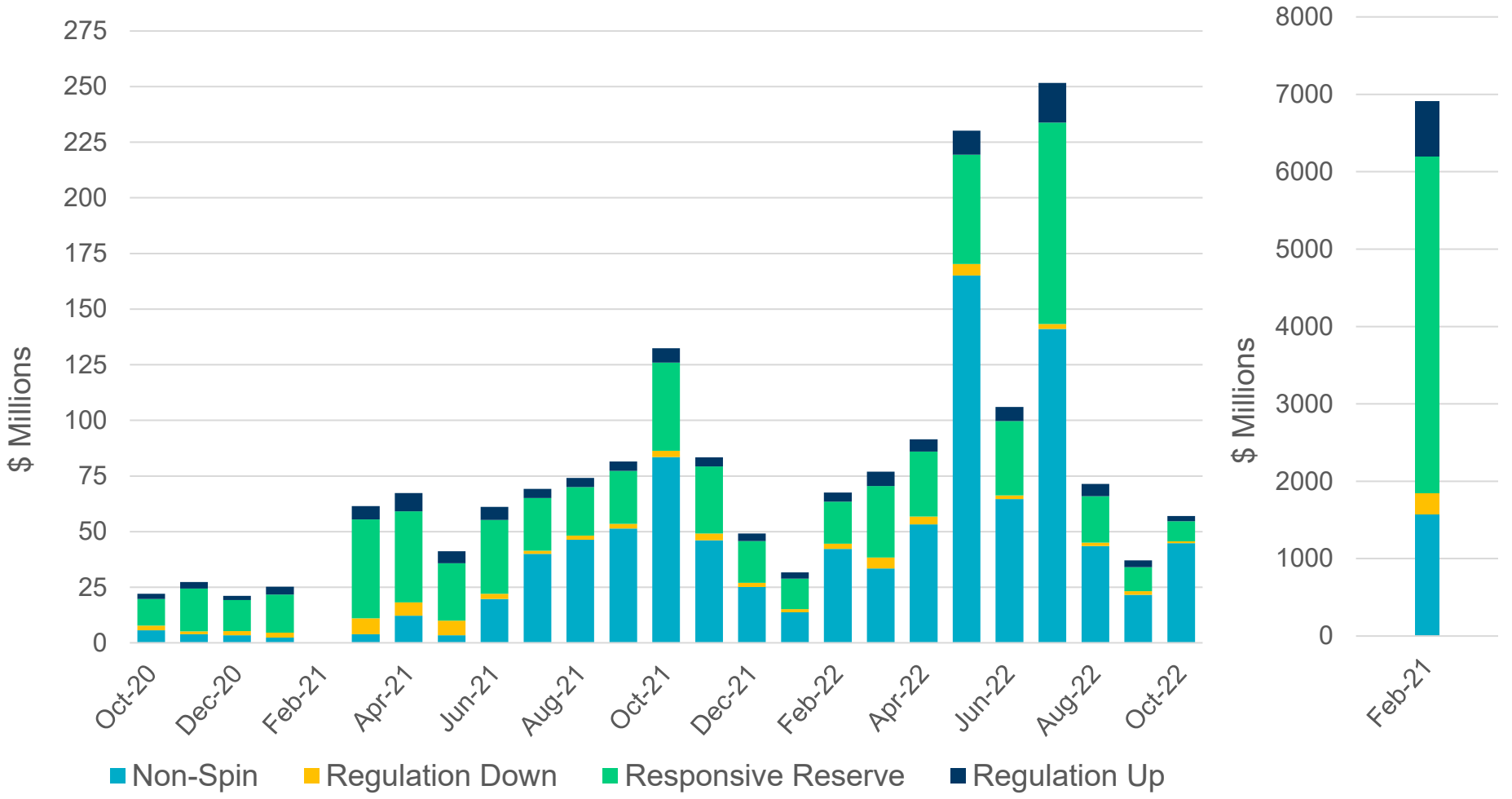
Real-Time Revenue Neutrality Allocated to Load was $8.08M for October 2022



	October 2022 ($M)
Real-Time Energy Imbalance	$91.86
Real-Time Point-to-Point Obligation	($95.15)
Real-Time Congestion from Self-Schedules	$0.25
DC Tie & Block Load Transfer	($3.49)
Real-Time Energy for SODG and SOTG	($1.55)
Load Allocated Revenue Neutrality	**$8.08**

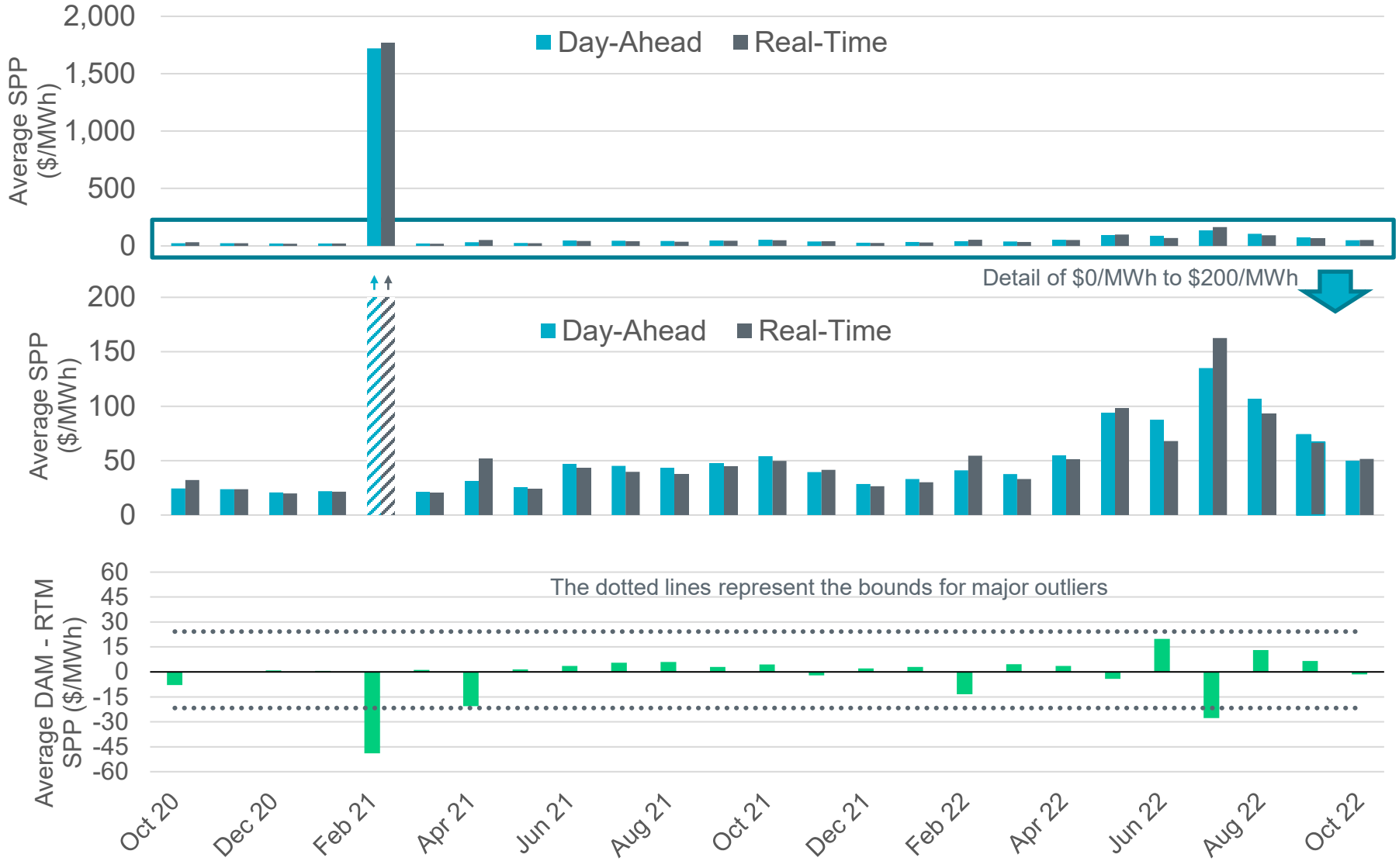
Note: For visual purposes, February 2021 has been separated into its own graph with different scaling. The legend applies for both graphs.

Ancillary Services for October 2022 totaled $57.08M



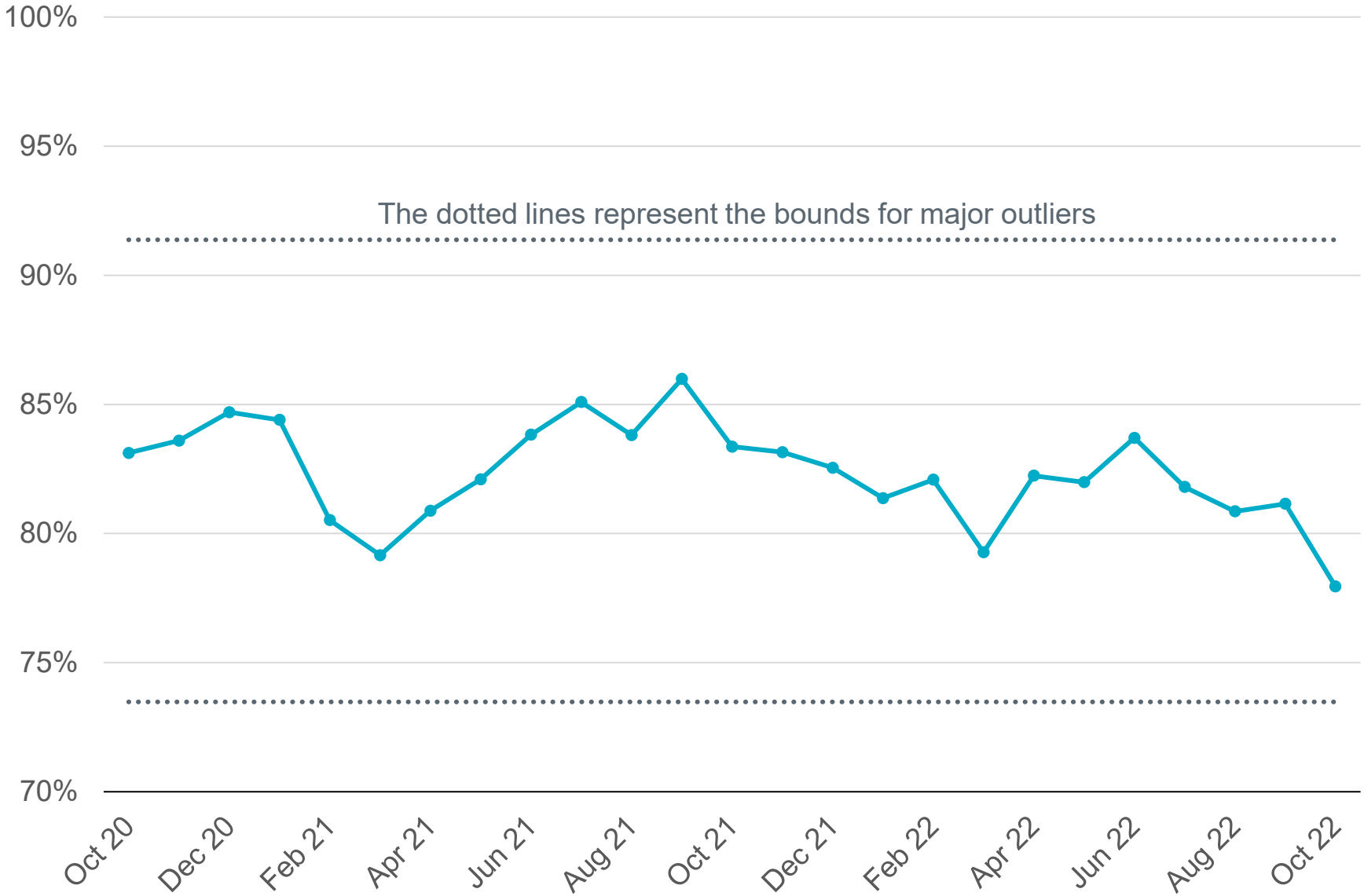
Note: For visual purposes, February 2021 has been separated into its own graph with different scaling. The legend applies for both graphs.

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

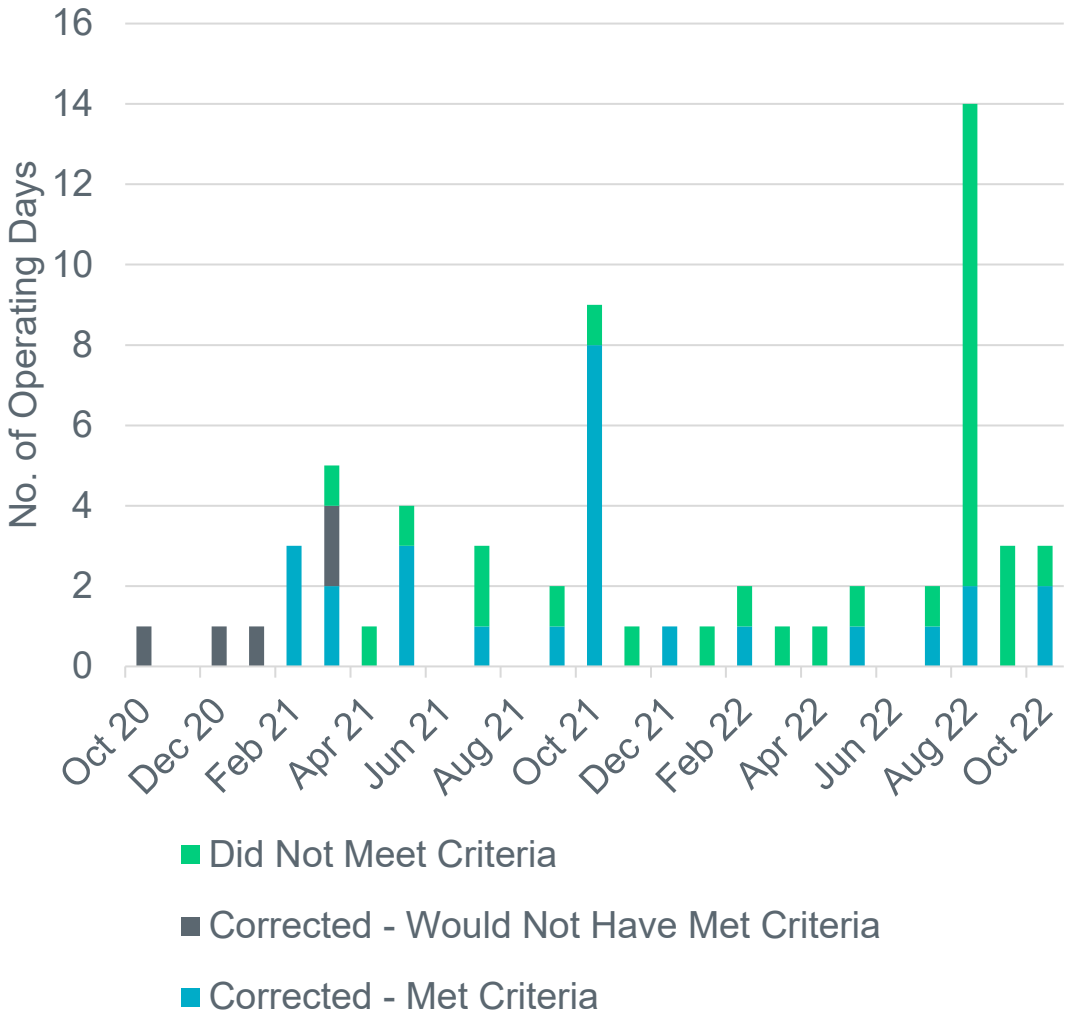


CRR Value and Cost Differences

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.



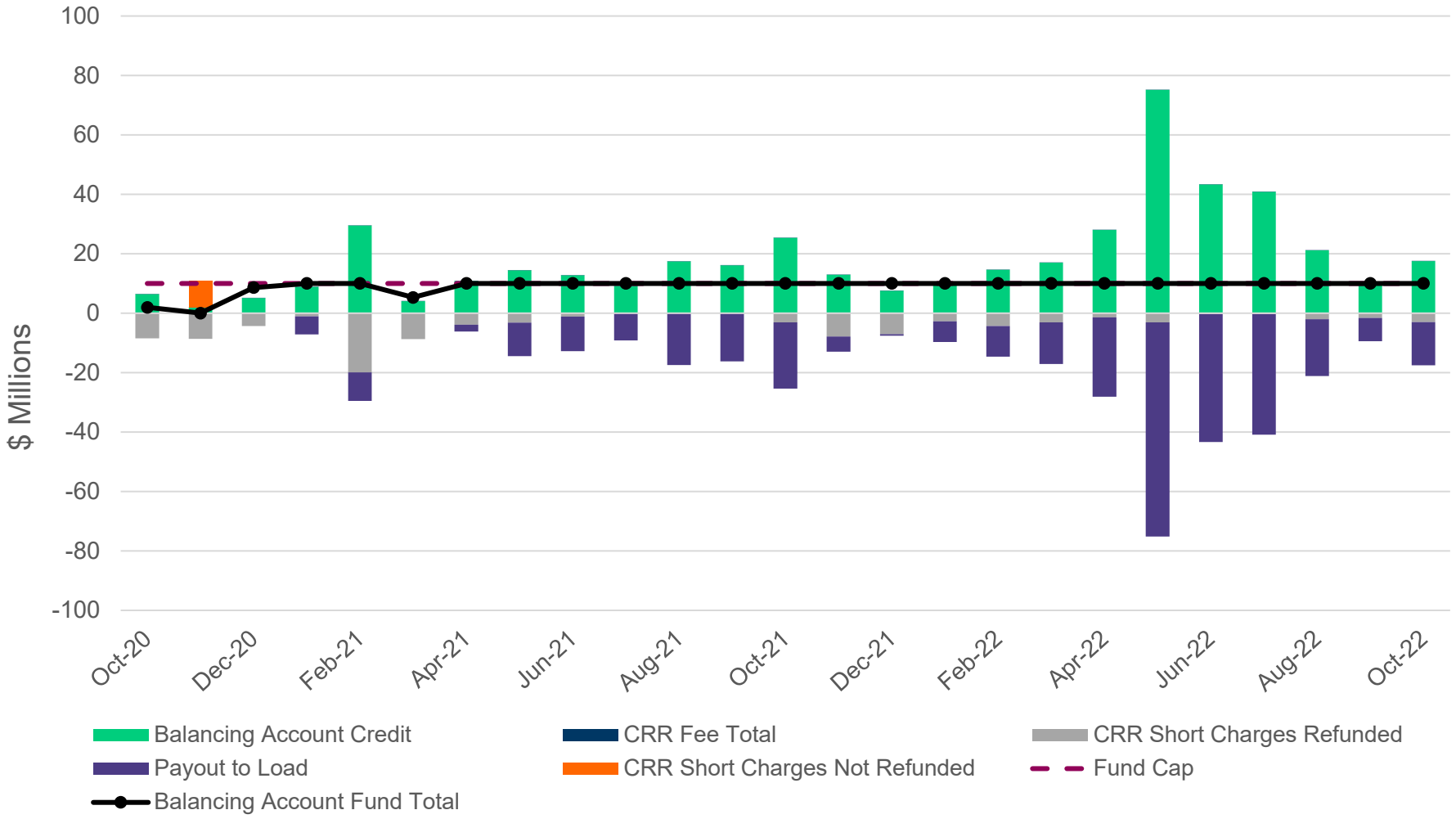
Details for Operating Days not Meeting the Criteria for Significance

- On Operating Day October 30, 2022, a software error in the Supplemental Ancillary Service Market (SASM) resulted in Responsive Reserve Service (RRS) subtypes in Resources' Current Operating Plans (COPs) not being considered when calculating the Resources' available capacity to provide additional Ancillary Services. This resulted in Ancillary Service awards through a SASM to Resources that did not have available capacity to provide Ancillary Services, as well as incorrect RRS Market Clearing Prices for Capacity (MCPCs).
  - Because ERCOT was not aware of the error until November 4, 2022, ERCOT was unable to determine corrected prices prior to prices becoming final at 16:00 on the second business day after the impacted Operating Day, per ERCOT Protocols Section 6.3.
  - Upon completion of ERCOT's impact analysis, ERCOT determined that the largest absolute value impact to any single Counter-Party was $146.19, which does not meet the criteria necessary to request ERCOT Board approval for price correction under Section 6.3(7)(b).

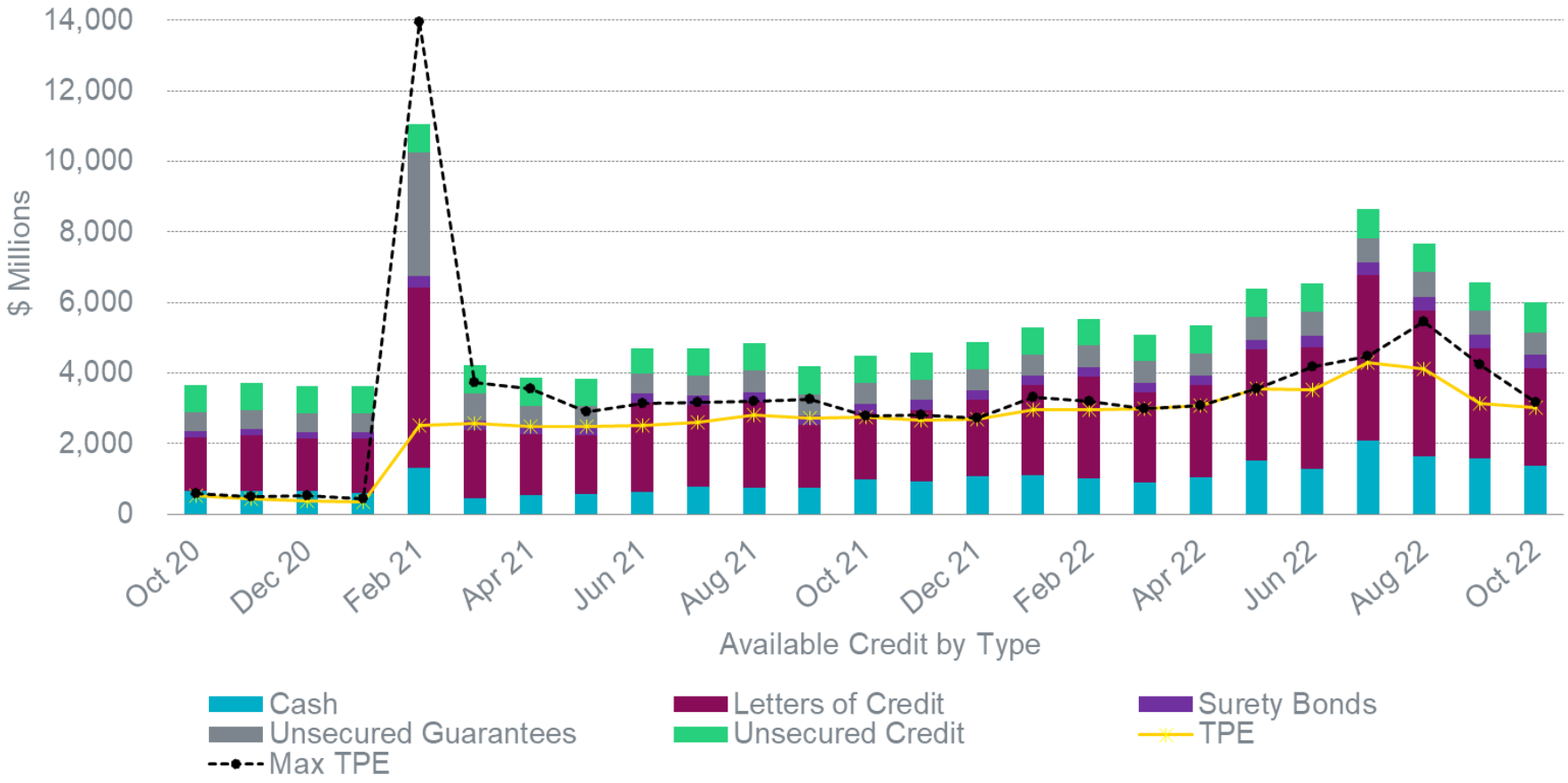
Details for Operating Days Meeting the Criteria for Significance

- On Operating Day October 27, 2022, the Bearkat Generic Transmission Constraint was modeled incorrectly, with one of the transmission lines in the constraint definition being monitored in the wrong direction. This resulted in incorrect DAM and SCED solutions when it was binding.
  - DAM was rerun with the corrected model and prices were posted prior to 10AM of the second business day, in accordance with ERCOT Protocol Section 4.5.3(5). The largest absolute value change to a Settlement Point Price was $8.15.
  - SCED was rerun with the corrected model and prices were posted prior to 4PM of the second business day, in accordance with the ERCOT Protocol Section 6.3(5). The largest absolute value change to a Settlement Point Price was $745.66.

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 – October 2022

	Year-To-Date		Transactions Received	
Transaction Type	October 2022	October 2021	October 2022	October 2021
Switches	1,041,526	1,114,562	75,040	56,991
Acquisitions	0	48,862	0	0
Move - Ins	2,633,636	2,354,520	261,008	233,687
Move - Outs	1,185,081	1,087,330	114,404	105,290
Continuous Service Agreements (CSA)	614,332	588,545	45,555	77,849
Mass Transitions	24,463	26,584	0	0
Total	5,499,038	5,220,403	496,007	473,817