ERCOT Monthly Operational Overview
(July 2023)

ERCOT Public
August 17, 2023

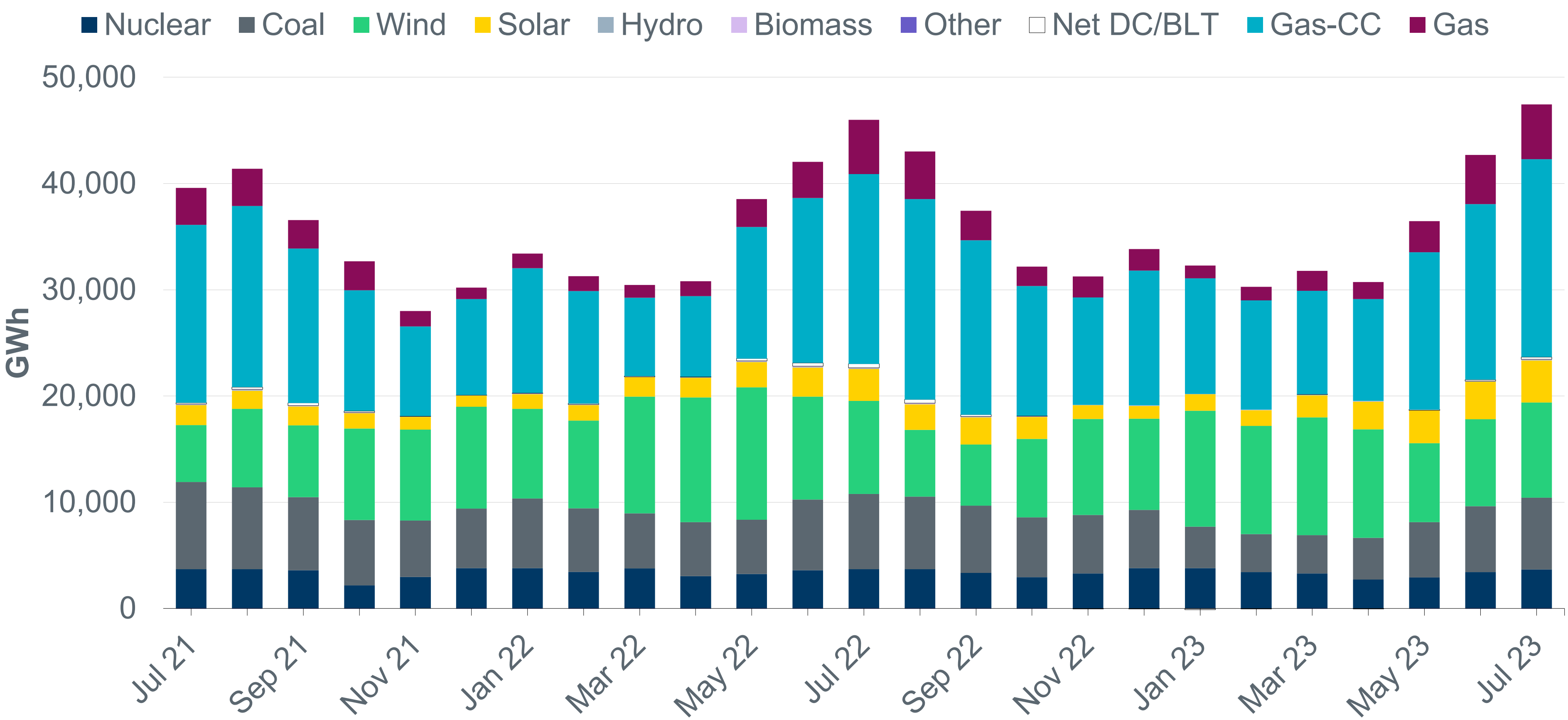
Highlights, Records and Notifications

- ERCOT set a new all-time record of 82,939 MW* for the month of July on 7/31/2023; this is 2,152 MW more than the previous all-time record of 80,787 MW set on 6/27/2023. This is 2,791 MW more than the July 2022 demand of 80,148 MW.

- ERCOT issued 9 notifications:
  - 5 OCN’s due to extreme hot weather forecasted in North Central and South Central weather zones.
  - 1 Watch issued for HRUC failure.
  - 3 DC Tie Curtailment Notices for DC_N due to a planned or unplanned outage.

* Preliminary value from August release of Demand and Energy 2023 report.

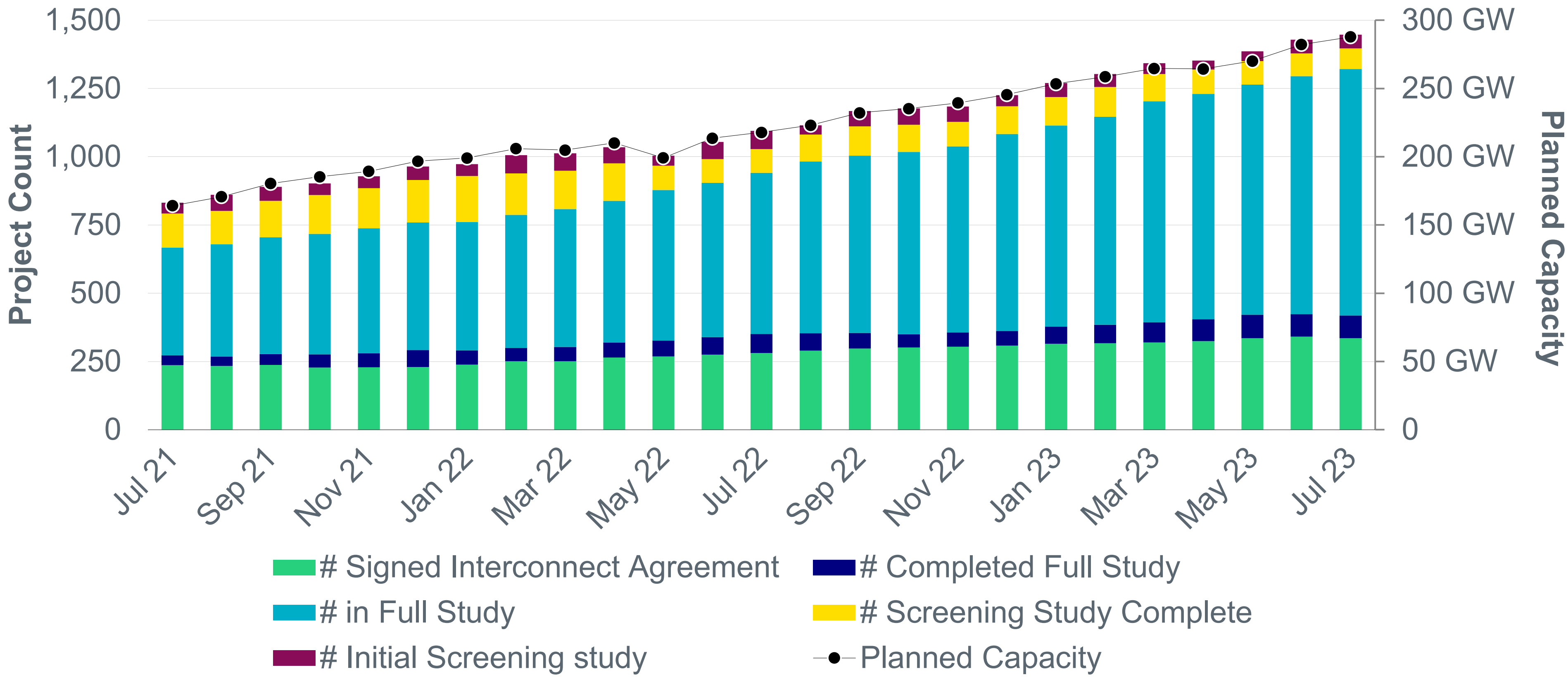
Monthly energy generation increased by 3.1% year-over-year to 47,422 GWh in July 2023, compared to 45,986 GWh in July 2022



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)

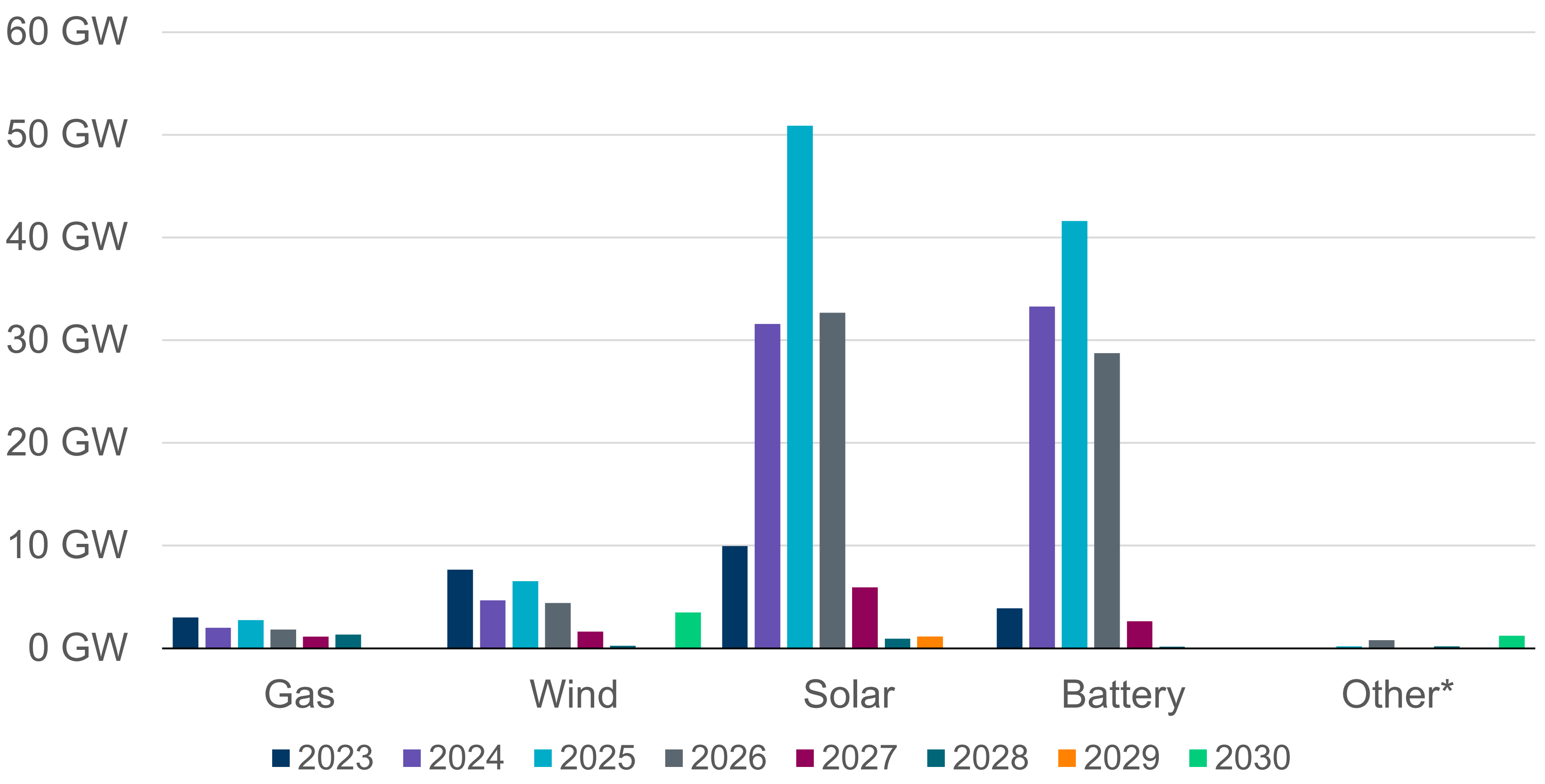


- There are an additional 28 “Small Generator” projects totaling 264 MW that are going through the simplified interconnection process.

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 133 GW (46.6%), Wind 29 GW (10%), Gas 12 GW (4.2%), Battery 110 GW (38.4%)
(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 1,500 active generation interconnection requests totaling 287,809 MW as of July 31. This includes 133,979 MW of solar, 28,615 MW of wind, 110,408 MW of battery, and 12,368 MW of gas projects; 76 projects were categorized as inactive, up from 70 inactive projects in June 2023.

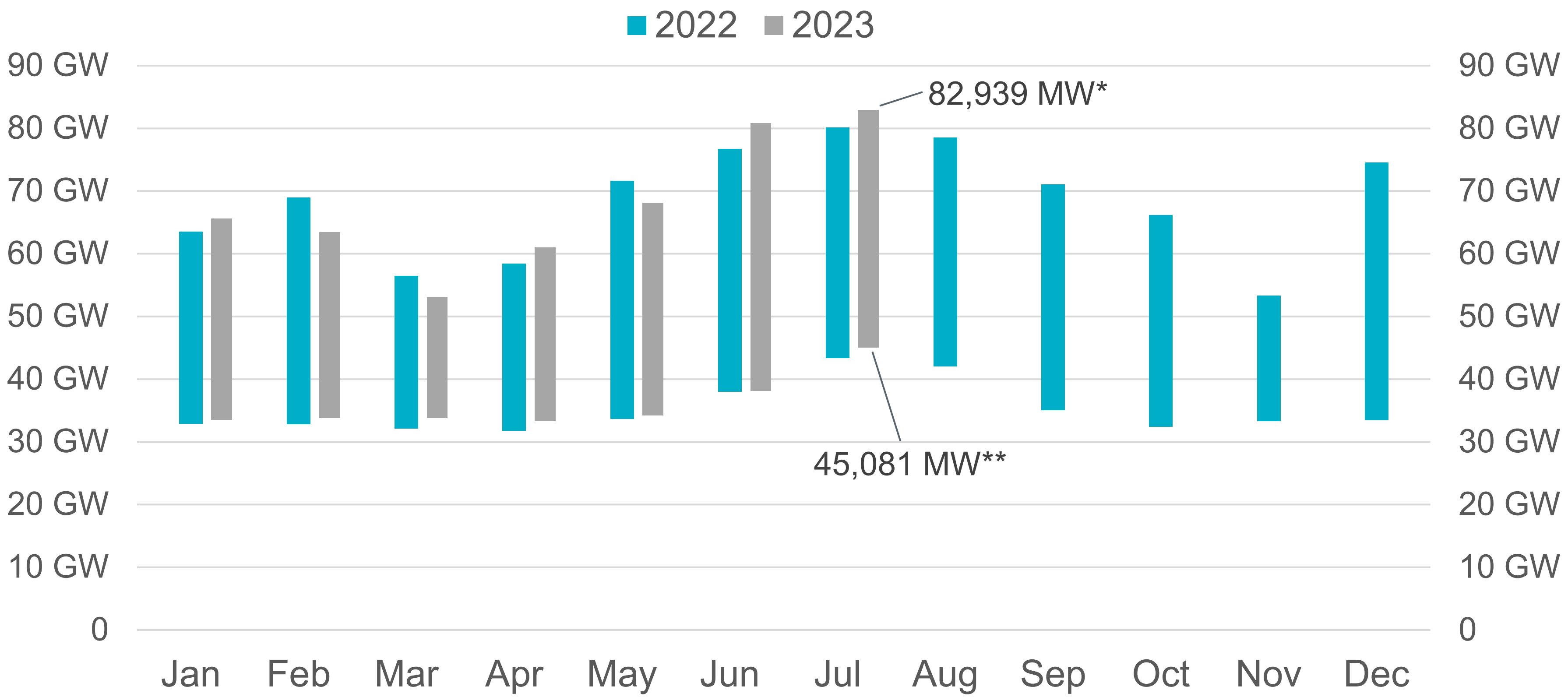
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of $580.00 million as of July 31, 2023.

- Transmission Projects endorsed in 2023 total $1.083 billion as of July 31, 2023.

- All projects (in engineering, routing, licensing and construction) total approximately $12.469 billion as of May 12, 2023.

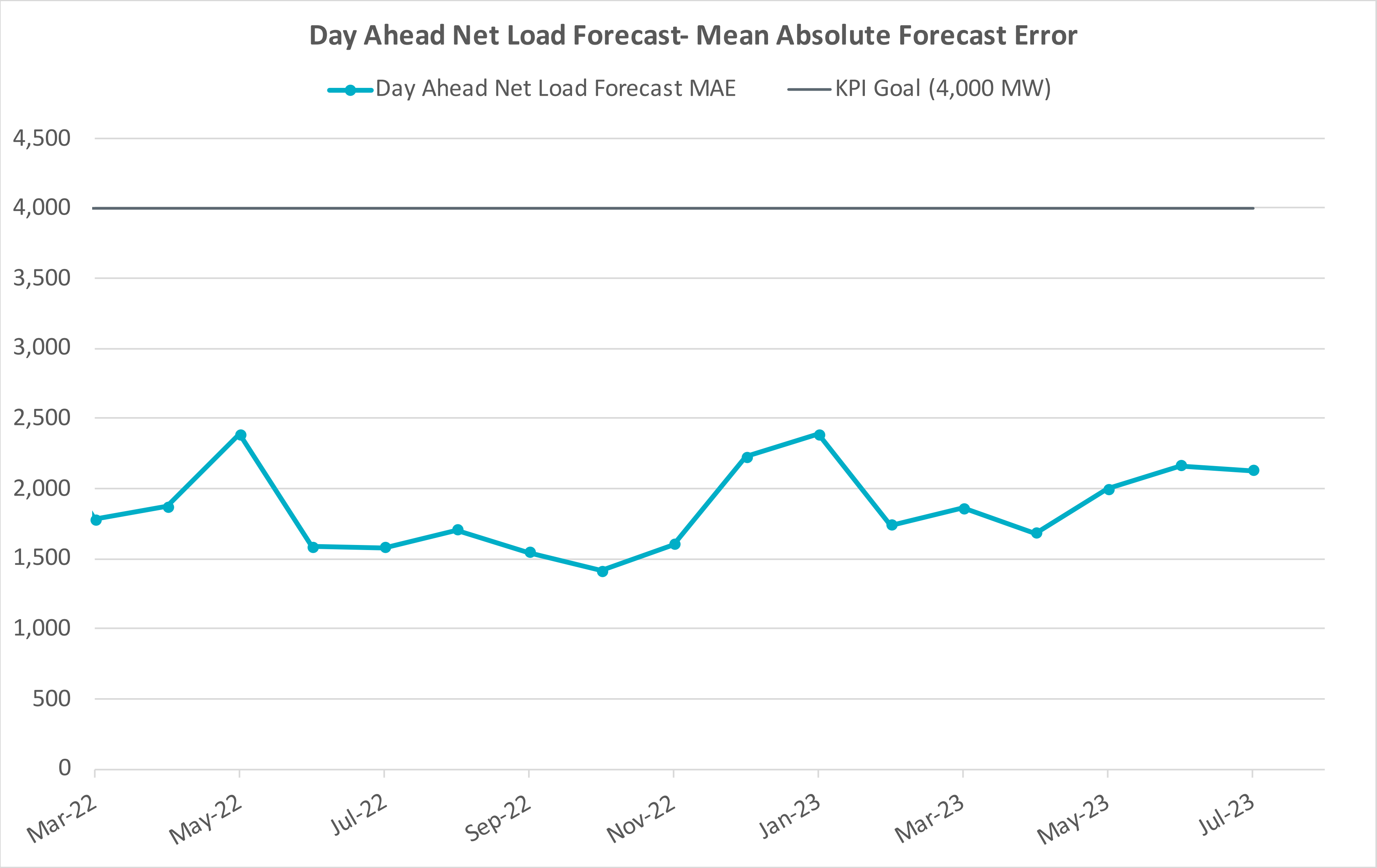
- Transmission Projects energized in 2023 total about $442 million as of May 12, 2023.

ERCOT set a new all-time record of 82,939 MW* for the month of July on 7/31/2023; this was 2,152 MW more than the previous all-time record of 80,787 MW set on 6/27/2023. This is 2,791 MW more than the July 2022 demand of 80,148 MW.

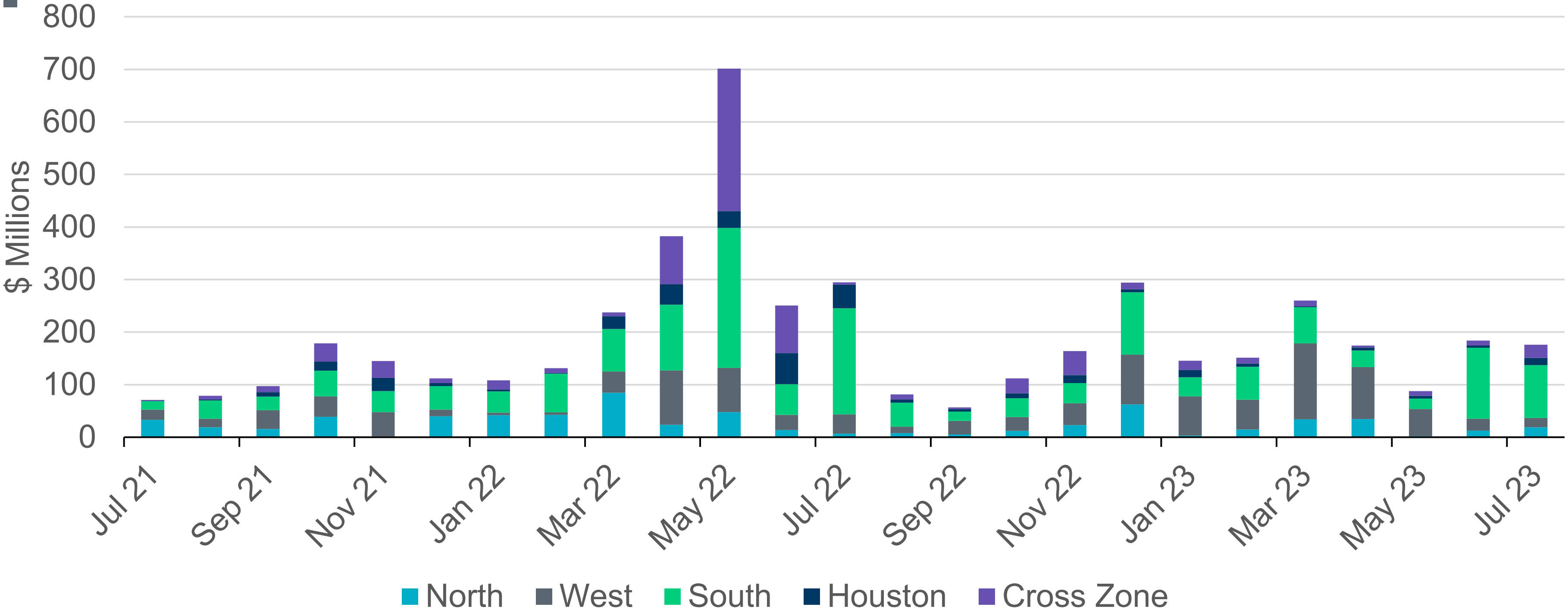


*Based on the maximum net system hourly value from the August Demand and Energy 2023 report.
**Based on the minimum net system 15-minute interval value from the August Demand and Energy 2023 report.
Data for latest two months are based on preliminary settlements.

Net Load Forecast Performance

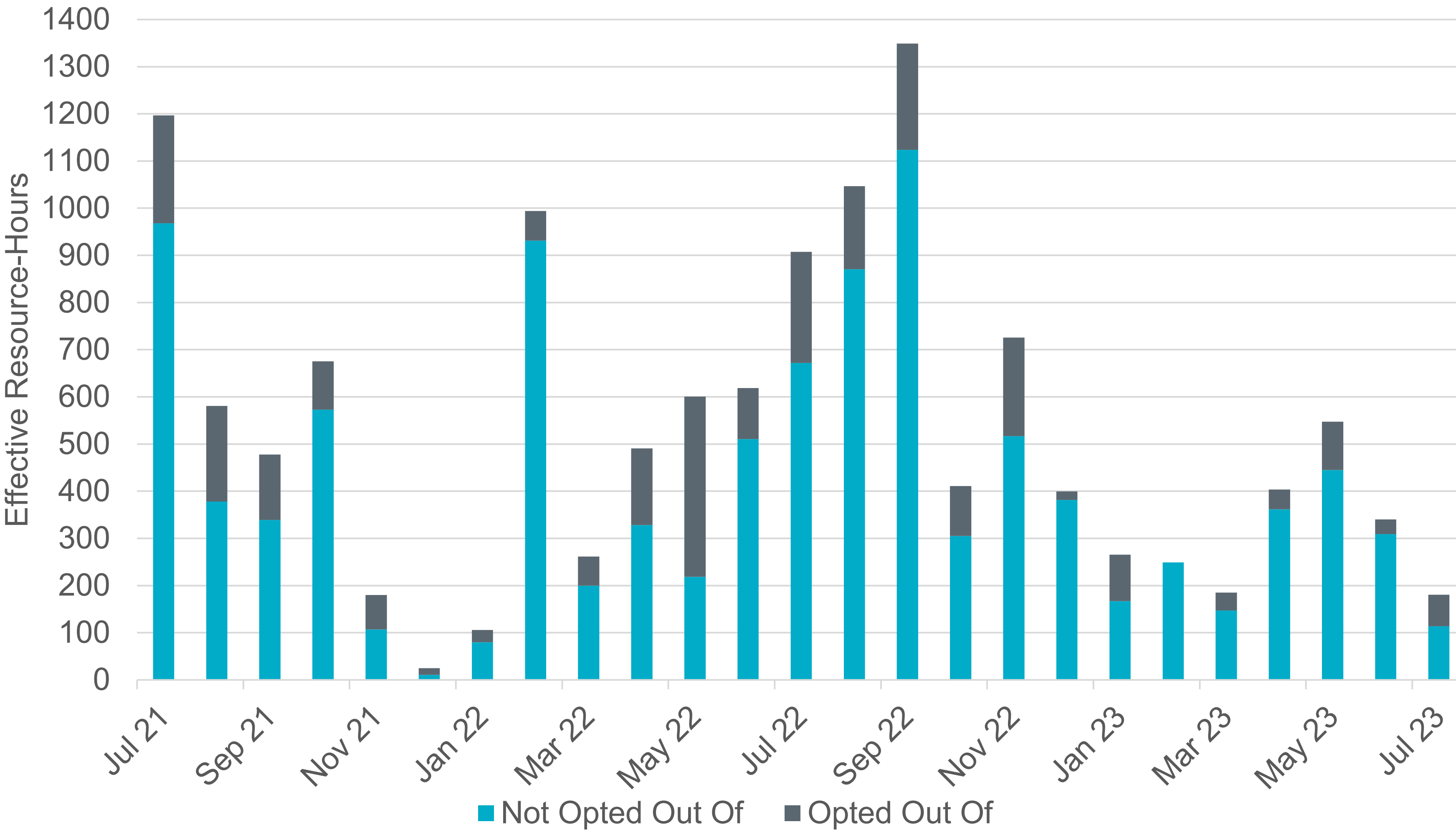


Real-Time Congestion Rent by Zone



- Overall, monthly congestion rent decreased slightly for July compared to June.
- 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 double circuit 345 kV contingency from Elmcreek to San Miguel Gen overloading the 345 kV transmission line from Pawnee Switching Station to Calaveras.
  - Congestion rent in the Cross Zone was primarily driven by the loss of the double circuit 345 kV contingency from Whaley and Wolf to WA Parish overloading the 345 kV transmission line from South Texas Project to WA Parish.
- 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 Resources were Committed in July for Capacity

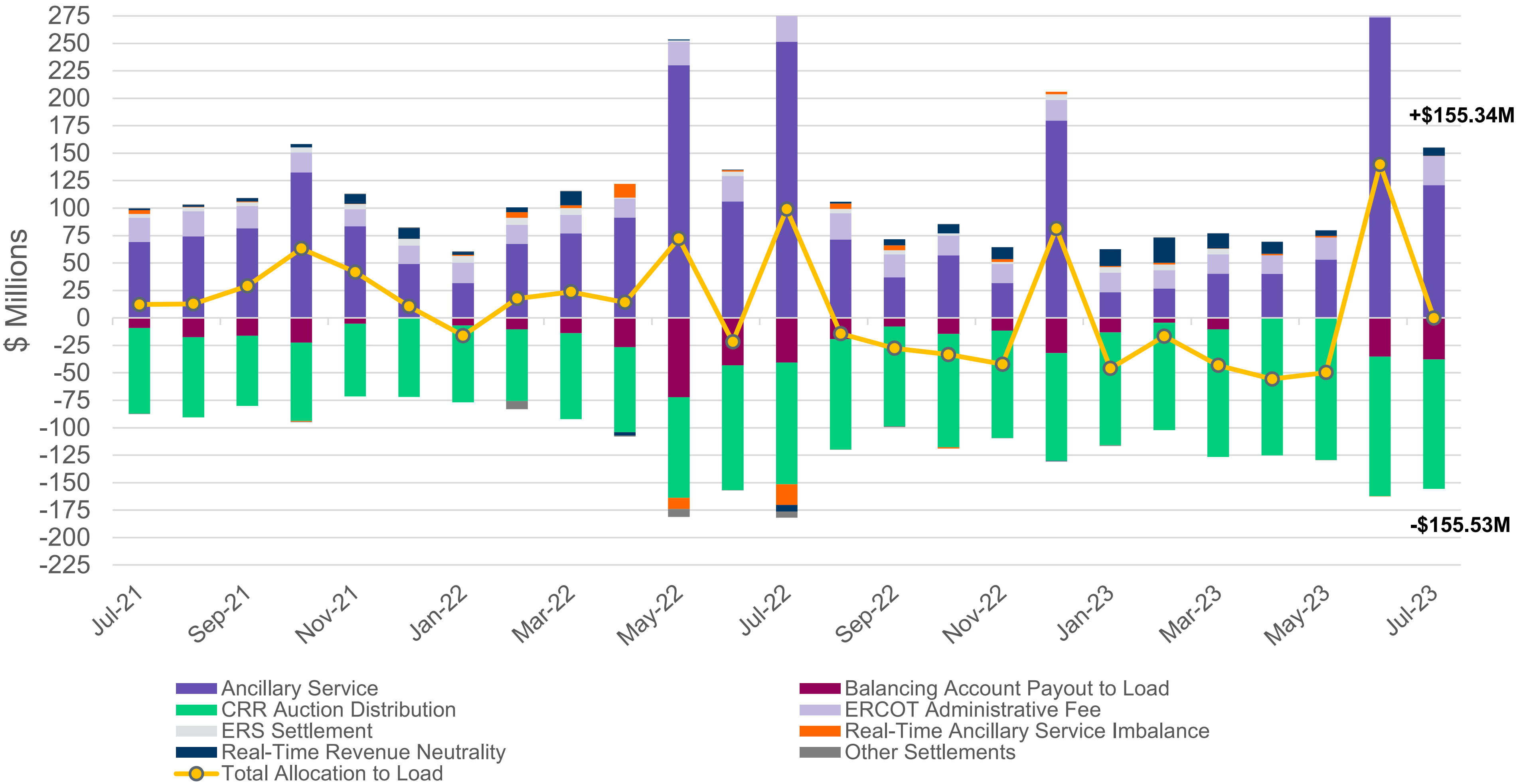


“Effective Resource-Hours” excludes any period during a Reliability Unit Commitment hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.

Twenty Resources were Committed in July for Capacity

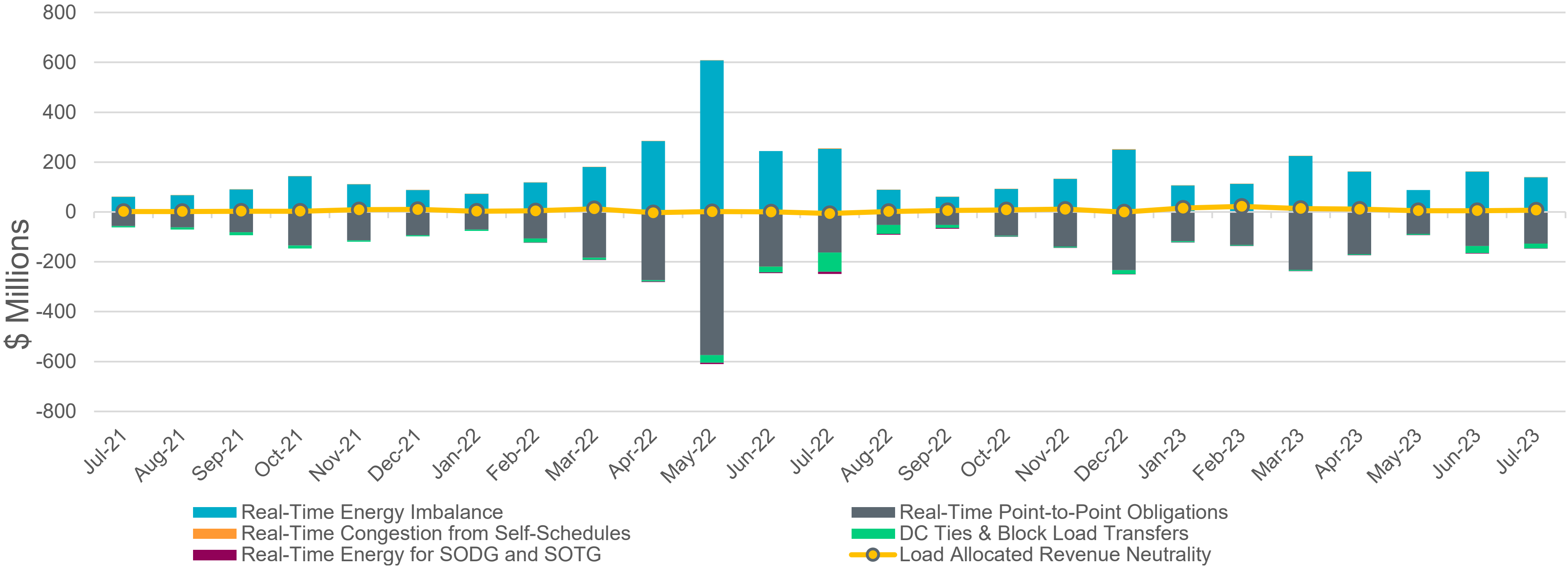
Resource #	Effective Resource-hours	Non-Opt Out (Effective Hours)	Opt Out (Effective Hours)
1	1.0	0.0	1.0
2	20.7	5.7	15.0
3	12.0	12.0	0.0
4	2.9	2.9	0.0
5	2.0	2.0	0.0
6	1.0	1.0	0.0
7	17.0	5.0	12.0
8	23.9	8.0	15.9
9	24.0	8.0	16.0
10	7.9	7.9	0.0
11	2.0	0.0	2.0
12	5.0	1.0	4.0
13	1.0	1.0	0.0
14	6.8	6.8	0.0
15	13.8	13.8	0.0
16	18.2	18.2	0.0
17	12.7	12.7	0.0
18	3.9	3.9	0.0
19	0.9	0.0	0.9
20	4.0	4.0	0.0
Total	**180.8**	**113.9**	**66.8**

Net Allocation to Load in July 2023 was ($0.19) Million



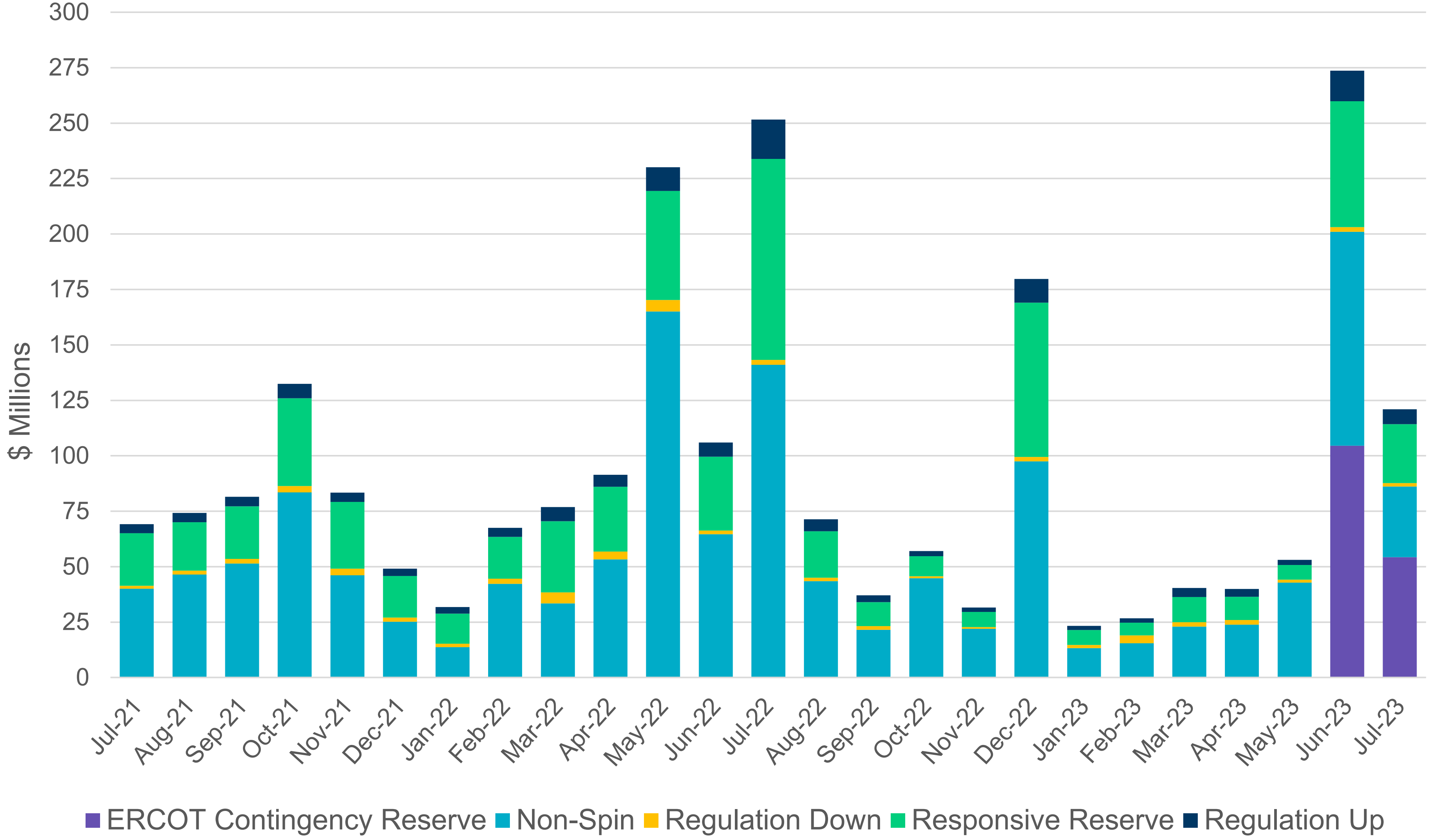
This information is available in tabular form in the Settlement Stability Report presented quarterly to the [Wholesale Market Subcommittee]

Real-Time Revenue Neutrality Allocated to Load was $7.50M for July 2023

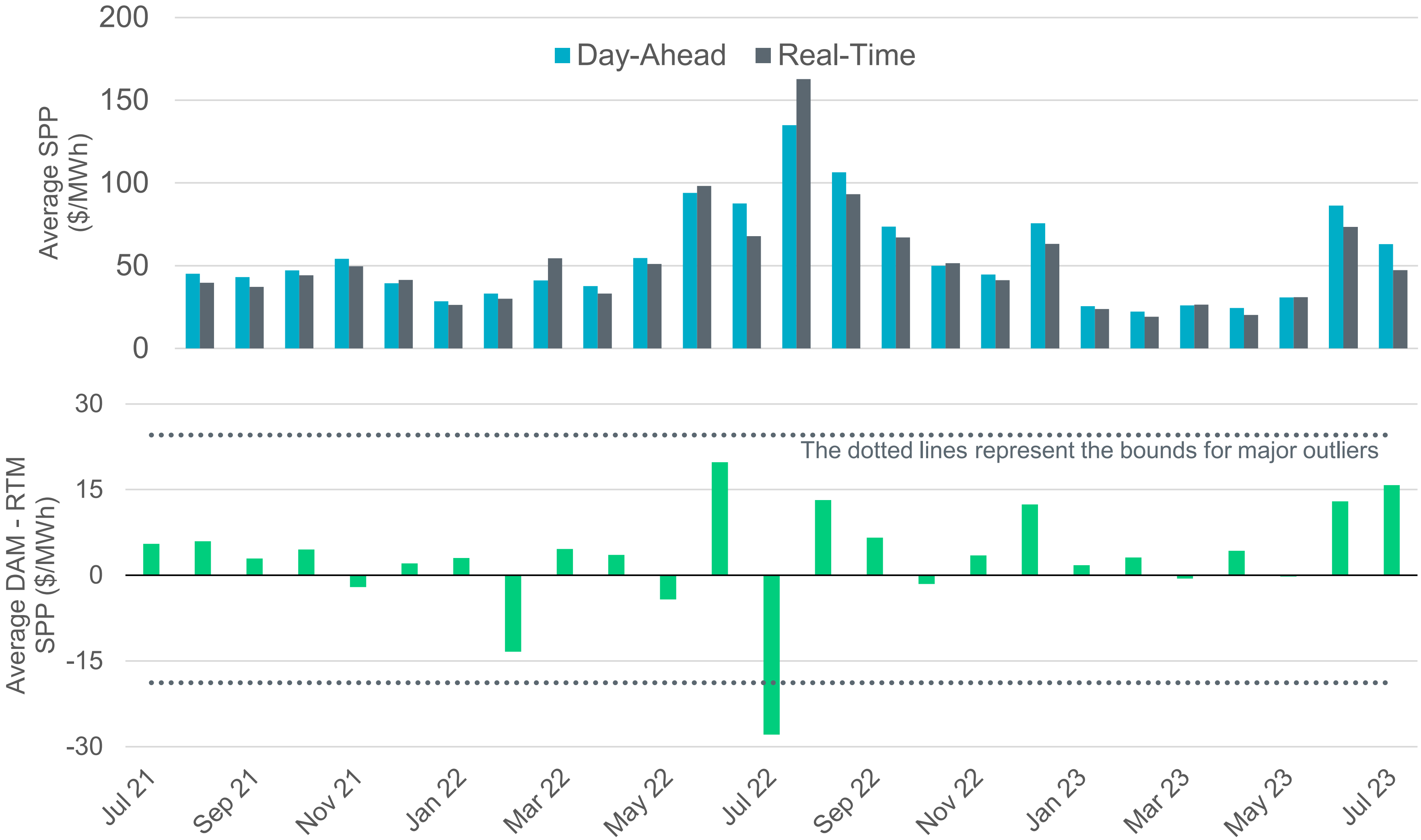


	July 2023 ($M)
Real-Time Energy Imbalance	$138.92
Real-Time Point-to-Point Obligation	($127.15)
Real-Time Congestion from Self-Schedules	$1.40
DC Tie & Block Load Transfer	($19.24)
Real-Time Energy for SODG and SOTG	($1.44)
Load Allocated Revenue Neutrality	**$7.50**

Ancillary Services for July 2023 totaled $120.94M

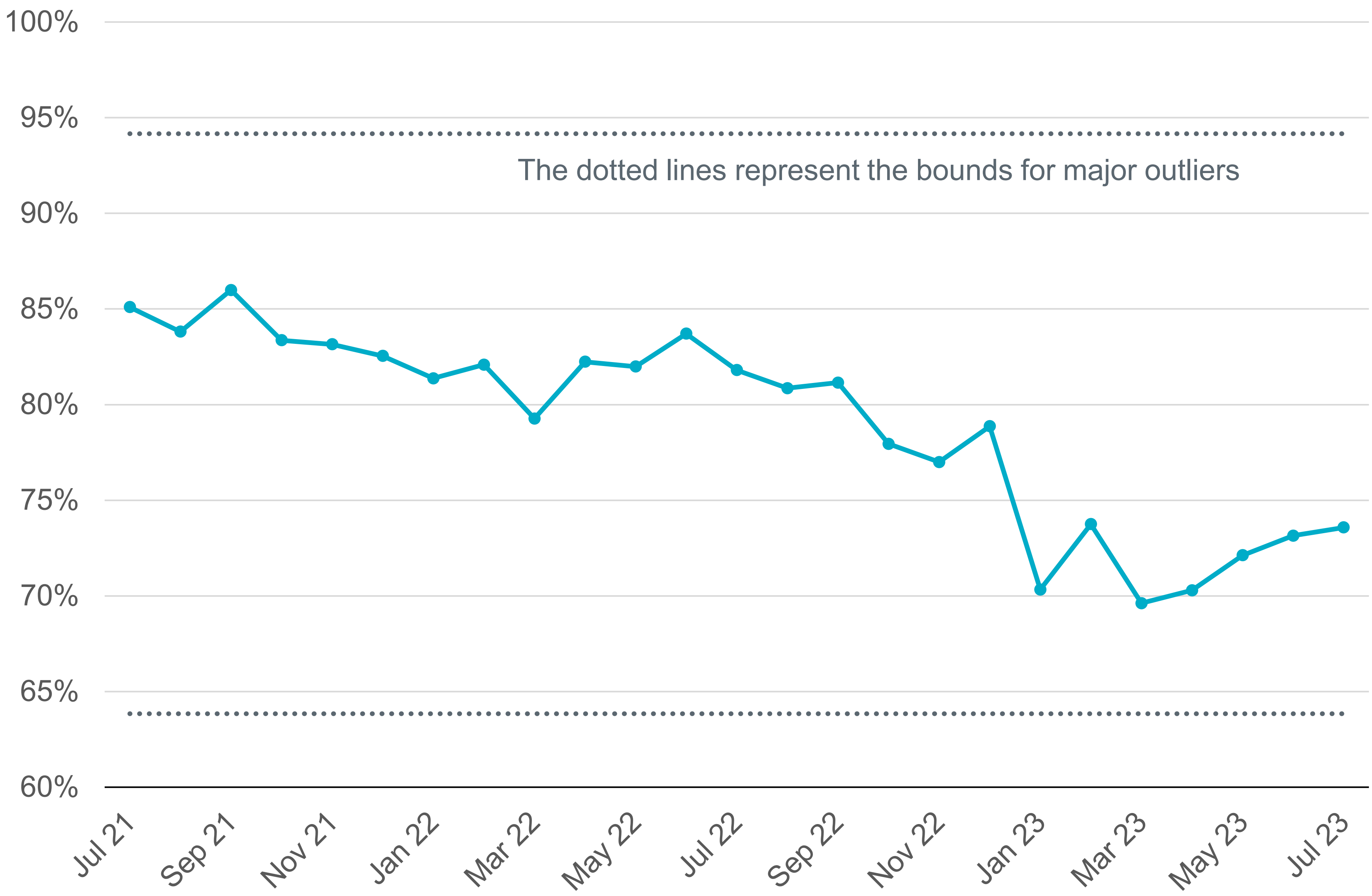


Day-Ahead and Real-Time Market Price Differences

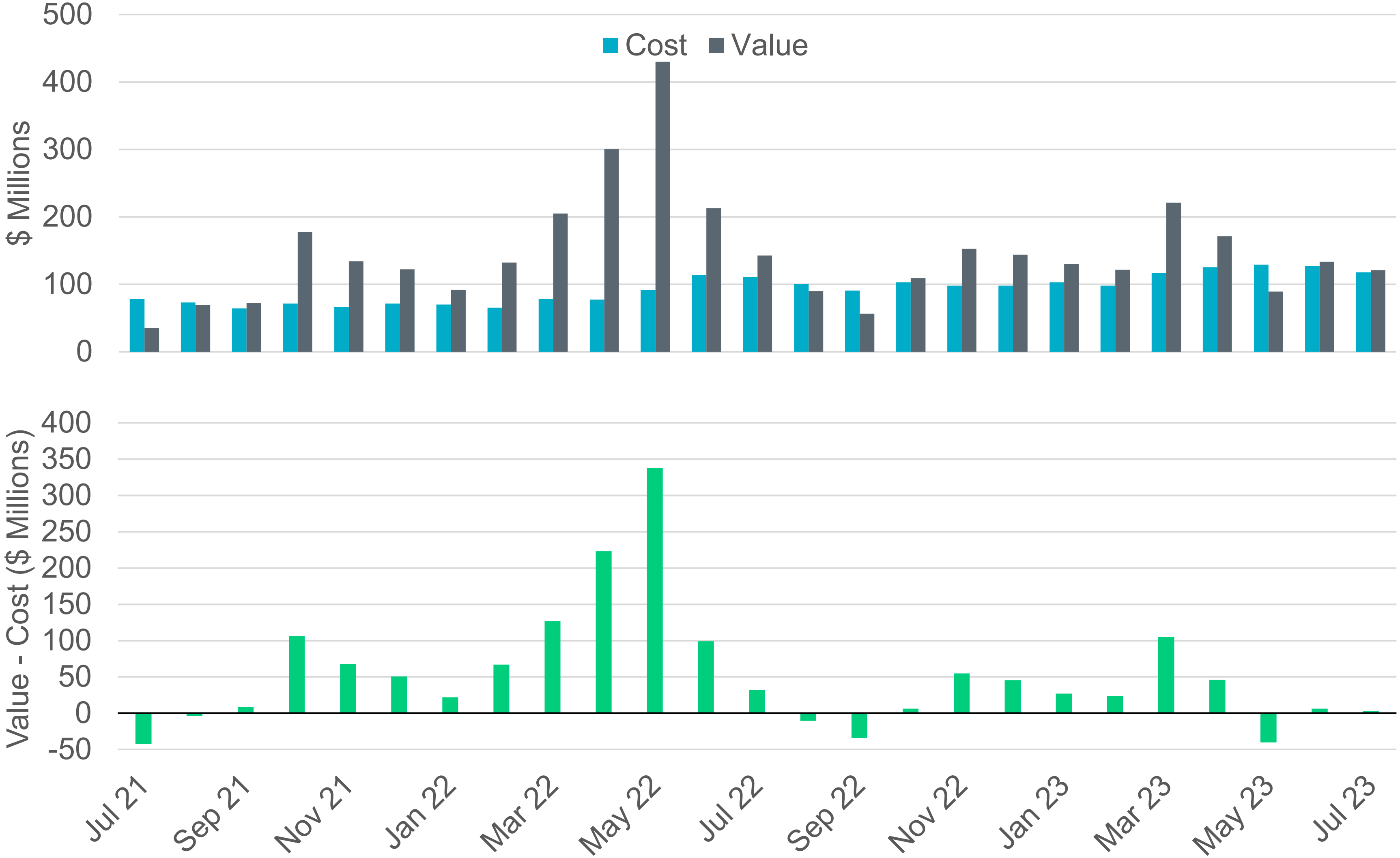


*Averages are weighted by Real-Time Market Load

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



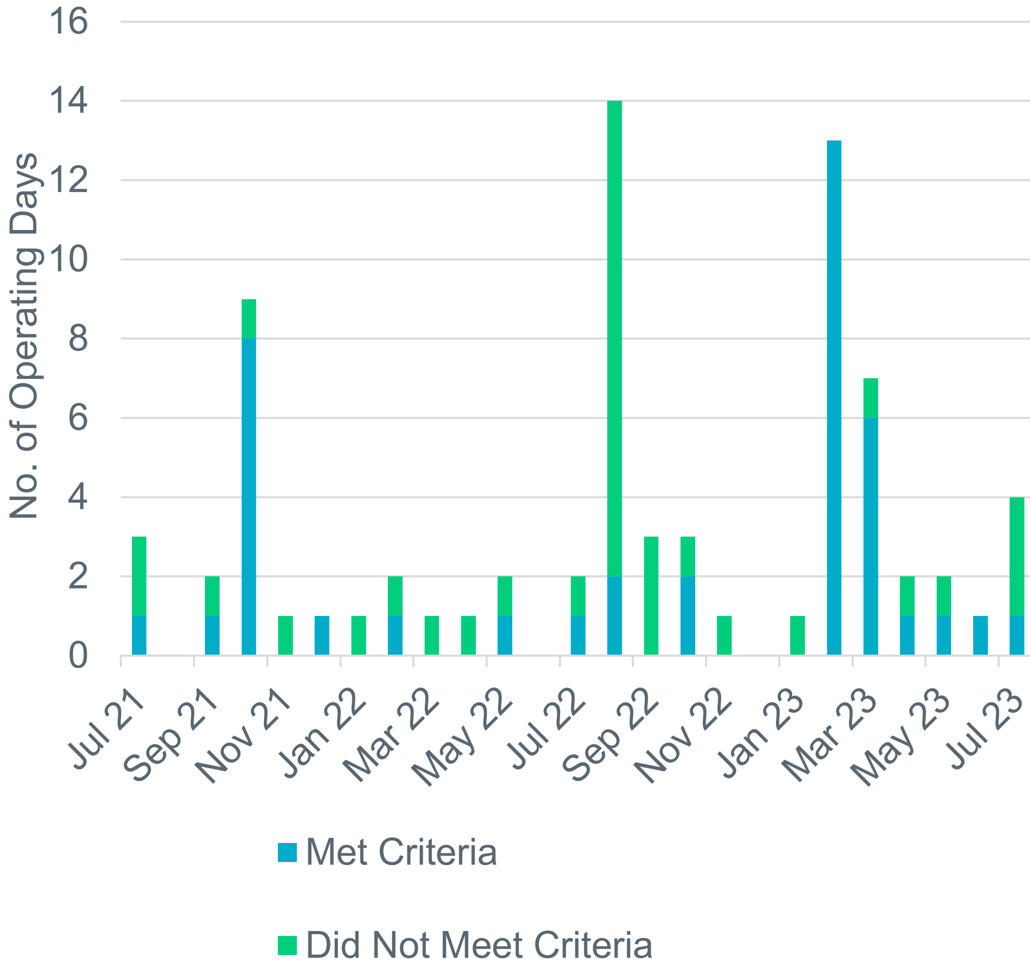
CRR Value and Cost Differences



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 two categories:

- Days that met the criteria for “significance” under NPRR1024 and were corrected; and
- Days that were not corrected because they did not meet the criteria for “significance” under NPRR1024.



Details for Price Corrections Review

Operating Day Meeting Significance Criteria

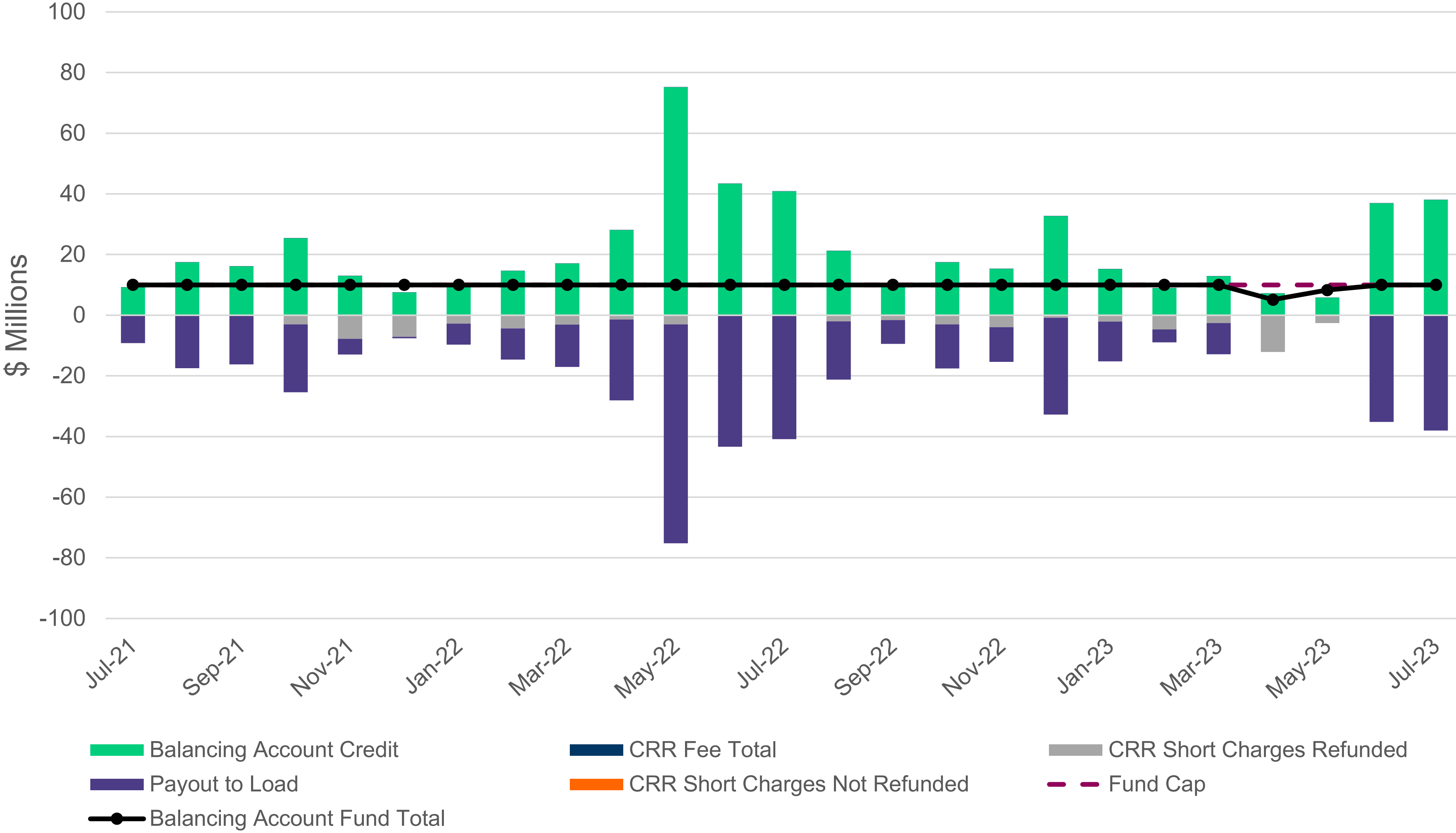
- On July 27, 2023, during a planned deployment of the Market Management System, Emergency Basepoints were activated between 15:47 and 16:02. Upon completion of the impact analysis, ERCOT determined that criteria was met for price correction with the estimated total dollar impact to Real-Time Metered Prices (RTRMPRs) being approximately $635.

Operating Days Not Meeting Significance Criteria

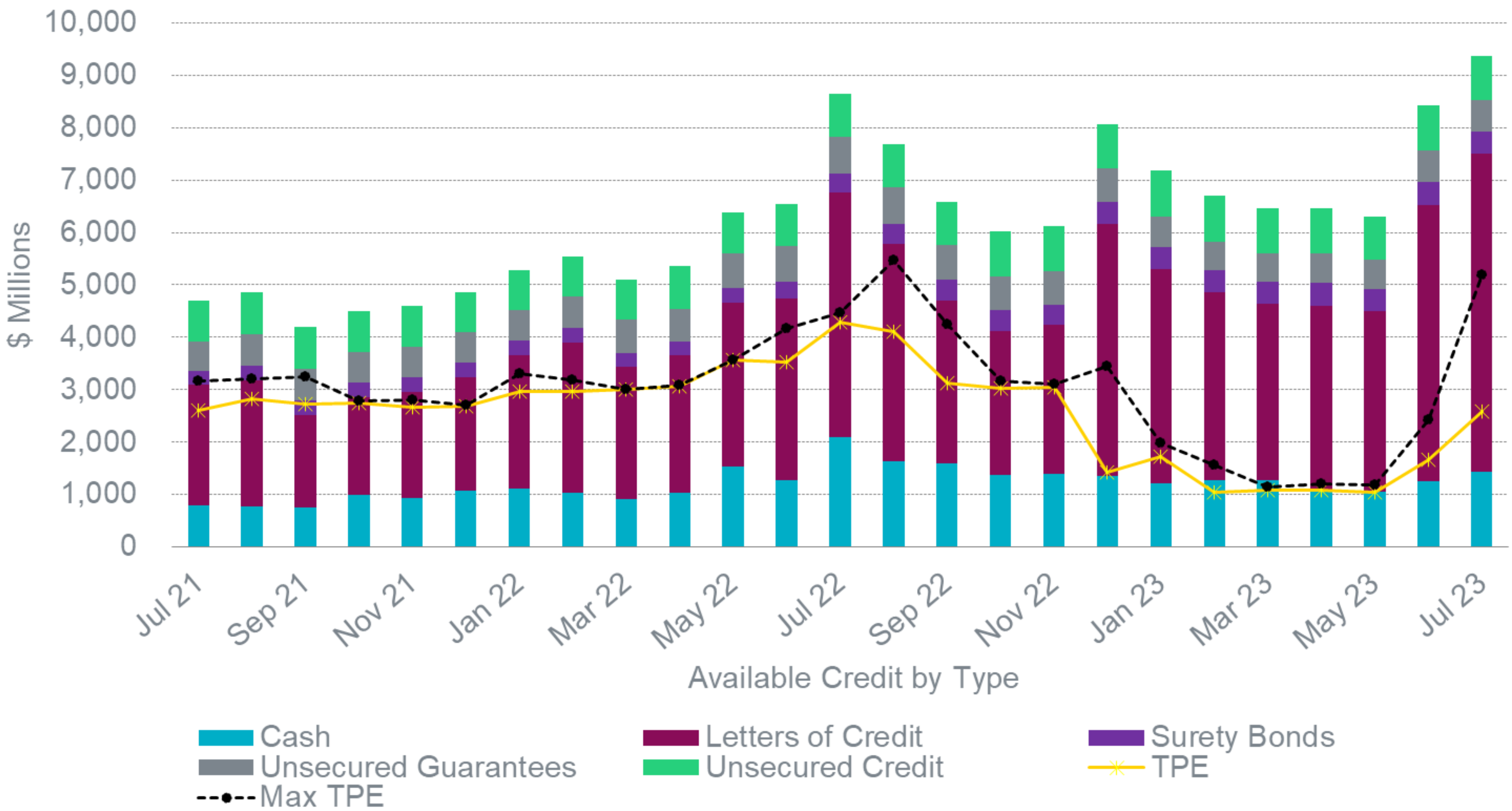
- On July 3, 2023, and July 5, 2023, Emergency Basepoints were activated during planned failovers. The resulting impact would have only affected RTRMPRs. Analysis showed that neither day met criteria for price correction, with estimated total dollar impacts of $24.19 and $6.24, respectively.

- On July 26, 2023, incorrect Real-Time Meter mapping for a single Energy Storage Resource (ESR) occurred during the weekly model load. Once the mapping was corrected and an impact analysis was performed, it was found that the impact did not meet criteria for price correction, with an estimated total dollar impact of $0.00.

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 – July 2023

	Year-To-Date		Transactions Received	
Transaction Type	**July 2023**	**July 2022**	**July 2023**	**July 2022**
Switches	668,654	782,568	95,134	96,502
Acquisitions	0	0	0	0
Move - Ins	1,819,348	1,767,450	266,689	277,038
Move - Outs	817,167	800,784	122,910	120,453
Continuous Service Agreements (CSA)	283,142	456,553	29,940	43,980
Mass Transitions	0	24,463	0	1,028
Total	**3,588,311**	**3,831,818**	**514,673**	**539,001**