



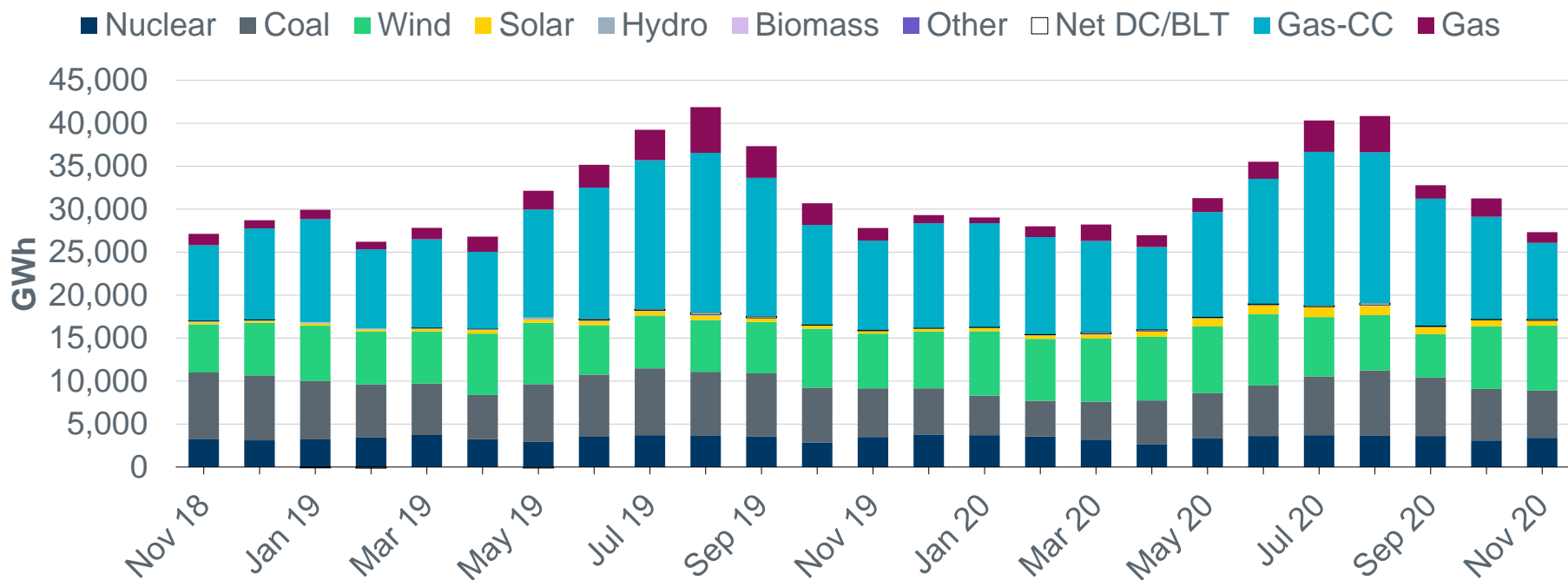
ERCOT Monthly Operational Overview (November 2020)

ERCOT Public
December 15, 2020

Monthly Highlights

- ERCOT set a maximum peak demand of 49,012 MW* in November 2020, which is 7,434 MW less than the November 2019 demand of 56,446 MW.
- ERCOT issued 6 notifications:
 - 1 OCN due to ERCOT modifying the PNHNDL Generic Transmission Constraint
 - 2 Advisories for delay in clearing DAM and posting DAM solution
 - 2 DC Tie curtailments for Laredo
 - 1 Watch for DRUC not completing by 18:00 due to clearing DAM and posting DAM solution

Monthly energy generation decreased by 1.8% year-over-year to 27,325 GWh in November 2020, compared to 27,818 GWh in November 2019

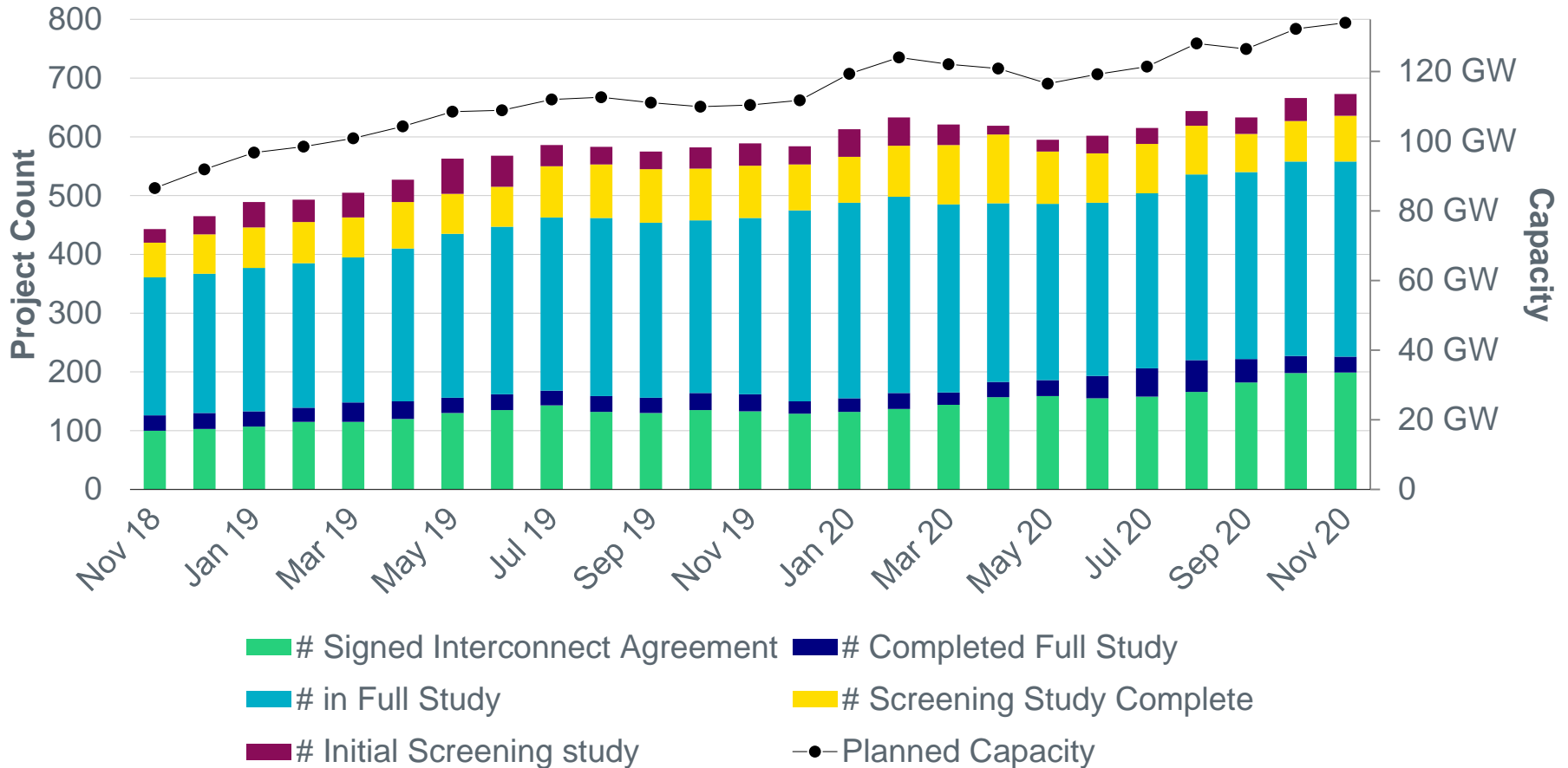


Data for latest two months are based on preliminary settlements.



Generation Interconnection activity by project phase

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

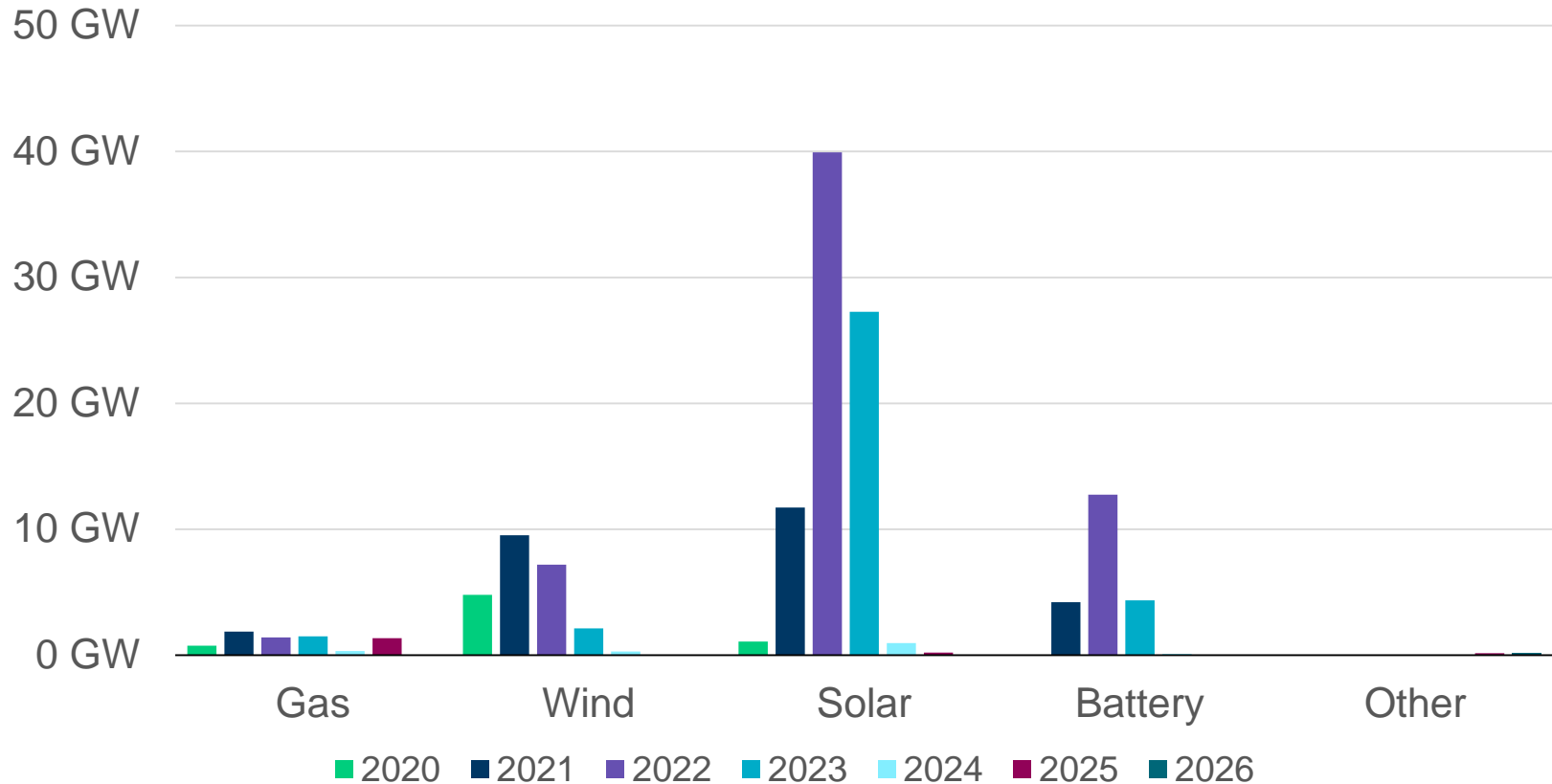


A break out by fuel type can be found in the monthly Generator Interconnection Status (GIS) reports available on the ERCOT Resource Adequacy Page: <http://www.ercot.com/gridinfo/resource>



Interconnection Queue Capacity by Fuel Type

Queue totals: Solar 81 GW (60.6%), Wind 24 GW (17.8%), Gas 7 GW (5.4%), Battery 21 GW (16.0%)
(Excludes capacity associated with Projects designated as Inactive per Planning Guide Section 5.7.6)

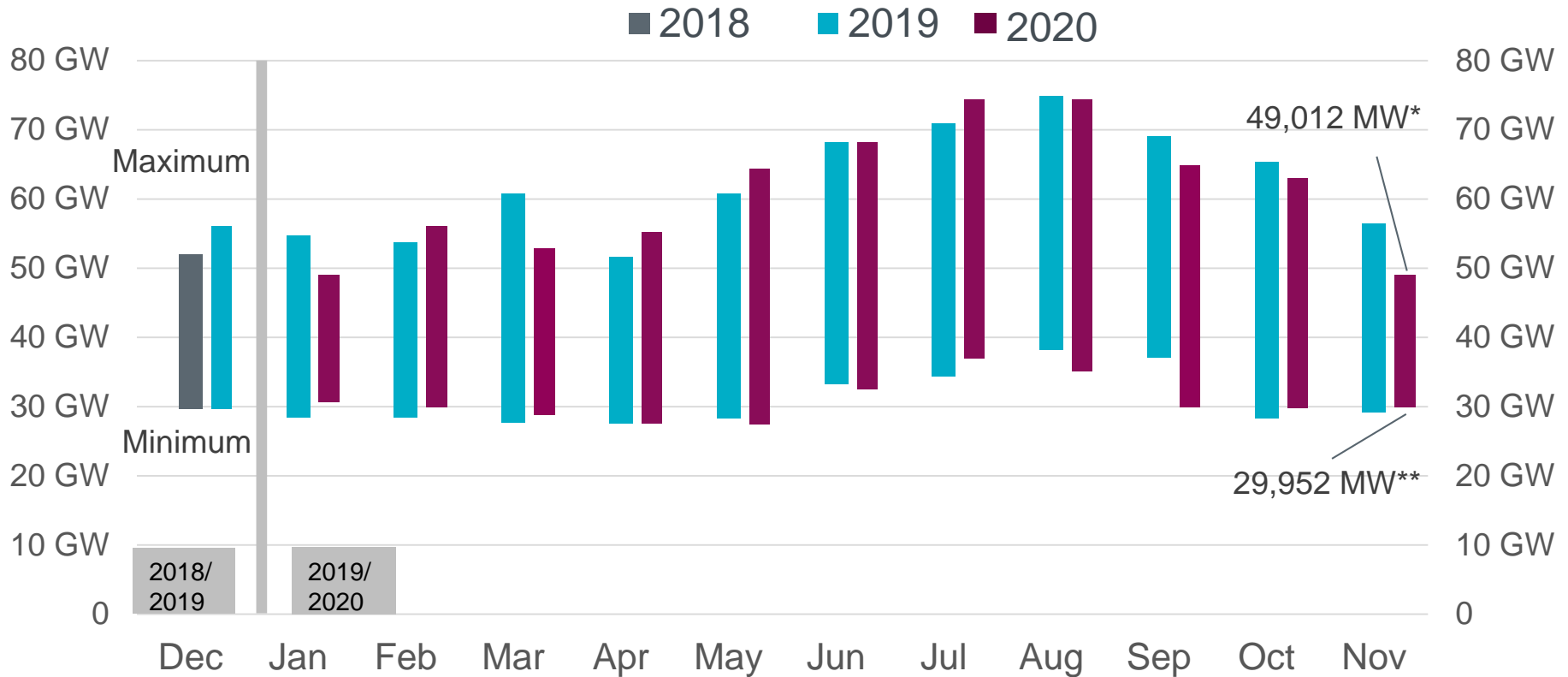


A break out by zone can be found in the monthly Generator Interconnection Status (GIS) reports available on the ERCOT Resource Adequacy Page: <http://www.ercot.com/gridinfo/resource>

Planning Summary

- ERCOT is currently tracking 673 active generation interconnection requests totaling 134,019 MW. This includes 81,157 MW of solar, 23,898 MW of wind, 21,404 MW of battery, and 7,197 MW of gas projects as of November 30, 2020.
- ERCOT is currently reviewing proposed transmission improvements with a total estimated cost of \$1,040.86 Million as of November 30, 2020.
- Transmission Projects endorsed in 2020 total \$1,043.29 Million as of November 30, 2020.
- All projects (in engineering, routing, licensing and construction) total approximately \$7.6 Billion as of October 1, 2020.
- Transmission Projects energized in 2020 total about \$1.20 Billion as of October 1, 2020.

ERCOT set a maximum peak demand of 49,012 MW* in November 2020, which is 7,434 MW less than the November 2019 demand of 56,446 MW



*Based on the maximum net system hourly value from December release of Demand and Energy 2020 report.

**Based on the minimum net system 15-minute interval value from December release of Demand and Energy 2020 report.

Data for latest two months are based on preliminary settlements.



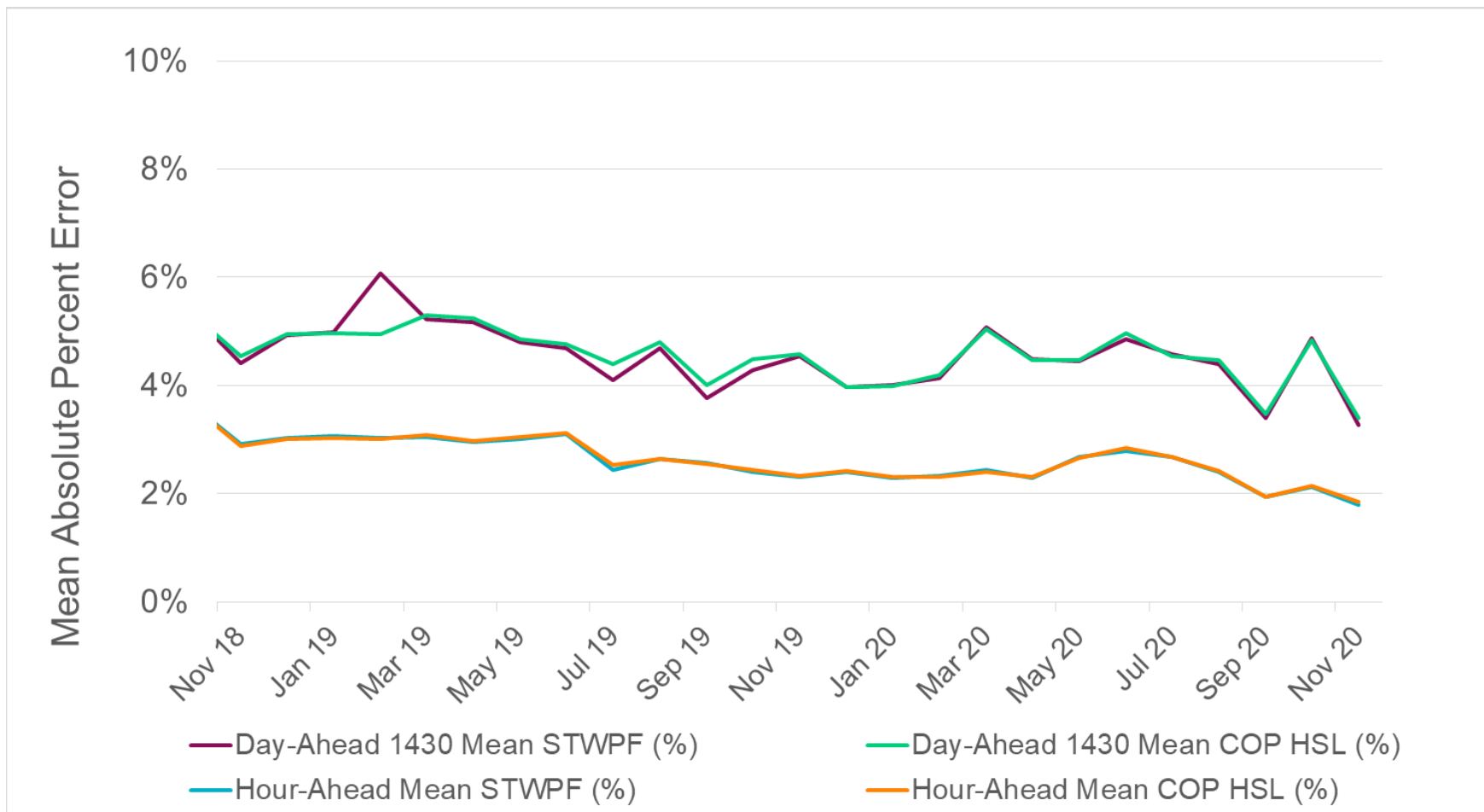
Mid-Term Load Forecast Performance



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



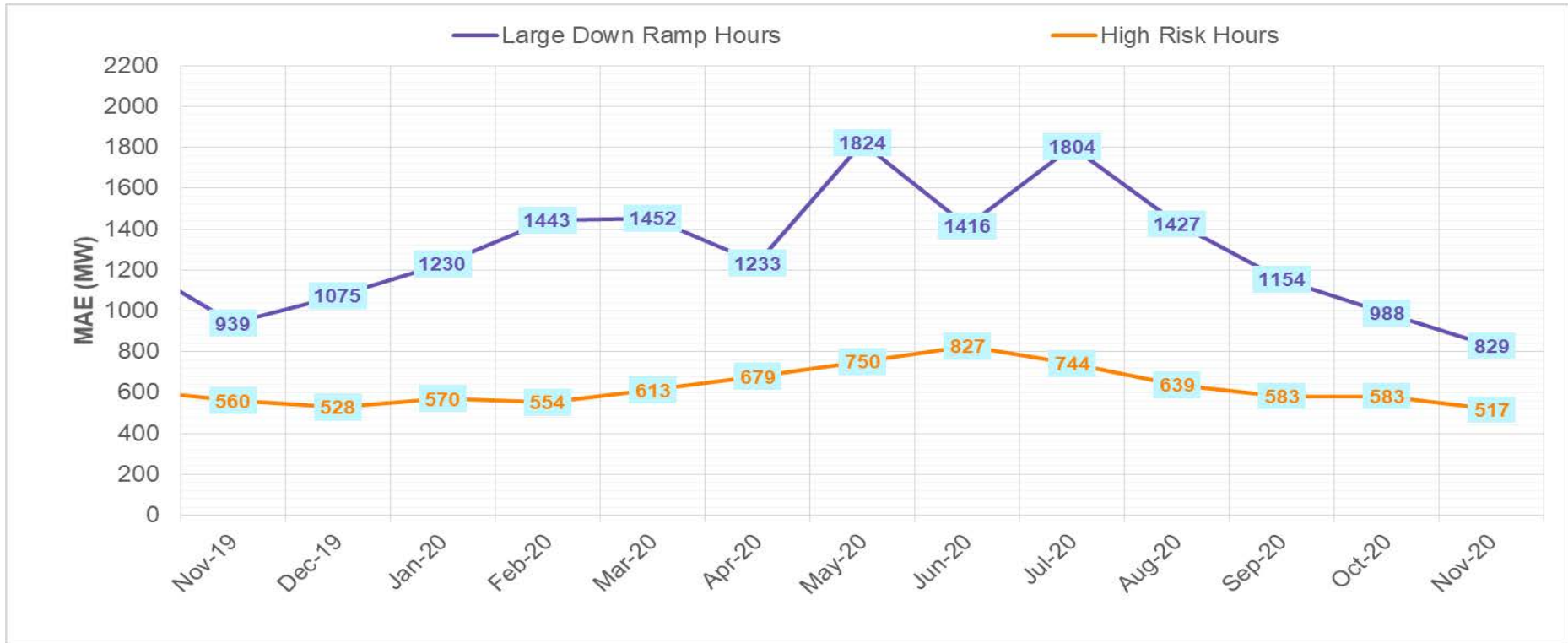
Wind Forecast Performance



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

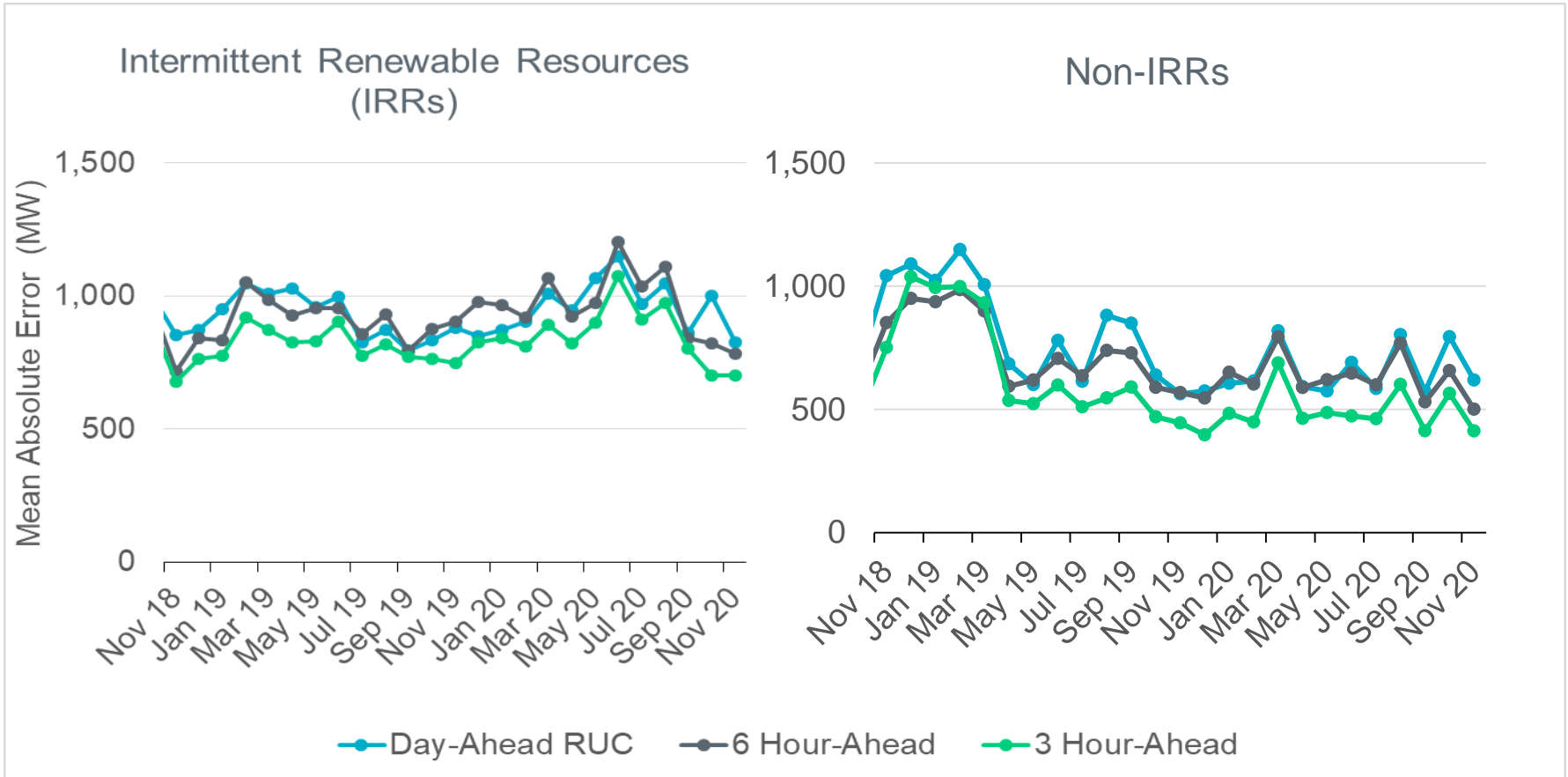
Hour-Ahead Mean Absolute Error (MAE) During Large Down Ramp (> 2000 MW) and High Risk Hours*



*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.

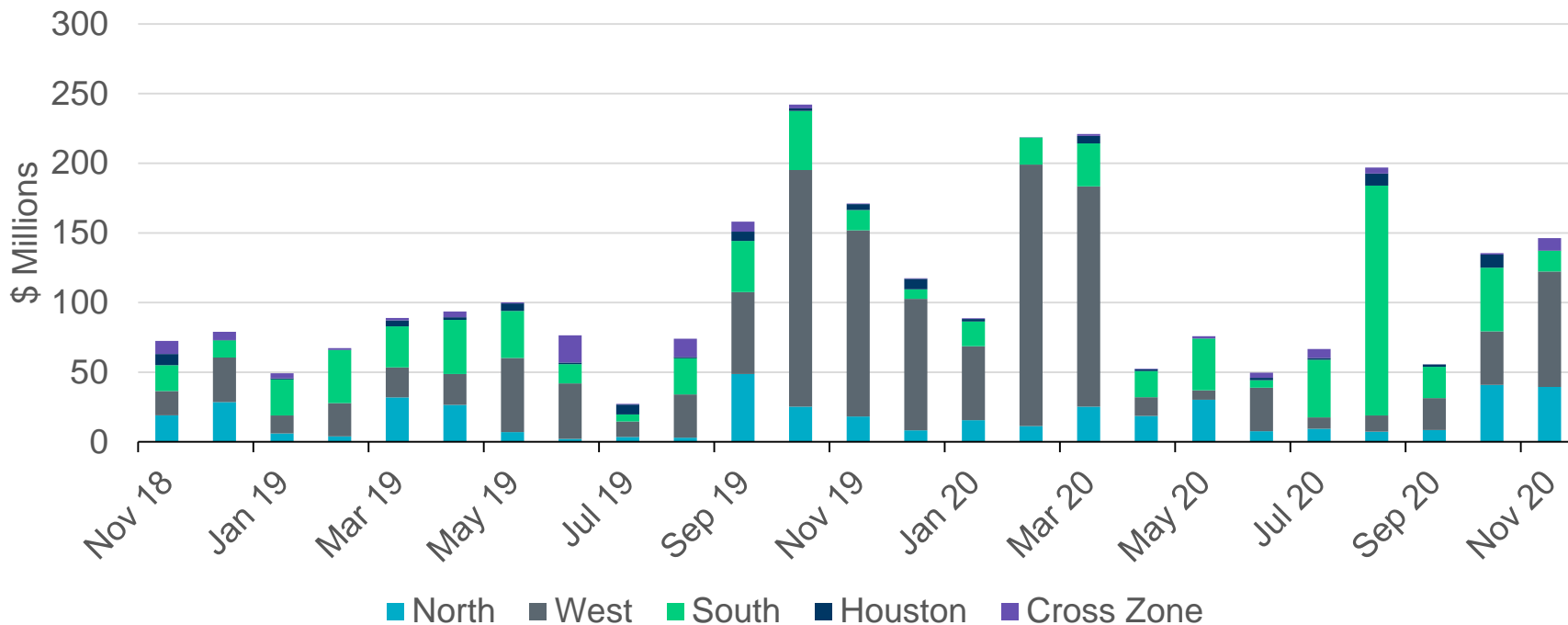
Forecast performance during large down ramp (wind ramp > 2000 MW) hours and high risk hours (historic risk of load ramping up and wind ramping down is high) is focused upon. Note that for the purposes of forecast performance measurement every hour in a month is classified as either a large down ramp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



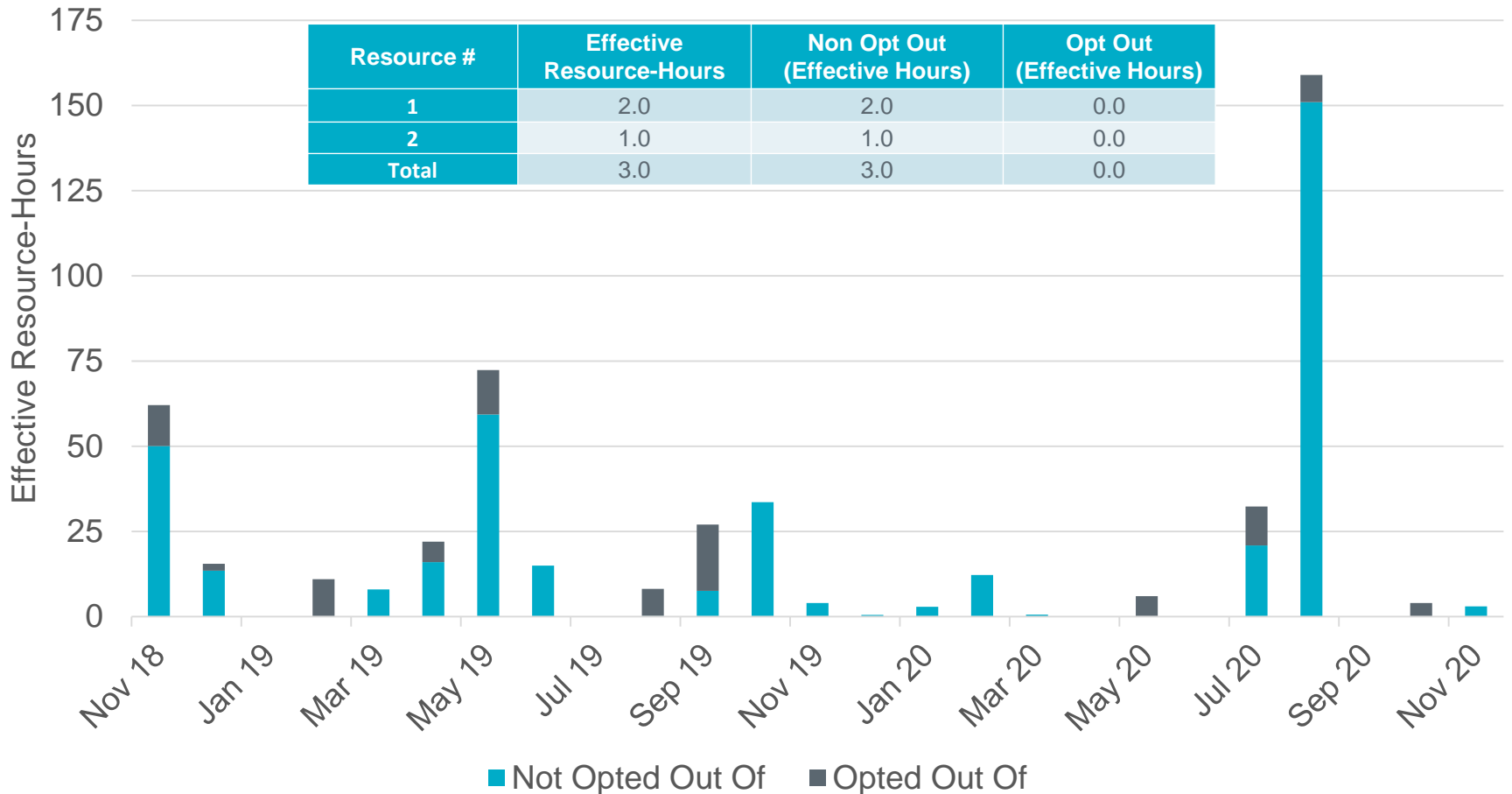
- COPs for IRRs are derived from wind and solar forecasts from ERCOT with any adjustments from Qualified Scheduling Entities.
- The installed capacity of approved Wind Units is 30,091 MW (as of November 30, 2020).
- The installed capacity of approved Solar Units is 4,863 MW (as of November 30, 2020).

Real-Time Congestion Rent by Zone



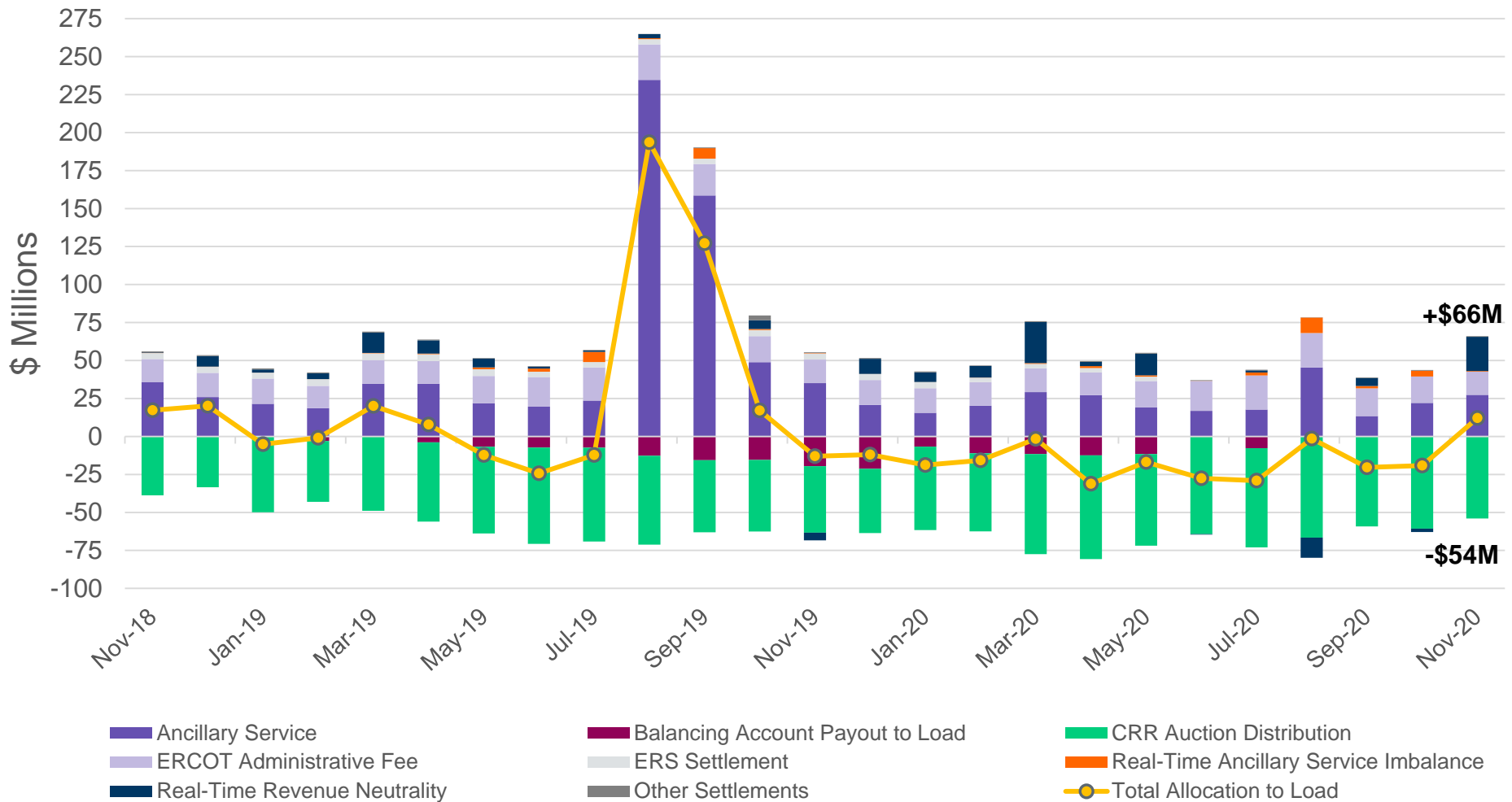
- The total congestion rent for November remained similar to October with some components increasing substantially (West, Cross Zone) and others decreasing (South, Houston). The most significant constraints for November are SHACPB38: LYNX_TOMBST1_1 in the West Zone and DCRLLSW5:588_A_1 in the North Zone.
- 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.

Two Resources were Committed in November for 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.

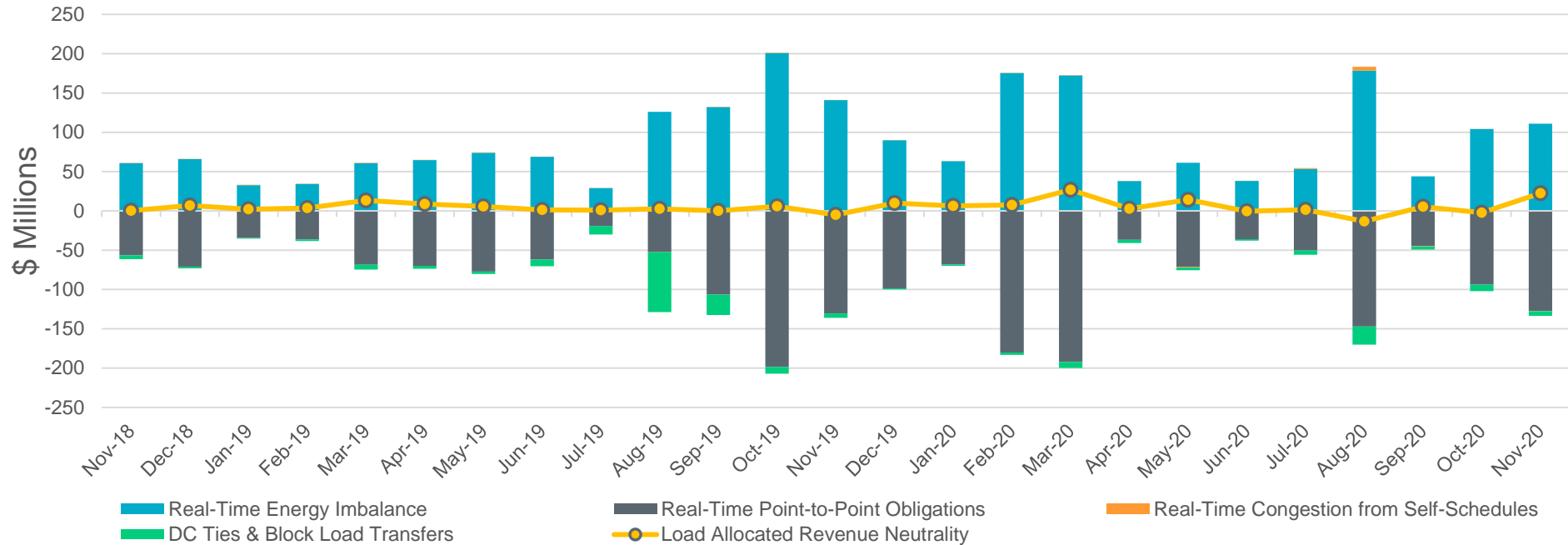
Net Allocation to Load in November 2020 was \$12.1 Million



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



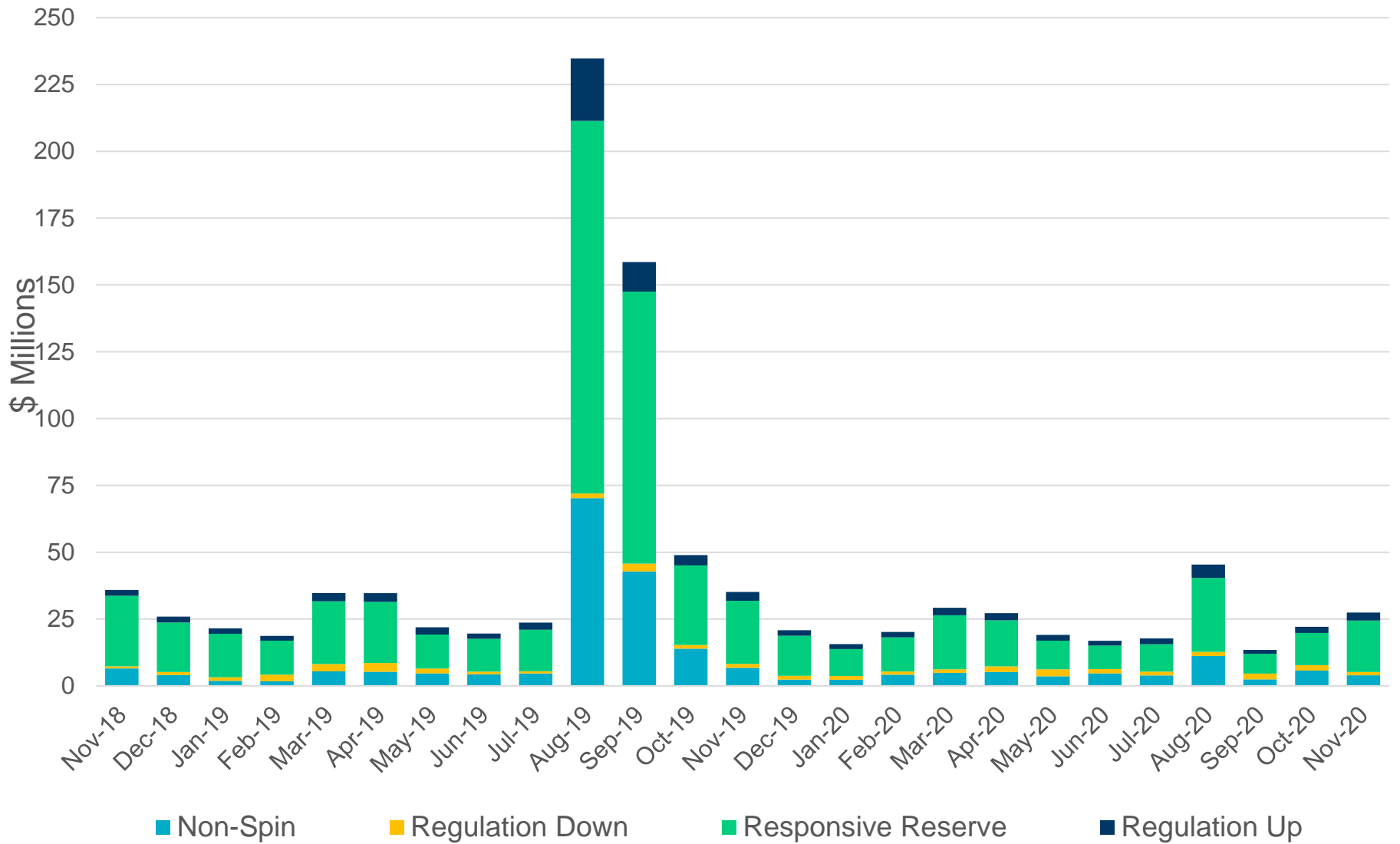
Real-Time Revenue Neutrality Allocated to Load was \$22.55M for November 2020



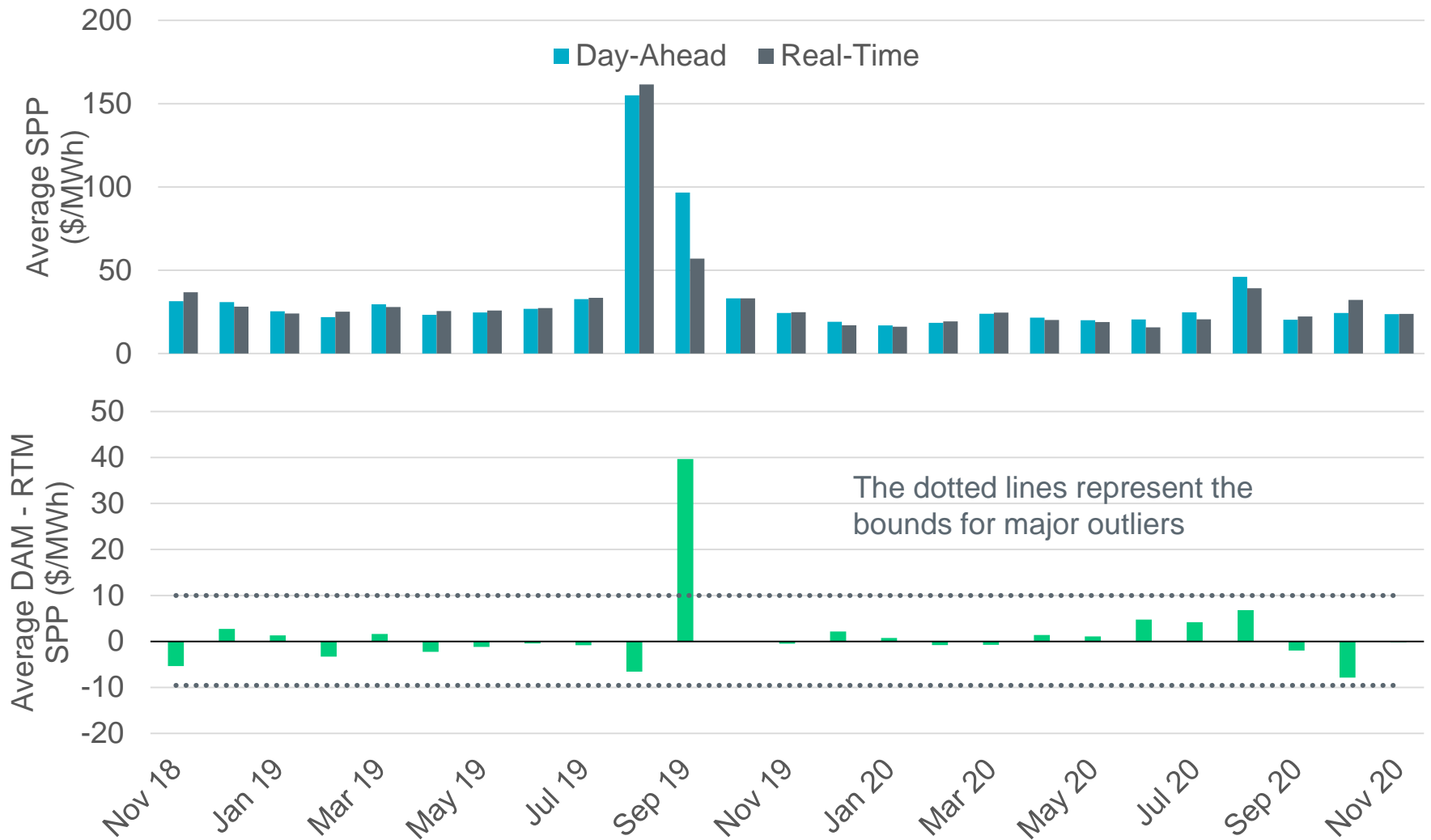
November 2020 (\$M)	
Real-Time Energy Imbalance	\$110.99
Real-Time Point-to-Point Obligation	(\$127.32)
Real-Time Congestion from Self-Schedules	(\$0.31)
DC Tie & Block Load Transfer	(\$5.92)
Load Allocated Revenue Neutrality	\$22.55



Ancillary Services for November 2020 totaled \$27.41M



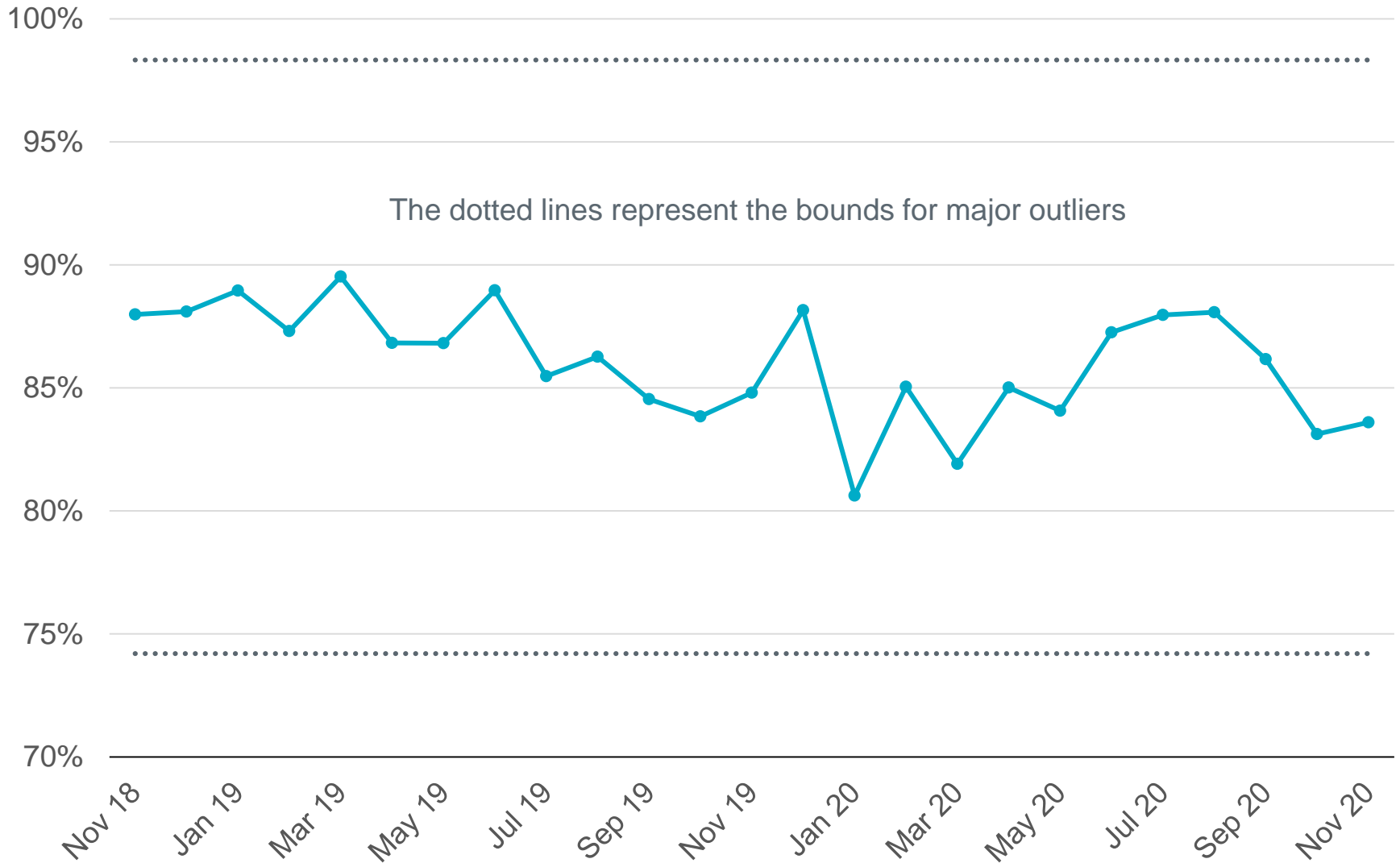
Day-Ahead and Real-Time Market Price Differences



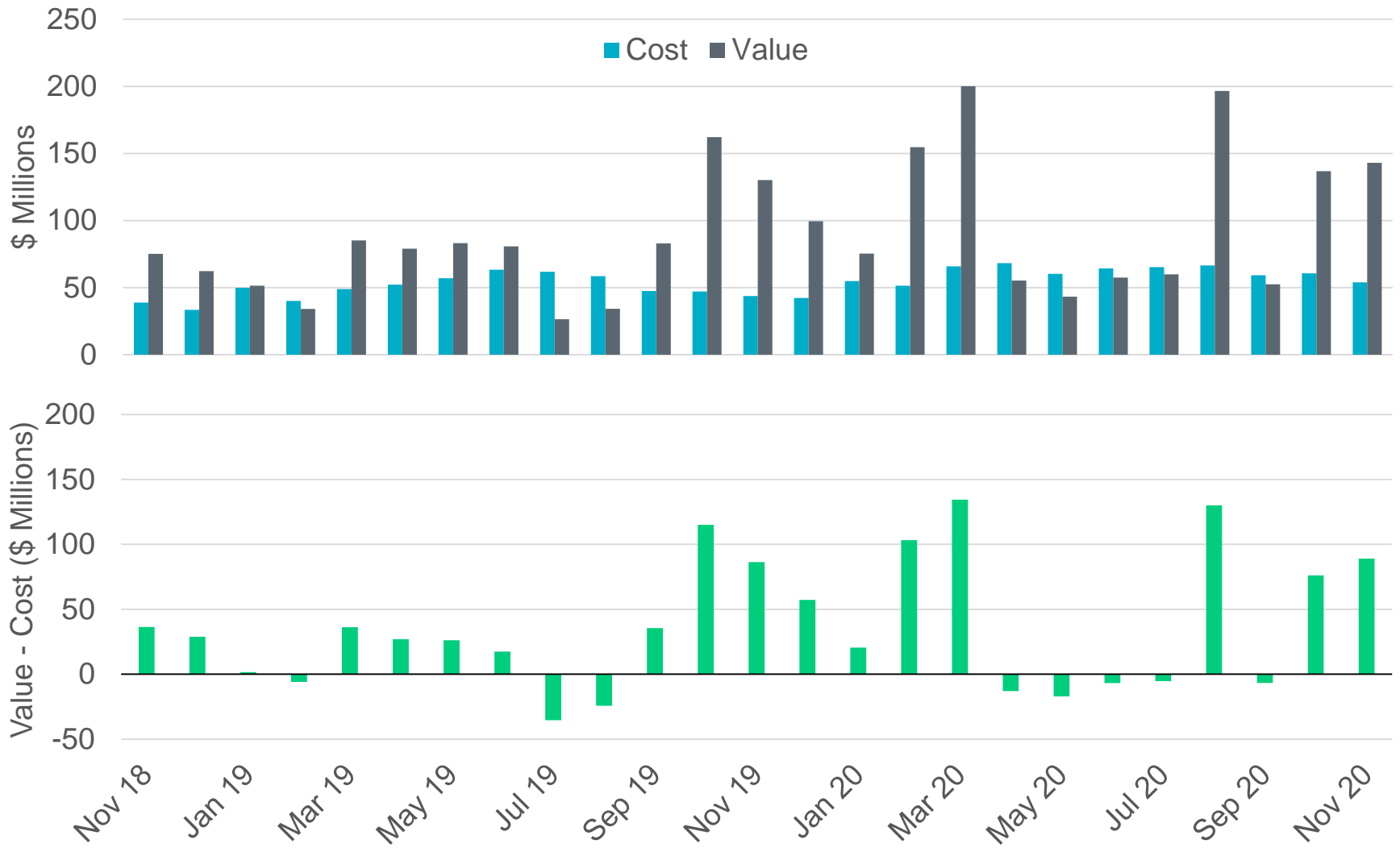
*Averages are weighted by Real-Time Market Load



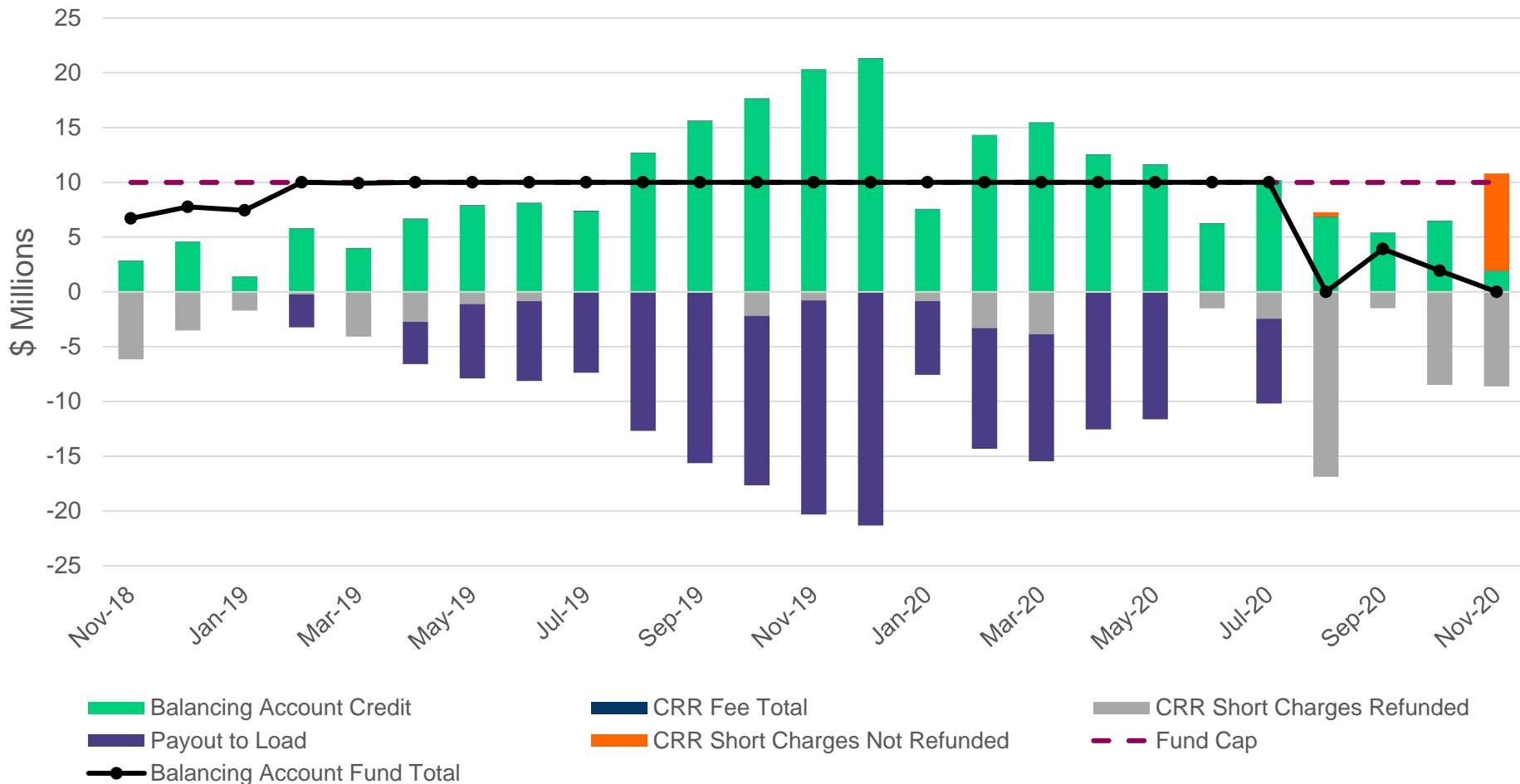
Percentage of Real-Time Load Transacted in the Day-Ahead Market



CRR Value and Cost Differences



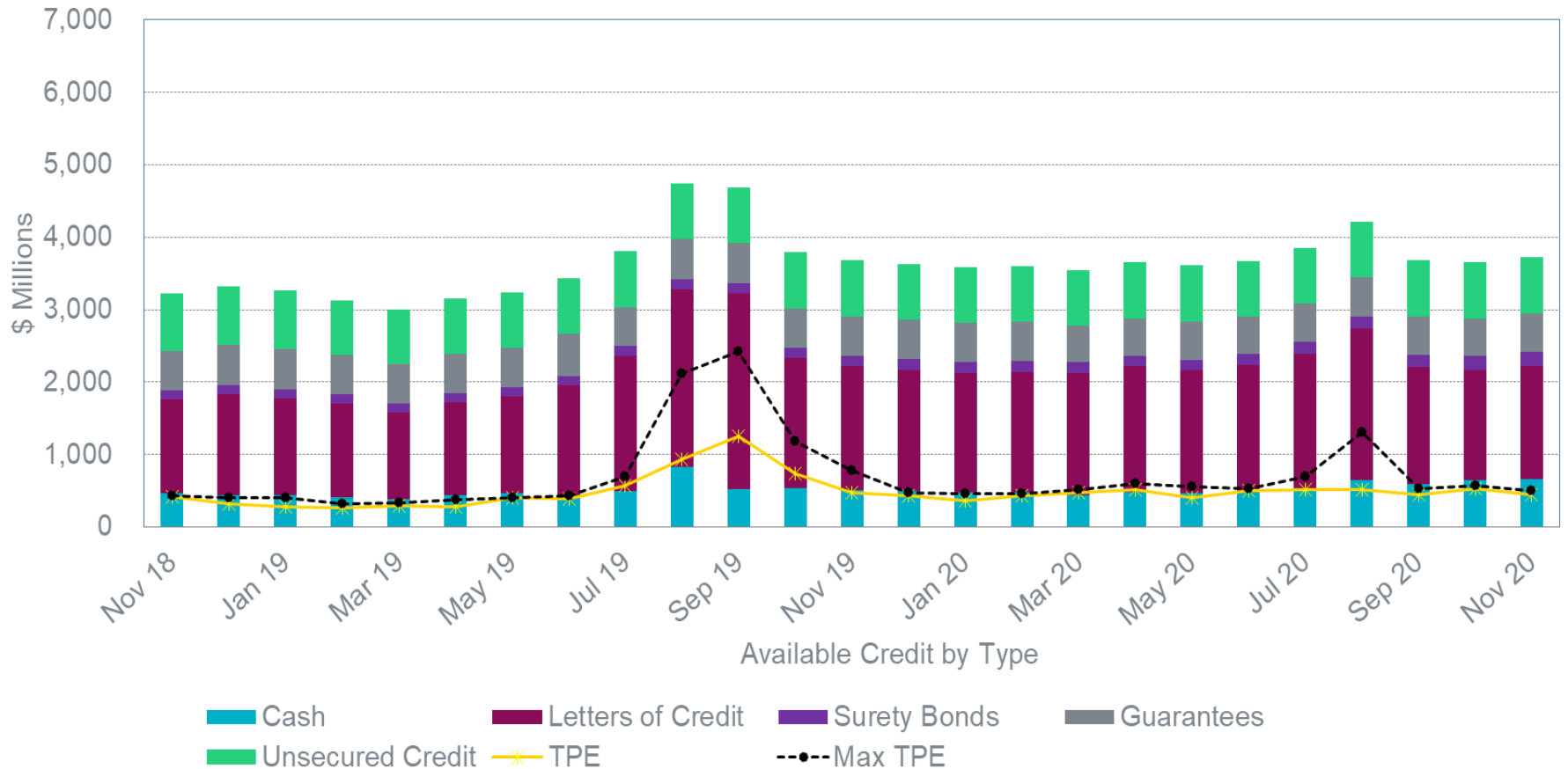
Congestion Revenue Rights settlement payments were not fully funded. Partial funding to settle the CRR Short Charges was provided from the CRR Balancing Account Fund with a remaining amount of \$8.88M of CRR Short Charges not refunded.



Note: Settlements for June 2020 have been adjusted due to DAM price corrections. Settlements for July and August 2020 will change as they are resettled due to DAM price corrections.



Available Credit by Type Compared to Total Potential Exposure (TPE)



*Numbers are as of month end except for Max TPE



Retail Transaction Volumes – Summary – November 2020

Transaction Type	Year-To-Date		Transactions Received	
	November 2020	November 2019	November 2020	November 2019
Switches	1,128,523	1,248,284	144,773	69,866
Acquisition	0	0	0	0
Move - Ins	2,522,083	2,733,451	215,114	210,793
Move - Outs	1,215,342	1,272,009	99,890	100,078
Continuous Service Agreements (CSA)	460,684	795,208	47,330	26,453
Mass Transitions	0	0	0	0
Total	5,326,632	6,048,952	507,107	407,190