



Item 7.1: System Operations Update

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Reliability and Markets Committee Meeting

ERCOT Public

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The following slides represent concepts that could be included in regular Operations updates to the R&M Committee.

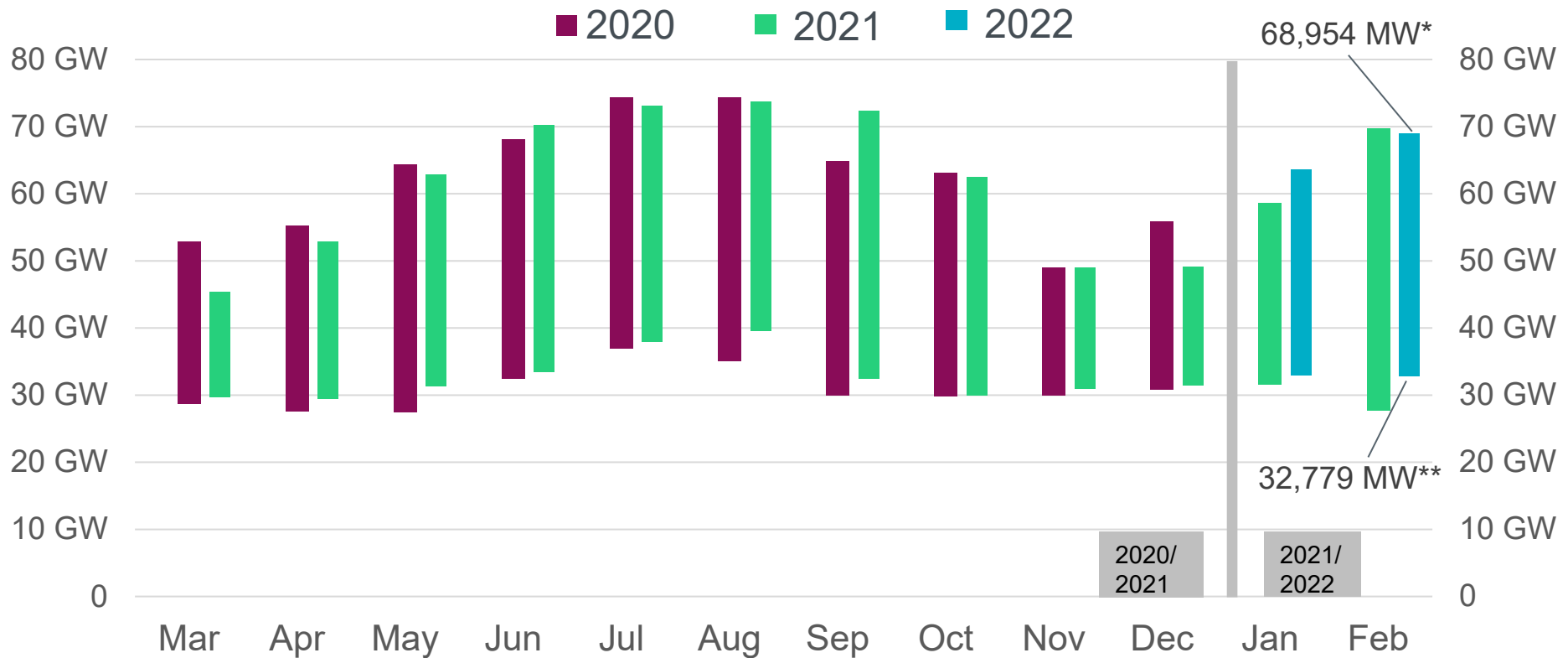
Highlights, Records and Notifications - February

- ERCOT set a maximum peak demand of 68,954 MW* for the month of February, which is 858 MW less than the February 2021 demand of 69,812 MW.
- A solar generation record of 8,735 MW was set on Feb. 27 at 15:47.
- A solar penetration record of 22.40% was set on Feb. 19 at 15:18.
- A wind generation record of 25,408 MW was set on Feb. 22 at 21:57.
- ERCOT issued 6 notifications:
 - 1 OCN issued for the predicted extreme cold weather event for the ERCOT region.
 - 1 OCN issued for the potential of freezing precipitation over the West Texas area and much of North Central area including the DFW area.
 - 1 Advisory issued for the predicted extreme cold weather for the ERCOT region.
 - 1 Advisory issued for the potential of freezing precipitation over the West Texas area and much of North Central area including the DFW area.
 - 1 Advisory for delay in posting of DAM Solution.
 - 1 Watch issued for the predicted extreme cold weather for the ERCOT region.

Operating Days of Interest

- February 2-5
 - Cold weather event.
 - Used RUC to commit generation operating with fuel oil.
 - Procured additional ancillary services.
 - Load forecast used coldest temperature assumptions and wind forecast used worst-case icing assumption.
 - Actual load and wind was favorable compared to forecast.
- February 23-25
 - Cold weather event.
 - Used RUC to commit generation operating with fuel oil.
 - Load forecast used coldest temperature assumptions and wind forecast used worst-case icing assumption.
 - Actual peak load was higher than some of the early forecasts.
 - Actual wind icing was inline with worst-case icing forecast on Feb. 24.

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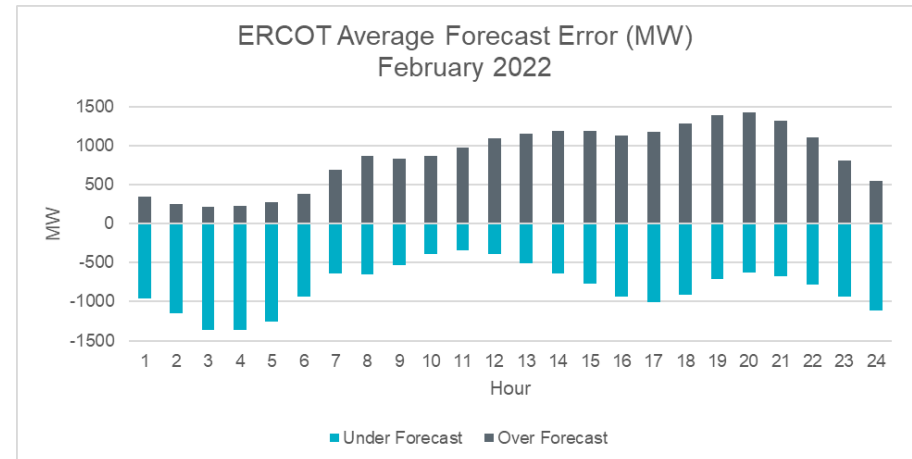
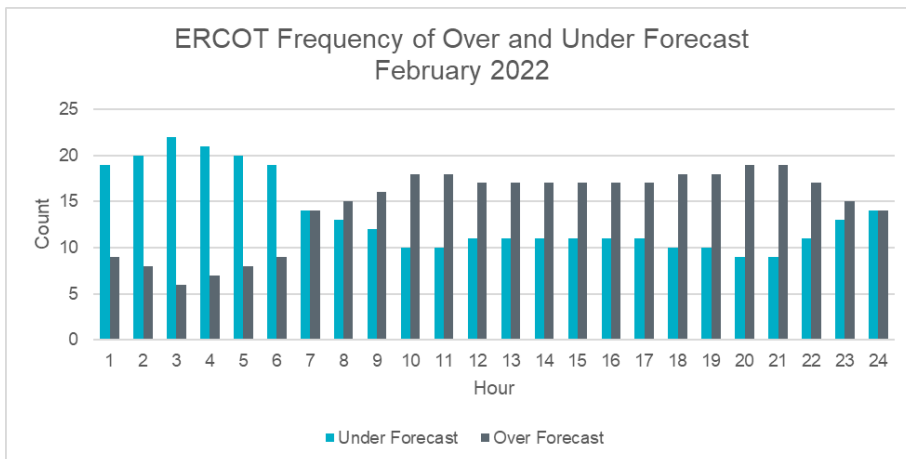
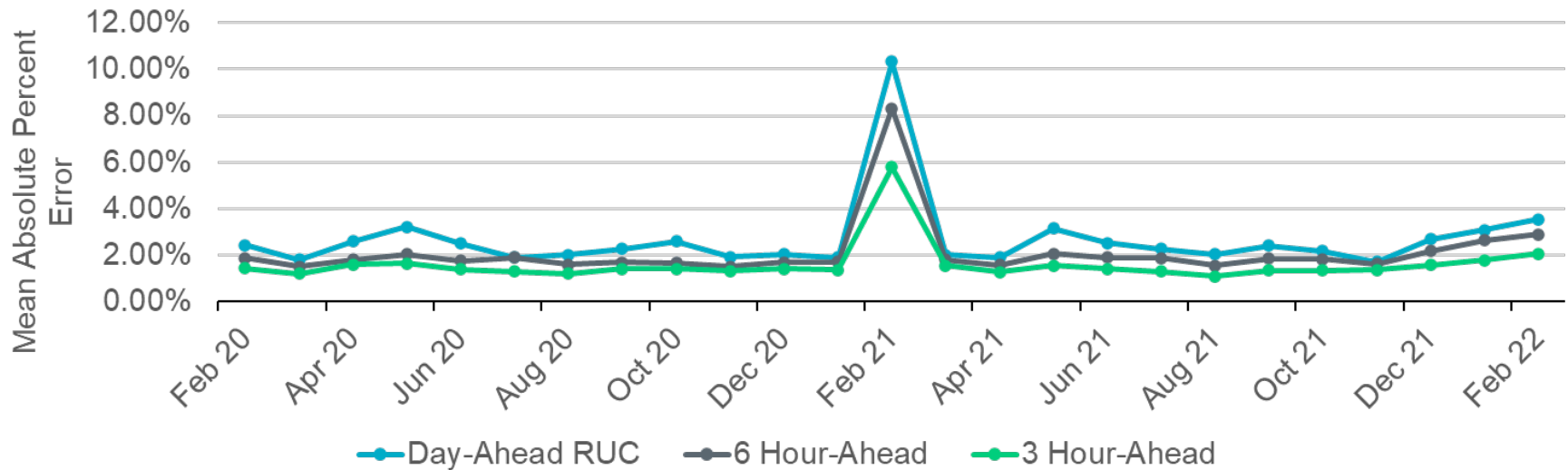
*Based on the maximum net system hourly value from March release of Demand and Energy 2022 report.

**Based on the minimum net system 15-minute interval value from March release of Demand and Energy 2022 report.

Data for latest two months are based on preliminary settlements.



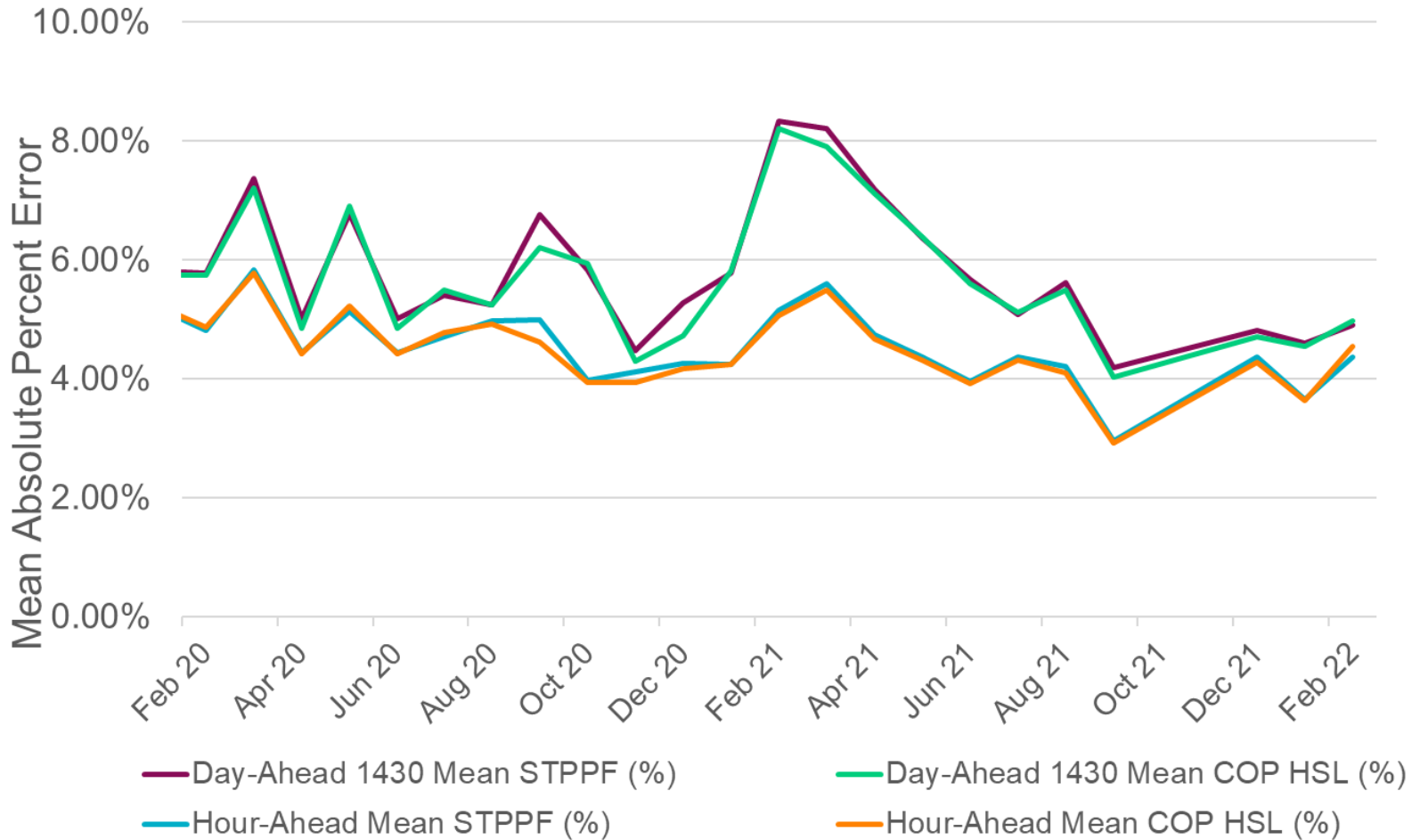
Mid-Term Load Forecast Performance



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



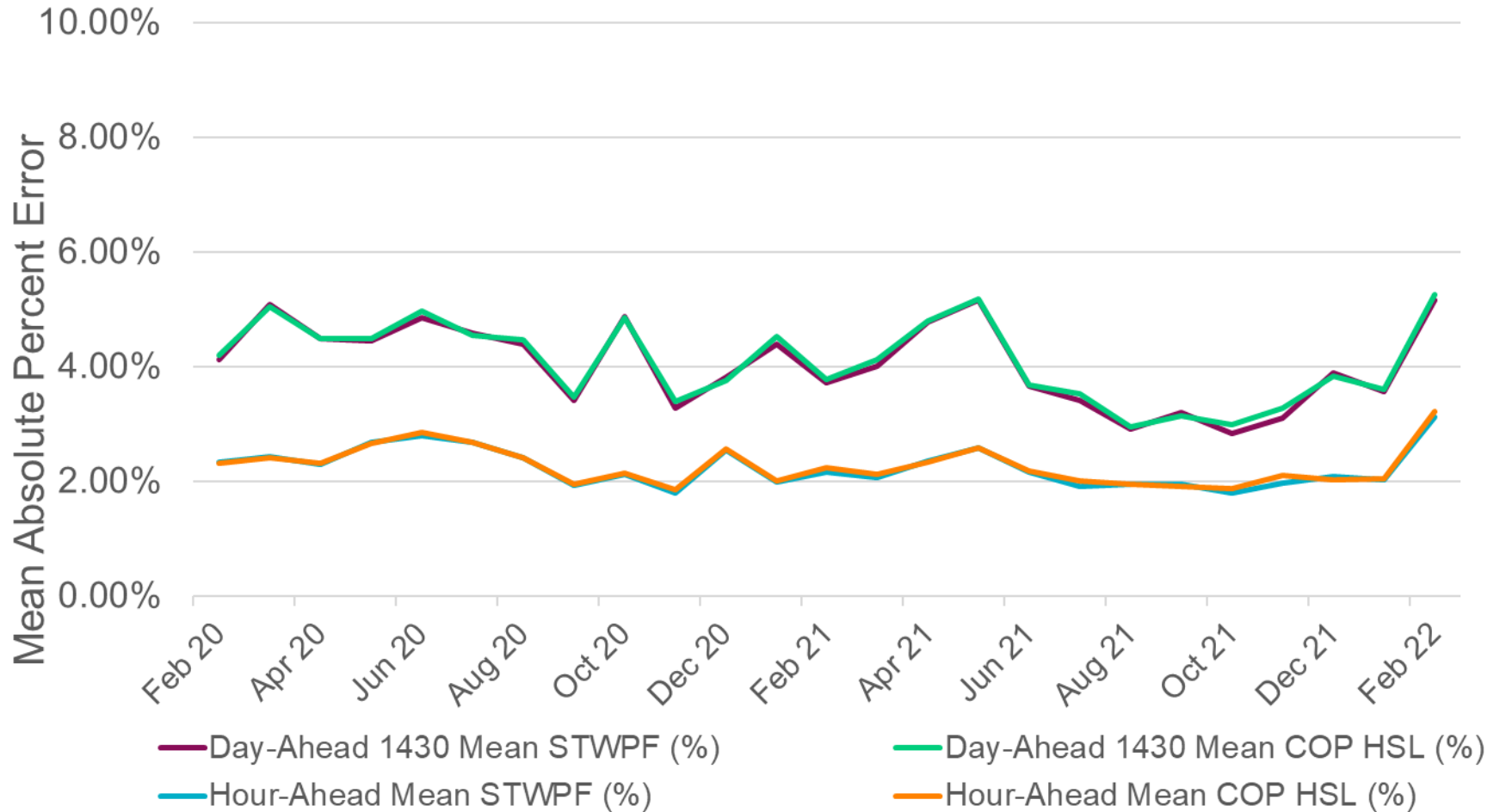
Solar Forecast Performance



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

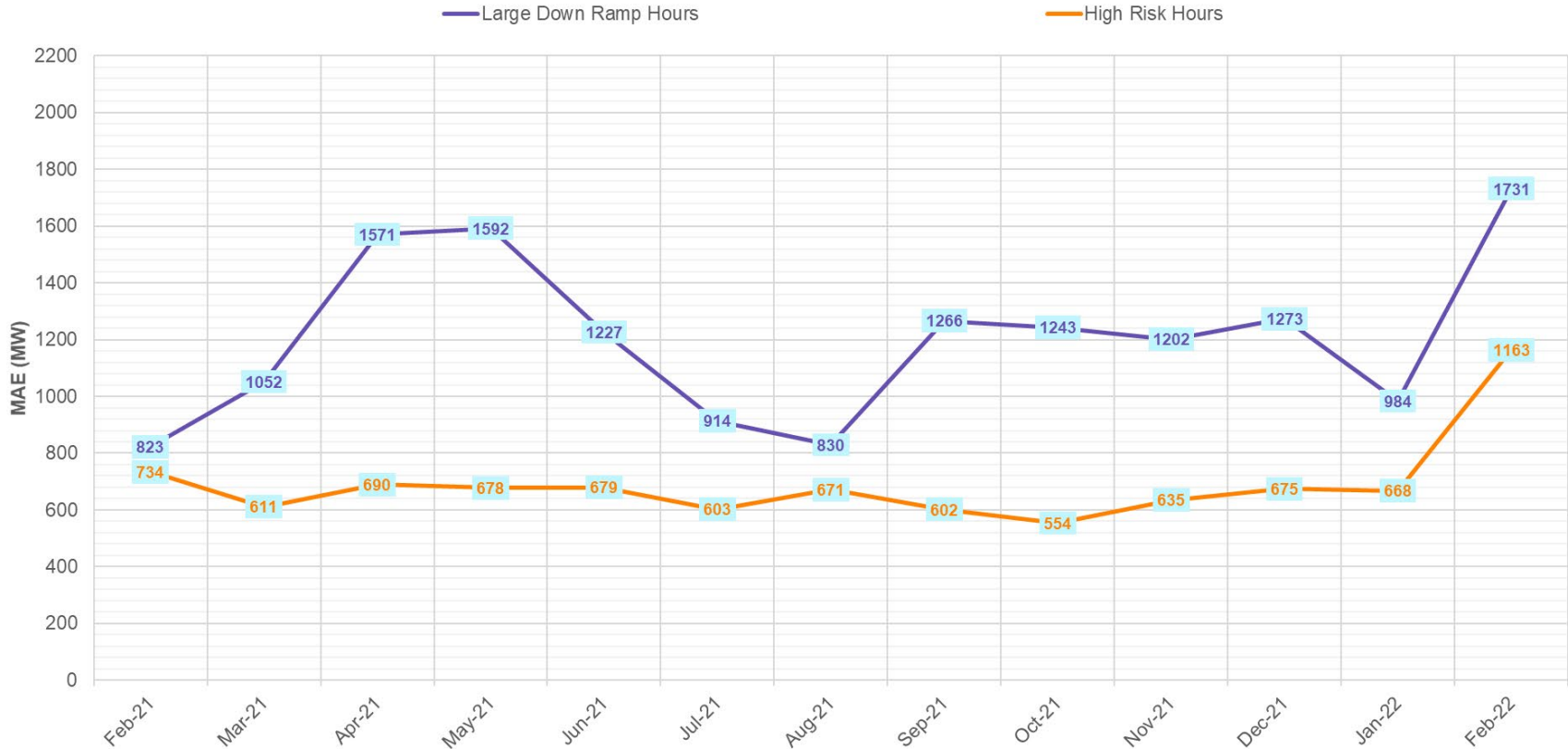


The Short-Term Wind Power Forecast (STWPF) is an ERCOT produced hourly 50% probability of exceedance forecast of the generation in MWh per hour from each Wind Generation Resource.



Hour-Ahead Wind Forecast Performance

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

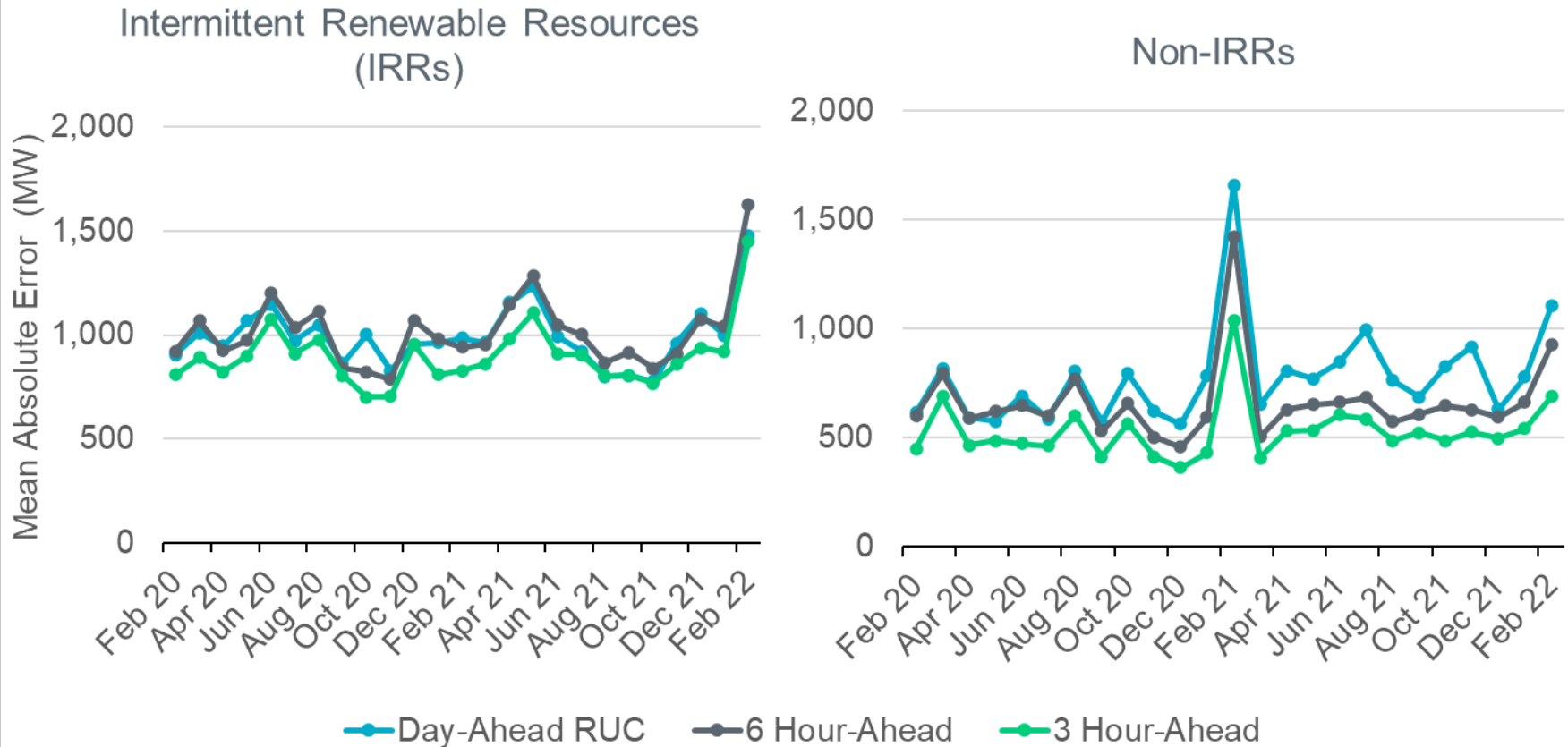


*ERCOT's performance-based payment structure for Wind Forecasts with both vendors incentivizes improvements in forecast performance during hours that are of more importance to operational reliability. This approach is a paradigm shift from the "traditional" methodology of measuring wind forecast performance 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 35,256 MW (as of February 28, 2022).
- The installed capacity of approved Solar Units is 9,960 MW (as of February 28, 2022).



Highest Congestion for 2022 (through February)

Contingency	Overloaded Element	Location	# of 5-min SCED	Estimated Congestion Rent	Planned Transmission Project
WDGSW TO MARSW 138 DBLCKT	Mistletoe Heights - Hemphill 138kV	Dallas-Fort Worth	2078	\$30,437,608.94	
Basecase	WESTEX GTC	West	3514	\$26,282,989.02	
SALSW TO KLNSW 345 DBLCKT	Killeen Switch 345kV	Central	2982	\$14,763,713.92	
TWR(345) JCK-REF27 & JCK-STP18	Hillje - South Texas Project 345kV	South	1590	\$13,488,757.54	
Basecase	NE_LOB GTC	Valley	5841	\$11,915,405.44	The Lower Rio Grande Valley (LRGV) System Enhancement Project (21RPG017) will improve but not eliminate the need for this GTC.
EVRSW TO HLSES 138 DBLCKT	Mistletoe Heights - Hemphill 138kV	Dallas-Fort Worth	1065	\$9,007,490.05	
STP SWITCH to Esperanza LIN 1	Blessing - Pavlov 138kV	South	2209	\$8,551,326.03	
MTFSW TO TRSES 138 AND MTFSW TO CRSCN 138 DBLCKT	Desoto Switch - Red Oak 138kV	Dallas-Fort Worth	67	\$6,231,596.29	
FREDERICKSBURG TRX AT2 138/69	Gillespie 138kV	Central	1122	\$5,733,841.31	
Fowlerton to LOBO 345 LIN1	Bruni Sub 138kV	South	2362	\$5,462,452.47	

