



Item 7.2: System Operations Update

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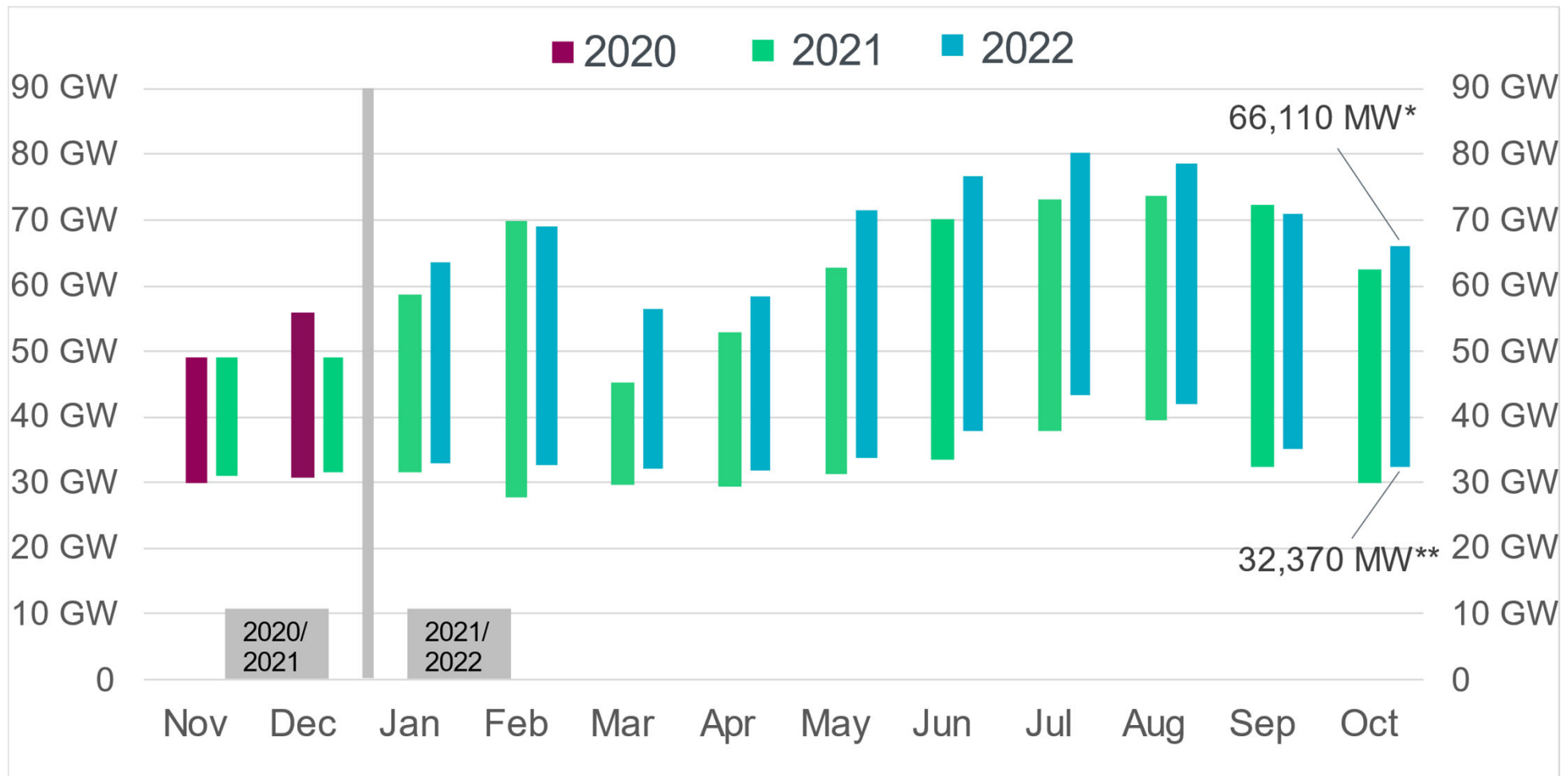
Vice President, System Operations

Reliability and Markets Committee Meeting

ERCOT Public

December 19, 2022

October Peak Demand was 66,110 MW; this was 3,634 MW more than the previous year



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

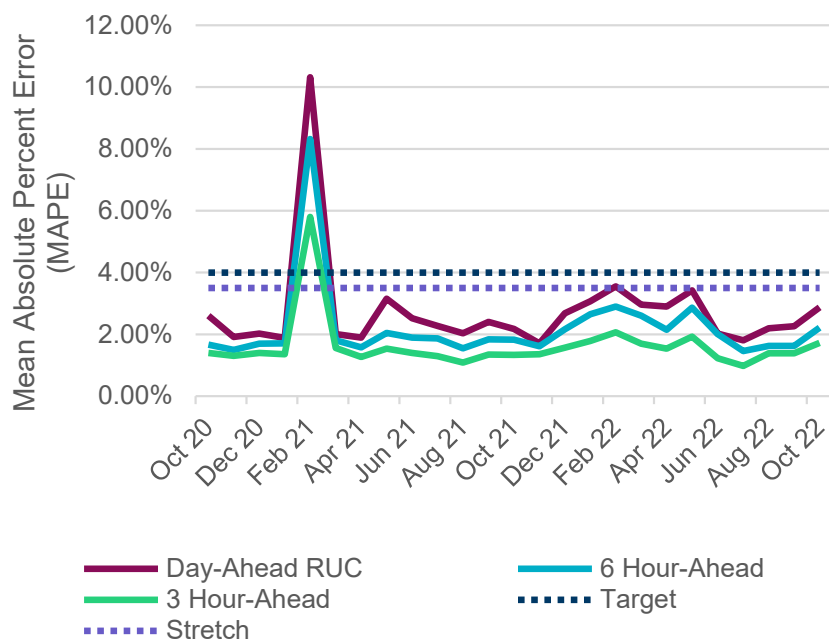
**Based on the minimum net system 15-minute interval value from October release of Demand and Energy 2022 report.

Data for latest two months are based on preliminary settlements.

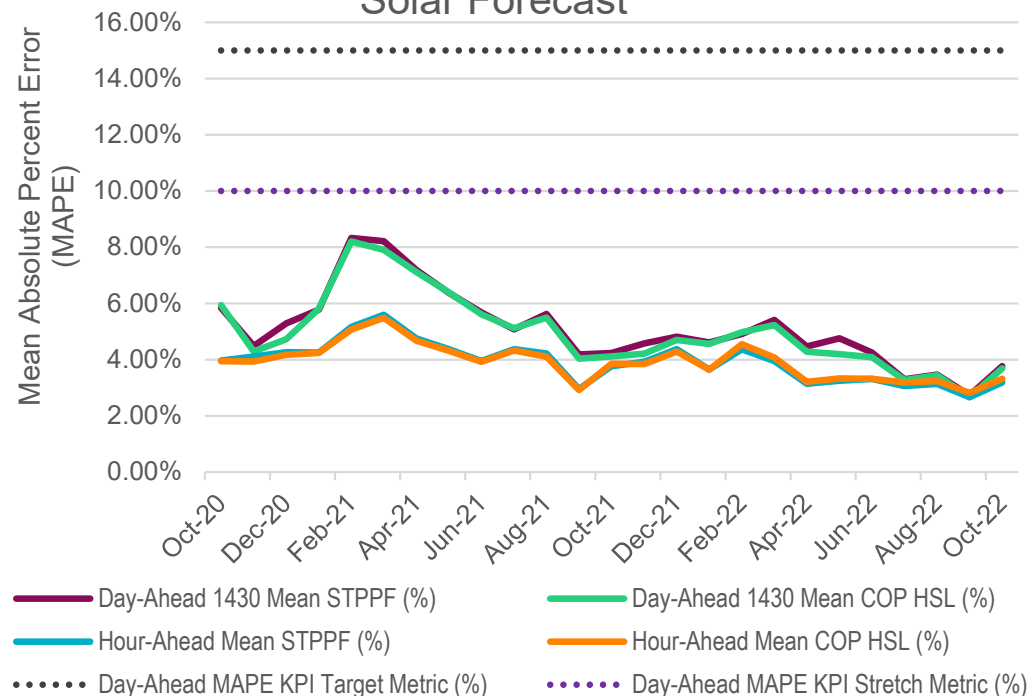


Forecast Performance

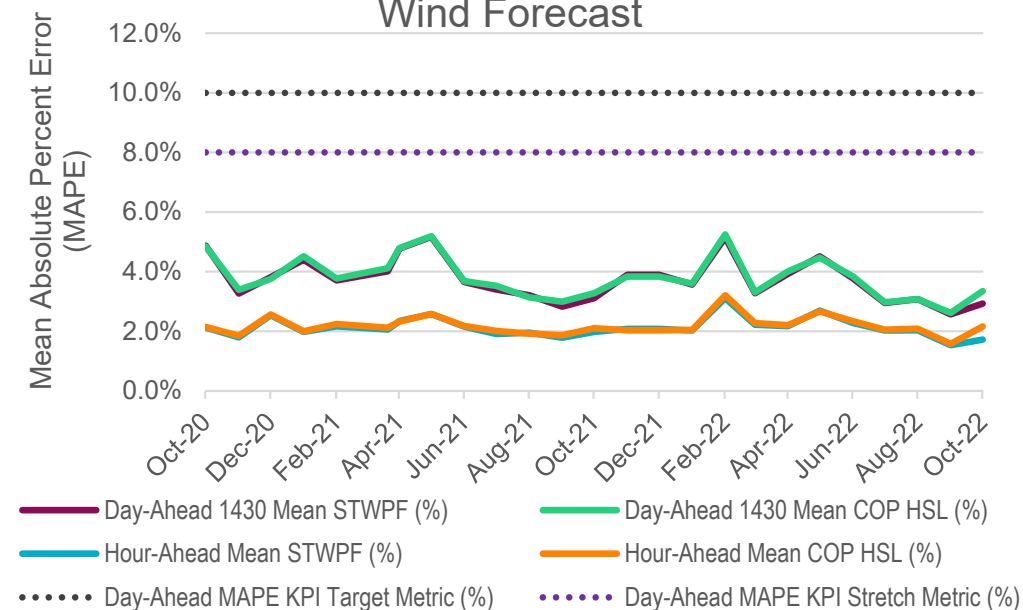
Mid-Term Load Forecast



Solar Forecast

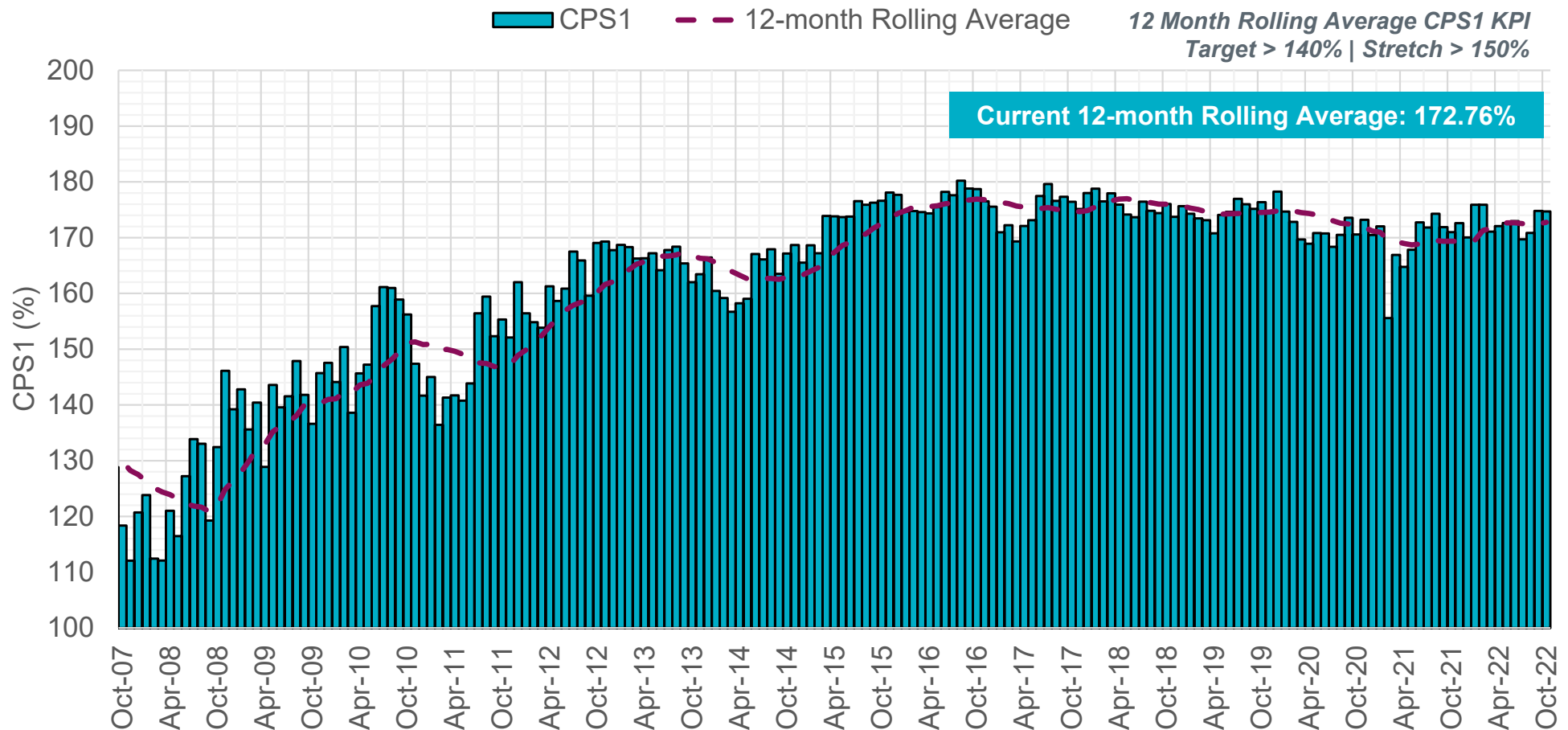


Wind Forecast



Frequency Control - 12-Month Rolling Average CPS1

- Control Performance Standard 1 (CPS-1) is a measure of the frequency control on a power system, pursuant to NERC Standard BAL-001. The 12-month rolling-average of this measure is required to stay above 100%.



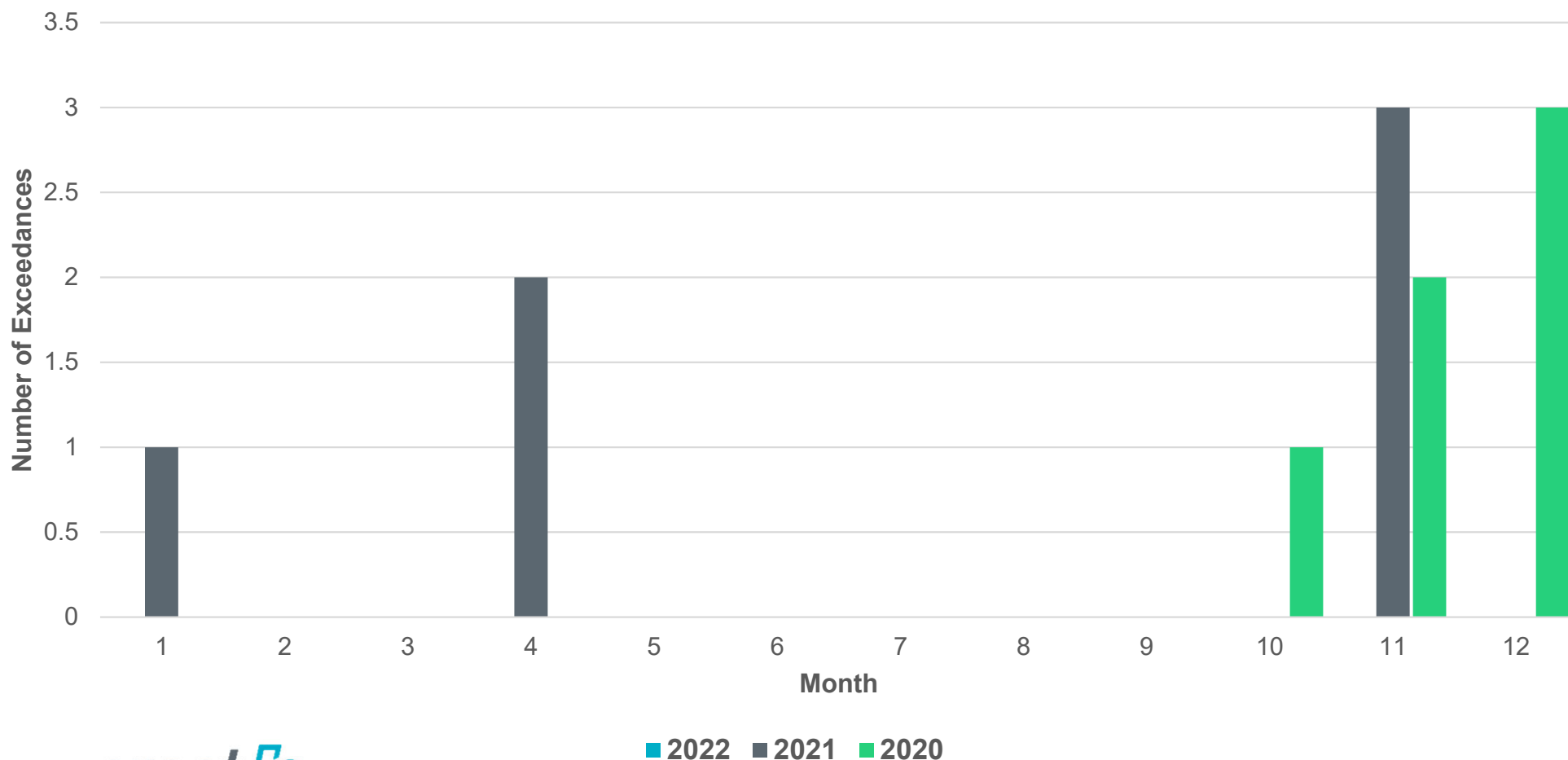
Interconnection Reliability Operating Limits (IROL) Exceedances

- Last IROL exceedance occurred in November 2021.

Monthly IROL Exceedances (January 2020 to Nov 2022)

All exceedances had the duration between 10 second and 10 minutes.

There was no exceedance which lasted for more than 10 minutes.



Special Topics

Comparing Summer 2022 Seasonal Assessment of Resource Adequacy (SARA) Values vs. Actuals at Peak Demand – as requested

- The SARA extreme peak load forecast was 81,567 MW.
- While actual wind output was lower than the SARA base forecast amount (7,370 MW vs. 9,367 MW, respectively), actual output was well above the extreme low wind output assumption of just 263 MW.

	Conditions at Highest Peak Demand (7/20/22)	Final 2022 Summer SARA (****)	Difference
Total Resources, MW	89,017	91,392	(2,375)
Thermal and Hydro	66,081 (*)	64,710	1,371
Private Use Networks, Net to Grid	4,157	4,262	(105)
Switchable Generation Resources	2,515	2,948	(433)
Wind Capacity Contribution	7,370	9,367	(1,997)
Solar Capacity Contribution	8,080	9,254	(1,174)
Non-Synchronous Ties	814	850	(36)
Peak Demand, MW	80,148 (**)	77,317	2,831
Reserve Capacity, MW	8,869	14,075	(5,206)
Reserve Margin	15.2%	22.8%	-7.6%
Total Outages, MW	4,069 (***)	4,105	(36)
Extreme Outage Scenario		9,595	
Capacity Available for Operating Reserves, MW	4,800	9,970	(5,170)

Includes online ESR capacity contribution

Tight reserve due to less wind and solar and more demand

Source: [Final 2022 Summer SARA](#)

* Actual Thermal and Hydro capacity includes online ESR HSL.

** Actual peak demand is based on Demand & Energy report.

*** The outage information in this table was extracted on July 21, 2022.

**** The totals for the Final 2022 Summer SARA column combine multiple rows into a single row in some cases. (e.g., already in-service Thermal and Hydro Resources combined with planned Thermal and Hydro Resources).



Operating Day of Note: November 26

- All margins looked sufficient as of early afternoon; no Reliability Unit Commitments.
- Actual Net Load (Load minus Wind and Solar) for Hour Ending 6PM was 3400 MW higher than had been forecasted as late as 3 hours ahead and 2000 MW higher than forecasted 1 hour ahead, primarily due to load and wind forecast error.
- As solar was going down and load was ramping up to evening peak, wind was also ramping down.
- The 30-minute look-ahead showed that Non-Spin needed to be deployed in order to have sufficient SCED-dispatchable generation to meet the 30-minute ahead load.
- Deployed Offline Non-Spin Reserve Service from ~17:00 until ~18:30. Lowest PRC was 3875 MW.
 - The use of Non-Spin worked as designed to cover forecast errors and net load ramps
 - The level of forecast error was within the amount of Non-Spin procured