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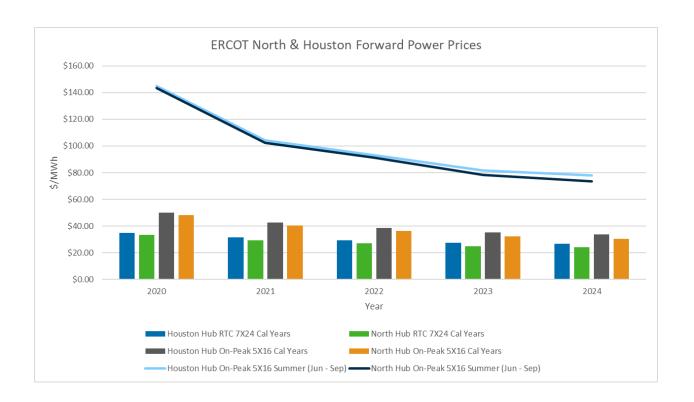
2020 Summer Reserve Margin Improved over 2019 as Renewables Provide Much Needed Generation

On December 4th, 2019, ERCOT released its bi-annual Report on Capacity, Demand and Reserves (CDR). This report provides insight into the coming seasons' supply demand mix as well as the more important upcoming summer reserve margin picture.

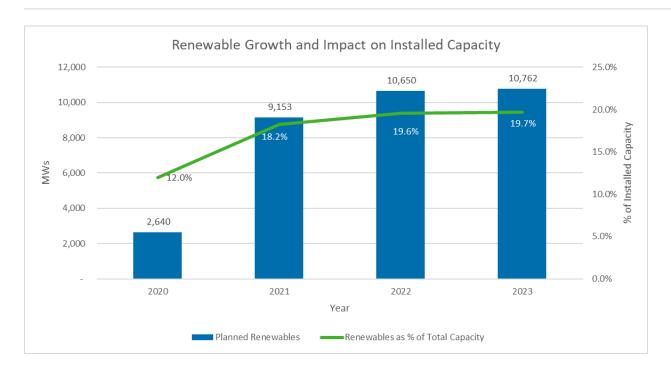
Reserve margin, which is the available capacity above the expected summer peak demand under normal conditions, is forecasted to be 10.6% for summer 2020. This figure is 2% higher than the 8.6% margin reported for summer 2019. Looking further ahead, reserve margins for summer 2021 and summer 2022 are 18.2% and 17.3% respectively.

Based on ERCOT's current interconnection queue, most new generation will come from planned solar and wind projects. In fact, these projects make up about 92% of forecasted capacity additions in each of the next 5 years. Unlike thermal capacity, renewable assets require no fuel costs to produce electricity, so they can offer into the market at zero or even negative prices. This increase in low offer prices is leading to lower prices and bearish market conditions. In this bearish forward market, longer term contracts have more value than short term contracts.

An important caveat to this market pattern is that it will be characterized by an increasingly intermittent supply. Deployment of flexible thermal capacity will be necessary to meet demand, especially in extreme conditions, and can potentially raise total system costs. Summer of 2019 was particularly enlightening to this potentiality as August Real-time system prices averaged over \$130/MWh and reached sustained all time high prices of \$8,9000/MWh for over 3 hours across the month.



Forward Power Prices and Renewable Growth



FERC Rejects PJM Capacity Proposals & Expands MOPR

More than a year after PJM sought FERC approval for changes to its Capacity Market, FERC has finally weighed in and rejected PJM's proposals. PJM's original proposals were intended to address the recent implementation of state authorized subsidies for certain types of generation in the PJM market. At issue is how those state subsidies, and the generators that receive them, should be treated in the PJM capacity auctions that are conducted across the entire PJM footprint. Owners of generation in states that do not have subsidies, or use technology that does not qualify for the subsidies, have argued that the subsidies create an uneven playing field in the capacity market.

PJM had proposed several mechanisms of essentially carving out generation that was receiving state subsidies from the capacity market. FERC rejected those proposals, stating in a news release, "FERC determined that those proposals would unacceptably distort the markets, inhibiting incentives for competitive investment in the PJM market over the long term."

Illinois was the first state to pass subsidies with its Future Energy Jobs Bill, passed in 2016, which provides subsidies for several nuclear plants in the state which were at risk of closure. Several other states have since followed suit, including Pennsylvania, Ohio, and New Jersey. The issue has become contentious at times, with several states threatening to leave PJM over the issue, as PJM has sought ways to re-level the playing field for other generators. After the FERC announcement, several Illinois trade groups called on the state to pass legislation enabling the state to take over procurement of generating capacity and exit the PJM capacity process.

PJM has delayed the base residual capacity auction for 2022-2023 several times, and FERC has now directed PJM to provide a schedule of when that auction will move forward. Today's ruling is highly unlikely to resolve the issues in the PJM capacity market, rather it will likely trigger more legislative, regulatory, and potentially legal action.

ERCOT Releases Official 4CP Results

ERCOT released their official 4CP results for the 2019 season. The results showed no changes in the dates of the monthly peaks and no changes in the time of occurrence of the monthly peaks for June and August. For July, the monthly peak interval was changed from 16:00 to 16:30 on July 30th. For September, the monthly peak interval was changed from 17:00 to 16:45 on September 6th.

Final Dates and Intervals:

June 19th during 17:00

July 30th during 16:30

August 12th during 17:00

September 6th during 16:45