

2019 ERCOT ELECTRICITY MARKET OUTLOOK

December 2018 by LCG Consulting

EXECUTIVE SUMMARY

The Texas energy industry continues to experience an unprecedented transformation. The state saw record wind energy production in 2018 and will continue to see wind growth through 2019. Transmission has been expanded and upgraded in West Texas over the past five years, but more transmission is needed to keep up with the increasing load. In 2017, ERCOT endorsed nearly \$890 million of major transmission projects to serve this growing area. In June 2018, the ERCOT Board endorsed two major projects that will allow ERCOT to reliably serve load, while also reducing congestion in the Far West Texas region. New import and export capabilities are on the horizon, such as through the integration of Lubbock Power & Light and the possible Southern Cross transmission project.

These conditions intensify the challenge to model the system, especially considering unknowns in transmission development, intermittent resources, and a greater focus on ancillary services. At the same time, and for the same reasons, getting a good picture of 2019 and beyond is increasingly important to all ERCOT stakeholders.

LCG Consulting (LCG) has completed a comprehensive hourly simulation of the ERCOT market for 2019 to help stakeholders tackle uncertainties in future ERCOT operations. The simulation discussed in this report relies on the expected demand growth, changes in the makeup of active generation capacity, transmission infrastructure and market operation. It outlines future operation of the ERCOT nodal market, including Locational Marginal Prices (LMPs), load zone prices, hub prices and expected congestion. The report looks at a broad picture of the Texas market; LCG can further customize the report to drill down into details of this market study, such as individual generator performance, hourly LMPs, Congestion Revenue Rights (CRRs), and other information of interest to market participants.

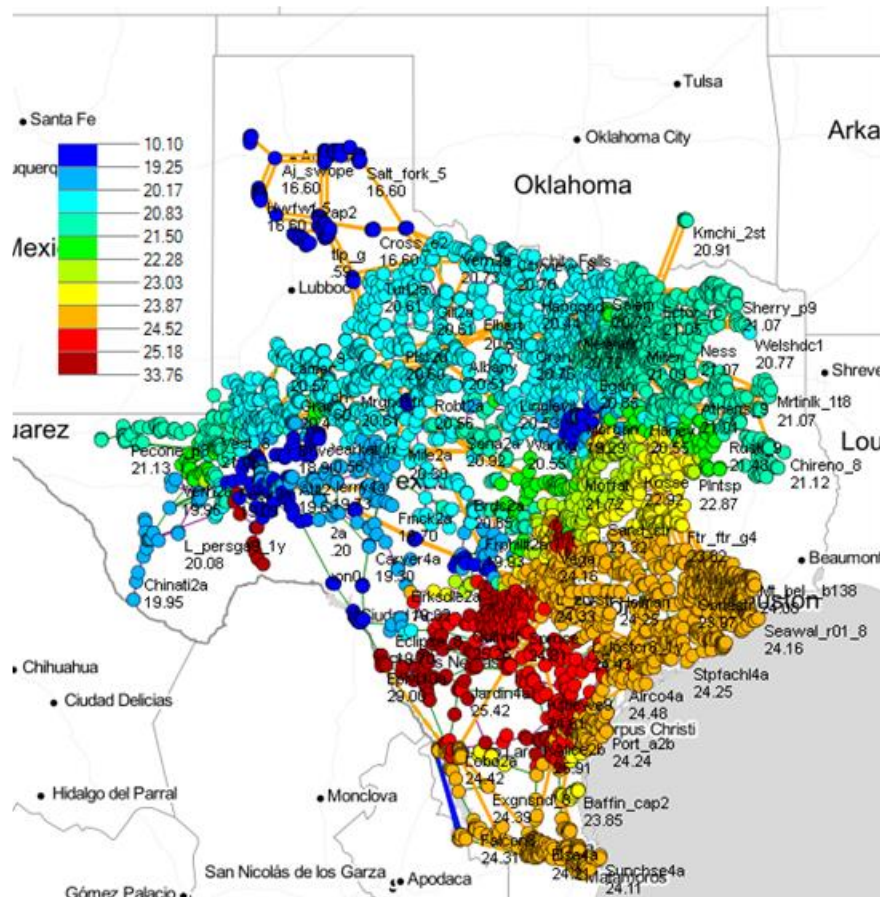
All nodal market simulations were performed using LCG's proprietary UPLAN Network Power Model (NPM) and PLATO-ERCOT data model. UPLAN simulations provide a realistic projection of future physical and financial operations in any electricity market and have been used extensively to model ERCOT. Given the pace of development in ERCOT, simulation of the ERCOT nodal market requires detailed, hourly, node-specific information about generation, transmission, and loads, as well as the economic and engineering parameters. Generator engineering and economic parameters are continuously and meticulously verified and updated in LCG's PLATO-ERCOT data model. Generation expansion and retirement assumptions were based on ERCOT publications. ERCOT publications and other public and private data sources provided electricity demand, transmission network topology including transmission upgrades, list of contingencies analyzed, list of monitored elements, interface definitions and limits.

Some key findings from the ERCOT 2019 simulation include:

- The lowest prices are expected in the West zone, a result consistent with recent trends.
- Congestion on the Panhandle interface is expected to be a significant factor in the ERCOT market in 2019.
- ERCOT-wide wind curtailment is expected to remain low in 2019, maintaining average monthly curtailment of 1.84% for all months through November. However, a significant uptick in curtailment is expected in November and December as a large amount of capacity is scheduled to come online during that month.
- Wind growth is expected to continue to increase its share of overall generation reaching 21.5% in 2019.
- Electricity generation in ERCOT is expected to continue to be supplied primarily from fossil fuels in 2019.

UPLAN forecasts that fossil fuel sources will continue to be the primary source of generation in ERCOT's portfolio for 2019, with the contribution of natural gas and coal generation amounting to 53.2% and 11.3% of total generation, respectively. Share of generation coal has declined in 2019 due to 5GW of retirements by end of 2018. This is made up by increasing contribution from Natural Gas and Wind generation (accounting for 21.5% of total generation in 2019).

Figure below shows a heat map of annual average LMPs at all nodes in the ERCOT region for 2019. Here the majority of high price nodes are observed primarily in Houston and South zone.



Annual Average Nodal LMP Heat Map – 2019

If you are interested in receiving the full report, please contact us at Julie.chien@energyonline.com.



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