

Transmission improvements underway to address unprecedented growth in Far West Texas

In the past year, electricity demand in Far West Texas has increased by 500 megawatts (MW) due to oil and gas activity. In June 2019, load exceeded 4,000 MW for the first time in this region, and ERCOT anticipates this upward trend will continue. The strong load growth is concentrated in Culberson, Reeves, Loving, Winkler and Ward counties. This is an area served by transmission lines that form a loop known as the Culberson Loop.

A number of transmission additions and upgrades have been completed in West Texas over the past five years, but more transmission will be needed to keep up with the increased load. In 2016 and 2017, ERCOT endorsed nearly \$600 million of major transmission projects to serve this growing area. In June 2018, the ERCOT Board endorsed two additional projects that will allow ERCOT to reliably serve load, while also reducing congestion in the Far West Texas region.

The annual growth rate in peak demand from 2013 through 2018 in West Texas was 10%, and this strong growth is expected to continue for the next five years. This far exceeds ERCOT's annual system-wide load growth rate of 1.7% during the same time. ERCOT's annual system-wide load growth rate is expected to increase to 2% from 2019 through 2023.

Transmission improvements

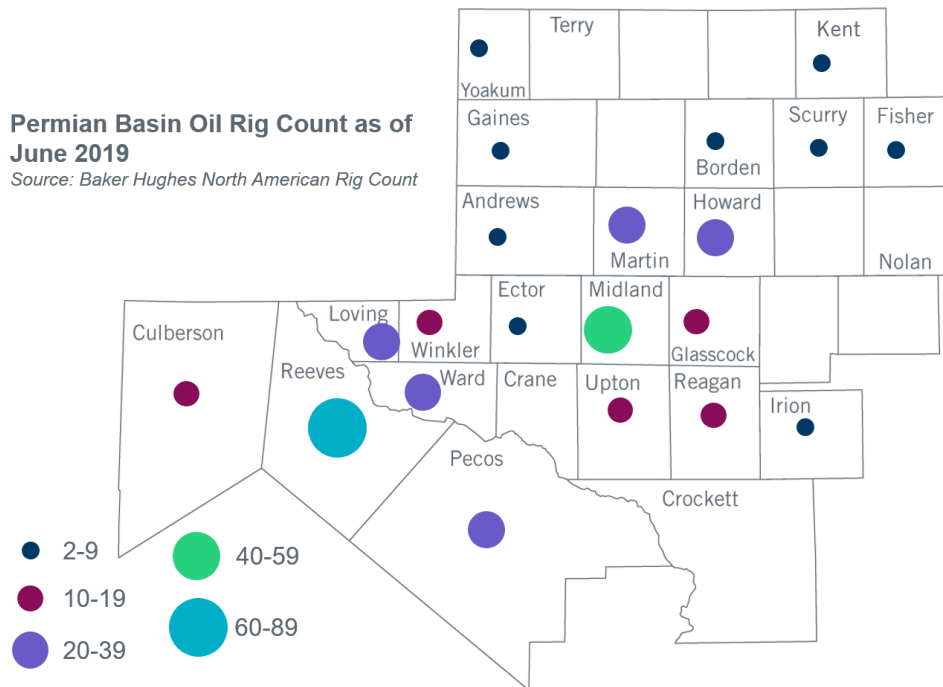
Several transmission projects are underway to address congestion resulting from the significant load growth, especially in the area served by the Culberson Loop. Highlighted projects include four new 345-kV power lines that will

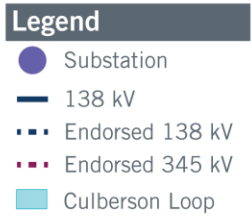
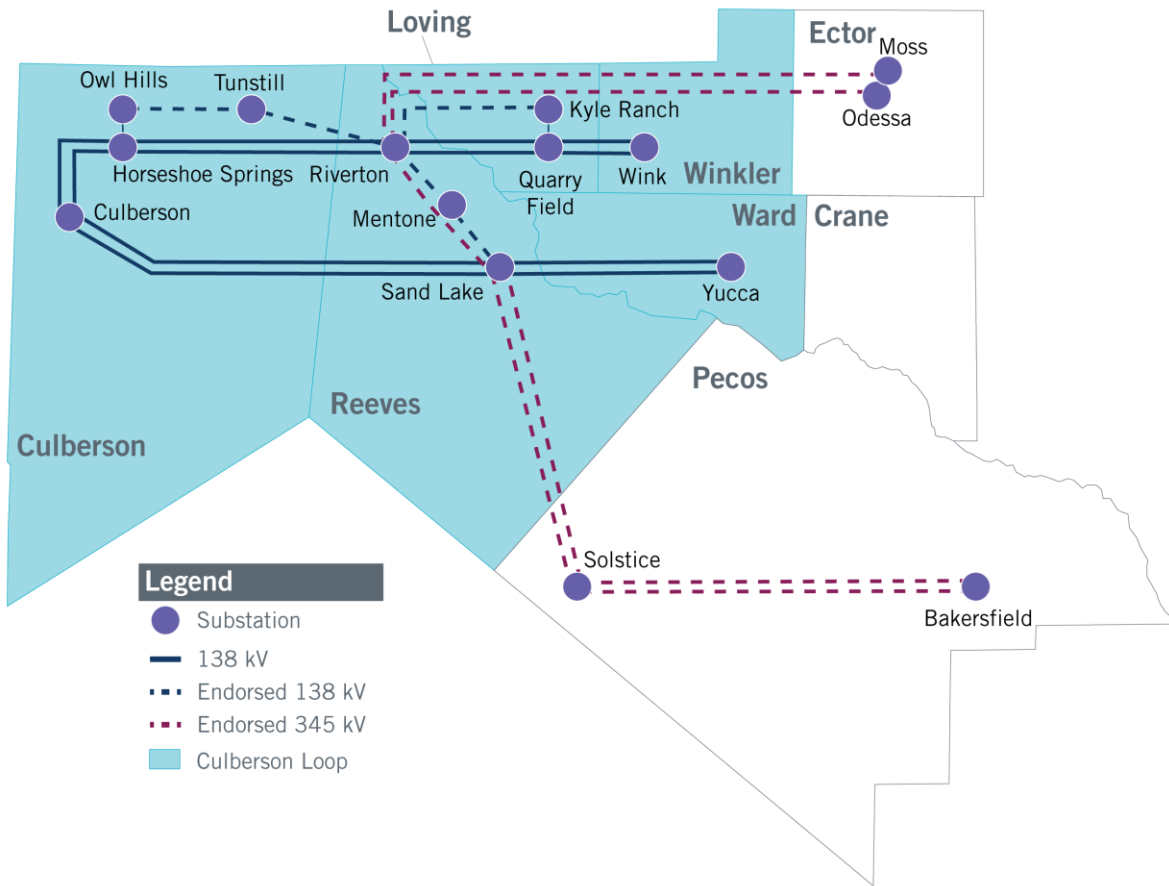
create a double-circuit loop, as well as three new 138-kV power lines that will be double-circuit capable. Together, these lines will span approximately 272 miles and are expected to help support customer demand in the area served by the Culberson Loop.

Other projects include making improvements to several existing 69-kV and 138-kV lines to enhance their load serving capabilities and adding dynamic reactive devices at nearby substations to help support voltage.

Permian Basin Oil Rig Count as of June 2019

Source: Baker Hughes North American Rig Count





Transmission Improvement Project	ERCOT Endorsement	Anticipated Service Dates
Line 69H Rebuild and 138-kV Conversion Project	October 2016	Completed
Permian Basin-Solstice 138-kV line rebuild	October 2016	Completed
Riverton-Sand Lake 138-kV line (new)	November 2016	December 2019
Far West Texas Project 1.0 (New Odessa-Riverton and Bakersfield-Solstice 345-kV lines)	June 2017	December 2020
Far West Dynamic Reactive Devices	June 2018	May 2019 / December 2019
Far West Texas Project 2.0 (New Riverton-Sand Lake-Solstice 345-kV line and Kyle Ranch-Riverton and Horseshoe Spring-Riverton 138-kV lines)	June 2018	May 2019 / May 2020 / November 2020 / December 2020 / May 2021