

What is ERCOT?

The Electric Reliability Council of Texas, or ERCOT, is a nonprofit organization that ensures reliable electric service for 90 percent of the state of Texas. The ERCOT region is one of three electric grid interconnections in the United States and operates as its own interconnection.



ERCOT does not own power lines or generation assets, but it guides all of the moving parts that keep electricity flowing to Texans. The grid operator maintains system reliability by balancing generation and load on the electric system at all times. This is done through a wholesale electricity market that pays resources only for the energy and other reliability services provided to the grid.

ERCOT also provides financial and accounting services for the wholesale market, ensuring that energy transactions are handled appropriately and that the right systems are in place to keep those transactions flowing smoothly.

The grid operator is regulated by the Public Utility Commission of Texas (PUCT) and the Texas Legislature. ERCOT also complies with reliability standards put in place by the North American Electric Reliability Corporation (NERC) and reports to a 16-member Board of Directors.

ERCOT and stakeholders are preparing for the future by developing and evaluating market rules, protocols and technologies to reliably manage a changing electric system.

ERCOT's Mission: We serve the public by ensuring a reliable grid, efficient electricity markets, open access to transmission and retail choice.



2018 Year in Review

A thriving Texas economy and increased electric demand continues to drive electric consumption to new levels in the ERCOT region.

ERCOT experienced record-breaking peak demand in the summer of 2018, and there was sufficient generation to meet the demand. ERCOT entered the summer of 2018 with a historically low reserve margin of 11 percent following the retirement of several coal-fired power plants in late 2017 and early 2018. Enhanced preparations by ERCOT and the PUCT, strong market incentives and excellent system performance kept the grid operating effectively and efficiently.



Developers continue to show interest in building new generation resources in the ERCOT region. A record number of interconnection requests were made in 2018 for new wind, solar, small natural gas peaking units and battery storage projects. ERCOT continues to study the impacts of this changing energy landscape to ensure it is able to maintain system reliability.



ERCOT serves as an information resource to the PUCT and stakeholder groups. In 2018, the grid operator provided studies and analyses related to the planning reserve margin and proposed market design changes. In early 2019, the PUCT directed ERCOT to move forward with the implementation of Real-Time Co-optimization in the ERCOT market.

ERCOT's Core Responsibilities:

Maintain System Reliability

Annual Energy and Peak Demand

Texans in ERCOT consumed a record amount of electricity in 2018. On July 19, the grid operator set a new all-time system-wide peak demand record when electricity demand reached 73,473 MW between 4 and 5 p.m. This new system-wide record surpassed the previous record set in August 2016 by more than 2,300 MW.

ERCOT also set a new winter peak demand record in 2018, when electricity demand reached 65,915 MW on Jan. 17 between 7 and 8 a.m.

In addition to the records set in January and July, ERCOT set three monthly peak demand records in May, June and November.





Annual Energy Use

Consumers used more than 376 billion kilowatt-hours of energy in 2018, a 5 percent increase compared to 2017. Nearly 19 percent of this energy was produced by wind power.



New Generation Development

In 2018, the grid operator saw a 30 percent increase in the number of interconnection requests compared to the prior year. Nearly all of these requests were primarily for renewable and natural gas projects.

ERCOT saw an increase in the number of solar projects, battery storage and small, flexible natural gas peaking units being considered for development.



Ensure Open Access to Transmission

Transmission Improvements

In 2018, electricity demand in Far West Texas increased by nearly 500 MW due to oil and gas activity. The annual growth rate in peak demand for this area is roughly 8 percent and is expected to grow at this rate through 2023. This outpaces the rest of the ERCOT region, which is seeing an annual average growth rate of 1 to 2 percent.

A number of major transmission additions are underway to address the increased load in Far West Texas. In 2018, the ERCOT Board of Directors endorsed the addition of second circuits on two previously-endorsed 345kV lines and a new double-circuit 345-kV line. These improvements will allow ERCOT to reliably serve load, while also reducing congestion.



Protecting ERCOT's Systems from Cyber Attacks

The grid operator follows a U.S. government-supported framework to identify and mitigate cyber threats. This framework consists of standards, guidelines and practices to promote the protection of critical infrastructure.

ERCOT also engages with local, state and federal agencies to enhance its security presence and collaborate on best practices for detecting and responding to cyber threats. Provide Industry Training

Facilitate a Competitive Retail Market



A cross-functional team successfully developed ERCOT's 2019-2023 Strategic Plan, which includes key business drivers that will shape ERCOT's strategies and objectives for the next five years.

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Strategic Plan 2019-2023

Facilitate a Competitive Wholesale Market

Incorporating New Technologies in ERCOT

In 2018, ERCOT worked with stakeholders to develop a standard approach for obtaining the data needed to map registered Distributed Energy Resources (DERs) to their appropriate transmission loads. Mapping registered DER units to their locations will improve situational awareness and help grid operators more accurately assess ERCOT system conditions.



In the future, energy storage may also be a significant resource in ERCOT. More than 2,300 MW of new battery capacity was under study as of December 2018. ERCOT has limited visibility into the operational status of these resources and is working with energy storage owners and developers to improve how information is shared with ERCOT.

Variable Generation

Wind and solar power continue to grow in the ERCOT region. Installed wind capacity reached 21,751 MW in 2018, and installed solar capacity increased to 1,719 MW. Both resources are expected to increase significantly by the end of 2019.

	2018 - 21,751 MW
1	2017 - 20,682 MW
Wind capacity 2014-2018	2016 - 17,604 MW
	2015 - 15,764 MW
	2014 - 12,470 MW
	2018 - 1,719 MW
	2017 - 1,000 MW
Solar capacity	2016 - 556 MW
	2015 - 288 MW
	2014 - 193 MW

Instantaneous wind penetration record: 54.6 percent Dec. 27, 2018 at 4:57 a.m. Instantaneous wind output record: 19,168 MW Dec. 14, 2018 at 12:07 a.m.

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