

ERCOT's use of Energy Emergency Alerts

ERCOT has a series of emergency procedures that may be used when operating reserves drop below specified levels. These procedures are designed to protect the reliability of the electric system as a whole and prevent an uncontrolled system-wide outage.

Per ERCOT Protocols and NERC requirements, the grid operator is required to declare an Energy Emergency Alert (EEA) when operating reserves drop below 2,300 MW or system frequency cannot be maintained above certain levels and durations. There are three levels of EEA, depending on the amount of operating reserves that are available to meet the electric demand on the system.

When ERCOT issues an EEA, it is able to take advantage of additional resources that are only available during scarcity conditions. Resources include demand response that is procured specifically for these types of conditions (Emergency Response Service and other demand response from Transmission Operators), use of resources that are normally set aside to provide operating reserves (including contracted load reduction from some industrial facilities), additional generation or imports from neighboring regions, and voluntary conservation by consumers.

If all of the EEA tools listed above are insufficient, rotating outages are required to help preserve the reliability of the system as a whole. However, rotating outages have only been implemented three times in the history of ERCOT.

Energy Emergency Alert levels

EEA Level 1

When operating reserves drop below 2,300 MW and are not expected to recover within 30 minutes, grid operators can call on all available power supplies, including power from other grids, if available.

EEA Level 2

When operating reserves are less than 1,750 MW and are not expected to recover within 30 minutes, ERCOT can reduce demand on the system by interrupting power from large industrial customers who have contractually agreed to have their electricity turned off during an emergency. ERCOT can also use demand response resources that have been procured to address tight operating conditions.

EEA Level 3

An EEA3 is declared if operating reserves cannot be maintained above 1,375 MW. If conditions do not improve, continue to deteriorate or operating reserves drop below 1,000 MW and are not expected to recover within 30 minutes, ERCOT will order transmission companies to implement rotating outages.

Which scenarios may result in scarcity conditions?

Texas is generally hot during the summer, but ERCOT's electric use typically peaks during sustained periods of above-normal or extreme temperatures, when heat begins to build up over time. ERCOT's summer peaks are driven largely by a combination of high temperatures across our largest urban load centers (i.e., Dallas/Fort Worth, Houston, San Antonio and Austin).

Based on historical weather data, the following combinations result in normal, above-normal and extreme weather conditions in the ERCOT region:

- **Normal:** temperatures are 102 degrees in Dallas, 102 degrees in Austin/San Antonio and 96 degrees in Houston
- **Above-normal:** temperatures are 104 degrees in Dallas, 104 degrees in Austin/San Antonio and 98 degrees in Houston
- **Extreme:** temperatures are 106+ degrees in Dallas, 105+ degrees in Austin/San Antonio and 100+ degrees in Houston

While a combination of above-normal or extreme temperatures across multiple urban load centers may result in scarcity conditions, other factors can also increase the likelihood of tight operating conditions. Significant generation outages or low wind output may make it difficult for grid operators to balance generation and load, even when electric consumption is only moderately high. In these types of scenarios, it may be necessary for grid operators to implement ERCOT's emergency operating procedures to maintain system reliability.

What is a rotating outage?

Rotating outages are controlled, temporary interruptions of electrical service implemented by utilities when it is necessary for ERCOT to reduce demand on the system. This type of demand reduction is only used as a last resort to preserve the reliability of the electric system as a whole.

In these situations, each utility is required to lower the demand on its system based on its percentage of the historic ERCOT peak demand. While each utility is responsible for determining how to implement the required demand reduction, most utilities use rotating outages for this purpose. Rotating outages primarily affect residential neighborhoods and small businesses and are typically limited to 10 to 45 minutes before being rotated to another location.

ERCOT has initiated system-wide rotating outages three times in the history of ERCOT (Dec. 22, 1989, April 17, 2006 and Feb. 2, 2011).