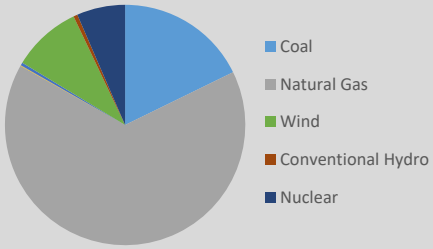
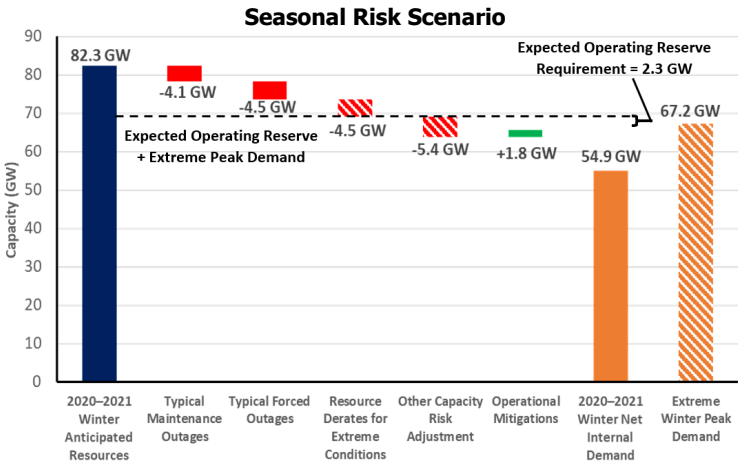
Texas RE-ERCOT

The Electric Reliability Council of Texas (ERCOT) is the ISO for the ERCOT Interconnection and is located entirely in the state of Texas; it operates as a single Balancing Authority. It also performs financial settlement for the competitive wholesale bulk-power market and administers retail switching for nearly 8 million premises in competitive choice areas. ERCOT is governed by a board of directors and subject to oversight by the Public Utility Commission of Texas and the Texas Legislature.

ERCOT is a summer-peaking Regional Entity that covers approximately 200,000 square miles, connects over 46,500 miles of transmission lines, has 650 generation units, and serves more than 25 million customers. Texas RE is responsible for the regional RE functions described in the *Energy Policy Act of 2005* for the ERCOT Regional Entity.



On-Peak Generation Fuel Mix



Texas RE-ERCOT Resource Adequacy Data			
Demand, Resource, and Reserve Margins	**2019–2020 WRA**	**2020–2021 WRA**	**2019–2020 vs. 2020–2021 WRA**
Demand Projections	**MW**	**MW**	**Net Change (%)**
Total Internal Demand (50/50)	62,257	57,699	-7.3%
Demand Response: Available	2,685	2,764	2.9%
Net Internal Demand	59,572	54,935	-7.8%
Resource Projections	**MW**	**MW**	**Net Change (%)**
Existing-Certain Capacity	79,741	80,715	1.2%
Tier 1 Planned Capacity	1,191	1,359	14.1%
Net Firm Capacity Transfers	50	210	320.0%
Anticipated Resources	80,982	82,284	1.6%
Existing-Other Capacity	509	614	20.6%
Prospective Resources	82,284	82,898	0.7%
Reserve Margins	**Percent (%)**	**Percent (%)**	**Annual Difference**
Anticipated Reserve Margin	35.9%	49.8%	13.9
Prospective Reserve Margin	38.1%	50.9%	12.8
Reference Margin Level	13.75%	13.75%	0.0

Risk Scenario Summary

Operating mitigations and EEAs may be needed under extreme demand and extreme resource derated conditions studied.

Scenario Assumptions

- **Extreme Peak Load:** Based on 2011 historic winter peak load
- **Typical Outages:** A capacity derate for thermal resources based on historical averages (Wind, solar, and hydro outages are accounted for in capacity contribution percentages.)
- **Derates for Extreme Conditions:** The expected amount of natural-gas-fired generator derates/outages due to natural gas curtailment at the time of an extreme peak load
- **Other Capacity Risk Adjustment:** Low wind output based on the fifth percentile of hourly wind capacity factors (hourly MW output as a percentage of installed capacity) associated with the 100 highest net load hours (load minus wind output) for the 2015/2016–2019/2020 winter peak load seasons.
- **Operational Mitigations.** Additional resources (e.g., switchable generation resources, additional imports, voltage reduction, and mothballed capacity) to support maintaining operating reserves that are not already counted in WRA reserve margins

Highlights

- ERCOT anticipates no reliability issues for the upcoming winter season and should have sufficient generation resources available to meet system-wide peak demand. ERCOT's expected winter peak load accounts for an economic growth projection prepared in April 2020.
- ERCOT also expects to have sufficient resources under scenarios that assume low wind output as well as extreme peak load conditions with an associated increase in unit outages and derates due to weather-related natural gas supply disruptions.
- An additional 5,424 MW of planned natural gas, wind, and solar capacity is projected to be added by the start of the winter season based on developer information provided to ERCOT. This amount equates to 1,359 MW of capacity available during winter peak load periods.
- Texas RE and ERCOT conducted their ninth winter Generator Weatherization Workshop on September 3, 2020, where generator operators and plant engineers presented their experiences with recent extreme weather events and covered lessons learned, best practices, and reliability improvements.