

**PRELIMINARY**  
**Seasonal Assessment of Resource Adequacy for the ERCOT Region (SARA)**  
**Winter 2020/2021**

**SUMMARY**

The Electric Reliability Council of Texas (ERCOT) anticipates there will be sufficient installed generating capacity available to serve system-wide forecasted peak demand this winter (December 2020-February 2021).

“We study a range of normal to extreme scenarios prior to each season to determine whether there are any operational risks associated with meeting the forecasted peak demand,” said Manager of Resource Adequacy Pete Warnken. “At this time, our assessments show there will be adequate generation for winter.”

The peak demand forecast was developed using revised Moody’s economic data obtained in April 2020. The preliminary winter SARA includes a peak demand forecast of 57,699 MW, which is well below the winter peak demand record of 65,915 MW set on Jan. 17, 2018. The forecast is based on normal weather conditions during winter peak periods, from 2004 through 2018.

An additional 1,359 MW of planned winter-rated resource capacity is expected to be added between now and the start of the winter season.

The preliminary winter SARA includes a unit outage forecast of 8,617 MW based on normal winter weather conditions. For the extreme outage scenario included in the assessment, ERCOT is now using the region’s most recent cold weather event that occurred on Jan. 17, 2018 along with a three-year outage history to calculate the amount of potential outages.

Due to the increased amount of renewables on the ERCOT system, the grid operator has also included a low wind output scenario in the preliminary winter SARA. Moving forward, ERCOT will begin including a low wind output scenario in all of its seasonal assessments.

The final winter SARA for 2020-21 will be released in early November.

**Seasonal Assessment of Resource Adequacy for the ERCOT Region**  
**Winter 2020/21 - Preliminary**  
**Release Date: September 2, 2020**

**Forecasted Capacity and Demand**

Operational Resources (thermal and hydro), MW	67,547	Based on current Seasonal Maximum Sustainable Limits reported through the unit registration process
Switchable Capacity Total, MW	3,710	Installed capacity of units that can interconnect with other Regions and are available to ERCOT
Less Switchable Capacity Unavailable to ERCOT, MW	-568	Based on survey responses of Switchable Resource owners
Available Mothballed Capacity, MW	0	Based on seasonal Mothball units plus Probability of Return responses of Mothball Resource owners
Capacity from Private Use Networks, MW	3,631	Average grid injection during the top 20 winter peak load hours over the last three years, plus the forecasted net change in generation capacity available to the ERCOT grid pursuant to Nodal Protocol Section 10.3.2.4.
Coastal Wind, Peak Average Capacity Contribution, MW	1,480	Based on 43% of installed capacity for coastal wind resources (winter season) per ERCOT Nodal Protocols Section 3.2.6.2.2
Panhandle Wind, Peak Average Capacity Contribution, MW	1,411	Based on 32% of installed capacity for panhandle wind resources (winter season) per ERCOT Nodal Protocols Section 3.2.6.2.2
Other Wind, Peak Average Capacity Contribution, MW	3,251	Based on 19% of installed capacity for other wind resources (winter season) per ERCOT Nodal Protocols Section 3.2.6.2.2
Solar Utility-Scale, Peak Average Capacity Contribution, MW	254	Based on 7% of rated capacity for solar resources (winter season) per Nodal Protocols Section 3.2.6.2.2
Storage, Peak Average Capacity Contribution, MW	0	Based on 0% of rated capacity (winter season); resources assumed to provide regulation reserves rather than sustained capacity available to meet peak loads
RMR Capacity to be under Contract	0	
Capacity Pending Retirement, MW	0	Announced retired capacity that is undergoing ERCOT grid reliability reviews pursuant to Nodal Protocol Section 3.14.1.2
Non-Synchronous Ties, Capacity Contribution, MW	838	Based on net imports during winter 2013/2014 Energy Emergency Alert (EEA) intervals
Planned Thermal Resources with Signed IA, Air Permits and Water Rights, MW	317	Based on in-service dates provided by developers
Planned Coastal Wind with Signed IA, Peak Average Capacity Contribution, MW	254	Based on in-service dates provided by developers and 43% winter capacity contribution for coastal wind resources
Planned Panhandle Wind with Signed IA, Peak Average Capacity Contribution, MW	0	Based on in-service dates provided by developers and 32% winter capacity contribution for panhandle wind resources
Planned Other Wind with Signed IA, Peak Average Capacity Contribution, MW	747	Based on in-service dates provided by developers and 19% winter capacity contribution for other wind resources
Planned Solar Utility-Scale, Peak Average Capacity Contribution, MW	41	Based on in-service dates provided by developers and 7% winter capacity contribution for solar resources
Planned Storage, Peak Average Capacity Contribution, MW	0	Based on in-service dates provided by developers and 0% winter capacity contribution for storage resources
[a] Total Resources, MW	82,912	
[b] Peak Demand, MW	57,699	Based on average weather conditions at the time of the winter peak demand from 2004 – 2018, and updated to reflect a revised economic growth forecast prepared in April 2020
[c] Reserve Capacity [a - b], MW	25,213	

**Range of Potential Risks**

	Forecasted Season Peak Load	Load / Typical Generation Outages During Extreme Peak Load	Forecasted Season Peak Load / Extreme Low Wind Output	Extreme Peak Load / Extreme Generation Outages During Extreme Peak Load	
Seasonal Load Adjustment	-	9,509	-	9,509	Based on the 2011 winter and a revised economic growth forecast prepared in April 2020 ; the extreme winter forecast is 67,208 MW
Typical Maintenance Outages, Thermal	4,074	4,074	4,074	4,074	Based on the historical average of planned outages for December through February weekdays, hours ending 7 am - 10 am, for the last three winter seasons (2017/18, 2018/19, and 2019/20)
Typical Forced Outages, Thermal	4,543	5,340	4,543	5,340	Based on historical average of forced outages for December through February weekdays, hours ending 7 am - 10 am, for the last three winter seasons (2017/18, 2018/19, and 2019/20); both Extreme Load scenarios include typical fuel limitation-related derates/outages at units in north Texas during extreme peak load hours
95th Percentile Forced Outages, Thermal	-	-	-	4,540	Based on the 95th percentile historical average of forced outages for December through February weekdays, hours ending 7 am - 10 am, for the last three winter seasons (2017/18, 2018/19, and 2019/20) plus additional fuel limitation-related derates/outages at units in north Texas during the peak load hours for the January 17, 2018 cold weather event
Low Wind Output Adjustment	-	-	5,352	-	Based on the 5th percentile of hourly wind capacity factors (output as a percentage of installed capacity) associated with the 100 highest Net Load hours (Load minus wind output) for the 2015/16-2019/20 winter Peak Load seasons; this low wind output level is 1,791 MW
[d] Total Uses of Reserve Capacity	8,617	18,923	13,969	23,463	
[e] Capacity Available for Operating Reserves, Normal Operating Conditions (c-d), MW	16,596	6,290	11,244	1,750	See the Background tab for additional details



















UNIT NAME	GENERATION INTERCONNECTION PROJECT CODE	UNIT CODE	COUNTY	FUEL	ZONE	IN SERVICE	CAPACITY (MW)
961 <b>Seasonal Mothballed Resources</b>							
962 GREGORY POWER PARTNERS GT1 (AS OF 10/17/2019, AVAILABLE 5/1 THROUGH 9/30)		LGE_LGE_GT1	SAN PATRICIO	GAS-CC	COASTAL	2000	158.0
963 GREGORY POWER PARTNERS GT2 (AS OF 10/17/2019, AVAILABLE 5/1 THROUGH 9/30)		LGE_LGE_GT2	SAN PATRICIO	GAS-CC	COASTAL	2000	158.0
964 GREGORY POWER PARTNERS STG (AS OF 10/17/2019, AVAILABLE 5/1 THROUGH 9/30)		LGE_LGE_STG	SAN PATRICIO	GAS-CC	COASTAL	2000	75.0
965 SPENCER STG U4 (AS OF 10/3/2018, AVAILABLE 5/20 THROUGH 10/10)		SPNCER_SPNCE_4	DENTON	GAS-ST	NORTH	1966	57.0
966 SPENCER STG U5 (AS OF 10/3/2018, AVAILABLE 5/20 THROUGH 10/10)		SPNCER_SPNCE_5	DENTON	GAS-ST	NORTH	1973	61.0
967 NACOGDOCHES POWER (SEASONAL MOTHBALL ON 10/16/2020, AVAILABLE 5/15 THROUGH 10/15)		NACPW_UNIT1	NACOGDOCHES	BIOMASS	NORTH	2012	105.0
968 <b>Total Seasonal Mothballed Capacity</b>							<b>614.0</b>
969							
970 <b>Mothballed Resources</b>							
971 J T DEELY U1 (AS OF 12/31/2018)		CALAVERS_JTD1_M	BEXAR	COAL	SOUTH	1977	430.0
972 J T DEELY U2 (AS OF 12/31/2018)		CALAVERS_JTD2_M	BEXAR	COAL	SOUTH	1978	420.0
973 <b>Total Mothballed Capacity</b>							<b>850.0</b>
974							
975 <b>Retiring Resources Unavailable to ERCOT (since last CDR/SARA)</b>							
976 DECKER CREEK STG 1 (RETIRING ON 10/31/2020)		DECKER_DPG1	TRAVIS	GAS-ST	SOUTH	1971	320.0
977 <b>Total Retiring Capacity</b>							<b>320.0</b>

Notes:

Capacity changes due to planned repower/upgrade projects are reflected in the operational units' ratings upon (1) receipt and ERCOT approval of a new Resource Asset Registration Form (RARF). Projects associated with interconnection change requests that change the MW capacity are indicated with a code in the "Generation Interconnection Project Code" column of operational units.

Although seasonal capacity ratings for battery energy storage systems are reported above, the ratings are not included in the operational/planned capacity formulae. These resources are assumed to provide regulation reserves rather than sustained capacity available to meet system peak loads.

Unit Names with a (DGR) suffix are Distribution Generation Resources. A DGR fully participates in ERCOT's markets, but is connected to the Distribution System and is currently not required to go through the GINR application process.

## Seasonal Assessment of Resource Adequacy for the ERCOT Region

### Background

The Seasonal Assessment of Resource Adequacy (SARA) report is a deterministic approach to considering the impact of potential variables that may affect the sufficiency of installed resources to meet the peak electrical demand on the ERCOT System during a particular season.

The standard approach to assessing resource adequacy for one or more years into the future is to account for projected load and resources on a normalized basis and to require sufficient reserves (resources in excess of peak demand, on this normalized basis) to cover the uncertainty in peak demand and resource availability to meet a probabilistic reliability standard.

For seasonal assessments that look ahead less than a year, specific information may be available (such as seasonal climate forecasts or anticipated common-mode events such as drought) which can be used to consider the range of resource adequacy in a more deterministic manner.

The SARA report focuses on the availability of sufficient operating reserves to avoid emergency actions such as deployment of voluntary load reduction resources. It uses an operating reserve threshold of 2,300 MW to indicate the risk that an Energy Emergency Alert Level 1 (EEA1) may be triggered during the time of the forecasted seasonal peak load. This threshold level is intended to be roughly analogous to the 2,300 MW Physical Responsive Capability (PRC) threshold for EEA1. However, PRC is a real-time capability measure for Resources that can quickly respond to system disturbances. In contrast, the SARA operating reserve reflects additional capability assumed to be available before energy emergency procedures are initiated, such as from Resources qualified to provide non-spinning reserves. Additionally, the amount of operating reserves available may increase relative to what is included in the SARA report due to the market responding to wholesale market price increases and anticipated capacity scarcity conditions. Given these considerations, ERCOT believes that the 2,300 MW reserve capacity threshold is a reasonable indicator for the risk of Energy Emergency Alerts given the uncertainties in predicting system conditions months in advance.

The SARA report is intended to illustrate the range of resource adequacy outcomes that might occur. It serves as a situational awareness tool for ERCOT operational planning purposes, and helps fulfill the "extreme weather" resource adequacy assessment requirement per Public Utility Commission of Texas rule 25.362(i)(2)(H). In addition to a base scenario, several other scenarios are developed by varying the value of load forecast and resource availability parameters. The variation in these parameters is based on historic ranges of the parameter values or known changes expected in the near-term. The SARA report is not intended to indicate the likelihood of any of these scenario outcomes.