

FINAL
Seasonal Assessment of Resource Adequacy for the ERCOT Region (SARA)
Fall 2020

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 fall (October-November 2020).

“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 fall.”

The peak demand forecast was developed using revised Moody’s economic data obtained in April 2020. The final fall SARA includes a 60,966 MW peak demand forecast, which is unchanged from the preliminary fall forecast and is based on normal weather conditions during fall peak demand periods, from 2004 through 2018.

ERCOT anticipates there will be more than 86,000 MW of resource capacity available at the start of the fall season, including 1,475 MW of planned wind and solar capacity that is expected to be available during fall peak demand periods.

This fall SARA includes a unit outage forecast of 14,267 MW, which is based on the historical average of outages for weekday peak hours for each of the last three fall seasons (2017-2019).

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Forecasted Capacity and Demand

Operational Resources (thermal and hydro), MW	65,850	Based on current Seasonal Maximum Sustainable Limits reported through the unit registration process
Switchable Capacity Total, MW	3,639	Installed capacity of units that can interconnect with other Regions and are available to ERCOT
Less Switchable Capacity Unavailable to ERCOT, MW	-558	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	2,772	Average grid injection during the top 20 fall 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	1,205	Based on 35% of installed capacity for coastal wind resources (fall season) per ERCOT Nodal Protocols Section 3.2.6.2.2
Panhandle Wind, Peak Average Capacity Contribution, MW	1,896	Based on 43% of installed capacity for panhandle wind resources (fall season) per ERCOT Nodal Protocols Section 3.2.6.2.2
Other Wind, Peak Average Capacity Contribution, MW	6,503	Based on 38% of installed capacity for other wind resources (fall season) per ERCOT Nodal Protocols Section 3.2.6.2.2
Solar Utility-Scale, Peak Average Capacity Contribution, MW	2,392	Based on 66% of rated capacity for solar resources (fall season) per Nodal Protocols Section 3.2.6.2.2
Storage, Peak Average Capacity Contribution, MW	0	Based on 0% of rated capacity (fall 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 (Used as a proxy for the fall season due to lack of EEA intervals)
Planned Thermal Resources with Signed IA, Air Permits and Water Rights, MW	0	Based on in-service dates provided by developers
Planned Coastal Wind with Signed IA, Peak Average Capacity Contribution, MW	130	Based on in-service dates provided by developers and 35% fall 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 43% fall capacity contribution for panhandle wind resources
Planned Other Wind with Signed IA, Peak Average Capacity Contribution, MW	960	Based on in-service dates provided by developers and 38% fall capacity contribution for other wind resources
Planned Solar Utility-Scale, Peak Average Capacity Contribution, MW	386	Based on in-service dates provided by developers and 66% fall capacity contribution for solar resources
Planned Storage, Peak Average Capacity Contribution, MW	0	Based on in-service dates provided by developers and 0% fall capacity contribution for storage resources
[a] Total Resources, MW	86,012	
[b] Peak Demand, MW	60,966	Based on average weather conditions at the time of the fall peak demand from 2004 – 2018, and updated based on a revised economic growth forecast prepared in April 2020
[c] Reserve Capacity [a - b], MW	25,046	

Range of Potential Risks

	Forecasted Season Peak Load / Typical Generation Outages	Forecasted Season Peak Load / Extreme Generation Outages	Forecasted Season Peak Load / Extreme Low Wind Output	Extreme Season Peak Load / Typical Generation Outages	
Seasonal Load Adjustment	-	-	-	4,694	Based on 2014 fall weather conditions and an April 2020 revised economic growth forecast; the extreme fall forecast is 65,660 MW
Typical Maintenance Outages, Thermal	9,926	9,926	9,926	9,926	Based on the historical average of planned outages for October through November weekdays, hours ending 2 pm - 8 pm, for the last three fall seasons (2017 - 2019)
Typical Forced Outages, Thermal	4,341	4,341	4,341	4,341	Based on historical average of forced outages for October through November weekdays, hours ending 2 pm - 8 pm, for the last three fall seasons (2017 - 2019)
95th Percentile Forced Outages, Thermal	-	3,157	-	-	Based on the 95th percentile of historical forced outages for October through November weekdays, hours ending 2 pm - 8 pm, for the last three fall seasons (2017 - 2019); the adjustment is the 95th percentile value, 8,006 MW, less the typical forced outage amount of 3,616 MW
Low Wind Output Adjustment	-	-	8,908	-	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 2015-2019 fall Peak Load seasons; this low wind output level is 1,785 MW
[d] Total Uses of Reserve Capacity	14,267	17,425	23,175	18,961	
[e] Capacity Available for Operating Reserves, Normal Operating Conditions (c-d), MW Less than 2,300 MW indicates risk of EEA1	10,778	7,621	1,871	6,084	See the Background tab for additional details

UNIT NAME	GENERATION INTERCONNECTION PROJECT CODE	UNIT CODE	COUNTY	FUEL	CDR ZONE	START YEAR	CAPACITY (MW)
961 Inactive Planned Capacity Total							210.0
962							
963 Seasonal Mothballed Resources							
964 GREGORY POWER PARTNERS GT1 (AS OF 10/17/2019, AVAILABLE 5/1 THROUGH 9/30)		LGE_LGE_GT1	SAN PATRICIO	GAS-CC	COASTAL	2000	152.0
965 GREGORY POWER PARTNERS GT2 (AS OF 10/17/2019, AVAILABLE 5/1 THROUGH 9/30)		LGE_LGE_GT2	SAN PATRICIO	GAS-CC	COASTAL	2000	151.0
966 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
967 SPENCER STG U4 (AS OF 10/3/2018, AVAILABLE 5/20 THROUGH 10/10)		SPNCER_SPNCE_4	DENTON	GAS-ST	NORTH	1966	57.0
968 SPENCER STG U5 (AS OF 10/3/2018, AVAILABLE 5/20 THROUGH 10/10)		SPNCER_SPNCE_5	DENTON	GAS-ST	NORTH	1973	61.0
969 Total Seasonal Mothballed Capacity							496.0
970							
971 Mothballed Resources							
972 J T DEELY U1 (AS OF 12/31/2018)		CALAVERS_JTD1_M	BEXAR	COAL	SOUTH	1977	430.0
973 J T DEELY U2 (AS OF 12/31/2018)		CALAVERS_JTD2_M	BEXAR	COAL	SOUTH	1978	420.0
974 Total Mothballed Capacity							850.0
975							
976 Retiring Resources Unavailable to ERCOT (since last CDR/SARA)							
977 Total Retiring Capacity							-

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.