

# ERCOT MONTHLY

Issued May 2024

### April 2024

# **Look Back**

#### **GRID OVERVIEW**

#### **April Peak Demand**

ERCOT set three new April peak demand records in 2024.

- 62,618 MW April 18 in the 5-6 p.m. hour
- 63,151 MW April 29 in the 5-6 p.m. hour
- 63,997 MW April 30 in the 5-6 p.m. hour, which is 3,002 MW more than the April peak demand of 60,995 MW set April 3, 2023



\*Based on the maximum net system hourly value from the 2024 May Demand and Energy report.

\*\*Based on the minimum net system 15-minute interval value from the 2024 May Demand and Energy report.

Data for latest two months is based on preliminary settlements.

#### **Recent April Peaks**

ERCOT peak demand records can be found on our website or by navigating to About Us > Helpful Resources > Peak Demand.

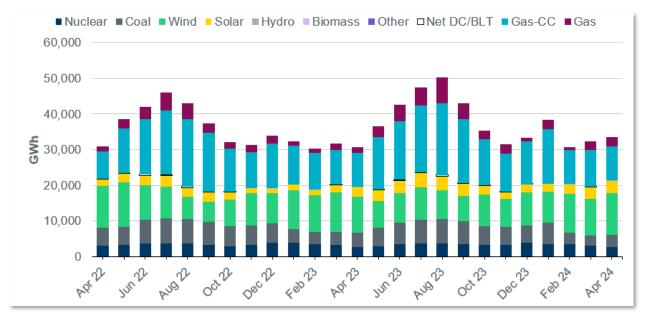
- April 2023 peak demand: 60,995 MW in the 5-6 p.m. hour on April 3
- April 2022 peak demand: 58,419 MW in the 5-6 p.m. hour on April 5
- April 2021 peak demand: 52,814 MW in the 4-5 p.m. hour on April 9
- April 2020 peak demand: 55,292 MW in the 4-5 p.m. hour on April 8
- View ERCOT's peak demand records.

#### **Solar and Wind Records**

- A new renewable generation record of 37,806 MW was set April 4 at 4:07 p.m. Renewable penetration at record generation time was 69.47%.
- These records and other grid facts can be found on the ERCOT <u>Fact Sheet</u>.

#### MONTHLY ENERGY GENERATION MIX

The monthly energy generation increased by 9% year-over-year to 33,457 GWh in April 2024, compared to 30,698 GWh in April 2023. The chart below shows the generation type fueling the grid each month.

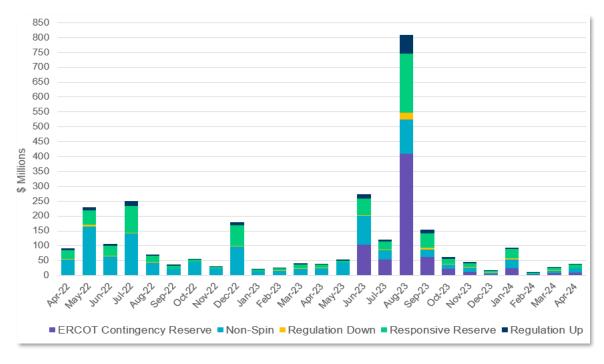


Data for the last two months is based on preliminary settlements.

#### **ANCILLARY SERVICES**

ERCOT uses Ancillary Services (AS) to balance the next day's supply and demand of electricity on the grid and mitigate Real-Time operational issues. Real-Time AS deployment is viewable on our dashboards.

#### ERCOT procured \$39.44 million in Ancillary Services for grid reliability in April 2024.



#### WHOLESALE PRICES

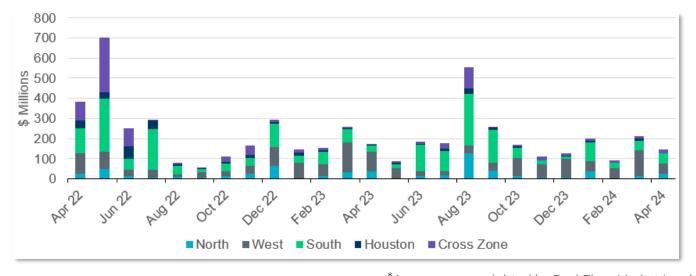
Average energy prices for April were relatively low, which is typical during the fall and spring seasons with lower overall demands for electricity. This was consistent between the Day-Ahead and Real-Time Market. Low fuel costs, specifically natural gas prices, were also a contributing factor.



\*Averages are weighted by Real-Time Market Load.

#### TRANSMISSION CONGESTION COSTS

Total Real-Time congestion rent decreased in April compared to March with the highest congestion rent in the South and West Zones in April 2024 compared to March 2024.

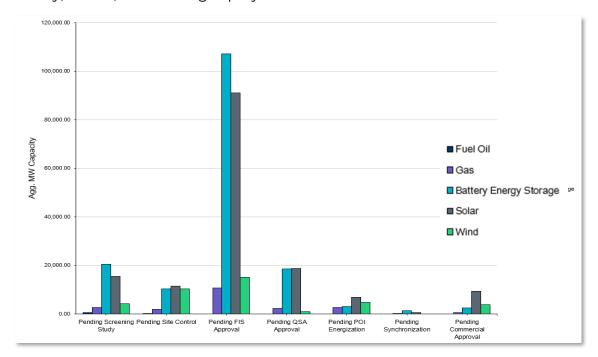


\*Averages are weighted by Real-Time Market Load.

\*\*Security Constrained Economic Dispatch (SCED) is the Real-Time market evaluation of offers to produce a leastcost dispatch of online resources. SCED calculates Locational Marginal Prices (LMPs) using a two-step
methodology that applies mitigation to resolve non-competitive constraints. More information is on our website.

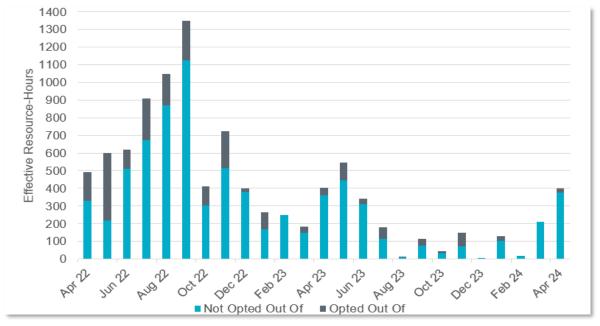
#### GENERATION INTERCONNECTION QUEUE BY FUEL TYPE BY STAGE

As of May 21, 2024, ERCOT was tracking 1,780 active generation interconnection requests totaling almost 349,000 MW. This includes 152,917 MW of solar, 32,956 MW of wind, 145,000 MW of battery, and 15,573 MW of gas projects.



#### **RELIABILITY UNIT COMMITMENT**

Reliability Unit Commitment (RUC) activity for April included 29 Resources committed due to capacity or congestion.



"Effective Resource-Hours" excludes any period during a Reliability Unit Commitment hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.

#### June

# **Look Forward**

#### June Monthly Outlook for Resource Adequacy (MORA) Scenarios

Under typical grid conditions, the deterministic scenario indicates that there should be sufficient generating capacity available to serve the expected peak load. Scenario modeling results indicate a low risk, less than 1%, of ERCOT having to declare an Energy Emergency Alert (EEA) in June. For the typical peak load day in June, the highest risk hours extend from 7 p.m. to 9 p.m. when daily loads are typically near their highest levels and solar production is ramping down. The highest risk hour is 8 p.m. to 9 p.m.

The ratio of available dispatchable capacity to available total capacity for the peak load hour (9 p.m.) is 79%. This latter measure helps indicate the extent that the grid relies on dispatchable resources to meet the peak load. The possibility of low wind production remains a significant risk for maintaining adequate reserves for the peak demand day. Probabilistic and deterministic scenarios that reflect a historically low wind generation day (based on weather going back to 1980) indicate an increased reserve shortage risk during the early evening hours. (Please note, the MORA probabilistic assessment is not intended to forecast expected grid conditions.)

	EMERGENCY LEVEL		
	Chance of Normal System Conditions	Chance of an Energy Emergency Alert	Chance of Ordering Controlled Outages
	Probability of CAFOR	Probability of CAFOR	Probability of CAFOR
Hour Ending (CDT)	being above 3,000 MW	being less than 2,500 MW	being less than 1,500 MW
1 a.m.	100.00%	0.00%	0.00%
2 a.m.	100.00%	0.00%	0.00%
3 a.m.	100.00%	0.00%	0.00%
4 a.m.	100.00%	0.00%	0.00%
5 a.m.	100.00%	0.00%	0.00%
6 a.m.	100.00%	0.00%	0.00%
7 a.m.	100.00%	0.00%	0.00%
8 a.m.	100.00%	0.00%	0.00%
9 a.m.	100.00%	0.00%	0.00%
10 a.m.	100.00%	0.00%	0.00%
11 a.m.	100.00%	0.00%	0.00%
12 p.m.	100.00%	0.00%	0.00%
1 p.m.	100.00%	0.00%	0.00%
2 p.m.	100.00%	0.00%	0.00%
3 p.m.	100.00%	0.00%	0.00%
4 p.m.	100.00%	0.00%	0.00%
5 p.m.	99.99%	0.00%	0.00%
6 p.m.	99.98%	0.00%	0.00%
7 p.m.	99.99%	0.00%	0.00%
8 p.m.	99.89%	0.02%	0.00%
9 p.m.	99.35%	0.18%	0.04%
10 p.m.	99.68%	0.02%	0.00%
11 p.m.	100.00%	0.00%	0.00%
12 a.m.	100.00%	0.00%	0.00%

Scenario Assuming Extreme Low Wind Generation

	EMERGENCY LEVEL		
	Chance of Normal System Conditions	Chance of an Energy Emergency Alert	Chance of Ordering Controlled Outages
Hour Ending (CDT)	Probability of CAFOR being above 3,000 MW	Probability of CAFOR being less than 2,500 MW	Probability of CAFOR being less than 1,500 MW
1 a.m.	100.00%	0.00%	0.00%
2 a.m.	100.00%	0.00%	0.00%
3 a.m.	100.00%	0.00%	0.00%
4 a.m.	100.00%	0.00%	0.00%
5 a.m.	100.00%	0.00%	0.00%
6 a.m.	100.00%	0.00%	
7 a.m.	100.00%	0.00%	
8 a.m.	100.00%	0.00%	0.00%
9 a.m.	100.00%	0.00%	
10 a.m.	100.00%	0.00%	0.00%
11 a.m.	100.00%	0.00%	
12 p.m.	100.00%	0.00%	0.00%
1 p.m.	100.00%	0.00%	0.00%
2 p.m.	100.00%	0.00%	0.00%
3 p.m.	100.00%	0.00%	
4 p.m.	100.00%	0.00%	0.00%
5 p.m.	99.95%	0.00%	0.00%
6 p.m.	99.89%	0.00%	0.00%
7 p.m.	99.95%	0.00%	0.00%
8 p.m.	97.58%	0.12%	0.05%
9 p.m.	93.17%	1.08%	
10 p.m.	99.93%	0.00%	0.00%
11 p.m.	100.00%	0.00%	0.00%
12 a.m.	100.00%	0.00%	0.00%

Note: Probabilities are not additive

MORA reports can be found on ERCOT's <u>Resource Adequacy page</u>. Links to the June MORA:

- MORA\_June2024.xlsx (live.com)
- MORA\_June2024.pdf (ercot.com)

Note: Probabilities are not addit

#### Summer

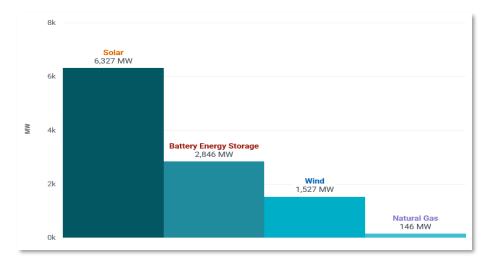
# Preview

#### **Key Summer Takeaways**

- New generation in ERCOT has grown by more than 9,300 MW since last summer.
- ERCOT's Weatherization and Inspections team is focused on summer weatherization.
- ERCOT is working with Market Participants on hurricane preparedness.
- The ramp down of solar generation from approximately 7 10 p.m. CDT becomes the tightest time to manage the grid.

#### **Resource Mix Additions Since Summer 2023**

ERCOT has seen growth in new generation resources since last summer. The graph below shows the additions to the resource mix between October 1, 2023, and June 1, 2024.



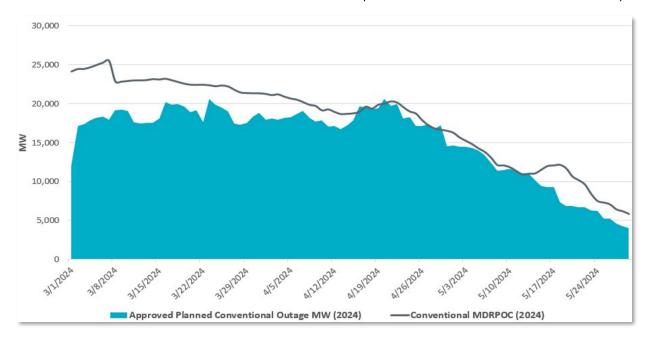
#### **Summer Weatherization & Inspections**

The ERCOT Weatherization and Inspections Team, with supplemental support from contract personnel, anticipates inspecting more than 300 generation resources and 300 transmission facilities between June and September for the second year of summer weatherization inspections. ERCOT also recently held a Summer Weatherization Workshop for Generation Resources and Transmission Service Providers (TSPs).

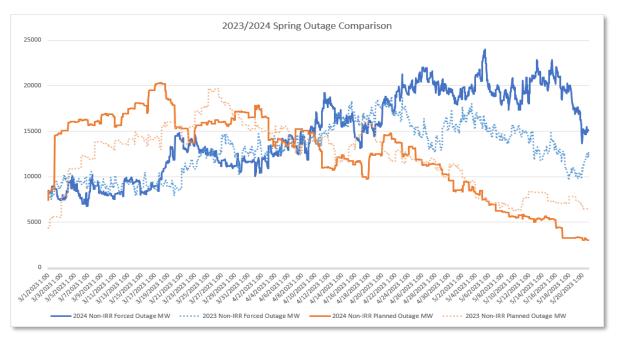
As a reminder, Phase I of the PUC weatherization rule, finalized in October 2021, established winter weather emergency preparedness standards for generation and transmission facilities. Phase II, adopted in September 2022, kept winter weather emergency preparedness standards and added summer weather standards for generation and transmission facilities. In 2023, the rule established weather-zone-specific cold and hot temperatures at which Market Participants (MPs) must implement measures reasonably expected to ensure sustained operation. It also required each facility to develop a list of all cold- and hot-weather-critical components. The reliability of all components of the system has never been more critical as ERCOT demand levels continue to grow at historically high levels.

#### **Scheduled Maintenance Update**

ERCOT worked closely with MPs to schedule their shoulder month maintenance this spring. This graph shows the approved planned outages versus the Maximum Daily Resource Planned Outage Capacity (MDRPOC). MDRPOC has provided sufficient margin to accommodate planned resource outages this shoulder season. (Tight capacity days can still occur when actual conditions differ from the assumptions used to derive the MDRPOC).



<u>Generation outages</u> were in the 30 GW range (includes all generation resources) for a portion of the spring. ERCOT saw several instances where planned thermal outages were extended due to additional time needed. When this occurs, the planned maintenance outage becomes a forced outage. The graph below shows 2024 spring outages compared to 2023.



#### **Preliminary Weather Outlook**

ERCOT Meteorologist Chris Coleman shared an early summer forecast, which as of today, calls for above normal temperatures and mostly normal to below-normal rainfall. The past two summers have been the #2 (2023) and #3 (2022) hottest in Texas weather history, leading to 21 new all-time peak demand records for ERCOT. The current record of 85,508 MW was set August 10, 2023.

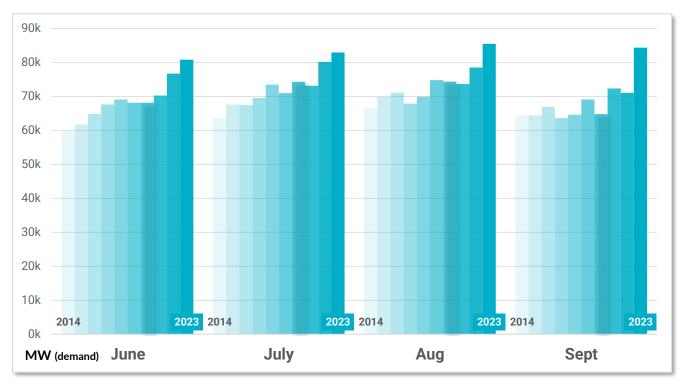
Much of what drove those summers to extremes is still in place (solar max, drought, warm oceans). 2024 could easily bring another top 10 hottest summer to Texas. Significant rainfall is needed over the next several months to limit summer temperature extremes; however, the drought may worsen. This spring is running considerably warmer than last spring in Texas, with three new April and five new May peak demand records set.

La Niña is expected to return this summer and continue through the remainder of 2024, which commonly supports drought within Texas. The best hope for the summer to trend less hot would require a wet summer, which could come from active tropics, monsoons bringing rain to West Texas, or a more active sea breeze than observed last summer.

It's also important to note, the average temperature of ocean surfaces across the globe is currently the warmest ever recorded. Last year, this resulted in not only the warmest year on record for the state of Texas but also averaged across the planet.

#### Summer Demand by Month Over the Last 10 Years

When looking at peak demand by month during the heat of June, July, August, and September, since 2014, the demand growth in ERCOT is easy to see.



#### 2024 Hurricane Season Starts June 1

All signs point to a very active hurricane season as the key ingredients – warm ocean temperatures and the La Niña cycle – are in place. The forecast calls for 18 to 22+ named tropical cyclones in the Atlantic Basin (Atlantic, Caribbean, Gulf of Mexico). Seven to 12 of those named storms are predicted to develop into hurricanes, and 3 to 6 of those hurricanes are expected to intensify to major hurricanes (Category 3 or greater).

This year should also bring more activity to the Gulf of Mexico than last year, with 4 to 6+ named storms forecasted for the Gulf. While predicting landfalls for storms is not possible months in advance, this year shows higher-than-average potential for landfall(s) in Texas.

ERCOT is implementing weather emergency preparation measures reasonably expected to ensure sustained operations during summer weather conditions. The ERCOT System Operations Training team held the 40<sup>th</sup> Annual Operator Training Seminar (OTS) and Energy Emergency Alert (EEA) Load Shed Drill. Additionally, the System Operations Training team is holding a summer tabletop training exercise June 3 with MPs.

#### Summer 2024 Peak Demand Time Frame / July & August Snapshot

We look at the grid in term of riskiest hours. Most hours of the day there is little to no risk of ERCOT entering emergency operations and declaring an EEA. The tightest time on the grid during summer used to be between 4 p.m. and 7 p.m. Today, the ramp down of solar generation in the evenings from approximately 7 – 10 p.m. CDT becomes the tightest time, or riskiest, to manage the grid. If an EEA were to be issued, it is likeliest to occur in the evening hours during the summer monthly peak load days.

August is expected to see a higher risk relative to June and July due to much higher loads forecasted in August compared to June and July; typical August wind generation is lower relative to July; and solar generation is lower for the late afternoon into evening hours due to shorter days.

Extremely high net loads (the amount of demand not served by wind or solar resources for a given interval of time) in the early evening hours may necessitate curtailing generation exported from South Texas into the San Antonio region to avoid line overloads. This risk is accounted for in the July MORA and NERC Seasonal Resource Adequacy (SRA) reports.

#### **NERC Reliability Summer Resource Assessment Report**

NERC's 2024 Summer Reliability Assessment (SRA) <u>report</u>, published May 15, states that nationally all areas, including ERCOT, are assessed as having adequate anticipated resources for normal summer peak load conditions. While there is a risk of electricity supply shortfalls during periods of more extreme summer conditions, NERC's analysis also focuses on summer evening solar ramp downs and the South Texas GTC as we address further in *Additional Items of Note* section, page 15.

The report also highlights a growing risk involving Inverter-Based Resources (IBRs). ERCOT is leading the industry conversation regarding IBR standards and addressing this well ahead of the rest of the nation due to the incredible growth of renewables (solar and wind) and batteries on the ERCOT system. (*More info on IBRs on next page*).

#### **ERCOT Addressing Inverter-Based Resources (IBR) Risks**

IBRs are generation resources connected to the grid through power electronic interfaces called inverters rather than the electromagnetic interface that connects conventional generation resources.

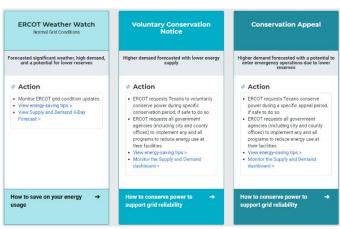
- Almost all wind, solar, and battery storage resources use inverters to connect to the grid and are collectively referred to as IBRs.
- IBRs comprise 40% of the generation capacity in ERCOT and are forecasted to rapidly increase and become the dominant resource technology on the ERCOT system.
- IBRs can have operational issues associated with their frequency and voltage ridethrough capability. ("Ride-through capability" refers to a resource's ability to continue to produce power and support voltage following a disturbance on the grid, such as a lightning strike.) If a large number of IBRs fail to ride-through normal system disturbances, it creates risk of Under-Frequency Load Shed (UFLS) and cascading loss of additional generation and load, which could result in a system blackout.
- Two significant lack-of-ride-through events and numerous smaller events have already occurred on the ERCOT system, prompting investigations by ERCOT and federal regulators.
- If ride-through failures are not addressed and more IBRs connect to ERCOT, the risk of a major uncontrolled loss-of-load event will continue to rise. Addressing the issues identified in Nodal Operating Guide Revision Request (NOGRR) 245 will adequately minimize ride-through failure events to a manageable level and help prevent such events from occurring as the ERCOT system continues to transition to an IBRdominated resource mix.

**NOGRR245** is a proposed set of rule changes to existing and new IBRs addressing current and future potential operational issues. The proposed changes would be implemented by generator owners on existing IBRs over the next several years to prevent ride-through failures by properly configuring their controls and protection equipment. Many of these rules and new equipment will take multiple years to implement. In the interim, ERCOT and stakeholders continue to analyze events and propose corrective actions. Currently, NOGRR245 is still before ERCOT's Technical Advisory Committee (TAC).

#### Communicating to Stakeholders Through TXANS Notifications

The Texas Advisory and Notification System (TXANS) was created last year to provide earlier notification of periods of higher demand with the potential for lower reserves due to weather conditions, such as extreme heat and winter storms.

TXANS provides information on ERCOT's grid condition levels as well energy-saving tips. Signup to receive emails on the TXANS web page and follow us on social media.



#### **Operational Tools and Actions**

ERCOT schedules power on an electric grid that connects more than 54,100 miles of transmission lines and 1,250 generation units, including Private Use Networks. ERCOT has a variety of tools, or operational actions and procedures, to reliably manage the grid throughout the year. Read more on ERCOT's <u>Operating Procedures</u>.

The <u>Nodal Operating Guides</u>, which supplement the Protocols, describe the working relationship between ERCOT and the entities within the ERCOT region that interact on a minute-to-minute basis to ensure the reliability and security of the ERCOT system. Specific practices described in the Nodal Operating Guides for the ERCOT System are consistent with the North American Electric Reliability Corporation Reliability Standards and the Protocols.

A summary of some of the tools, or operational actions, deployed to keep supply and demand balanced include:

#### **Ancillary Services**

An Ancillary Service (AS) is capacity purchased by ERCOT in the day-ahead market to balance the next day's supply and demand and mitigate real time operational

- Regulation Service has two types Reg Up and Reg - deployed every 4 seconds to balance supply and demand and maintain frequency close to 60Hz between 5minute SCED runs.
- Responsive Reserve Service (RRS) is capacity procured to respond to low frequency events typically triggered by generating unit trips.
- ERCOT Contingency Reserve Service (ECRS) can be started in 10 minutes to cover forecast errors or ramps and replace deployed reserves. (ECRS is the first new daily procured AS added in more than 20 years).
- Non-Spinning Reserve Service (Non-Spin) can be started in 30 minutes to cover forecast errors, forced outages or ramps, and replace deployed reserves until additional resources can be committed

## **Demand Response**

In collaboration with Market Participants, ERCOT has developed demand response products and services for customers that have the ability to reduce or modify electricity use in response to instructions or signals. Loads may participate by offering directly into the ERCOT markets or indirectly by voluntarily reducing their energy usage in response to wholesale prices.

#### **ERCOT Demand Response Programs:**

- Emergency Response Service (ERS)
- TDSP Load Management Programs
- 4-Coincident Peak (CP) Load Reduction.
- Price-Responsive Demand Response
- REP/NOIE Demand Response
- ADER Pilot Project

#### **Additional Tools**

ERCOT has additional tools it can deploy to keep supply and demand balanced.

- Conservation is a widely used tool throughout the electric industry to reduce demand for a specific time frame.
- Distribution Voltage Reduction
- DC Ties
- Transmission Double Contingencies
- Switchable Capacity
- TO Load Management
- TCEQ Enforcement Discretion allows a generator to extend its service/runtime/operations to help meet demand, if needed.

Many of these operational tool are used to add capacity and reduce demand to keep ERCOT out of emergency operations; however, if ERCOT enters emergency operations, access to additional operational tools becomes available to protect grid reliability.

# Additional Items of Note

#### **ERCOT Names New VP of Market Operations**



ERCOT has named Keith Collins as Vice President of Market Operations, responsible for the organization's market analysis, performance, and design. Collins brings more than two decades of experience in market operations and 25 years of experience in the electric power industry.

Collins joins ERCOT from Southwest Power Pool (SPP), where he served as Vice President of the Market Monitoring Unit. He will begin work at ERCOT on June 17. Collins replaces Kenan Ögelman, who recently retired.

"With the Texas energy market rapidly evolving, ERCOT is focused on continuing to make improvements to market performance," said ERCOT President and CEO Pablo Vegas. "A key component will be to review the current market design and behavior to drive positive market outcomes. Keith brings a wealth of market operations experience to ERCOT to achieve that important goal."

Prior to joining SPP, Collins served as manager of Monitoring and Reporting for California Independent System Operator (CAISO) and branch chief for Federal Energy Regulatory Commission (FERC). He has also worked with the New York Independent System Operator (NYISO) to analyze market performance and enhance market outcomes.

#### Texas Pushing Back on EPA Rules Impacting Power Plant Operations

On April 25, the Environmental Protection Agency (EPA) finalized the Greenhouse Gas Rule. For existing coal-fired plants, the rule substantially limits emissions of carbon dioxide by requiring either the retirement of those plants or the use of carbon capture and sequestration (CCS) by 2032, or co-firing with natural gas by 2030. For new natural gas-fired power plants with a capacity factor greater than 40%, the rule substantially limits emissions of carbon dioxide at levels determined based on operations using CCS.

In early May, 25 states, including Texas, filed a motion to stay with the U.S. Court of Appeals for the D.C. Circuit. As part of that motion, ERCOT supplied a declaration explaining concern that because the rule requires installation of technologies not currently demonstrated at scale and that are uneconomical, the rule will likely lead to retirements of coal-fired plants and likely constrain the development of new natural gas-fired power plants. ERCOT further explained existing coal-fired plants and new natural gas-fired power plants will be needed to ensure reliable, dispatchable power for Texas. A ruling on the motion to stay could be issued as early as the end of June, but more likely will occur late summer or early fall.

#### 2025 CDR Report

In late May, ERCOT released the <u>2025 Capacity</u>, <u>Demand and Reserves (CDR) report</u> to provide forecasted Planning Reserve Margins for the ERCOT summer and winter peak load seasons. The Planning Reserve Margin represents the percentage of resource capacity, in excess of firm electricity demand, available to cover uncertainty in future demand, generator availability, and new resource supply. *Note that the CDR report is not intended for characterizing the risk of capacity scarcity conditions from a real-time operations perspective*.

The 2025 report includes ERCOT Protocol-required summaries for future years; however, it also contains a supplemental tab with the numbers stemming from the incorporation of House Bill (HB) 5066 (88th Legislative Session) requiring ERCOT to include prospective load identified by TSPs, which has led to significant increases in large loads (i.e., crypto mining, hydrogen and hydrogen-related manufacturing, data centers, and electrification).

#### **Consideration of Mitigation Solutions for South Texas Export IROLs**

As explained in the March ERCOT Monthly report (page 8), ERCOT identified a reliability need (pursuant to federal reliability requirements) to limit flows on certain lines transporting power between South Texas and the San Antonio area. These Interconnection Reliability Operating Limits (IROLs) are required because exceeding them can, under certain operating conditions that involve additional contingencies, place the reliability of the entire grid at risk. ERCOT established the South Texas Generic Transmission Constraints (GTCs) to enable ERCOT's tools to ensure these limits are factored into generator dispatch. However, during high system demand and a deficiency of generation north of the GTCs, flows on these lines could still exceed the limits. In those cases, ERCOT would be required to take all actions necessary to mitigate any overload of the South Texas Export GTC, including directing firm load-shedding if necessary.

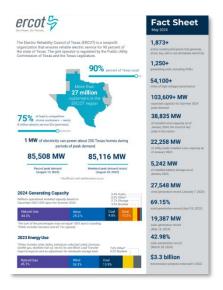
ERCOT has implemented operating procedures to help reduce the need for load-shedding under these conditions. For example, when loading approaches 90% of the limit, ERCOT will activate a series of pre-arranged transmission switching actions that will reduce the loading on the impacted transmission lines. ERCOT has also issued a request for proposal (RFP) seeking the participation of demand response in areas that would help relieve loading on the lines. Offers on this RFP are due by June 13. If valid offers are submitted and awarded, this solution will be implemented as soon as July 1.

ERCOT has also proposed changes to certain price parameters in its dispatch algorithm that could allow for more optimal management of congestion on these lines, reducing the likelihood of load-shedding. We have also been discussing with TSPs regarding new technologies that may improve dynamic ratings of transmission lines, which may allow for greater transfer capability under certain weather conditions.

#### **ERCOT Fact Sheet**

Bookmark the ERCOT Fact Sheet for quick reference information on the ERCOT grid, such as 2024 generating capacity and previous energy use. You can also find recently updated statistics such as:

- **ERCOT** manages the flow of electric power to more than 27 million Texas customers. ERCOT has updated the number of Texans receiving electricity from the ERCOT grid based on the population growth in the state. ERCOT took the population numbers from the counties within the ERCOT system, which totals 27,110,977. (The previous number was 26 million.)
- 1 MW serves ~ 250 residential customers during peak hours. (The previous number was 1 MW power serves about 200 homes.) The number of residential customers served by 1 MW has been updated based on the advent of advanced meters, which provides additional residential load data.



#### **ERCOT Innovation Summit Recap**

ERCOT's first annual Innovation Summit, held May 21, attracted attention and interest from around the globe, with more than 300 attending in person and 650 live streaming. Rapid grid transformation is shaping the future of the grid, not just in Texas, but well beyond. ERCOT is at the forefront of these conversations as we are seeing the transformation ahead of many other grids, who see it still on horizon. Innovation and transformation were key topics.

"We had the privilege of hearing from some of the brightest minds in our industry - thought leaders, innovators, experts, and, more importantly, doers who challenged us to think differently and put forth several actionable ideas," shared **ERCOT Vice President of DevOps** and Grid Transformation Venkat Tirupati who led the Summit from conception to completion. "To summarize, the call to action on innovation and collaboration is loud and clear. Our future depends on it."

In his closing remarks, Tirupati also talked about the need to partner to create supportive frameworks that enable rapid deployment of new technologies.



You can view the entire conference on our Innovation Summit page.

# Upcoming **Activities**

#### **BOARD OF DIRECTORS MEETINGS\***

ERCOT <u>Board of Directors</u> meetings are live streamed on <u>ercot.com</u>, where you can also find links, additional information, agendas, and supporting documents.

June 18 August 20 October 10 December 3

#### **RELIABILITY & MARKETS (R&M) COMMITTEE MEETINGS\***

ERCOT <u>Reliability & Markets (R&M)</u> meetings are live streamed on <u>ercot.com</u>, where you can also find links, additional information, agendas, and supporting documents.

June 17 August 19 October 9 December 2

#### TECHNICAL ADVISORY COMMITTEE (TAC) MEETINGS\*

ERCOT <u>Technical Advisory Committee (TAC)</u> meetings are live streamed on <u>ercot.com</u>, where you can also find links, additional information, agendas, and supporting documents.

June 24July 31August 7 & 28September 25October 30November 20

ERCOT has additional working groups and committees.

<sup>\*</sup>Meetings dates are subject to change, so please check the meetings <u>page</u> for the latest information and for more on the various groups, committees, dates, agendas, and meeting materials.