2024

ERCOT MONTHLY

Issued March 2024

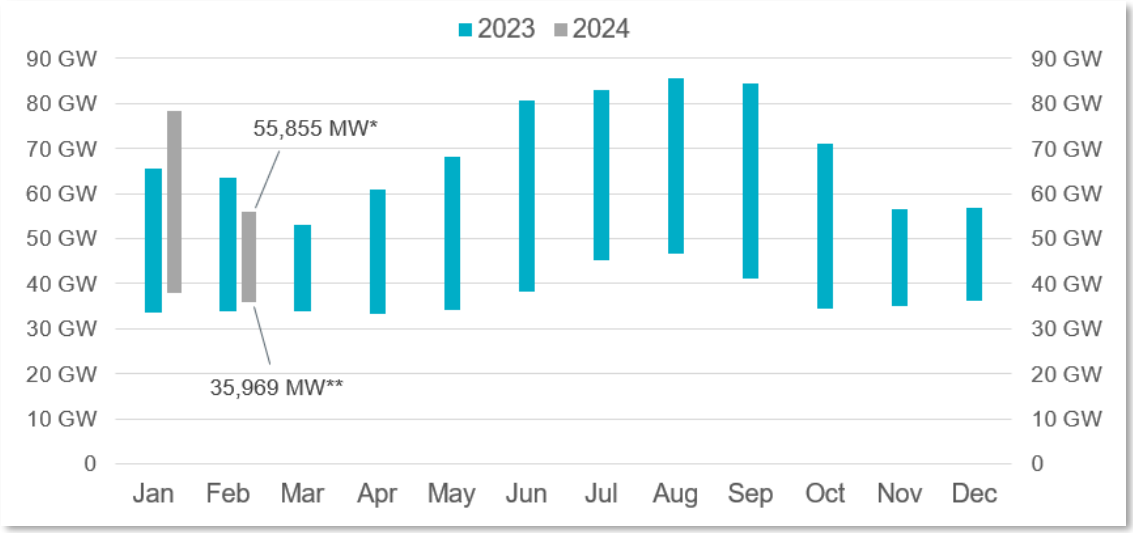
February 2024

Look Back

GRID OVERVIEW

February Peak Demand

The February peak demand of 55,855 MW was set February 19, which is 7,653 MW less than the 2023 February peak demand of 63,508 MW set February 1, 2023.



*Based on the maximum net system hourly value from the 2024 February Demand and Energy report.
**Based on the minimum net system 15-minute interval value from the 2024 February Demand and Energy report.
Data for latest two months is based on preliminary settlements.

Recent February Peaks

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

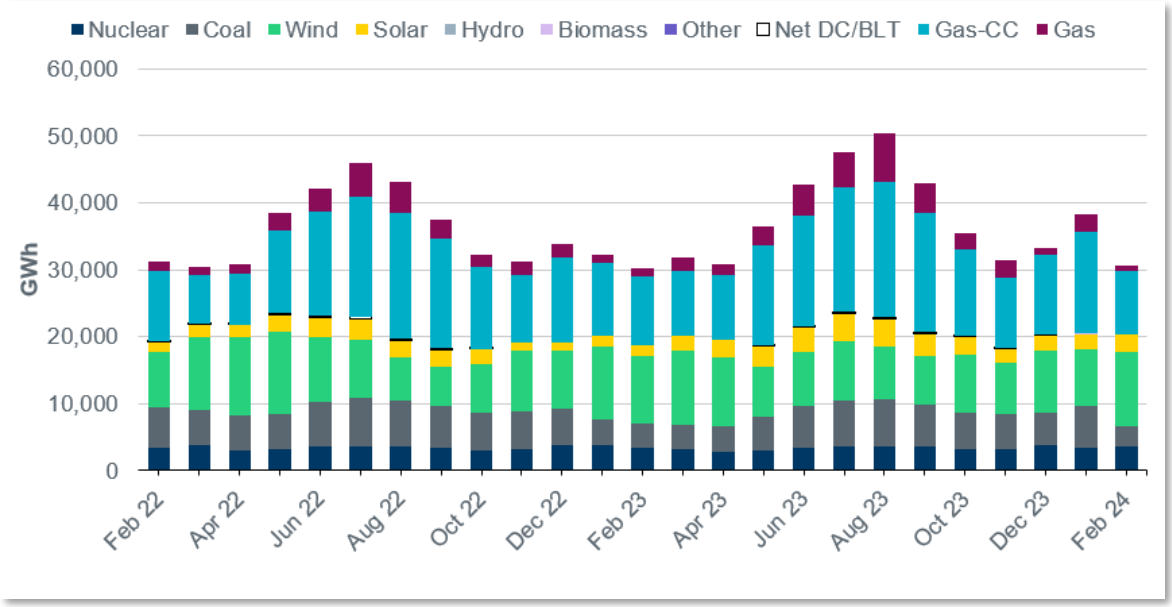
- February 2023 peak demand: 63,508 MW in the 6-7 p.m. hour on February 1
- February 2022 peak demand: 68,968 MW in the 9-10 a.m. hour on February 4
- February 2021 peak demand: 69,812 MW in the 9-10 p.m. hour on February 14 (current February record) during Winter Storm Uri
- February 2020 peak demand: 56,128 MW in the 7-8 a.m. hour on February 6
- View ERCOT's peak demand records.

New Solar and Wind Records

- February saw three new solar generation records:
  - 16,729 MW on February 13, passing 15,222 MW set January 28
  - 17,136 MW set February 18 at 3:05 p.m.
  - 17,201 MW set February 19 at 10:20 a.m.
- A new solar penetration record was achieved February 18 at 3:05 p.m. when solar was serving 39.9% of ERCOT load.
- Renewable penetration record update: 71.87% February 25, 2024, at 1:13 p.m. (generation at record penetration time: 31,366 MW).
- These records and other grid facts can be found on the ERCOT Fact Sheet.

MONTHLY ENERGY GENERATION MIX

The monthly energy generation increased by 1.3% year-over-year to 30,625 GWh in February 2024, compared to 30,228 GWh in February 2023. The chart below shows the generation type fueling the grid each month.

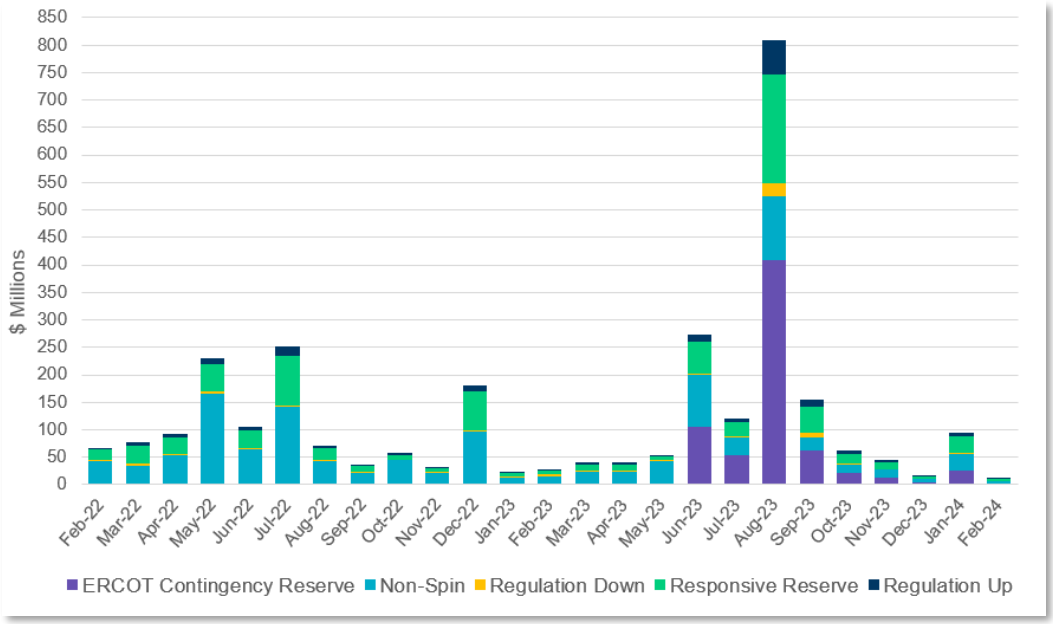


Data for the last two months is based on preliminary settlements.

ANCILLARY SERVICES

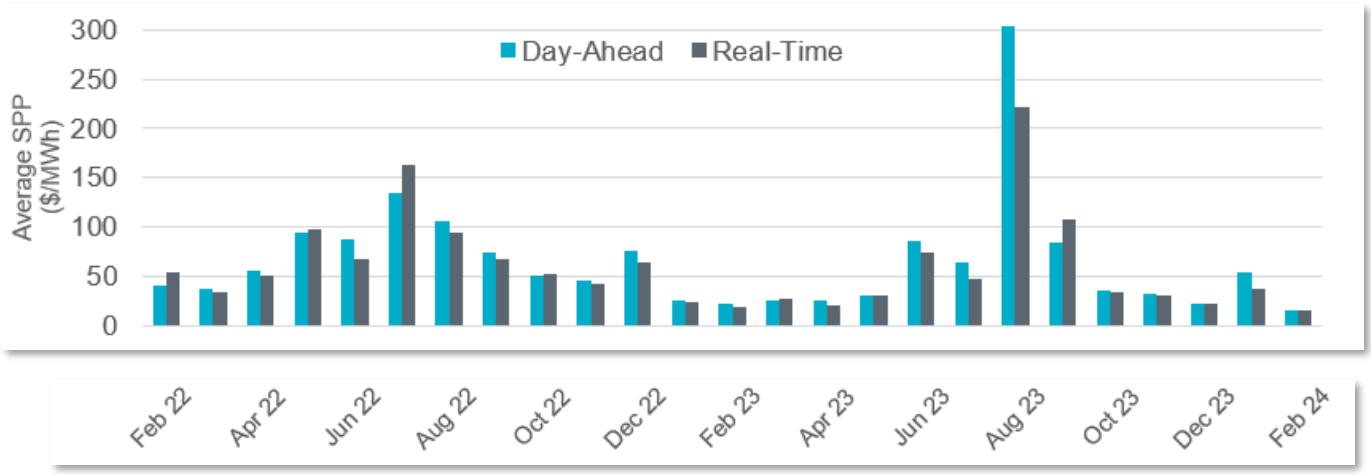
ERCOT uses Ancillary Services (AS) to balance the next day's supply and demand of electricity on the grid and mitigate real-time operational issues. Real-time AS deployment is viewable on our dashboards.

ERCOT procured $10.5 million in Ancillary Services for grid reliability in February 2024.



WHOLESALE PRICES

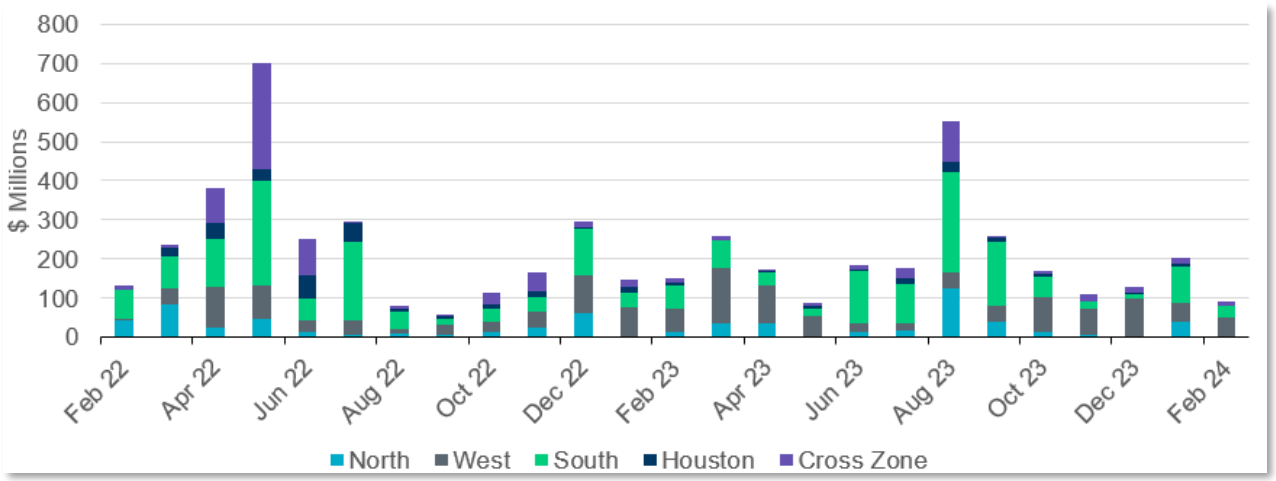
Average prices for February were somewhat lower than what has been observed in February of last year due in part to warmer weather conditions and lower peak demands for electricity.



*Averages are weighted by Real-Time Market Load.

TRANSMISSION CONGESTION COSTS

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



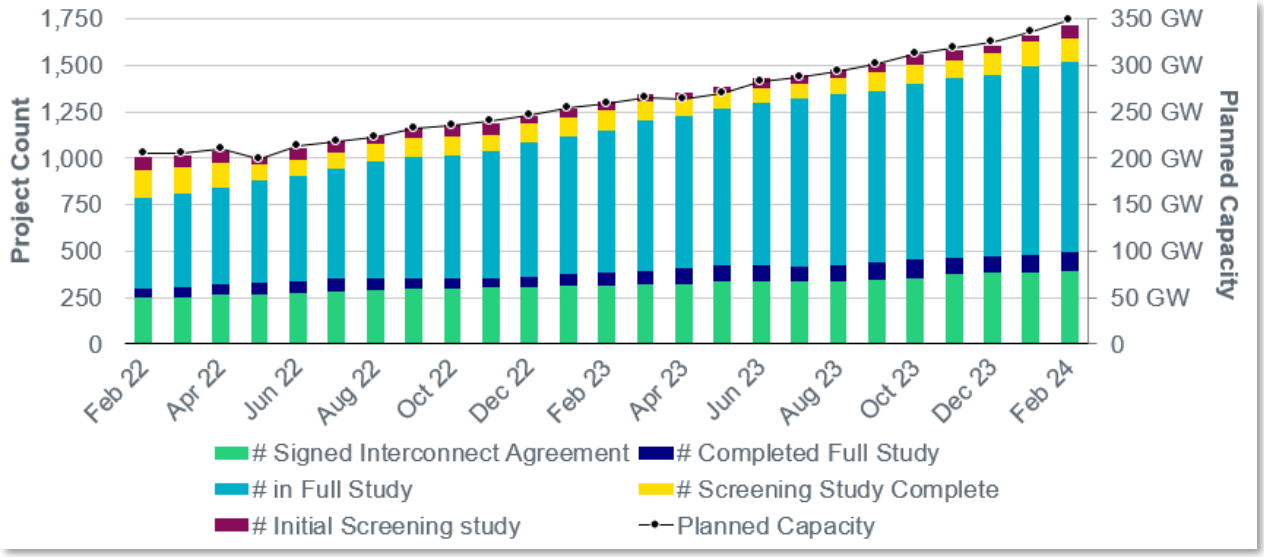
*Averages are weighted by Real-Time Market Load.

**Security Constrained Economic Dispatch (SCED) is the real-time market evaluation of offers to produce a least-cost 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

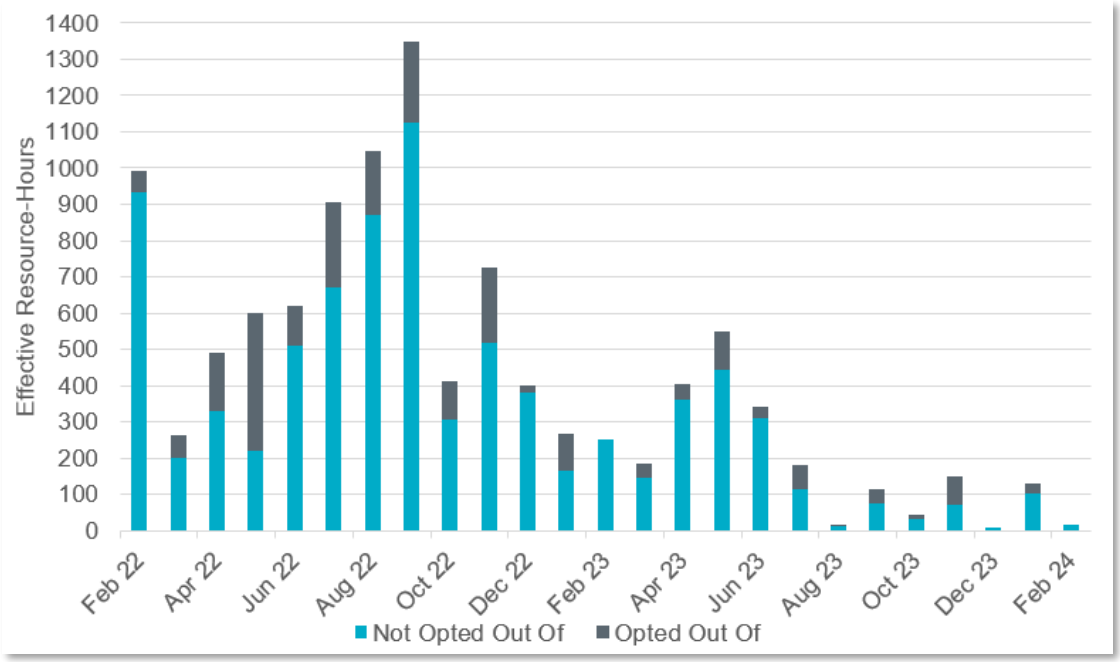
ERCOT is currently tracking 1,783 active generation interconnection requests totaling 348,521 MW as of February 29. This includes 152,098 MW of solar, 37,215 MW of wind, 140,219 MW of battery, and 16,022 MW of gas projects. An additional 27 "Small Generator" projects totaling 253 MW are going through the simplified interconnection process.

Interconnection Queue Projects by Project Phase



RELIABILITY UNIT COMMITMENT

Reliability Unit Commitment (RUC) activity for February included five 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.

MARCH – MAY SHOULDER MONTHS/SCHEDULED MAINTENANCE PERIOD

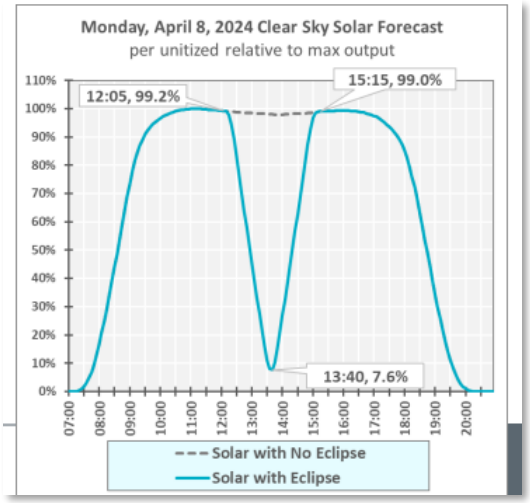
The shoulder months are the spring and fall months, typically not peak demand time, when ERCOT works with Qualified Scheduling Entities (QSE) and Transmission Service Providers (TSP) to schedule their generator and transmission facility maintenance, while allowing ERCOT to reliably operate the grid. Generally, ERCOT can support most requested outages, however, there are areas where limited outages can be taken at the same time due to the need to ensure reliable operations. In those areas, ERCOT coordinates with the requested entities to identify options to support the required maintenance. The options include, but are not limited to, adjusting the outage schedule, reducing outage restoration time, and adjusting the system configuration when feasible and reliable. All of the information and available slots are posted on our website for review and scheduling. ERCOT also has a generation outage dashboard that provides a graphical representation of planned and forced generation outages within the ERCOT system.

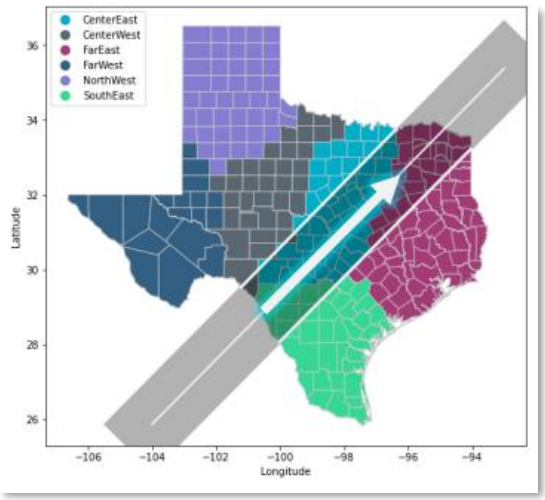
April
Look Forward

Total Solar Eclipse

On Monday, April 8, 2024, a total solar eclipse will pass over Texas from the southwest to northeast. This event will impact solar power production in the region from approximately 12:10 p.m. to 3:10 p.m. CDT, similar to ERCOT experiencing a sunset and sunrise in the middle of the day. Sun coverage will range from 81% to 99% in Texas. The maximum impact will occur around 1:40 p.m., reducing solar generation to about 7.6% of its maximum clear sky output.

ERCOT is working with solar forecast vendors on forecasting models to reflect solar generation on the grid during the eclipse. The impact of reduced solar generation during the eclipse will be reflected in forecasts beginning April 1 and will continue to be updated hourly through the day of the eclipse. As we did in preparation for the October 2023 eclipse, ERCOT is actively monitoring the forecasts and available dispatchable capacity for April 8. ERCOT will rely on Ancillary Services and other actions to posture the system as necessary during the eclipse to compensate for both the reduction and increase in solar generation on this day and maintain grid reliability. ERCOT has been engaging Market Participants so that they are prepared for the eclipse and expects sufficient generation to meet demand.





April 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 of ERCOT having to declare an Energy Emergency Alert (EEA). For the typical peak load day in April, 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. (Please note, the MORA probabilistic assessment is not intended to forecast expected grid conditions.)

The possibility of low wind production remains a significant risk for maintaining adequate reserves for the April peak demand day. Probabilistic and deterministic scenarios that reflect an historically low April wind generation day (going back to 1980) indicate an elevated reserve shortage risk during the early evening hours.

	EMERGENCY LEVEL		
	Chance of Normal System Conditions	Chance of an Energy Emergency Alert	Chance of Ordering Controlled Outages
Hour Ending	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%	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.	100.00%	0.00%	0.00%
6 p.m.	100.00%	0.00%	0.00%
7 p.m.	94.18%	1.99%	0.99%
8 p.m.	93.26%	2.30%	1.30%
9 p.m.	98.26%	0.50%	0.28%
10 p.m.	99.64%	0.05%	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.

	EMERGENCY LEVEL		
	Chance of Normal System Conditions	Chance of an Energy Emergency Alert	Chance of Ordering Controlled Outages
Hour Ending	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%	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.	100.00%	0.00%	0.00%
6 p.m.	99.96%	0.00%	0.00%
7 p.m.	80.69%	2.42%	0.76%
8 p.m.	70.40%	4.94%	1.83%
9 p.m.	91.49%	0.50%	0.06%
10 p.m.	99.59%	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.

Links to the April MORA:

MORA_Apr2024.pdf

MORA_Apr2024.xlsx

Additional
Items of Note

Value Of Lost Load, Phase 2 Survey

The Public Utility Commission of Texas (PUCT) identified the Value of Lost Load (VOLL) as a key input for purposes of establishing a reliability standard and directed ERCOT to engage a consultant (The Brattle Group and its survey administration subcontractor, PlanBeyond) to perform a study informing any potential updates to VOLL. Phase 1, completed in December 2023, consisted of a literature review assessing the results of prior VOLL studies performed and the development of interim VOLL values for the ERCOT Region to be used in reliability standard modeling.

- The literature review looked at studies performed in North America and Europe over the past decade, identifying key takeaways to inform the VOLL Study for the ERCOT Region.
- Brattle developed the interim VOLL values by running publicly available U.S. Census and Energy Information Administration (EIA) data for the ERCOT Region through a model developed by Lawrence Berkeley National Labs (LBNL).
- Based on options for an interim VOLL proposed by Brattle, PUCT staff recommended using an interim VOLL of $25,000 per MWh. At the PUCT's February 1, 2024, Open Meeting, Commissioners requested that interim VOLLs between $20,000 and $70,000 per MWh be used to run sensitivities in an additional iteration of ERCOT's reliability standard study in Project No. 54584.
- It is important to note that the interim VOLL is only contemplated for use in the reliability standard studies. ERCOT does not intend to use any interim VOLL values as inputs to pricing in the ERCOT market.

For Phase 2 of the VOLL Study, Brattle developed a proposed VOLL Survey Work Plan to conduct a survey in the ERCOT Region:

- The VOLL Survey Work Plan proposed to use Customer Billing Contact Information (CBCI) submitted by Competitive Retailers to ERCOT to distribute the VOLL survey to a weighted sample of customers in the competitive areas of the ERCOT region. For Non-Opt-In Entity (NOIE) areas of the ERCOT Region, ERCOT would partner with any interested electric cooperative or municipally-owned utility (MOU) for those entities to distribute the VOLL survey within their respective service areas. Bandera Electric Cooperative, CPS Energy, Garland Power & Light, Guadalupe Valley Electric Cooperative, and Pedernales Electric Cooperative are helping with this distribution.
- At a January PUCT Open Meeting, Commissioners agreed with the use of CBCI and NOIE partnerships to distribute the VOLL survey, and further agreed that the survey should begin in March with a final study resulting from the survey to be delivered in Q3 2024.
- At the March 21, 2024, Open Meeting, ERCOT and PUCT outlined a more detailed survey rollout plan and communications strategy. The survey will begin with a soft launch on March 26 to a smaller subset of customers, followed by a formal launch on April 9, and an outreach with NOIE customers on April 16. The survey will remain open until mid-May.
- The PUCT has created a webpage with more information on the survey. Additionally, ERCOT issued a market notice announcing the survey distribution.

New South Texas Export and Import Generic Transmission Constraints

ERCOT has identified a reliability need to limit power transfers in both south-to-north and north-to-south directions across interfaces that are generally south of San Antonio. ERCOT is establishing four new generic transmission constraints (GTCs) to manage these transfers. ERCOT began enforcing the four new GTCs on March 1, 2024. GTCs and their associated Generic Transmission Limits (GTLs) are operational tools for managing stability limits and other non-thermal limits using market-based dispatch.

ERCOT has developed a plan containing actions that will be taken to avoid exceeding the limit. If these actions are not sufficient, controlled load shed may be required. ERCOT is working with the local transmission owners to identify and implement near-term solutions to maximize the capability of the transmission system to export power from south Texas. In August 2023, the ERCOT Board of Directors endorsed the San Antonio South Reliability Project, which is expected to alleviate the constraint when it is placed in-service in 2027. ERCOT will continue to work with Market Participants to identify short-, mid-, and long-term mitigation efforts.

Additional information can be found in the ERCOT filing and in the PUCT discussion with ERCOT Chief Operating Officer Woody Rickerson (agenda item #20). More to come on this in the upcoming months.

CPS Notice of Suspension of Operations & Grid Reliability

ERCOT works closely with its Market Participants to ensure generation resources are available to support voltage stability and other transmission system requirements for a reliable grid. When the owner of a generation resource plans to stop operating a resource for more than 180 days, the owner must notify ERCOT at least 150 days before suspending or ending operations of that resource.

In March 2024, ERCOT received three Notifications of Suspension of Operations (NSO) from CPS Energy for one of its generation sources. The NSOs indicate that, as of March 31, 2025, the generation resources will indefinitely suspend operations. ERCOT implements a defined protocol process, called Reliability Must Run (RMR), when an NSO is received. ERCOT then evaluates if the resource is needed to support grid reliability in the affected area and if other solutions could address that need.

ERCOT has 60 days after receiving the notice to complete its evaluation, and Market Participants can comment on the need for the resource in question. If a resource is needed, ERCOT must issue a request for proposal (RFP) for a more cost-effective alternative (referred to as a must-run alternative or MRA) to meet that need. ERCOT must obtain ERCOT Board approval before entering any RMR or MRA agreement. Factors for whether or not to enter an RMR or MRA agreement include the number of customers affected and potential economic impact to customers. Visit ERCOT's RMR process one-pager for more information.

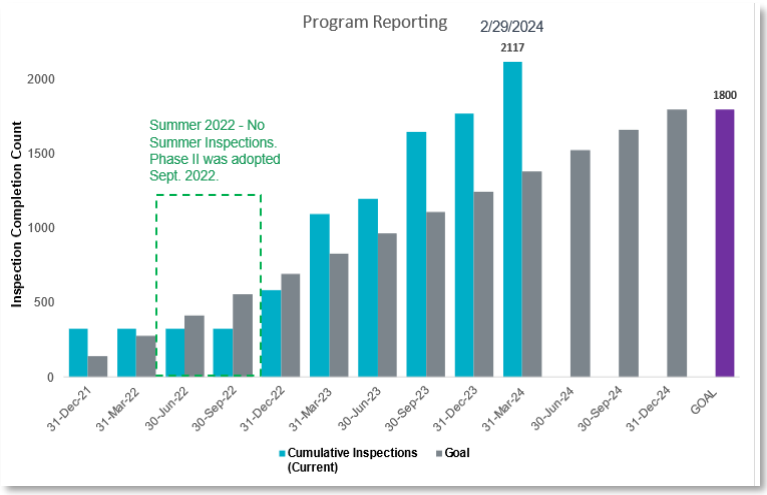
Weatherization Updates

Weatherization Customer Service Management Module

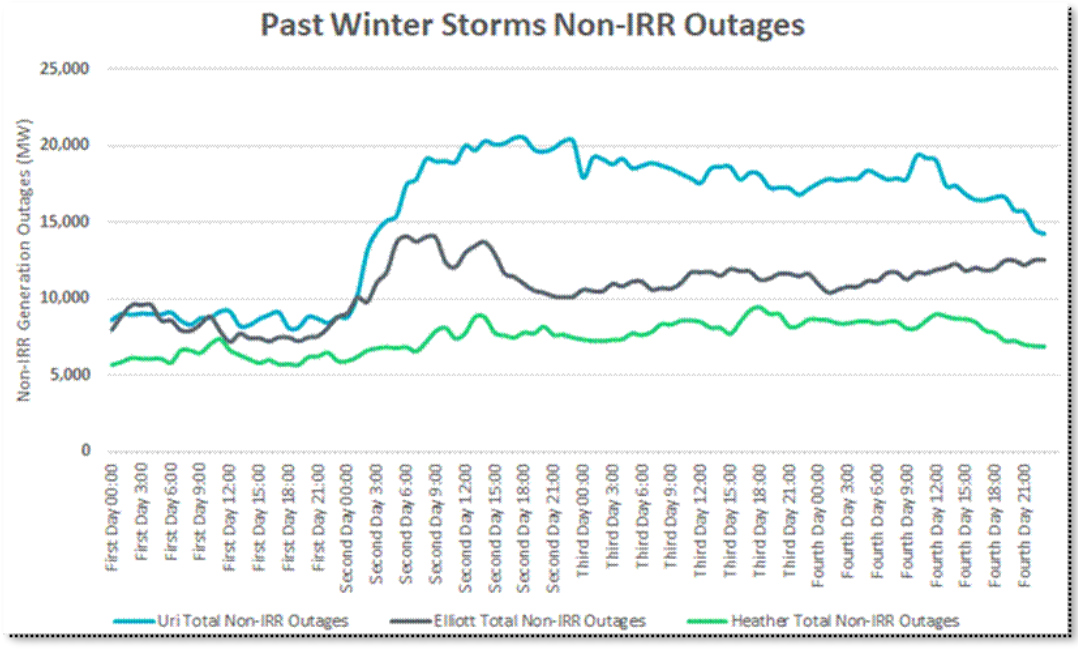
The Weatherization and Inspection team is rolling out a new Weatherization Customer Service Management Module (wCSM) on the ServiceNow platform after more than a year of nearly continuous development. The wCSM will provide Market Participants with a "one-stop shop" for submitting semi-annual Declarations of Weather Preparedness, responding to Notices of Inspection, and conducting other interactions with ERCOT in compliance with the PUCT's Weather Emergency Preparedness Rule. The wCSM is currently in a beta test phase and is anticipated to go-live on May 1, 2024, substantially improving the ERCOT/Market Participant interface in support of continued weatherization efforts.

ERCOT Winter Weatherization Summary

After its third winter implementing weatherization standards, ERCOT has executed more than 2,100 weatherization inspections to date.



Efforts by Market Participants to weatherize their facilities, supported by ERCOT's inspections and the collaborative conversations occurring during them, are having a beneficial impact on ERCOT system reliability during severe winter conditions. We have observed significant decreases in dispatchable generation (non-intermittent renewable resources, or non-IRR) forced outage rates, as seen during Winter Storms Elliott and Heather as compared to Winter Storm Uri (shown in the graph below).



Public Utility Commission of Texas v. RWE Renewables Americas, LLC

On Tuesday, March 19, the Supreme Court of Texas held oral argument in *Public Utility Commission of Texas (PUCT) v. RWE Renewables Americas, LLC and TX Hereford Wind, LLC*. While ERCOT is not formally a party to the case, the final decision will significantly impact ERCOT.

At issue is whether the Austin Court of Appeals erred when it ruled that the PUCT failed to comply with the Texas Administrative Procedures Act when it approved Nodal Protocol Revision Request (NPRR) 1081 and that NPRR 1081 is therefore invalid. NPRR 1081 modified the calculation of the Real-Time On-Line Reliability Deployment Price Adder so that when ERCOT is directing load shed during an Energy Emergency Alert (EEA) Level 3, real-time energy prices clear at the high system-wide offer cap. The Austin Court of Appeals' decision calls into question the entire ERCOT/PUCT rulemaking process which has existed for 20-plus years.

The PUCT subsequently appealed the Austin Court of Appeals' decision to the Supreme Court of Texas. Prior to the March oral argument, ERCOT filed an amicus curiae brief in support of the PUCT's position. The oral argument recording is available here. ERCOT expects a decision from the Supreme Court of Texas in June.

Upcoming
Activities

BOARD OF DIRECTORS MEETINGS*

ERCOT Board of Directors meetings are livestreamed from ercot.com, where you can also find links, additional information, agendas, and supporting documents.

April 23 June 18 August 20 October 10 December 3

RELIABILITY & MARKETS (R&M) COMMITTEE MEETINGS*

ERCOT Reliability & Markets (R&M) meetings are livestreamed from ercot.com, where you can also find links, additional information, agendas, and supporting documents.

April 22 June 17 August 19 October 9 December 2

TECHNICAL ADVISORY COMMITTEE (TAC) MEETINGS*

ERCOT Technical Advisory Committee (TAC) meetings are livestreamed from ercot.com, where you can also find links, additional information, agendas, and supporting documents.

April 15
August 7 & 28
May 22
September 25
June 24
October 30
July 31
November 20

ERCOT has additional working groups and committees. Visit our Meeting Calendar for more on the various groups, committees, dates, agendas, and meeting materials. *Meetings dates are subject to change, so please check the meetings page for the latest information.