



2024



ERCOT MONTHLY

Issued June 2024

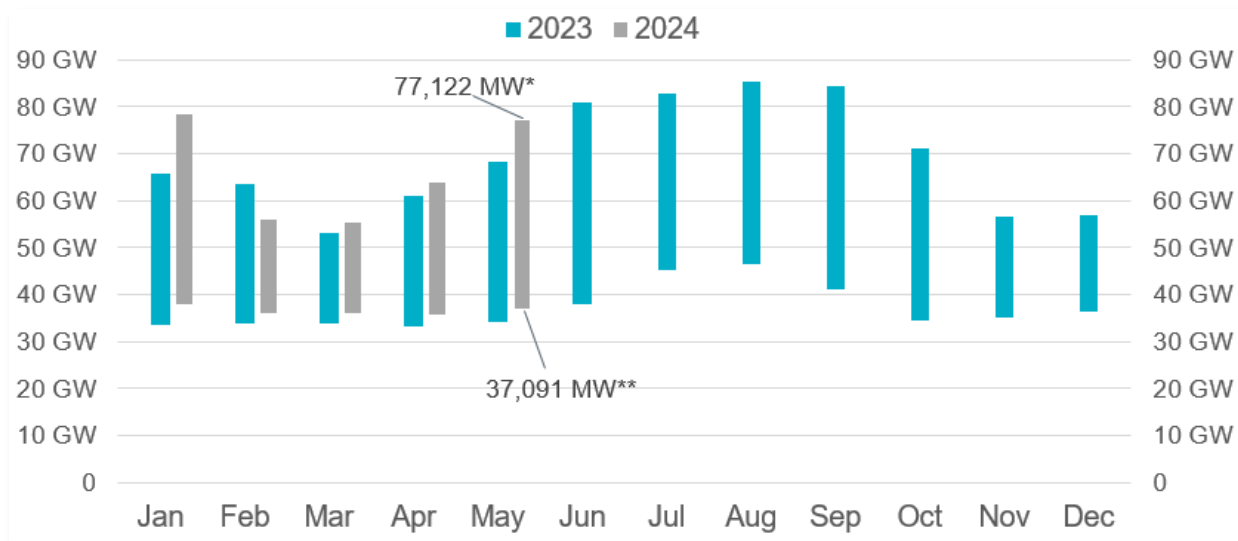
May 2024 Look Back

GRID OVERVIEW

May Peak Demand

ERCOT set five new May peak demand records in 2024.

- 72,261 MW set May 20 in the 5-6 p.m. hour
- 72,695 MW set May 24 in the 4-5 p.m. hour
- 73,749 MW set May 25 in the 4-5 p.m. hour
- 73,756 MW set May 26 in the 5-6 p.m. hour
- 77,122* MW set May 27 in the 4-5 p.m. hour, which is 8,967 MW more than the peak demand of 68,159 MW set May 5, 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 May Peaks

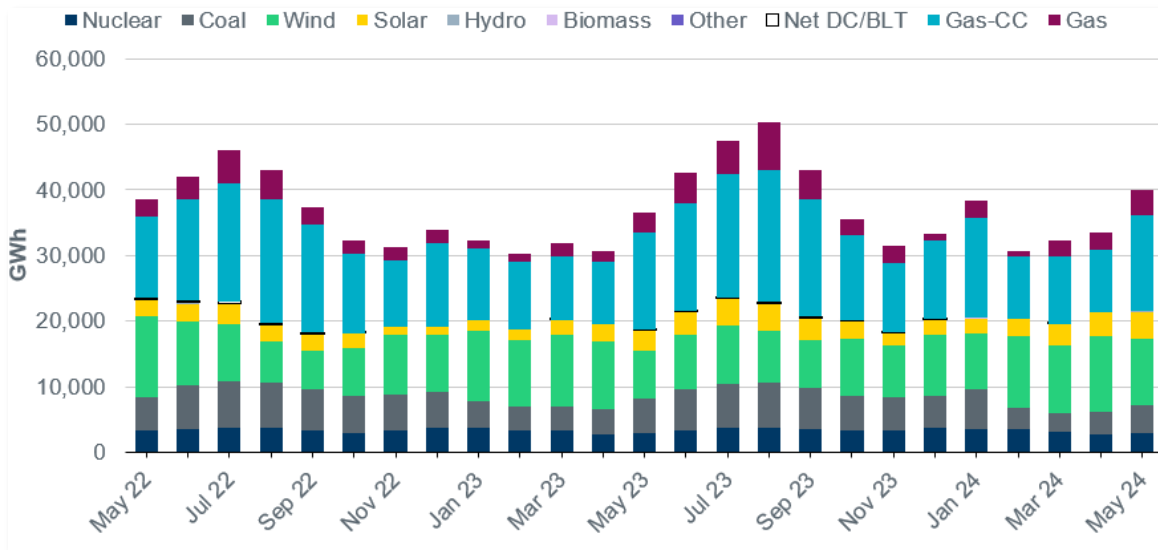
- May 2022 peak demand: 71,645MW in the 4-5 p.m. hour on May 31
- May 2021 peak demand: 62,832MW in the 4-5 p.m. hour on May 26
- May 2020 peak demand: 64,411MW in the 5-6 p.m. hour on May 19
- View ERCOT's [peak demand records](#).

Solar and Wind Records

- A new renewable generation record of 37,806 MW was set April 4 at 4:07 p.m. with 69.47% renewable penetration at time of record generation.
- 2 new solar records:
 - 19,115 MW set May 14 at 1:29 p.m. penetration at record generation time 33.56%
 - 19,387 MW set May 18 at 11:40 a.m. penetration at record generation time 36.55%
- These records and other grid facts can be found on the ERCOT [Fact Sheet](#).

MONTHLY ENERGY GENERATION MIX

The monthly energy generation increased by 9.6% year-over-year to 39,971 GWh in May 2024, compared to 36,462 GWh in May 2023. The chart below shows the generation type fueling the grid each month.

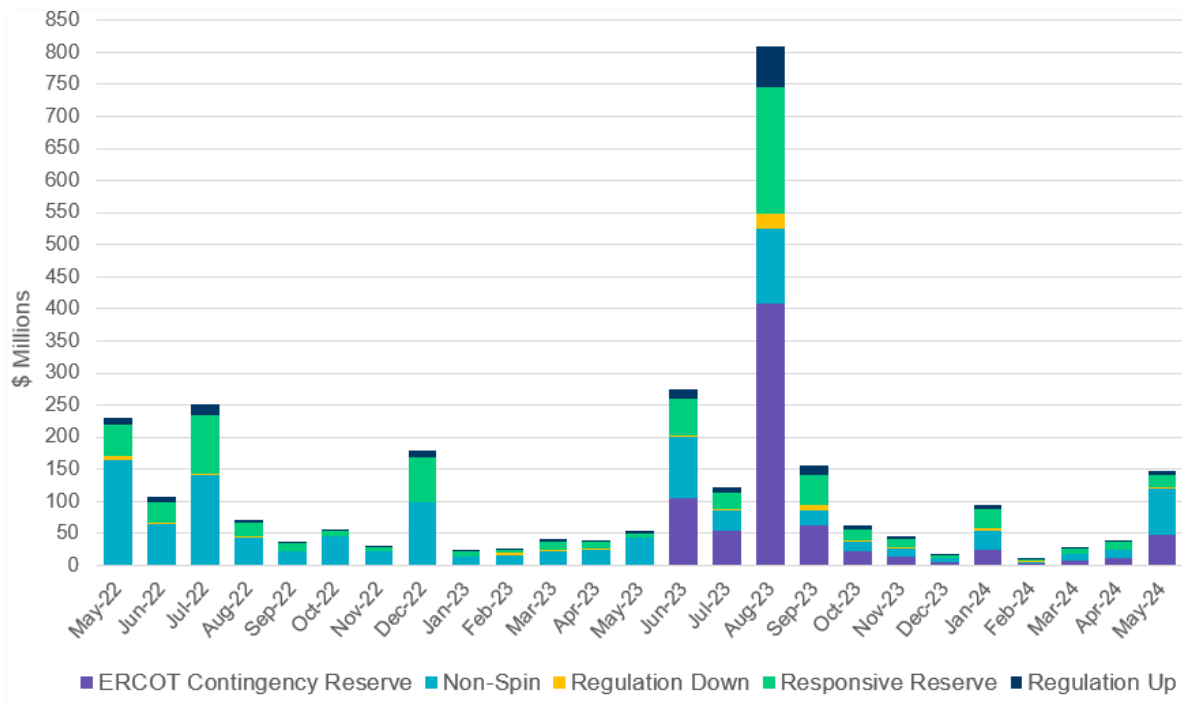


Data for the last two months is based on preliminary settlements.

ANCILLARY SERVICES

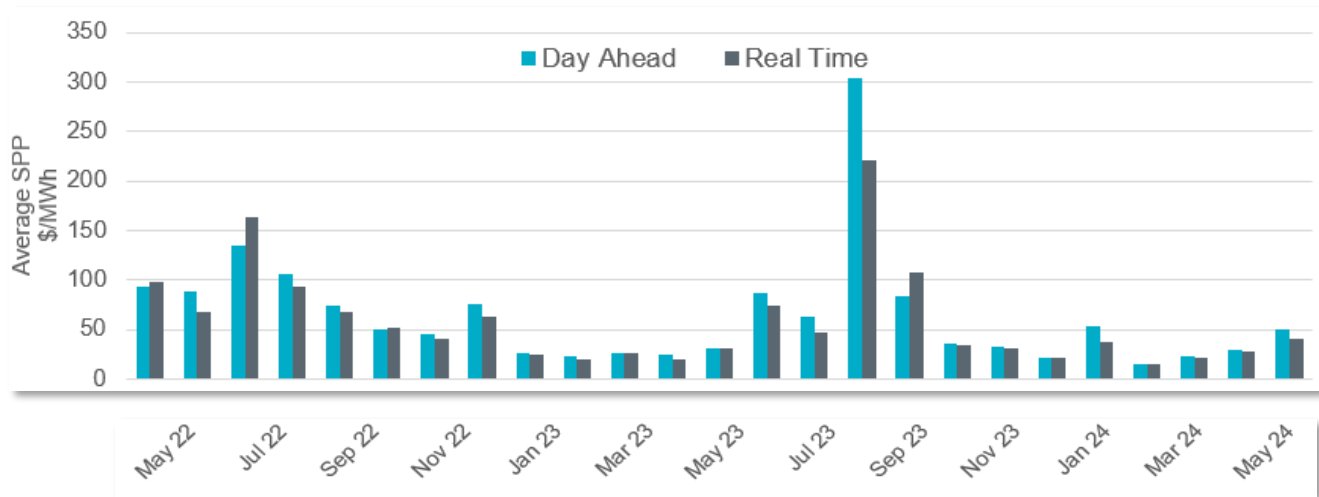
ERCOT uses [Ancillary Services \(AS\)](#) to balance the next day's supply and demand of electricity on the grid and mitigate Real-Time operational issues. Real-Time AS deployment is viewable on our [dashboards](#).

ERCOT procured \$146.39 million in Ancillary Services for grid reliability in May 2024.



WHOLESALE PRICES

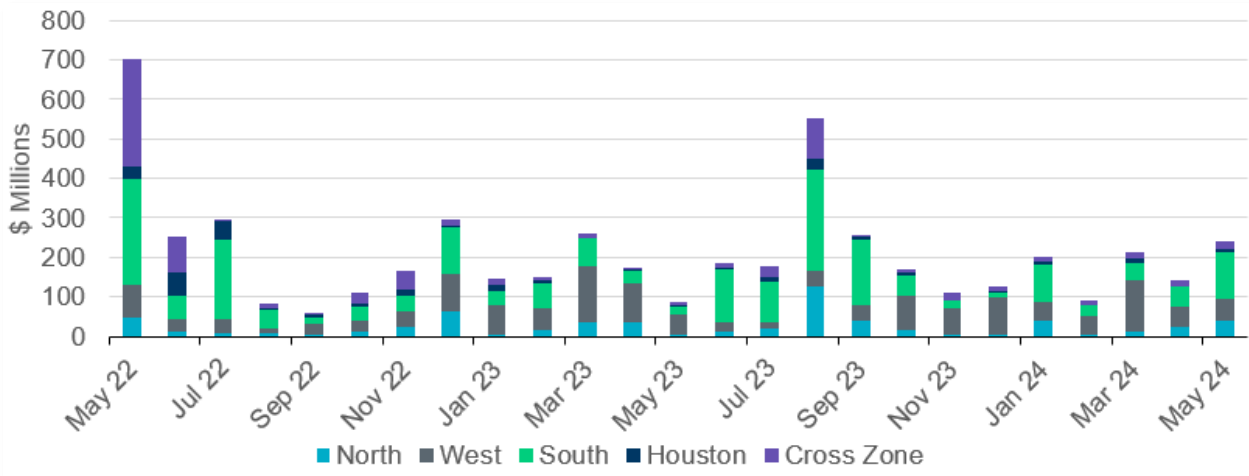
Average energy prices in the Day-Ahead and Real-Time Market for May were broadly in alignment with expectations. There were some specific days in which elevated prices were observed, specifically on operating day May 8. Unseasonably high temperatures and high levels of expected maintenance outages caused scarcity and were the primary drivers for these high prices. Additionally, there was a subset of days in which the market was anticipating higher prices for the evening hours in the Day-Ahead, but these prices didn't materialize in Real-Time.



*Averages are weighted by Real-Time Market Load.

TRANSMISSION CONGESTION COSTS

Total Real-Time congestion rent increased in May compared to April with the highest congestion rent in the South and West Zones.

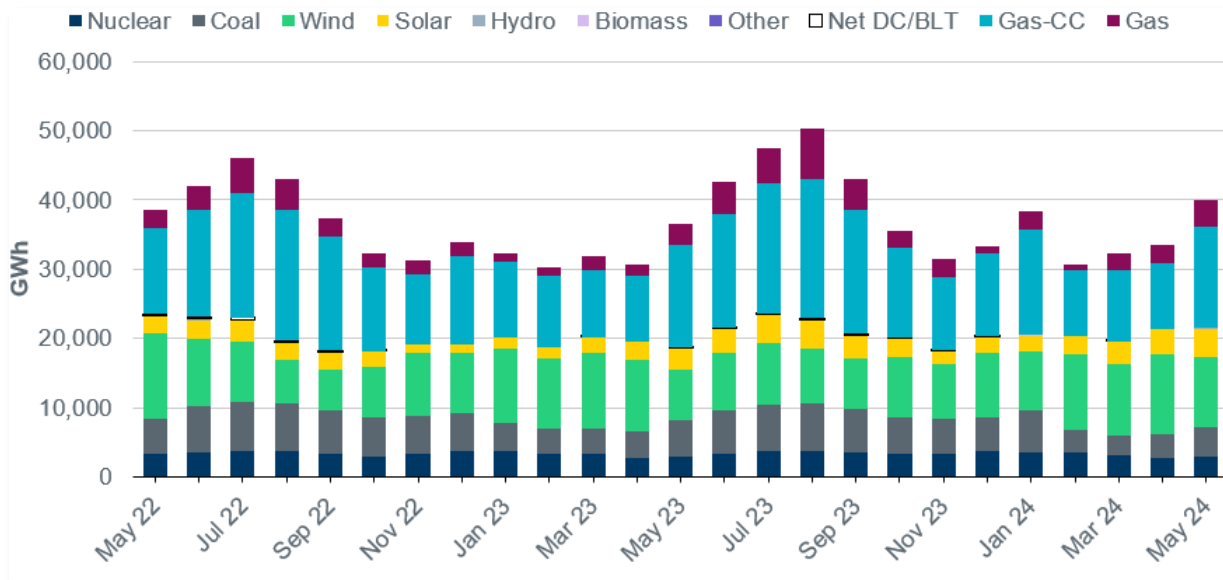


*Averages are weighted by Real-Time Market Load.

**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](#).

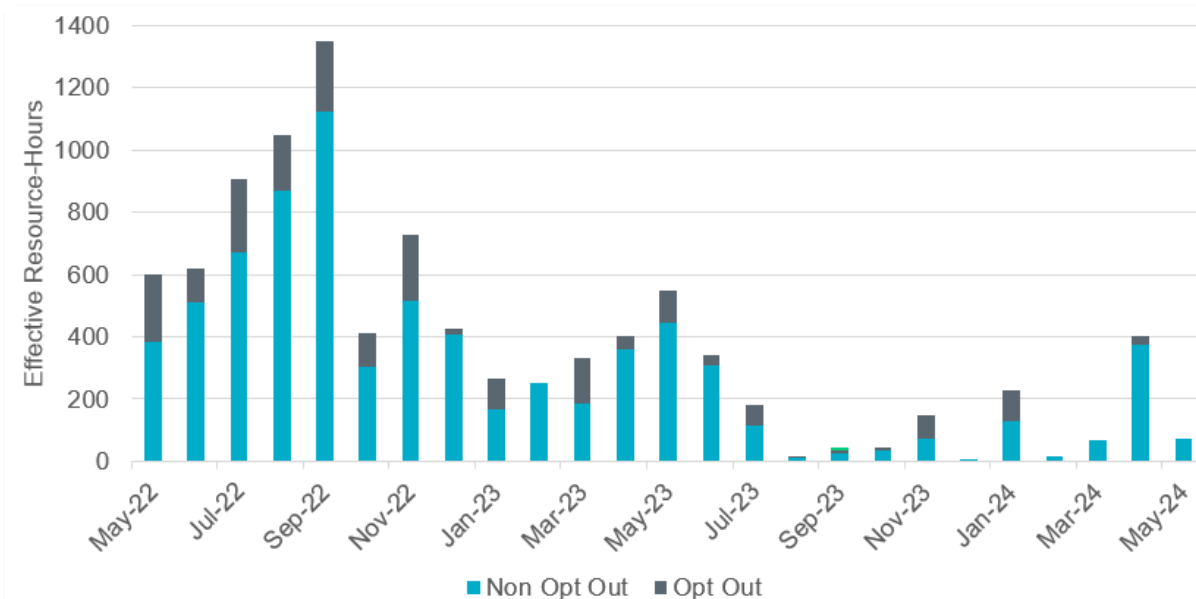
GENERATION INTERCONNECTION QUEUE BY FUEL TYPE

As of May 31, ERCOT was tracking 1,813 active generation interconnection requests totaling almost 355,383 MW. This includes 154,225 MW of solar, 33,887 MW of wind, 149,002 MW of battery, and 15,938 MW of gas projects. Not all of these projects will likely be built, but it shows where market interest lies at this time.



RELIABILITY UNIT COMMITMENT

Reliability Unit Commitment (RUC) activity for May included nine Resources committed due to capacity or congestion. This spring has seen a decrease compared to last spring due to lower temperatures, more solar generation and battery storage, and the addition of the ERCOT Contingency Reserve Service, which started in June 2023.



“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.

July Look Forward

July 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 July. For the typical peak load day in July, 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 82%. This 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.)

Hour Ending (CDT)	EMERGENCY LEVEL		
	Chance of Normal System Conditions	Chance of an Energy Emergency Alert	Chance of Ordering Controlled Outages
	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.	100.00%	0.00%	0.00%
8 p.m.	99.83%	0.02%	0.00%
9 p.m.	98.33%	0.48%	0.27%
10 p.m.	99.54%	0.12%	0.03%
11 p.m.	99.99%	0.00%	0.00%
12 a.m.	100.00%	0.00%	0.00%

Note: Probabilities are not additive.

Scenario Assuming Extreme Low Wind Generation

Hour Ending (CDT)	EMERGENCY LEVEL		
	Chance of Normal System Conditions	Chance of an Energy Emergency Alert	Chance of Ordering Controlled Outages
	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.	100.00%	0.00%	0.00%
8 p.m.	99.68%	0.02%	0.00%
9 p.m.	84.56%	4.80%	2.36%
10 p.m.	88.86%	3.30%	1.36%
11 p.m.	98.96%	0.03%	0.00%
12 a.m.	100.00%	0.00%	0.00%

Note: Probabilities are not additive.

MORA reports can be found on ERCOT's [Resource Adequacy page](#).
Links to the July MORA:

- [MORA_July2024.xlsx \(live.com\)](#)
- [MORA_July2024.pdf \(ercot.com\)](#)

Summer Update

Summer 2024 Snapshot

As we shared [last month](#) (page 7), ERCOT has seen meaningful growth in new generation resources since last summer. Because of the additional solar and storage resources, the risk profile for the grid during peak demand from this summer to last is about the same to slightly improved.

Storage resources at scale is still a relatively new reality in ERCOT. As we start to see batteries saturate traditional Ancillary Services (AS) – like regulation up and down – we expect more of them to operate in the energy market and the longer duration AS market, like ECRS and Non-Spin. As we get more data on this type of utilization, ERCOT will continue to update our risk models with more actual performance data to better model future risk impacts from these resources.

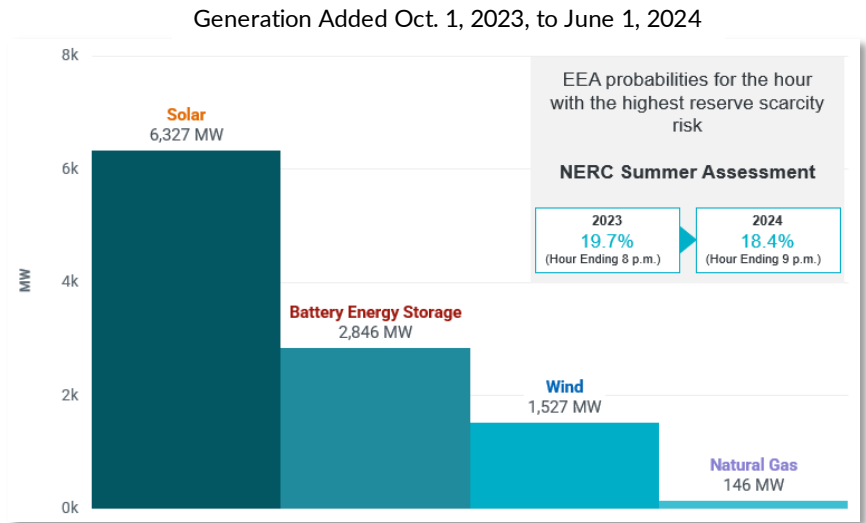
ERCOT has little to no risk of entering emergency operations for the majority of the days. The tightest time to manage the grid during summer is from 7-10 p.m. CDT as solar generation declines. August is expected to see a higher risk of tighter conditions in the evening hours (8-10 p.m.) relative to June and July due to:

- Higher temperatures and higher loads are forecast for August.
- Typical August wind generation lower relative to July wind generation.
- Solar generation is lower late afternoon into evening hours due to slightly shorter days.

ERCOT Cancels RFP For Contracts for Capacity for Summer 2024

ERCOT announced in a [Market Notice](#) and at the [June Board meeting](#) that the Request for Proposals (RFP) for Contracts for Capacity for Summer 2024 has been cancelled. ERCOT is not moving forward with the proposed procurement due to less than 6.5 MW of potentially qualified offered capacity. In making the decision to cancel the RFP, ERCOT weighed factors such as the costs of the RFP, including costs of administration, and the incremental additional complexity for the Control Room operators against the very small amount of capacity that could be provided and the associated minimal reliability benefits. ERCOT looks forward to working with the Public Utility Commission of Texas (PUCT), its staff, and stakeholders to implement lessons learned from this RFP into the ERCOT Protocols.

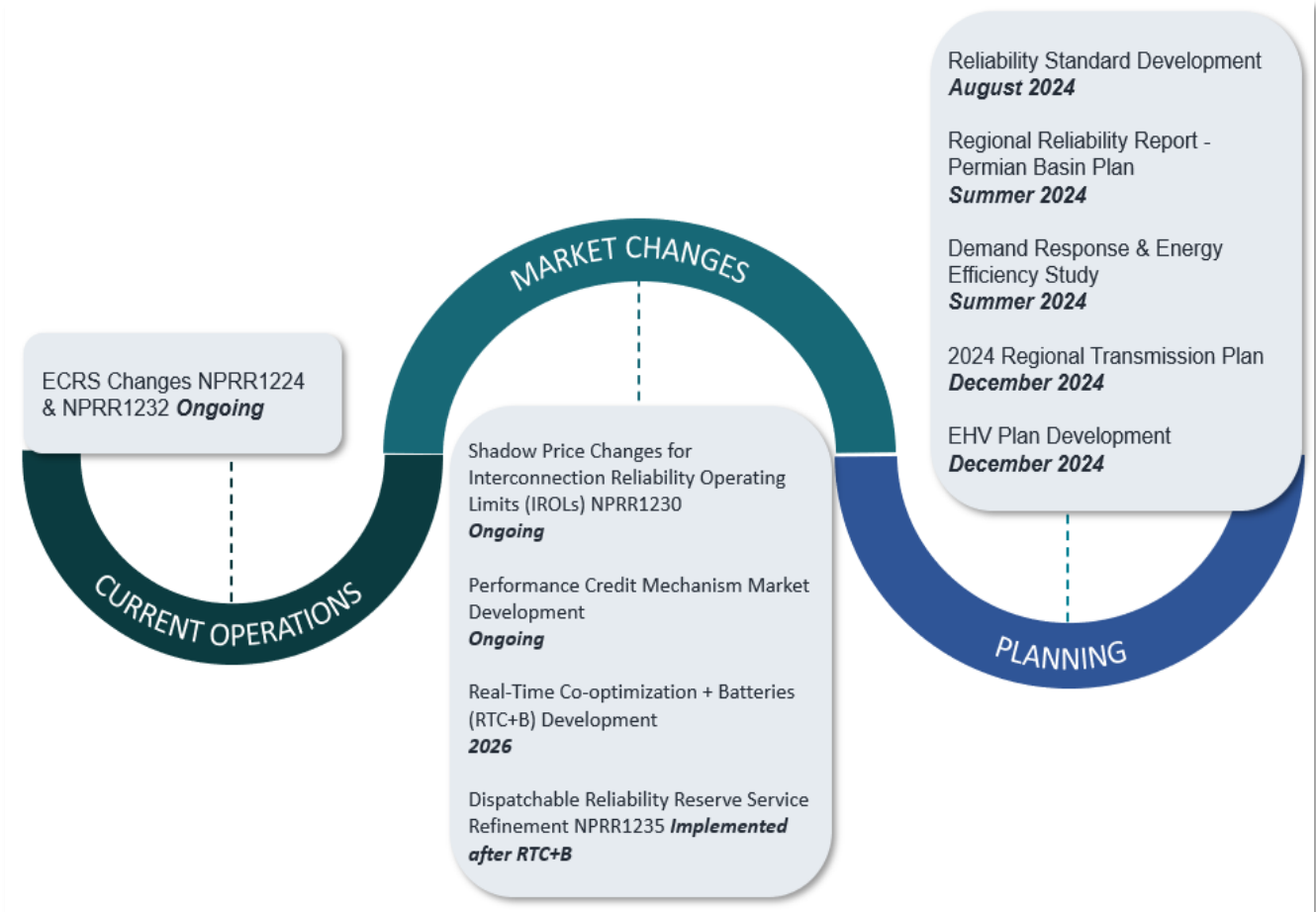
ERCOT continues to work on alternatives to mitigate the risks associated with the new South Texas IROLs, including evaluating changes to the shadow price caps and working with transmission operators on dynamic line ratings to improve throughout on the existing lines. An initial set of line rating changes will be implemented in July.



Reliability Roadmap Update

ERCOT continues to work on key activities related to driving improved reliability in the ERCOT market. These efforts cover the next 18 months, with several key milestones being achieved this summer. We are advancing the suite of market design components that resulted from the prior legislative session, including the design of the Performance Credit Mechanism and Dispatchable Reliability Reserve Service (DRRS), and the associated cost study of the total suite of solutions that will help to inform a go-forward recommendation for a market solution that will support the energy-only competitive market while also sending the appropriate long-term price signals that will incentivize the development of long-duration dispatchable supply resources.

The approval of the draft reliability standard last week marked a very important milestone in this roadmap. While the draft standard is out for comment, there are two additional components to finalize – the Cost of New Entry (CONE) value that will be used and the Value of Lost Load. Both are projected to be finalized by the end of the summer to support the commission’s finalization of the Reliability Standard.



Texas Energy Fund Shows Interest in Building in the ERCOT Market

The PUCT is seeing a strong response to the Texas Energy Fund’s (TEF) In-ERCOT Loan Program, having received [125 Notices of Intent](#) to apply for a low-interest loan to help finance construction of new thermal generation resources. In total, companies filing the notices are requesting \$38.9 billion in loans for 55,908 MW of proposed dispatchable power generation projects for the ERCOT region. The statute currently supports up to a maximum of 10GW of new generation build with the allocated funds.

125 Notices of Intent

\$38.9 billion in requests

55,908 MW of dispatchable generation

The application filing period opened June 1 and closes July 27. To be eligible for a loan, the project must add a minimum of 100 MW of new dispatchable generation. The loan may finance up to 60% of the cost of the project. Visit the [TEF webpage](#) or recent PUCT [news release](#) for more.

NERC State of Reliability Assessment Overview of 2023 Bulk Power System Performance

This year’s State of Reliability (SOR) [report](#) provides NERC’s comprehensive annual analytical review of the bulk power system (BPS) reliability for the 2023 calendar year and seeks to inform regulators, policymakers, and industry leaders on the most significant reliability risks facing the BPS and describe the actions that the Electrical Reliability Organization (ERO) Enterprise has taken and will take to address them.

The report (page 13) states that, “Despite reliability challenges posed by integrating variable generation and new technologies, the Texas Interconnection (ERCOT) has demonstrated a high level of improvement to reliability by using BESS (battery energy storage systems) to support frequency.”



2024 State of Reliability Overview

June 2024

[2024 SOR Infographic](#)

[2024 SOR Technical Assessment](#)

[2024 SOR Video](#)

Assessment Overview of
2023 Bulk Power System
Performance

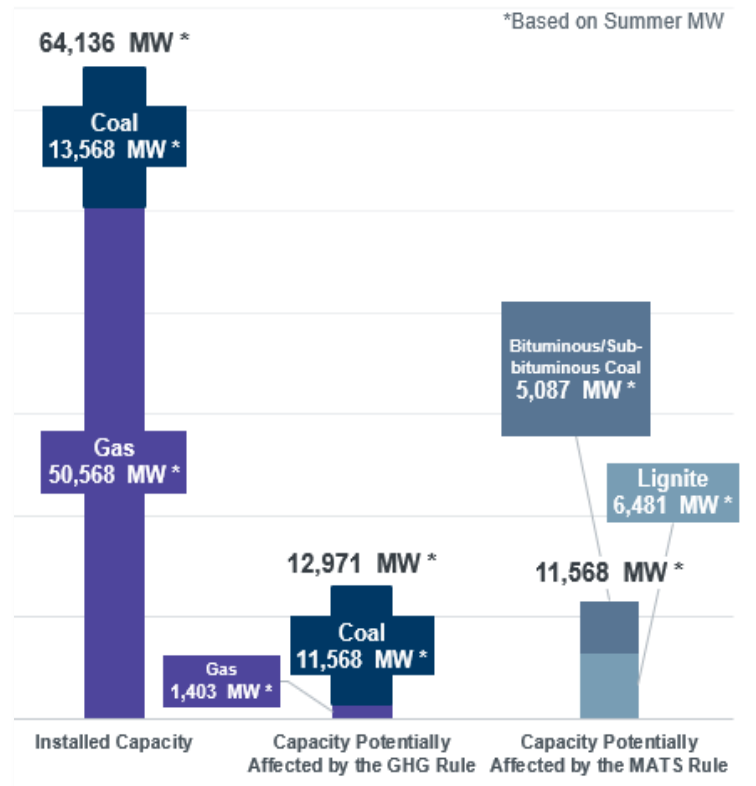
“The Texas Interconnection has demonstrated a high level of improvement to reliability by using BESS to support frequency.”

Additional Items of Note

EPA's GHG & MATS Rules Impacts on ERCOT Capacity

Last [month](#), we shared how Texas has joined other state groups challenging both the Environmental Protection Agency (EPA) Greenhouse Gas Rule (GHG) and the Mercury & Air Toxics Standards (MATS) Rule. This graph shows the impact these rules would have.

- In support of the states' motion to stay the GHG Rule, the rule will likely lead to retirements of all coal-fired plants (13,600 MW total summer capacity) and constrain development of new natural gas-fired power plants, exacerbating reliability risks given forecasted load growth and need for dispatchable, unlimited-duration capacity.
- ERCOT provided a similar declaration in support of the states' motion to stay the MATS Rule, given impacts on coal units and especially lignite units (6,500 MW).
- Rulings on the stay motions are expected sometime this summer.



Legal Updates

The Supreme Court of Texas recently announced two important decisions that impact ERCOT. While ERCOT was not a formal party to either case, ERCOT submitted amicus curiae briefs in support of the PUCT's positions.

First, in [PUCT v. Luminant Energy Company, LLC.](#), the Supreme Court of Texas held that the PUCT's Winter Storm Uri pricing orders were valid and did not violate applicable rulemaking procedures.

Second, in [PUCT v. RWE Renewables Americas, LLC et al.](#), the Supreme Court of Texas held that the PUC's order approving ERCOT Nodal Protocol Revision Request (NPRR) 1081 did not constitute a "competition rule," and, therefore, compliance with rulemaking requirements under the Texas Administrative Procedure Act was not necessary. The decision means the existing ERCOT rulemaking process, including final PUCT approval, remains intact.

The cases are important victories for the PUCT.

Legislative Update

On June 10, ERCOT President and CEO Pablo Vegas provided testimony before the House Committee on State Affairs. The hearing served as a general update to the Committee with participation from various market segments. The House State Affairs Committee is scheduled to have their [next interim charge hearing on July 8](#) and will focus on legislation passed during the 88th Legislative Session.



On June 12, the Senate Business and Commerce Committee met to discuss interim charges relating to the current state of Electricity Market Design, Transmitting Texas Power, and the Impact of Bitcoin Mining on the Texas electric grid. Vegas and ERCOT Sr. Vice President and Chief Operating Officer Woody Rickerson provided testimony relating to legislative initiatives passed during the 88th Legislative Session including SB 2627, HB 1500, and HB 5066.

ERCOT continues to implement the various legislative provisions from previous legislative sessions. A full listing of the of legislative provisions currently undergoing the implementation process can be found in the most recent edition of the [ERCOT Legislative Status Report](#).

June Board of Directors Meeting Recap

- The ERCOT Board voted to approve the Oncor West Texas 345-kV Infrastructure Rebuild Regional Planning Group (RPG) Project, a \$1.12 billion, Tier 1 project with expected in-service date in Summer 2028. The project will support ERCOT reliability requirements through the construction of new infrastructure along with improvements to transmission lines and configurations. It is intended to address thermal overloads and load growth on 218 miles of 345-kV transmission lines in the Scurry, Mitchell, Howard, Glasscock, Martin, Midland, and Ector Counties in the West and Far West Weather Zones. The Oncor West Texas 345-kV Infrastructure Rebuild Project will require PUCT approval of a Certificate of Convenience and Necessity before construction can commence. The project includes components of Preferred Projects identified in the December 2021 Permian Basin Load Interconnection Study.
- The Board approved eight revisions to the ERCOT Nodal Protocols along with a revision to the Nodal Operating Guide and three revisions to the Planning Guide. The approvals included [NPRR1224](#), ECRS Manual Deployment Triggers, which would introduce a trigger that ERCOT may use to manually release ERCOT Contingency Reserve Service (ECRS) from Security-Constrained Economic Dispatch (SCED)-dispatchable Resources under certain conditions at a price floor of no less than \$750 per MWh. These revisions are now pending final approval at the PUCT for consideration at the PUCT July 25 Open Meeting. Information regarding recently approved rules and the revision request process is available on the Market Rules section of the ERCOT [website](#).

- The Board considered [NOGRR245](#), *Inverter-Based Resource (IBR) Ride-Through Requirements*, ultimately keeping it tabled at the Board for further consideration. ERCOT continues to work with stakeholders on the reliability initiative to develop voltage and frequency ride-through requirements for IBRs and Wind-powered Generation Resources consistent with new Institute of Electrical and Electronics Engineers Interconnection and Interoperability Standards. The Board is expected to consider NOGRR245 through special upcoming Reliability and Markets and Board meetings.
- The Board held an educational session on ERCOT load forecasting. The [presentation](#) provided an overview of the different load forecast types with a focus on the operational midterm load forecast (MTLF). The MTLF provides an hourly forecast for the next 168 hours, or 7 days, and updates hourly. The session highlighted different weather forecast inputs and the impact of demand response as ERCOT continues to see growth of large, increasingly active and responsive load.
- The Board's Technology and Security Committee received an overview of grid forming inverters from Ben Kroposki, Director of the Power Systems Engineering Center at National Renewable Energy Laboratory (NREL). The [presentation](#) was the first invited emerging technology speaker for the committee and focused on the rapid increase in the amount of IBRs on the ERCOT grid from solar PV, wind, and batteries and how integrating grid-forming technologies can help provide increased stability and reliability benefits.
- The Board of Directors approved [amendments](#) to the ERCOT Board Policies and Procedures. The changes implement legislation relating to PUCT Commissioner participation in Executive Session and PUCT directives and conform budget timelines consistent with PUCT rules. The changes also codify current practices for public access, including comments by interested parties, at Board and Board committee meetings and set forth procedures for participation in Board consideration of Revision Requests.

ERCOT Board of Directors' Chair Stepping Down

At the June Board of Directors meeting, Paul Foster announced that he is stepping down as Chair of the ERCOT Board of Directors. Paul was named Chairman in October 2021.

"What I have come to learn in my tenure as ERCOT Chair is that this is the most dynamic, innovative, adaptive, and forward-looking electric grid and competitive market in the world," Foster said at the meeting. "Texas and ERCOT are at the forefront in the global energy transformation that is currently taking place. And, frankly, I think we are handling it better than just about anyone else."

"Paul's extensive experience, insight, and pursuit of grid reliability have been integral to ERCOT and the electric power industry in Texas," Pablo Vegas, ERCOT President and CEO, shared. "Paul has contributed his time and efforts to see ERCOT through some challenging times and has consistently acted in the best interest of Texas. His legacy will leave a positive and long-lasting impact on the future of the electric grid and our state."

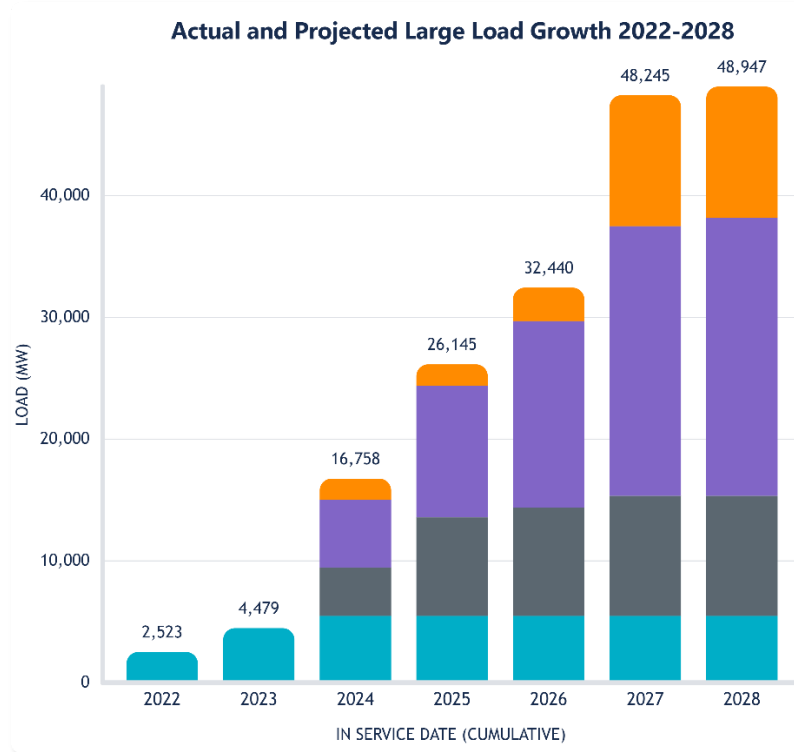
Earlier this week, Governor Abbott appointed Foster to the ERCOT Board Selection Committee for a term to expire at the pleasure of the Governor. The Governor's press release is available [here](#). Vice Chairman Bill Flores will manage Board responsibilities until a Chair is named. The Chair must be appointed by the ERCOT Board Selection Committee.

Large Load Revision Requests Update

The amount of Large Load (which includes bitcoin mining, hydrogen and hydrogen-related manufacturing, data centers, and electrification) connected to the ERCOT grid is projected to continue growing. ERCOT continues to work with stakeholders, including the [Large Flexible Load Task Force](#) (LFLTF), to develop rules in areas where there is consensus. In areas where there is not, ERCOT will take steps to mitigate risks to grid reliability. ERCOT recently introduced NPRR1234 and PGRR115 and brought them to the June Protocol Revision Subcommittee and LFLTF meetings for discussion and further action. These Revision Requests:

- Establish a new interconnection process for all Large Loads (loads 75 MW and greater)
- Define new standards for identifying loads 25 MW and greater
- Take stakeholder feedback on NPRR1191 and PGRR111 and replace those documents
- Address some, but not all, of the issues identified by the LFLTF

The information below shows the current Large Load Interconnection Queue.



Project Status	2022	2023	2024	2025	2026	2027	2028
No Studies Submitted	-	-	1,750	1,750	2,750	10,760	10,760
Under ERCOT Review	-	-	5,548	10,831	15,325	22,148	22,850
Planning Studies Approved	-	-	3,981	8,085	8,886	9,859	9,859
Approved to Energize	2,523	4,479	5,479	5,479	5,479	5,479	5,479
Total (MW)	2,523	4,479	16,758	26,145	32,440	48,245	48,947

Upcoming Activities

BOARD OF DIRECTORS MEETINGS*

ERCOT [Board of Directors](#) meetings are live streamed on [ercot.com](#), where you can also find links, additional information, agendas, and supporting documents.

August 20

October 10

December 3

RELIABILITY & MARKETS (R&M) COMMITTEE MEETINGS*

ERCOT [Reliability & Markets \(R&M\)](#) meetings are live streamed on [ercot.com](#), where you can also find links, additional information, agendas, and supporting documents.

August 19

October 9

December 2

TECHNICAL ADVISORY COMMITTEE (TAC) MEETINGS*

ERCOT [Technical Advisory Committee \(TAC\)](#) meetings are live streamed on [ercot.com](#), where you can also find links, additional information, agendas, and supporting documents.

July 31

August 28

September 25

October 30

November 20

ERCOT has additional working groups and committees.

*Meetings dates are subject to change, so please check the meetings [page](#) for the latest information and for more on the various groups, committees, dates, agendas, and meeting materials.