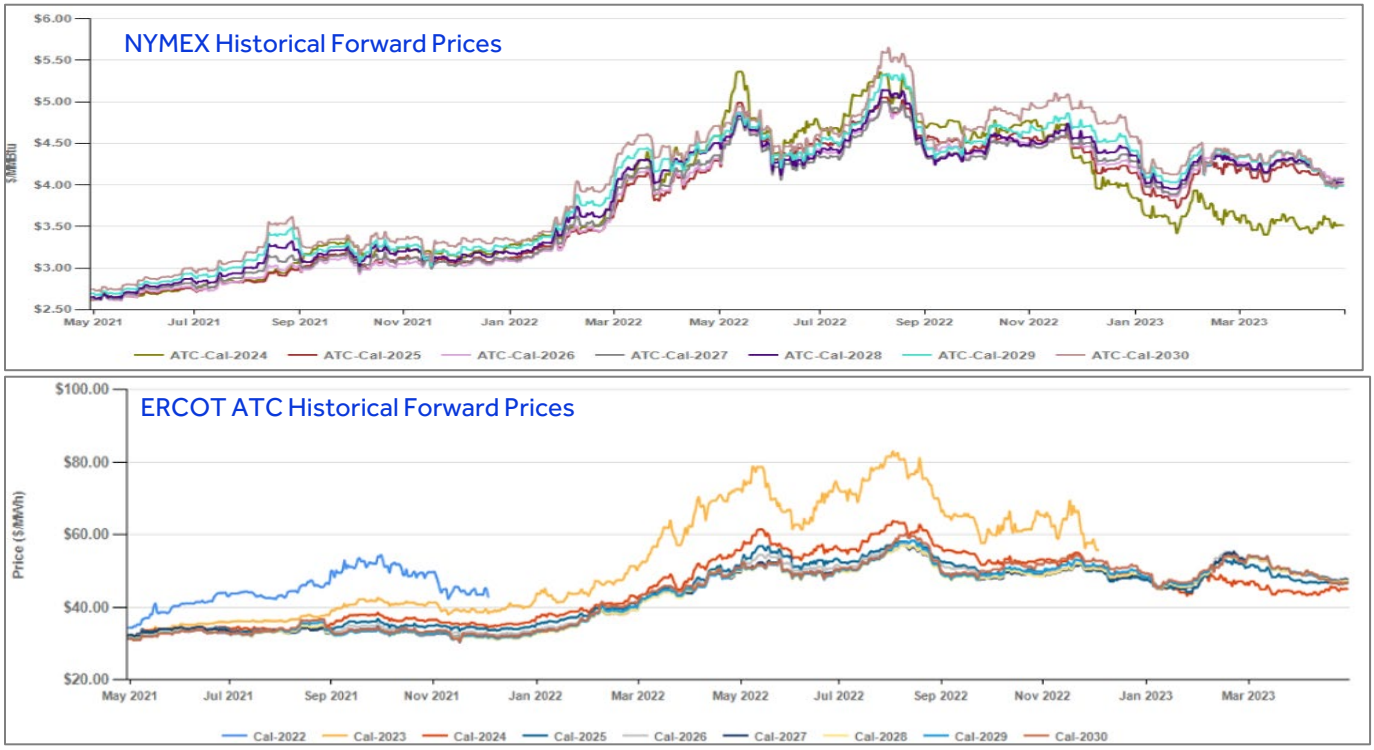
ERCOT Market Update Webinar
Q&A

Compiled: June 12, 2023

The following are answers to the questions our presenters received from participants during the ERCOT Market Update webinar.

Describe the current relationship between electricity prices and natural gas pricing in ERCOT.

Due to a mild winter and continued strong gas production, the market is well supplied, and natural gas prices are currently low compared to 2022. Based on several bullish factors, future calendar strips are priced higher, which is reflected in the current contango gas curve. Natural gas is still the marginal unit dispatched in ERCOT, which sets the price in real-time, so power forwards still tend to trend directionally with gas. Summer forward prices (July-August) however are backwardated, which is opposite the contango shape of the gas curve.



One thing to keep in mind: natural gas trends cannot tell us is whether shifting grid dynamics — such as transmission constraints and net load ramping issues caused by the increased reliance on intermittent renewables — will create real-time volatility and to what extent.

How does peak demand work when you use most of your energy on one or two days? How far apart do you need to start up large A/C units to save on/cut peak demand back?

Please consult with your NRG Account Executive or Energy Advisor to discuss a plan specific to your operations and to learn more about the tools we offer to help with demand management planning and execution.

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Generally speaking, transmission cost recovery factor (TCRF) charges for the following year apply to meters >750KW, and the quantity for this charge is based on the average usage during the prior year's four coincident peaks from June - September. Our free peak alert service provides a general window for when to curtail (for informational purposes only). Historically, most coincident peaks occur between 3 p.m. and 6 p.m. For businesses that are interested in trying to avoid both the peak and price volatility, it may require staying down for a longer window of time.

What will the changes be, if any, to the 4CP policies in 2024 and onward?

At this time there are no proposed changes to 4CP policies.

Will any battery energy storage systems (BESS) be built? Will this cause the market to get to neutral.

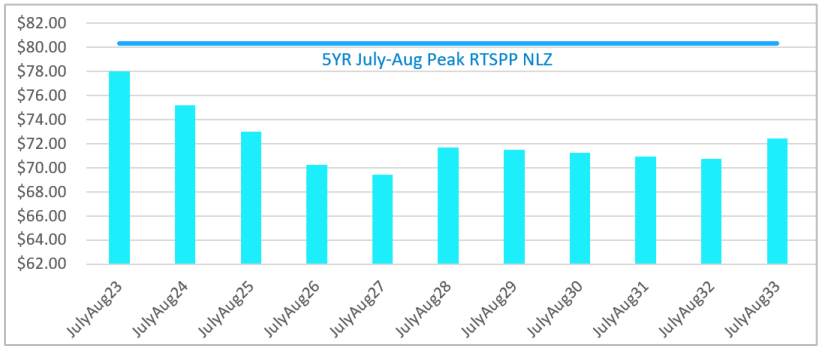
According to the most recent *Seasonal Assessment of Resource Adequacy* (SARA) (dated May 3,2023), there are about 3.5GWs of installed battery capacity. ERCOT's May 1 GIS report, which shows interconnection milestones and trend information for generation resources in the ERCOT region, has about 96 GW in the queue, much of which will not get built. While batteries are promising, most batteries at the moment are being designed to deploy for 1-2 hours within the ancillary services market (likely for fast frequency response), instead of the energy market.

What percentage of demand response is now Bitcoin mining?

In the May 3, 2023 SARA, ERCOT accounted for 1.1 GW of large flexible load adjustment in their planning reserve margin for this summer. In the prior five years, about 2 GW of 4CP curtailment was typical — and now we're closer to 4-5 GW of peak curtailment, inclusive of large flexible loads (i.e. crypto). As of February 2023, there were 2.3 GW approved to energize and, as of April 23, there were roughly 40 GW in the queue.

Will Texas remain in a contango market structure for the foreseeable future. If so, will energy only rates serve as the best option for C&I accounts?

While forward calendar strips for power are following the natural gas contango (lower near-term, higher long-term), the ERCOT forward summer (July-Aug.) prices from 2023 thru 2027 are backwardated and below recent real-time clears. Forward summer prices typically drive calendar prices.



When may the forward curve begin to even out and match prompt month pricing?

Current short-term gas fundamentals are the most bearish they've been in nearly a decade, and longer-term strips haven't responded to that bearish configuration because the expectation is that supply/demand in the future will be much different. Leveling out the curve any time soon is very unlikely.

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Do you see an environment that would allow us to see fixed all-in rates in the $0.04/kWh range?

Although there are some calendar strips that are already in the $0.04/kWh price range, this is for energy only. In terms of a fixed all-in price, it is unlikely that it will drop as low as 4 cents/kWh since ERCOT is adding market costs by creating new ancillary service products, and the market redesign Performance Credit Mechanism (PCM) charges are still being determined as well.

What are the before and after market redesign ancillary requirements from ERCOT?

As a result of phase 1 of the ERCOT market redesign, we've put together a current state (now) and future state view of the ancillary requirements:

Current state of ancillary services

Product	Subtype	Primary Function	Reason for Function	Response Time	Duration	Can Provide	Online/ Offline	Typical Avg Q	Additional Notes
Regulation	RegUp	Restore Frequency to 60 Hz	Accounts for normal S/D deviations outside of 5min SCED	4 seconds	15 Min.	SCED Resources (ESR, Thermal Gen, CLR)	Online	500MW-1,000MW	
	RegDown						N/A		
Responsive Reserve (RRS)	Primary Frequency Response (PFR)	Restore Frequency to 60 Hz	Large Unit Trips - avoid EEA or firm load shed for loss of two largest units	<10min	15 Min.	SCED Resources (ESR, Thermal Gen, CLR)	Online	2,500MW-3,000MW	10min response not an incentive for batteries that can respond instantaneously
	Under Frequency Relay (UFR (LRs))				1 hour	NCLR			
Non-Spin	"Online"	Net Load Ramps	Net load forecast errors, replenish RRS	<30min	1 hour +	SCED Resources (ESR, Thermal Gen, CLR)	Online	2,000MW - 5,000MW (1,000MW - 2,000MW pre-Uri)	Lower grid inertia via renewable penetration can be dangerous for reliability during periods of large net load forecast errors
	"Offline"					Thermal	Offline		

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Highlighted items represent the changes from current state. This table does not include the Dispatchable Reliability Reserve Service that is part of HB1500, which was just signed into law by the governor.

Future state of ancillary services									
Product	**Subtype**	**Primary Function**	**Reason for Function**	**Response Time**	**Duration**	**Can Provide**	**Online/Offline**	**Typical Avg Q**	**Additional Notes**
Regulation	Reg Up	Restore Frequency to 60 Hz	Accounts for normal S/D deviations outside of 5 min. SCED	4 seconds	15 min.	SCED Resources (ESR, Thermal Gen, CLR)	Online	500MW-1,000MW	
	Reg Down						N/A		
Responsive Reserve (RRS)	**Fast Frequency Response (FFR)**	Restore Frequency to 60 Hz	Large Unit Trips - avoid EEA or firm load shed for loss of two largest units	<10min	15 min.	SCED Resources (ESR, Thermal Gen, CLR), NCLR	Online	2,500MW - 3,000MW	Incentive for batteries, triggered at 59.85 Hz
	Primary Frequency Response (PFR)				15min.	SCED Resources (ESR, Thermal Gen, CLR), NCLR			
	Under Frequency Relay (UFR) (LRs)				1 hour	NCLR			Triggered at 59.7 Hz
ECRS	**ECRS**	**Net Load Ramps (shorter)**	**Error in 5min SCED renewable forecast**	**<10min**	**2 hours**	**SCED Resources (Thermal Gen, CLR), NCLR**	**Online**	**1,300MW-3,000MW**	Created to account for significant real-time net load ramps (greater than Reg Up) via deviations in solar output (unlike sustained ramps like wind). Also to restore frequency as a backup to FFR if batteries can't restore frequency within 15 min. Likely priced similarly to RRS, go-live early June
Non-Spin	"Online"	Net Load Ramps (larger)	Error in hourly renewable forecast used in RUC	<30min	4 hours	SCED Resources (ESR, Thermal Gen, CLR)	Online	**2,000MW-5,000MW minus ECRS**	
	"Offline"					Thermal	Offline		

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Why don't we have more plants generating power as demand seems to be increasing at an exponential rate?

The current market structure has struggled to incentivize the construction of more dispatchable generation resources to keep pace with demand growth and the existing generation fleet has continued to age. The PUCT and ERCOT have adopted market design reforms to strengthen incentives for existing and new dispatchable generation, including enhancing the operating reserve demand curve (ORDC) and adding the Performance Credit Mechanism (PCM). These reforms however will take time to implement and for the market to respond.

Should the Performance Credit Mechanism (PCM) have a hard cap?

The Texas Legislature passed a bill (SB1500) to create a "net" $1 billion cost cap for the PCM. This means the annual cost cap will vary from year to year and be more uncertain. A cost cap will limit the ability of the PCM to incentivize new dispatchable generation, just like a cost cap on the energy market would limit dispatch of generation.

For SB2627 that was just signed into law: what other requirements are there for this loan and who does the loan come from?

The funds from the loan will come from surplus state revenue originating from Texas ratepayers. The base details of the loan include:

- 20-year loan term at 3% interest rate
- Loan amount cannot exceed 60% of estimated construction costs
- Completion bonus of $120,000 per MW for new generation energized by 6/1/2026 or $80,000 after 6/1/2026 but before 6/1/2029

Requirements to be considered for the loan include:

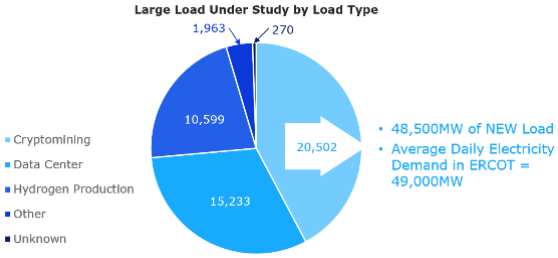
- quality of services and management
- efficiency of operations
- history of electricity generation operations in this state and this country
- resource operation attributes
- ability to address regional and reliability needs
- access to resources essential for operating the facility for which the loan is requested (such as land, water, and reliable infrastructure, as applicable)
- evidence of creditworthiness

Access the full bill language for more information.

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Do you see hydrogen in the near future and, if so, what major sector will be affected?

There has been significant interest in hydrogen production facilities that benefit from the tax credits. Over 10,000 MW of hydrogen production facilities have filed interconnection requests with transmission operators in ERCOT. This will add more load to the ERCOT system.



Is there an update on the timeline for the deregulation of Lubbock?

The implementation of retail competition in Lubbock has been delayed until 2024 due to a challenge at FERC that impacts approval of Lubbock's application.

With the recent resignation of Chairman Peter Lake, is there any replacement currently under consideration?

Commissioner Jackson has been named interim Chair and will serve in that role until Governor Abbott appoints a permanent Chair.