

# How to get rich mining Bitcoin in Texas

Three ways cryptocurrency miners are profiting  
at your expense.

Senate Committee on Business and Commerce

June 12, 2024

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See our Nov. 17, 2022 comments to this committee here: <https://www.citizen.org/wp-content/uploads/2022-11-17-PCTX-Crypto-Mining-Impacts-in-Texas.pdf>.

# Get Rich in Three Easy Steps!

**1. Mine Bitcoin**

**2. Don't Mine Bitcoin**

**3. Enron?**



# 1. Mine Bitcoin

September 6, 2023



## Riot Announces August 2023 Production and Operations Updates

### Riot Produces 333 Bitcoin While Realizing Expanded Benefits of Power Strategy

CASTLE ROCK, Colo., Sept. 06, 2023 (GLOBE NEWSWIRE) -- Riot Platforms, Inc. (NASDAQ: RIOT) ("Riot" or "the Company"), an industry leader in Bitcoin ("BTC") mining and data center hosting, announces unaudited production and operations updates for August 2023.

#### Bitcoin Production and Operations Updates for August 2023

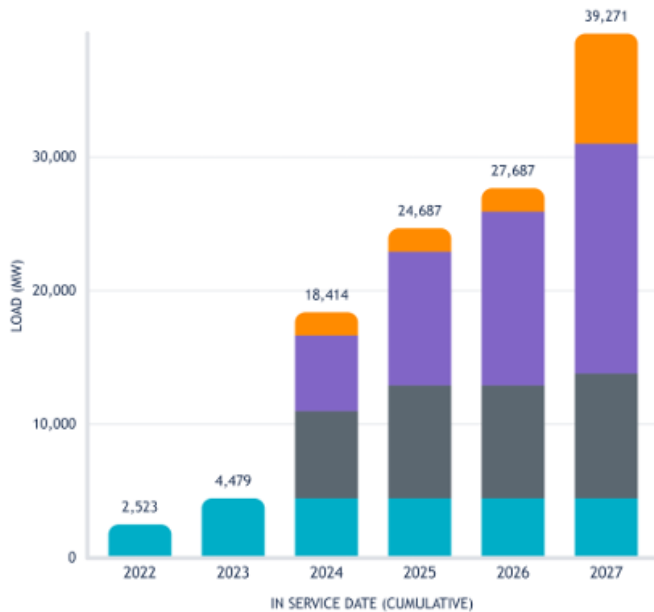
Metric	August 2023	July 2023	August 2022	Comparison (%)	
				Month/Month	Year/Year
Bitcoin Produced	333	410	374	-19%	-11%
Average Bitcoin Produced per Day	10.8	13.2	12.1	-19%	-11%
Bitcoin Held <sup>1</sup>	7,309	7,275	6,720	0%	9%
Bitcoin Sold	300	400	350	-25%	-14%
		\$12.1 million			
Bitcoin Sales - Net Proceeds \$8.6 million		million	\$7.7 million	-29%	12%
Average Net Price per Bitcoin Sold	\$28,617	\$30,293	\$21,926	-6%	31%
Deployed Hash Rate <sup>1</sup>	10.7 EH/s <sup>2</sup>	10.7 EH/s <sup>2</sup>	4.8 EH/s	0%	123%
Deployed Miners <sup>1</sup>	95,904 <sup>2</sup>	95,904 <sup>2</sup>	46,658	0%	106%
	\$24.2 million <sup>6</sup>	\$6.0 million <sup>6</sup>			
Power Credits <sup>3,5</sup>	million <sup>6</sup>	million <sup>6</sup>	\$3.0 million	303%	709%
Demand Response Credits <sup>4,5</sup>	\$7.4 million <sup>6</sup>	\$1.8 million <sup>6</sup>	\$0.2 million	316%	2,933%

In August 2023, Riot Platforms made **\$8.6 million** mining 333 bitcoin.

# Mines add demand

## Current Large Load Interconnection Queue

Actual and Projected LFL Growth 2022-2027



Project Status	2022	2023	2024	2025	2026	2027
No Studies Submitted	-	-	1,750	1,750	1,750	8,244.5
Under ERCOT Review	-	-	5,674	10,021	13,021	17,221
Planning Studies Approved	-	-	6,511	8,437	8,437	9,326.5
Approved to Energize	2,523	4,479	4,479	4,479	4,479	4,479
<b>Total (MW)</b>	<b>2,523</b>	<b>4,479</b>	<b>18,414</b>	<b>24,687</b>	<b>27,687</b>	<b>39,271</b>

**NOTE:** In January 2024 ERCOT identified several projects that had been previously misclassified in this chart. This error was corrected, resulting in a higher 2023 total of approved load than was previously reported. The overall size of the queue was not impacted by this error. The charts on slides 4, 5, and 6 were also corrected.

- **Approved to Energize** – Projects that have received Approval to Energize from ERCOT Operations. NOTE: not all MWs in this category have been observed to be operational (see next slide)
- **Planning Studies Approved** – Projects that have received ERCOT approval of required interconnection studies. Any MWs that were not approved are reclassified as No Studies Submitted.
- **Under ERCOT Review** – Projects that have studies under review by ERCOT
- **No Studies Submitted** – Projects that are tracked by ERCOT but that have not yet provided sufficient information for ERCOT to begin review. Additionally, MWs that were not approved by ERCOT after review of planning studies are included in this category until a path to interconnect these MWs is identified or the customer cancels the interconnection request.

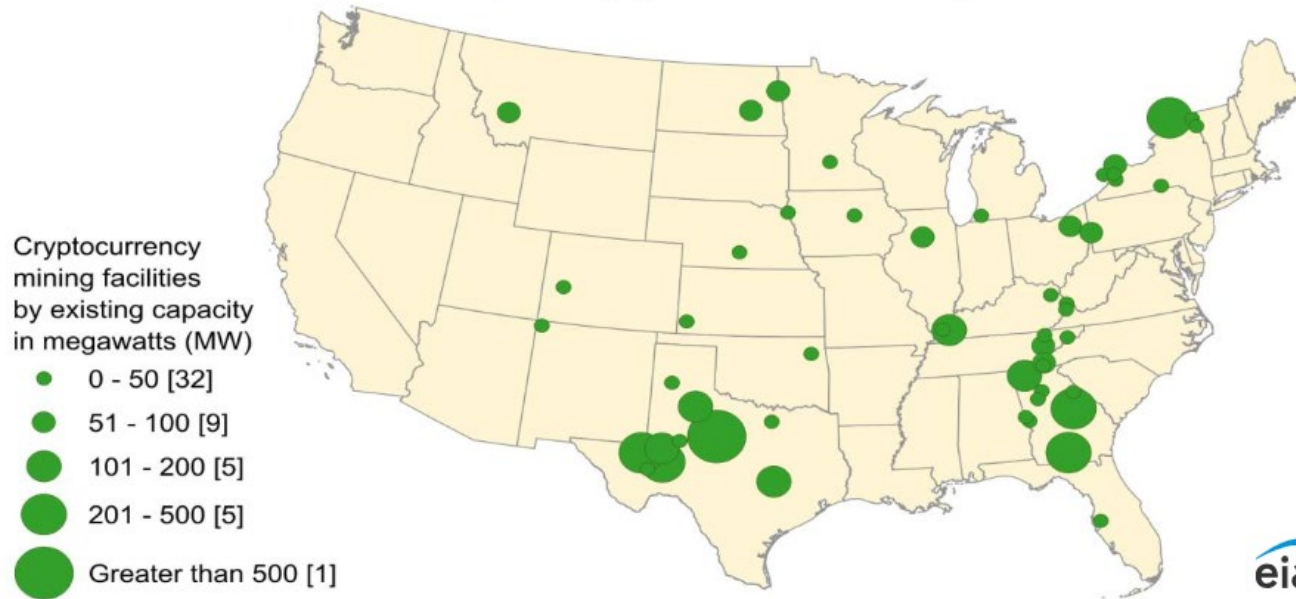


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# How much demand is unknown

Locations of 52 U.S. cryptocurrency mining operations, as of January 2024



Data source: U.S. Energy Information Administration

Note: The representative size shown for a facility is based upon estimates contained in our bottom-up approach. Number in brackets represents the number of facilities.

<https://www.eia.gov/todayinenergy/detail.php?id=61364>

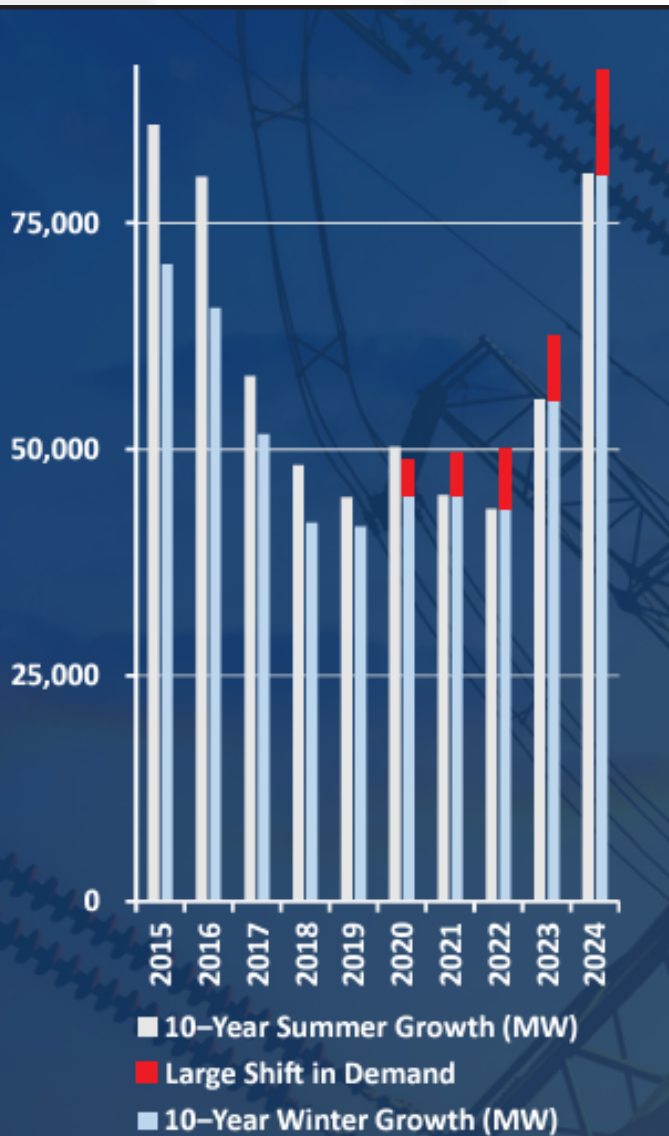
Energy Information Administration estimates energy demand by Bitcoin across the U.S in 2023 at:

- 25 – 91 TWh.
- 0.6 – 2.3% of all demand.
- 3-6 million homes worth of electricity.

EIA data collection was halted in March 2024 after a lawsuit against the Department of Energy by Riot Platforms and the Texas Blockchain Council.

See <https://news.bitcoin.com/texas-blockchain-council-and-riot-secure-legal-victory-in-bitcoin-mining-data-collection-lawsuit/>

# NERC projects U.S. demand



The North American Electric Reliability Corporation (NERC) 2023 Long-Term Reliability Assessment shows **skyrocketing 10-year demand projection** across the United States (at left).

NERC identified ERCOT interconnection requests by crypto mines at:

- 41 GW of planning studies requested.
- 9 GW of planning studies approved.

## Cryptocurrency Impacts on Load and Resources

Due to unique characteristics of the operations associated with cryptocurrency mining, potential growth can have a significant effect on demand and resource projections as well as system operations.

Computer operations for cryptocurrency mining are energy intensive, and mining operators can interrupt or scale operations in response to energy costs. ERCOT continues to see a large volume of interconnect requests from cryptocurrency mining: 9 GW have had planning studies approved of 41 GW that are currently requested.

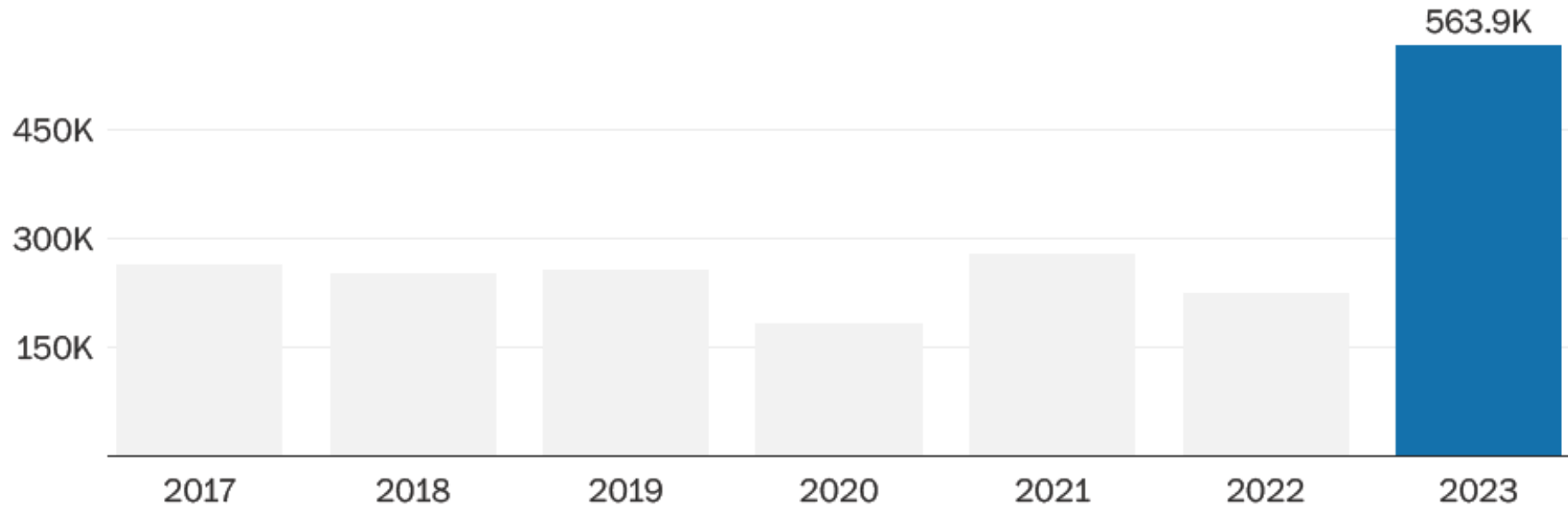
This new category of large flexible loads is leading some areas to update load forecasting methods to capture the flexibility and price-responsiveness of cryptocurrency mining operations. In anticipation of further growth in large flexible loads, ERCOT and its stakeholders are assessing further operational issues that could emerge, such as the effect on system frequency of sudden changes in large flexible loads.

[https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC\\_LTRA\\_2023.pdf](https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2023.pdf)

# 9-year demand projection has doubled

## Projected new energy demand in North America doubles

9-year growth forecast of demand for new electricity, in gigawatt hours



Data covers U.S., Canada and part of Baja California, Mexico.

Source: North American Electric Reliability Corp. Long Term Reliability Assessment

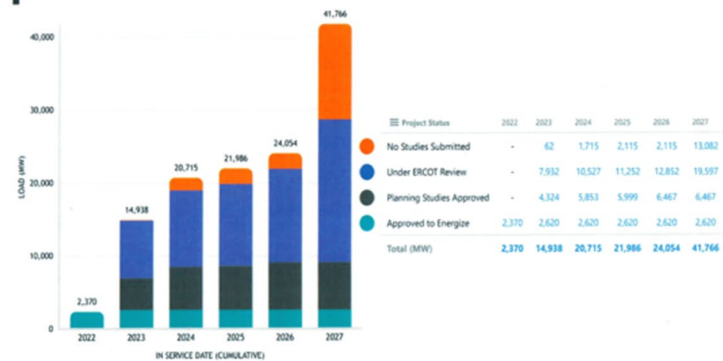
“Amid explosive demand, America is running out of power” Washington Post (7 Mar. 2024)  
<https://washingtonpost.com/business/2024/03/07/ai-data-centers-power/>.

# Crypto on the Texas Grid

30,000 MWs of new industrial load?

- ERCOT has over 2500 MWs currently connected Crypto mining Load
- Projection:
- Designing a system for 30K MWs of new Crypto is different than for 5,000 MWs. 30K is far from likely

Current LLI Interconnection Queue



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# 2. Don't Mine Bitcoin

Bitcoin mines take advantage of ERCOT's Demand Response program.

- **\$170 million each year** was the 2022 estimate by the Tech Transparency Project of crypto's participation in demand response in ERCOT.<sup>1</sup>
- **\$17 million** was collected by Layer1 just for enrolling in demand response in 2020.<sup>2</sup>
- **\$9.5 million** earned by Riot Blockchain for participation in DR in July 2022.<sup>3</sup>

1. "Cryptocurrency Miners' Sweetheart Deal with Texas Threatens an Already Fragile Grid" Tech Transparency Project (2022),

<https://www.techtransparencyproject.org/sites/default/files/Crypto%20Texas%20Report.pdf>

2. <https://www.cnbc.com/2022/02/03/winter-storm-descends-on-texas-bitcoin-miners-shut-off-to-protect-ercot.html>

3. <https://www.forbes.com/sites/christopherhelman/2020/05/21/how-this-billionaire-backed-crypto-startup-gets-paid-to-not-mine-bitcoin/?sh=5e4e68ae7596>

# Riot Platforms takes \$31.7 million from Texas grid in one month

September 6, 2023



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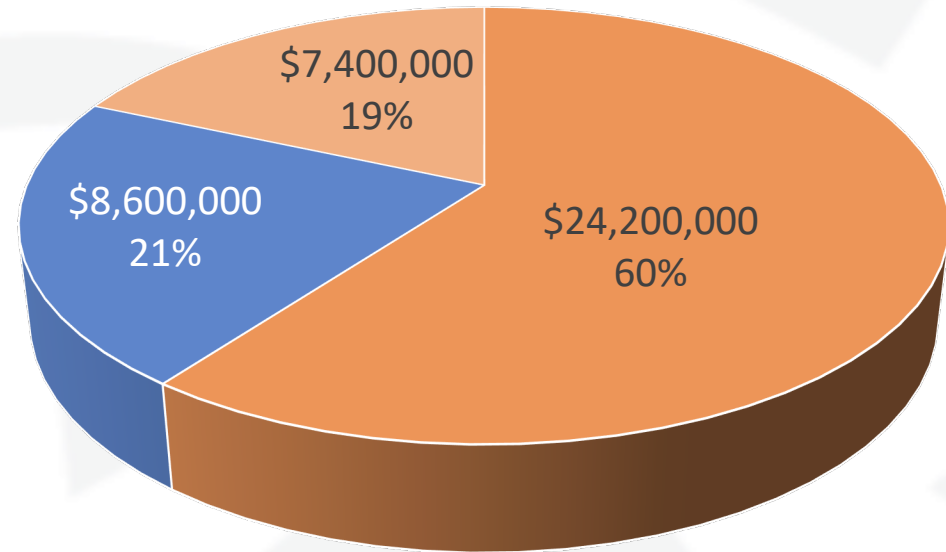
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Riot Platforms Revenue - August 2023



- Power curtailment credits
- Bitcoin mining
- Demand response credits

# The Legislature can limit crypto's participation in demand response

SB 1751 (88R) by Senator Lois Kolkhorst:

- Passed the Senate in 2023.
- Requires registration of large flexible loads >10 MW.
- Demand response participation by crypto mines is limited to 10% of the program.
- Tax abatements prohibited for crypto mines.

# ERCOT will require large load classification

## Loads 25 MW or Greater - Draft End Use Classifications

- Oil and Gas Production, Processing, and Transmission
- Oil and Chemical Refining
- Steel Manufacturing
- **Cryptocurrency Mining**
- Data Center (non-Cryptocurrency)
- Hydrogen and Electrofuel Production
- Other Industrial



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# Enron?

How crypto miners drive up energy prices.



**Alex Liegl** ⚡   
@alexanderliegl

An energy arbitrage operation disguised as a bitcoin mining company.

10:28 AM · Aug 6, 2020



**Michael T McNamara**  
@McNamaraMT

Power in ERCOT next week is trading over \$500 per MWh. This is excellent for bitcoin miners.

<https://x.com/alexanderliegl/status/1291395637318234112>

<https://x.com/McNamaraMT/status/1359905968583299073>

# 3. “Enron style” energy arbitrage



EDGAR<sup>pro</sup>  
by SECURITIES

RIOT PLATFORMS, INC.

FORM 10-Q  
(Quarterly Report)

Filed 08/23/21 for the Period Ending 06/30/21

Address 3855 AMBROSIA STREET, SUITE 301  
CASTLE ROCK, CO, 80109  
Telephone 303-794-2000  
CIK 0001167419  
Symbol RIOT  
SIC Code 7374 - Services-Computer Processing and Data Preparation  
Industry Financial & Commodity Market Operators

Riot's Whinstone mine made **\$125.1 million** selling energy during Winter Storm Uri in February 2021.

In April 2021, under the provisions of the TXU Power Supply Agreement, Whinstone entered into a Qualified Scheduling Entity (“QSE”) Letter Agreement, which resulted in Whinstone being entitled to receive approximately \$125.1 million for its power sales during the February winter storm, all under the terms and conditions of the QSE Letter Agreement. Whinstone received cash of \$29.0 million in April 2021 (after deducting \$10.0 million in power management fees owed by Whinstone), approximately \$59.7 million is scheduled to be credited against future power bills of Whinstone beginning in 2022 and the remaining \$26.3 million is contingent upon ERCOT’s future remittance. These amounts are gross before fair value adjustments and expenses incurred by Whinstone for power management fees noted above and customer settlements. The fair value of the settlement agreement was estimated and recognized as an asset as part of acquisition accounting. Additionally, pursuant to the Northern Data stock purchase agreement, the Company agreed to pay Seller additional consideration in cash in the amount of the future power credits, net of income taxes, when and if realized by Whinstone. See Note 4, “Acquisitions”.

# Crypto drives up energy prices

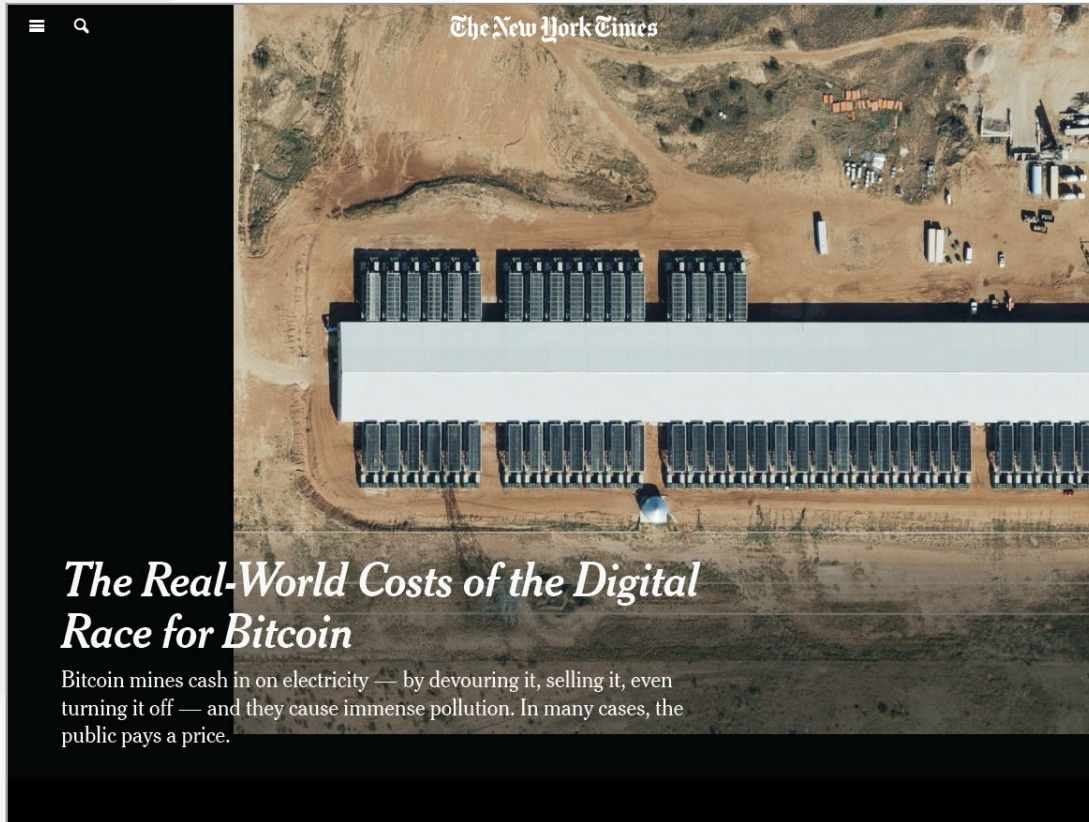
Researchers at the Texas A&M University Department of Atmospheric Sciences quantified energy price increases from crypto demand. They found:

- Wholesale price on the ERCOT grid can increase **2.2%** with **1 GW** of additional demand.
- Crypto demand in Texas was estimated to be 1 GW (which is low).
- **7 GW** additional crypto demand projected in Texas by 2030.
- **5 GW** of additional demand could increase wholesale prices by **8-12%**.
- This price increase does not include the cost of crypto's participation in Demand Response.

**Table 1.** Increase in wholesale prices in % due to increased demand

	1 GW	5 GW
total demand + day-ahead price	2.2%	11.2%
total demand + real-time price	1.6%	8.2%
net demand + day-ahead price	2.4%	11.8%
net demand + real-time price	2.0%	10.2%

# Crypto drives up energy prices



<https://www.nytimes.com/2023/04/09/business/bitcoin-mining-electricity-pollution.html>

New York Times analysis found that:

- 10 mines in Texas demand **1,812 MW** of electricity.
- **5% rise in electric bills** due to increase in demand.
- **\$1.8 billion** cost to Texas ratepayers according to a simulation by Wood Mackenzie

Bitcoin Mine	Location	Power (MW)
Riot Platforms	Rockdale, TX	450
Cipher Mining	Odessa, TX	207
US Bitcoin	Upton County, TX	200
Rhodium Enterprises	Temple, TX	185
Bitdeer	Rockdale, TX	170
Core Scientific	Pecos, TX	140
Genesis Digital Assets	Pyote, TX	135
Core Scientific	Denton, TX	125
Galaxy	Afton, TX	100
Poolin	Pyote, TX	100
	TOTAL	1812



**BITCOIN MINERS**



**THAT'S A NICE GRID YOU HAVE THERE**

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