

July 14, 2022

Sunset Advisory Commission
Attn: ERCOT
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Submitted electronically via sunset@sunset.texas.gov

Re: Public comment to ERCOT self-assessment for the Sunset Commission of Texas

Thank you for the opportunity to provide comments to the Sunset Commission so early in this process. Please accept the following recommendations in response to the Electric Reliability Council of Texas (“ERCOT”)’s self-assessment reports. These comments are submitted by Public Citizen:

Background:

These comments are offered as possible statutory amendments necessary to ensure that the Public Utility Commission (PUC) and ERCOT appropriately prioritizes the people of Texas when providing a reliable and equitable market for electricity. This fundamental obligation is found within ERCOT’s enabling statute. ERCOT describes its authority as primarily performing four statutory functions:

- Providing non-discriminatory access to the transmission and distribution systems within the region for all buyers and sellers of electricity;
- Ensuring the reliability and adequacy of the regional electrical network;
- Providing information relating to a customer's choice of Retail Electric Provider (REP); and
- Ensuring electricity production and delivery are accurately accounted for among generators, wholesale sellers, and wholesale buyers.

While these four statutory functions predominantly describe the tasks ERCOT must complete, they ignore the deep economic impact that ERCOT’s role has on the energy market in the state. These submitted comments predominantly assert that ERCOT must be more transparent and aggressive when ensuring that huge transfers of risk do not get laid onto consumers in Texas, but instead are born by the market participants that create these windfalls or losses.¹ For example, immediately following Winterstorm Uri, the legislature was forced to act quickly to reverse charges by ERCOT

¹ While not a current matter, in February 2015, a Texas federal court dismissed a private lawsuit *Aspire Commodities v. GDF Suez Energy* alleging that certain electricity generators had manipulated the ERCOT markets by intentionally withholding generation during peak periods in order to benefit from their positions in the secondary futures markets.

to manufacturers, and then later, again to permit securitization of debt.² It is incredibly important for sunset and legislative staff to continue to ask hard questions about how ERCOT intends to collect the nearly \$2.9 billion it is owed in the aftermath of Winterstorm Uri—an amount tied up in litigation that likely will last a decade.³ But in the meantime, average Texas residential consumers and small business owners continue to hold the risk when another weather emergency—be it a hurricane or a deep freeze—hits our landscape. During this once in a decade opportunity to strengthen an important administrative agency for the state, we urge the Sunset Commission to recognize the role that regulatory authority provides to ensure a more transparent and equitable marketplace.

Further, it is no longer acceptable to argue hurricanes are “unforeseen” risks when the reality of the changing climate provides direct evidence that temperature extremes and stronger storms are more likely. In order to provide ERCOT with flexibility to ensure that community is protected first, then property, ERCOT requires greater authority and more capacity to implement and respond to new operating scenarios. By amending the Public Utility Regulatory Act (PURA) to expressly provide greater authority for rule making or otherwise, ERCOT will be better able to ensure it meets the function of providing nondiscriminatory access to markets and accurate accounting for all market participants. The economic reality of how markets for electricity will be impacted by climate change should not be ignored by this once-in-a-decade opportunity to direct these state agencies to appropriately plan and regulate for the safety and public health of the residents of Texas.

Recommendations for Specific Statutory Amendments:

The following recommendations point to specific provisions of the PURA and seek discrete changes to strengthen ERCOT’s independence and ability to accurately forecast, manage, and in some cases, control the electricity market in the ERCOT region of Texas.

²² See for ex. <https://www.texastribune.org/2021/03/16/texas-public-utility-commission-resignation/> (discussing the resignation of the then-chair of the PUC after “he told out-of-state investors on a call he would work to throw ‘the weight of the commission’ behind stopping calls to [reverse billions of dollars in charges for wholesale electricity](https://www.texastribune.org/2021/03/11/ercot-texas-overcharge-16-billion/) during the storm.”). See also <https://www.texastribune.org/2021/03/11/ercot-texas-overcharge-16-billion/>

³ The Timeline and Events of the February 2021 Texas Electric Grid Blackouts, July 2021, Energy Institute at The University of Texas, found at: <https://energy.utexas.edu/ercot-blackout-2021>, “On April 14, 2021, ERCOT reported cumulative aggregate “short payments” of approximately \$2.9 billion, and that it would take 96 years to collect the amount outstanding using its standard Default Uplift Invoice process. This estimate was raised to \$2.99 billion on May 14, 2021. Of that, \$1.86 billion relates to the default of Brazos Electric Power Cooperative Inc., which filed for bankruptcy on March 1, 2021. Other market participants that had failed to pay amounts owed to ERCOT at that time included Rayburn Country Electric Cooperative, Eagles View Partners LTD, Energy Monger LLC, Entrust Energy Inc., GBPower, Griddy Energy LLC, Gridplus Texas Inc., Hanwha Energy USA Holdings Corp., Iluminar Energy LLC, MQE LLC, Power of Texas Holdings Inc., and Volt Electricity Provider LP. As a consequence of receiving less revenue than ERCOT has invoiced to the market, ERCOT has reduced payments to market participants that are owed revenues from the market for congestion revenue rights.”

Recommendation 1:

Focus on protecting residential consumers of electricity throughout this process, in part by expressly providing ERCOT with the ability to manage crypto mining through bonding or other financial assurance means.

ERCOT and others recognize the unique stress that crypto mining will place on the ERCOT managed system in the years to come. As such, this sunset process should provide new language to the enabling statute specifically providing for ERCOT's role to manage these types of interconnections and require additional bonding or other financial or contractual assurance in order to better manage the system during times of stress. Because crypto mining creates a huge reliability burden to Texas's electric grid, and because crypto mining proponents have likened their operations to manufacturing, mining, data centers or science centers elsewhere in the country, multiple sections of statutes must be amended to allow ERCOT the ability to control, minimize, require performance bonds, or create any other operational criteria, protocol or other requirement it deems necessary to deal with this unknown.

It is estimated that cryptomining operations will require as much as 6 gigawatts ("GW") of additional electricity over the next two years, the same amount as the city of Houston.⁴ The amount of miners requesting interconnection is even more than that—17 GW—which can be described as: "about the equivalent of load of two-and-a-half New York Cities."⁵ Many operations also utilize demand response models to help secure financing, or to make the financing of the original operations more palatable.⁶

The enormous load being placed on the ERCOT grid from proof-of-work mining will have significant impacts on electricity prices and on transmission and distribution infrastructure, which is already unstable—as evidenced most recent and tragically by the Texas Winter Storm in February 2021, in which at least 246 people lost their lives,⁷ and millions of households were

⁴ MacKenzie Sigalos, *Bitcoin miners say they're helping to fix the broken Texas energy grid – and Ted Cruz agrees*, CNBC (Dec. 4, 2021), <https://www.cnbc.com/2021/12/04/bitcoin-miners-say-theyre-fixing-texas-electric-grid-ted-cruz-agrees.html>.

⁵ Naureen S. Malik, *Crypto Miners' Elec. Use in Texas Would Equal Another Houston*, Bloomberg (Apr. 27, 2022), <https://www.bloomberg.com/news/articles/2022-04-27/crypto-miners-in-texas-will-need-more-power-than-houston>.

⁶ See e.g., <https://www.utilitydive.com/news/bitcoin-mining-as-a-grid-resource-its-complicated/617896/> ("Crypto mines are very different data center beasts," said Dixon, in that they can shut down 'instantly.' And that flexibility can be more valuable than the cryptocurrency being mined. Providing services back to the electric grid can generate anywhere from 2% to 10% of a mine's revenue, he said.").

⁷ Erica Proffer, *Here is why death totals from Winter Storm Uri may vary*, KVUE (Feb. 15, 2022), <https://www.kvue.com/article/weather/winter-storm/here-is-why-death-totals-from-winter-storm-uri-may-vary/269-f2bf277f-74d9-443b-ab2e-ff89f336f3ec>.

without power in frigid and dire circumstances.⁸ Proof-of-work cryptocurrency mining can cause local ratepayer impacts, raising rates for ordinary consumers of electricity, and, worse, potentially leaving ratepayers on the hook to pay for newly installed grid assets when miners pick up and leave. These challenges are not unique to Texas and are being experienced by communities across the United States.

Because of this immense increase in load from proof-of-work cryptomining operations, ERCOT is instituting additional processes and requirements for new large-scale cryptominers to connect to the state's power grid.⁹ On March 25, 2022, ERCOT released a notice¹⁰ instructing utilities to submit studies on the impact of miners and other large users tapping the grid before they can get "approval to energize." ERCOT's new rule applies to both new projects and expansions as well as projects at the site of power generation and projects that do not have their own power generation: any project that will add 20 megawatts ("MW") of demand on the site of a generator within the next two years, and any project that will add 75 MW of demand without its own power generation on site within the next two years, will have to undergo a review process.¹¹

Even at the local level, officials are sounding the alarm on grid instability that would be caused by cryptomining operations. For example, the City of Brenham's Planning and Zoning Committee said that the city's current power grid cannot sustain the amount of electricity required for large scale and commercial-like cryptomining set ups, thus necessitating the committee halting the approval of more mining setups.¹² Further, electric cooperatives and utilities across the state are weighing requests from Bitcoin miners to connect to the grid, which would require millions of dollars in transmission upgrades and associated infrastructure. For example, the Rayburn County

⁸ Texas Tribune Staff, *Texas power outages: Nearly half the state experiencing water disruptions as power grid operator says it's making progress*, Texas Tribune (Feb. 18, 2021), <https://www.texastribune.org/2021/02/18/texas-winter-storm-power-outage-ercot/>; see also Mandy Cai et al., *How Texas' power grid failed in 2021 – and who's responsible for preventing a repeat*, Texas Tribune (Feb. 15, 2022), <https://www.texastribune.org/2022/02/15/texas-power-grid-winter-storm-2021/>.

⁹ Naureen S. Malik, *Texas Grid's Review of Crypto Miners Connection May Take Months*, Bloomberg (Apr. 4, 2022), <https://www.bloomberg.com/news/articles/2022-04-04/texas-grid-s-review-of-crypto-miners-connection-may-take-months>.

¹⁰ ERCOT, *Market Notice re Interim Large Load Interconnection Process* (Mar. 25, 2022), https://www.ercot.com/services/comm/mkt_notices/detail?id=fc84b65f-72fe-4704-9974-b52974cdb81e.

¹¹ Bloomberg Wire, *Texas now requiring crypto miners to seek 'approval to energize' before plugging into grid*, Dallas Morning News (Mar. 30, 2022), <https://www.dallasnews.com/business/energy/2022/03/30/texas-now-requiring-crypto-miners-to-seek-approval-to-energize-before-plugging-into-grid/>; Chris Reeder & Miguel Suazo, *ERCOT Now Requires Cryptocurrency Miners to Provide Info. on their Impact to the Texas Power Grid*, JDSupra (Apr. 6, 2022), <https://www.jdsupra.com/legalnews/ercot-now-requires-cryptocurrency-6065651/>.

¹² Morgan Riddell, *Brenham officials discuss cryptocurrency and their ability to sustain energy demands that come with it*, KBTX (Mar. 29, 2022), <https://www.kbtx.com/2022/03/29/brenham-officials-discuss-cryptocurrency-their-ability-sustain-energy-demands-that-come-with-it/>.

Electric Cooperative found that two of the crypto mines interested in connecting to the utility's service territory north and east of Dallas would each require as much as \$20 million to fortify power lines and avoid blackouts and consume enough electricity to power as many as 60,000 Texas homes. As explained in Bloomberg, "[u]tilities like Rayburn have to provide service to miners if it's technically feasible to do so, but upgrades to the grid threaten to drive up bills for consumers already shouldering price shocks for almost everything."¹³ This is in part because transmission assets are permitted to distribute their costs to ratepayers in the system.

The Sunset Commission should not miss this opportunity to adequately protect the people of Texas and appropriately place the risk of inadequate reserves on this new large load user.

Recommendation 2:

Amend PURA Section 39.151(l) to provide greater authority to ERCOT to manage manufacturing or generation.

Public Utility Regulatory Act Section 39.151(l) states: "(l) No operational criteria, protocols, or other requirement established by an independent organization, including the ERCOT independent system operator, may adversely affect or impede any manufacturing or other internal process operation associated with an industrial generation facility, except to the minimum extent necessary to assure reliability of the transmission network."

Currently, this provision restricts ERCOT's ability to propose protocols to manage large system users (refineries etc) but could be construed towards crypto mining. As the PUC has noted in its own self-assessment, "[t]he ERCOT wholesale and retail markets are open to competition, but there are extensive and significant complexities involved in overseeing a multi-billion dollar market that produces a service critical for the life and safety of Texas residents. In addition, significant portions of Texas continue to be served by vertically integrated investor-owned utilities that are subject to traditional cost of service regulation." Thus, while the PUC maintains staff for each "type of market," ERCOT's model of regulation normally does not distinguish but could mirror that by eliminating this PURA restriction.

By amending this provision to allow ERCOT greater ability to integrate large users, or incentivize those users if appropriate, ERCOT will have more ability to be nimble during times of stress. Giving ERCOT greater flexibility and control will allow for greater experimentation and hopefully more nimble actions in the coming years.

Recommendation 3:

Require ERCOT's disaster planning programs related to voluntary and involuntary load shedding to rely on both historical peak demands as well as forecasted "worst case" scenarios assuming climate change for summer and winter peaks.

¹³ Naureen S. Malik & Michael Smith, *Crypto Mania in Texas Risks New Costs and Strains on Shaky Grid*, Bloomberg (Mar. 15, 2022), <https://www.bloomberg.com/news/articles/2022-03-15/crypto-mania-in-texas-risks-new-costs-and-strains-on-shaky-grid>.

Climate change and its related swings in temperature will continue to upend historical use patterns that ERCOT predominantly utilizes in its forecasting. To some extent, the system operators saw that during Winterstorm Uri. During the emergency legislative session after Winterstorm Uri, the legislature required greater disaster planning that has still not been completed. In SB 3, the legislation specifically called on ERCOT to “provide for allocation of the load shedding obligation . . . in different seasons based on historical seasonal peak demand”¹⁴ But it is absolutely understood that “historical seasonal peak demand” will no longer forecast the extreme temperature changes Texas can expect with the changing climate. In 2021, the state climatologist published a report recognizing that Texas has already seen a nearly 2 degree rise in temperature, and that by 2036, it would see additional increases in average temperatures, extremely hot days of more than 100 degrees, as well as droughts or impacts to water supplies.¹⁵ During the Sunset process, the Sunset Commission should provide further clarity to ERCOT in recognition that changing weather patterns will likely not be accurately forecasted based on past data. Because historical data will not be enough, the Sunset Commission should amend further the provision in PURA at 38.076 regarding disaster planning to provide expressly for (1) “worst case” scenario planning in addition to (2) expressly assuming climate change scenarios by requiring forecasting based on the last 3 or 5 years of data, and (3) forecasting for both winter and summer peaks.

This is even more true as the state welcomes additional crypto mining and proof of work facilities. Currently, PURA Section 38.077 requires load shedding exercises to be conducted annually during a summer peak month as well as winter. The language again however should be amended to

¹⁴ In SB 3, the language was amended to state:

Sec. 38.076. INVOLUNTARY AND VOLUNTARY LOAD SHEDDING. (a)

The commission by rule shall adopt a system to allocate load shedding among electric cooperatives, municipally owned utilities, and transmission and distribution utilities providing transmission service in the ERCOT power region during an involuntary load shedding event initiated by the independent organization certified under Section 39.151 for the region during an energy emergency.

(b) The system must provide for allocation of the load shedding obligation to each electric cooperative, municipally owned utility, and transmission and distribution utility in different seasons based on historical seasonal peak demand in the service territory of the electric cooperative, municipally owned utility, or transmission and distribution utility.

¹⁵ <https://climatexas.tamu.edu/files/ClimateReport-1900to2036-2021Update> See also <https://www.texastribune.org/2021/10/07/texas-climate-change-heat-water/> (noting “the state’s power grid can be strained during extreme heat when Texans turn up the air conditioning to stay cool. At the same time, higher temperatures make it more difficult for power plants to run as efficiently as they do during normal conditions, decreasing the power supply — and increasing the risk of blackouts.”).

provide unmistakable clarity that these load shedding exercises should take into account “foreseeable climate change impacts” such as the rising temperatures, erratic weather patterns, and additional hurricane risks along the entire Texas Gulf Coast. When disasters such as Hurricane Harvey hit, the grid operator and industrial consumers are all impacted at the same time, causing cascading negative effects that may impact the reliability of the grid state-wide.¹⁶ By recognizing that past historical data is likely not sufficient for ERCOT to meet its mission of providing reliable and adequate power in the state, PURA Section 38.077 should be amended to require load shedding exercises that assume worst case scenarios of maximum peak demand, and an unwillingness by major customers to shed load voluntarily.

The concern that certain customers may not shed load voluntarily is linked to the second recommendation that seeks to provide greater flexibility and more regulatory authority to ERCOT to manage the grid. While unclear at this time, ERCOT currently anticipates huge loads to be utilized in the new crypto mining markets, and those interconnections and contracts are most likely outside existing regulatory frameworks. By directing ERCOT to assume climate change, worst case scenarios, and market impacts where customers do not voluntarily engage, ERCOT can then make strategic recommendations for regulatory changes.

Recommendation 4:

Provide ERCOT with its requested “clear direction” on reliability expectations in its role as the independent systems operator for most of Texas.

In its self-assessment, ERCOT states:

Differing Regulatory Objectives: Federal and state policymaking bodies may have different goals in the ever-shifting regulatory environment, which affect ERCOT actions and operations. ERCOT needs clear direction from those who oversee ERCOT on reliability expectations, market design, and any limits on its operations that may affect its ability to meet its objectives.

The North American Electric Reliability Corporation (NERC) currently provides mandatory standards of reliability as well as best practices to manage systems under stress.¹⁷ In particular, ERCOT must initiate emergency procedures if it is unable to maintain a frequency of 60 Hertz (Hz) or contingency reserve equal to, or greater than, its most severe single contingency.¹⁸ NERC’s standards are not, and should not be, discretionary. After Winterstorm Uri, multiple

¹⁶ See for example <https://www.eia.gov/todayinenergy/detail.php?id=32892>

¹⁷ NERC’s Reliability Standards for the Bulk Electric Systems of North America, updated May 13, 2022 found at <https://www.nerc.com/pa/Stand/Reliability%20Standards%20Complete%20Set/RSCCompleteSet.pdf>

¹⁸ FERC, NERC, and Regional Entity Staff Report at 133, note 4, found at <https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and> Report at page 134 (Joint Reliability Report).

experts investigated ERCOT's actions in the hopes of avoiding that type of catastrophe in the future. Reports indicate that ERCOT did not maintain the requisite contingency reserve nor frequency of above 60 Hz, particularly in the early morning hours of February 15, 2021, causing generators to trip offline and hurt ERCOT's ability to recover timely.¹⁹ While ERCOT initiated its emergency procedures, it did not take the most aggressive action available to it.²⁰ Given the dire nature of the system and the consistent waive of outages, ERCOT should have used its most aggressive emergency procedures for shedding load (i.e., procedure for recovering from the lowest frequency). The Sunset Commission has the opportunity, through the ERCOT's enabling statute, to unequivocally state that this independent operator match the revised reliability standards mandated by NERC and match the reliability standards of the other two independent system operator regions.

Recommendation 5:

Strengthen enforcement mechanisms to hold ERCOT and market participants accountable.

As one study showed, past similar events did not result in adequate forecasting or planning.²¹ Thus, in order to provide further market incentives, and enforcement options, the Sunset Commission could provide a citizen right of enforcement should ERCOT not adequately plan on an annual basis nor existing facilities adequately comply with the rules, statutes, procedures or other types of obligations promulgated by the PUC and ERCOT collectively.

Similarly, an option to strengthen by statute the Independent Market Monitor's ("IMM") role in holding market actors accountable for damages could be clearly stated and provide for robust penalties should a review of activities result in a finding of price gouging, market manipulation, or monopoly in certain nodes. *See* Tex. Admin. Code Sec. 25.365(e). While the IMM itself does not need express enforcement authority, by amending the provisions related to the IMM to require the PUC's enforcement division to act within 60 or 90 days of a report by the IMM or allow other market participants to enforce, or require the IMM to publish more market data, ERCOT could be strengthened. These checks and balances are incredibly important in a state where the retail provider market is open, as well as the wholesale power market but the middle transmission sector is still a socialized cost born by all. Because the power market is not entirely a "free market" and likely can never be without placing enormous risk to health and property on residents in Texas, ERCOT and the PUC must play a stronger role in enforcement with penalties to dissuade bad actors.

Recommendation 6:

The PUC's request for complete overlap with the ERCOT board should be denied.

¹⁹ Joint Reliability Report at 137, 231.

²⁰ Joint Reliability Report at 209.

²¹ The University of Texas Energy Institute report found at <https://energy.utexas.edu/sites/default/files/UTAustin%20%282021%29%20EventsFebruary2021TexasBlackout%2020210714.pdf>

Finally, ERCOT is meant to be an independent system operator, ensuring non-discriminatory access to electricity throughout the region, and meeting the standards established for reliability set forth nationally. The PUC commissioners are political appointees that should have separate oversight authority when setting standards, protocols, rules and regulations for the electrical markets, as well as other rate-based markets. If there is complete overlap between the ERCOT board and the PUC commissioners, the ability to “regulate” and ensure that separation of power and authority is lost. Thus, the two should remain separate in order to prioritize their individual missions.