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Office of Science & Technology Policy  
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Submitted electronically via DigitalAssetsRFI@ostp.eop.gov

**Re: The Energy and Climate Implications of Digital Assets in Texas**

Thank you for the opportunity to provide comments on your Request for Information (“RFI”) on the Energy and Climate Implications of Digital Assets. 87 Fed. Reg. 17,105 (Mar. 25, 2022). Please accept these state-specific comments on Texas on behalf of Chispa LCV, Chispa TX, Coastal Bend Group - Sierra Club Lone Star Chapter, Concerned Citizens of Cook County (Georgia), Earthjustice, Environmental Integrity Project, For the Greater Good, FracTracker Alliance, Ingleside on the Bay Coastal Watch Association, Move Past Plastic, Public Citizen, Texas Campaign for the Environment, and Turtle Island Restoration Network. While these comments are 12 pages in length, our footnotes represent five pages of the response, thus still meeting the 10-page limit.

We appreciate the Biden Administration’s goals to combat the climate crisis and advance environmental justice by cutting U.S. greenhouse gas pollution by 50–52% below 2005 levels by 2030 and a net-zero emissions economy by 2050. However, as the RFI notes, these goals could be threatened by the climate, energy, and environmental challenges associated with digital assets, in particular proof-of-work cryptocurrencies like Bitcoin, Ethereum, and Dogecoin, among others.

**The Scope of the Energy Demand from Proof-of-Work Cryptocurrency Mining in Texas**

The impacts of proof-of-work cryptocurrencies are experienced most directly and acutely at the local level, particularly in a state like Texas where cryptomining operations rely on fossil fuel power plants and enable additional fossil fuel production at oil and gas wells by utilizing flared gas. These operations are also utilizing clean renewable energy generation that would otherwise be sent directly to the Texas grid, where it is needed for homes and local businesses.<sup>1</sup>

In addition, as described further below, the enormous load being placed on the Electric Reliability Council of Texas (“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

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<sup>1</sup> The limited clean renewable energy is also needed for the green hydrogen buildout presently being envisioned by the Biden Administration. For clean hydrogen power production, there cannot be grey or blue hydrogen, only hydrogen powered entirely by renewable energy. *See, e.g.*, U.S. Dept. of Energy, *DOE Establishes Bipartisan Infrastructure Law’s \$9.5 Billion Clean Hydrogen Initiatives* (Feb. 15, 2022), <https://www.energy.gov/articles/doe-establishes-bipartisan-infrastructure-laws-95-billion-clean-hydrogen-initiatives>; *see also* Sasan Saadat & Sara Gersen, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Oil & Gas Industry Spin from Zero-Emission Solutions*, at 24–26, Earthjustice (2021) (citing Jeffrey Goldmeer et al., *Hydrogen as a Fuel for Gas Turbines*, at 3–4, Gen. Elec. (Sept. 2021), [https://www.ge.com/content/dam/gepower-new/global/en\\_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf](https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf)), [https://earthjustice.org/sites/default/files/files/hydrogen\\_earthjustice\\_2021.pdf](https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice_2021.pdf).

lives,<sup>2</sup> and millions of households were without power in frigid and dire circumstances.<sup>3</sup> 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.

Texas is emerging as the leading state for proof-of-work cryptocurrency mining, with the misguided support of Texas elected officials as well as financing and support from the oil and gas industry.<sup>4</sup> Further, Texas' deregulated power grid, with its abundance of inexpensive power sources and generally lax regulations across the board, have attracted an influx of cryptomining companies.<sup>5</sup>

As described further below, 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.<sup>6</sup> The amount of miners requesting interconnection is even more than that—17 GW—or as the interim head of described it: “that’s about the equivalent of load of two-and-a-half New York Cities.”<sup>7</sup> As of March 2022, the Texas Blockchain Council offered that the Lone Star State is home to seven large crypto mining companies and 20 smaller ones.<sup>8</sup> Just one proof-of-work cryptomining company, Greenidge Generation Holdings, will be responsible for 2 GW capacity in Texas alone, with undisclosed

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<sup>2</sup> 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>.

<sup>3</sup> 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/>.

<sup>4</sup> See, e.g., Kate Aronoff, *Because Oil Drilling Isn’t Destructive Enough, ExxonMobil Is Getting Into Bitcoin Mining, Too*, NewRepublic (Mar. 30, 2022), <https://newrepublic.com/article/165880/exxon-bitcoin-crypto-climate>.

<sup>5</sup> MacKenzie Sigalos, *Bitcoin miners and oil and gas execs mingled at a secretive meetup in Houston – here’s what they talked about*, CNBC (Sept. 4, 2021), <https://www.cnbc.com/2021/09/04/bitcoin-miners-oil-and-gas-execs-talk-about-natural-gas-mining.html>; Zach Budryk, *Democrats press cryptomining companies on energy consumption*, The Hill (Jan. 27, 2022), <https://thehill.com/policy/energy-environment/591714-eight-congressional-democrats-press-cryptomining-companies-on/>.

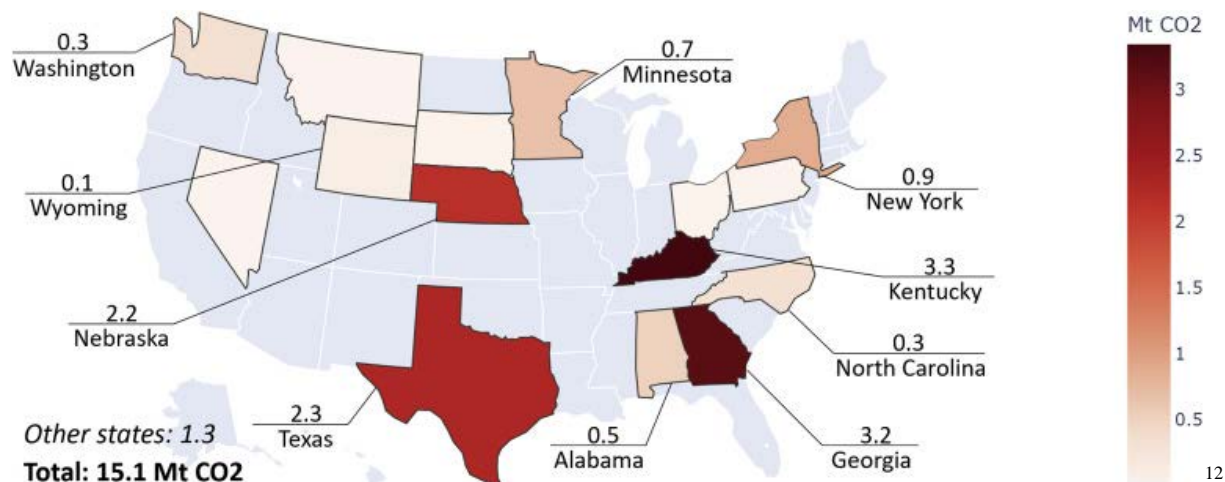
<sup>6</sup> MacKenzie Sigalos, *Bitcoin miners say they’re helping to fix the broken Texas energy grid – and Ted Cruz agrees*, CNBC (Dec. 4, 2021), <https://www.cnbc.com/2021/12/04/bitcoin-miners-say-theyre-fixing-texas-electric-grid-ted-cruz-agrees.html>.

<sup>7</sup> 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>.

<sup>8</sup> Chandler France, *Texas bitcoin mining booms, but sustainability, grid concerns remain*, Beaumont Enter. (Mar. 3, 2022), <https://www.beaumontenterprise.com/news/article/Bitcoin-mining-on-the-rise-in-Texas-with-27-16967837.php>; David Yaffe-Bellany, *Bitcoin Miners Want to Recast Themselves as Eco-Friendly*, New York Times (Mar. 22, 2022), <https://www.nytimes.com/2022/03/22/technology/bitcoin-miners-environment-crypto.html>.

fuel sources or locations.<sup>9</sup> Another publicly-traded proof-of-work cryptomining company, Riot Blockchain, has started the development of a large-scale 1 GW expansion project in Navarro County, TX—once online, Riot will account for 1.7 GW of energy, slightly behind Greenidge Generation.<sup>10</sup>

As of August 2021 (before China banned cryptomining), Texas was home to nearly 15% of the country’s proof-of-work cryptocurrency mining operations, and that percentage has increased every day.<sup>11</sup> As the map below shows, the carbon footprint from cryptocurrency mining in Texas alone is estimated at 2.3 megatons of carbon dioxide per year:



<sup>9</sup> Abbie Bennett, *Bitcoin miner Greenidge enters deal for at least 2,000 MW of capacity in Texas*, S&P Global (Oct. 22, 2021) (“The company announced that it was entering an agreement for a development pipeline of at least 2,000 MW of capacity in Texas and another agreement with a company controlling 1,000 MW of power generation in the Electric Reliability Council of Texas Inc. market, according to a news release from the company.”), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/bitcoin-miner-greenidge-enters-deal-for-at-least-2-000-mw-of-capacity-in-texas-67222563>; Jamie Crawley, *Greenidge Generation to Expand into Texas, Acquire South Carolina Site*, CoinDesk (Oct. 22, 2021), <https://www.coindesk.com/business/2021/10/22/greenidge-generation-holdings-to-expand-acquire-sites-in-texas-south-carolina/>; Greenidge Generation, *Greenidge Generation Announces Comprehensive Expansion Plans*, at Ex. 99.1 (Oct. 21, 2021), <https://www.sec.gov/Archives/edgar/data/1844971/000119312521304493/d221812dex991.htm>.

<sup>10</sup> Aoyon Ashraf, *Riot Blockchain to Develop 1GW of Bitcoin Mining Capacity in Texas*, CoinDesk (Apr. 27, 2022), <https://www.coindesk.com/business/2022/04/27/riot-blockchain-to-develop-1gw-of-bitcoin-mining-capacity-in-texas/>.

<sup>11</sup> MacKenzie Sigalos, *New York and Texas are winning the war to attract bitcoin miners*, CNBC (Oct. 9, 2021), <https://www.cnbc.com/2021/10/09/war-to-attract-bitcoin-miners-pits-texas-against-new-york-kentucky.html>; Avi Asher-Schapiro, *Coal to crypto: The gold rush bringing bitcoin miners to Kentucky*, Thomson Reuters Found. (Mar. 14, 2022) (citing Alex de Vries et al., *Revisiting Bitcoin’s carbon footprint*, at Fig. 3, *Joule* (Feb. 25, 2022), <https://www.sciencedirect.com/science/article/abs/pii/S2542435122000861?dgcid=author>), <https://longreads.trust.org/item/bitcoin-mining-US-coal-country-climate>.

<sup>12</sup> Estimated carbon footprint of the Bitcoin network in the United States, as of August 2021. Alex de Vries et al., *Revisiting Bitcoin’s carbon footprint*, at Fig. 3, *Joule* (Feb. 25, 2022), <https://www.sciencedirect.com/science/article/abs/pii/S2542435122000861?dgcid=author>.

## Specific Comments

### 3. Resources

In Texas, there are three primary means by which proof-of-work cryptomining operations occur: (1) cryptomining companies deriving electricity from the grid; (2) cryptomining companies operating at or purchasing power directly from a power plant, often powered by fossil fuels; and (3) cryptomining companies hooking up a generator to underused oil and gas wells that would otherwise not be combusted, or otherwise be flared or vented. In all of these scenarios, these unregulated, energy-intensive, and energy wasteful proof-of-work cryptomining operations<sup>13</sup> serve essentially as a lucrative subsidy to continue fossil fuel extraction and generation—in direct opposition to the climate and environmental justice goals of the Biden Administration and what is needed to prevent the worst of the impacts from the climate crisis.

#### A. A Rapid Increase in Cryptomining Operations Threatens Texas' Already Strained and Struggling Grid and Everyday Texans' Livelihoods

Perhaps the biggest energy and climate impact of proof-of-work mining in Texas is the strain it puts on the grid, at a time when grid stability and reliability is front of mind for Texans, following the state-wide blackouts in February 2021.

As noted above, ERCOT estimates that proof-of-work cryptomining alone will account for 6 GWs of new demand over the next two years—with peak demand in 2022 7.7% higher than in 2021.<sup>14</sup> Another estimate by an analyst at Wood MacKenzie predicts that bitcoin could more than double demand growth in ERCOT's territory.<sup>15</sup>

Without the sudden increase in cryptomining in ERCOT, in 2018 (pre-cryptomining at a large scale in the U.S.), ERCOT already expected electricity consumption to increase more than 25% from 2018 to 2033.<sup>16</sup> ERCOT has an obligation to provide affordable, reliable, and sustainable electricity to more than 26 million Texas customers, representing 90% of Texas, and the massive amount of demand caused by cryptomining threatens Texas customers on a daily basis.<sup>17</sup>

During the Texas Winter Storm in February 2021, ERCOT instituted rolling blackouts to reduce demand as low temperatures forced power sources, in particular fossil gas, offline more than expected and caused millions of Texans to lose power for days. More than two out of three Texans, 69%, lost electricity at

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<sup>13</sup> Proof-of-work cryptocurrency mining is often called proof-of-waste. Andrew Tayo, *Proof of work, or proof of waste?*, Hackernoon (Dec. 14, 2017), <https://hackernoon.com/proof-of-work-or-proof-of-waste-9c1710b7f025>.

<sup>14</sup> 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>; Michael Smith, *Texas governor eyes Bitcoin to fortify the elec. grid*, Bloomberg (Jan. 27, 2022), <https://www.bloomberg.com/news/articles/2022-01-27/texas-governor-eyes-bitcoin-mining-to-fortify-the-electric-grid>.

<sup>15</sup> 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>.

<sup>16</sup> ERCOT, *2018 Long-term System Assessment for the ERCOT Region* (Dec. 21, 2018), [https://www.ercot.com/files/docs/2018/12/21/2018\\_LTSA\\_Report.pdf](https://www.ercot.com/files/docs/2018/12/21/2018_LTSA_Report.pdf).

<sup>17</sup> See, e.g., Matteo Benetton, *When Cryptomining Comes to Town: High Electricity-Use Spillovers to the Local Econ.* (May 14, 2021) (noting that in NY as large crypto mining loads came onto the grid, residential and mid-size businesses had to pay significantly more for electricity), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3779720](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3779720).

some point during Winter Storm Uri for an average of 42 hours.<sup>18</sup> In fact, ERCOT officials said that Texas was “seconds and minutes” away from catastrophic monthslong blackouts, thus necessitating rolling blackouts over the course of three consecutive days.<sup>19</sup> **Put frankly, the Texas grid is not prepared for another catastrophic event**, with or without several additional GW of energy-intensive and energy-wasteful proof-of-work cryptomining on top of new transportation electrification loads expected from additional electric vehicles, trucks, and buses in the coming decade and new renewable energy needed for truly green, clean hydrogen. Even heading into late 2021, an analysis by ERCOT found that four of the five extreme risk scenarios considered by ERCOT would leave the grid short of a significant amount of power, while recognizing that in an average year, “ERCOT anticipates that there will be sufficient installed generating capacity available to serve the system-wide forecasted peak demand.”<sup>20</sup> Texans continue to worry: ERCOT issued a winter storm watch in early February 2022, causing uncertainty among everyday Texans.<sup>21</sup>

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.<sup>22</sup> On March 25, 2022, ERCOT released a notice<sup>23</sup> 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.<sup>24</sup>

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

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<sup>18</sup> Chris Stipes, *New Report Details Impact of Winter Storm Uri on Texans*, Univ. of Houston (Mar. 29, 2021), <https://uh.edu/news-events/stories/2021/march-2021/03292021-hobby-winter-storm.php>.

<sup>19</sup> Erin Douglas, *Texas was “seconds and minutes” away from catastrophic monthslong blackouts, officials say*, Texas Tribune (Feb. 18, 2021), <https://www.texastribune.org/2021/02/18/texas-power-outages-ercot/>; Kirstin Gibbs et al., *FERC/NERC Report on Winter Storm Uri Recommends Enhanced Cold Weather Preparation*, JDSupra (Sept. 28, 2021) (“The severity of the outages peaked from February 15–18, with the most severe and prolonged effects hitting ERCOT, which experienced three consecutive days of firm load shed—at one point up to 20,000 megawatts.”), <https://www.jdsupra.com/legalnews/ferc-nerc-report-on-winter-storm-uri-5140527/>.

<sup>20</sup> Erin Douglas, *Texas grid vulnerable to blackouts during severe winter weather, even with new preparations, ERCOT estimates show*, Texas Tribune (Nov. 20, 2021), <https://www.texastribune.org/2021/11/20/texas-grid-ercot-winter-estimates/>; see also ERCOT, *Seasonal Assessment of Resource Adequacy for the ERCOT Region (SARA) Winter 2021/2022* (Nov. 19, 2021), [https://www.ercot.com/files/docs/2021/11/19/SARA\\_Winter2021-22.pdf](https://www.ercot.com/files/docs/2021/11/19/SARA_Winter2021-22.pdf).

<sup>21</sup> Mitchell Ferman, *A winter storm is heading to Texas. Here’s what that means for the power grid*, Texas Tribune (Feb. 2, 2022), <https://www.texastribune.org/2022/02/02/texas-winter-snow-storm-2022-power-grid/>.

<sup>22</sup> 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>.

<sup>23</sup> 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](https://www.ercot.com/services/comm/mkt_notices/detail?id=fc84b65f-72fe-4704-9974-b52974cdb81e).

<sup>24</sup> 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/>.

mining setups.<sup>25</sup> 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 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.”<sup>26</sup>

Despite this huge impact on the grid, the cryptomining industry has been arguing that proof-of-work cryptomining can “fortify” or “stabilize” the Texas grid. Grid experts are dubious. For example, a recent analysis by Professor Severin Borenstein of UC-Berkeley’s Energy Institute at Haas found that “[a]dding demand will just make a grid tighter and increase capacity problems.” In addition, it is patently unfair for miners to add enormous new loads on the grid and then seek to be paid, handsomely, to take that load off the grid during emergencies or peak times, at the expense of ratepayers.<sup>27</sup> As explained by Professor Severin Borenstein, “the crypto mining business model is based on buying electricity at wholesale prices or on a real-time variable price tariff. They would already have a strong incentive to cut back during grid emergencies without the additional payments from the demand response program, especially in Texas with its \$5000/MWh wholesale price cap. **That means the mining companies get paid for taking demand off the grid that they never would have put on the grid at those high prices anyway.**”<sup>28</sup>

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<sup>25</sup> 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/>.

<sup>26</sup> 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>.

<sup>27</sup> See, e.g., MacKenzie Sigalos, *Bitcoin miners say they’re helping to fix the broken Texas energy grid – and Ted Cruz agrees*, CNBC (Dec. 4, 2021) (“Miners commit to buying a certain amount of power, and either use it for mining if the grid doesn’t need it, or sell it back at a profit if the grid demands it.”), <https://www.cnbc.com/2021/12/04/bitcoin-miners-say-theyre-fixing-texas-electric-grid-ted-cruz-agrees.html>; Naureen S. Malik & Michael Smith, *Crypto Mania in Texas Risks New Costs and Strains on Shaky Grid*, Bloomberg (Mar. 15, 2022) (“Upgrades to the power system will be needed because the grid ‘can’t handle all of this new load,’ said Evan Caron, a former power trader in Austin who invests in energy technology. New investments in the transmission system are typically shared among ERCOT’s consumers and show up in their utility bills.”), <https://www.bloomberg.com/news/articles/2022-03-15/crypto-mania-in-texas-risks-new-costs-and-strains-on-shaky-grid>; Chris Tomlinson, *Crypto could raise Texas elec. prices if not planned well*, Houston Chronicle (Apr. 15, 2022) (“Crypto-miners often brag they can shut down in five seconds if the grid needs the power, but rising cryptocurrency values make voluntarily ‘saving the grid’ less attractive. Miners are enrolling in ERCOT programs where they are paid to shut down, creating an additional cost.”), <https://www.houstonchronicle.com/business/columnists/tomlinson/article/Crypto-could-raise-Texas-electricity-prices-if-17081552.php>; Sabrina Toppa, *In Texas, an Influx of Crypto Miners May Mean Higher Elec. Bills for Consumers*, The Street (Mar. 16, 2022) (explaining that “upgrades to the local electricity grid may soon involve an increase in electricity fees for consumers across the Lone Star state”), <https://www.thestreet.com/crypto/news/in-texas-the-influx-of-crypto-miners-may-mean-higher-electricity-bills>; Karin Rives, *Crypto mining industry’s greening campaign raises new questions*, S&P Global (May 4, 2022) (“[C]oncerns are growing that the industry could be using too much of the state’s wind capacity and could drive up power prices for homes and businesses.”), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/crypto-mining-industry-s-greening-campaign-raises-new-questions-69679254>; see also Ariana Garcia, *Can Texas’ Power Grid Withstand Cryptocurrency Mining?*, Governing (Nov. 2, 2021), <https://www.governing.com/next/can-texas-power-grid-withstand-cryptocurrency-mining>.

<sup>28</sup> Severin Borenstein, *Crypto Mining for a More Stable Grid?*, Energy Inst. at Haas (Mar. 21, 2022) (emphasis added), <https://energyathaas.wordpress.com/2022/03/21/crypto-mining-for-a-more-stable-grid/>.

A primary takeaway of his analysis is that paying cryptomining for demand response is likely to encourage even more cryptomining. And the industry points to outlier events like they are the norm, which they are not. For example, Bloomberg recently reported that Texas' largest Bitcoin miner, Riot Blockchain, voluntarily began to reduce power to Bitcoin mining rigs at its Whinstone facility, which typically uses enough electricity to power about 60,000 homes.<sup>29</sup> Using ratepayer money, ERCOT pays miners when they are asked to shut down or curtail power use, bankrolling an energy-intensive industry. During the summer of 2021, ERCOT asked residents to reduce their electricity usage for almost a week due to "tight" power grid operations.<sup>30</sup>

## B. Proof-of-work Cryptomining Companies Use Energy from Fossil Fuel Power Plants

There is also a number of fossil fuel plants directly contracting with cryptomining companies, often with discounted prices, generating a massive amount of money for these companies at the expense of local communities who directly face the toxic air and water pollution associated with fossil-fueled power generation.

Most recently, Bootstrap Energy received approval by the City of Corpus Christi in April 2022 to expand its Industrial District Agreement<sup>31</sup> to install a \$1.1 billion cryptomining operation.<sup>32</sup> Phase 1 of the project includes a partnership with Bootstrap and Compute North, a cryptomining data center provider, which

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<sup>29</sup> Michael Smith, *Biggest Texas Bitcoin Miner Shuts Down Ahead of Cold Blast*, Bloomberg (Feb. 2, 2022), <https://www.bloomberg.com/news/articles/2022-02-02/biggest-bitcoin-miner-in-texas-will-shut-for-cold-blast-if-asked>.

<sup>30</sup> Erin Douglas & Mitchell Ferman, *Is Texas headed toward another blackout? Did the Legislature fix the power grid? Here are answers to your questions about the grid*, Texas Tribune (June 15, 2021), <https://www.texastribune.org/2021/06/15/texas-power-grid-ercot/>.

<sup>31</sup> City of Corpus Christi, Ordinance No. 22-0485 (Apr. 12, 2022), [https://corpuschristi.legistar.com/ViewReport.ashx?M=R&N=Master&GID=212&ID=5532494&GUID=F51C6F1B-FD1A-4FF1-BC6D-D42FF12EC5B9&Extra=WithText&Title=Legislation+Details+\(With+Text\)](https://corpuschristi.legistar.com/ViewReport.ashx?M=R&N=Master&GID=212&ID=5532494&GUID=F51C6F1B-FD1A-4FF1-BC6D-D42FF12EC5B9&Extra=WithText&Title=Legislation+Details+(With+Text)); Alecia Ormsby, *Bitcoin generator coming to Corpus Christi*, Corpus Christi Business News (Apr. 20, 2022), <https://www.ccbiznews.com/bitcoin-generator-moving-to-corpus-christi>.

<sup>32</sup> To the extent that hydrogen is being proposed to be a new fuel source at these natural gas plants, the gas-hydrogen blend creates additional harmful local pollution with modest CO<sub>2</sub> reductions, absent significant advances in emission control technology. For example, a 10 percent hydrogen blend, which is all the current Proposed Project could accomplish without major modifications, would only result in 3 percent CO<sub>2</sub> emissions savings. See Jeffrey Goldmeier, *Power to Gas: Hydrogen for Power Generation*, Gen. Elec. (Feb. 2019), [https://www.ge.com/content/dam/gepower/global/en\\_US/documents/fuel-flexibility/GEA33861%20Power%20to%20Gas%20-%20Hydrogen%20for%20Power%20Generation.pdf](https://www.ge.com/content/dam/gepower/global/en_US/documents/fuel-flexibility/GEA33861%20Power%20to%20Gas%20-%20Hydrogen%20for%20Power%20Generation.pdf). Even 100 percent hydrogen has greenhouse gas emissions, particularly when the gas leaks, as it is prone to do. Justin Mikulka, *Decoding the Hype Behind the Nat. Gas Industry's Hydrogen Push*, Desmog Blog (Jan. 14, 2021) (citing Zahreddine Hafsi et al., *Hydrogen Embrittlement of Steel Pipelines During Transients*, 13 *Procedia Structural Integrity* 210 (2018)), <https://www.desmog.com/2021/01/14/decoding-hype-behind-natural-gas-industry-hydrogen-push/>. Unburned, leaked hydrogen is a potent GHG, "100 times more potent than CO<sub>2</sub> emissions over a 10-year period (for equal emissions annually during this time)." *Id.* (citing Zahreddine Hafsi et al., *Hydrogen embrittlement of steel pipelines during transients*, 13 *Procedia Structural Integrity* 210 (2018)). Local air quality and local public health outcomes will worsen with hydrogen combustion. For example, a study conducted by General Electric on its combustion turbines found that a 50/50 mixture of hydrogen and fossil gas (by volume) increased concentrations of NO<sub>x</sub> in gas exhaust by 35 percent. Jeffrey Goldmeier et al., *Hydrogen as a Fuel for Gas Turbines*, at 5, Gen. Elec. (Sept. 2021), [https://www.ge.com/content/dam/gepower-new/global/en\\_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf](https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf). NO<sub>x</sub> does significant damage to the respiratory system over time. In areas affected by smog resulting from NO<sub>x</sub> emissions, symptoms including coughing, increased rates of asthma, and comorbidities with other respiratory illness develop. Resp. of Clean Energy Group to DOE Hydrogen Program Req. for Information #DE-FOA-0002529, at 3 (July 7, 2021), <https://www.cleangroup.org/wp-content/uploads/CEG-Response-to-DOE-Hydrogen-RFI.pdf>.

will build, own, and operate approximately 150 containers, which collectively require 300 MW to mine bitcoin.<sup>33</sup> Already, Bootstrap has contracted with AEP Texas for 600 MW.<sup>34</sup> In addition to the massive amount of electricity that this project will require, the City of Corpus Christi is forgoing \$7 million annually in sales tax and franchise fees, equating to \$70,501,509 over ten years.<sup>35</sup>

For example, Cipher Mining, a publicly traded company, announced a 200 MW power purchase contract in October 2021 with Vistra, most likely at Vistra's 1,054 MW Odessa gas-fired plant.<sup>36</sup> There are countless other examples of announcements by cryptomining companies signing power purchase agreements with energy providers that generate electricity from fossil fuel production at rates significantly lower than available to Texas residents.

### C. Cryptomining Operations are Incentivizing Additional Extraction and Combustion of Fossil Fuels

Many cryptomining companies are utilizing electricity generated from combusting gas at well pads that otherwise could be used for more societally beneficial uses, especially as fossil gas prices continue to rise,<sup>37</sup> putting households and business' bottom lines in jeopardy. This further incentivizes the practice of flaring gas, rather than capturing as much gas as possible—directly placing harmful and toxic air pollution into local communities and adding climate-warming pollution into the atmosphere. Examples of this in Texas and throughout the west abound.<sup>38</sup>

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<sup>33</sup> Bootstrap Energy, Project Corpus Christi Energy Park, at slide 9 (Mar. 25, 2022), <https://corpuschristi.legistar.com/View.ashx?M=F&ID=10675758&GUID=10B47135-9684-416F-A8C0-D46E8AA2B5AE>.

<sup>34</sup> City of Corpus Christi, Agenda Memorandum from Ian Vasey and Andrea Gardner to Peter Zanoni re Disannexation and Amendment Industrial District #2 Boundaries, at 2 (Mar. 3, 2022), <https://corpuschristi.legistar.com/View.ashx?M=F&ID=10666001&GUID=E7BE68AC-B0F7-4198-B758-739D20E1814D>.

<sup>35</sup> Bootstrap Energy, Project Corpus Christi Energy Park, at slides 22–24 (Mar. 25, 2022), <https://corpuschristi.legistar.com/View.ashx?M=F&ID=10675758&GUID=10B47135-9684-416F-A8C0-D46E8AA2B5AE>; see also City of Corpus Christi, Agenda Memorandum from Ian Vasey and Andrea Gardner to Peter Zanoni re Disannexation and Amendment Industrial District #2 Boundaries, at 2 (Mar. 3, 2022) (“However, staff’s financial analysis concludes the City will forego \$70,501,509 over a ten-year period if the same development were constructed and operated outside of an Industrial District Agreement in the city limits.”).

<sup>36</sup> Eliza Gkristi, *Cipher Mining Scraps Plan to Buy Bitfury Rigs, Sticks With Bitmain, MicroBT*, CoinDesk (Mar. 4, 2022), <https://www.coindesk.com/business/2022/03/04/cipher-mining-scraps-plan-to-buy-bitfury-rigs-sticks-with-bitmain-microbt/>; see also Cipher Mining, S-4 Registration Statement, at Exh. 10-26, Purchase and Sale Agreement, U.S. Securities & Exchange Commission, (June 28, 2021), <https://www.sec.gov/Archives/edgar/data/0001819989/000119312521224426/d127963ds4a.htm>. While the name of Vistra’s power plant is redacted, the “1,054 megawatt natural gas fired electric generating facility” is most likely Vistra’s Odessa gas plant.

<sup>37</sup> Patti Domm, *Nat. gas prices are rising and could be the most expensive in 13 years this winter*, CNBC (Sept. 9, 2021), <https://www.cnbc.com/2021/09/09/natural-gas-prices-are-rising-and-could-be-the-most-expensive-in-13-years-this-winter.html>.

<sup>38</sup> Audrey Carleton, *Inside a Bitcoin Mine at a Nat. Gas Well in Texas*, Vice (Mar. 17, 2022), <https://www.vice.com/en/article/m7v49n/inside-a-bitcoin-mine-at-a-natural-gas-well-in-texas>; MacKenzie Sigalos, *These 23-year-old Texans made \$4 million last year mining bitcoin off flare gas from oil drilling*, CNBC (Feb. 12, 2022), <https://www.cnbc.com/2022/02/12/23-year-old-texans-made-4-million-mining-bitcoin-off-flared-natural-gas.html>; see also Seth Tupper, *Orphaned South Dakota Gas Wells Could Soon Power Bitcoin Mining*, South Dakota Pub. Broadcasting (Feb. 24, 2021), <https://listen.sdpb.org/business/2021-02-24/orphaned-south-dakota-gas-wells-could-soon-power-bitcoin-mining>.



Some cryptomining companies claim that they are a beneficial end-user of gas that would otherwise be flared or vented directly into the atmosphere.<sup>39</sup> In reality, these operations are further enabling oil and gas extraction at a time when we need to be rapidly decreasing our oil and gas consumption, per multiple reports by international organizations like the Intergovernmental Panel on Climate Change (“IPCC”)<sup>40</sup> and International Energy Agency (“IEA”) in order to meet the real and existential challenge of the climate crisis.<sup>41</sup> Oil and gas companies should be incentivized to capture and pipe as much of the oil and gas they extract as possible, ensuring that said oil and gas does not leak or spill while in transit,<sup>42</sup> which directly aligns with the U.S. Environmental Protection Agency’s (“EPA”) recently released proposed rule to ensure the capture of gas for beneficial use rather than flaring.<sup>43</sup> As the Biden Administration offered upon the launch of the Global Methane Pledge, “[r]apidly reducing methane emissions is complementary

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<sup>39</sup> See, e.g., Sergio Chapa, *Cryptocurrency mining company eyes flared gas in Permian Basin*, Houston Chronicle (June 23, 2020) (EZ Blockchain installs mobile computer rigs in Texas’s oil and gas fields, powering their mining operations with natural gas that would otherwise be flared.),

<https://www.houstonchronicle.com/business/energy/article/Cryptocurrency-mining-company-eyes-flared-gas-in-15359750.php>; Crusoe Energy, *Understanding the Problem Crusoe Solves* (Sept. 23, 2021),

<https://www.crusoeenergy.com/blog/3MyNTKiT6wqsEWKhP0BeY/understanding-the-problem-crusoe-solves>.

<sup>40</sup> IPCC Newsroom, *The evidence is clear: the time for action is now. We can halve emissions by 2030.*

(Apr. 4, 2022) (quoting IPCC Working Group III Co-Chair Jim Skea, “It’s now or never, if we want to limit global warming to 1.5°C (2.7°F)... Without immediate and deep emissions reductions across all sectors, it will be impossible.”), <https://www.ipcc.ch/2022/04/04/ipcc-ar6-wgiii-pressrelease/>; Damian Carrington, *It’s over for fossil fuels: IPCC spells out what’s needed to avert climate disaster*, The Guardian (Apr. 4, 2022) (quoting UN Secretary General, António Guterres, “Increasing fossil fuel production will only make matters worse... It is time to stop burning our planet, and start investing in the abundant renewable energy all around us.”),

<https://www.theguardian.com/environment/2022/apr/04/its-over-for-fossil-fuels-ipcc-spells-out-whats-needed-to-avert-climate-disaster>; Lina Tran & Joseph Winters, *‘We are at a crossroads’: New IPCC report says it’s fossil fuels or our future*, Grist (Apr. 4, 2022), <https://grist.org/science/we-are-at-a-crossroads-new-ipcc-report-says-its-fossil-fuels-or-our-future/>.

<sup>41</sup> IEA, *Net Zero by 2050: A Roadmap for the Global Energy Sector* (May 2021) (“A rapid shift away from fossil fuels. Net zero means huge declines in the use of coal, oil and gas. This requires steps such as halting sales of new internal combustion engine passenger cars by 2035, and phasing out all unabated coal and oil power plants by 2040.”) (scroll down on linked page), <https://www.iea.org/reports/net-zero-by-2050>; Fiona Harvey, *No new oil, gas or coal development if world is to reach net zero by 2050, says world energy body*, The Guardian (May 18, 2021), <https://www.theguardian.com/environment/2021/may/18/no-new-investment-in-fossil-fuels-demands-top-energy-economist>.

<sup>42</sup> See, e.g., Dan Charles, *A satellite finds massive methane leaks from gas pipelines*, NPR (Feb. 3, 2022) (citing a paper that found over the course of two years, during 2019 and 2020, there were more than 1,800 large bursts of methane, often releasing several tons of methane per hour), <https://www.npr.org/2022/02/03/1077392791/a-satellite-finds-massive-methane-leaks-from-gas-pipelines>; Morgan McFall-Johnsen, *Views from space reveal huge methane leaks in the US and Asia. They could be easy spots to cut emissions and save money*, Business Insider (Feb. 3, 2022), <https://www.businessinsider.com/space-imagery-reveals-methane-pouring-from-the-us-russia-daily-2022-2>; Leah Burrows, *Leaky natural gas pipelines are tip of the iceberg*, Harvard Gazette (Oct. 26, 2021) (citing research by the Harvard John A. Paulson School of Engineering and Applied Sciences that found “[m]ethane emissions from the distribution and use of natural gas across U.S. cities are 2 to 10 times higher than recent estimates from the Environmental Protection Agency”), <https://news.harvard.edu/gazette/story/2021/10/urban-areas-across-u-s-are-undercounting-greenhouse-gas-emissions/>.

<sup>43</sup> EPA, *Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*, 86 Fed. Reg. 63110, 63116 (Nov. 15, 2021) (“The EPA is also seeking input on ways to ensure that captured associated gas is collected for a useful purpose rather than flared.”), <https://www.federalregister.gov/documents/2021/11/15/2021-24202/standards-of-performance-for-new-reconstructed-and-modified-sources-and-emissions-guidelines-for>; see also EPA, *U.S. to Sharply Cut Methane Pollution that Threatens the Climate and Public Health* (Nov. 2, 2021) (“Key features of the proposed rule include... standards to eliminate venting of associated gas, and require capture and sale of gas where a sales line is available, at new and existing oil wells.”), <https://www.epa.gov/newsreleases/us-sharply-cut-methane-pollution-threatens-climate-and-public-health>.

to action on carbon dioxide and other greenhouse gases, and is regarded as the single most effective strategy to reduce global warming in the near term and keep the goal of limiting warming to 1.5 degrees Celsius within reach.”<sup>44</sup> Instead, cryptomining operations take the economics of flared gas in the *opposite* direction, by further rewarding and subsidizing an industry that already receives subsidies from taxpayers while harming local communities and the planet.<sup>45</sup>

#### 4. Economics

Energy-intensive proof-of-work mining companies often point to two primary arguments as to why they benefit Texas economically. First, they claim that the lucrative crypto industry can increase renewable energy development. In actuality, cryptomining companies are predominantly utilizing fossil fuel generation, and often times resurrecting and elongating the lifespan of dirty fossil fuel power plants, to mine for cryptocurrency. And even where clean, renewable energy technologies like solar or wind are being used to mine, many operations do not have commitments for renewable-only power supply and instead continue to mine when the sun is not shining nor the wind blowing, using the grid or natural gas, since these operations are 24/7/365. Further, considering how volatile the cryptocurrency market is and the fact that cryptomining companies come and go, there are serious implications for what happens when a cryptomining rig leaves the area and the economics of the renewable energy project means that it is unable to properly compete in an open market and potentially becomes stranded. In places like New York,<sup>46</sup> ratepayers have had to pick up the bill, and this is becoming a concern in Texas as more and more cryptomining operations attempt to plug into the grid.<sup>47</sup>

Regardless of cryptocurrency operations that supposedly promise increased renewable energy deployment, renewable energy is already low-cost in Texas and throughout the U.S. Texas led the country in new renewable energy capacity in 2021, boasting 7,352 MWs of new wind, solar, and energy storage.<sup>48</sup>

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<sup>44</sup> The White House, *Joint US-EU Press Release on the Global Methane Pledge* (Sept. 18, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/18/joint-us-eu-press-release-on-the-global-methane-pledge/>.

<sup>45</sup> Justine Calma, *Why fossil fuel companies see green in Bitcoin mining projects*, The Verge (May 4, 2022) (quoting Professor Paasha Mahdavi of University of California, Santa Barbara, “This is basically a way to monetize flaring. It’s not a way to stop flaring.”), <https://theverge.com/2022/5/4/23055761/exxonmobil-cryptomining-bitcoin-methane-gas>.

<sup>46</sup> For a fuller discussion of the economic and ratepayer impacts on local residents and municipalities in New York, we refer to the comments being simultaneously submitted by Dr. Colin Read. See State Univ. of New York, Plattsburgh, Dr. Colin Read, Professor of Econ. & Finance, <https://www.plattsburgh.edu/academics/schools/business-economics/economics-finance/faculty/read-colin.html> (last visited May 4, 2022).

<sup>47</sup> 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> (“Given the crypto industry’s notorious volatility, there’s also the chance that miners will close up shop, leaving ratepayers to cover the costs of upgrades that may no longer be needed.”); see also Fitch Ratings, *Crypto Mining Poses Challenges to Public Power Utilities* (Jan. 24, 2022), <https://www.fitchratings.com/research/us-public-finance/crypto-mining-poses-challenges-to-public-power-utilities-24-01-2022> (“The first two of these three options pose the greatest risk to the utility should the crypto mining operation shut down, as utilities could be left with stranded assets and costs that then must be recovered.”).

<sup>48</sup> American Clean Power Ass’n, *U.S. surpasses 200 gigawatts of total clean power capacity, but the pace of deployment has slowed according to ACP 4Q report* (Feb. 15, 2022), <https://cleanpower.org/news/u-s-surpasses-200-gigawatts-of-total-clean-power-capacity-but-the-pace-of-deployment-has-slowed-according-to-ACP-4q-report/>; Dan Gearino, *Inside Clean Energy: Texas Is the Country’s Clean Energy Leader, Almost in Spite of Itself*, Inside Climate News (Feb. 17, 2022), <https://insideclimatenews.org/news/17022022/inside-clean-energy-texas-clean-energy-leader/>.

In 2020, wind and solar accounted for 25.2% of power generation, growing steadily from 7.8% in 2010.<sup>49</sup> Even if cryptomining companies only used excess renewable energy that would otherwise be curtailed, there are serious implications with wasting energy at a time when we need to be placing that energy in energy storage technologies for dispatch at peak usage times by deploying more energy efficiency technologies. While the interim CEO of ERCOT, Brad Jones, described himself as “pro bitcoin,” it is worth noting that was specifically in the context only of excess solar and wind, in which cryptominers would actually get paid to use power if the price per megawatt hour goes negative.<sup>50</sup>

The second argument for proof-of-work crypto’s purported economic value is a claim that because miners are able to ramp up and down cryptomining operations when the grid may be strained, they can safeguard the grid’s reliability. However, if the curtailment of crypto electric usage comes through demand response and load reduction programs, as discussed above, in addition to already receiving massive amounts of money through mining cryptocurrencies like Bitcoin and then incentives from local and state governments, ratepayers are then on the hook for paying cryptomining companies through demand response programs, an unjustified double subsidy.

#### A. Subsidies from taxpayers to small amount of wealthy miners

Because of the immense amount of capital needed to purchase enough ASIC miners<sup>51</sup> to mine bitcoin, there are actually very few miners today compared to even a few years ago. In 2021, a whitepaper published by the National Bureau of Economic Research found that the top 10% of cryptominers control 90% of mining and just 0.1% (about 50 miners) control close 50% of the mining—which directly translates to ownership of Bitcoin.<sup>52</sup>

And miners combusting fossil fuels seek even more handouts from taxpayers. The industry is lobbying state lawmakers to introduce legislation that would eliminate the taxes on sales of stranded gas, which is currently set at 7.5% of market value for fossil gas in Texas.<sup>53</sup> While the cryptocurrency industry will have to wait until the 2023 Texas legislative session to pass more crypto-friendly legislation like North Dakota, Wyoming, and Kentucky, the Texas Legislature already passed House Bill 4474 to recognize

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<sup>49</sup> Garrett Golding, *Surging Renewable Energy in Texas Prompts Electricity Generation Adequacy Questions*, Federal Reserve Bank of Dallas (Aug. 17, 2021) (percentages calculated using chart data for Figure 1) (citing data from ERCOT), <https://www.dallasfed.org/research/economics/2021/0817>.

<sup>50</sup> 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>.

<sup>51</sup> Paul Kim, *ASIC mining: Computers built specifically for mining cryptocurrency*, Insider (Mar. 16, 2022), <https://www.businessinsider.com/personal-finance/asic-mining>.

<sup>52</sup> Igor Makarov & Antoinette Schoar, *Blockchain Analysis of the Bitcoin Market*, at 22–23, Nat’l Bureau of Econ. Rsch., Working Paper 29396 (Oct. 2021) (note: this analysis was for the time period before China banned mining), [https://www.nber.org/system/files/working\\_papers/w29396/w29396.pdf](https://www.nber.org/system/files/working_papers/w29396/w29396.pdf). It is believed that the concentration of mining and wealth is even more stark in the U.S. today.

<sup>53</sup> Bloomberg, *Texas bitcoin miners sketch a future of cozying up to gas wells*, E&E News (Apr. 1, 2022), <https://subscriber.politicopro.com/article/eenews/2022/04/01/texas-bitcoin-miners-sketch-a-future-of-cozying-up-to-gas-wells-00022124>; see also Texas Railroad Commission, *Texas Severance Tax Incentives*, <https://www.rrc.texas.gov/oil-and-gas/publications-and-notice/texas-severance-tax-incentives> (last visited May 5, 2022); Shelly Hagan & Michael Smith, *Texas Bitcoin miners seek tax break for using trapped well gas*, World Oil (Mar. 31, 2022), <https://www.worldoil.com/news/2022/3/31/texas-bitcoin-miners-seek-tax-break-for-using-trapped-well-gas/>.

cryptocurrency in the state's Uniform Commercial Code as well as enacted House Bill 1576 to establish a 16-member working group on blockchain matters.<sup>54</sup>

## **Conclusion**

Texas is ground-zero for where proof-of-work cryptomining operations are located—the externalities of which are being placed on everyday Texans who are still concerned about grid stability, reliability, and affordability after the lethal Texas Winter Storm in February 2021 that took the lives of 246 people and left millions of households without power in frigid and dire circumstances. The massive amount of energy unnecessarily required by proof-of-work cryptomining, which operates intentionally as an energy-wasteful industry, threatens the United States' ability to meet the Biden Administration's goal of enabling a swift and equitable transition away from a fossil fuel economy through deployment of zero-emissions, renewable energy to power our grid, transportation, and buildings. As more and more communities face the public health, noise, ratepayer, environmental, energy, and climate impacts associated with energy-intensive, energy-wasteful proof-of-work cryptocurrency, the Biden Administration must take a holistic approach to ensuring that this industry does not exacerbate social inequities and environmental injustice—and is held accountable for the destructive actions it continues to take at the expense of communities. Unfortunately, the states with the most cryptomining operations, like Texas, also have the weakest state environmental laws and energy regulations, and lax enforcement. The federal government should explore options at its disposal to ensure that proof-of-work cryptocurrency does not continue to threaten the Biden Administration's climate, environmental, and energy goals.

Thank you for the opportunity to submit these comments and for your attention to this issue. Sincerely,

**Chispa LCV**

**Chispa TX**

**Coastal Bend Group - Sierra Club Lone Star Chapter**

**Concerned Citizens of Cook County (Georgia)**

**Earthjustice**

**Environmental Integrity Project**

**For the Greater Good**

**FracTracker Alliance**

**Ingleside on the Bay Coastal Watch Association**

**Move Past Plastic**

**Public Citizen**

**Texas Campaign for the Environment**

**Turtle Island Restoration Network**

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<sup>54</sup> James Pollard, *Texas Republicans want to make the state the center of the cryptocurrency universe*, The Texas Tribune (Oct. 28, 2021), <https://www.texastribune.org/2021/10/28/texas-republicans-blockchain-bitcoin/>.