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October 1, 2024

To: The Honorable Charles Schwertner, Chair
Honorable Members, Senate Committee on Business and Commerce
Attn: annika.vandayar@senate.texas.gov, committee clerk
From: Luke Metzger, Executive Director, Environment Texas

Re: Interim charge on "Managing Texas Sized Growth: Evaluate the state's ability to keep pace with increasing electricity demand related to population growth and energy intensive technologies"

Environment Texas, a non-profit advocate for clean air and water, parks and wildlife, and a livable climate, is pleased to offer these written comments to the Senate Business and Commerce Committee. We write today to recommend action to reduce the high energy use of data centers and cryptocurrency mines.

ERCOT CEO Pablo Vegas testified in June that data centers and crypto mining could account for half of ERCOT's forecasted doubling of Texas energy demand by 2030, putting a severe strain on the Texas grid.[1] As Lt. Gov. Patrick wrote on X, "We want data centers, but it can't be the Wild Wild West of data centers and crypto miners crashing our grid and turning the lights off."[2]

The growth of these operations poses an extraordinary threat to the reliability and affordability of the Texas power grid in a time when the ERCOT grid is already strained by extraordinary population, manufacturing and economic growth. The addition of more data centers and crypto miners threatens to outstrip our ability to expand the grid, jeopardizing grid reliability, our environment, and public health.

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[1] Alex Boyer, "Lt. Gov. Dan Patrick criticizes crypto-miners, AI data centers for potential strain on Texas power grid, " *Fox 4 News*, June 13, 2024, https://www.fox4news.com/news/lt-gov-dan-patrick-criticizes-crypto-miners-ai-data-centers-potential-strain-texas-power-grid.

[2] Office of the Lieutenant Governor Dan Patrick (@LtGovTX), "ERCOT CEO Pablo Vegas and others gave shocking testimony today in the Senate Committee on Business & Commerce …," X, June 12, 2024, https://x.com/LtGovTX/status/1800968003636408657?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axioslocal_austin&stream=top.

But Texas could take several important steps to keep data centers and crypto mining from turning Texas into the Wild Wild West. Data center operators have the knowledge and technology to make their facilities more energy efficient. The Department of Energy's Office of Energy Efficiency & Renewable Energy publishes a Data Center Master List of Energy Efficiency Measures.[3] This extensive document details many ways data centers can improve energy efficiency. Liquid cooling systems use significantly less energy than air cooling systems.[4] Upgrading room-based air cooling systems to row-based or rack-based ones can lead to a threefold reduction in energy use.[5] While the servers in data centers can function effectively at 77 degrees, many data centers are kept at a frigid 65 degrees, using unnecessary energy.[6] Furthermore, Energy Star-certified servers can reduce energy consumption.[7]

A number of governments have proposed regulations to ensure that data centers don't hoard valuable energy resources. This year, for example, Virginia lawmakers drafted 17 bills regulating data centers,[8] including HB 116[9] and SB 192,[10] which would have tied tax exemptions to energy efficiency standards. As more governments regulate data centers, which are often run by large corporations with data centers across many states or countries, it makes even more sense to adopt similar energy efficiency standards.

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[3] Office of Energy Efficiency & Renewable Energy, "Data Center Master List of Energy Efficiency Measures," US Department of Energy, September 2020, https://datacenters.lbl.gov/sites/default/files/2024-04/DCEE%20Actions%20Master%20List_090920_final.pdf.

[4] Robert Sheldon, "Liquid cooling vs. air cooling in the data center," TechTarget, May 3, 2022, https://www.techtarget.com/searchdatacenter/feature/Liquid-cooling-vs-air-cooling-in-the-data-center.

[5] "16 More Ways to Cut Energy Waste in the Data Center," ENERGY STAR, accessed September 3, 2024, https://www.energystar.gov/products/data_center_equipment/16-more-ways-cut-energy-waste-data-center.

[6] Brien Posey, "6 ways to increase energy efficiency in data centers," TechTarget, May 3, 2022, https://www.techtarget.com/searchdatacenter/tip/Four-ways-to-reduce-data-center-power-consumption.

[7] Robert McFarlane, "Considerations for sustainable data center design," TechTarget, September 27, 2021, https://www.techtarget.com/searchdatacenter/tip/Considerations-for-sustainable-data-center-design.

[8] "Data Center Legislation in the 2024 Virginia General Assembly," Piedmont Environmental Council, February 13, 2024, https://www.pecva.org/region/regional-state-national-region/general-assembly/data-center-legislation-in-the-2024-virginia-general-assembly/.

[9] "HB 116 Retail Sales and Use tax; exemption for data centers," LIS: Virginia's Legislative Information System, accessed September 3, 2024, https://lis.virginia.gov/cgi-bin/legp604.exe?241+sum+HB116.

[10] "SB 192 Sales and use tax exemption; data centers," LIS: Virginia's Legislative Information System, accessed September 3, 2024, https://lis.virginia.gov/cgi-bin/legp604.exe?241+sum+SB192.

There are a variety of legislative solutions to this problem. Texas could eliminate all existing and new tax breaks for data centers.[11] Given the enormous strain data centers place on the grid, Texas should think twice before offering incentives, including tax breaks from counties,[12] schools,[13] and the state sales tax,[14] that would only worsen this strain. At a minimum, Texas could tie these incentives to meeting energy efficiency standards.

The legislature could require all data centers to follow strong energy efficiency standards of Power Usage Effectiveness (PUE), a metric used to measure data center energy efficiency.[15] A PUE of 1.0 means the site is 100% energy efficient. Unfortunately, the average PUE has stagnated around 1.6 for a decade.[16] The proposed energy efficiency legislation in Virginia would require a minimum PUE of 1.2.[17] Texas could develop PUE standards for data centers to promote energy efficiency. The state could also incentivize on-site power generation for data centers–this can prevent power losses from conversions and save energy for the rest of the state.[18]

Data center cooling infrastructures could follow strong water efficiency standards. Texas could also require detailed reporting on the electricity and water use of existing data centers and crypto miners. Another proposed Virginia bill, HB 910, would require

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[11] "State of Texas Data Center Incentives," City of Plano, accessed September 5, 2024, https://planotexas.org/242/State-of-Texas-Data-Center-Incentives.

[12] Gabriel Romero, "Caldwell County approves tax incentives for $1.3 billion data center," *MySA*, March 20, 2024, https://www.mysanantonio.com/business/article/caldwell-data-center-19307060.php.

[13] "Jobs, Energy, Technology and Innovation Act (JETI)," Texas Comptroller of Public Accounts, accessed September 5, 2024, https://comptroller.texas.gov/economy/development/prop-tax/jeti/.

[14] "State Sales Tax Exemption for Qualified Data Centers," Texas Comptroller of Public Accounts, accessed September 5, 2024, https://comptroller.texas.gov/taxes/data-centers/.

[15] "What's the Best PUE Ratio for Data Centers?," Sunbird, March 9, 2022, https://www.sunbirddcim.com/blog/whats-best-pue-ratio-data-centers.

[16] Petroc Taylor, "Data center average annual power usage effectiveness (PUE) worldwide 2007-2023," *Statista*, April 30, 2024, https://www.statista.com/statistics/1229367/data-center-average-annual-pue-worldwide/#statisticContainer.

[17] "HB 116 Retail Sales and Use tax; exemption for data centers," LIS: Virginia's Legislative Information System, accessed September 3, 2024, https://lis.virginia.gov/cgi-bin/legp604.exe?241+sum+HB116.

[18] Vijay Kanade, "4 Ways to Ensure Energy Efficiency in Data Centers," Spiceworks, January 23, 2023, https://www.spiceworks.com/tech/data-center/articles/ensure-energy-efficiency-data-centers/.

quarterly reporting of energy efficiency.[19] Grid managers and utilities also need corresponding detail on proposed data center and crypto miner facilities, to enable better energy and water forecasting and planning for these high-impact energy and water users.

Furthermore, Texas could place a moratorium on crypto mining, as its energy and taxpayer costs are simply too high to justify. Bitcoin mining company Riot Platforms made $32 million from shutting down its operations in August 2023, nearly fourfold the amount it made from cryptocurrency.[20] Last year, the Texas Senate approved a bill, SB 1751,[21] that would restrict the ability of crypto miners to take advantage of the demand response programs, but the bill never passed the Texas House.[22] Texas could pass this legislation to stop crypto miners from taking advantage of Texans.

Crypto mines also present serious noise pollution concerns; residents of Granbury, Texas, claim that the deafening noise from a new Bitcoin mine in their town is causing serious health problems.[23] Texas could lower its noise code limit of 85 decibels, the highest in the nation, to a level that protects human health above noisy industry.[24] According to the European Environmental Agency, noise at or above 55 decibels can make people sick.[25] The risk of hearing loss begins at around 70 decibels, well below Texas' limit.[26]

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[19] "HB 910 Data centers; energy usage," LIS: Virginia's Legislative Information System, accessed September 5, 2024, https://lis.virginia.gov/cgi-bin/legp604.exe?241+sum+HB910.

[20] "Why Texas Republicans are souring on crypto," *The Economist*, August 27, 2024, https://www.economist.com/united-states/2024/08/27/why-texas-republicans-are-souring-on-crypto?utm_source=substack&utm_medium=email.

[21] "Texas Senate Bill 1751," LegiScan, accessed September 3, 2024, https://legiscan.com/TX/bill/SB1751/2023.

[22] "Why Texas Republicans are souring on crypto," *The Economist*, August 27, 2024, https://www.economist.com/united-states/2024/08/27/why-texas-republicans-are-souring-on-crypto?utm_source=substack&utm_medium=email.

[23] Andrew R. Chow, "'We're Living in a Nightmare:' Inside the Health Crisis of a Texas Bitcoin Town," *TIME*, July 8, 2024, https://time.com/6982015/bitcoin-mining-texas-health/.

[24] Ibid.

[25] Ibid.

[26] Miranda M. Riva, "Decibel Chart: What You Need to Know," National Council on Aging, June 17, 2024, https://www.ncoa.org/adviser/hearing-aids/decibel-levels/.

The upcoming legislative session provides a crucial opportunity to ensure that the booming data center and crypto industries stop draining our precious resources. We encourage the adoption of legislation to meet this goal.

Sincerely,

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