June 6, 2025

Pennsylvania Public Utility Commission
400 North St
Keystone Bldg.
Harrisburg, PA 17120

To the Pennsylvania Public Utility Commission Chairman and Commissioners,

The Delaware Riverkeeper Network is submitting this comment in response to the Pennsylvania Public Utility Commission's public hearing regarding the growing impact of data centers. This comment is in response to Docket No. M-2025-3054271. The Delaware Riverkeeper Network has serious concerns regarding the increase of data centers coming into the Commonwealth of Pennsylvania due to their massive consumption of potable water, negative impacts on our nation's climate goals, use of fossil fuels as an energy source, health concerns, and the current lack of regulatory oversight of data centers while their growth continues at an unprecedented rate.

Data centers are warehouse buildings with anywhere from hundreds to thousands of servers powering the programs they run. These centers put out an immense amount of heat and need to be continuously cooled to keep the servers, and their programs, running. A Pew Research Center study showed that generating a 100-word email would use up an entire bottle of water for cooling needs.[1] The Washington Post reported that a 100-word email generated by an AI chatbot using ChatGPT-4 "once weekly for a year requires 27 liters about 1.43 water cooler jugs" and that a 100-word email generated by an AI chatbot using ChatGPT-4 "once weekly for a year by 1 out of 10 working Americans requires 435,235,476 liters, equal to

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[1] O'Neill, Aynsley. "Ai Is Everywhere Now-and It's Sucking up a Lot of Water." *Inside Climate News*, 28 Sept. 2024, insideclimatenews.org/news/28092024/ai-water-usage/?gad_source=1&gclid=Cj0KCQjw2N2_BhCAARIsAK4pEkULMGxQYb6nbVuVTmKxjcxnE3JzRwWkSQtteoB38zEpVsoOrW0pHUcaAgG9EALw_wcB.

the water consumed by all Rhode Island households for 1.5 days".[2] On the same model, 10 to 50 queries consumes about 2 litres of water, which is about a half-gallon.[3] Some data centers also use their servers to train AI which also uses energy and water. It is reported that "training a model like GPT-3 in Microsoft's U.S. data centers can consume 5.4 million litres of water".[4] And not just any type of water will do. In order to prevent issues, the water must be potable, which means drinking water is the standard. While data centers can use outside air to cool, water will still be needed when the outside temperature is higher than 85 degrees Fahrenheit or when the air is too dry.[5] The demand from AI globally is expected to need between 4.2 and 6.6 billion cubic meters of water withdrawal which surpasses "the annual water use of 4-6 countries the size of Denmark, or about half of the United Kingdom's total annual withdrawals".[6] If data centers are placed in areas with water scarcity or that are prone to low rainfall or drought -- a condition being experienced by more and more frequently across the U.S. due to growing climate instability -- they pose serious risks to water security in and for these communities.

Another concern is that data center construction and energy consumption is being marketed as a reason to continue and even ramp up fossil fuel use. Utility companies have "developed plans to delay their shutdown of coal-fired power plants and will add natural gas capacity in order to meet expected future electricity demand".[7] It is clear the natural gas industry is positioning itself to provide a substantial portion of the growing need for energy created by the construction and operation of data centers.[8] CEO of EQT, Toby Rice, told CNBC "we firmly believe that natural gas is going to take the lion's share of power demand to meet this growing AI demand need".[9] EQT told its investors that the company is in a good position to take "advantage of a forecasted 10-18-bn-cubic-feet increase in gas demand" by 2030 which will involve demand from AI, data centers, and crypto currency mining.[10] Energy Transfer, a company that engages in pipeline transportation, storage, and terminaling for natural gas, crude oil, NGLs, refined products, and liquid natural gas, has received a 75% rise in requests to power new data centers.[11] Reuters reported that in

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[2] Pranshu Verma & Shelly Tan, *A bottle of water per email: the hidden environmental costs of using AI chatbots*, Washington Post, Published Sept 18, 2024 https://archive.is/8xeFT#selection-1023.0-1023.119

[3] Li, P., Yang, J., Islam, M. A., & Ren, S. (2023). *Making AI Less "Thirsty": Uncovering and Addressing the Secret Water Footprint of AI Models* (No. arXiv:2304.03271). arXiv. (https://doi.org/10.48550/arXiv.2304.03271)

[4] Pranshu, *Supra* note 2.

[5] Li, *Supra* note 3.

[6] *Id*.

[7] Terry Yosie, *AI data centers are undermining climate solutions,* Trellis, Published July 8, 2024, https://trellis.net/article/ai-data-centers-are-undermining-climate-solutions/

[8] Alex Steis et. al., *How Much Natural Gas Will U.S. Data Centers Consume? Forecasts Still in Flux,* AI Rising: How Will Natural Gas Markets Evolve to Fuel the Demand Surge, Published March 3, 2025, at 2

[9] Andy Rowell & Nina Lakhani, *Revealed: Trump's Fossil-fuel donors profit from data-center boom and green rollbacks,* The Guardian, Published April 3, 2025, https://www.theguardian.com/environment/2025/apr/03/trump-fossil-fuel-donors-data-centers

[10] *Id*.

[11] *Id.*

a half dozen countries, regulators and researchers have discussed that the rapidly growing new demand for power being driven by AI and similar systems will be met in the near term by using fossil fuels like natural gas and in some instances even being powered by coal.[12] As a result, Reuters reporting also shows that utilities and gas plants are delaying retirement of their facilities and reneging on climate commitments asserting that they are needed to meet the power demand of data centers. It is clear that in the rapid expansion of data centers, the natural gas industry has found a new foothold to avoid a transition to clean and renewable energy resources, and to keep their operations alive and even expanding.

Construction and operation of data centers in Pennsylvania is a clear goal for fossil fuel companies seeking to continue their operations and avoid transition to renewable energy. Fossil fuel company claims will remain as they have always been, that the only way to power the grid and ensure needed energy for the data center industry is to keep fossil fuels online. In reality, there will only be a continuing need for fossil fuels if we continue to invest money in their growth and operations, rather than in the growth and expansion of truly renewable and more affordable energy resources like wind and solar.

The energy demands of data centers put the climate goals of the entire world in danger. The power demand for artificial intelligence alone is projected to triple by 2030 in the US.[13] While, many companies like Google, Amazon, and Microsoft have made climate pledges and spoken about their prior decarbonization tactics, these plans and promises were made prior to their surging investments in data centers. Berkeley Lab released a report last December projecting that by 2028 data centers would consume between 6.7% and 12% of US electricity.[14] If this projected load growth were to be powered through natural gas generation exclusively, "it would result in about 180 million tonnes of additional CO2 emissions annually. If [data centers] were a country, that would make it the 45th largest emitter" of CO2.[15] The implications on climate instability from data centers are two-fold: (1) how many of these data centers will we allow to be built in the short amount of time these companies are seeking and (2) how they will source their power. At the rate we are seeing companies propose data center projects without any planning for renewable energy options as a primary energy source, they will likely be seeking power from fossil fuels.

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[12] Valerie Volcovici & Laila Kearney, *Data-center reliance on fossil fuels may delay clean-energy transition,* Reuters, Published Nov. 26, 2024, https://www.reuters.com/technology/artificial-intelligence/how-ai-cloud-computing-may-delay-transition-clean-energy-2024-11-21/

[13] Brad Plumer & Nadja Popovich, *A New Surge in Power Use Is Threatening U.S. Climate Goals,* The New York Times, Published on March 14, 2024 https://www.nytimes.com/interactive/2024/03/13/climate/electric-power-climate-change.html

[14] Shehabi, A., Smith, S.J., Hubbard, A., Newkirk, A., Lei, N., Siddik, M.A.B., Holecek, B., Koomey, J., Masanet, E., Sartor, D. 2024. *2024 United States Data Center Energy Usage Report*, at 52, Lawrence Berkeley National Laboratory, Berkeley, California. LBNL-2001637

[15] Camille Fassett, *The emissions risks of AI data center buildout,* WattTime, Published on Feb. 5, 2025, https://watttime.org/news-and-insights/the-emissions-risks-of-ai-data-center-buildout/

Additionally, data centers are unique in that their power sources are large and concentrated. The current grid system of the U.S. was not meant to handle concentrated large loads.

AI use is so novel and new, that regulators, politicians, decisionmakers and the public are not yet aware of the harms that result from its use for the environment and the climate, and in turn for their own health and safety. Unaware of its impacts, people, politicians and decisionmakers use services such as ChatGPT to build a to do list, a grocery list, as their own personal therapist, to create art for use on social media or to fulfill business needs. Many search engines have an automatic AI feature that you have to manually turn off – *if one can figure that step out.* While the general public may not be aware of the implications of AI use, it is incumbent on decisionmakers like the PUC to ensure you are fully informed, and to bring that information in to your decisionmaking.

The PUCs obligation to ensure you are fully considering the environmental implications of data centers – including for water, air, climate, natural resources and environment – is constitutionally mandated by Article 1, Section 27 of the Pennsylvania State Constitution.

Data centers are not obscure buildings, tucked away from sight, where nobody will be affected. They are located in the heart of communities, including residential areas, in enormous warehouse size buildings. They bring with them massive land use, tree cutting, light pollution, noise pollution, in addition to the massive water usage discussed above. Data centers are not noiseless, but rather produce a low and constant hum as can be heard in this video. Noises or sounds at or below 70 decibels are considered safe for human hearing and can range from the sound of a ticking clock to your typical office hustle and bustle noise. But once you go above 70 decibels hearing can begin to be negatively impacted. The Occupational Health and Safety Administration (OSHA) requires employers to implement a "hearing conservation program" when a workplace exposes employees to an average 85 decibels over an 8 hour day.[16] Across various sources, data centers are reported to range from between 55 to 96 decibels.

Communities deal with a myriad of issues when a data center moves in. More Perfect Union went into states to talk to people who live near data centers and the effects it has had on their lives. This video, taken about a community in Georgia, shows how people were forced to have a data center move in just 400 yards from their home. This community, and its residents, are now experiencing constant light pollution, including that enters homes at night; trees cut down that previously provided shade, quality of life benefits and beauty; overwhelming dust plumes surrounding their home; and problems with drinking water. The data center is imposing serious costs on nearby residents including in the form of high electric bills, declining property values, and damage to home water infrastructure. Communities in Tennessee are

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[16] Occupational Safety and Health Administration, https://www.osha.gov/noise

suffering because of the new data center built by Elon Musk for the AI function on X as seen in [this news report.](#) Many were unaware this center was even being built. Since its construction and operation, they now are impacted by release of hazardous air pollutants, noise and strange smells coming from the turbines. Residents with pre-existing respiratory issues face additional impacts and concerns. If data centers are powered by fossil fuels, we know there are harmful pollutants and emissions that come out of those projects. This means the harms go even beyond the community directly impacted by the data center and includes those living near the fossil fuel infrastructure that will power them.

Delaware Riverkeeper Network provides this information to the PUC because we consider it crucial for fully informed decisionmaking and data center oversight. The issues a data center brings do not only affect electric bills and grid overload, but are far reaching for our nation's climate goals and the impacts on availability of drinking water. In addition, the healthcare costs of communities are likely to rise given the pollution risks we are starting to see come from data centers. These technologies are so new that there is still much we don't know about their negative impacts. But what we do know about pollution from fossil fuel power plants is of great concern and must be given consideration through a thorough cumulative impact analysis. In the short time data centers have begun to rise to the surface, so have their flaws and dangers. The PUC has a crucial role to play in how much access data centers and their companies will have to Pennsylvania and to what degree they are allowed to inflict the adverse environmental, health, safety and associated economic consequences on Commonwealth communities. The Delaware Riverkeeper Network asks you to look at all of the impacts of data centers and their power sources on the Commonwealth and beyond when making your decisions and carrying forth your regulatory oversight regarding data centers. Your decisions will not just implicate finances or electric capabilities, but it will impact the human and environmental health of all Pennsylvanians.

Respectfully submitted:

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