



**Pennsylvania Environmental Council
Comments on Data Center Buildout
September 2025**

Introduction

The Pennsylvania Environmental Council (PEC) appreciates the opportunity to submit these comments on the issue of data center development in Pennsylvania. For purposes of these comments, we combine cloud computing and artificial intelligence systems under the more general term “data centers.”

Please note that our recommendations will likely evolve as we gain a better understanding of the true opportunities and challenges that this development will bring. But what follows is our first impression of needs and issues that must be addressed to develop this industry in a sustainable manner.

As a starting point, we recognize the economic opportunities associated with the growth of data centers. Without question, the academic and research expertise, workforce talents, data center infrastructure,¹ and energy and water resources of our state make it a desired location for development. However, concurrent with this potential is the clear reality of cost considerations as well as energy and water resource management needs that must be addressed, particularly when considering cumulative or long-term effects. Pennsylvania has an opportunity to lead in the development of this industry, but leadership requires doing it right and not just fast.

We further recognize that the Public Utility Commission (PUC) is developing a proposed model tariff aimed at addressing logistical and consumer issues such as appropriate MW size for tariff designations, financial security requirements, minimum contract terms, early termination fees, maximum interconnection study times, load ramping, and best practices from other jurisdictions.² This model tariff should be published soon for public comment, and while it will help inform other policy needs and actions, it is important that we move forward now with discussion of complementary legislative solutions.

¹ See 2025 map from the National Renewable Energy Laboratory Research Hub: <https://research-hub.nrel.gov/en/publications/data-center-infrastructure-in-the-united-states-2025-map>

² Testimony of Stephen DeFrank, Chairman, PA Public Utility Commission, before the Senate Democratic Policy Committee (September 2, 2025). <https://pasenatormiller.com/wp-content/uploads/2025/09/Stephen-DeFrank-September-2-2025.pdf>

Energy

Historically, growth in electricity demand has been linear, increasing in the range of one to three percent per year.³ Data centers change that trajectory, perhaps significantly.⁴ It is unclear just how drastically, and predictions range widely – made uncertain by speculative developer bids, changing market conditions, and advancements in technology efficiency and platforms.⁵ Nonetheless, even modest data center build in Pennsylvania will be disruptive. Given that Pennsylvania participates in the PJM-managed regional transmission grid and electricity market, even buildout in other states will impact energy consumers and availability here in Pennsylvania.

The PUC model tariff can help address some of these concerns, particularly in establishing better certainty and closer alignment of actual energy needs with new generation and infrastructure buildout. This potential has been flagged by utility executives⁶ and consumer advocates alike. Similarly, the issue of demand response – incenting *and* requiring large load customers like data centers to maintain flexibility and curtail use when deemed necessary – will be essential to maintain grid stability.⁷ While some of these policy decisions will be guided by the Federal Energy Regulatory Commission (FERC) and/or PJM, the PUC and General Assembly should act as necessary and appropriate to help manage grid resilience and affordability.

When it comes to new generation build, we will need to use all the tools at our disposal.

Pennsylvania needs to increase the amount and diversity of our electric generation, particularly by expanding renewables paired with storage and fostering emerging technologies like advanced nuclear and geothermal to balance traditional commodity-based generation with carbon capture and storage where feasible. Legislative proposals

³ Ibid.

⁴ See the Pennsylvania Public Utility Commission's *Electric Power Outlook for Pennsylvania 2024-2029* (August 2025). Based on projections submitted by Electric Distribution Companies in Pennsylvania, the total average annual aggregate five-year energy usage growth projection for the residential, commercial, and industrial classes is projected to increase by 6.17% per year. This includes a 1.08% growth rate for residential, a commercial growth rate decrease of -0.58%, and an industrial (including data centers) growth rate increase of 14.77% for the entire five-year projected period. <https://www.puc.pa.gov/media/3586/final-draft-2025-epo-2024-2029-8-2025.pdf>

⁵ Testimony of Robert Routh, Pennsylvania Policy Director, Energy & Climate, Natural Resources Defense Council (NRDC), before the Senate Democratic Policy Committee (September 2, 2025). <https://pasenatormiller.com/wp-content/uploads/2025/09/Robert-Routh.pdf>

⁶ See Duquesne Light's *Three Proposals to Protect Consumers from AI Price Increases*, Pittsburgh Post Gazette (July 30, 2025). <https://www.post-gazette.com/opinion/guest-columns/2025/07/30/ai-summit-energy-demand-duquesne-light-consumers-prices-kevin-walker/stories/202507230008>

⁷ Testimony of Robert Routh, NRDC.

like the Pennsylvania Reliable Energy Sustainability Standard (PRESS)⁸ are essential to addressing this need. This isn't about picking winners and losers – it's about ensuring grid resiliency by making supply available and the system more reliable and diverse. Firm power is essential, but we must also acknowledge that electricity derived from commodity resources that have competing market demands can impact availability and cost. For example, the recent U.S. Energy Information Administration Short Term Energy Outlook⁹ projects an increase in natural gas prices due to LNG export growth. It's also important to note that no generation facility runs 24/7. Disruptions due to extreme weather, fuel shortfalls, or scheduled or unplanned maintenance impact all generation facilities on a recurring basis.¹⁰ On this note, deployment of energy storage technologies is vastly preferable to reliance on backup options like diesel generators, which are highly expensive and polluting.

We must also differentiate between securing new build and merely consuming existing renewable or nuclear generation through direct power purchase agreements. Pennsylvania needs new zero or low emission build to keep pace with rising energy demand and make sure that additional renewable energy, which remains the most cost-competitive form of new-build generation,¹¹ is attainable for all consumers.

These challenges also point to the high value of energy efficiency programs, as well as “electron-agnostic” technologies (often referred to as “advanced” or “alternative” transmission technologies) that can expand the capacity and improve the operation of the existing grid without the need for more generation build or additional transmission corridors. These technologies can be deployed more quickly, and at lower overall cost, than new build.¹² PJM's proposed compliance approach for FERC Order 1920¹³ recognizes the value of these technologies, and we encourage both the PUC and the General Assembly to consider proper incentives and allowance for the utility planning and investment needed for deployment in Pennsylvania.

⁸ Senate Bill 501 (PN771) and companion House Bill 501 (PN 1478)

⁹ <https://www.eia.gov/outlooks/steo/archives/Jun25.pdf>

¹⁰ This became evident during Winter Storm Elliott, when natural gas generation availability failed at significant levels. <https://www.ferc.gov/news-events/news/elliott-report-complete-electricity-standards-implement-gas-reliability-rules>. See also NERC, *2024 Long-Term Reliability Assessment* (December 2024, updated July 15, 2025): <https://www.nerc.com/pa/RAPA/ra/Pages/default.aspx>

¹¹ See Lazard's 2025 Levelized Cost of Energy+ analysis: <https://www.lazard.com/research-insights/levelized-cost-of-energyplus-lcoeplus/>

¹² See RMI's *How Advanced Transmission Technologies Can Revamp the Aging US Power Grid* (July 2025) <https://www.wri.org/insights/advanced-transmission-technologies-us-power-grid>

¹³ <https://www.pjm.com/-/media/DotCom/committees-groups/committees/teac/2025/20250905-special/pjm-whitepaper-on-order-1920-compliance-approach.pdf>

We also encourage examination of co-benefit opportunities like waste heat recovery and reuse at data centers or adjacent facilities.

The potential impacts of data center development on energy demand, cost, and emissions should be conducted to inform and guide future development.

Water Management

Pennsylvania is fortunate to have an abundance of freshwater resources, but it is not something we can take for granted. As identified by testifiers in the Senate Majority Policy Committee hearing¹⁴ on August 11, data centers bring concerns about water quality and quantity impacts, supplier availability and infrastructure buildout, and burdens on ratepayer costs.

As stated at that hearing, certain types of data center campuses can utilize millions of gallons of water per day for operations, which is more than what is used by most communities with public drinking water systems.¹⁵ Depending on the cooling systems used at a data center, a significant amount of this water use could be consumptive – i.e., it will not return to its original source and therefore is not inexhaustible. This use can be mitigated to a degree by water recycling or alternatives like treated wastewater, but ultimately there will still be a net loss to the watershed.

If data centers are paired with new, adjacent power plant buildout, these water use problems can be substantially compounded due to the cooling demands of those plants.¹⁶

Many (if not most) communities with public systems do not have large surpluses of excess water supply readily available to provide to larger size data centers, and even those that do would still face the challenges and costs of new infrastructure build and balancing competing uses and needs.¹⁷ As with electricity demand, this implies an unfair distribution of costs across rate payers, and the need to have data centers directly pay for necessary upgrades.¹⁸ Many public water systems are already struggling with capacity and

¹⁴ Video and testimony from the hearing is available at <https://policy.pasenategop.com/policy-081125/>

¹⁵ Testimony of Andrew Dehoff, P.E., Executive Director, Susquehanna River Basin Commission (SRBC). <https://policy.pasenategop.com/wp-content/uploads/sites/140/2025/08/Susquehanna-River-Basin-Commission-1.pdf>

¹⁶ A modern gas-fired combined cycle power plant can have evaporative water demands of 6 to 10 million gallons a day. Ibid.

¹⁷ Ibid.

¹⁸ Testimony of Tony Nokovich, P.E., Vice-President of Engineering, Pennsylvania American Water <https://policy.pasenategop.com/wp-content/uploads/sites/140/2025/08/American-Water-PA.pdf>

maintenance issues; data centers might be one way to help address these issues, or they could make them worse.

But even if the builds and costs are feasible, there remains the issue of resource management within the watersheds themselves. While the Susquehanna and Delaware River basins have Commissions which actively manage larger water withdrawals, the Ohio, Potomac, and Genesee River Basins do not. If a data center is proposing to supply its own water from groundwater wells or a nearby river, careful review will be necessary to ensure that the volume of water needed can be safely supported by the source without depleting it, without denying water to existing users, and without harming aquatic habitat and wildlife that rely on the water.¹⁹ The Department of Environmental Protection is currently not equipped, with respect to sufficient authority or capacity, to take on this responsibility in those river basins, which make up a significant part of the state.

Mitigation and management measures for direct withdrawals — such as minimum pass-by flow requirements, consumptive use mitigation, and reduced withdrawals during times of drought or other emergencies — are all essential to proper management.²⁰ Given that we don't yet have an adequate understanding of what demand may be, this puts us in an even more challenging position.

So, as with energy, both the legislature and the PUC need to provide support and authority to our resource management agencies and public systems to properly manage the influx of new demand, and to fairly address concerns about use and cost.

Permitting

As with other activities in Pennsylvania, there has also been discussion about the need to improve permitting for data center site development. PEC understands this concern and shares the goal of improving permitting performance. But improvement should be broadly defined and should help all stakeholders.

PEC is a member of the Carbon Capture Coalition²¹ (“CCC”), a national and nonpartisan collaborative that works to enable economy-wide, commercial scale deployment of carbon management technologies. The CCC is comprised of more than 100 companies, unions, and conservation and environmental organizations.²² To help guide its work, the coalition

¹⁹ Testimony of Andrew Dehoff, SRBC.

²⁰ All of these issues are identified in testimony provided by Kristen Bowman Kavanagh, Executive Director Delaware River Basin Commission (DRBC). <https://policy.pasenategop.com/wp-content/uploads/sites/140/2025/08/Delaware-River-Basin-Commission.pdf>

²¹ <https://carboncapturecoalition.org/>

²² <https://carboncapturecoalition.org/about-us/>

has adopted permitting reform principles²³ that we believe are instructive here. Those principles include:

- Ensuring that state agencies have the resources, staffing, training, and technology to efficiently complete a growing number of reviews and community engagement processes required by new development.
- Ensuring that early, robust, meaningful, and timely public engagement and input from affected communities are reflected in decision making.
- Ensuring that environmental standards and protections are maintained, and environmental outcomes are strengthened.
- Ensuring that permit reviews follow a predictable, transparent, and efficient timeframe, and encouraging agencies to establish programmatic review where sensible to help facilitate decisions.

We note that legislation has already been introduced on permitting for data centers. Some of those bills run counter to the principles outlined above.

The Department of Environmental Protection recently launched its Streamlining Permits for Economic Expansion and Development (“SPEED”) Program,²⁴ which was mandated by the General Assembly via Act 54 of 2024.²⁵ It will take time to understand the effectiveness of this program, but it should be given the chance to prove its value and impact.

That said, it will take a comprehensive effort to improve permitting. If we work together, this moment could be the catalyst for groundbreaking change in Pennsylvania to not only improve permitting but also improve outcomes for all involved – from regulated businesses and industry, to communities and residents, to the larger environment on which we all depend. PEC is committed to working with the legislature, administration, and other stakeholders to make this goal a reality. We all want Pennsylvania to succeed.

Siting and Local Considerations

Data center development also brings concerns about local noise and air pollution (particularly if there is co-location with new electric generation), as well as open space and habitat fragmentation given the considerable footprint these facilities occupy. Many local

²³ <https://carboncapturecoalition.org/wp-content/uploads/2023/11/Carbon-Capture-Coalition-Guiding-Principles-for-Permitting.pdf>

²⁴ <https://www.pa.gov/services/dep/speed>

²⁵ <https://files.dep.state.pa.us/SPEED/2024%20Act%2054.pdf>

governments in Pennsylvania already struggle with capacity to address large or complex land use decisions, and are often uncertain about what aspects of development they can or cannot manage. Obtaining legal, engineering, or other professional assistance can be daunting and expensive. Further, decisions made in one location can have consequences in neighboring jurisdictions, and opportunities and resources to collaboratively plan are often limited within our Commonwealth.

PEC thanks Senators Argall and Brown for circulating a cosponsor memo²⁶ for legislation that would enhance local government engagement.

We encourage the General Assembly to provide additional support to local governments to support regional coordination and planning, better integrate state agency resources into local decisions, facilitate community benefit agreements, and direct siting of heavy uses like data centers to property already impacted by past use. Examples could include bolstering assistance programs that help local governments redevelop brownfield sites, providing additional funding for comprehensive planning, or identifying means to share and assess data housed with state agencies (e.g., habitat indicators).

Conclusion

Again, we thank you for allowing PEC the opportunity to submit these comments. We look forward to working with the General Assembly to advance sound and successful economic development in the Commonwealth in a way that preserves our natural resources and quality of life. Though the opportunities and challenges are complex, we will need to work together to get this right. Thank you for your consideration.

Sincerely,

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²⁶ <https://www.palegis.us/senate/co-sponsorship/memo?memoID=47303>