

VIA ELECTRONIC MAIL

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Hon. Julie Fedorchak AI and Energy Working Group 607 Longworth House Office Building Washington, D.C. 20515

Dear Congresswoman Fedorchak:

Americans for Prosperity ("AFP") submits for consideration the following policy recommendations.

- I. American Energy Dominance and AI Energy Demands
- What are the current and projected data center industry energy demands associated with emerging AI applications, including high-performance computing and data center operations?

According to the U.S. Department of Energy (DOE), data centers can consume 10 to 50 times the energy per floor space of a typical commercial office building; and data centers account for roughly 2% of total U.S. electricity use.¹

Data centers are energy-intensive primarily because they provide power and cooling for numerous servers and networking equipment responsible for storing and processing massive amounts of data.² Because they operate 24/7, a constant supply of energy is needed. The energy required for cooling is a significant reason for the center's overall energy consumption. As the

¹ Data Centers and Servers, U.S. Department of Energy,

https://www.energy.gov/eere/buildings/data-centers-and-

servers#:~:text=Data%20centers%20are%20one%20of,a%20typical%20commercial%20office% 20building.

² "What to Know About Data Center Growth, Energy Usage, and Efficiency," Post by Yes Energy, No author named, YES ENERGY, <u>https://blog.yesenergy.com/yeblog/data-center-growth-energy-usage-and-efficiency</u>

servers process data, heat is generated; and cooling is necessary to prevent overheating and to maintain the reliability of the equipment.³

AI-ready data centers have high average power densities – the energy consumption of servers in the racks.⁴ According to McKinsey & Company, "(a)verage power densities have more than doubled in just two years, to 17 kilowatts (kW) per rack, from eight kW, and are expected to rise to as high as 30 kW by 2027 as AI workloads increase. Training models like ChatGPT can consume more than 80 kW per rack, while Nvidia's latest chip, the GB200, combined with its servers, may require rack densities of up to 120 kW."⁵ And Goldman Sachs Research estimates that power demand from data centers will grow 160% by 2030.⁶

"A single ChatGPT query requires 2.9 watt-hours of electricity, compared with 0.3 watt-hours for a Google search, according to the International Energy Agency. Goldman Sachs Research estimates the overall increase in data center power consumption from AI to be on the order of 200 terawatt-hours per year between 2023 and 2030. By 2028, our analysts expect AI to represent about 19% of data center power demand."⁷

In 2023, data centers in Northern Virginia had a combined power consumption capacity of 2,552 MW, four times the capacity of the Dallas area (654 MW) or the capacity of Silicon Valley (615 MW). ⁸ More than one third of global online traffic is handled through the Northern Virginia data center market.⁹

This demand for power within the Commonwealth of Virginia, an area within the territory of PJM, a Regional Transmission Organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia, resulted in adjustments to its

³ *Id*.

⁴ "AI power" Expanding data center capacity to meet growing demand," Collaborative effort by Bhargs Srivathsan, Marc Sorel, and Pankaj Sachdeva, with Arjita Bhan, Haripreet Batra, Raman Sharma, Rishi Gupta, and Surbhi Choudhary, representing views from McKinsey's Technology, Media & Telecommunications Practice, October 29, 2024.

https://www.mckinsey.com/industries/technology-media-and-telecommunications/ourinsights/ai-power-expanding-data-center-capacity-to-meet-growing-demand

⁵ Id.

⁶ "AI is poised to drive 160% increase in data center power demand," No author named, May 14, 2024,

https://www.goldmansachs.com/insights/articles/AI-poised-to-drive-160-increase-in-power-demand

⁷ Id.

⁸ *Supra*, Footnote 2.

⁹ Id.

2024 forecasts for load in its territory. ¹⁰ The "PJM Load Forecast Report January 2024" notes that forecasts for a number of zones had been adjusted to account for "large, unanticipated load changes, market adjustments, and peak shaving adjustments...:" ¹¹

- The AEP¹² zone has been adjusted to account for growth in data center load;
- The APS¹³ zone has been adjusted to account for growth in data center load;
- The DOM¹⁴ zone has been adjusted to account for growth in data center load;
- The PS¹⁵ zone has been adjusted to account for growth in data center load and port electrification;"

And four of the six zone forecasts were adjusted specifically for growth in data center load.

Other states where data centers are locating are likewise grappling with power consumption, load growth, and who should pay for the generation and transmission to get power to end users.

In Georgia, by mid-year 2024, data center construction had increased 76% in the Atlanta market compared to the same time in 2023.¹⁶ Georgia Power, the investor owned electric utility that provides service in 155 of Georgia's 159 counties, on January 31, 2025, filed its January, 2025 "2025 Integrated Resource Plan." ¹⁷ In that document, it states that its

"risk-adjusted load forecast from the winter of 2024/2025 through the winter of 2030/2031 reflects approximately 8,200 MW of load growth, representing an increase of more than 2,200 MW compared to load growth projections in the 2023 IRP Update for the same period. In the near-term, the Company projects nearly 6,000 MW of load growth as early as the winter of 2028/2029. Over the next ten years – through the winter of 2023/2025 – Georgia Power expects up to 9,400 MW of load growth."¹⁸

¹⁰ PJM Load Forecast Report, January, 2024, Revised 2/1/2024, Prepared by PJM Resource Adequacy Planning Department, <u>https://www.pjm.com/-/media/DotCom/library/reports-notices/load-forecast/2024-load-report.ashx</u>

¹¹ *Id.*, p. 1.

¹² *Id.*, AEP being a reference to American Electric Power zone.

¹³ *Id.*, APS being a reference to Allegheny Power zone.

¹⁴ *Id.*, DOM being a reference to Dominion Viginia Power zone.

¹⁵ *Id.*, PS being a reference to Public Service Electric & Gas zone.

¹⁶ "Why Is Georgia Attracting So Many New Data Centers?" by Zachary Hansen, Drew Kann, October 7, 2024, *The Atlanta Journal Constitution*, <u>https://www.govtech.com/analytics/why-is-georgia-attracting-so-many-new-data-centers</u>

¹⁷ "2025 Integrated Resource Plan, January 2025," Georgia Power Company's 2025 Integrated Resource Plan; Georgia Public Service Commission, Docket No. 56002, filed January 31, 2025, ¹⁸ *Id.*, p. 1.

It further noted that "(t)he utility industry is also experiencing extraordinary growth in electricity demand driven by the manufacturing and infrastructure that support these technology advancements, including economic development associated with data centers....¹⁹

Practical Solutions in the Energy Space

AFP believes that practical solutions can be identified that move our nation forward as we continue to build a resilient electric grid while meeting the increased demand from large loads and AI.

We look forward to working with you and the Congress to assist in the identification of those solutions.

Respectfully submitted,

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¹⁹ *Id.*, p. 85.