

SharedGround

<u>Team Member Name</u>	<u>Year</u>	<u>Major</u>
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Topic Title: AI Growth and Community Impacts

Audience: PJM Interconnection

Sustainable Development Goal

SDG # 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Executive Summary

With the growth and rapid expansion of AI data centers comes increased demand for electricity. In total, approximately 176 terawatt-hours were consumed by all of the US data centers in one year. That represents roughly 4.4% of the US power consumption. A single large-scale facility requires 100 megawatts, or in other words, enough electricity to power 80,000 homes. This is electricity being purchased by these data centers from the US power grid, placing significant strain on existing power infrastructure and driving higher energy costs for surrounding communities. As a result, residents increasingly bear the financial burden of rising energy prices caused by industrial-scale consumption.

Take Virginia's Data Center Alley, for example, the world's largest collection of data centers, capable of hosting Amazon, Microsoft, Google, and Meta, all of which amount to almost 70% of the world's internet traffic passing through this one place. The power demand of this "Alley" amounts to 25% of the state's supply, and is projected to increase. In this situation, Virginia's power grid infrastructure can not keep up with demand, raising the price of electricity for everyone on the grid. This means that without any ability to decide for themselves, the residents of nearby cities like Loudoun County's Ashburn must pay the price of electricity from a strained grid.

Large technology corporations, particularly those operating in Virginia, have a duty to regulate their energy consumption and invest in sustainable power generation. Implementing policies that require major data center operators to contribute to sustainable power generation would help stabilize electricity markets, protect local communities from escalating costs, and ensure that the economic benefits of the AI industry are shared more equitably. Doing so would help meet the energy needs of expanding data centers while also returning benefits to the local communities that have absorbed the rising costs associated with the AI boom.