RACHEL CARSON COUNCIL

Fact Sheet

Data Center Expansion and Rising Energy Bills

BACKGROUND

With hundreds of millions of users a day, artificial intelligence (AI) tools rely on power-intensive data centers to store and process digital information at an unprecedented scale. Data centers are large facilities that house computer chips and servers that consume electricity 24/7 to operate AI, cloud computing, and online platform services.

AI's rapid growth has led to a significant increase in the size and number of data centers. There are currently over 4,000 data centers located throughout the U.S.,[1] with an estimated 1,500 more in various planning and development stages.[2]

At the same time, electricity bills for households have been on the rise. The connection between data centers and higher energy costs is two-fold: **demand threatens to outweigh supply and costs of grid upgrades are shared among all ratepayers.**

KEY FACTS

U.S. data center energy usage is rapidly increasing[3]

In Virginia—the nation's largest data center market—data centers accounted for around 25.6% of the state's electricity demand in 2023, with projections that this share could reach 29%–46% by 2030.[4]

Year	TWh consumption	% of total U.S. electricity
2018	76 TWh	1.9%
2023	176 TWh	4.4%
2028 Projection	325–580 TWh	6.7%–12%

Data centers use substantially more power nowadays due to AI's significant computational needs.

While a traditional Google search required 0.3 watt-hours, early estimates indicate that **a single ChatGPT query required ten times that amount of electricity**, 2.9 watt-hours.[5] An average proposed data center's size **doubled from 150 MW to 300 MW** between 2023 and 2024,[6] which is roughly equivalent to the energy needed to power 240,000 homes.

The year-long delays experienced by electricity generation projects across the country have caused energy supply growth to stagnate.

When electricity demand jumps without an equally rapid increase in supply, prices must skyrocket to clear the market, and these prices are passed onto everyday consumers' electricity bills. Customers in the PJM region, the Mid-Atlantic grid operator serving 13 states and Washington, D.C., paid **over $23 billion more in capacity costs these past two years due to forecasted data center demand**.[7]

The FERC regulatory process on transmission costs requires all utility consumers to share the cost of connecting data centers to the grid.

Data center interconnection requires upgrading transmission and distribution networks with additional power lines. But the cost of building this new infrastructure is shared across all ratepayers, since utilities cannot charge a single large load customer individually for these costs.[8] PJM customers in 7 states paid over $4.3 billion in 2024 to cover local transmission upgrades caused by data centers alone.[9]

The nation's largest tech companies are willing to pay for the transmission costs they require.

In March 2026, Amazon, Google, Meta, Microsoft, OpenAI, Oracle, and xAI **pledged their willingness** to fund all new infrastructure upgrades required to service their data centers and ensure these costs are not passed onto households.[10]

Electricity is becoming more expensive across the country.

Nationwide, retail electricity prices increased by 10.2% over the past year, but in states like Maryland and Ohio with growing data center construction, the increase was as high as 57.6% and 21.1%, respectively.[11]

CONCLUSION

AI supports our nation, economy, and industries. But due to the large load that data centers impose on the grid, they threaten grid reliability for all consumers. Their expansion will continue to increase energy costs without any regulatory frameworks in place, yet Big Tech has expressed willingness to pay their fair share for developing data centers in an effort to protect ratepayers.

ENDNOTES

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