

AI Energy Expert Reasons Jevon Paradox Will Drive AI Voracious Demand for Power

PENN VALLEY, PA, UNITED STATES, March 4, 2025 /EINPresswire.com/ -- The US power grid is undergoing massive change. Rich [DiClaudio](#), an energy expert for over four decades, likens the grid's plight to a perfect storm. Many factors involve the gargantuan power needs of ever-larger [data centers](#) and the onslaught of artificial intelligence.

“

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Rich DiClaudio, President and CEO, Energy Information Institute Center

“You have the harassing of the usage of fossil fuels (to produce power), you have the massive movement to fuel switching, and you have the push toward the use of electricity, such as to power electric vehicles,” said DiClaudio, president and CEO of Bedford Management Partners (BMP) and the Energy Innovation Center Institute.

“Then comes AI.”

BMP is a energy advisory services firm that deploys sustainable energy generation solutions for infrastructure backed by private capital.

DiClaudio will be a featured presenter at [Appalachian AI Energy Conference I](#), which will take place on May 21 at the Hilton Garden Inn/Southpointe, south of Pittsburgh. He will discuss the Appalachian Basin's role as a feedstock and data center base.

The conference was developed by the H2-CCS Network and Shale Directories.

Data centers are full of routers, storage devices, and servers for one or more companies that have transferred their information technology operations to a centralized location managed by experts. A center can be more than one million square feet and use more than ten times the power a steel mill needs.

According to DiClaudio, two axioms about data centers remain constant: the physical size of the centers keeps growing, and the amount of power needed to power the equipment inside the big boxes only goes up.

When data center developers' and users' build-it-now mentality meets the reality of power

availability, power always wins.

“Data centers are being built to a size dependent on the amount of power that can be secured,” according to DiClaudio.

BMP is designing and building power generation behind the meter today, with power plants adjacent to data centers and other industrial users. Generation is powered by natural gas. The Appalachian Basin is ideal for building new power plants and data centers.

“The best locations to build data centers have to offer a fiberoptic network, sufficient water (for cooling purposes), and few or no natural disasters which could interrupt the flow of power,” DiClaudio said.

“Appalachia also has 150 to 200 years of natural gas reserves to power centers,” he added.

With power calling the shots, continued exponential growth in demand would far outpace previous data center expansion, according to a just-released report from the RAND Corp.

“AI data center power demand grew tenfold over the last three years—from 0.4 gigawatts (GW) in 2020, to 4.3 GW in 2023,” according to the RAND report. “In 2025, total AI data center demand will likely reach about 21 GW (21,000 megawatts) of total power capacity, more than a fourfold increase from 2023 – and twice the total power capacity of the state of Utah.”

Gartner reports that 40% of AI data centers will be energy-limited by 2027, while Forbes states that AI data center spending will exceed \$250 billion in 2025 alone.

As AI grows and operational efficiencies increase in all equipment, logic dictates that the required power will fall.

DiClaudio said that this is not the case, according to Jevon Paradox. Jevon Paradox occurs when technological progress or policy measures increase the efficiency of a resource (reducing the amount needed for any use). However, that resource's consumption rate rises due to increasing demand.

The Jevon Paradox challenges the assumption that efficiency increases will lead to reductions in resource use. It suggests efficiency measures need to be linked with other strategies, such as promoting changes in consumption or introducing resource-use taxes, to achieve overall reductions in resource use and environmental impacts.

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