

PENNSYLVANIA  
**ENERGY &  
INNOVATION**  
INSTITUTE

# **DATA CENTER DEVELOPMENT IN PENNSYLVANIA**

*Driving Community Prosperity, Innovation, and Infrastructure Modernization*  
*An Educational Toolkit for Stakeholders and Policymakers*

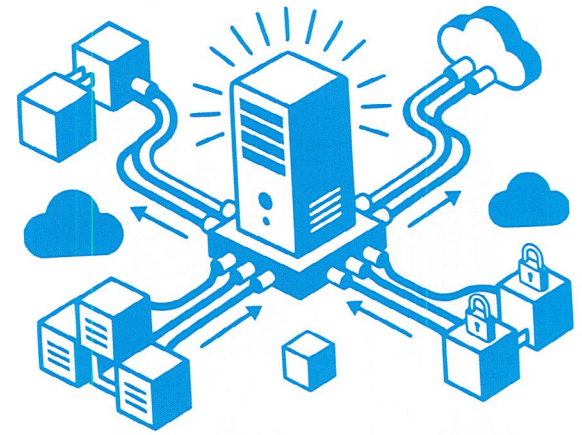
# What is a “data center”?

**Think about how much you use the internet every day.**

Between smartphones, smart TVs, tablets, speakers, smart watches, doorbell cameras, security systems, thermostats, lighting, video game consoles, smoke alarms, health monitors, appliances, and more — there’s no denying we are all benefitting from an increasingly interconnected world driven by cloud computing and massive amounts of data.

**With an average of 21 connected devices per household and 5.5 billion people online globally, data generation is doubling approximately every five years.** From enabling healthcare advancements that save lives, to fraud detection in financial services that protects seniors and safeguards livelihoods, and traffic management systems that improve quality of life, data-driven digital technologies are everywhere and evolving constantly.

But this innovation depends on a physical foundation — known as data centers — the infrastructure that makes data flow possible.



Data centers are facilities that house computer servers which process, store, and share the data that fuels our daily lives.

As the world increasingly goes digital, the **demand for data centers is skyrocketing and Pennsylvania stands to benefit.**

## Analysts expect data center demand to grow by 33 percent annually through 2030.

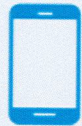
And companies worldwide are choosing Pennsylvania as the place to lead this revolution. Pennsylvania's natural resources, strategic location, skilled workforce, infrastructure, and world-class educational institutions make it an ideal destination for data center growth.

By supporting data center development, we are investing in a future of innovation, sustainability, and prosperity for our Commonwealth and its residents.

## Data centers power our daily lives.



Providing high-performance computing



Delivering real-time streaming and cloud services



Ensuring reliability and power continuity during outages



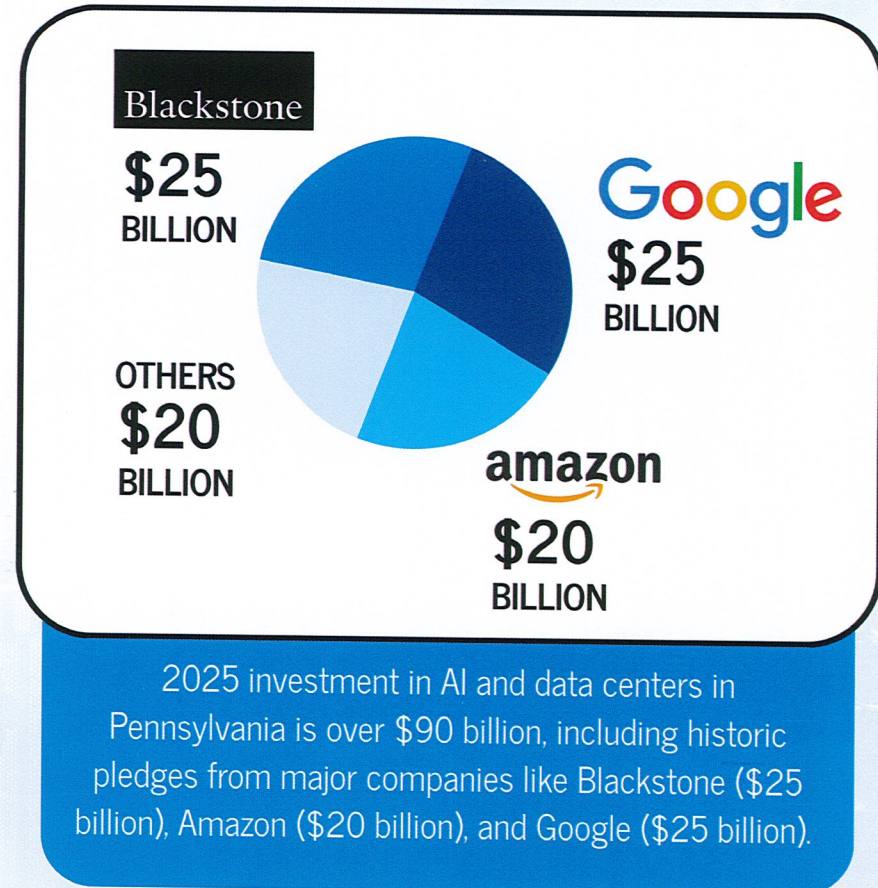
Securing data storage and protection




Hosting e-commerce and financial services



Enabling telemedicine and remote work





# THE CASE FOR DATA CENTERS IN PENNSYLVANIA



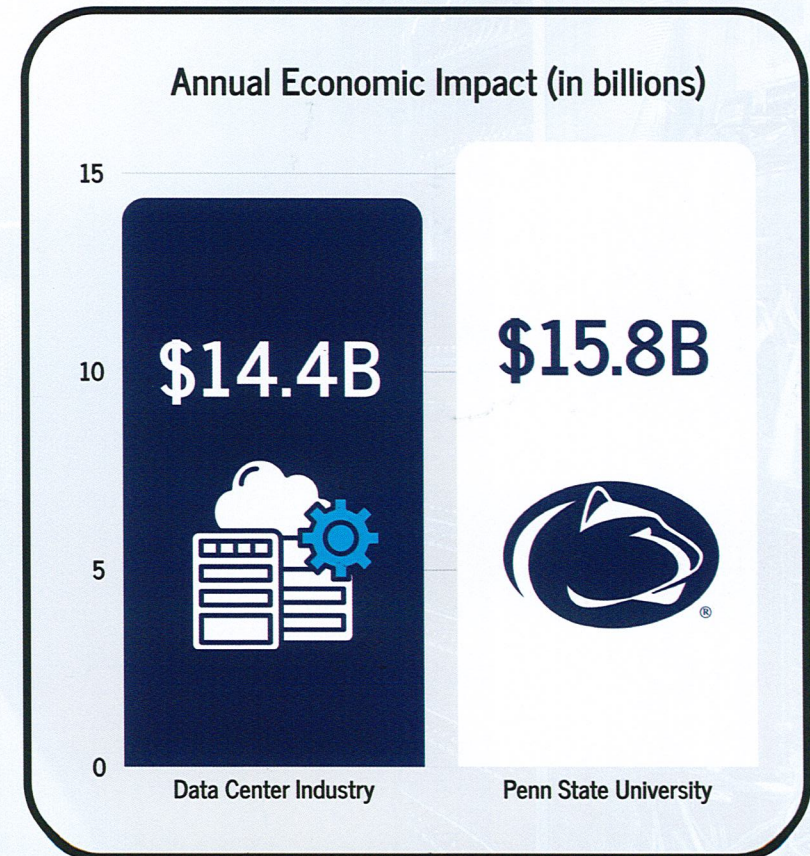
# Driving Economic Growth, Lucrative Careers, and Community Investment

Data centers represent a transformative opportunity for Pennsylvania, offering historic investments, new careers, stronger local budgets, and pathways for communities to build sustainable opportunities for prosperity.

## ECONOMIC GROWTH

The rise of artificial intelligence, cloud computing, and investments in digital infrastructure have been significant drivers of broader U.S. economic growth. These positive impacts can be observed both in the national gross domestic product (GDP) and in state economies.

- **National Economic Impact:** The data center industry contributed **\$2.1 trillion to U.S. GDP** from 2017–2021.
- **Pennsylvania Impact:** The industry added **\$14.4 billion to the state economy in 2023**, rising to \$21.2 billion with spillover effects, **comparable to the entire economic impact of Penn State University.**
- **Catalyst for Additional Investment:** Blackstone announced \$25 billion for digital and energy infrastructure, which is expected to spur \$60 billion in related projects.



# Driving Economic Growth, Lucrative Careers, and Community Investment



Amazon alone has made significant commitments to strengthening Pennsylvania's workforce, including:

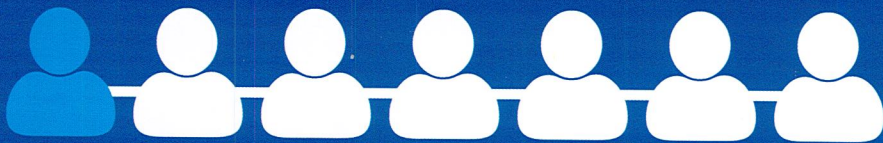
- Launching a \$250,000 Amazon Northeastern Pennsylvania Community Fund for STEM programs, sustainability, digital skills, and health.
- Creating the Amazon Community Workforce Accelerator program to train Pennsylvanians for technical roles in data center operations.
- Partnering with local educational institutions to offer Fiber Optic Fusion Splicing Workshops and Data Center Technician Programs.
- Providing K-12 STEM education initiatives and scholarships for students pursuing computer science and engineering degrees.

## LUCRATIVE CAREERS

Initiatives are underway to launch and enhance data center technician programs, fiber-optic training, and STEM education in partnership with educational institutions across Pennsylvania to help prepare the workforce for next-generation careers.

- Amazon's \$20 billion investment **will create 1,250+ new technical careers** plus thousands of jobs in construction and the supply chain.
- Blackstone/QTS's \$25 billion investment **will create 3,000 permanent jobs** in addition to an estimated 6,000 construction-related jobs.
- CoreWeave's \$6 billion data center project in Lancaster County **will create 175 permanent jobs** in addition to 600 jobs associated with the buildout of the project.

Every job in the **data center industry** supports



**six additional jobs** across the economy.

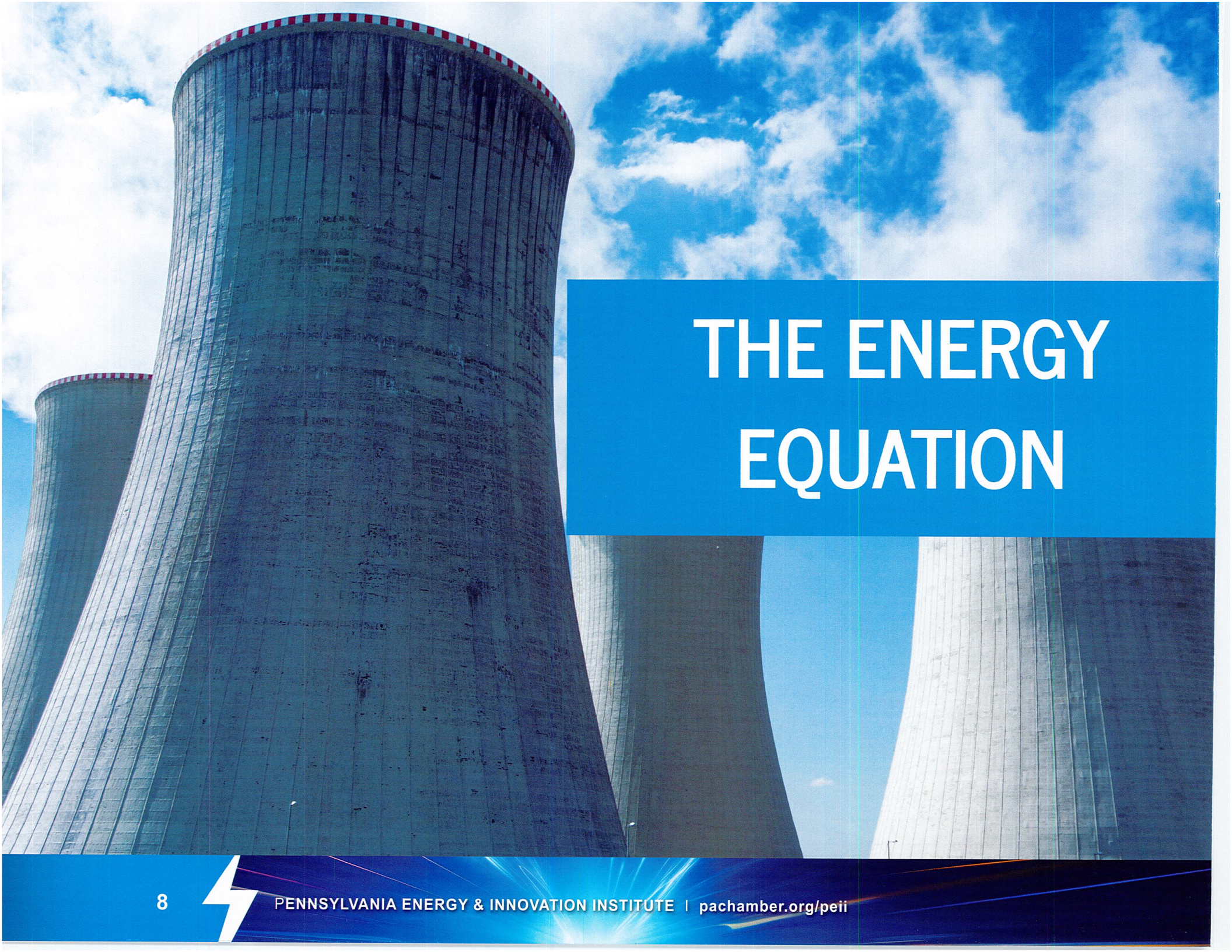
# Driving Economic Growth, Lucrative Careers, and Community Investment

## COMMUNITY INVESTMENT

Data centers increase local tax bases, enabling municipalities to expand public services without raising taxes.

- **Proven Model:** Data centers contributed \$900 million in tax revenue to Loudon County, VA, or 40 percent of its budget, while occupying just three percent of land. For context, it would take > 75,000 homes to generate the same revenue.
  - **Benefit-to-Cost Ratios:** In Loudon County, data centers have paid out \$26 for every \$1 spent on services for them.
  - **Imported Tax Base:** Because data centers serve customers around the world, they effectively import new tax revenue into the local economy rather than redistribute pre-existing local dollars.
- **Local Impact:** Pennsylvania Data Center Partners' \$15 billion investment into Cumberland County will generate over \$65 million in direct tax revenue – doubling Middlesex Township's operating budget, covering a quarter of the school district's annual budget, and providing a 12 percent increase to the county's overall tax base.



A photograph of several large, grey, hyperboloid cooling towers of a nuclear power plant against a blue sky with white clouds. The towers are arranged in a row, with the one in the foreground being the most prominent. A blue horizontal bar is overlaid on the right side of the image, containing the title text.

# THE ENERGY EQUATION



# The Energy Equation

## PENNSYLVANIA'S ENERGY DOMINANCE

"Energy is the long pole in the tent for Pennsylvania's economic future."

— U.S. Senator Dave McCormick

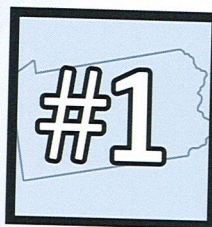
"We have the energy resources to support this technology, the brains to drive innovation forward, and the workforce ready to build and maintain these critical data centers."

— Governor Josh Shapiro

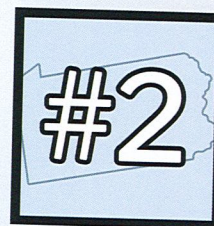
Pennsylvania is uniquely blessed with an abundance of the resources necessary to be a national and global leader in energy production.

Pennsylvania is **the top exporter of electricity** nationwide, the **second-leading producer of natural gas** (behind only Texas), and produces the **third-most total energy** out of all fifty states.

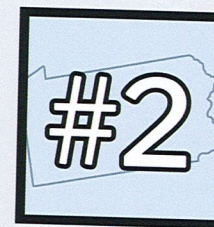
Additionally, Pennsylvania is the **second-leading producer of nuclear energy in the country**, and is one of only twelve states to generate over 30 percent of its total electricity from nuclear power, giving us a competitive advantage in attracting data centers and next-generation technology.



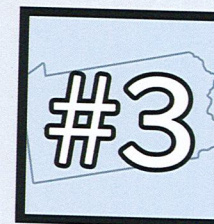
Electricity exports



Natural gas



Nuclear power



Total energy

# The Energy Equation

## WHY ARE ENERGY PRICES RISING?

Pennsylvania is the nation's top electricity exporter and a leading producer of baseload energy (like natural gas, coal, and refined petroleum). But despite our high rate of energy production, reliability is at risk, and electricity prices are rising.

This is due in part to accelerated retirements of reliable baseload energy generation resources, which have outpaced the ability to bring new energy generation sources online.

As Pennsylvania has failed to supply the reliable energy generation needed to meet demand, electricity prices have risen — a trend that started well before data centers.

**According to the U.S. Energy Information Administration (EIA), the average residential price in Pennsylvania rose 34 percent between 2022 and 2025, before more than \$90 billion in investments in data centers and related technologies were announced.**

## REALITY CHECK

Data center development in Pennsylvania is **directly driving new power generation projects and expanding supply**, not just consuming existing capacity.

# The Energy Equation

## INCREASING BASELOAD CAPACITY

Many data center developers are funding new baseload generation (including from natural gas, nuclear, and hydrogen).

These projects are entirely funded by private capital, not ratepayers, reducing congestion costs and ensuring that residents maintain access to accessible, affordable power.

Examples include:

- **The Homer City Energy Campus** in Indiana County, a privately-funded redevelopment of a retired coal facility into a gas fired plant that will generate 4.4–4.5 GW, positioning it to be the largest gas fired plant in the U.S.
- **Microsoft's effort to restart a Three Mile Island nuclear reactor**, providing approximately 835 MW of zero-carbon baseload for data center needs.
- **TECfusion's proposal to co-locate approximately 3 GW of on-site natural gas generation** with a new campus in Westmoreland County that could dispatch excess power to the grid.
- **Blackstone–PPL's \$25B infrastructure program** pairing QTS data center builds with new natural gas power generation in Pennsylvania to ensure long duration, dispatchable supply for AI computing.



# The Energy Equation

## Data centers enable smarter, more efficient, lower-cost energy systems by:

- Helping utilities improve grid planning, forecasting, and reliability through AI.
- Investing in power transmission grid upgrades, benefitting residential and commercial energy consumers at no additional cost.
- Integrating renewable energy sources using advanced algorithms to balance supply and demand.
- Recovering and reusing heat energy from servers for local heating or other applications.
- Managing dynamic loads based on energy availability and cost to reduce strain on the power grid.
- Participating in demand-response programs, adjusting consumption during peak periods to stabilize the grid.

## MODERNIZING EFFICIENCY

Since 2010, data centers have become significantly more energy efficient.

Each server now uses about **four times less electricity** for the same amount of computing work, thanks to better processors and less wasted power.

Storing data is also far more efficient — **nine times less energy per terabyte** is required as storage drives have improved. Fewer servers are needed overall because each one can handle five times more tasks through virtualization, and data centers themselves have cut down on wasted energy.

**These efficiency trends have resulted in a plateau in U.S. data center energy use, even while demand for data centers has increased rapidly.**

# SEPARATING FACT FROM FICTION



# Separating Fact from Fiction

**FICTION:** Data centers will raise energy costs for residents.

**FACT:**

- Data centers co-invest in grid modernization, adding transmission capacity and reducing congestion costs that otherwise drive-up rates.
- Many projects include on-site generation and battery storage, improving reliability for all customers.

**BOTTOM LINE:** These projects strengthen grid reliability and keep energy affordable for all consumers, without burdening ratepayers.



## Separating Fact from Fiction

**FICTION:** Data centers don't create enough jobs to justify the investment.

**FACT:**

- Each direct data center job supports six additional jobs in industries including construction, maintenance, and local services.
- Examples include: Amazon (1,250+ high-paying technical roles plus thousands of related jobs); Blackstone/QTS (3,000 permanent and 6,000 construction jobs); and CoreWeave: (600 construction and 175 operational jobs).

**BOTTOM LINE:** Data centers deliver high-skill careers and create jobs across the economy in the trades, logistics, and professional services.

# Separating Fact from Fiction

**FICTION:** Data centers strain the grid and cause outages.

**FACT:**

- Developers work with utilities and PJM to plan capacity upgrades years in advance of development.
- Many projects include demand-response agreements and energy storage systems to reduce peak demand.

**BOTTOM LINE:** Data centers are partners in grid reliability, not competitors for power.



# Separating Fact from Fiction

**FICTION:** Data centers waste water and harm the environment.

**FACT:**

- Many facilities use closed-loop cooling systems that reuse water and limit ongoing demand. Data centers are among the most efficient water users in the economy.
- Virginia concluded in a 2024 report that 83% of its data centers used the same amount of water, or less, than an average large office building.

**BOTTOM LINE:** Data centers are leaders in energy efficiency and water conservation.

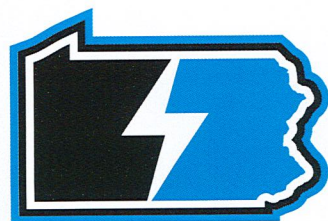
# Separating Fact from Fiction

**FICTION:** Local communities won't see benefits from data center development.

**FACT:**

- Data centers expand local tax bases, funding schools, fire/EMS, and infrastructure without raising residential taxes.
  - Pennsylvania Data Center Partners' \$15 billion investment into Cumberland County will generate over \$65 million in direct tax revenue – doubling Middlesex Township's operating budget, covering a quarter of the school district's annual budget, and providing a 12 percent increase to the county's overall tax base.
  - CoreWeave's data center project in Lancaster County has already generated approximately \$7.8 million in Phase 1 building permit fees for the city. Additionally, the data center owners have agreed to pay a combined \$20 million toward local grant programs to support economic development and sustainability.

**BOTTOM LINE:** Data centers add millions to local community budgets, allowing for increased investments in education and other critical public services.



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An initiative of the PA Chamber Foundation, the Pennsylvania Energy & Innovation Institute (PEII) is the primary statewide forum convening policymakers and industry leaders to shape Pennsylvania's energy landscape.

The PEII stems from the PA Chamber Foundation's Keystone Initiative, a long-term strategic blueprint to enhance Pennsylvania's economic competitiveness, which called for a private sector-driven statewide energy plan.

Through data collection, research, and education, the PEII ensures that the Commonwealth leverages our energy dominance to lead the innovation revolution.



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[pachamber.org/peii](http://pachamber.org/peii)