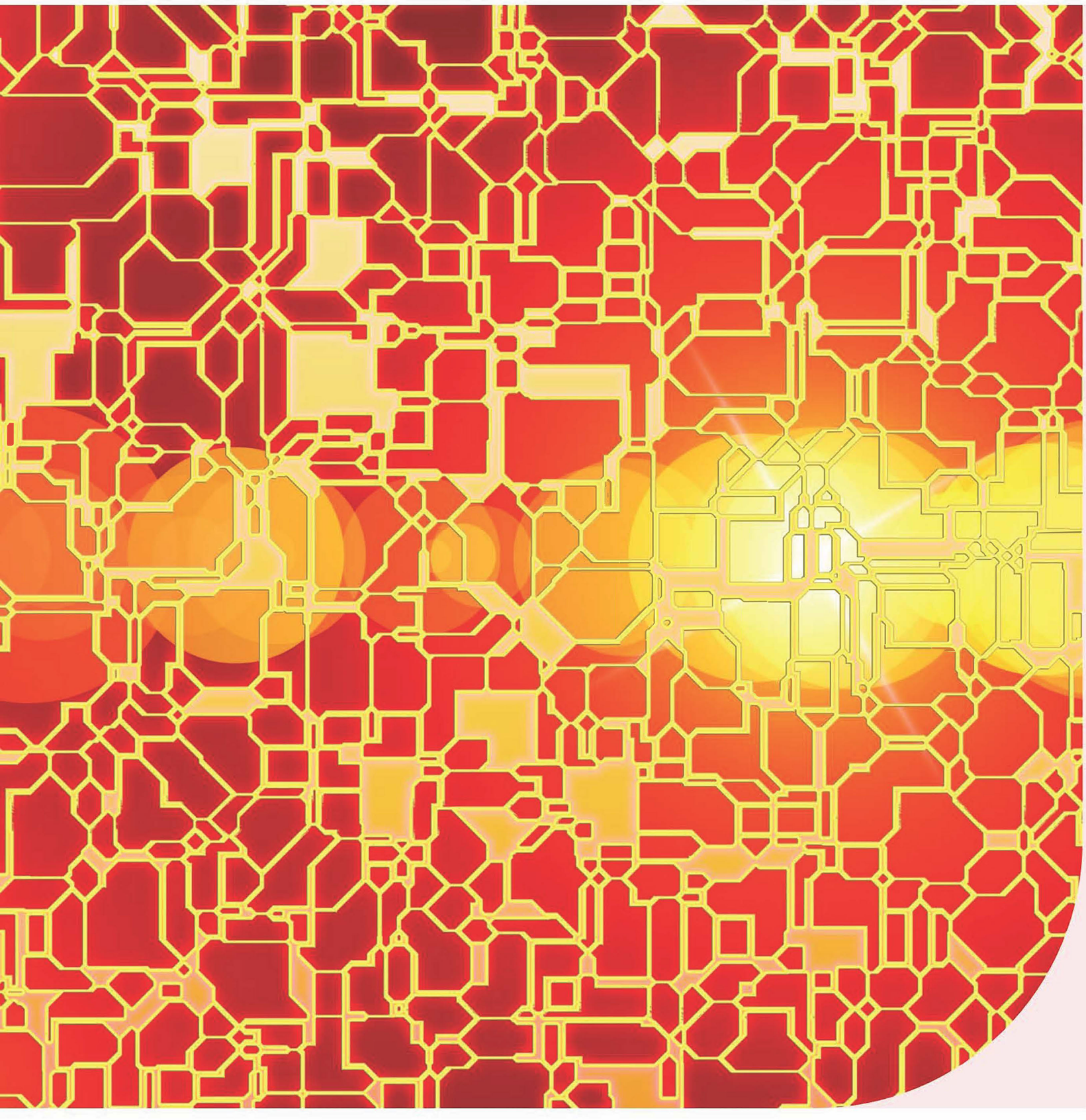
MARCH 2026

WEIGHING THE EVIDENCE:

Data Centers and Maryland's Future



602 STEAMFITTERS

Questions Answered in this Primer

EXECUTIVE SUMMARY

This primer examines four questions frequently raised about data center developments in Maryland: whether data centers drive up household energy costs, whether they strain local government finances, whether they create jobs, and whether they threaten the state's environmental health. Available evidence suggests that data center developments represent a substantial net benefit for Maryland.

DO DATA CENTERS DRIVE UP ENERGY COSTS FOR MARYLAND FAMILIES?

Not necessarily. This is a legitimate concern; large energy users can put upward pressure on electricity rates when not properly regulated. The evidence to date, however, suggests data centers have more often helped than hurt. Recent research found that from 2019 to 2024, retail electricity prices tended to fall in states with the greatest load growth and rise in states where demand contracted, a finding consistent with the notion that a broader customer base more widely spreads fixed infrastructure costs. A 2025 case study by Energy+Environmental Economics found that a typical 100 MW data center generates roughly $3.4 million per year in net revenue above the utility's cost of service, funds that can be applied to benefit other ratepayers.

Policymakers and large data center operators are already taking steps to manage the risk going forward. Governor Moore joined 13 other PJM-region governors in a bipartisan Statement of Principles committing to ensure data centers absorb their fair share of electricity costs. Amazon, Google, Meta, Microsoft, OpenAI, Oracle, and xAI recently signed the White House's Ratepayer Protection Pledge, which includes commitments to mitigate any rate-boosting impacts. These are meaningful developments, though their effectiveness will ultimately depend on implementation and enforcement.

DO DATA CENTERS STRAIN LOCAL GOVERNMENT FINANCES?

Quite the opposite. Data centers have significantly higher assessed values than other types of commercial development; a recent analysis estimated that data centers are assessed at an average of $858 per square foot, over four times the value of comparable commercial space. These massive valuations generate outsized property tax revenues. In Loudoun County, Virginia, for instance, data centers return $26 in tax revenue for every $1 spent on public services. Those revenues enabled the County to implement a 38 percent property tax reduction over the past 15 years.

Recent Sage analyses have found that a single 300 MW data center in Maryland is capable of generating enough local tax revenue to cover the educational costs recently shifted from the State government to its jurisdictions. This benefit is amplified by the unusually low burden data centers put on local government services due to minimal demand for schools, roadways, and emergency services.

EXECUTIVE SUMMARY

DO DATA CENTERS CREATE JOBS?

Yes. Consider that a single 800,000-square-foot data center creates over 5,000 construction jobs, providing a critical lifeline for a beleaguered statewide construction industry that employs 6,000 fewer Marylanders than before the pandemic and nearly 30,000 fewer than before the Great Recession. Driven by the ongoing data center development projects throughout Maryland and its neighbors, the state added 1,400 construction jobs in 2025, the largest calendar-year gain since 2019.

Organized labor has benefited significantly from the proliferation of large data center developments that currently is happening mostly in neighboring states. UA Steamfitters Local 602, for instance, is completing roughly four million hours of data center work each year and increased its membership by 30 percent from 2021 to 2026, while IBEW Local 24 has grown its membership by more than 35 percent over the past four years. Union leaders attribute this growth directly to data center investments. These benefits are glaringly visible in state-level data; Maryland's construction union membership share reached a 23-year high in 2025.

DO DATA CENTERS THREATEN ENVIRONMENTAL HEALTH?

No. Maryland's Healthy Air Act is among the nation's strictest, and the state produces fewer CO_2 emissions per megawatt hour than neighboring states. Nationwide, data centers account for less than 0.2 percent of freshwater consumption. For context, the nation's golf courses use approximately 2.5 times more water. Microsoft, Amazon, Google, and Meta have all committed to becoming water positive by 2030. As a result, the industry is taking steps to progress toward zero-water cooling and greater battery-based backup power usage.

BOTTOM LINE

Data centers offer Maryland a rare combination of substantial fiscal benefits and strong job creation, especially for organized construction labor. Their environmental footprint is highly mitigated by advanced technology, and available evidence suggests they are more likely to support grid stability than threaten it. Rather than weakening Maryland's communities, data centers offer a significant opportunity to strengthen them.

INTRODUCTION

As data center development proliferates across the Mid-Atlantic, Maryland faces a straightforward question: do the benefits justify the costs? Stakeholders have raised concerns about electricity rates, local government finances, environmental impacts, and whether the economic gains flow to anyone beyond developers.

This report examines each of those concerns against the available evidence. Drawing on a wide array of federal energy data, economic and fiscal impact analyses, labor market statistics, and legislative actions and industry commitments, it finds that well-regulated data center development strengthens the state's construction industry and organized labor, generates transformative tax revenues for local governments and the education system, and poses minimal risk to the state's air, water, and electricity rates.

DO DATA CENTERS DRIVE UP ENERGY COSTS FOR MARYLAND FAMILIES?

The short answer: Data centers, when properly regulated, serve as anchor tenants that stabilize the grid, creating the potential for downward pressure on consumer energy rates. By funding massive infrastructure upgrades and providing steady demand for energy, data centers allow utilities to spread fixed costs over a larger volume of sales.

MORE BROADLY DISTRIBUTED FIXED COSTS

Despite concerns that increased demand for electricity can put upward pressure on prices, research has found that recent load growth at the state level has tended to reduce retail electricity prices; from 2019 to 2024, real electricity prices declined in the states with greatest load growth and often increased in states with shrinking demand for electricity. Load growth reduces consumer prices by more broadly distributing fixed costs.

FLATTER LOAD GENERATES SURPLUS VALUE

During normal operations, data centers provide a constant, 24/7 demand for power. This unusually flat load allows utilities to operate energy infrastructure more efficiently and generates surplus value that can be used to benefit other ratepayers.

Put another way, the annual electric bills paid by a typical 100 MW data center are projected to be $3.4 million greater than the utility's marginal cost of serving that data center.

A typical 100 MW data center, for instance, generates $3.4 million of surplus value each year, according to a 2025 case study by Energy+Environmental Economics. Put another way, the annual electric bills paid by a typical 100 MW data center are projected to be $3.4 million greater than the utility's marginal cost of serving that data center. This surplus net revenue can be used to offset revenue requirements for other customers, putting downward pressure on rates. Notably, this case study found that data centers will still support a marginal surplus in 2030, with the value growing to $6.1 million per 100 MW facility.

EMERGING POLITICAL CONSENSUS ON RATEPAYER PROTECTION

While the evidence on retail electricity rates is encouraging, the question of how costs related to expanding generation supply to meet growing demand will be allocated remains an active policy issue. Several recent efforts seek to protect households from bearing those costs. Governor Moore, for instance, joined 13 other PJM-region governors in signing a bipartisan Statement of Principles that represents a commitment to ensure data centers absorb their fair share of electricity costs.[iii]

The private sector has made parallel commitments. Amazon, Google, Meta, Microsoft, OpenAI, Oracle, and xAI signed the White House's Ratepayer Protection Pledge on March 4, 2026, agreeing to 1) build, bring, or buy new power supply, 2) pay for new power delivery infrastructure upgrades, 3) pay whether they use the power or not, 4) invest in local job creation and workforce development, and 5) contribute to electric and community resilience.[iv]

DO DATA CENTERS STRAIN LOCAL GOVERNMENT FINANCES?

The short answer: No, data centers do not strain local government finances; quite the opposite, in fact. Data centers generate massive fiscal benefits for local governments, both on a one-time basis during the construction phase and on an annual, ongoing basis once the facilities are fully operational, while putting minimal stress on local government services. Notably, data centers ease financial strain on local school systems by creating significant tax revenues without meaningfully adding to enrollment.

MASSIVE CONSTRUCTION PHASE IMPACTS

While the majority of a data center's fiscal benefits arise from the annual, ongoing tax revenues generated once the facility is operational, a project begins generating tax revenues during the construction phase. Put simply, data centers are expensive and labor-intensive to build, and the massive amounts of income earned by workers during the construction phase generates significant tax revenues for Maryland's 24 jurisdictions, all of which levy a local income tax.

Construction of a modestly-sized 660,000 square foot data center in Maryland, for instance, would support more than $230 million in development-related labor income. That compensation would generate millions of dollars of income tax revenues for Maryland's jurisdictions.

CRITICAL SUPPORT FOR MARYLAND'S EDUCATIONAL FUNDING

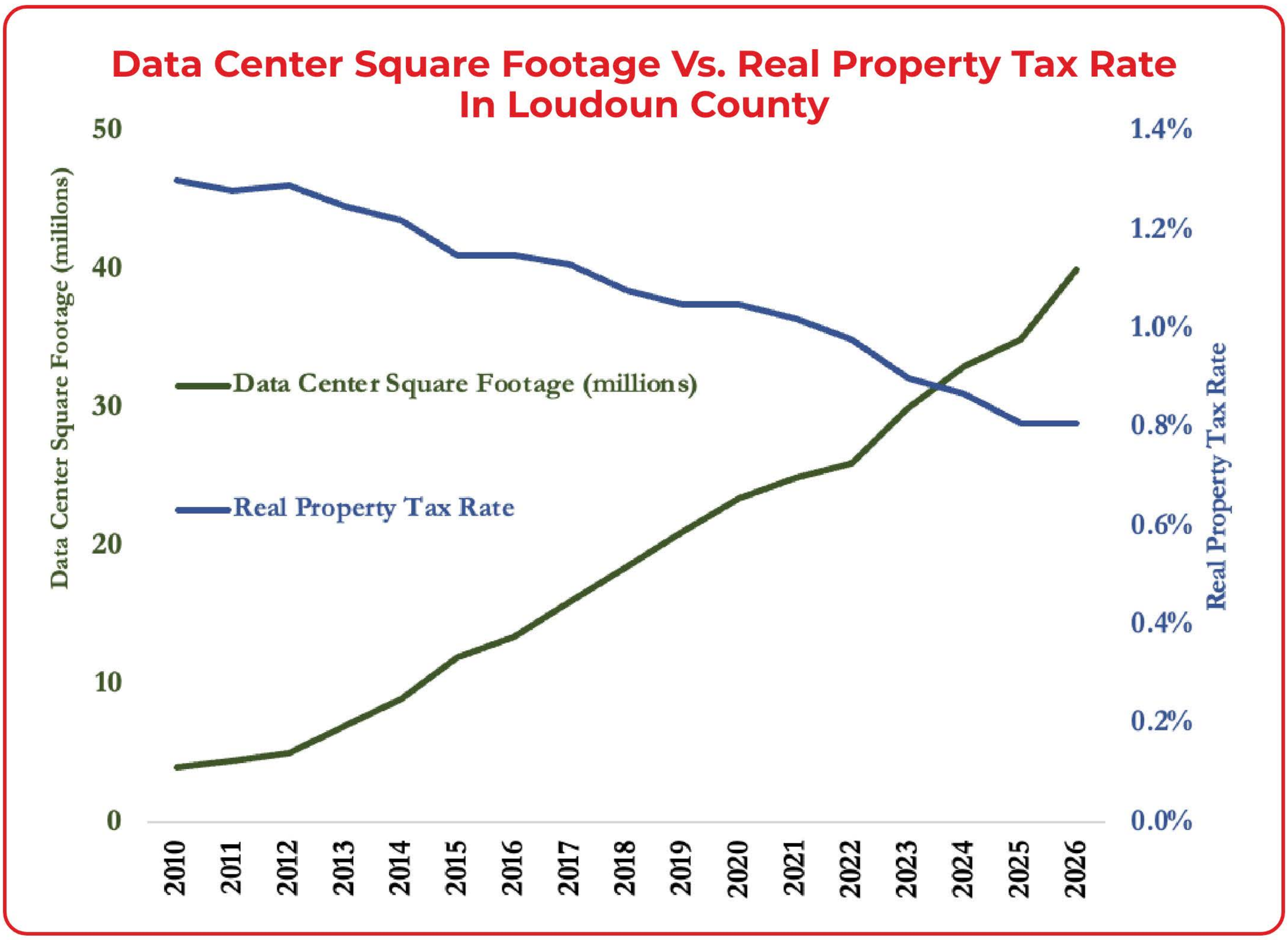
The way in which the State government closed its $3.3 billion FY 2026 budget shortfall pushed a significant spending burden onto county governments, with shifted costs ranging from approximately $300,000 in Kent County to nearly $28 million in Montgomery County.[v] These shifts compound an existing problem: the Blueprint for Maryland's Future funding formula has not kept pace with actual school costs, leaving counties to spend $1.4 billion more on local schools in FY 2026 than the Blueprint requires.

Data centers represent an opportunity for Maryland's local governments to fully meet these educational funding obligations. In Prince George's County, for instance, roughly $19.5 million in FY 2026 educational costs have been shifted onto the county government. The annual tax revenues generated by a single 300 MW data center ($19.9 million) would more than fully cover those additional educational costs, according to a conservative estimate produced by Sage in November 2025.[vi]

TRANSFORMATIVE ONGOING TAX REVENUES

Data centers are significantly more expensive to build than other commercial real estate, and that leads to outsized property tax impacts. The average assessed value of a new data center is $858 per square foot, over four times more than office, retail, or flex/industrial space, according to an analysis by Loudoun County Economic Development.[vii]

That same analysis estimates that data centers generate $26 in tax revenues for every $1 Loudoun County spends on public services for data centers. These massive revenues have allowed Loudoun County to lower its property tax rate by 38 percent since 2010.



Source: Loudoun County, Virginia Economic Development

LIMITED LOCAL GOVERNMENT BURDENS

Data centers use exceedingly few government services relative to residential developments or other large commercial uses. They generate little traffic once operational, produce minimal waste, and have low demands on emergency services compared to other industries. Additionally, they don't heavily rely on public education, healthcare, or transportation systems for their operations.

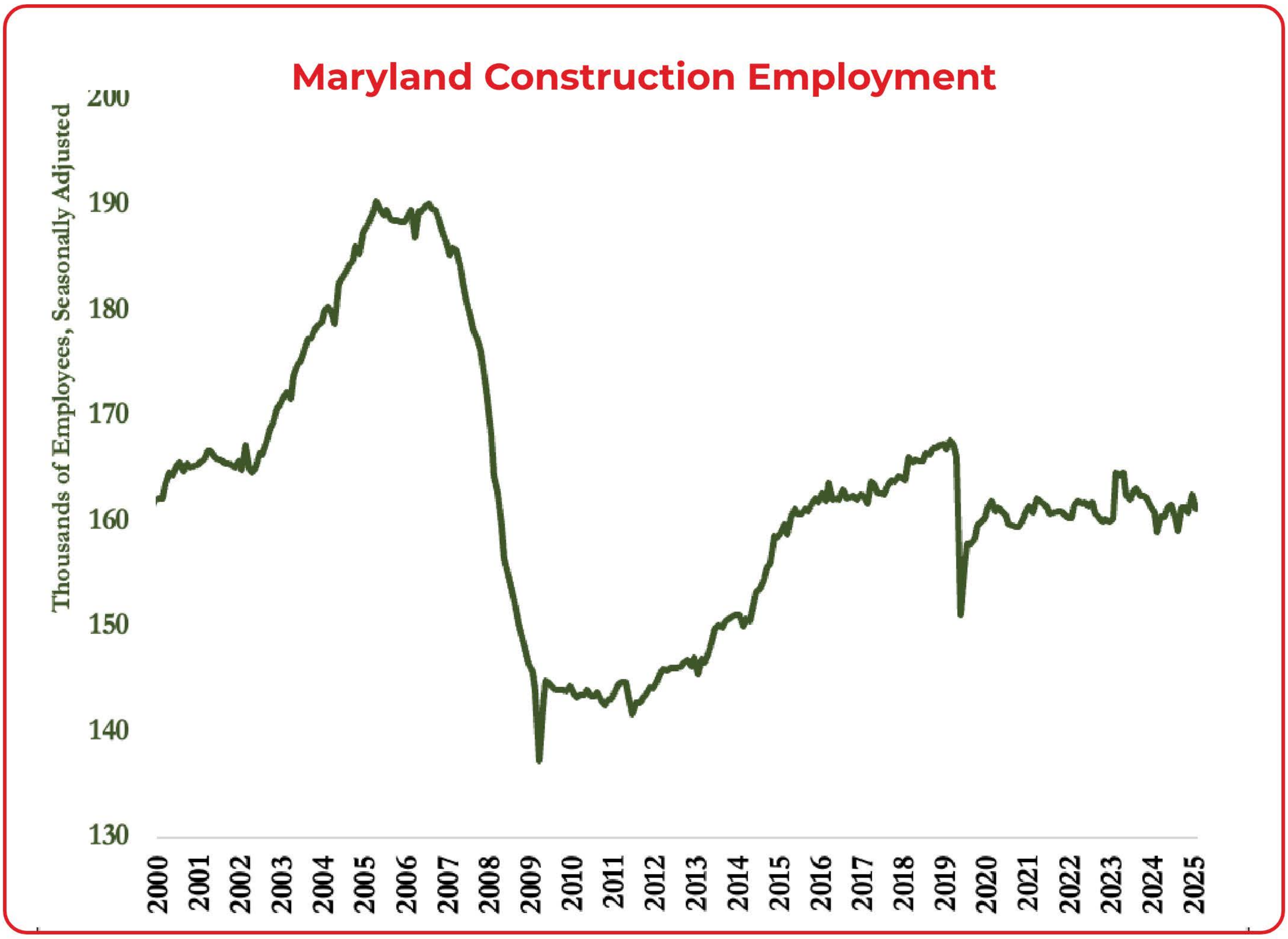
As a result, their direct burden on government-funded services is relatively low, especially compared to the revenues they generate; net fiscal impact analyses find that data centers can generate revenues more than ten times higher than the cost of services they use.[viii]

DO DATA CENTERS CREATE JOBS?

The short answer: Yes. Data centers provide critical support for Maryland's construction industry, creating thousands of high-paying jobs and giving a much-needed boost to the state's organized labor.

CRITICAL SUPPORT FOR MARYLAND'S CONSTRUCTION INDUSTRY

The development of a single 800,000-square-foot data center creates over 5,000 construction jobs—a critical lifeline for an industry that employs 6,000 fewer Marylanders than before the pandemic and nearly 30,000 fewer than before the Great Recession of 2008.



Source: Bureau of Labor Statistics

That surge in data center-related construction opportunities comes as work dries up elsewhere. Over the past 30 months, nationwide data center construction spending has risen 131 percent while spending on all other private nonresidential segments has fallen 6 percent.[ix] The gap is especially pronounced in Maryland, where sluggish population growth has long weighed on demand for construction services.

Driven by data center activity, Maryland added 1,400 construction jobs in 2025—the largest calendar-year gain since 2019. Construction is now one of only three of the state's 11 major industries to have grown last year.

GROWTH OPPORTUNITY FOR MARYLAND'S UNIONS

Data centers have provided a much needed boost for Maryland's organized labor. The United Association (UA) Steamfitters Local 602, for instance, is completing approximately four million hours of work on data centers each year. That equates to roughly 40 percent of their entire annual workload. As a result, the union's membership grew from 5,000 in 2021 to 6,500 in 2026. Much of that increase is attributable to new apprenticeships; the union expects to welcome over 400 new apprentices in 2026, an increase of 70 percent from 2021 levels.

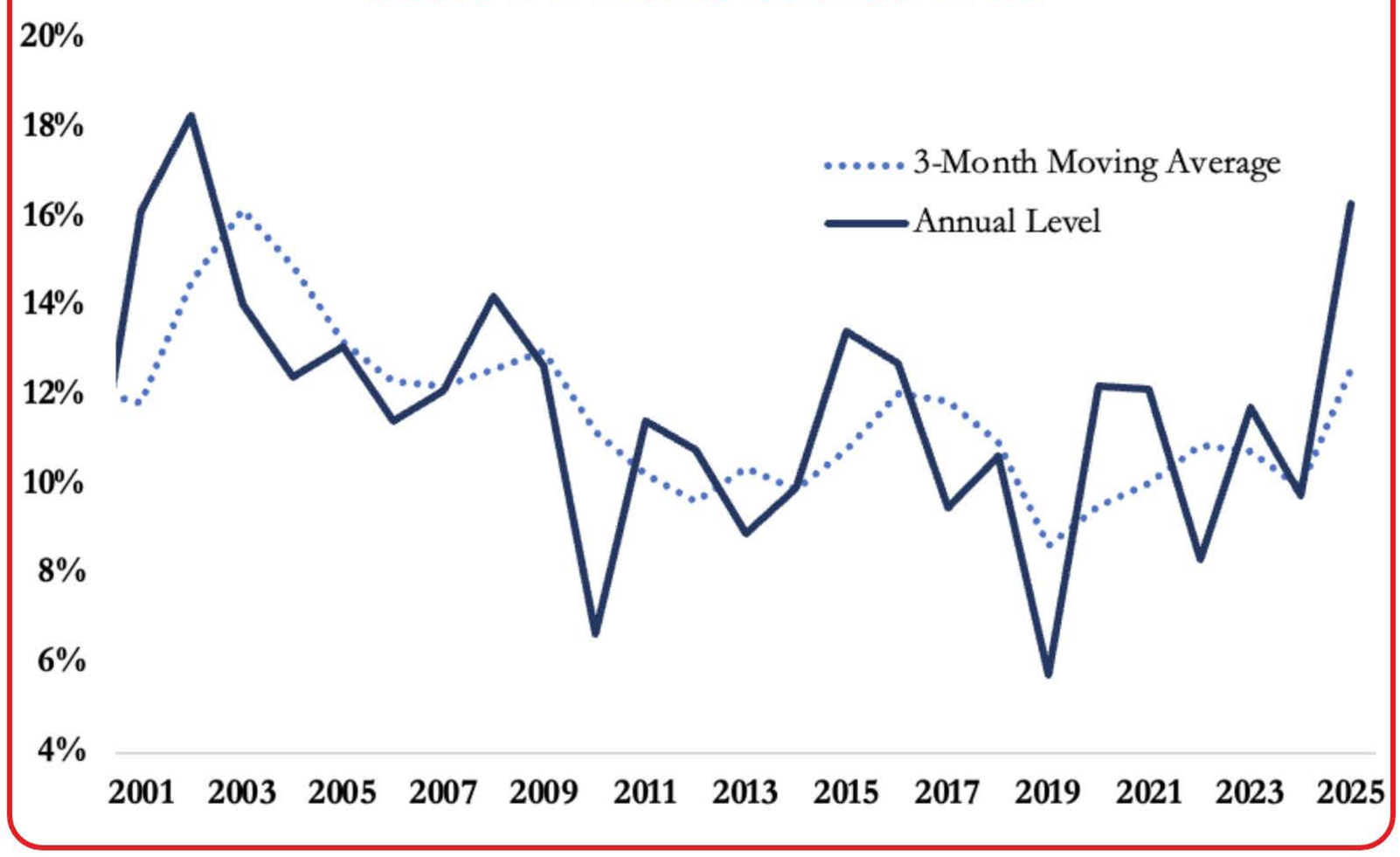
UA Steamfitters Local 602 is not alone in benefitting from the surge in data center-related work. IBEW Local 24, which represents the state's electrical workers, has grown from 1,980 to 2,700 members over the past four years, an increase of more than 35 percent. Business manager Mike McHale credits data center projects with having "given us the opportunity to increase our membership, increase our apprenticeship and provide more opportunities for workers in our area."[x]

As the heads of three local construction unions—the Mid Atlantic Pipe Trades Association, IBEW Local 26, and Ir workers Local 5—wrote in an open letter:[xi]

> **"Data centers already employ thousands of workers year-round during construction, in addition to workers maintaining ongoing operations and equipment upgrades. Growth in the industry across the region has enabled our unions to recruit apprentices from underserved communities and to partner with small minority-owned businesses. Thousands of our members already earn a living in the data center industry, its continued growth is critical to Maryland's ability to create family-sustaining middle-class jobs."**

As a result of these dynamics, Maryland's construction union membership as a share of all statewide construction jobs reached 16.3 percent in 2025, the highest level since 2002.

Members Of Unions As Share Of Statewide Construction Workforce



Source: Unionstats.com, Current Population Survey

DO DATA CENTERS THREATEN MARYLAND'S ENVIRONMENTAL HEALTH?

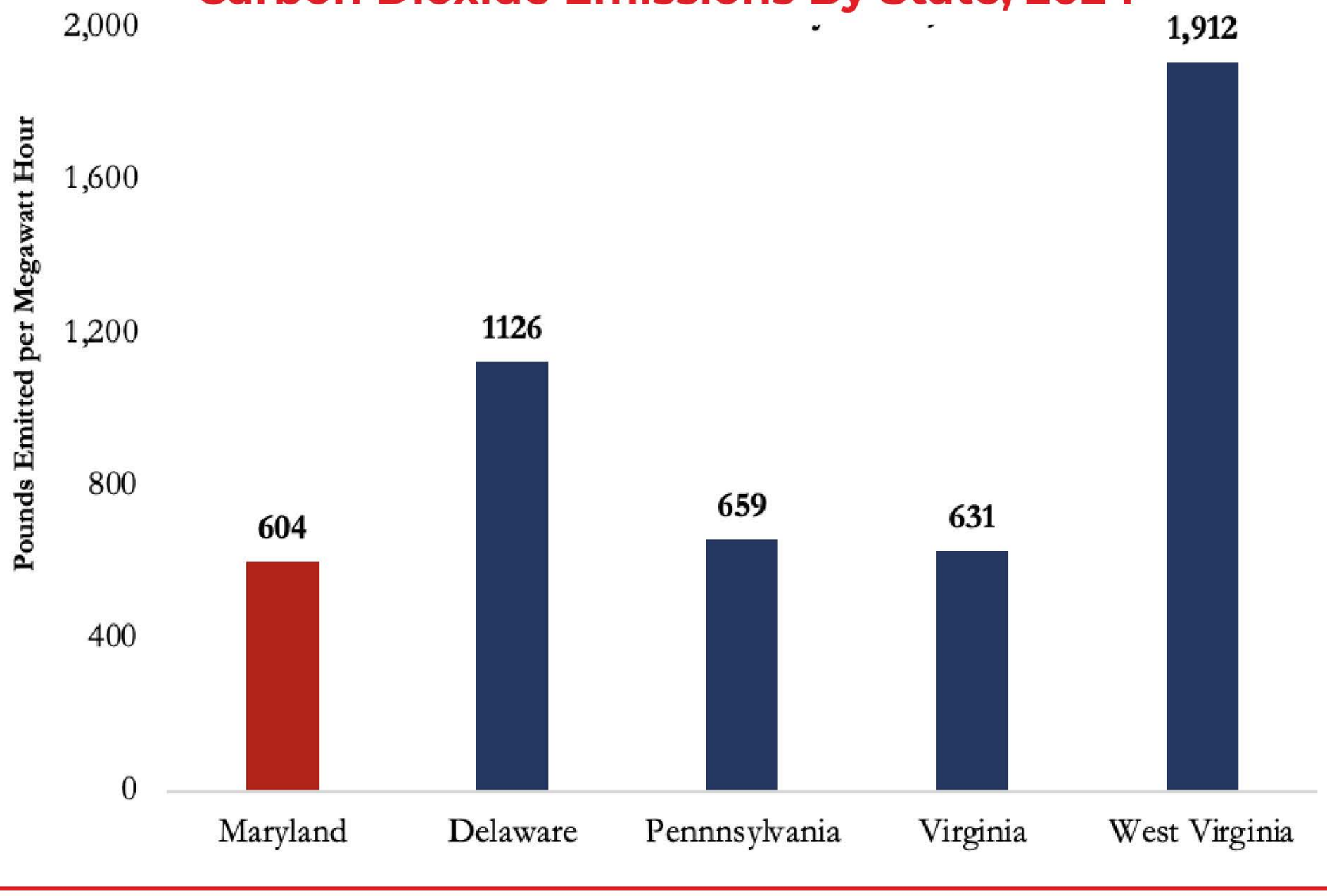
The short answer: No. The industry's water consumption represents just a small fraction of total U.S. freshwater use, major operators are deploying new cooling technologies that eliminate freshwater consumption entirely, and Maryland's existing regulatory framework—among the nation's most stringent—tightly controls any air quality impacts.

ROBUST AIR QUALITY PROTECTIONS ARE ALREADY IN PLACE

Maryland's Healthy Air Act is one of the nation's most stringent power plant emission laws, requiring at least 75 percent reductions in nitrogen oxides, sulfur dioxide, and mercury from 2002 levels.[xi] Furthermore, any equipment that discharges emissions into the atmosphere, like data center backup generators, requires air quality permits from the Maryland Department of the Environment that impose tight standards on both equipment and how that equipment is operated.

In addition to tightly controlling any pollutants emitted by data center equipment, Maryland's strict standards mean that it is one of the greenest possible locations for a data center. As of 2024, Maryland produced fewer carbon dioxide emissions per megawatt hour of energy generated than any of its neighbors, with its advantage ranging from 4 percent over Pennsylvania to 68 percent over West Virginia.[xiii]

Carbon Dioxide Emissions By State, 2024



Source: U.S. Energy Information Administration, State Electricity Profiles for 2024

TECHNOLOGICAL ADVANCES IMPROVE ALREADY MINIMAL EMISSIONS

The onsite emissions from data centers, which are already constrained by Maryland's strict environmental standards, will shrink further as the industry moves away from diesel backup power. Microsoft is already aiming to phase out diesel backup power by 2030, while Google is transitioning away from diesel generators and toward Battery Energy Storage Systems (BESS), which produce zero on-site emissions.[xiv] Because these systems also offer operational advantages, like being quieter and responding more quickly to power outages, and have seen substantial price declines in recent years, they are poised to become the industry standard form of backup power generation even absent stricter regulations.[xv]

CONTEXTUALIZING DATA CENTER WATER USE

The alarm over data center water consumption is not supported by the data. Across the nation, data centers account for less than 0.2 percent of U.S. freshwater consumption.[xvi] Even in Northern Virginia, home to the world's densest concentration of data centers, the industry accounts for just 3 percent of water usage in the Potomac River Basin.[xvii] To put this consumption in perspective, the data center industry's nationwide freshwater use is significantly lower than that of other common land uses; for instance, golf courses nationwide consume approximately 2.5 times more water than data centers.[xviii,xix]

AN INDUSTRY STRIVING FOR WATER-USE EFFICIENCY

The data center industry is voluntarily racing toward zero-water operations. Microsoft, for instance, began using closed-loop, chip-level cooling in their data centers in 2024. These systems consume no water, saving more than 30 million gallons of freshwater per facility per year, and represent a 39 percent improvement from 2021 water use effectiveness and an 80 percent improvement from the first-generation data centers built in the early 2000s.[xx]

Microsoft is far from alone in these efforts; other hyperscalers like Amazon, Google, and Meta have achieved similar efficiency improvements in recent years. Notably, all four companies have committed to returning more water to communities than they use at their data centers by 2030.

Where data centers do still use water-based cooling, operators are increasingly turning to non-potable sources, like reclaimed wastewater, rather than drawing from municipal drinking water supplies. AWS, for instance, now cools 20 of its data centers with purified wastewater that is sent back to treatment plants for cleaning and reuse after cycling through the cooling system.[xxi] That number will increase substantially over the next few years; AWS recently announced that it would expand its use of recycled water to more than 120 U.S. data centers, a move that will preserve over 530 million gallons of fresh drinking water each year.[xxii]

DO DATA CENTERS CONTRIBUTE TO NOISE POLLUTION?

Communities have expressed concern about data center-related noise pollution, particularly from cooling fans and backup generators that operate around the clock. While these concerns have been valid in some cases, especially with older air-cooled facilities, ongoing technological shifts are fundamentally changing the issue.

The growing adoption of liquid cooling, driven by the thermal demands of modern AI processors, is reducing reliance on the large fan arrays that have historically been a primary source of data center noise. Air-cooled facilities typically generate 85–95 dBA in equipment areas, while liquid-cooled systems reduce reliance on these high-speed fans and can operate at lower sound levels at the equipment level.[xxiii] A 10 dB reduction in sound corresponds roughly to a halving of perceived loudness, meaning these differences can be substantial in practice; consider that certain new technologies, such as those developed by Supermicro, can bring equipment-level noise down to approximately 50 dBA under controlled conditions, a level comparable to moderate rainfall.[xxiv]

More than four in every five data center operators plan to deploy prefabricated cooling modules in new builds, according to industry surveys, a trend that is expected to support broader adoption of advanced cooling technologies.[xxv] Combined with proven mitigation tools such as acoustic louvers, sound barrier walls, and updated local zoning requirements, such as those adopted or proposed in Calvert, Montgomery, and Charles counties, which mandate 200–500 foot setbacks from residential properties and require noise studies, properly designed modern data centers can comfortably meet community noise standards.

About Sage Policy Group

Sage Policy Group is an economic and policy consulting firm headquartered in Baltimore, MD. Dr. Anirban Basu, Sage's chairman and CEO, founded the firm in 2004. Sage has a client base that encompasses more than forty states and seven countries and includes Fortune 500 companies, NFL teams, aquariums and zoos, state and local governments, insurance companies, banks, brokerage houses, major medical systems, trade organizations, and law firms, among others.

The company is especially well known for its analytical capabilities in economic and fiscal impact estimation, economic development, forecasting, legislative analyses, litigation support, environmental economics, and industry outlooks.

In addition to leading Sage, Dr. Basu has emerged as one of the nation's most recognizable economists. He serves as the chief economist to Associated Builders and Contractors, the Maryland Bankers Association, and the International Food Distributors Association and as the chief economic adviser to the Construction Financial Management Association. He chaired the Maryland Economic Development Commission from 2014 to 2021 and currently chairs the Baltimore County Economic Advisory Committee.

Dr. Basu's lectures in economics are delivered to audiences across the U.S. and abroad. He has lectured at Johns Hopkins University and, most recently, at Goucher College as the Distinguished Economist in Residence, where he taught about the History of Economic Thought.

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