

# Economic Impact of Data Centers in Ohio

## An Interim Report

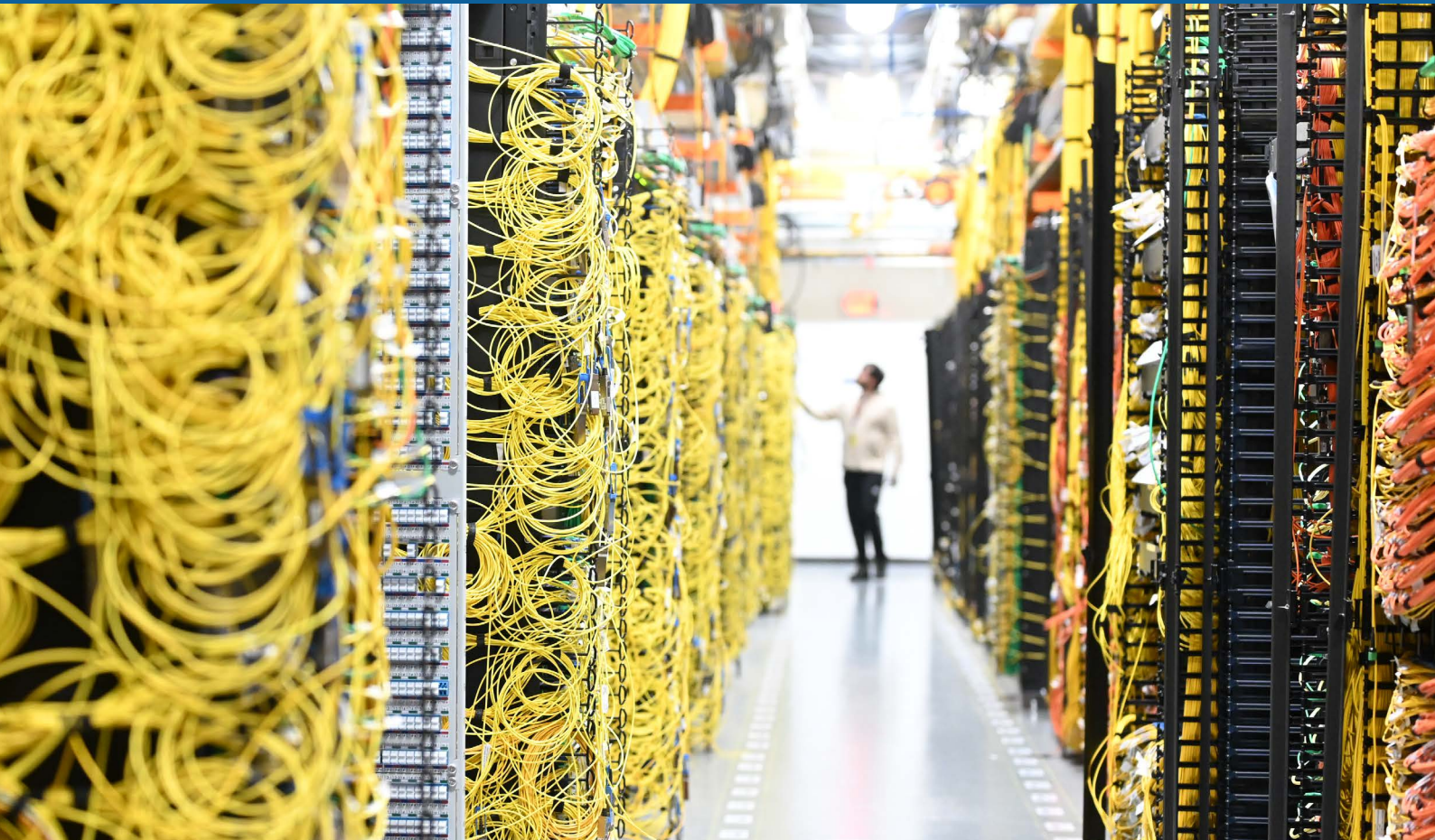


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Prepared for the Ohio  
Chamber of Commerce  
Research Foundation

By



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# Economic Impact of Data Centers in Ohio

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### 1. Overview

The world now runs on data-center horsepower. Roughly 11,000 facilities consume about 55 GW of power—enough to light the Netherlands—while North America provides more than half that capacity. Within this continental build-out, Ohio has become the Midwest’s breakout star. A once-quiet manufacturing corridor stretching from Columbus to Licking County is morphing into a hyperscale enclave: Amazon Web Services, Google, and Meta each staked billion-dollar campuses in New Albany, a suburb of Columbus, and a 2023 land-grab by operators signaled that the first wave was only the warm-up. Low-cost power, dense fiber backbones, and sales-tax exemptions on IT gear now make Central Ohio one of the few U.S. markets where a cloud provider can still secure triple-digit megawatts on a predictable timeline.

#### How the Market Got Here— In One Breath

Two mutually reinforcing forces explain the boom.

1. **Investment velocity.** America’s “Big Four” cloud firms poured an estimated \$180 billion into data-center infrastructure in 2024; add telecoms, enterprises, and specialist landlords and global spend cleared \$450 billion. Private-equity giants chased the trend with a record \$70 billion in M&A.
2. **Provider proliferation.** In 2015 only two U.S. players controlled 300 MW-plus portfolios; by 2024, 42 operators did—spread across 28 metros. The on-premise server room gave way to leased colocation space

after the 2008 financial crisis, and then hyperscale cloud platforms multiplied the required footprint tenfold.

#### Colocation, Hyperscale, and the Rise of the Powered Shell

The industry now revolves around two operating models:

- **Colocation**—multi-tenant fortresses where companies rent power, cooling, and network ports instead of building their own. U.S. colocation capacity ballooned from  $\approx 2$  GW in 2015 to  $\approx 18$  GW today.
- **Hyperscale**—single-tenant campuses purpose-built for cloud titans. The global count of hyperscale sites passed 1,100 in 2024 and is still climbing.

Lines blur when demand outruns construction pipelines: In 2024, the major clouds pre-leased entire buildings from colocation providers to avoid growth slowdowns. Facility formats are blurring too. Traditional turnkey builds arrive fully outfitted ( $\approx \$12$ – $13$  M per MW). Powered shells deliver only the concrete box and utility feeds ( $\approx \$4$ – $8$  M per MW), letting a tenant slide in its own standardized power and cooling blocks—an attractive shortcut when every quarter counts. New Albany’s latest projects mix both options, giving hyperscalers speed while landlords lock in anchor leases.

#### Why Ohio Matters in 2025 and beyond

Central Ohio now offers a rare combination of sub-11¢/kWh power, uncongested fiber, shovel-ready land, and a policy environment

that welcomes eight-figure utility upgrades. Companies that once treated the region as an out-of-the-way disaster recovery (DR) location now view it as a primary availability zone. With AI workloads ballooning, and prime coastal markets grid-locked, the state is positioned to capture the next \$10-billion tranche of hyperscale spend and the local construction, operations, and tax receipts that follow.

Ohio's ascent is no accident; it is the product of global demand that outruns supply, a capital market that views digital infrastructure as the new core real-estate class, and pragmatic state incentives that clear the path for gigawatt-scale campuses. Understanding these macro drivers—and how they converge in the Columbus corridor—frames the economic-impact story that follows.

Beyond the racks and servers, Ohio's data-center boom is rippling through the entire state economy. Every new campus pulls a long value chain into motion: union electricians, steel fabricators, concrete and HVAC contractors during the build-out; specialty switch-gear makers, cable suppliers, and modular-skid assemblers once the facilities are live. In the steady-state operations phase, data centers become anchor clients for local utilities, telecom carriers, security firms, and facility-management crews while generating recurring work for accountants, lawyers, and lease-finance specialists who structure the complex wholesale contracts. High-velocity freight flows of servers and networking gear translate into business for third-party-logistics (3PL) warehouses, drayage operators, and air-cargo hubs in Columbus and Dayton. Just as important, the critical-mass of digital infrastructure draws complementary industries- Artificial Intelligence (AI) start-ups, cloud-focused software vendors, semiconductor back-end plants, and renewable-energy developers—creating a virtuous circle of investment that reaches well beyond the tech sector itself.

This report distills where Ohio's data-center economy stands today—and what policymakers must do next. It documents an industry that, in under a decade, has vaulted the state from a manufacturing heartland to a Tier-1 digital-infrastructure hub. More than \$40 billion in

announced private capital,  $\approx 95,000$  total jobs, and \$11.8 billion in 2024 GDP contribution now make data centers a top-flight pillar of Ohio's economy. On a fiscal basis, every public dollar of incentive has returned roughly two dollars in new state-and-local revenue, a 2-to-1 payback. If current build-outs stay on track, the sector could support  $\approx 132,500$  jobs and add \$21.2 billion to GDP by 2030.

The report also flags emerging pressure points: grid capacity is tightening, competing states are copying Ohio's tax packages, and some abatements may be delivering diminishing marginal returns. Our upcoming chapters therefore pair the economic scorecard with forward-looking recommendations—targeted infrastructure investment, incentive recalibration, and workforce pipelines—to ensure Ohio can sustain this momentum, keep public ROI positive, and remain the Midwest's digital capital.

## 2. Methodology

This report employs a rigorous input-output (I-O) modeling approach to quantify the economic contributions of Ohio's data center industry. I-O modeling treats the economy as an intertwined web of industries that both buy from, and sell to, one another; by tracing those flows it lets us see how a dollar spent in one sector “echoes” through suppliers and ultimately into household paychecks. The method was pioneered by Nobel-laureate Wassily Leontief, who, beginning in the 1930s, formalized the now-familiar spreadsheet-like tables that track inter-industry purchases and demonstrated how solving a set of linear equations could reveal the total ripple effects of any initial investment or shock. Today's practitioners build on that foundation using the comprehensive framework laid out in Ronald Miller and Peter Blair's definitive text *Input-Output Analysis: Foundations and Extensions*, which explains the mathematics behind direct, indirect, and induced effects and shows how those concepts are implemented in modern software such as IMPLAN. In our study we follow exactly this lineage: a 2022-benchmark IMPLAN dataset (the most recent year available

in the 546-industry schema described in Appendix A) provides the Ohio-specific I-O table. All source data for 2023 and 2024 were deflated into 2022 dollars with IMPLAN's sector-specific price deflators; IMPLAN's algorithms then apply Leontief's equations—augmented with regional purchase coefficients that strip out imports—to translate the data center sector's spending into statewide employment, labor-income, GDP, and tax impacts. For this study, the data center sector is defined by NAICS 518210 – Data Processing, Hosting, and Related Services, which, while broader than just server farms, is the closest classification to model data center activity. Using the 546-sector structure ensures full historical comparability while still capturing the detailed production functions and commodity flows that characterize modern digital-infrastructure businesses.

For more on IMPLAN's origins, analytic foundations, and the key input-output/SAM assumptions (constant returns to scale, fixed-recipe technologies, no supply constraints, etc.), see Appendix A.

**Data Sources:** The economic model integrates a wide array of data (see Appendix B for a discussion). Key inputs include industry-level output, employment, and income data from the IMPLAN Data Library, which synthesizes federal statistics (BEA, BLS, Census Bureau, ACS, etc.) Ohio-specific intelligence (e.g. recent project announcements, construction cost benchmarks, and state tax records) is incorporated to fine-tune assumptions. These local inputs ensure the analysis reflects both the macro-level industry structure and micro-level realities of data center development in Ohio. Notably, to avoid overstating multipliers the model accounts for Ohio's generous tax incentives by adjusting cost inputs rather than treating abatements as new spending (a detailed tax incentive treatment is provided in Appendix E-1).

**Model Calibration:** To verify the robustness of results, Ohio's IMPLAN-derived multipliers were cross-checked against national benchmarks.

For 2024, the employment multiplier is  $\sim 2.6^1$ , meaning each direct job supports  $\sim 1.6$  additional jobs in the state – a reasonable magnitude for a state-level analysis and much lower than the national-level multiplier ( $\sim 7.4$ ) that captures interstate spillovers. The output multiplier of  $\sim 2.1$  is within industry norms (2.0–2.5), indicating that every \$1 of direct data center output generates an additional \$1.09 in economic activity statewide. Similarly, labor income and GDP/value-added multipliers around 2.1–2.6 remain in common ranges, reflecting the capital-intensive, lower-labor profile of data centers (which yields more moderate local spillovers than labor-heavy industries). All results presented are the outcome of this validated IMPLAN modeling, supplemented by scenario forecasts for 2025–2030 as described later in this report (See Table 1: Economic Contribution of Ohio's Data Center Industry, 2017–2024 for a summary of key metrics).

### 3. Economic Footprint

Ohio's data-center industry has grown from a niche sector into a significant pillar of the state economy over the past decade. This section reviews the industry's current economic footprint—including employment, output, GDP contribution, and labor income—and how these metrics have expanded since 2017 (all dollar values are expressed in 2025 dollars to ensure a consistent, apples-to-apples comparison across years). See Table 1 for full details.

**Employment Impact:** Data centers now support about 95,217 jobs in Ohio when accounting for direct, indirect, and induced employment as of 2024 (see Appendix C for a description of these impacts). Approximately 36,860 of these are direct jobs attributable to the industry, split between permanent operations roles ( $\sim 17.3$  k jobs at data center facilities) and ongoing construction and development jobs ( $\sim 19.4$  k) driven by capital projects. The remaining 58,000+ jobs are spillover positions – 30,300 indirect jobs in supply-chain industries (e.g. construction contractors, utility providers, equipment suppliers) and 28,000 induced jobs supported

1. Calculation:  $95,217/36,857 = 2.58$ , all multipliers of this kind are computed using the data in Table 1. IMPLAN multipliers assume fixed input structures and no supply constraints—see Appendix A.

Our combined jobs multiplier of 2.58—36,857 direct Ohio data-center jobs supporting 95,217 total jobs in 2024—includes both one-time construction labor and ongoing operations, and construction is leak-prone (out-of-state steel, turbines, specialty crews) so it drags the composite ratio downward. Looking only at steady-state operations, the IMPLAN model produces a much higher 5.5 multiplier, yet that, too, is below PwC’s 7.5 national figure for three defensible reasons. First, a state model must net out dollars that leave Ohio to pay for imported servers, networking gear and certain professional services, whereas a national model treats every purchase as domestic, so no leakage occurs. Second, data centers (NAICS 518210) are capital-intensive and labor-light; with a larger share of spending on hardware and electricity rather than wages, fewer paychecks flow into local households, and the induced ripple shrinks accordingly. Finally, a long-standing rule of thumb suggests that once interstate leakages are removed, a state-level employment multiplier settles at roughly two-thirds of the national number —  $7.5 \times 0.67 \approx 5.0$ —which corroborates Ohio’s operations-only estimate of about 5.5 and confirms the logic behind our results.

by the household spending of workers. This yields an employment multiplier of ~2.58, meaning each direct data center job supports roughly 1.6 additional jobs in Ohio’s economy. This multiplier is prudent and reflects Ohio’s in-state impact scope, whereas a national analysis would capture larger spillovers across state lines. If we consider solely on-site operations roles, the employment multiplier climbs to roughly 5.5.

Still, the employment growth has been remarkable: total employment linked to data centers climbed from about 38,400 jobs in 2017 to 95,200 in 2024, a 148% increase. Direct on-site employment more than doubled in that period, and the construction workforce surged as Ohio became a construction hotbed for new facilities. Notably, these jobs are high-quality: the average annual wage in the data center industry is roughly \$76,000, well above Ohio’s overall average, and positions come with

robust benefits and clear career progression paths in technical fields. In short, the data center boom has created tens of thousands of jobs, many of them skilled and well-paying, across the state.

**Contribution to GDP and Output:** Data centers contribute heavily to Ohio’s gross output (business sales) and value-added (GDP). In 2024, Ohio data centers generated an estimated \$26.4 billion in total economic output statewide. This includes roughly \$12.6 billion in direct output from data center operations (e.g. spending on power, cooling, staff, and services) and construction, plus \$7.2 billion in indirect output from Ohio suppliers and \$6.6 billion in induced consumer spending. The corresponding output multiplier is about 2.09, meaning every \$1 of direct spending by data centers produces an additional \$1.09 of economic activity in Ohio — a testament to the extensive supply chain and consumer links of this industry.

Nationally, direct data-center employment remains concentrated in a handful of states: California hosts roughly 81,000 operational jobs (about 17 % of the U.S. total) and Texas about 48,000 (10 %), while Florida, New York, and Georgia collectively round out the top five. Ohio’s on-site head-count—roughly 17,320 workers as of 2024—places it just outside that elite tier, yet the state’s wider economic footprint is catching up fast. To benchmark progress, we compare Ohio with Virginia—the industry’s long-time bellwether—using the most recent year for which Virginia data are available (2023). In that year Virginia’s data-center sector supported about 22,400 permanent operations jobs, 13,700 construction positions, and roughly 113,200 total jobs once supply-chain and household-spending effects are included (PwC Report, 2025). Ohio’s ecosystem, by contrast, backed an estimated 82,800 jobs in 2023, including about 16,100 on-site roles—evidence that the Buckeye State is rapidly narrowing the gap with the nation’s largest data-center markets even as newer 2024 figures boost Ohio’s totals further.

2. Calculation:  
 $4,544.5 / 11,827.2 = 2.6$ ,  
 all multipliers  
 of this kind are  
 computed using  
 the data in Table  
 1. IMPLAN  
 multipliers  
 assume fixed  
 input structures  
 and no supply  
 constraints—  
 see Appendix A.

In terms of contribution to Gross Domestic Product (value added), the data-center industry added an estimated \$3.7 billion in direct value-added to Ohio's economy in 2024 from \$1.69 billion in 2017. That expansion has vaulted data centers from the 21st percentile of Ohio's 527 industry groups in 2017 to the 11th percentile by 2022. If current growth trajectories persist, the sector is on course to enter the state's economic top decile—roughly the 7th percentile—by 2030, placing it firmly among Ohio's most productive and strategic industries. When indirect and induced effects are included, the sector's total contribution rises to about \$11.8 billion in 2024, more than double the \$4.7 billion recorded in 2017. This represents a GDP contribution multiplier around  $2.6^2$ , indicating that each \$1 of direct value-added by data centers generates about \$1.60 in additional GDP across the state's economy. While slightly above typical multipliers in other industries, this reflects the capital-intensive nature of data centers and strong upstream linkages (e.g. utilities, construction) that amplify their value-added impact. The rapid GDP growth – ~150% increase since 2017 – underscores that data centers have become a major component of Ohio's economic base, comparable in gross terms to some of the state's traditional industries.

**Labor Income:** The industry is also a significant generator of household income for Ohio residents. In 2024, labor income (employee compensation) stemming from data center activity totaled approximately \$5.9 billion statewide. Of this, about \$2.8 billion was paid in direct wages and benefits to those working at data center facilities or construction projects, with an additional \$1.6 billion in indirect labor income at supplier companies and \$1.5 billion in induced labor income as workers spend earnings in the broader economy. The labor income multiplier of ~2.14 is relatively conservative— a reflection of the industry's high productivity (each worker generates substantial output) and the fact that a large portion of data center spending goes toward capital and energy rather than labor. Even so, nearly \$6 billion in yearly payroll tied to data centers has become an important source of consumer spending power

in Ohio. It also highlights the human capital aspect of the boom: as thousands of Ohioans gain employment in and around data centers, their incomes support diverse sectors from housing and retail to healthcare and education.

## 4. Capital Investment

Underlying Ohio's extraordinary data center growth is an influx of capital investment on a massive scale. Over the past decade, Ohio has attracted well over \$40 billion in private data center investment from technology giants and colocation providers, catapulting the state into the top-tier of U.S. data center markets. This investment surge has transformed cornfields into server farms and made Central Ohio – especially the Columbus metropolitan area – one of the world's major cloud infrastructure hubs. Ohio now hosts nearly 180 data center facilities statewide, with at least 6 gigawatts (GW) of new capacity in development, placing it alongside Northern Virginia and Dallas in terms of development pipeline. The following are some of the major projects and commitments driving this investment boom:

- Amazon Web Services (AWS): Committed roughly \$23 billion through 2030, one of Ohio's largest private investments. This includes a 1.5 GW “flagship” data center in Jefferson Township (Licking County), among the world's largest, and a 1.7 GW hyperscale campus in Dayton, with a \$11.25 billion investment by 2031 and a \$1.3 billion AI campus on the former LexisNexis site in Southwest Ohio by 2027. AWS plans 2.8 GW of capacity across multiple campuses, operates dozens of Ohio sites, and has contributed ~\$3.8 billion to Ohio's GDP, supporting ~4,700 jobs annually.
- Google: Over \$6.7 billion invested across at least three campuses in New Albany, Columbus, and Lancaster. From 2019–2024 Google spent \$4.4 billion building out roughly 700 MW of capacity and announced an additional \$2.3 billion expansion in 2024. Google's Ohio data centers serve major clients including state government and large corporations, anchoring Central Ohio as a cloud region.

Table 1: Economic Contribution of Ohio's Data Center Industry, 2017–2024

	2017	2018	2019	2020	2021	2022	2023	2024
<b>Employment</b>								
<b>Direct</b>	<b>14,466.9</b>	<b>16,727.7</b>	<b>21,247.5</b>	<b>16,637.8</b>	<b>21,993.3</b>	<b>28,038.0</b>	<b>31,447.7</b>	<b>36,857.2</b>
Operations	10,149.1	10,970.6	12,036.2	12,076.1	12,897.2	15,169.4	16,077.8	17,320.5
Capital Spending	4,317.8	5,757.1	9,211.3	4,561.7	6,394.8	12,868.5	15,369.9	19,536.7
<b>Indirect</b>	<b>12,016.5</b>	<b>13,263.1</b>	<b>17,628.9</b>	<b>17,584.5</b>	<b>22,059.6</b>	<b>20,974.3</b>	<b>25,955.6</b>	<b>30,315.8</b>
<b>Induced</b>	<b>11,900.6</b>	<b>13,355.4</b>	<b>16,685.1</b>	<b>17,149.2</b>	<b>18,696.2</b>	<b>21,274.0</b>	<b>24,396.2</b>	<b>28,043.8</b>
<b>Totals</b>	<b>38,383.9</b>	<b>43,346.2</b>	<b>55,561.4</b>	<b>51,371.4</b>	<b>62,749.2</b>	<b>70,286.2</b>	<b>81,799.4</b>	<b>95,216.8</b>
<b>Labor Income (\$ millions)</b>								
<b>Direct</b>	<b>1,448.6</b>	<b>1,641.5</b>	<b>1,969.9</b>	<b>1,544.4</b>	<b>2,036.8</b>	<b>2,653.2</b>	<b>2,875.7</b>	<b>3,269.2</b>
Operations	1,146.2	1,238.2	1,324.7	1,349.6	1,411.7	1,806.9	1,864.9	1,984.4
Capital Spending	302.4	403.3	645.2	194.8	447.9	846.3	1,010.8	1,284.8
<b>Indirect</b>	<b>883.3</b>	<b>975.1</b>	<b>1,296.3</b>	<b>1,293.2</b>	<b>1,621.7</b>	<b>1,477.9</b>	<b>1,858.7</b>	<b>2,171.4</b>
<b>Induced</b>	<b>665.0</b>	<b>746.3</b>	<b>932.3</b>	<b>958.2</b>	<b>1,044.6</b>	<b>1,176.7</b>	<b>1,349.3</b>	<b>1,551.0</b>
<b>Totals</b>	<b>2,996.9</b>	<b>3,362.9</b>	<b>4,198.5</b>	<b>3,795.7</b>	<b>4,703.1</b>	<b>5,307.8</b>	<b>6,083.7</b>	<b>6,991.6</b>
<b>Contribution to GDP (\$ millions)</b>								
<b>Direct</b>	<b>1,826.6</b>	<b>2,054.3</b>	<b>2,511.8</b>	<b>2,023.0</b>	<b>2,727.5</b>	<b>3,523.9</b>	<b>3,975.7</b>	<b>4,544.5</b>
Operations	1,514.0	1,637.5	1,844.9	1,821.7	1,988.1	2,657.2	2,940.5	3,228.6
Capital Spending	312.6	416.8	666.9	201.3	463.0	866.7	1,035.2	1,315.9
<b>Indirect</b>	<b>1,687.7</b>	<b>1,859.7</b>	<b>2,467.2</b>	<b>2,458.3</b>	<b>3,096.0</b>	<b>2,948.1</b>	<b>3,723.4</b>	<b>4,345.3</b>
<b>Induced</b>	<b>1,206.0</b>	<b>1,353.3</b>	<b>1,690.6</b>	<b>1,737.6</b>	<b>1,894.3</b>	<b>2,228.6</b>	<b>2,555.5</b>	<b>2,937.4</b>
<b>Totals</b>	<b>4,720.2</b>	<b>5,267.4</b>	<b>6,669.5</b>	<b>6,218.8</b>	<b>7,717.9</b>	<b>8,700.6</b>	<b>10,254.5</b>	<b>11,827.2</b>
<b>Output (\$ millions)</b>								
<b>Direct</b>	<b>4,965.9</b>	<b>5,527.0</b>	<b>7,139.5</b>	<b>7,223.6</b>	<b>8,496.1</b>	<b>9,037.4</b>	<b>10,903.1</b>	<b>12,648.4</b>
Operations	4,392.2	4,762.0	5,915.5	5,515.4	6,498.9	7,507.4	9,075.7	10,325.5
Capital Spending	573.8	765.0	1,224.0	369.5	849.7	1,530.0	1,827.4	2,322.8
<b>Indirect</b>	<b>3,350.2</b>	<b>3,692.3</b>	<b>4,899.0</b>	<b>4,881.8</b>	<b>6,146.3</b>	<b>5,829.9</b>	<b>7,407.7</b>	<b>8,647.8</b>
<b>Induced</b>	<b>2,105.7</b>	<b>2,363.0</b>	<b>2,951.8</b>	<b>3,033.9</b>	<b>3,307.6</b>	<b>3,857.8</b>	<b>4,423.8</b>	<b>5,084.9</b>
<b>Totals</b>	<b>10,421.8</b>	<b>11,582.3</b>	<b>14,990.4</b>	<b>15,139.3</b>	<b>17,950.1</b>	<b>18,725.2</b>	<b>22,734.5</b>	<b>26,381.0</b>

Source: SRC Estimates Based on IMPLAN Modeling System, IMPLAN Data Library, and Publicly Available Data

Note: All dollar values are expressed in 2025 dollars.

- Meta (Facebook): Approximately \$3–4 billion to develop 500 MW across two hyperscale sites in Central Ohio, plus an \$800 million, 200–250 MW AI-optimized data center in Bowling Green (Wood County) in Northwest Ohio by 2027. These facilities, housing social media, metaverse, and AI computing infrastructure, marked Meta’s first major Midwest footprint and reinforced Ohio’s reputation as an attractive location for hyperscale projects.
- Microsoft: Initially announced \$1 billion for new campuses in New Albany, Heath, and Hebron, but paused construction in early 2025 amid a global pullback in data center spending. The delay is temporary, but it highlights how macro-industry shifts can impact project timelines. The pullback was driven by several factors: DeepSeek’s breakthrough AI model demonstrated that advanced AI could be built at a fraction of traditional costs, creating investor skepticism about massive infrastructure spending; Microsoft facing oversupply relative to current demand forecasts after OpenAI shifted workloads to other cloud providers like Oracle. Once completed, Microsoft’s sites would further diversify the industry mix and add hundreds of permanent tech jobs in Ohio.
- Vantage Data Centers: Invested \$2 billion to establish its first Midwest data center campus in New Albany. This development delivers 192 MW of capacity across 1.5 million square feet and signifies a major colocation provider betting on Ohio’s market potential.
- Cologix: Announced a \$7 billion project to build an 800 MW “AI Campus” in Johnstown (Licking County). This 2 million sq. ft. campus, aimed at high-density AI computing needs, underscores the new wave of specialized facilities and will cement Ohio’s status as a global-scale data center cluster if fully realized.
- QTS Data Centers: Developing roughly \$1.5 billion in facilities across two campuses in New Albany. QTS’s entry, along with other firms like Edged Energy and Compass, reflects a broadening ecosystem of operators beyond the initial big three hyperscalers.

These headline projects, among many others, have not only poured concrete and raised buildings, but also anchored long-term tech operations in the state. The capital investment has primarily flowed into construction of large-scale server farms, procurement of electrical and cooling equipment, and land development. According to industry analyses, only about 20–30% of typical data center capital expenditure goes into traditional construction trades (concrete, steel, labor), while the majority (60%+) is for specialized equipment like servers and electrical gear. Ohio’s aggressive incentives effectively target these costs – for example, the state’s 100% sales tax exemption on data center equipment substantially lowers the cost of that 60% portion, encouraging firms to deploy more capital in Ohio. In sum, the billions invested by cloud giants and colocation firms have physically transformed parts of Ohio and positioned the state as a leading locus of digital infrastructure.

## 5. Fiscal Impact

The rapid expansion of data centers has significantly boosted public revenues in Ohio, even as the state has offered sizable tax incentives to attract these facilities. This section examines the tax revenue impacts of the industry and the net fiscal balance after accounting for incentive costs.

**Tax Revenue Generation:** Data centers contribute to a broad tax base at the state and local levels. Annual state and local tax revenues attributable to Ohio’s data center industry grew from about \$431 million in 2017 to approximately \$1.0 billion in 2024, a compound annual growth rate of roughly 13.4%. Cumulatively, the sector generated an estimated \$5.21 billion in Ohio state and local taxes over 2017–2024. See Table 2 for full details.

These taxes encompass multiple categories, notably:

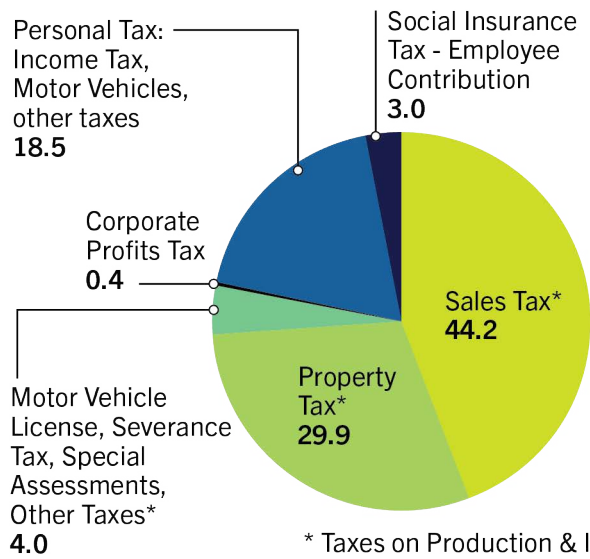
- Property Taxes: Levies on data center real estate and tangible equipment (often a major share of local revenue).
- State Sales/Use Taxes: Taxes on purchases of materials and non-exempt equipment (though many data center purchases qualify for Ohio’s exemption, as discussed later).

**Table 2: State and Local Tax Revenues Attributable to Ohio Data Centers, 2017–2024**

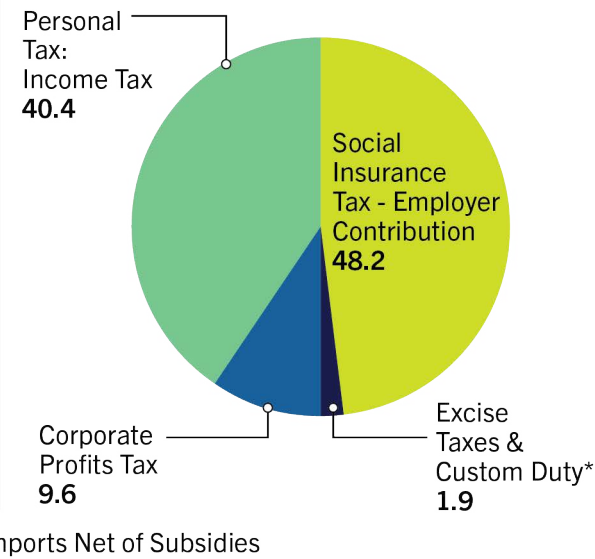
<b>Contribution to Taxes</b> (\$ millions)								
	2017	2018	2019	2020	2021	2022	2023	2024
Federal	554.3	621.7	771.7	584.8	764.5	1,235.5	1,424.4	1,636.0
<b>State and Local</b>	<b>431.1</b>	<b>475.9</b>	<b>609.9</b>	<b>644.5</b>	<b>641.1</b>	<b>734.0</b>	<b>868.5</b>	<b>1,006.4</b>
Direct	100.3	109.3	135.1	76.4	146.1	189.7	224.6	259.9
Indirect	204.8	225.3	298.2	386.2	320.0	326.4	394.0	459.4
Induced	126.0	141.4	176.6	181.8	175.0	217.9	249.8	287.2
<b>Totals</b>	<b>985.4</b>	<b>1,097.6</b>	<b>1,381.6</b>	<b>1,229.3</b>	<b>1,405.6</b>	<b>1,969.5</b>	<b>2,292.9</b>	<b>2,642.4</b>

Source: SRC Estimates Based on IMPLAN Modeling System, IMPLAN Data Library, and Publicly Available Data  
 Note: All dollar values are expressed in 2025 dollars.

**Figure 1: Average Composition of Ohio’s State and Local Tax Components from Data Center Contributions**



**Average Composition of Federal Tax Components from Data Center Contributions in Ohio**



- **State Income Taxes:** Personal income taxes paid by data center employees.
- **Commercial Activity Tax (CAT):** Ohio’s gross receipts tax on business revenues, which data center operators pay on in-state sales.
- **Payroll and Other:** Miscellaneous contributions such as municipal income taxes, utility excise taxes, and contributions to unemployment insurance and workers’ compensation funds.

On average, property taxes constitute the largest portion of state-local revenues from data centers, given the high-value facilities (though many enjoy partial abatements). Sales and income taxes also form significant components

of the tax mix.

Figure 1 illustrates the typical breakdown, with property-related taxes often accounting for roughly half of the total, followed by state sales/use tax and income-based taxes (see Figure 1). At the federal level, Ohio’s data centers generated roughly \$1.6 billion in federal tax revenue in 2024 alone (see Table 2) – primarily through corporate income taxes, federal personal income taxes on worker earnings, and payroll taxes, see Figure 1).

While federal revenue impacts are outside the state’s fiscal ledger, it is notable that Ohio’s data center growth contributes to the federal treasury as well.

**Net Fiscal Balance:** Do the public revenues from data centers outweigh the tax incentives granted? In Ohio's case, the answer to date has been yes – data centers have delivered a net fiscal surplus for state and local governments, though the margin is modest. Based on available data, Ohio provided an estimated \$2–3 billion worth of tax incentives to data center projects from 2017 to 2024. These incentives primarily include foregone sales tax on equipment and construction materials, plus property tax abatements (typically 15-year abatements of 75–100% for qualifying facilities).

Over the same 2017–2024 period, data centers generated about \$5.2 billion in cumulative state and local tax receipts. Thus, even after accounting for incentives, the industry yielded roughly a \$2 billion net fiscal benefit to Ohio's coffers, roughly a 2:1 ratio of revenues to costs. In other words, for every \$1 in tax breaks, data centers have returned about \$2 in new tax revenue – a positive return on investment for the public sector. This benefit-cost ratio (approximately 1.7:1 to 2.6:1 under plausible ranges) is healthy, though not as high as some earlier, overly optimistic estimates that assumed all projects would have proceeded only because of the incentives.

Moreover, the cost per direct job created has been high: by one estimate, the combined tax incentives equate to over \$1 million of tax expenditure per direct job in the data center industry, reflecting the capital-intensive nature of these projects. Although the ledger is comfortably in surplus, this million-dollar price tag suggests scope for recalibration: every marginal dollar diverted from blanket tax relief to targeted grid or transmission upgrades is likely to yield higher social returns. This suggests room to improve the cost-effectiveness of Ohio's incentive programs.

Importantly, even a conservative economic assessment finds that data centers confer net benefits. A detailed benefit-cost analysis (BCA) of a prototypical 100 MW data center project – accounting for all in-state costs, benefits, and externalities over 24 years – found an overall net present value (NPV) gain of about \$758 million for Ohio stakeholders. This BCA (see Appendix G for methodology) includes factors

often omitted from simple fiscal tallies, such as environmental externalities (noise, visual impact, carbon emissions) and opportunity costs of land and labor. The finding of a strongly positive NPV even after including these factors indicates that, beyond just taxes minus incentives, data centers bring substantial real economic value to Ohio. In essence, the public investments via tax incentives are paying off in terms of broader welfare – though carefully recalibrating incentive levels could likely achieve similar economic outcomes at lower public cost.

## 6. Role of the Sales Tax Exemption

One incentive in particular – Ohio's sales tax exemption for data centers – has played a pivotal role in the industry's growth and warrants close examination. This program effectively eliminates Ohio's 5.75% state sales tax (and applicable county sales tax) on purchases of data center equipment and construction materials for qualifying projects. Given that a single large data center can involve hundreds of millions in hardware and construction costs, this incentive offers very substantial savings to investors, reducing upfront capital costs and ongoing upgrade expenses.

**Program Overview:** Ohio's data center sales tax exemption was designed to attract large-scale investments with high upfront costs. To qualify, a project must meet a minimum capital investment threshold (currently \$100 million) within a defined period and also create a minimum annual payroll (e.g. \$1.5 million per year of Ohio jobs). Once certified, the project is granted a sales and use tax exemption on a broad range of purchases essential to data center construction and operations.

Eligible items include almost all major facility inputs: computer servers, storage and network hardware, electrical infrastructure (e.g. generators, transformers, UPS systems), cooling and HVAC equipment, software and systems, and even building materials for the data center itself. In effect, the state forgoes sales tax on the very capital expenditures that dominate data center project budgets. The exemption typically

lasts for the duration of the construction and often covers a period of years for equipment purchases as the facility ramps up.

Ohio implemented this incentive in the 2010s to jump-start data center attraction, and it quickly became a cornerstone of the state's competitive offering. By wiping out roughly 5–7% in upfront taxes on huge capital outlays, the program significantly improves project economics for developers. For example, one early beneficiary was the 2017 “Sidecat” data center project (an alias for a large enterprise data center), which received about \$37 million in sales tax savings on a \$750 million investment. Likewise, Ohio inked a long-term agreement with Amazon Web Services such that AWS could realize up to \$1.54 billion in sales tax exemptions through 2055 as it continues to expand its Ohio cloud campuses. During the 2022–2024 wave of mega-projects by Amazon, Google, and others, the state extended an estimated \$1.6 billion in sales tax abatements to these data center investments. These figures illustrate the magnitude of Ohio's bet on this industry via forgone tax revenue – and why data center firms have found Ohio a financially attractive build location.

**Cost-Benefit Considerations:** The sales tax exemption has likely succeeded in drawing investment, but it comes at a fiscal cost. To assess whether this incentive is “worth it,” it's useful to consider alternative scenarios. Our analysis modeled a counterfactual scenario with no sales tax exemption: In a “no-exemption” counterfactual, we estimate turnkey build costs would rise by roughly 6–8%, triggering a 35% fall in CapEx (2025–30) as some projects relocate or scale back. This contraction would translate into about 33% fewer jobs (dropping from 132,000 to 89,000), a 32% smaller GDP contribution (from \$21 billion to \$14 billion), and 30% lower state-local tax revenues (from \$1.8 billion to \$1.3 billion) in 2030. Paradoxically, even though Ohio would retain sales tax on each remaining build, the diminished pipeline would shrink the overall tax base enough that net annual state-local revenues would be \$0.5 billion lower than under the incentive regime. In short, by enabling projects that would otherwise bypass or downsize in Ohio, the exemption more than pays for itself—see Appendix F-2 for full

methodology and sensitivity analysis. Conversely, an expanded incentive (even more generous terms) might increase investment by perhaps 25% but yield diminishing returns in terms of net benefits. Once a state's tax policy is already very favorable, sweetening it further may not sway many additional site selection decisions; it would mainly reduce the tax take on projects that would have happened anyway. These scenario analyses underscore the importance of finding the optimal incentive level – one that is competitive enough to win projects but not so generous as to needlessly erode the public return.

From a policy-effectiveness perspective, Ohio's 100% sales-tax exemption has served its purpose—but the time for an outright arms race may be over. Today, tax breaks alone rarely sway location decisions: power capacity, fiber connectivity, available land and skilled workers remain the decisive factors. Ohio's early success owed much to its central geography and robust infrastructure, with the exemption playing a supporting role (see Section 7). But with Illinois, Indiana, Michigan, North Carolina and others now matching or exceeding Ohio's offer, the playing field is level—and further generosity would simply shift dollars from state coffers to corporate balance sheets without changing site-selection calculus.

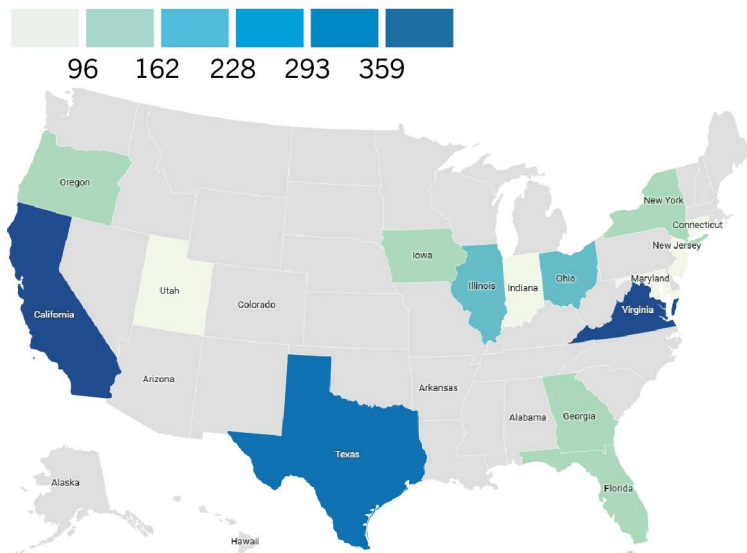
The prudent path forward is to hold the line on the current exemption, neither expanding it nor letting it lapse—while tightening its design. Modest refinements could include claw-back clauses tied to project milestones or graduated relief calibrated to project scale and demonstrated economic benefits. In this way, Ohio preserves its competitive position, sustains the data-center pipeline, and ensures each dollar of foregone revenue delivers maximum jobs and investment.

## 7. Ohio's Competitive Position in the National Market

Ohio has rapidly ascended to become one of the nation's leading data center destinations, a remarkable feat for a state that was not even on the industry's radar a decade ago. By number

of facilities, Ohio now ranks roughly 5th among U.S. states, with around 179 data centers, trailing only Virginia, California, Texas, and Illinois. The state's capacity pipeline – over 6 GW of new projects announced – is among the largest in the country, rivaling traditional hubs like Northern Virginia (the longtime #1 market) and Dallas. Such status would have seemed implausible a few years ago but reflects Ohio's successful positioning at the intersection of key industry trends.

**Figure 2: Data Center Count: Top 15 States (2025)**



Ohio's advantages in the data center race are multifaceted:

- **Central Geography and Market Access:** Ohio's location offers low-latency access to a huge swath of the U.S. population. About 50% of Americans are within a 600-mile radius of Columbus, making Ohio ideal for serving nationwide cloud and content needs from a single region. This central positioning lowers latency to East Coast and Midwest markets and is a hedge against concentrating too much in coastal hubs.
- **Affordable, Plentiful Power:** Ohio provides relatively inexpensive electricity in a deregulated market. Industrial power rates in central Ohio range roughly 8.7–11.2 cents per kWh, competitive with other major markets. Crucially, Ohio's utilities historically had available capacity – one

reason hyperscalers initially flocked here as other regions neared their power limits. Large projects can negotiate directly with multiple retail power suppliers, leveraging Ohio's deregulated electricity market to secure favorable terms.

- **Robust Fiber and Connectivity:** Ohio has excellent network infrastructure, with multiple Tier 1 internet backbone providers in the region and the presence of the Ohio Internet Exchange (Ohio IX) in Columbus. This means data centers can connect to major telecom networks with low latency and redundancy. Proximity to existing fiber routes (including east-west national routes and north-south links to Chicago and Atlanta) enhances Ohio's appeal for data routing.
- **Pro-business Climate and Incentives:** Ohio has not shied away from using incentives as a lure. As detailed in Section 6, the state's 100% sales tax exemption on data center equipment and construction materials (for projects over \$100 million) is one of the most generous in the country. Additionally, many projects receive 15-year property tax abatements from local authorities (often 75–100% abatements in designated Enterprise Zones). Ohio's stable tax and regulatory environment, skilled workforce, and overall lower cost of doing business compared to the costs also contribute to its competitive package.

These factors combined to make Ohio a preferred location for both hyper-scale cloud companies (like Amazon, Google, Meta) and colocation providers. Ohio effectively offered a rare mix of low cost, ample land, and ample power plus decent proximity to major metros – a combination that became very attractive as traditional hubs (Northern Virginia, Silicon Valley, etc.) grew expensive and faced land/power constraints.

**Emerging Challenges:** Ohio now faces the complications of its own success and evolving competition:

- **Power Grid Constraints:** The surging demand for new data centers has put strains on Ohio's electrical infrastructure. American Electric Power (AEP) Ohio – the utility

serving much of the Columbus region – received applications totaling an astounding 30,000 MW of new data center load in recent years. This is over 50 times the current data center load (~600 MW) and far exceeds the utility’s near-term expansion capacity. In response, AEP in 2023 temporarily halted new large power connections and introduced unprecedented “85% minimum take” contract clauses requiring data centers to pay for 85% of requested power capacity regardless of actual usage. These measures, aimed at managing grid stress, effectively slow the onboarding of new mega- projects. If not resolved through grid investment and planning, power availability could become a bottleneck that pushes projects to other states.

- **Regional Incentive Arms Race:** Ohio’s incentive offerings, while still robust, are no longer unique. Neighboring states have aggressively matched or even outbid Ohio on tax breaks for data centers.
- For example, Indiana and Michigan recently enacted 100% sales tax exemptions and additional tax credits for data centers, and Pennsylvania has advertised grant programs to attract large facilities. This erodes Ohio’s relative advantage and means future site selections will hinge even more on non-tax factors (power, sites, workforce). Ohio must be cautious not to overpay in incentives as companies leverage interstate bidding wars – a phenomenon often dubbed a “winner’s curse.”
- **Workforce and Skills Gap:** While data center operations don’t require massive staff, the rapid growth in facilities has increased demand for skilled workers such as electrical technicians, network engineers, HVAC specialists, and security personnel. Ohio’s education and training pipelines will need to keep up. Workforce development did not pose a major constraint in the industry’s infancy, but going forward a shortage of qualified labor (or rising labor costs) could affect Ohio’s competitiveness, especially as other states also cultivate tech workforce programs.
- **Market Saturation and Diversification:** With

Ohio now heavily invested in the data center sector, there is the broader question of diversification and sustainability. Data center growth nationally could moderate if, for instance, technology advances (like more efficient servers or decentralization via edge computing) reduce the need for giant centralized facilities. Ohio will want to monitor such trends to avoid over-reliance on what is currently a booming but constantly evolving industry.

Despite these challenges, Ohio’s competitive position remains strong. The state’s data center industry not only rivals older markets – by some measures it outpaces them. The Columbus area is now estimated to be the 7th largest data center metro globally<sup>3</sup>, an almost unthinkable rise for a Midwest city in just a few years. Going forward, maintaining this edge will require strategic investments in infrastructure and workforce (to alleviate the power and labor constraints) and shrewd adjustments to incentives (to remain competitive without excessive cost).

## 8. Future Growth Trajectory and Policy Variables

Looking ahead, Ohio’s data center industry is poised for continued robust growth through 2030 – but the exact trajectory will depend on key policy and infrastructure variables. This section outlines baseline projections and scenario forecasts, then discusses the drivers, constraints, and policy factors that will shape the industry’s future in Ohio. To generate the numbers in the three scenarios we first produced annual forecasts for both (i) ongoing operations output and (ii) capital expenditure (CapEx) build-outs and then ran each series through IMPLAN. For operations we fit the 2017-23 IMPLAN output series with two standard time-series models—double-exponential smoothing and an ARIMA (0,2,0)—and selected the more conservative ARIMA path as our Baseline; ±15 % bands create the Expansionary and Conservative cases. For CapEx we compiled every announced project,

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3. The global market leaders in operational capacity - Northern Virginia, Beijing, Hillsboro, Phoenix, Shanghai, Dallas, Columbus.

spread each budget across its construction window (linear unless a phased schedule was disclosed), and imputed costs for capacity-only announcements with a \$7.5 million-per-MW benchmark. Nominal figures were first deflated to 2022 dollars with IMPLAN’s sector deflators and then models outputs restated in 2025 dollars, the common year used throughout this report. A full, auditable walk-through—including smoothing parameters, error statistics, CapEx unit costs, treatment of paused projects, and location assumptions—appears in Appendix E.

**Disclaimer: Because both demand and grid policy are evolving rapidly, these forecasts should be read as planning ranges, not promises; they will require periodic revision as new investment announcements, utility-capacity rulings, or macroeconomic shocks emerge.**

**2030 Growth Projections:** Using historical trends (2017–2024) and industry forecasts, we project that by 2030 the economic footprint of Ohio’s data center sector could roughly double from current levels under a healthy growth scenario, (see Figures 3 & 4).

In the Base Case scenario, Ohio’s data centers are expected to support about 132,500 jobs in 2030 (total direct + indirect + induced), up ~39% from 2024. The annual GDP contribution is projected to reach \$21.2 billion (79% higher than in 2024), and state/local tax revenues could grow

to around \$1.8 billion annually (approximately 80% growth). Under a more aggressive Expansionary Scenario – assuming faster adoption of AI and cloud services and resolution of current grid bottlenecks – Ohio might see ~149,700 jobs supported (+57% vs 2024), \$24.0 billion GDP (+103%), and \$2.1 billion in state/local taxes (+110%) by 2030. Conversely, a Conservative Scenario with slower growth and stricter constraints yields about 119,800 jobs (+26%), \$18.8 billion GDP (+59%), and \$1.6 billion taxes (+60%) in 2030. These scenarios bracket the plausible outcomes; notably, even the low-end forecast sees substantial growth above 2024 levels. Rapid advancements in digital services (AI, IoT, etc.) could push outcomes toward the high end. Forecasted employment, income, and tax impacts are derived from IMPLAN; see Appendix A.

**Growth Drivers:** Several demand-side forces will keep Ohio’s build-pipeline full, first among them the explosive growth of AI and machine-learning (ML) workloads. A single frontier-model training run can now occupy tens of thousands of GPUs and draw 50-100 MW continuously for weeks, while rack densities have leapt from the historical 5-10 kW range to 30-50 kW—and, in some liquid-cooled pods, 80-100 kW. To accommodate that scale, hyperscalers are reserving 200-500 MW “mega-campus” and designing electrical and cooling plants

**Figure 3: Ohio Data Center Industry Output: Actual and Projected (\$ Billion)**

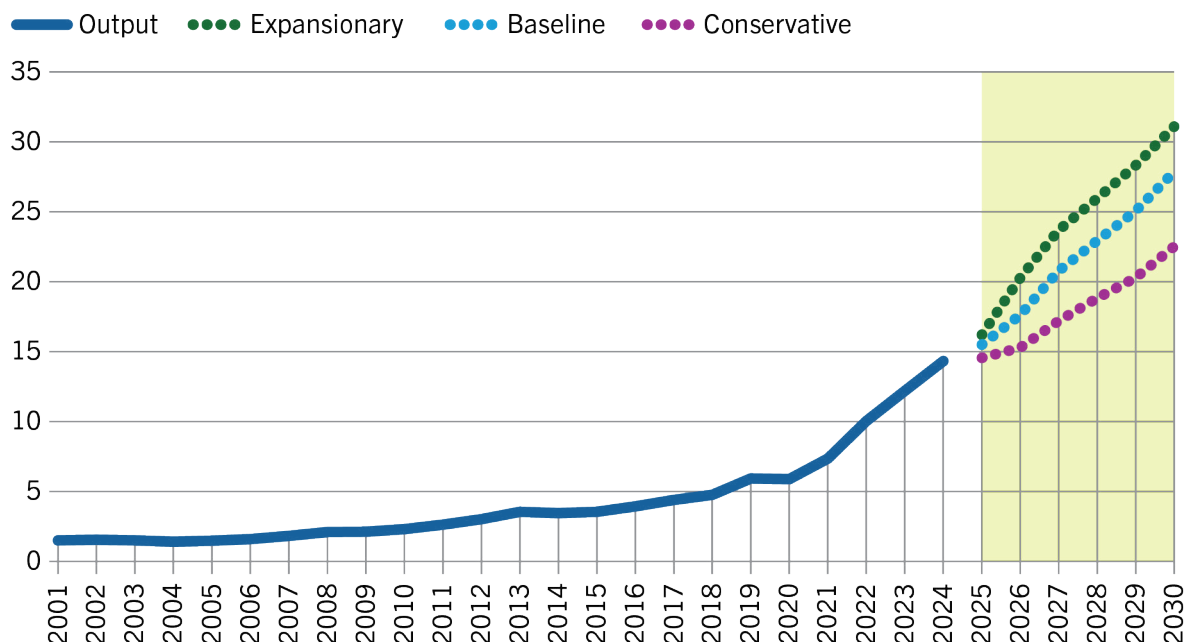
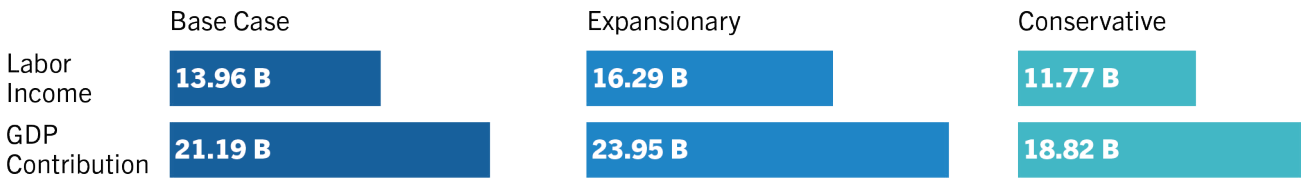
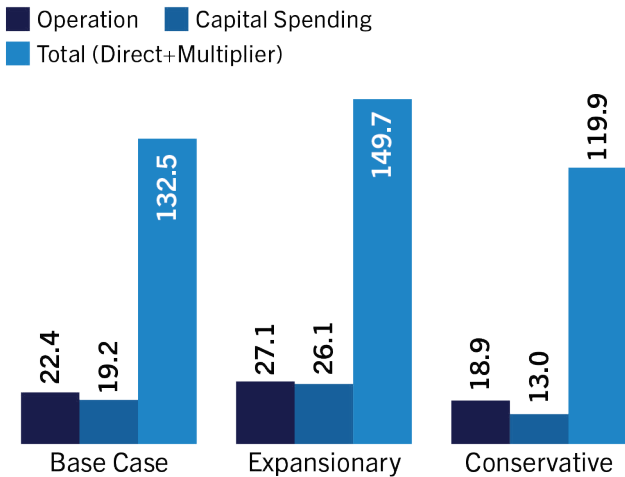


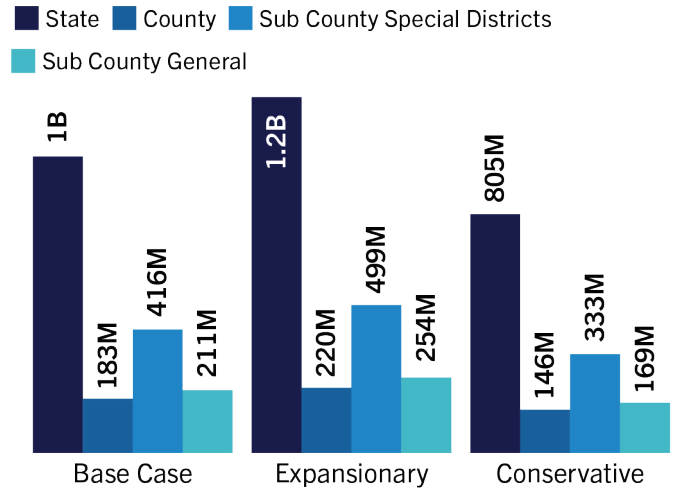
Figure 4: Projected Labor Income and GDP Contribution for 2030



Data Center Projected Employment in Thousands (2030)



Projected State and Local Tax Contribution in 2030



that can be doubled over a campus life-cycle. Ohio is especially well-positioned to lead the shift toward AI-optimized, high-density deployments—designing new facilities for 40–60 kW per cabinet—while much of the U.S. legacy colocation stock remains stuck at roughly 7–9 kW per cabinet. Similarly, cloud computing growth in general – as businesses migrate more IT infrastructure to the cloud – will keep data center demand on an upward trend. Other tech trends like 5G and edge computing (which extend the network and create new data streams) and the Internet of Things (IoT) will increase the need for central data processing, some of which will reside in big regional centers like those in Ohio. The ongoing digital transformation across sectors (finance, healthcare, e-commerce, etc.) ensures a steady pipeline of demand for data storage and processing. In short, the secular trends are favorable: more data, more cloud services, more AI – all point to more data center capacity, and Ohio is well-positioned to capture a share of that.

**Infrastructure and Resource Requirements:**

To sustain high growth, infrastructure capacity must keep pace. The foremost requirement is electric power: data centers are voracious electricity consumers, and significant new

generation and transmission capacity will be needed in Ohio to serve the planned 6+ GW of projects. Timely upgrades to the grid – new substations, high-voltage lines, perhaps dedicated transmission corridors for data center parks – are critical. Ensuring reliable power supply (with redundancy and stable costs) will require coordination between data center firms, utilities, and state regulators. Besides power, continued expansion of fiber optic networks is important to support the increased data traffic in and out of these centers. Ohio should also consider transportation infrastructure implications – e.g. road improvements for construction equipment and ongoing maintenance access, and even airport cargo capacity for flying in heavy equipment. Lastly, an adequate skilled workforce is a form of “infrastructure” in itself; training programs will be needed to supply electrical engineers, data technicians, and construction labor at the volumes required by dozens of simultaneous projects.

**Key Policy Variables:** Several policy and market factors will influence whether Ohio’s data center growth leans toward the conservative or expansionary scenario:

- Tax Incentive Policy: Adjustments to Ohio’s

incentive programs (such as the sales tax exemption or local abatements) could either attract additional marginal projects or, if rolled back too far, discourage investment. A well-calibrated incentive policy will be key to the base-case outcome. Competitors' incentives also play a role – if other states up the ante, Ohio may need to respond in kind or risk losing projects.

- **Infrastructure Investment:** The level of public and private investment in expanding grid capacity and fiber networks will directly impact growth. Proactive infrastructure spending could raise the ceiling for data center expansion (enabling the expansionary scenario), while delays or underinvestment would constrain it.
- **Regulatory Environment:** Environmental or land-use regulations (e.g. around water usage for cooling, noise, or carbon emissions) could affect how easily new centers can be built and operated. A balanced regulatory climate that addresses community concerns without unduly burdening development will help sustain growth. Similarly, fast-track permitting processes for large tech facilities would be

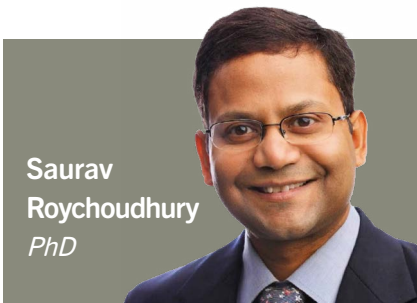
advantageous.

- **National Competitiveness:** If other states or countries create dramatically more attractive conditions (through bigger incentives or new tech hubs), Ohio's relative advantage could narrow. Conversely, if Ohio maintains a stable business climate while others falter, it could capture outsized growth. Ongoing competitive monitoring will be needed.

**Risk Factors and Mitigation:** While the outlook is bullish, several risk factors could temper the growth trajectory. One is the aforementioned infrastructure constraint – if power or other infrastructure isn't ready in time, projects might be delayed or canceled. Another is competitive pressure – a state like Michigan or Virginia could temporarily offer richer incentives or faster approvals and peel off a major project. There's also technological risk: unforeseen changes like shifts to more decentralized computing (edge devices reducing the need for big data centers) or breakthroughs in server efficiency could reduce demand for large facilities. Finally, macroeconomic cycles matter – a recession or credit tightening could slow the pace of new construction, as seen with Microsoft's pause in 2025.



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## Appendices

### Appendix A IMPLAN Methodology, Assumptions, and Limitations

#### A.1 Introduction to IMPLAN

IMPLAN is the leading provider of regional economic-impact data and analytical applications. Originally created by academics in the 1970s to support the U.S. Forest Service, it has evolved into a solution-provider for researchers, policy makers, business leaders, and governments seeking to understand their local economies. IMPLAN estimates the “ripple effects” of any economic activity — new investments, industry expansions, policy changes—by modeling how dollars flow through interconnected industries and households.

IMPLAN’s data sets and methods have been published and peer-reviewed extensively. Its county- and state-level industry tables are a de facto standard for economic impact studies in the United States, and its software interface allows users to customize industry definitions, geographic scopes, and final-demand scenarios.

#### A.2 How IMPLAN Works

At its core, IMPLAN employs two interrelated techniques:

- **Input–Output (I–O) Analysis:** Traces how a change in final demand for goods and services (e.g., data-center construction, operations) translates into the inputs required across all industries.
- **Social Accounting Matrix (SAM):** Extends I–O by integrating household and institutional spending, enabling estimation of induced effects (household spending of wages).

Together, these methods capture Direct, Indirect, and Induced effects within a specified region.

#### A.3 Key Modeling Assumptions

All IMPLAN results depend on these core assumptions, drawn from I–O and SAM theory (see Adams & Stewart 1956; Christ 1955; Miller & Blair 2009; Bess & Ambargis 2011):

- **Constant Returns to Scale:** Inputs scale exactly with output.
- **Fixed Input Structure (No Substitution):** Each industry uses a fixed “recipe” of inputs per unit of output unless the user edits the production function.
- **Industry Homogeneity:** All firms within a NAICS sector share the same production process.
- **No Supply Constraints:** Assumes sufficient labor, materials, and capital are available.
- **Technology Assumption:** Unless redefined, industries use the average U.S. technology to produce their outputs (Industry-Technology Assumption).
- **Constant Byproduct Coefficients:** Industries always produce the same mix of primary and secondary outputs.
- **Static Model (No Price Effects):** Prices, technologies, and consumer preferences remain fixed; the model does not capture general equilibrium adjustments.
- **Backward Linkages Only:** Captures upstream supply-chain effects (Indirect + Induced) but not forward (downstream) effects.
- **Time Delineation:** Results are assumed to materialize within a one-year adjustment period.

#### A.4 Regional Purchase Coefficients & Leakage

At the state level, IMPLAN applies Regional Purchase Coefficients to net out “leakage” (imports) of goods and services. This ensures that multipliers reflect only spending that remains within Ohio, trimming national multipliers to realistic local values.

#### A.5 Data Vintage and Deflation

Our analysis uses IMPLAN’s 2022 benchmark data (546-industry schema). All 2023 and 2024 inputs were deflated to 2022 dollars using

IMPLAN's sector-specific deflators, then final results are expressed in constant 2025 dollars for consistency.

## Appendix B Data Sources

This study draws upon a blend of national datasets and Ohio-specific data to ensure robust analysis. The backbone is the IMPLAN economic database, which integrates numerous U.S. federal data sources (BEA, BLS, Census Bureau, etc.) to provide industry-by-industry estimates of output, employment, income, and taxation. Because IMPLAN's 2024 data are not yet published, we used government datasets to estimate the industry's 2024 employment and output. Key national inputs include the Bureau of Economic Analysis's National Income and Product Accounts (for GDP and value-added figures) and the Bureau of Labor Statistics' employment and wage surveys. These were supplemented with Ohio-specific information such as actual investment figures from the Ohio Department of Development, tax incentive records from the Ohio Tax Credit Authority, and industry reports on recent data center projects in the state (for example, capital expenditure details from public filings of Microsoft, Vantage, and others in Central Ohio). Local construction cost indices and utility cost data were incorporated to tailor the IMPLAN model to Ohio's conditions. In summary, a comprehensive mix of primary data (observed investments and taxes) and modeled data (economic multipliers and relationships) underpins all results in this report.

**Note:** The data center industry is defined here using NAICS 518210 (Data Processing, Hosting, and Related Services) within the IMPLAN framework. While this NAICS code encompasses some activities beyond standalone data centers, it remains the most appropriate proxy available. All modeling for the period 2001–2024 was conducted using IMPLAN's 546-industry schema, as the updated 528-industry schema was not yet fully available for time-series analysis at the time. However, with the recent launch of IMPLAN's enhanced time series data—including revised raw data and methodological improvements, there is now potential for further refinement. If the revised data becomes available during our project timeline, we may incorporate them, though any resulting changes to estimates are expected to be modest.

## Appendix C Economic Impact Indicators and Methods

**Employment:** In IMPLAN, employment is measured as the number of jobs (full-time, part-time, and temporary) supported. This includes on-site data center staff (e.g. IT technicians, facility managers, security) as well as jobs in construction, equipment installation, and maintenance during the build-out phase. Because data center construction can be episodic, the employment figures in a given year represent annualized averages. We treated the construction impacts using industry contribution analysis so as not to overstretch short-term construction jobs over multiple years.

**Labor Income:** Labor income consists of wages, salaries, and benefits of workers, plus proprietors' income for any self-employed contractors. It captures how much household earnings are generated by the data center industry and its supply chain. For instance, an electrician's wages from wiring a data center, a software engineer's salary, and a janitorial contractor's earnings at the facility all contribute to labor income. This metric is useful for assessing how much purchasing power (and thus consumer spending impact) stays with Ohio residents.

**Value Added (GDP):** Value added is the contribution to GDP – essentially the industry's output minus the intermediate inputs it purchases. It includes labor income, capital income (profits, depreciation), and taxes on production. This is the clearest measure of the industry's contribution to Ohio's gross state product, analogous to how one

might compare the GDP contribution of automotive manufacturing or agriculture to the state economy. We calculated value added for the data center sector and used it to benchmark against other industries in Ohio.

**Output:** Output represents the total gross sales or expenditures of the industry. For data centers, this includes all operating expenditures (electricity, hardware purchases, cooling, land leases, etc.) and the spending associated with construction. One challenge is that data centers often do not “sell” a product locally (a cloud region serves national customers), so output is a way to measure the value of all goods and services produced and consumed by the centers and their contractors. We took care to model output using IMPLAN’s industry contribution analysis to avoid injecting artificial demand – essentially, we treated the data center operations as an industry whose size is growing, rather than as an external shock, to capture their ongoing contribution.

**Direct, Indirect, Induced Effects:** The analysis separates the direct effect (the economic activity at the data centers and construction sites themselves) from the indirect effect (activity in supply chain industries like utilities, construction materials, equipment vendors) and induced effect (activity from workers spending their incomes in the broader economy). For example, when a data center spends \$10 million on electricity, that money becomes revenue for the utility (an indirect effect), which in turn may hire more line workers or purchase more coal or natural gas, further stimulating the economy. Likewise, the salaries paid to a data center facility technician, or a construction worker will be spent on groceries, housing, healthcare, etc., inducing additional economic activity in those consumer-facing sectors. By summing direct + indirect + induced, we arrive at the total impact. Multipliers (as discussed in the section 2) are simply the ratio of total impact to direct impact. All results were carefully validated to ensure multipliers were in a realistic range and, if needed, adjustments were made (see Appendix F on SAM adjustments) to reflect the capital-intensive nature of data centers.

## Appendix D Fiscal Impact Detail – Tax Categories

Ohio’s fiscal gains from data centers flow through multiple channels and levels of government. IMPLAN’s tax impact reports were utilized to break down the taxes generated by type and by the level of government

Below is a brief on each category:

- **State Taxes:** These include Ohio’s state corporate income tax (computed on the profits attributable to the data center operations within Ohio), state sales and use taxes on any taxable purchases (not exempted by the incentive), personal income tax on wages earned in Ohio, and other state-specific taxes like the Commercial Activity Tax (gross receipts tax). In Ohio, data centers qualifying for the sales tax exemption won’t contribute much in sales/use tax, but they do pay corporate income tax and CAT on any sales. Fuel taxes and license fees (if any equipment or vehicles are involved) also contribute a small amount at the state level.
- **Local Taxes:** At the county and municipal level, the biggest source is property tax on real estate and business personal property (servers, equipment). Many data centers have negotiated abatements that reduce this, but those without full abatement contribute substantial sums, often becoming top taxpayers in their counties. Ohio counties and municipalities also levy income taxes in some jurisdictions, so the salaries of data center employees can generate local income tax revenue in those cities or villages. Additionally, local governments might receive utility users’ taxes or permit fees related to the facilities. Special Districts (school districts, fire districts) also benefit from property tax unless abated— typically, deals are structured so that school districts receive some baseline payment even if formal taxes are abated, recognizing the importance of school funding.
- **Federal Taxes:** While not the focus of Ohio’s policy analysis, it’s worth noting the federal tax contributions: corporate income taxes on data center company profits (relevant for

companies like Amazon, Google, Meta at a national level – though their tax strategies can minimize taxable income), federal personal income taxes on wages (which are significant given the high salaries in this industry), and payroll taxes (Social Security and Medicare) for each job. These federal flows were estimated to be even larger than state/local flows (about \$1.6 billion in 2024 as noted) – indicating the federal government is a major fiscal beneficiary of the data center boom in Ohio.

Understanding this breakdown is important for policy: for instance, Ohio's state government might forego sales tax to attract a project, but local governments will still gain property tax (unless also abated) and the federal government will collect income taxes regardless. Thus, there's an intergovernmental aspect to the cost-benefit – some benefits of Ohio's incentives accrue to federal coffers. Policymakers consider such dynamics when designing state-level incentives (the aim is that enough state/local benefit remains to justify the costs).

## Appendix E Ohio Data Center Output Forecasting Methodology

### Operations

To project future growth (as presented in Section 7), we employed a structured time-series forecasting approach for Ohio's data center output (gross industry sales/output in dollars). The methodology combined historical IMPLAN-based estimates for 2017–2023 with statistical forecasting techniques. Two primary models were used:

- **Double Exponential Smoothing:** This technique is suited for data with trend but no strong seasonality. We set high smoothing parameters ( $\alpha = 0.9990$ ,  $\beta = 0.6661$ ) to give substantial weight to recent growth while still accounting for the trend. This model captured the rapid upward trend in output (which was roughly doubling every few years) and produced an initial forecast trajectory. Performance metrics for the fit included  $RMSE \approx \$539$  million and Theil's  $U = 0.727$ ,

indicating a reasonably good fit though with some positive bias (Theil's  $U < 1$  suggests the model outperforms a naïve trend forecast).

- **ARIMA (0, 2, 0):** We also applied an integrated ARIMA model with two orders of differencing (essentially a linear trend model in disguise). This model, which is equivalent to a second-differenced random walk, handled the non-stationary trend in the data. Its residuals showed minimal autocorrelation (Durbin-Watson statistic  $\sim 2.09$ ) and a slightly higher RMSE (\$566 million) than the smoothing model. Information criteria ( $AIC \approx 40.3$ ) suggested the model was parsimonious and adequately fit.

Both models yielded very similar baseline forecasts; we ultimately selected the ARIMA(0,2,0) forecast for the base-case scenario as it had slightly more conservative long-run growth and statistically robust properties. We also experimented with a multiple linear regression model including external predictors (like Ohio's GDP or U.S. tech investment trends), but multicollinearity issues and limited data points led us to exclude it.

Using these models, we generated three scenarios: Baseline (using ARIMA as central forecast), Expansionary (approximately 15% higher growth path, reflecting an upper confidence bound or an assumption of accelerated AI demand), and Conservative (approximately 10% lower growth path, reflecting potential constraints). These were the basis for the 2030 projections given in Section 8. We assume no major recession or disruptive technological change derails the trend in the forecast period – essentially a continuation of current momentum, adjusted for capacity constraints. The forecast outputs (in constant 2024 dollars) were then input into the IMPLAN model to derive the projected employment, income, and tax impacts for 2030 under each scenario.

### Capital spending (CapEx)

To project the annual capital spending profile of Ohio's data-center pipeline, we first assembled a master list of announced and permitted projects, then allocated each project's total investment

across its construction window:

**Linear distribution by default:** Unless a press release or public filing specifies phased construction, we divide the total investment evenly across the announced start-up and completion years. This simplifying assumption avoids front-loading for site work or back-loading for server-hall fit-out, but yields a conservative, transparent annual pattern readers can replicate.

**Phased builds when disclosed:** If a company states that, for example, 30 MW will deliver in Year 1 followed by two 50 MW expansions, we weight the spending accordingly—typically ~40 % of the outlay in the first phase (earthwork, structure, core MEP) and ~30 % in each subsequent phase (equipment and commissioning).

**Benchmark cost for undisclosed budgets:** For projects that report expected capacity (MW) but not dollar figures, we apply a \$7.5 million per MW rule-of-thumb, the mid-point of recent hyperscale deals in the Midwest. Where

public sources show a materially different ratio we override the default (e.g., Bowling Green’s \$800 million / 225 MW ≈ \$3.6 million per MW, reflecting brownfield reuse and liquid-cooling efficiencies).

**Paused or contingent projects:** Microsoft’s 600 MW New Albany campus is currently on hold and therefore omitted; reactivation would add roughly \$1 billion (at \$7.5 million per MW) to the out-year totals. We flag similar contingencies in footnotes so readers can stress-test the forecast.

**Location assumptions for grid planning.** A handful of press releases (e.g., Stack’s “AI campus”) list capacity but not the exact township. When American Electric Power (AEP) is the interconnection utility, we assign the megawatts to Central Ohio—the portion of AEP’s footprint now seeing the greatest transmission upgrades—so that load-growth estimates stay on the cautious side.

**Land cost treatment:** In Ohio, land costs for data centers average about 10 % of total CapEx;

**Table D1: Year-by-Year Breakdown of Estimated Actual CapEx (2025-2030)**

Year	Estimated CapEx (\$ Billion)	Comments
2025	4.36	This year marks the start of multiple projects, with AWS and Google leading in Central Ohio. Vantage and STACK initiate hyperscale and AI-focused campuses, while Madison County and Hamilton begin smaller projects. The AI Campus in Dayton, served by FirstEnergy, starts construction with a new substation.
2026	7.96	Peak construction phase with AWS’s Sunbury campus and Meta’s AI-optimized expansion in Licking County. New Albany Development and Retail-Colo Hamilton projects ramp up, alongside the start of AWS’s massive hyperscale campus in Dayton.
2027	8.54	This year sees peak spending with AWS New Albany/Pickaway/Sunbury, Google Expansion, Cologix Campus, Vantage Hyperscale, Meta’s Bowling Green project and the Toledo AI Facility contributing significantly.
2028	6.4	Completion of early phases for several projects, with AWS and Google continuing major expansions. Meta’s Bowling Green project and Vantage’s hyperscale campus finalize key construction milestones.
2029	5.56	Focus shifts to completing earlier projects, with AWS’s New Albany/Pickaway and Cologix’s long-term campus driving spending. Google’s expansion nears completion.
2030	3.27	Spending decreases as many projects are completed, with Google finalizing its expansion and Cologix and AWS continuing phased development.

because IMPLAN treats land acquisitions as asset transfers rather than new economic output, we deduct that 10 % from our CapEx inputs and model only tangible goods and services (construction, site-prep labor and materials, and real-estate services), ensuring a conservative impact estimate.

**Inflation treatment.** Nominal project budgets are deflated to 2022 dollars using IMPLAN’s sector-specific deflators for construction inputs. This adjustment keeps real spending comparable across projects announced in different years.

The resulting schedule (see Table D1) shows aggregate CapEx peaking at \$8.54 billion in 2027, when multiple hyperscale campuses overlap in their heaviest build years, before tapering as current projects finish and the pipeline awaits new announcements.

## Appendix F Treatment of Ohio Data Center Fiscal Incentives in Impact Modeling

### F-1 Incentive Treatment in Base-Case IMPLAN Modeling

Accurately accounting for Ohio’s data center tax incentives was crucial in our economic impact model. Rather than simply ignoring taxes (which would overstate profits) or adding back “saved” taxes as if they were spent elsewhere (which would overstate impacts), we followed IMPLAN best practices: modeling incentives as reductions in the cost of investment. In practice, for each data center project, we reduced the initial spending injection by the amount of tax not paid. For example, consider a \$100 million construction project: if \$5 million in sales tax would have been due on materials but was exempted, we input only \$95 million of construction spending into IMPLAN, reflecting that the remaining \$5 million stayed with the company and did not generate Ohio economic activity. Similarly, for property tax abatements, we reduced the operational cost inputs by an amount equivalent to the present value of taxes abated, since those funds remain with

the company (or are potentially distributed to shareholders elsewhere) rather than flowing into local government spending.

This approach has several advantages: it prevents double-counting (we don’t count tax savings as if they were new spending) and it captures the true resource allocation – tax incentives lower the cost for the investor but do not inject new demand into the local economy. It also yields a more conservative, and we believe accurate, estimate of multipliers by not overinflating the direct impact. Our modeling assumed an average effective incentive rate of about 15% of capital cost (combining sales tax and property tax effects) based on Ohio’s typical incentive packages. We tested a range of incentive assumptions (from ~12% to ~18% of project cost) to see if results were sensitive; the differences in overall impact were minor (on the order of 5–7% variance in results), meaning our conclusions about net benefits and multipliers are robust to reasonable variation in incentive levels.

To summarize, Ohio’s incentives were accounted for by effectively treating them as a discount on project spending. This ensures that the economic impact attributed to a data center reflects only the actual dollars flowing into Ohio’s economy (to workers, contractors, suppliers, etc.), not the dollars retained by the company due to tax breaks. This methodology aligns with guidance from regional economic analysts and studies like the Virginia JLARC report (2024) on data center impacts, ensuring that our impact figures (jobs, GDP, taxes generated) are neither overstated nor distorted by the presence of incentives.

Our tax-revenue model is conservative. For example, it excludes local revenue in the form of “cost of doing business,” such as New Albany’s Minimum Annual Payment (MAP), a levy collected from the Data Centers during the abatement period and for five years thereafter. MAP has three parts: (i) a base fee linked to acreage and facility size; (ii) a mandatory Community Authority charge; and (iii) an income-tax “gap filler” that recoups payroll taxes foregone by favoring capital-intensive data centers over more labor-rich uses such as offices or manufacturing.

### F-2 Tax Incentive Sensitivity: Withdrawal of the Sales-Tax Exemption

Estimate of how Ohio’s data-center investment and downstream economic impacts would change if the 100 % sales-tax exemption on IT equipment and construction materials were rescinded.

#### Methodology

Cost delta	Re-apply the blended 7.25 % Ohio sales-tax rate to capital budgets, raising turnkey build cost by 6–8 %.
Elasticity	Apply a capital-mobility elasticity of –0.45 (mid-point) to translate the cost increase into an investment response.
Investment impact	Mid-case CapEx reduction: –35 %. Low/high bounds: –28 % to –41 %.
IMPLAN rerun	Run the reduced CapEx path through the same input–output model, holding all other parameters constant.
Output metrics	Compare revised jobs, GDP and tax streams with the base case.

#### Interpretation

- Paradoxical tax loss: Saving the incentive dollars still leaves Ohio collecting ≈ \$0.5 billion less in state-local revenue by 2030 because a smaller project pipeline erodes the tax base.
- Employment effect: Roughly 43,000 potential Ohio jobs (construction, operations, supply chain) may not exist without the exemption.
- Competitive signal: Large-scale digital-infrastructure builds remain highly cost-sensitive; neighboring states with similar incentives would likely absorb the displaced projects.

#### Sensitivity & Limitations

- Elasticity range (–0.30 to –0.55) drives a ±7 percentage-point swing in CapEx response; even the low-loss case (–28 %) leaves the state worse off fiscally.
- Grid constraints were kept constant; deferred transmission upgrades could independently delay some projects.
- Assumes that other States also have similar infrastructure that Ohio offers.
- Behavioral nuance (smaller projects proceeding without exemption) not modelled; assumption is binary—project proceeds at full scale or shifts out of state.
- Analysis focuses solely on the data-center pipeline and does not dynamically model alternative public uses of foregone incentive dollars.

#### Results (Mid-Case Scenario)

Indicator	Base Case (with Exemption)	No-Exemption Scenario	Change Δ %
Capital investment, 2025-30	\$40.0 bn	\$26.0 bn	–35 %
Jobs supported (2030)	132 k	89 k	–33 %
Contribution to GDP (2030)	\$21 bn	\$14 bn	–32 %
Annual state-local taxes (2030)	\$1.8 bn	\$1.3 bn	–30 %
Net fiscal position	+\$2.0 bn	+\$1.1 bn	–45 %

### Sources for Elasticity Assumption

The capital-mobility elasticity band ( $-0.30$  to  $-0.55$ ) is anchored in peer-reviewed work on state-level tax elasticity of investment.

Study	Scope / Data	Reported Elasticity	Relevance
Chirinko & Wilson (2010)	48 U.S. states, 1963-2006 manufacturing equipment	$\approx -0.48$ (state-average), most between $-0.35$ and $-0.55$	Standard benchmark for footloose capital reacting to state tax policy
Hassett & Newmark (2008)	Panel of U.S. states, equipment & structures	$\approx -0.40$	Confirms mid-range investment response to state tax changes

## Appendix F Social Accounting Matrix (SAM) Adjustments for Data Centers

Data centers have a very different spending pattern than the average “data processing” firm, especially in their exceptionally high spending on electricity and cooling and relatively low labor share. If one uses off-the-shelf IMPLAN data for NAICS 518210 without adjustments, the model may underestimate spending on utilities and overestimate labor/content spending, yielding exaggerated multiplier effects. To correct this, we adjusted IMPLAN’s underlying Social Accounting Matrix (SAM) coefficients for the data center industry, guided by research from Virginia’s JLARC (2024) and industry reports. Specifically, we increased the industry’s electricity expenditure share from  $\sim 0.7\%$  to  $40\%$  of operational spending

This dramatic increase reflects reality: electricity is by far the largest operating cost for large data centers (on the order of \$1 million per MW per year). We also raised the water and utility spending share from near-zero to about  $3\text{--}5\%$ , given significant cooling needs. Correspondingly, we reduced other categories (like services and labor) to maintain the balance. The effect of these adjustments is to lower the calculated employment and GDP multipliers to more realistic levels for a capital-intensive, utility-heavy industry. Without such calibration, IMPLAN might treat a data center more like a generic IT services firm, which would incorrectly suggest that data centers create more jobs per dollar of output than they truly do.

We cross-validated our adjusted cost structure using project data from Ohio’s recent builds (e.g. New Albany campus metrics) and findings from other states. The Virginia JLARC study indicated that allocating  $\sim 40\%$  of operating expenses to electricity substantially reduced the employment multiplier, consistent with an industry that spends much of its budget on out-of-state manufactured equipment and in-state utilities rather than on local labor. We found similar patterns in Ohio: for instance, a new 250 MW campus in New Albany reported annual electricity costs exceeding \$250 million, which indeed is on the order of  $40\%$  of a \$600–700 million revenue stream. We also noted high capital expenditure on equipment – studies from Nebraska (Mangum Economics, 2019) and others show roughly  $60\text{--}70\%$  of initial capital spend is IT and electrical equipment (often sourced globally), with only  $\sim 20\text{--}30\%$  on construction labor and materials.

Our IMPLAN setup for construction impacts therefore limited the local “construction” portion of each project’s spending to about  $20\%$  of total capital investment, directing the rest to sectors like wholesale trade (for equipment purchases) or out-of-region leakage.

These technical adjustments ensure that the impact results are credible. As a result, our reported multipliers and job impacts in the main report are more conservative than they would be without adjustment – but they are grounded in the actual cost structure of data centers. This lends greater confidence that the economic benefits cited (jobs, income, GDP) are not overstated, and that any comparisons to other industries are on an apples-to-apples basis.

## Appendix G Assumptions Employed in Benefit Cost Analysis (BCA)

For our numerical demonstration, the conceptual illustrative framework is applied to a hypothetical proposed data center. Specific assumptions are as follows:

- The analysis considers the project to be the addition of one data center to the current state inventory. The baseline is the current stock only.
- Stakeholder domain is limited to the state of Ohio and its residents.
- The proposed data center is 100 MW and 1M square feet.
- Construction and operating costs per MW and square foot reported in Table G1.
- For the environmental disamenities we adopt the estimates computed in below (Table G2 and G3). Viewshed estimates are based on studies of wind turbines.
- A real discount rate of 2.64 percent.
- Construction phase is 4 years, with construction costs spread evenly over each year.
- Operating costs begin in the fourth year.
- The data center operates for 20 years then shuts down without salvage value.
- For payroll, the relevant average income tax rates are 20% for federal income, 7.65% for federal payroll taxes, 3% for state income taxes, 2.2% school and municipal income taxes.
- Real local property taxes of 10 mills on property acquired for data center. Conveyance fees for real property transfer is 1 million for state and 2 million for local.
- The data center receives a full property tax abatement from the local government and a full sales tax abatement from the state.

**Table G1: Data Center Per Unit Financial Estimates**

Construction per sq ft	Payment
Land & Shell	\$130
Electrical Systems (Construction Input)	\$350
HVAC/Cooling (Construction Input)	\$160
Building Fit Out (Construction Input)	\$150
Construction per MW	
Facility (Construction Input) (Construction Input)	\$10,000,000
Operational per MW	
Electricity (Energy)	\$1,000,000
Staffing (Labor)	\$130,000
Maintenance (Other)	\$210,000
Network Connectivity (Other)	\$50,000
Water and Cooling (Water)	\$30,000

Table G2: Exposure Radius

Externality	Conservative impact radius	Population basis (uses 2020 Ohio mean density $\approx 289$ ppl / mi <sup>2</sup> , U.S. average household size = 2.5)
Noise ( $\geq 51$ dBA)	1 km (0.62 mi; 1.21 mi <sup>2</sup> )	$\approx 350$ people $\rightarrow$ 140 households
Viewshed	5 km (line-of-sight of 18 m structure)	$\approx 8,100$ people $\rightarrow$ 3,200 households
Air pollution (primary PM <sub>2.5</sub> health studies)	5 km (most benefits realized)	Same as viewshed

Table G3: Monetary Valuation Evidence

Impact	Unit	Recent valuation evidence (primary source)	Study range midpoint
Noise	% house-price change per dB	Meta-analysis of 20 airport noise hedonic studies: 0.4 – 1.1 % / dB (mean 0.58 %) (Nelson, 2004)	0.58% per dB
Viewshed	% price change within 5 km	Wind-turbine meta-analysis: 2.04% drop declines to zero by 4.5km (Schutt, 2024)	1.31%
PM <sub>2.5</sub> NOx & SO2	\$/ton avoided	Health benefit per ton PM <sub>2.5</sub> in 2025: \$110k – \$700k (EPA) (pmc.ncbi.nlm.nih.gov), adjust to 2025 dollars using CPI; Others 10% of PM	\$540k/t

Image courtesy of Amazon

