



# Data Centers:

Powering the Internet and our Modern Economy



# Data Center Coalition:

- The Voice of the data center sector
- Advocates for a business climate, policies, and investments that support the growth and competitiveness of the industry
- Information Resource for elected officials, candidates, community leaders, and other stakeholders

# DCC Membership



# DCC Membership

## Large End Users

**ANTHROPIC**

 **CoreWeave**

**OpenAI**

## Associate (Pre-Operational)

 **BEACON  
DATA CENTERS**

**Beale**  
Infrastructure



**CleanArc™**  
DATA CENTERS

 **FLEET**  
DATA CENTERS

 **NSCALE**

**MONTERA**  
INFRASTRUCTURE

 **RELATED  
DIGITAL**

## Industry Advisory Council



**CATERPILLAR®**

**CLAYCO**

THE ART & SCIENCE OF BUILDING

 **CLUNE**

 **DAIKIN**

**EAT•N**  
Powering Business Worldwide

 **HOLDER**

**Johnson  
Controls**

**MCCARTHY®**

 **PCI** | mission  
critical

Life Is On

**Schneider**  
Electric

**RYAN**

 **VERTIV™**

## 2 Main Types of Data Centers

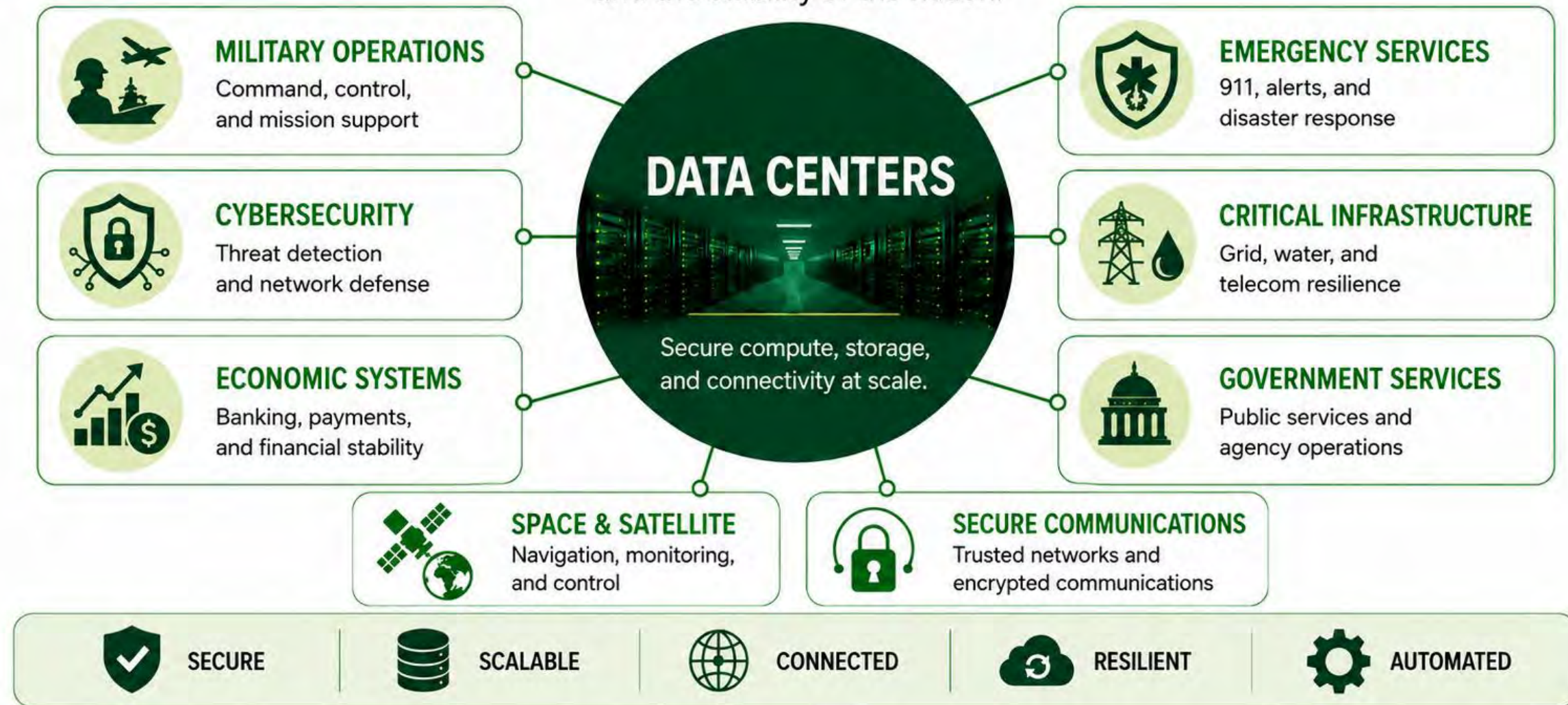
### Self-Perform / Enterprise

Business owns/controls servers and peripherals, may own facility

Multitenant and Build to Suit  
Facility owner leases to one or more tenants

# HOW DATA CENTERS SUPPORT U.S. NATIONAL SECURITY

Powering defense, intelligence, infrastructure,  
and the stability of the nation.



**Resilient. Secure. Scalable.**

# Data Center Basics

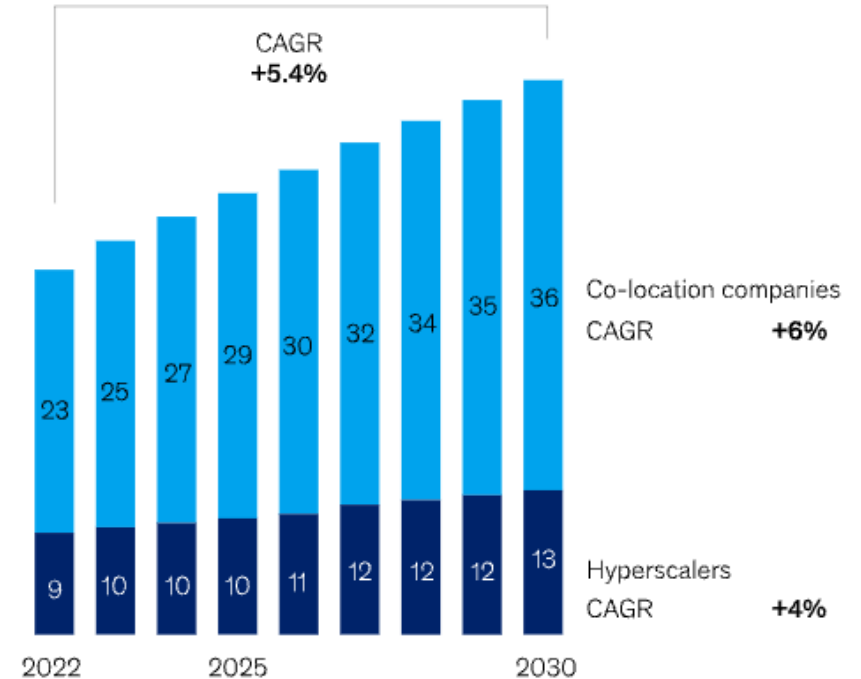
- Building Shell
- Interior Space
- Security
  - Exterior
  - Interior
  - Cyber
- Servers
- Fiber/Networking Connectivity
- Reliable Power 24/7
- HVAC/Cooling

# Increasing Data Center Demand

- In the US market alone, demand—measured by power consumption to reflect the number of servers a data center can house—is expected to reach 80 gigawatts (GW) by 2030, up from 25 GW in 2024, according to McKinsey & Company.
- The United States accounts for roughly 40 percent of the global market.

Global spending on the construction of data centers is forecast to reach \$49 billion by 2030.

Data center construction spending,<sup>1</sup> \$ billion



<sup>1</sup>Includes construction spending by providers. Excludes enterprise spending and any other capital expenditure outside of construction (such as equipment).  
Source: Synergy Research Group

McKinsey & Company



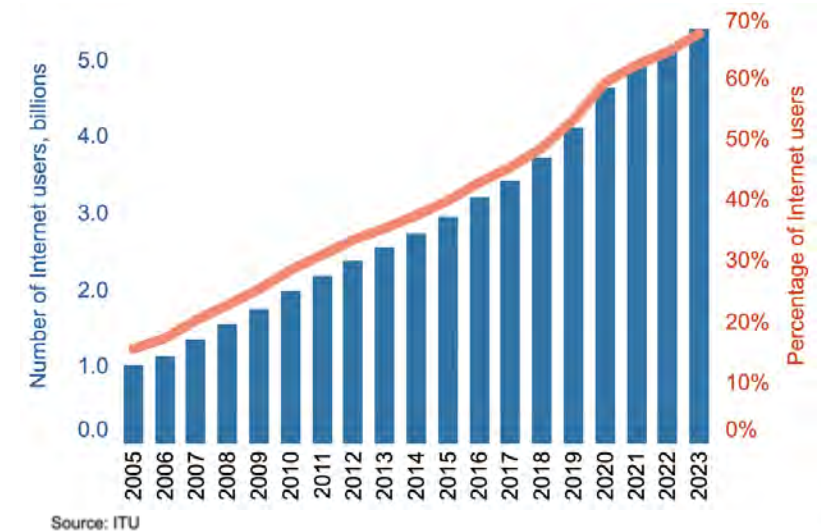
# Number of People/Devices Drives Data Center Demand

"The data center industry has experienced explosive growth over the past decade, driven by ever-increasing demand for cloud services and the expanding use of web-enabled devices globally. [...] In the next five years, consumers and businesses will generate twice as much data as all the data created over the past 10 years."

- JLL, *Data Centers 2024 Global Outlook*

## More People Are Getting Online

- ▶ Approximately 5.4 billion people - or 67% of the global population - are online today. This represents an **increase of 45 %** since 2018. 2.6 billion people are not yet connected to the internet.
- ▶ On average, U.S. households have a total of **21** connected devices.



Sources: JLL, *Data Centers 2024 Global Outlook*, <https://www.us.jll.com/content/dam/jll-com/documents/pdf/research/global/jll-data-center-outlook-global-2024.pdf>

International Telecommunication Union, <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

Deloitte "Shiny new devices may be bringing joy, but who's protecting consumer data?", January 23, 2023 <https://www2.deloitte.com/us/en/insights/industry/technology/consumer-data-privacy.html>

# What Happens Every Minute



- **16K** Tik Tok videos are uploaded



- **19 M** text messages are sent



- **252 M** Emails are sent



- **6 M** Google searches



- **1.5 B** steps in America



**Every SECOND**

**31K** credit and debit card swipes are processed at Visa's data center in Loudoun County

# New Products/Experiences/Applications Drive Demand

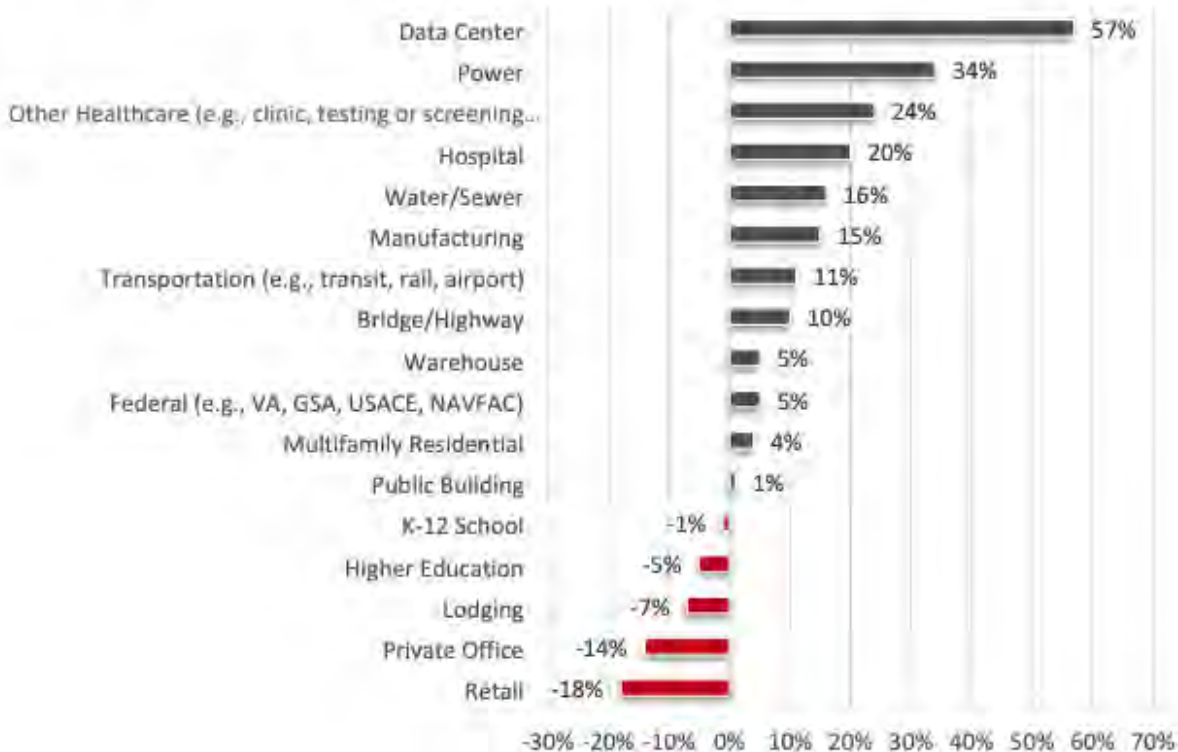
- ▶ Cloud Services
- ▶ Generative AI
- ▶ Business Apps
- ▶ Healthcare
- ▶ Internet of Things/Connected Devices
- ▶ Streaming Video

- ▶ Virtual/Augmented Reality
- ▶ eCommerce
- ▶ Machine Learning
- ▶ Payment Processing
- ▶ Online Learning
- ▶ Autonomous Vehicles
- ▶ Innovation!

# Data Center Trends

Compared to 2025, do you expect the available dollar value of projects you compete for in 2026 to be higher/lower/about the same (answer for all market areas in which your business operates)  
Responses: 935

Net % expecting 2026 value of projects to be Higher or Lower than 2025



| Higher | Lower | Same |
|--------|-------|------|
| 65%    | 8%    | 27%  |
| 46%    | 12%   | 41%  |
| 39%    | 15%   | 45%  |
| 38%    | 18%   | 44%  |
| 35%    | 18%   | 47%  |
| 36%    | 21%   | 42%  |
| 34%    | 23%   | 44%  |
| 31%    | 21%   | 48%  |
| 29%    | 24%   | 47%  |
| 29%    | 24%   | 47%  |
| 33%    | 28%   | 39%  |
| 27%    | 26%   | 46%  |
| 27%    | 29%   | 44%  |
| 26%    | 31%   | 44%  |
| 22%    | 30%   | 48%  |
| 21%    | 35%   | 44%  |
| 19%    | 37%   | 43%  |



**AGC**  
THE CONSTRUCTION  
ASSOCIATION

**Sage**

## 2026 Construction Outlook National Survey Results

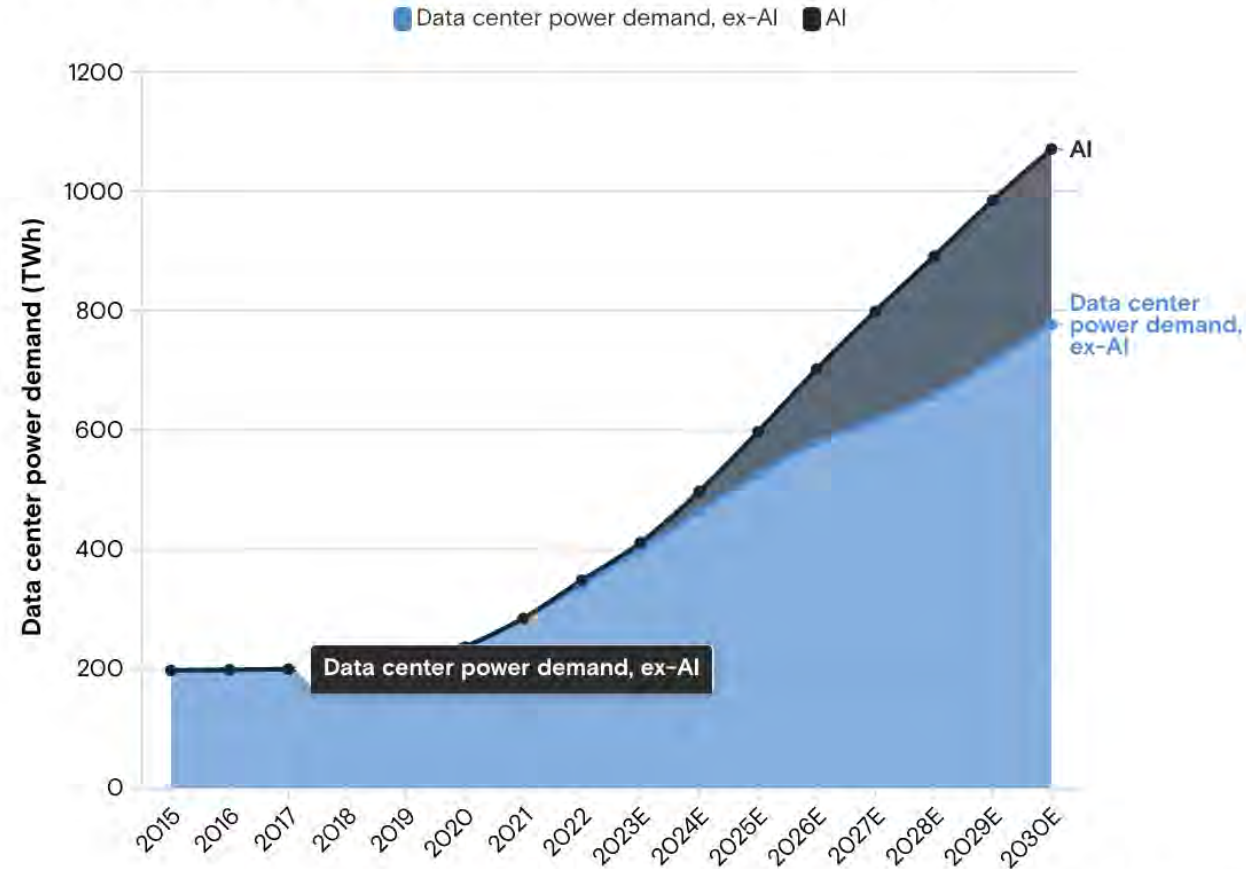
Total Responses: 951. Responses varied for some questions. Percentages are based on responses to each question and may not sum to 100 due to rounding.

\*Net equals difference between number of "Higher" and "Lower" responses as percent of total.



# Global Data Center Power Demand

Global data center power demand growth



Source: Masanet et al. (2020), IEA, Cisco, Goldman Sachs Global Investment Research

**Goldman Sachs**

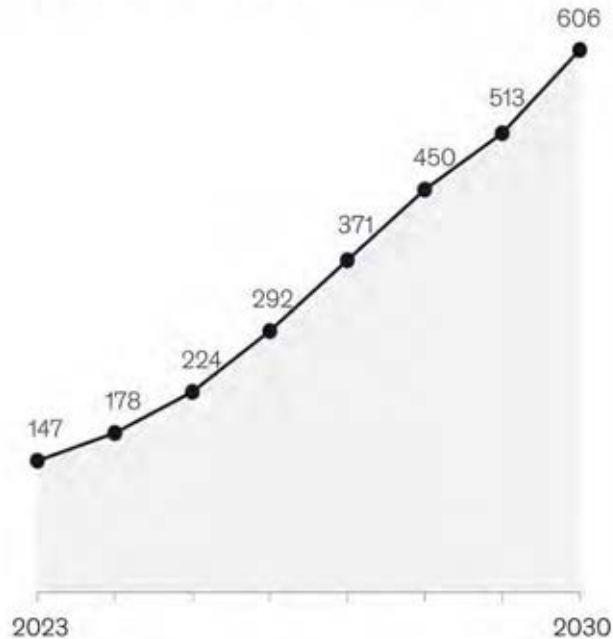


# Data Centers Trends

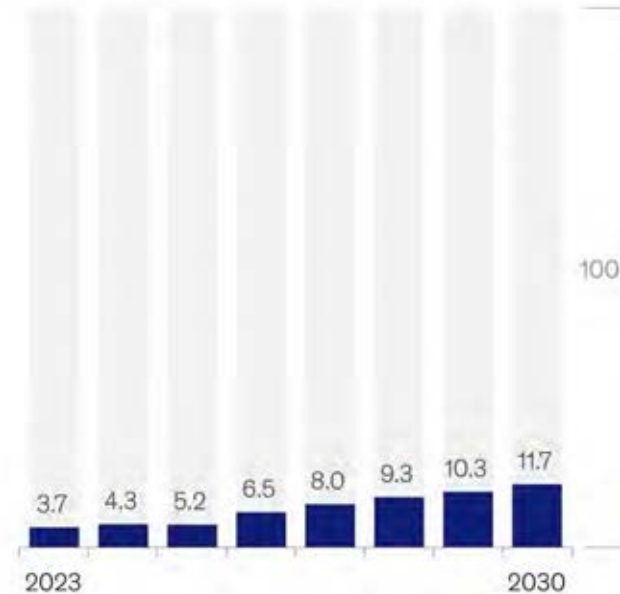
**Demand for power for data centers is expected to rise significantly in the United States.**

**US data center electricity demand, medium scenario**

Energy consumption, terawatt-hours



Share of total US power demand, %

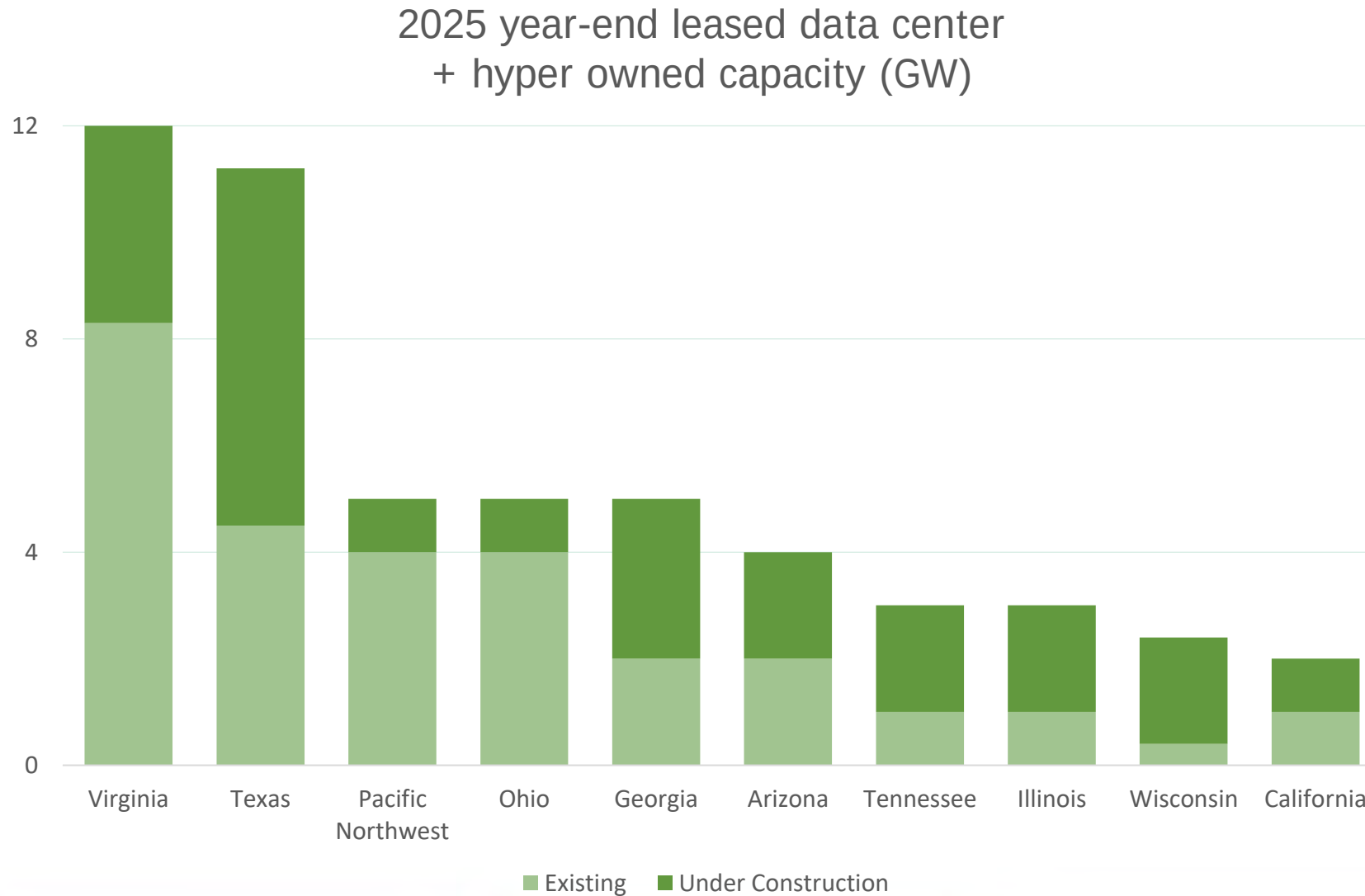


Source: Global Energy Perspective 2023, McKinsey, October 18, 2023; McKinsey analysis

McKinsey & Company



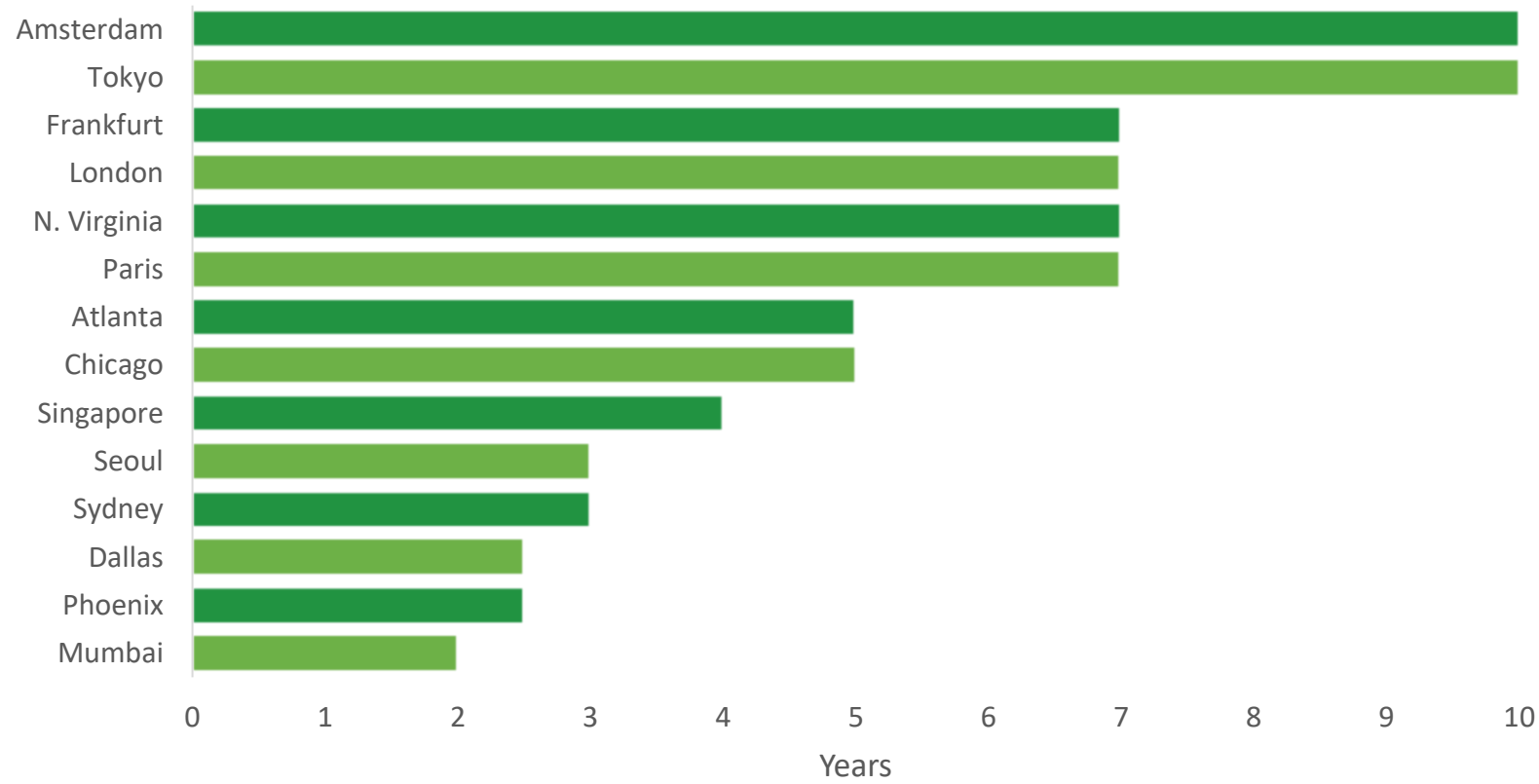
# Data Center Market Outlook



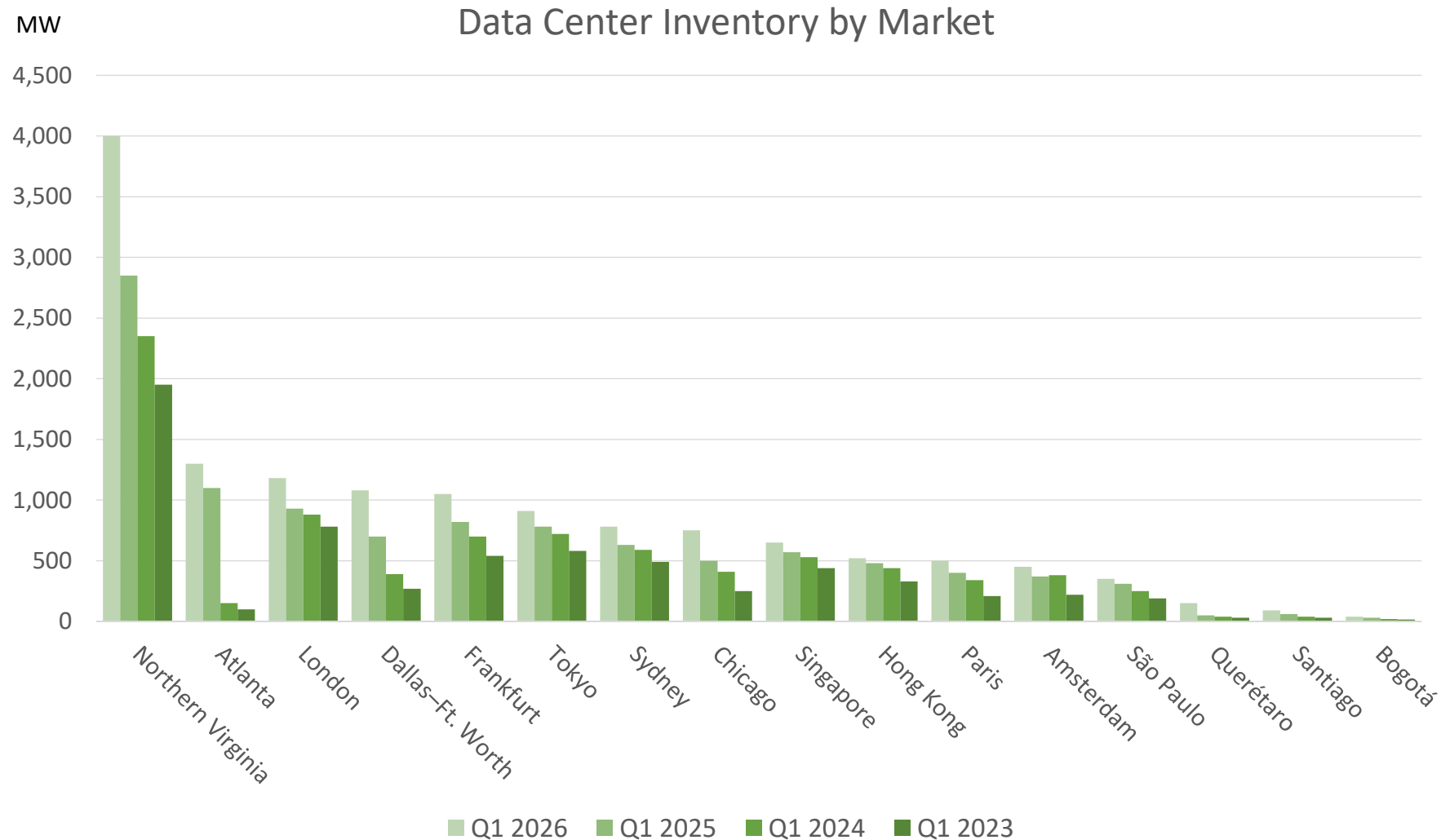
*Source: JLL Research, 2026*

# Global Data Center Market Outlook

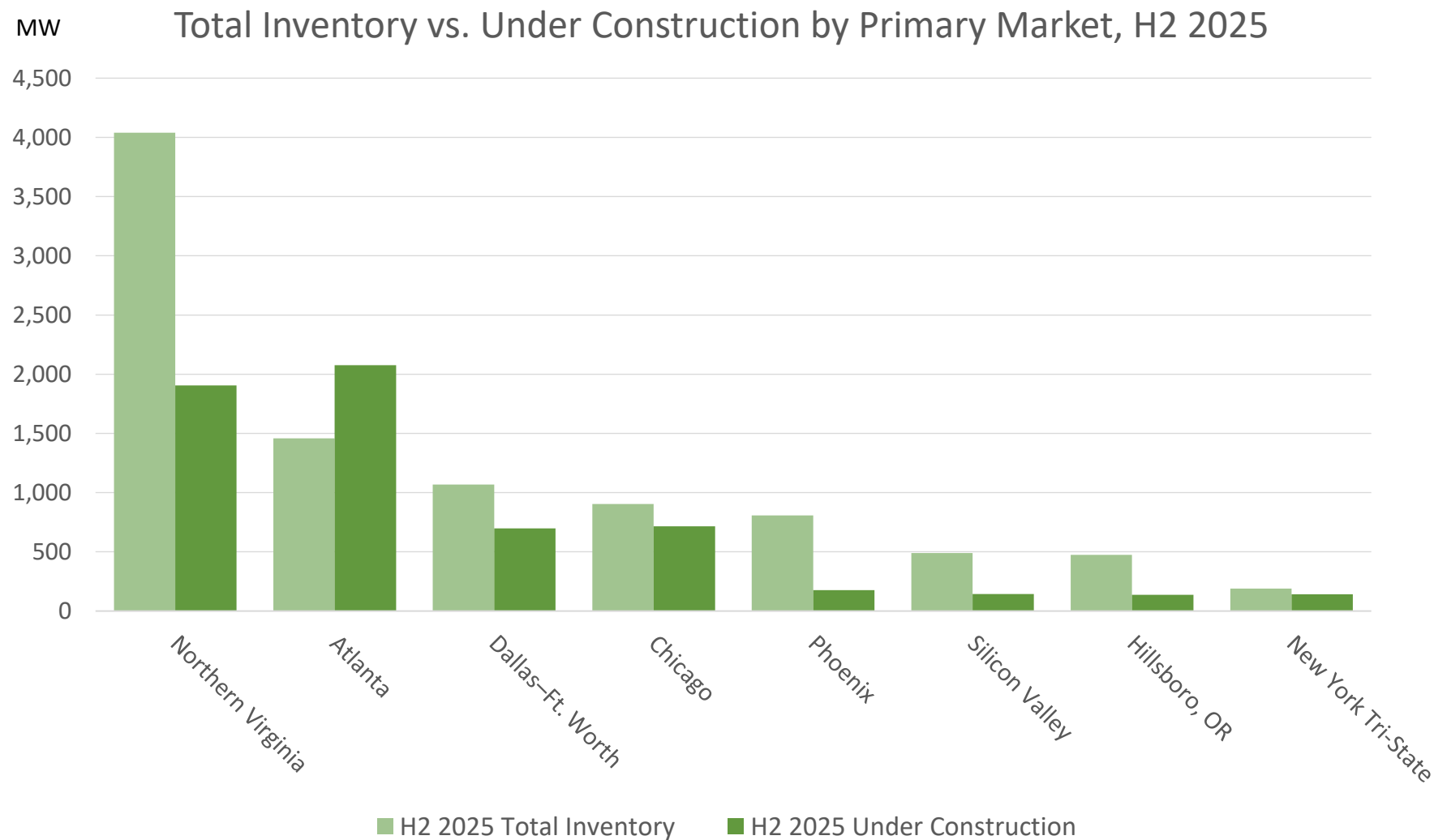
Average grid connection lead times for  
new 50MW data centers (years)



# Global Data Center Market Outlook



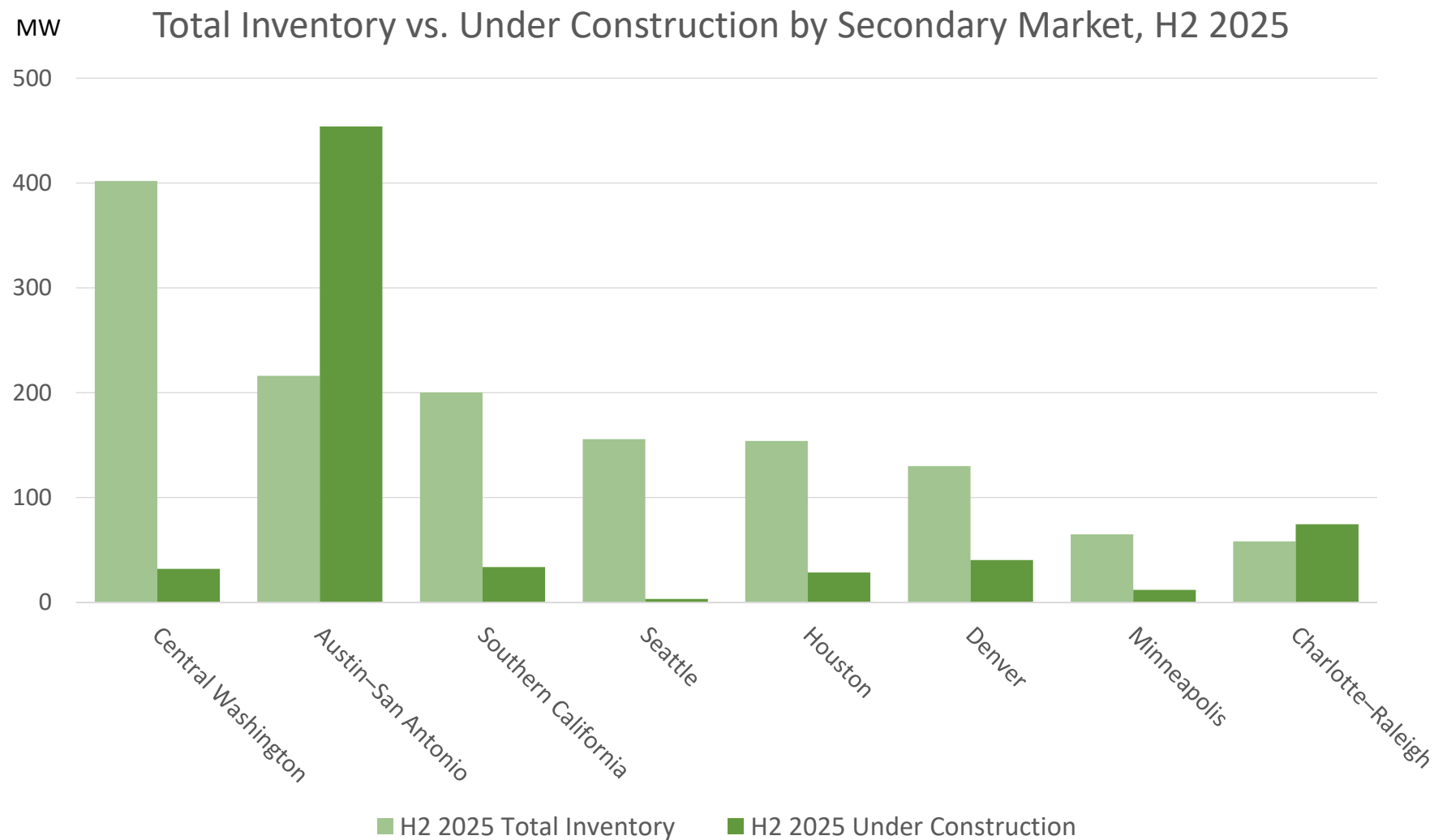
# Data Center Trends



*Source: CBRE Research, CBRE Data Center Solutions, H2 2025*



# Data Center Trends



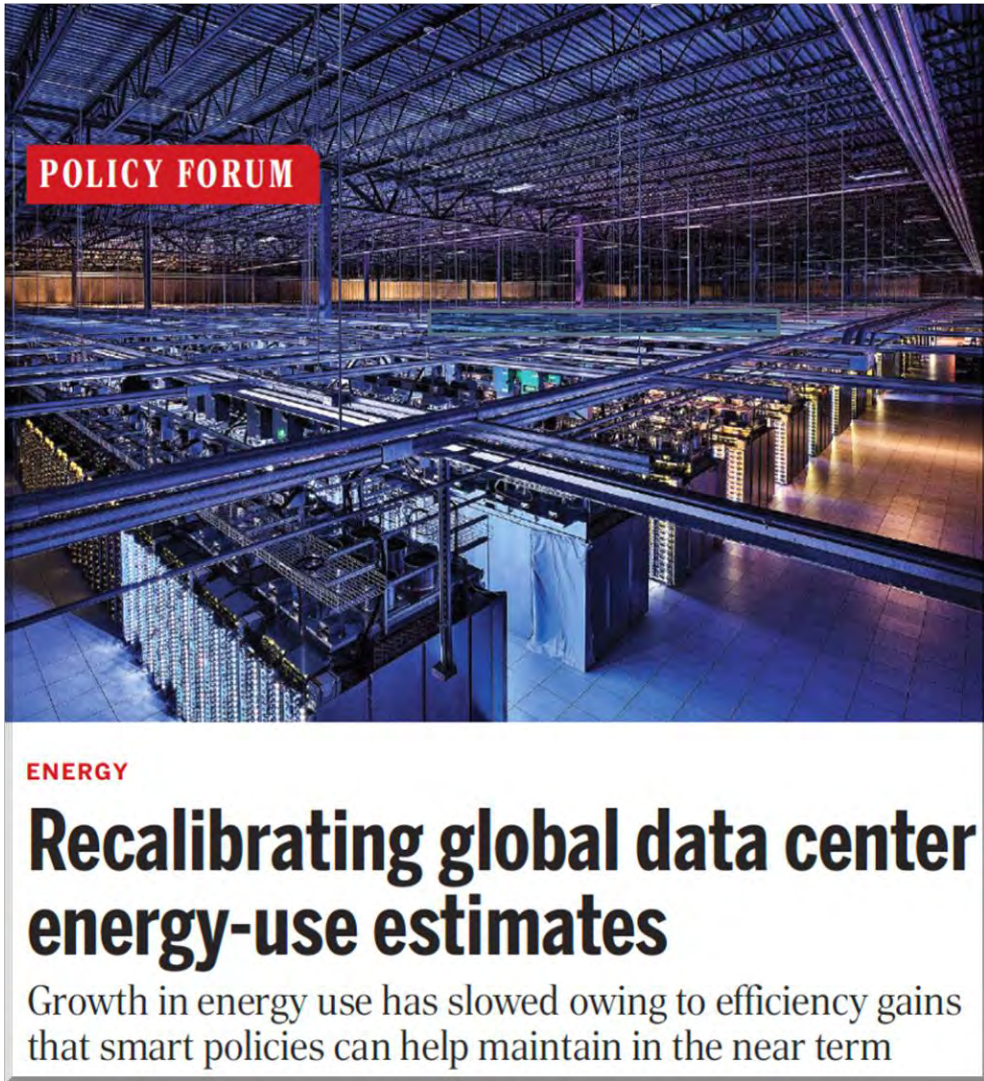
*Source: CBRE Research, CBRE Data Center Solutions, H2 2025*



# Key Siting Considerations Include

- Time to Market
- Access to Fiber/Connectivity
- Access to Water for Industrial Purposes
- Access to Clean, Reliable, Affordable Energy
- Climate and Risk of Natural Disaster
- Land Availability and Cost
- Tax and Regulatory Climate
- Ownership/Occupancy Costs
- Access to Skilled Construction and Technology Workforce

# Data Centers Are Highly Efficient Consumers of Energy



- ▶ “In 2010, the researchers estimated that 79 percent of data center computing was done in smaller traditional computer centers, largely owned and run by non-tech companies.”
- ▶ “By 2018, 89 percent of data center computing took place in larger, utility-style cloud data centers.”
- ▶ A 2020 study of data centers globally found that while their computing output jumped 550% from 2010 to 2018, their energy consumption rose only 6%.

# Data Centers and Energy

CRAIN'S CHICAGO BUSINESS

**Opinion: Data center growth fuels clean power and job creation. too**

**Clarion Ledger**

Mississippi's proving data centers don't always mean higher power bills

**The Economist**

Americans' electricity bills are up.  
Don't blame AI

Were it not for data centres, prices might be even higher

**The Atlanta Journal-Constitution**

BUSINESS

**Georgia Power CEO teases plans to lower rates, touts data center expansion**

**The Washington Post**

There's a reason electricity prices have been rising. And it's not data centers.

**PBS NEWS HOUR**

**How data center power demand could help lower electricity prices**

**21  
ALIVE**

I&M to lower electric rates, citing revenue from data centers



# Understanding the Drivers of Rising Electricity Rates and the Role of Data Centers

- UNCLEAR RELATIONSHIP BETWEEN GROWTH & RATE HIKES: State-level analysis shows **no direct correlation between load growth and rising electricity rates**.
- DATA CENTERS CAN LOWER CUSTOMER RATES: A study cited in the report found that **the data centers evaluated paid their full infrastructure costs plus a surplus**, which generated net positive revenue for those utilities.
- INDUSTRY IS PAYING ITS OWN WAY: The review found **no evidence of a historic cost shift from data centers to other customers**. New mechanisms are increasingly being used to ensure data centers pay for their share of grid investments.
- PRIMARY DRIVERS OF RISING RATES: **Retail rate outcomes are influenced by broader supply demand dynamics**, market design choices, fuel cost volatility, generation retirements, inflation, and other utility investments such as grid modernization, wildfire mitigation and policy compliance — not load growth alone.
- PJM MARKET ANALYSIS: In a new analysis of the PJM market (13 states and DC\*), E3 **found data center driven load growth accounted for ~50% of the capacity cost increase** while five other factors drove the other 50%.

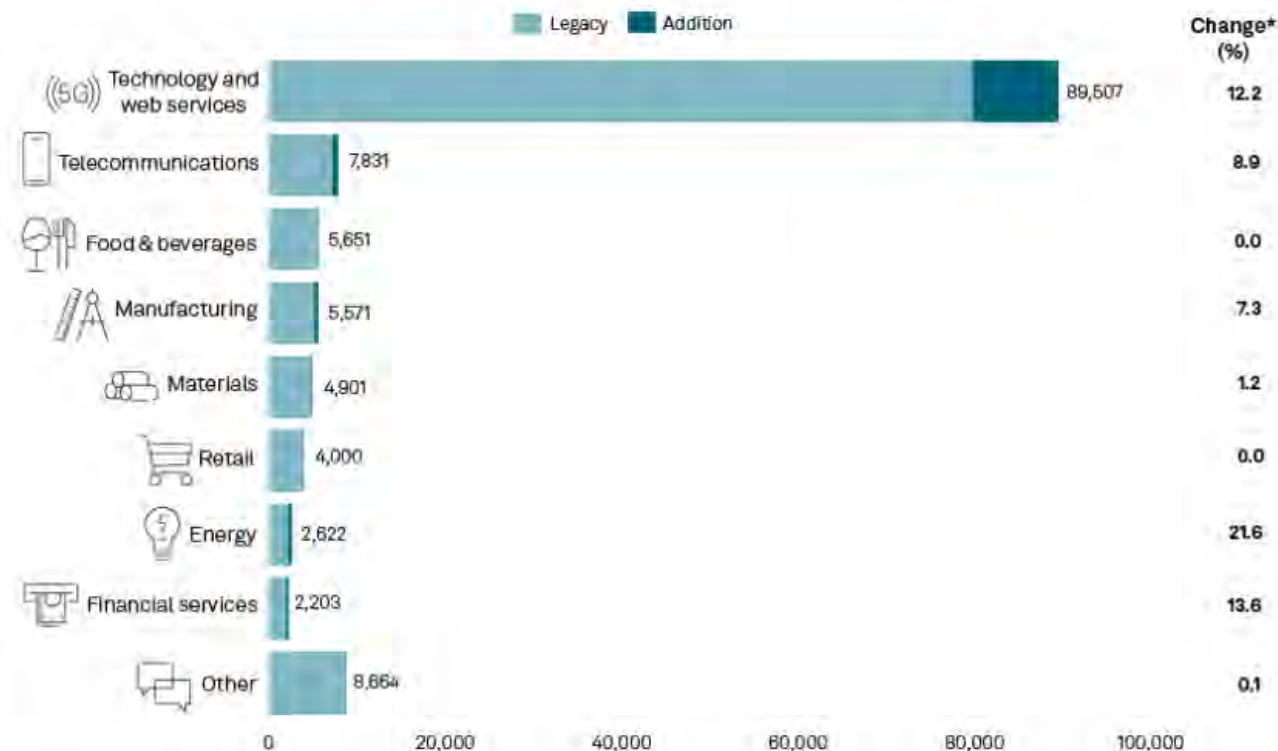
*\*Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia.*

Source: Energy + Environmental Economics (E3), Understanding the Drivers of Rising Electricity Rates and the Role of Data Centers, May 2026, <https://www.ethree.com/electricity-rate-drivers-data-center-role-2026/>



# Advancing Access to Clean Energy and Greening the Grid

Contracted US carbon-free energy capacity by sector (MW)



As of July 10, 2025.

\* From February 2025 to July 2025.

Tracked carbon-free energy capacity contracted with US projects only. Includes totality of Microsoft-Brookfield deal pending further visibility into US and Europe breakout for contracted capacity.

Cumulative capacity. All tracked deals.

Analysis does not include most on-site corporate renewable capacity, such as rooftop solar systems.

Legacy database adjusted based on availability of new information.

Sources: S&P Global Market Intelligence; public reports.

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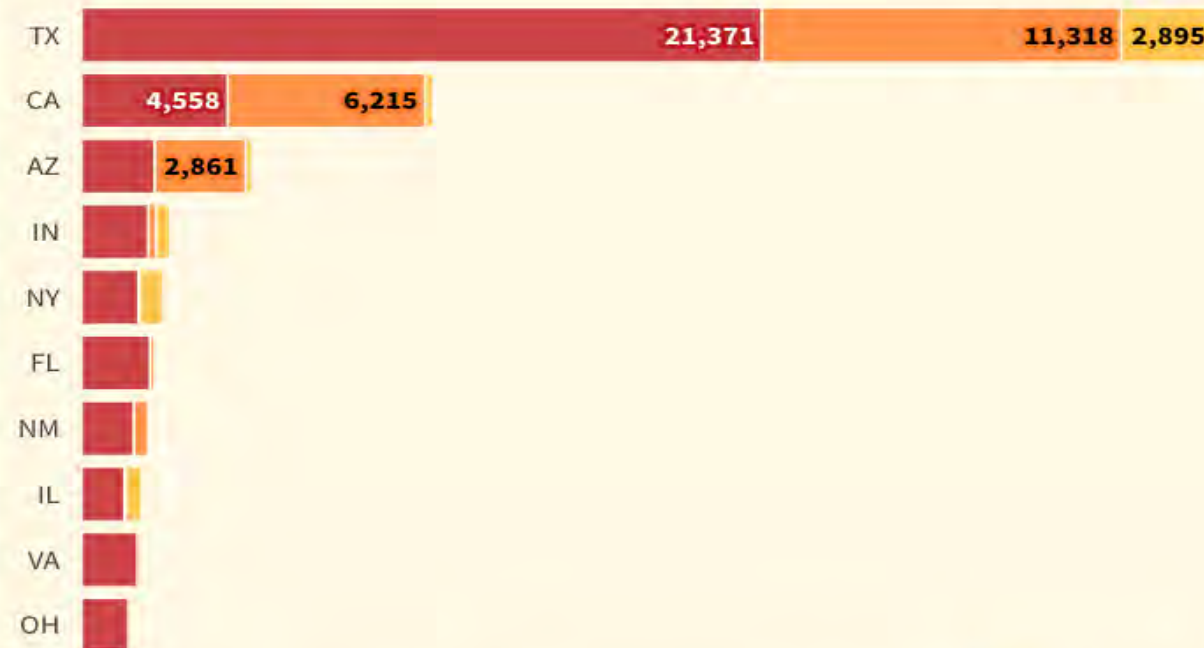
Source: S&P Global, Corporate-signed US clean energy surpasses 130 GW amid shifting policy support, July 30, 2025, <https://www.spglobal.com/market-intelligence/en/news-insights/research/corporate-signed-us-clean-energy-surpasses-130-gw-amid-shifting-policy-support>

# Clean Energy and Greening the Grid

## Texas plans to build far more clean energy than other states

Top 10 states by planned capacity additions, in megawatts, July 2024–Dec. 2025

■ Solar ■ Batteries ■ Wind



Source: [Cleanview analysis of U.S. Energy Information Agency data](#)

 **CANARY MEDIA**

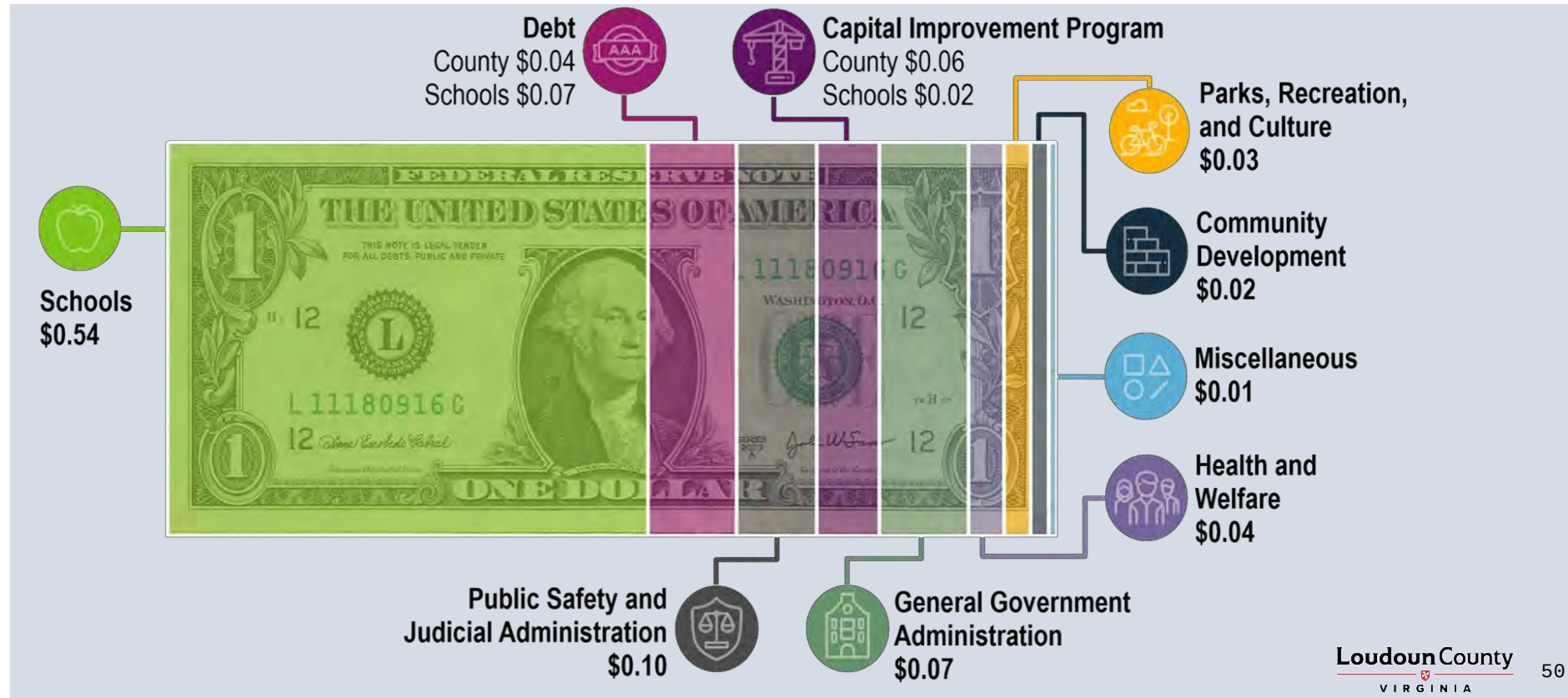


Source: Canary Media, Chart: Texas plans to build the most clean energy of any state, September 13, 2024, <https://www.canarymedia.com/articles/clean-energy/chart-texas-plans-to-build-far-more-clean-energy-than-any-other-state>

# Why Data Centers?

- Tremendous Capital Investment
- Big Driver of Tax Revenue
- High Wage Jobs, Low Demand on Services
- Substantial Construction Jobs and Activity
- Building and Strengthening Tech Ecosystem
- Catalyst for Renewable Energy

# Data Center Tax Revenues Help Address Local Priorities



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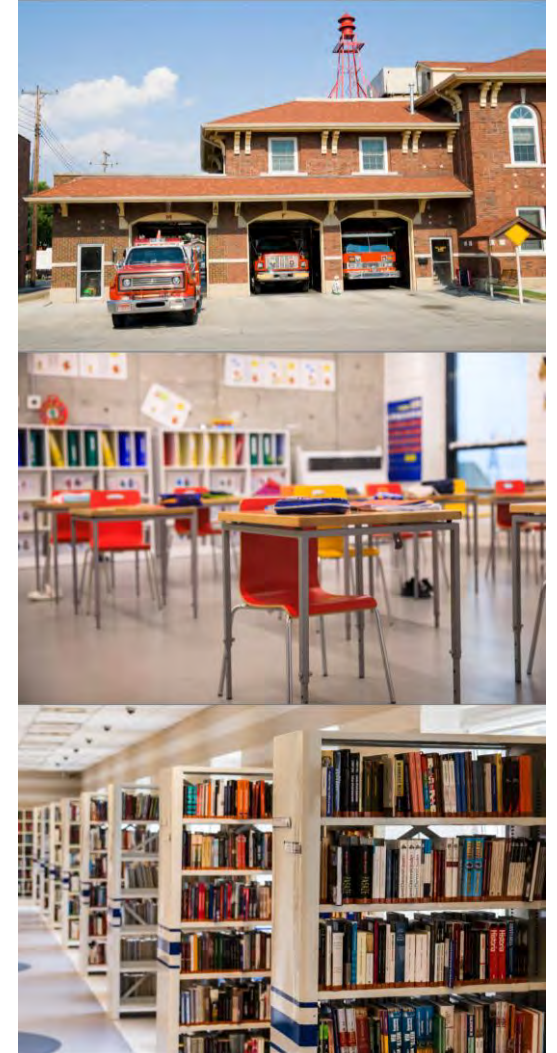
2024 Local Tax Benefit For Every  
\$1 Spent on Local Services

Loudoun County

\$1.00 → \$26.00

Prince William County

\$1.00 → \$13.00



# U.S. Data Center Industry

## Jobs

- 1,005,080 direct jobs in 2024
- 5.5 million in total employment in 2024 — 17% increase from 2023
- \$525 billion in total labor income in 2024 — 22% increase from 2023
- Each job in the data center industry supports 4.5 jobs elsewhere in the economy

## GDP

- \$1.7 trillion in cumulative impact on GDP 2023-2024

## Taxes – Federal, State, and Local

- \$369 billion in total impact from 2023-2024



# Data Center Industry Drives Job Creation & Workforce Development



## The Tech Job Paying Six Figures, No College Degree Required

The technicians who keep America's colossal data centers humming enjoy huge demand and earnings potential —and defy the traditional blue- and white-collar categories of work

Deborah Martinez Castellanos checks out the rooftop chillers at the data center where she works to ensure they are functioning properly.

By [Te-Ping Chen](#) [Follow](#) | Photographs by Maansi Srivastava for WSJ  
Aug. 14, 2024 5:30 am ET

## THE WALL STREET JOURNAL.

BUSINESS

## Data Centers Are a 'Gold Rush' for Construction Workers

Surging demand means six-figure pay and more perks

By [Te-Ping Chen](#) [Follow](#)

Nov. 29, 2025 8:00 pm ET



Sources: [The Wall Street Journal](#), "The Tech Job Paying Six Figures, No College Degree Required", Aug. 14, 2024 & [The Wall Street Journal](#), "Data centers Are a 'Gold Rush' for Construction Workers", Nov. 29, 2025

# Virginia's Data Center Industry

Overall, the data center industry is estimated to contribute annually:

- **74,000 Jobs**

- JLARC estimates data center direct employees and contract workers accounted for over 8,000 full-time jobs in FY23.
- On average, data center employees and contractors earn about \$100,000 per year, varying based on job role
  - In FY23, data centers added more than 800 new full-time jobs.



- **\$5.5 billion in labor income**

- **\$9.1 billion in GDP to Virginia's economy**

# Data Centers in Virginia

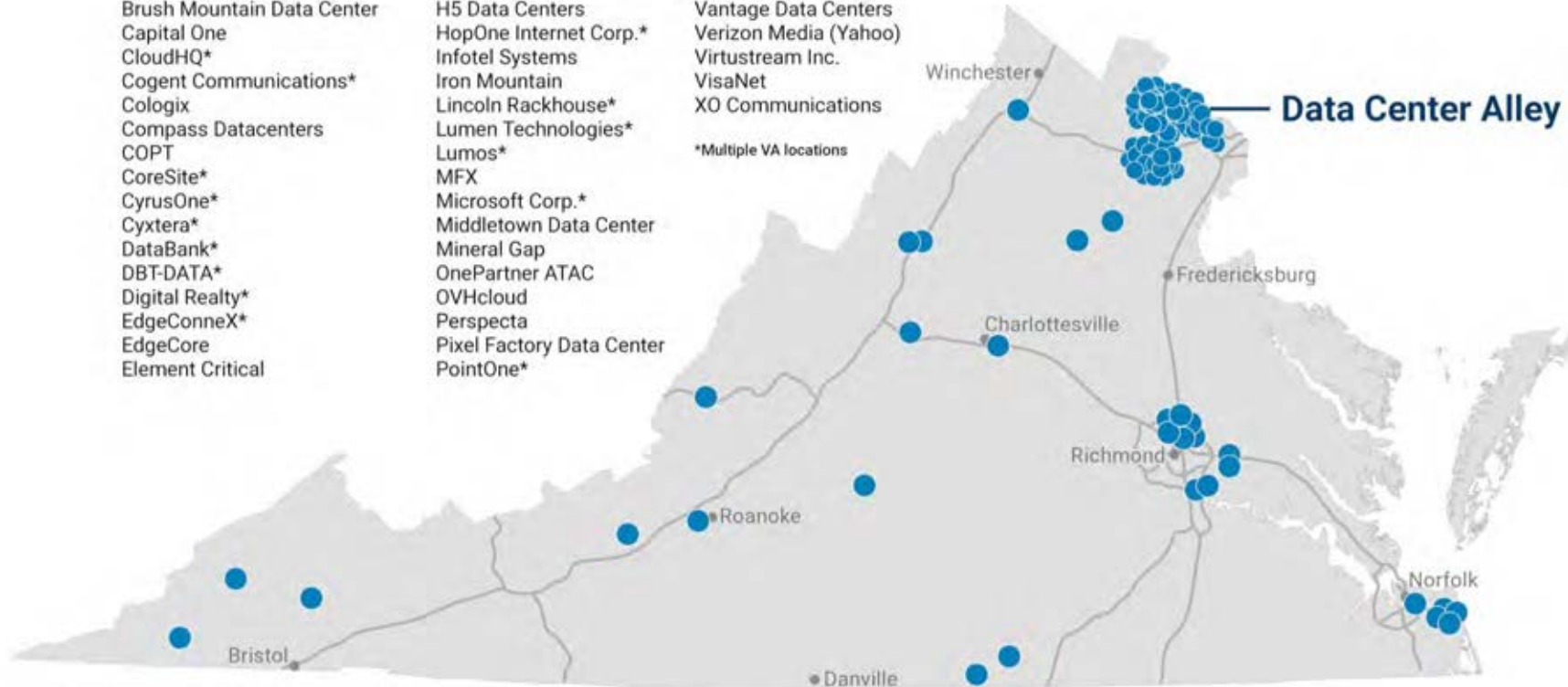
## Major Data Centers in Virginia

365 Data Centers  
ACA International  
Aligned  
Amazon Web Services\*  
Aptum Technologies  
Bank of America  
Brush Mountain Data Center  
Capital One  
CloudHQ\*  
Cogent Communications\*  
Cologix  
Compass Datacenters  
COPT  
CoreSite\*  
CyrusOne\*  
Cyxtera\*  
DataBank\*  
DBT-DATA\*  
Digital Realty\*  
EdgeConneX\*  
EdgeCore  
Element Critical

Equinix\*  
Evoque  
Facebook  
Flexential  
Globalinx Data Centers  
Google\*  
H5 Data Centers  
HopOne Internet Corp.\*  
Infotel Systems  
Iron Mountain  
Lincoln Rackhouse\*  
Lumen Technologies\*  
Lumos\*  
MFX  
Microsoft Corp.\*  
Middletown Data Center  
Mineral Gap  
OnePartner ATAC  
OVHcloud  
Perspecta  
Pixel Factory Data Center  
PointOne\*

Quality Technology Services (QTS)\*  
RagingWire\*  
Sabey Data Centers  
SAIC and VITA\*  
Stack Infrastructure\*  
Telxius  
Vantage Data Centers  
Verizon Media (Yahoo)  
Virtustream Inc.  
VisaNet  
XO Communications

\*Multiple VA locations

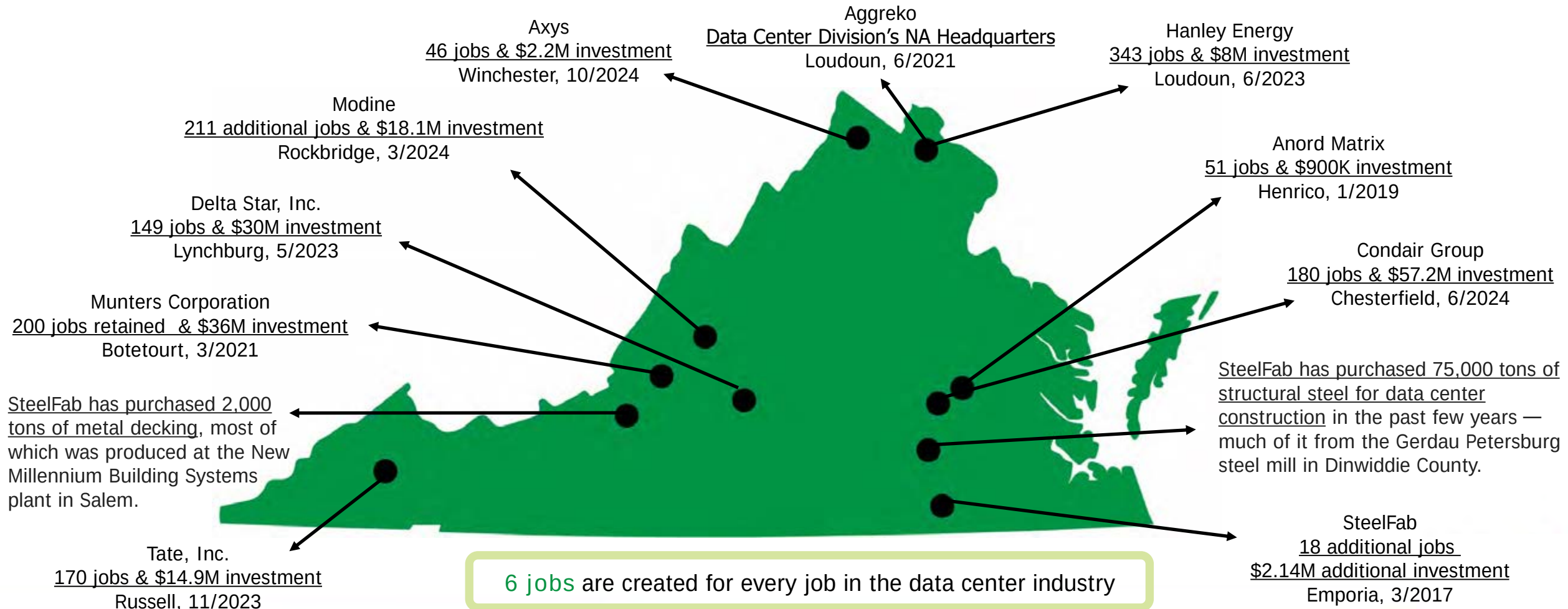


Source: Data Center Hawk, Baxtel.com, Company Websites

● Publicly Disclosed Data Center Location

# Virginia Data Center Ecosystem

Virginia's data centers establish and grow business ecosystems in the Commonwealth, from suppliers, service providers, construction firms, heavy equipment, rental companies, restaurants, etc.



# Georgia's Data Center Industry

## Jobs

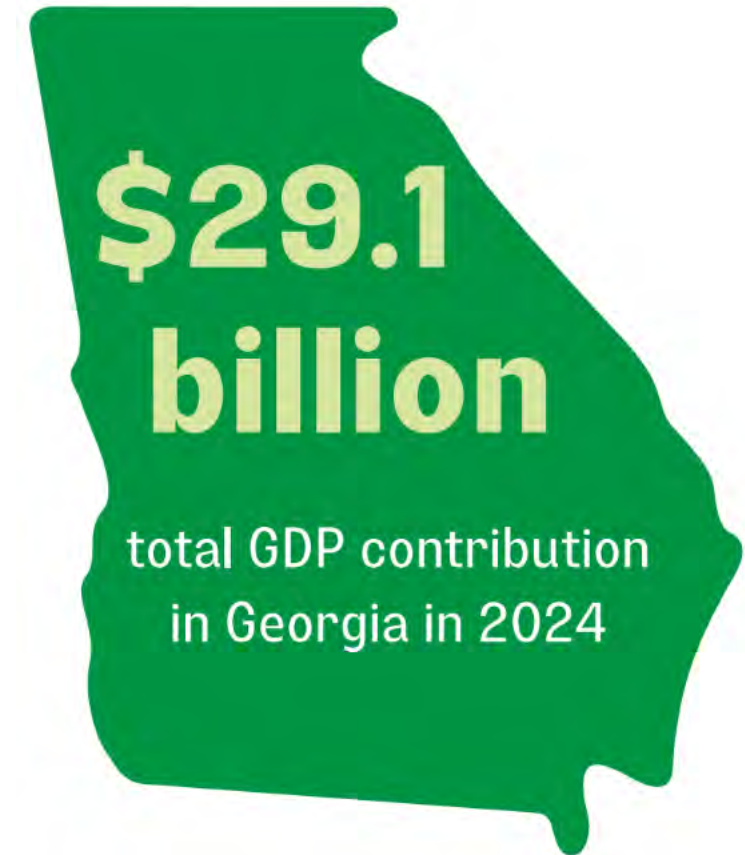
- 2024 direct employment: 47,230
- 2024 total (direct, indirect, and induced) employment: 187,660

## Labor Income

- 2024 total labor income: \$16.1 billion

## GDP and Taxes Impact

- \$29.1 billion to Georgia GDP in 2024
  - 17 % increase since 2023
- \$2 billion in state and local tax revenue in 2024
  - \$1.1 billion in state tax revenue in 2024
  - \$925 million in local tax revenue in 2024



# Arkansas Data Center Industry

## Jobs

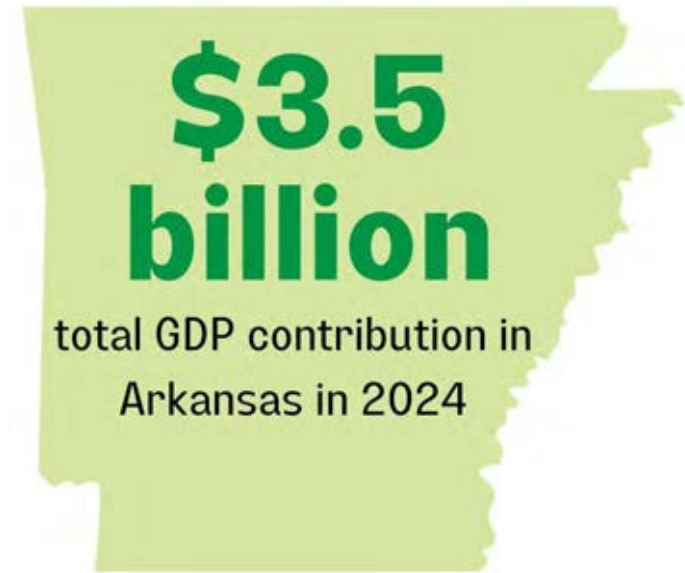
- 2024 direct employment: 7,100
- 2024 total (direct, indirect, and induced) employment: 25,760

## Labor Income

- 2024 total (direct, indirect, and induced) labor income: \$1.8 billion

## GDP and Taxes Impact

- \$3.2 billion (direct, indirect, and induced) to Arkansas GDP in 2024
  - 10 % increase since 2023
- \$311 million (direct, indirect, and induced) in state and local tax revenues in 2024
  - \$246 million in taxes to state government
  - \$65 million in taxes to local governments



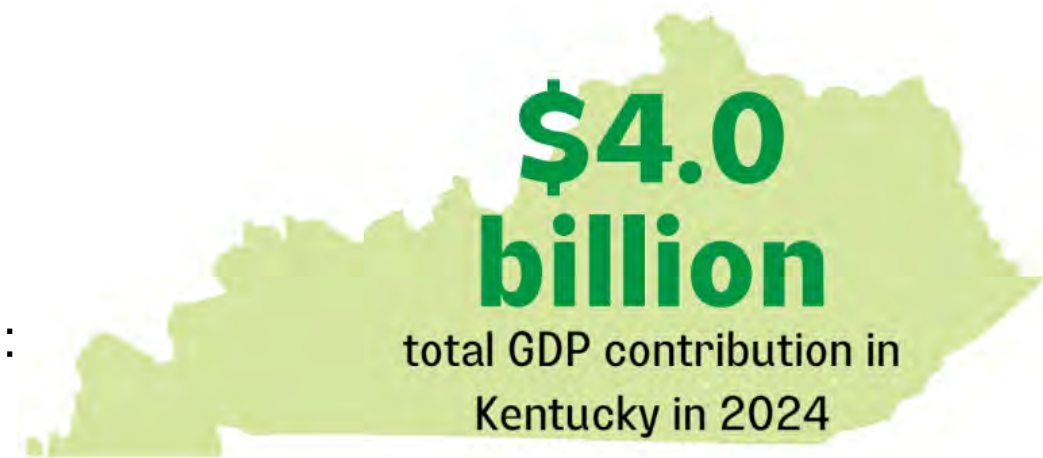
# Kentucky Data Center Industry

## Jobs

- 2024 direct employment: 8,620
- 2024 total (direct, indirect, and induced) employment: 33,210

## Labor Income

- 2024 total (direct, indirect, and induced) labor income: \$2.5 billion



## GDP and Taxes Impact

- \$4.0 billion (direct, indirect, and induced) to Kentucky GDP in 2024
  - 18 % increase since 2023
- \$414 million (direct, indirect, and induced) in state and local tax revenues in 2024
  - \$285 million in taxes to state government
  - \$128 million in taxes to local governments

# Missouri Data Center Industry

## Jobs

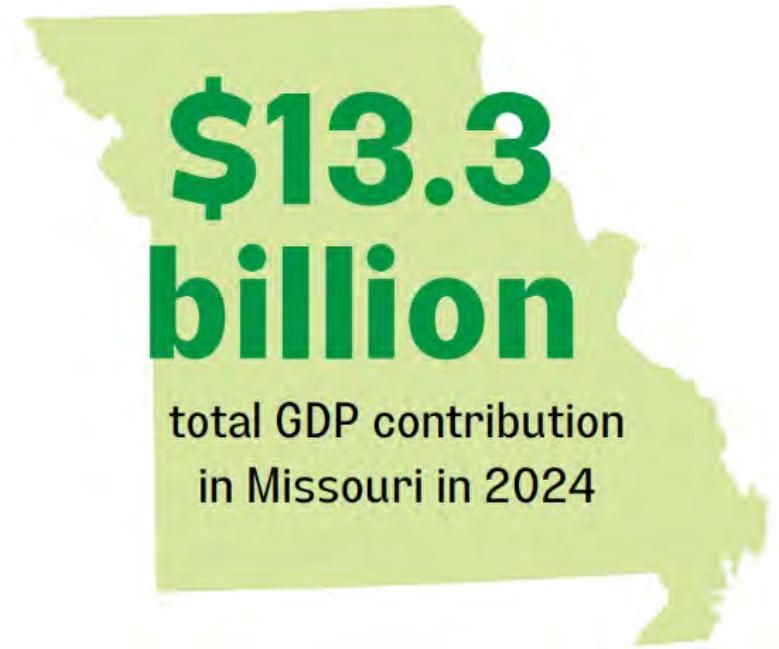
- 2024 direct employment: 22,660
- 2024 total (direct, indirect, and induced) employment: 85,260

## Labor Income

- 2024 total (direct, indirect, and induced) labor income: \$7.6 billion

## GDP and Taxes Impact

- \$ 13.3 billion (direct, indirect, and induced) to Missouri GDP in
  - 10 % increase since 2023
- \$ 1.1 billion (direct, indirect, and induced) in state and local tax revenues in 2024
  - \$ 567 million in taxes to state government
  - \$ 489 million in taxes to local governments



# Mississippi Data Center Industry

## Jobs

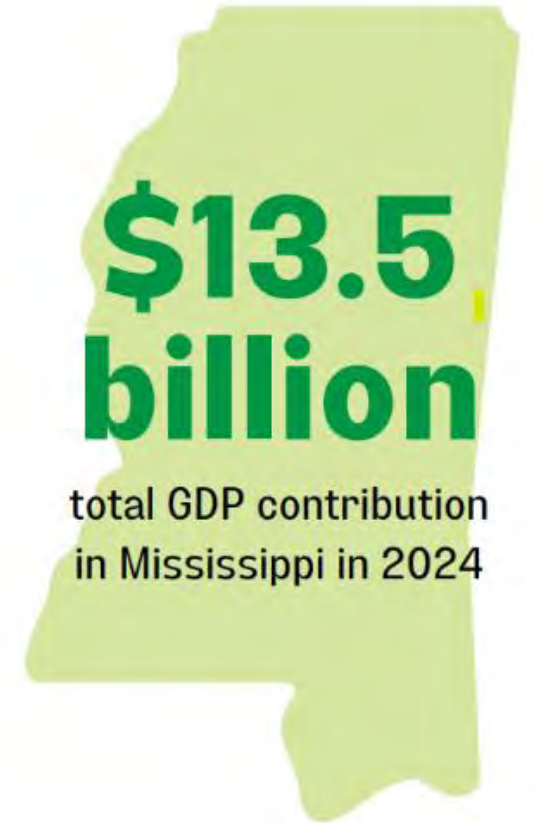
- 2024 direct employment: 3,030
- 2024 total (direct, indirect, and induced) employment: 13,710

## Labor Income

- 2024 total (direct, indirect, and induced) labor income: \$768 million

## GDP and Taxes Impact

- \$ 1.3 billion (direct, indirect, and induced) to Mississippi GDP in 2024
  - 26 % increase since 2023
- \$140 million (direct, indirect, and induced) in state and local tax revenues in 2024
  - \$100 million in taxes to state government
  - \$40 million in taxes to local governments



# North Carolina Data Center Industry

## Jobs

- 2024 direct employment: 25,750
- 2024 total (direct, indirect, and induced) employment: 117,280

## Labor Income

- 2024 total (direct, indirect, and induced) labor income: \$10.6 billion

## GDP and Taxes Impact

- \$18.5 billion (direct, indirect, and induced) to North Carolina GDP in 2024
  - 28 % increase since 2023
- \$1.4 billion (direct and indirect) in state and local tax revenues in 2024
  - \$879 million in taxes to state government
  - \$512 million in taxes to local governments



# South Carolina Data Center Industry

## Jobs

- 2024 direct employment: 10,780
- 2024 total (direct, indirect, and induced) employment: 44,120

## Labor Income

- 2024 total (direct, indirect, and induced) labor income: \$3.3 billion

## GDP and Taxes Impact

- \$5.6 billion (direct, indirect, and induced) to South Carolina GDP in 2023
  - 21 % increase since 2023
- \$478 million (direct and indirect) in state and local tax revenues in 2024
  - \$283 million (direct and indirect) in state tax revenue in 2024
  - \$195 million (direct and indirect) in local tax revenue in 2024



# Tennessee Data Center Industry

## Jobs

- 2024 direct employment: 15,690
- 2024 total (direct, indirect, and induced) employment: 68,100

## Labor Income

- 2024 total (direct, indirect, and induced) labor income: \$10.2 billion

## GDP and Taxes Impact

- \$ 10.2 billion (direct, indirect, and induced) to Tennessee GDP in 2024
  - 21 % increase since 2023
- \$ 625 million (direct, indirect, and induced) in state and local tax revenues in 2024
  - \$ 417 million in taxes to state government
  - \$ 209 million in taxes to local governments



**total GDP contribution in  
Tennessee in 2024**

# West Virginia Data Center Industry

## Jobs

- 2024 direct employment: 2,820
- 2024 total (direct, indirect, and induced) employment: 10,210

## Labor Income

- 2024 total (direct, indirect, and induced) labor income: \$723 million

## GDP and Taxes Impact

- \$1.2 billion (direct, indirect, and induced) to West Virginia GDP in 2024 - 26 % increase since 2023
- \$122 million (direct, indirect, and induced) in state and local tax revenues in 2024
  - \$88 million in taxes to state government
  - \$34 million in taxes to local governments



# What's the Average Useful Life of a Data Center?

The average useful life of data center: 25-30 years

Cooling equipment: 10-15 years

Electrical (transformer, UPS < PDUs): 8-20 years



# Why Do Data Centers Use Water?

Servers and IT equipment generates heat as a byproduct of computing  
That heat must be continuously removed or equipment fails

## Scope 1 (Direct)

- Water used on-site (mainly cooling)

## Scope 2 (Indirect)

- Water used in the process of generating electricity

## Scope 3 (Embodied)

- Water used to produce building materials (chip, steel, cement, etc.)

## No Industry is Doing More to Advance Clean Energy

- In 2024, data center companies accounted for roughly half of all corporate clean energy procurement in the U.S.
  - 90 % in North America and Europe in 2025
- By 2030, 72 % of data centers water consumption is projected to be tied to power generation
- Clean energy generation uses near negligible amounts of water compared to thermal power generation

# Data Center Onsite Cooling

There is no one size fits all solution for data center cooling: climate, availability of water, and design

Energy-water tradeoff: cooling systems that use more water use less energy and vice versa

## Cooling Methods

### Server Level Cooling

Air cooling: fans and AC move hot air out and cool air in

Liquid cooling: liquid coolant removes heat directly from chips, moved away, cooled, recirculated

Hybrid: combination

### Building Level Cooling

Non-evaporative: uses fans and AC to reject heat to outside air

Evaporative cooling: uses water evaporation to reject heat

# Where Does This Water Come From?

Misconception: "It is all drinking water"

- Municipal water
  - Potable drinking-quality water
- Reclaimed "purple pipe"
  - Treated wastewater, non-potable
- Groundwater / well water
  - Pumped on or near site
- Rainwater harvesting



# Putting Data Center Water Use into Perspective

**~39 BGY**

Data center water use  
in 2025

**2,500 BGY**

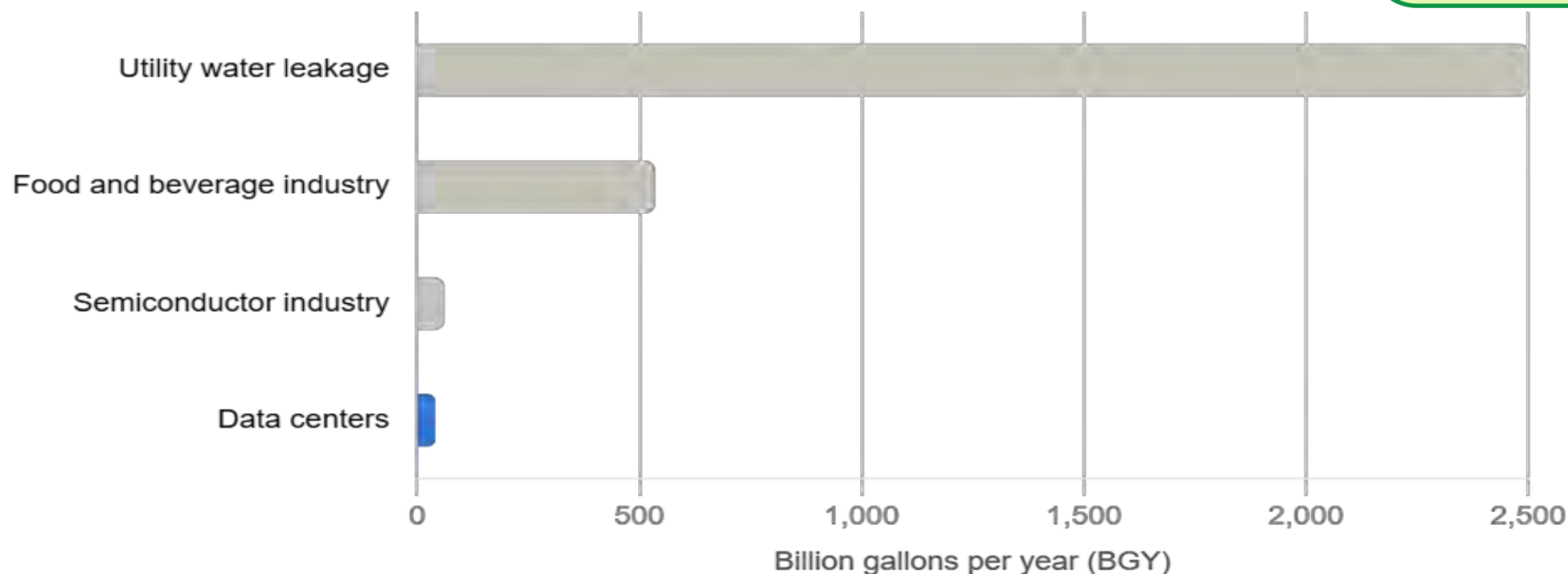
Utility water leakage

**533 BGY**

Food and beverage  
industry water use

**59 BGY**

Semiconductor  
industry water use



# Putting Data Center Water Use into Perspective

- Virginia Joint Legislative Audit and Review Commission (JLARC): 83% of data centers use as much, if not less, water than a large commercial office building (world's largest data center market)
  - o The report also found data center water use in the state is sustainable.
- Arizona State University (Kyl Center for Water Policy): data centers in Arizona are estimated to use less water (acre-feet) than:
  - o Sand & gravel mining
  - o Golf courses
  - o Semiconductor manufacturing (which has a significant presence in the state)
  - o Beverage facilities

# Data Center Community Partnerships

## Strengthening Resilience for All

- Investing in local water infrastructure to help communities:
  - o Expand reclaimed water systems
  - o Detect leaks
  - o Improve agricultural irrigation efficiency
- Watershed replenishment projects
- Water-positive commitments



# Main Takeaways

1. Data center water use is real, but it is a small piece of a much bigger picture
2. Headlines often conflate metrics that overstate the impact
3. Innovation is moving fast
4. Our industry is investing directly in community and economy-wide water resilience, not just our own footprint
5. There is no one-size-fits-all answer; the right approach is local



# Thank you!

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