Data Centers:

Powering the Internet and our Modern Economy

DATA CENTER COALITION

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

ANTHROP\C

CoreWeave

OpenAI

Associate (Pre-Operational)

BEACON DATA CENTERS

Beale Infrastructure

CleanArc DATA CENTERS

FLEET DATA CENTERS

NSCALE

MONTERA INFRASTRUCTURE

RELATED DIGITAL

Industry Advisory Council

ALL4

CATERPILLAR®

CLAYCO THE ART & SCIENCE OF BUILDING

CLUNE

DAIKIN

EATON Powering Business Worldwide

HOLDER

Johnson Controls

McCARTHY

PCI mission critical

Life Is On Schneider Electric

RYAN

VERTIV

Data Center Models

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

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Data Center Basics

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

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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**









Source: McKinsey & Company, What the real estate industry needs to know about data centers, October 15, 2024,
https://www.mckinsey.com/industries/real-estate/our-insights/what-the-real-estate-industry-needs-to-know-about-data-centers

DATA CENTER COALITION

HOW DATA CENTERS SUPPORT U.S. NATIONAL SECURITY

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

MILITARY OPERATIONS
Command, control,
and mission support

CYBERSECURITY
Threat detection
and network defense

ECONOMIC SYSTEMS
Banking, payments,
and financial stability

EMERGENCY SERVICES
911, alerts, and
disaster response

CRITICAL INFRASTRUCTURE
Grid, water, and
telecom resilience

GOVERNMENT SERVICES
Public services and
agency operations

DATA CENTERS



Secure compute, storage,
and connectivity at scale.

SPACE & SATELLITE
Navigation, monitoring,
and control

SECURE COMMUNICATIONS
Trusted networks and
encrypted communications

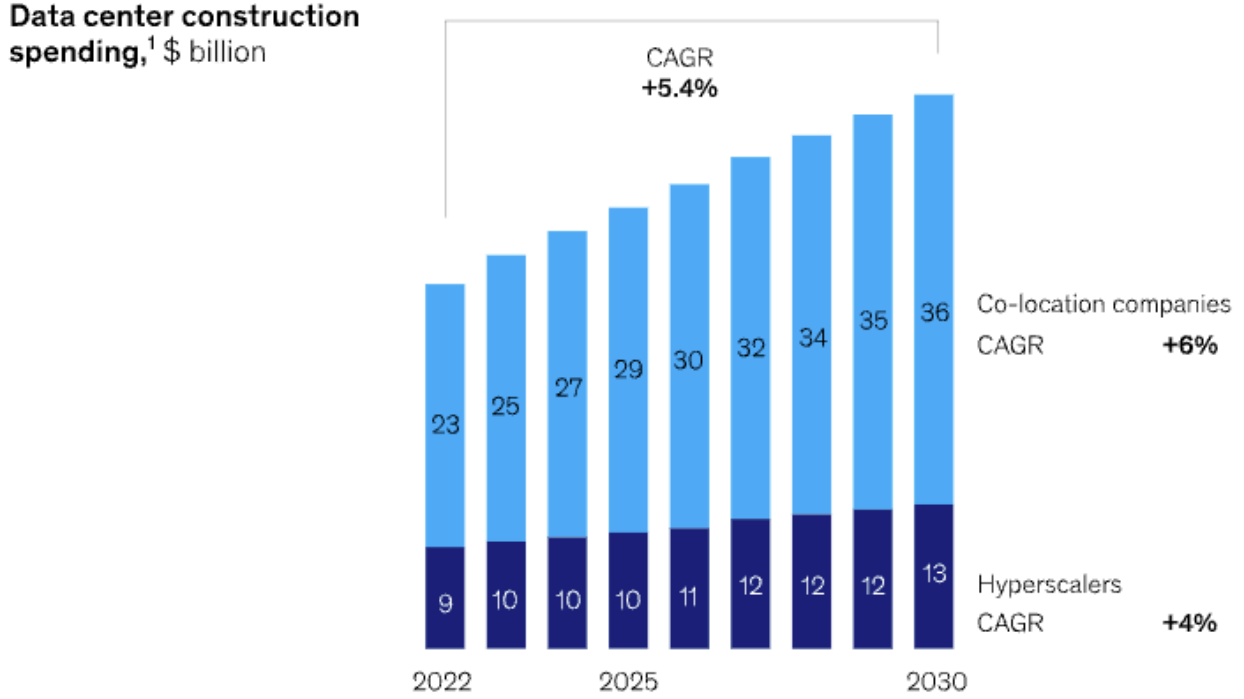
SECURE | SCALABLE | CONNECTED | RESILIENT | AUTOMATED

Resilient. Secure. Scalable.

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.



[1]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

Source: McKinsey & Company, "How data centers and the energy sector can sate AI's hunger for power"*, September 17, 2024,* *https://www.mckinsey.com/industries/private-capital/our-insights/how-data-centers-and-the-energy-sector-can-sate-ais-hunger-for-power*

DATA CENTER COALITION

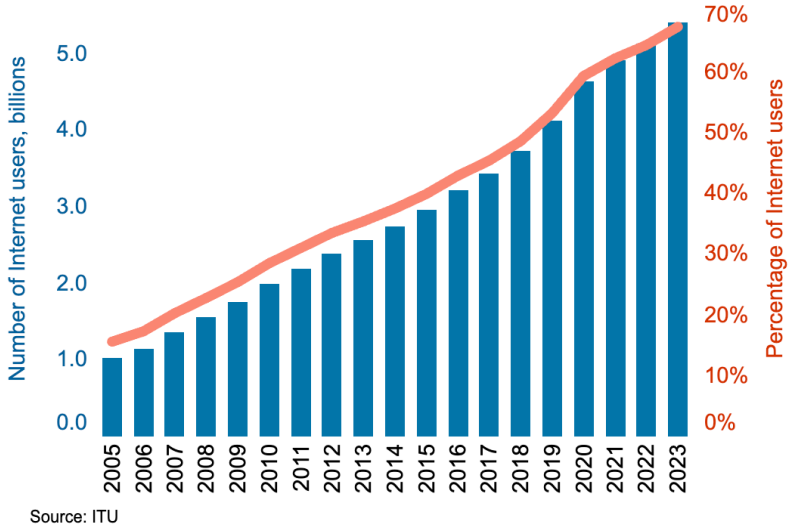
Number of People/Devices Drives Data Center Demand

"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

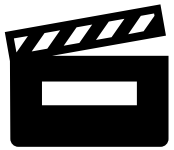
- Approximately 5.4 billion people - or 67% of the global population - are online today. This represents an **increase of 45% since 2018**. 2.6 billion people are not yet connected to the internet.
- On average, U.S. households have a total of **21 connected devices**.



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

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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

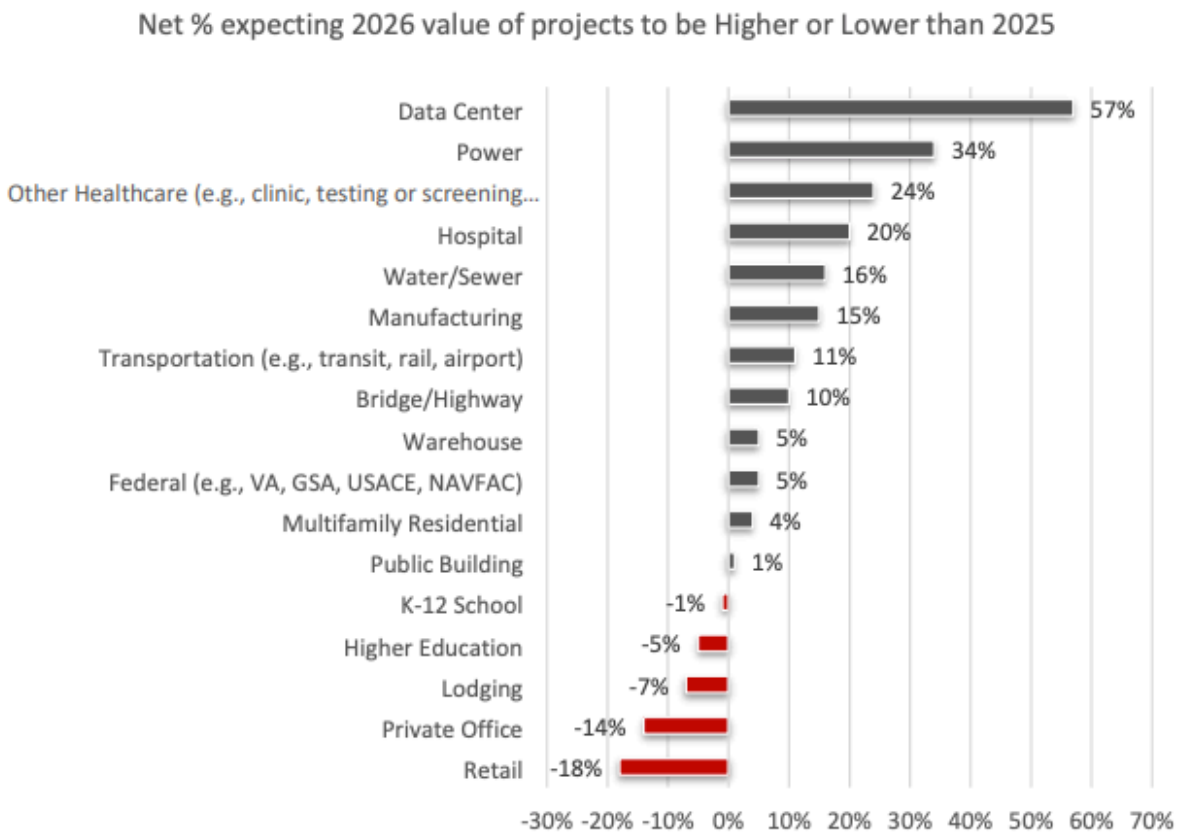


Every SECOND

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

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



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

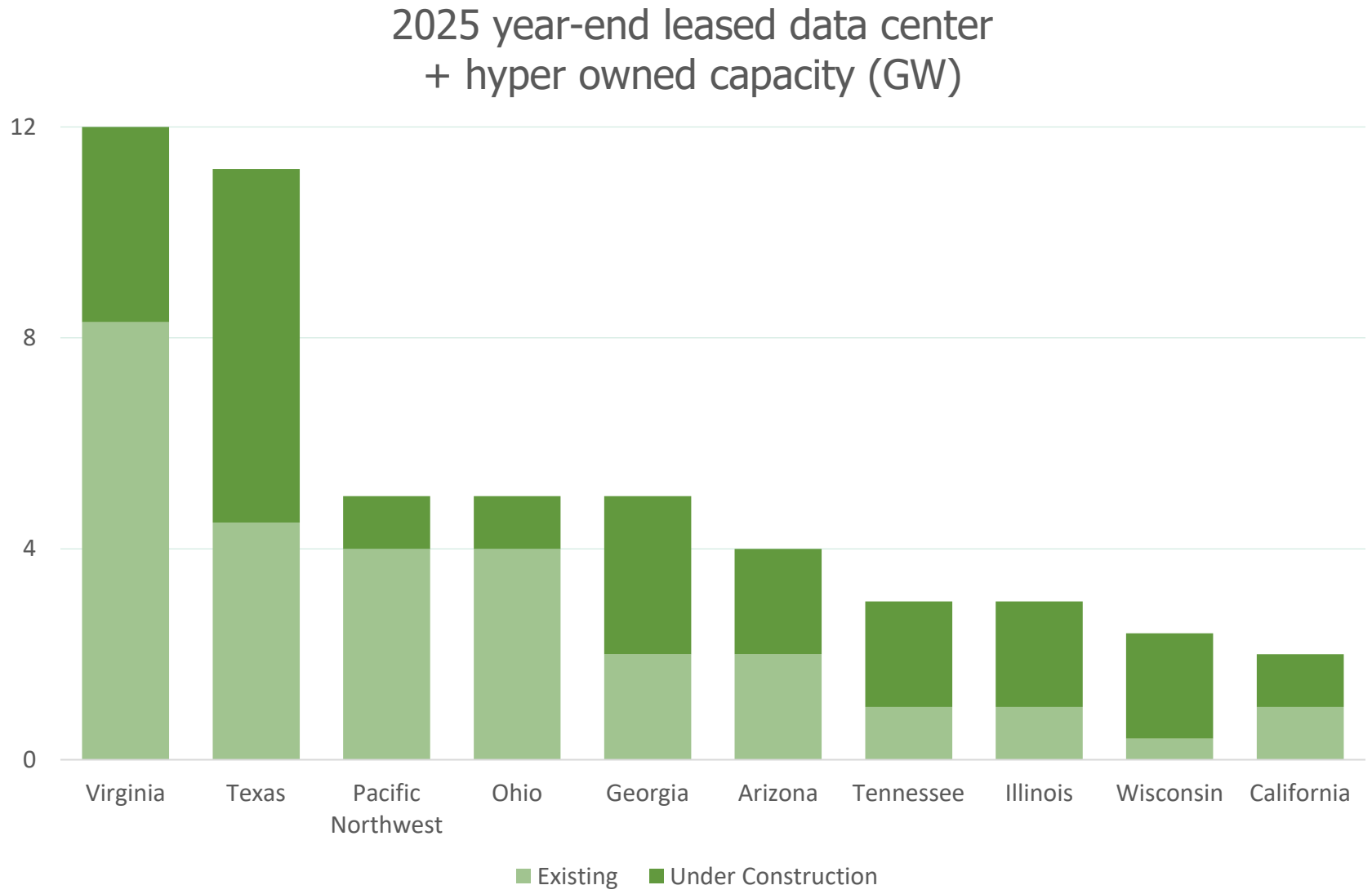
Total Responses: 951. Responses varied for some questions. Percentages are based on responses to each question and may not sum to 100 due to rounding.

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

DATA CENTER COALITION

Source: AGC, 2026 Construction Outlook National Survey Results, https://www.agc.org/sites/default/files/users/user21902/2026_Outlook_National_F.pdf

Data Center Market Outlook



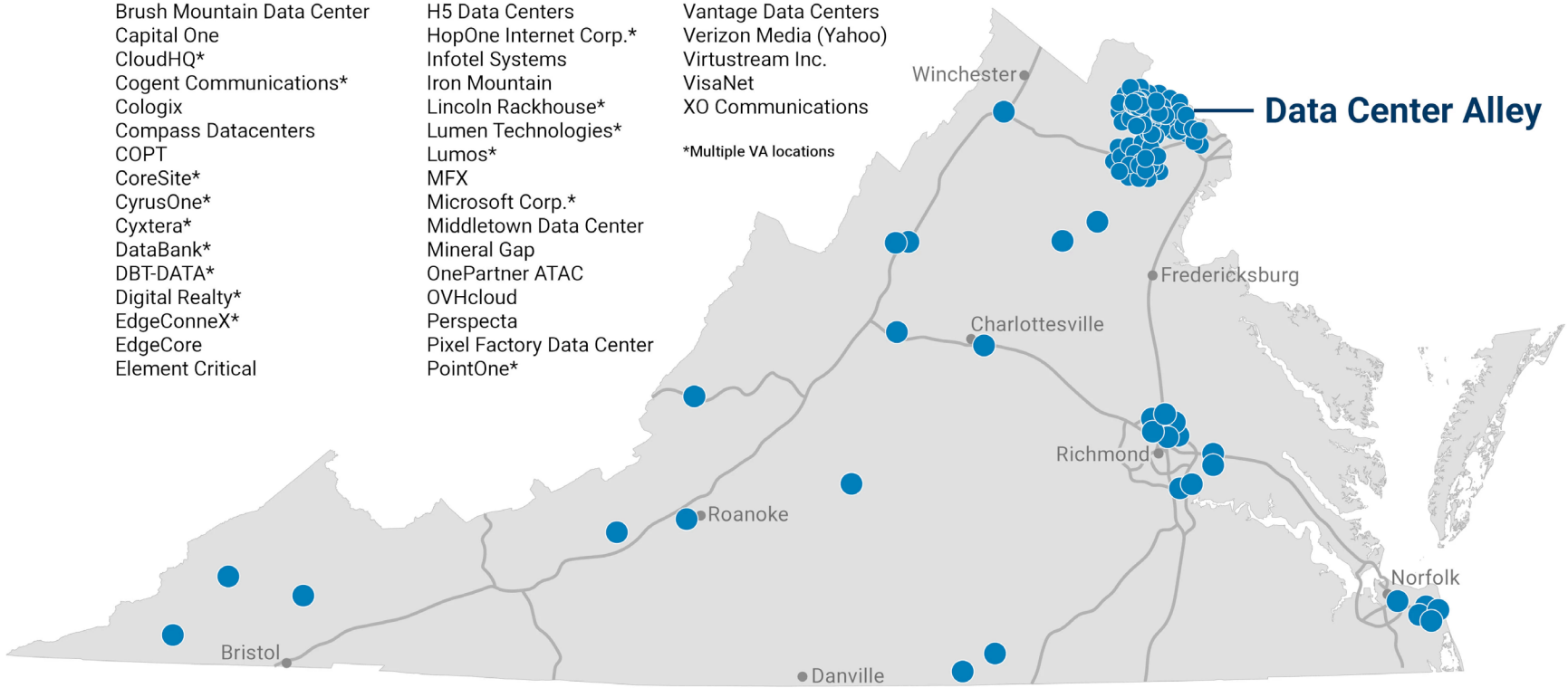
Source: JLL Research, 2026

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

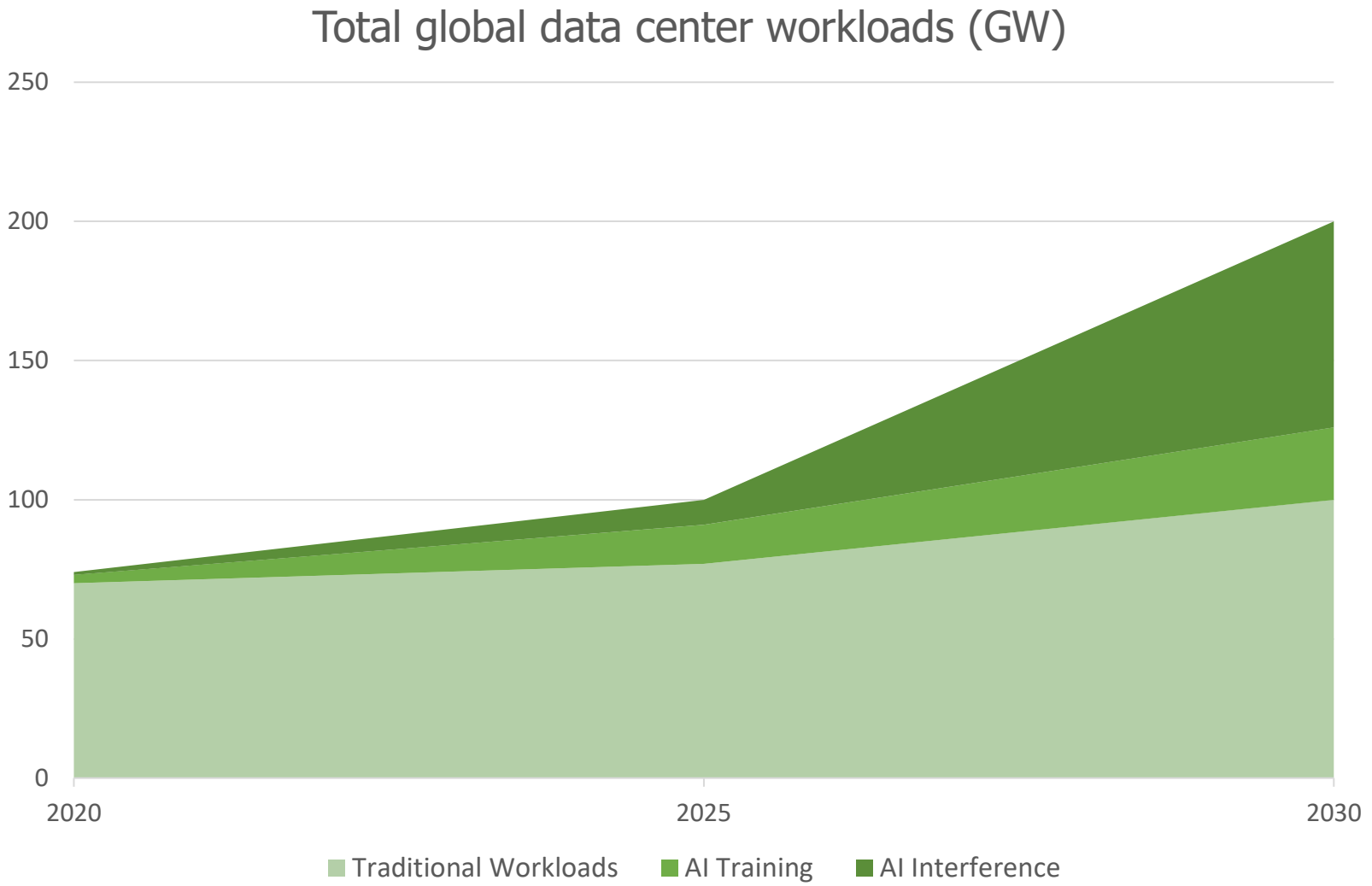


Source: Data Center Hawk, Baxtel.com, Company Websites

Publicly Disclosed Data Center Location

Source of Image: Virginia Economic Development Partnership

Global Data Center Market Outlook



Source: JLL Research, 2025

Key Siting Considerations Include

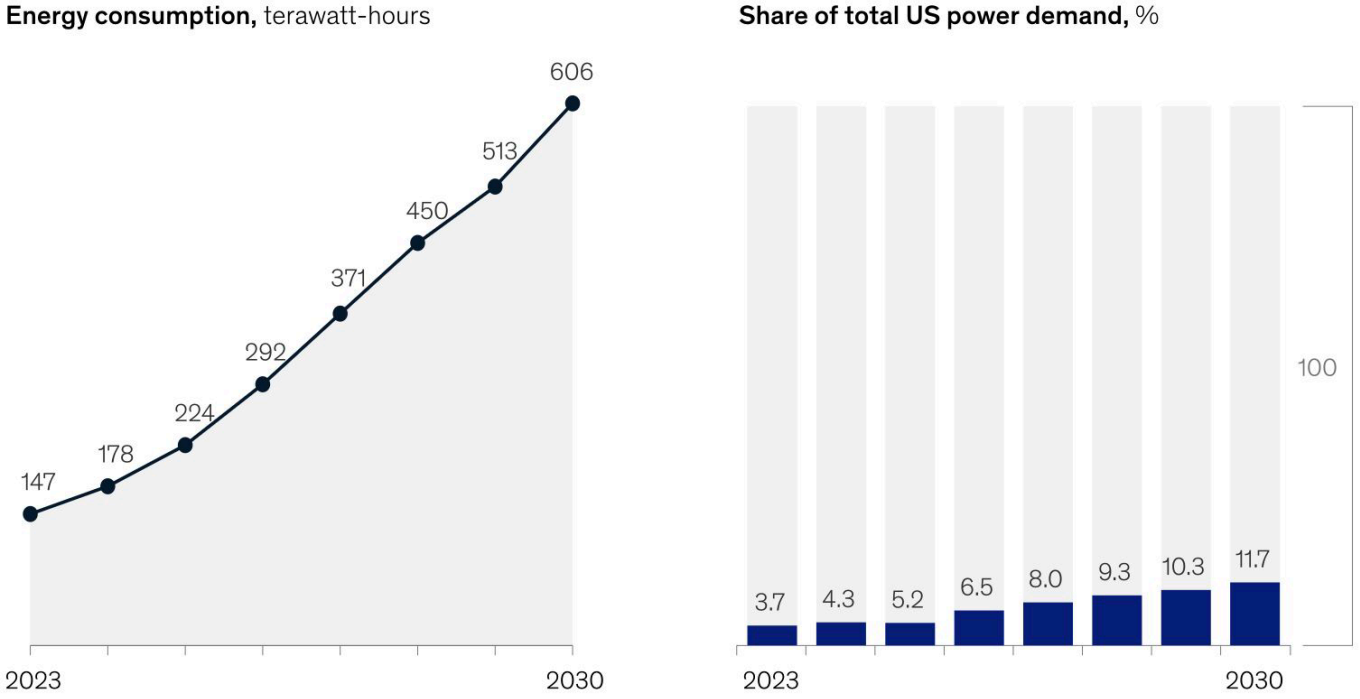
- Time to Market
- Access to Fiber/Connectivity
- Access to Water for Industrial Purposes
- Access to Clean, Reliable, Affordable Energy
- Climate and Risk of Natural Disaster
- Land Availability and Cost
- Tax and Regulatory Climate
- Ownership/Occupancy Costs
- Access to Skilled Construction and Technology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

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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



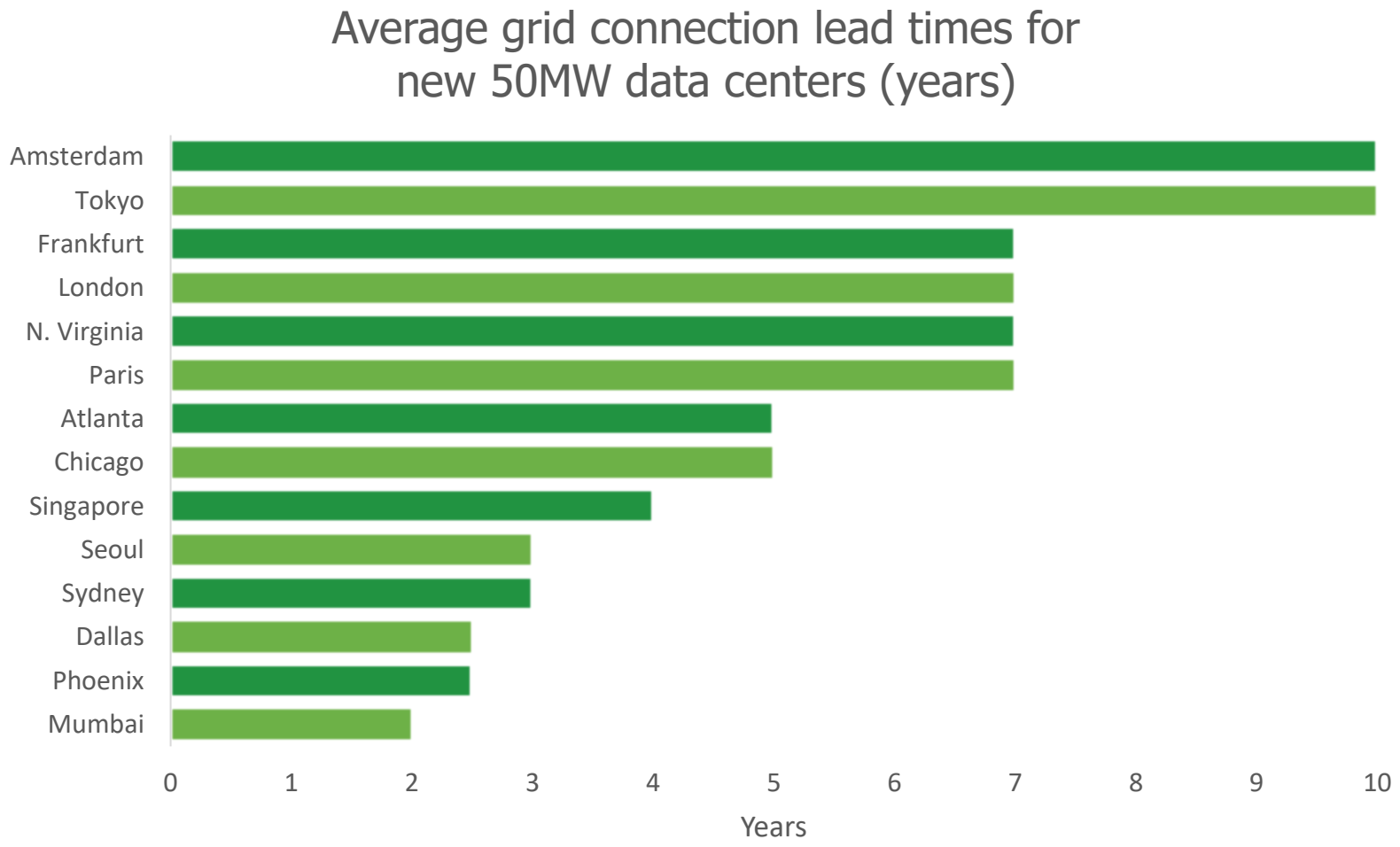
Source: *Global Energy Perspective 2023*, McKinsey, October 18, 2023; McKinsey analysis

McKinsey & Company

DATA CENTER COALITION

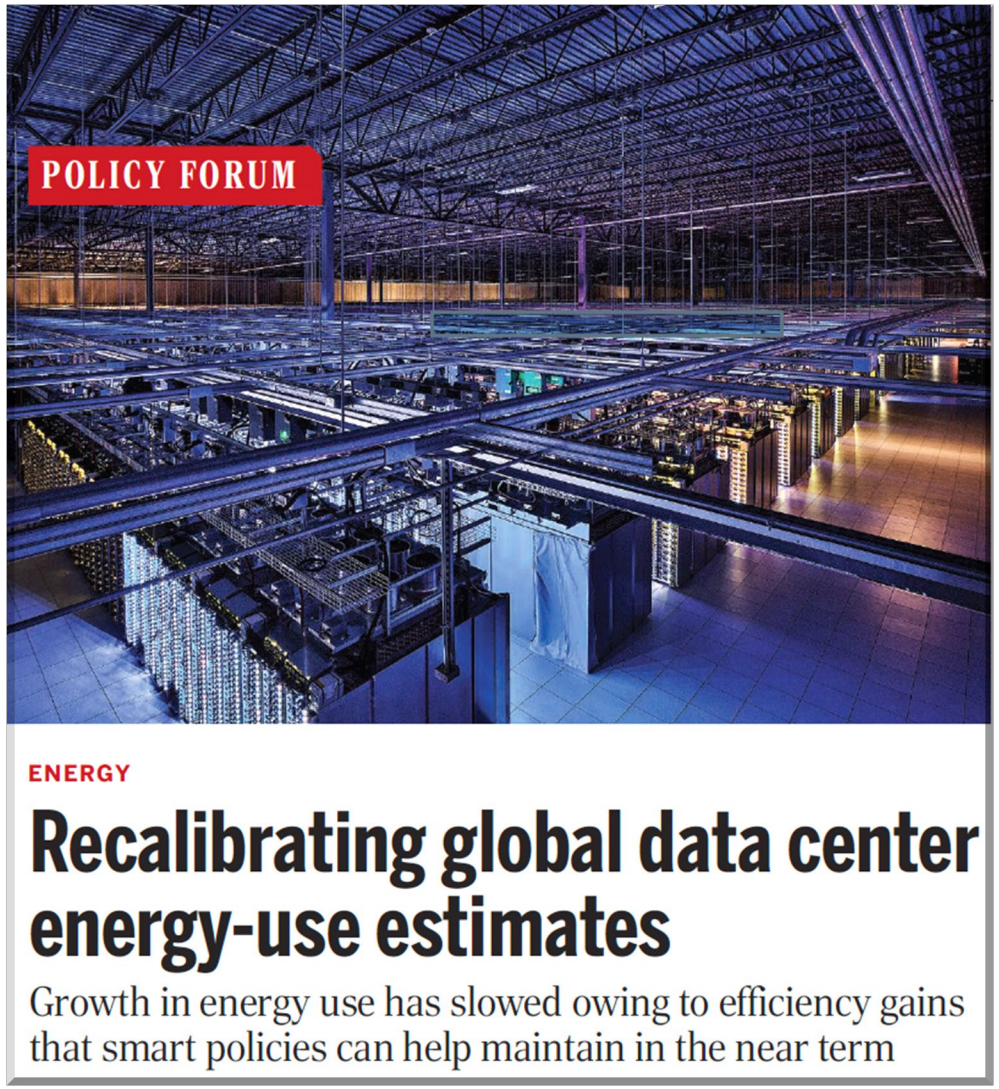
Source: https://www.linkedin.com/posts/anaestherfranco_datacenters-digitalinfrastructure-economicgrowth-activity-7370090249177309184-i5ng/?utm_source=share&utm_medium=member_ios&rcm=ACoAAAKLw2YBeQZzzHwOYXpqBV-CfxaCsFwGY_c

Global Data Center Market Outlook



*Source: JLL Research, 2025 *Dublin is paused until 2028*

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%**.

Source: Science, Recalibrating global data center energy-use estimates, Feb 28, 2020. https://www.science.org/doi/10.1126/science.aba3758 and https://datacenters.lbl.gov/sites/default/files/Masanet_et_al_Science_2020.full_.pdf

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

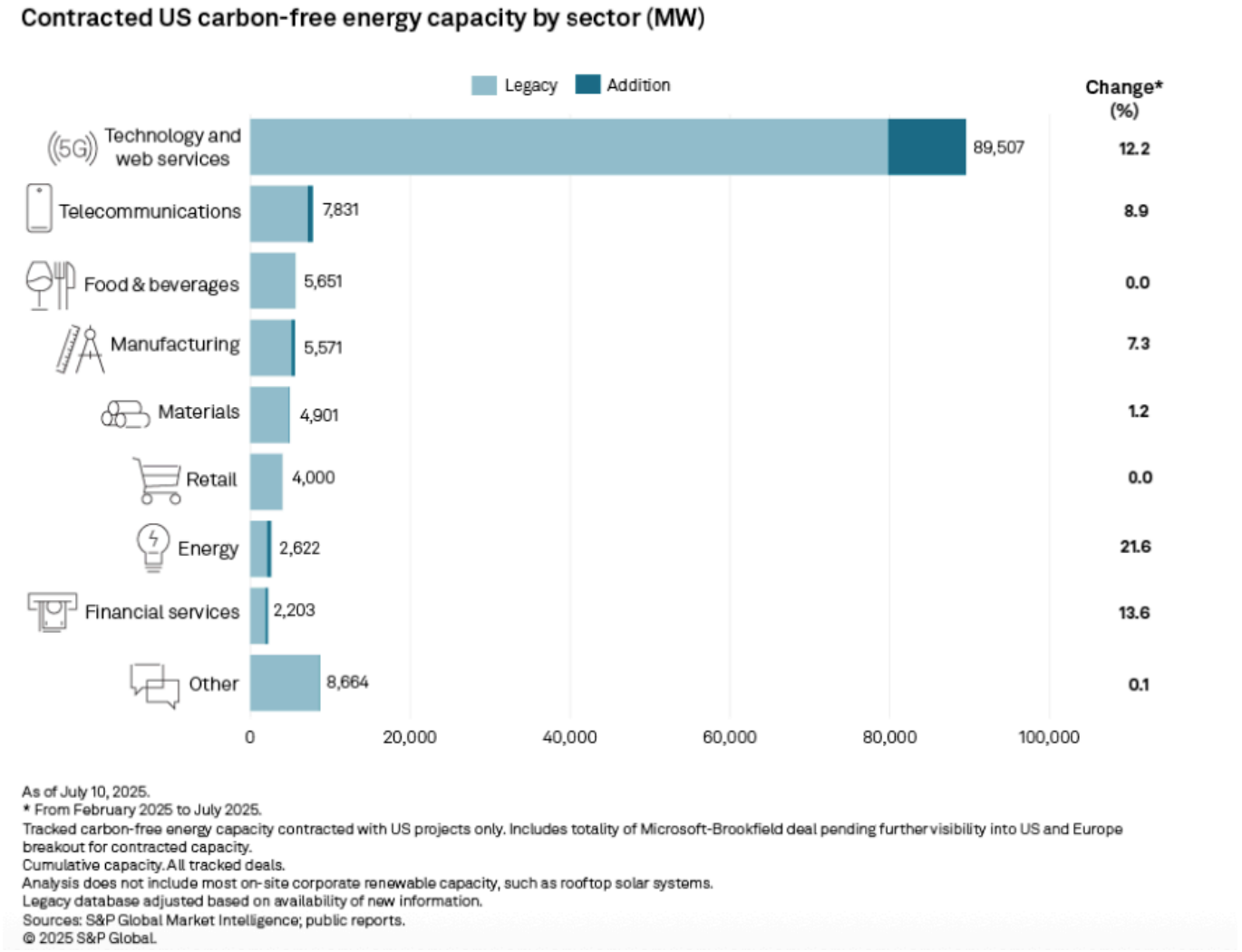
- **UNCLEAR RELATIONSHIP BETWEEN GROWTH & RATE HIKES:** State-level analysis shows **no direct correlation between load growth and rising electricity rates**.
- **DATA CENTERS CAN LOWER CUSTOMER RATES:** A study cited in the report found that **the data centers evaluated paid their full infrastructure 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/

DATA CENTER COALITION

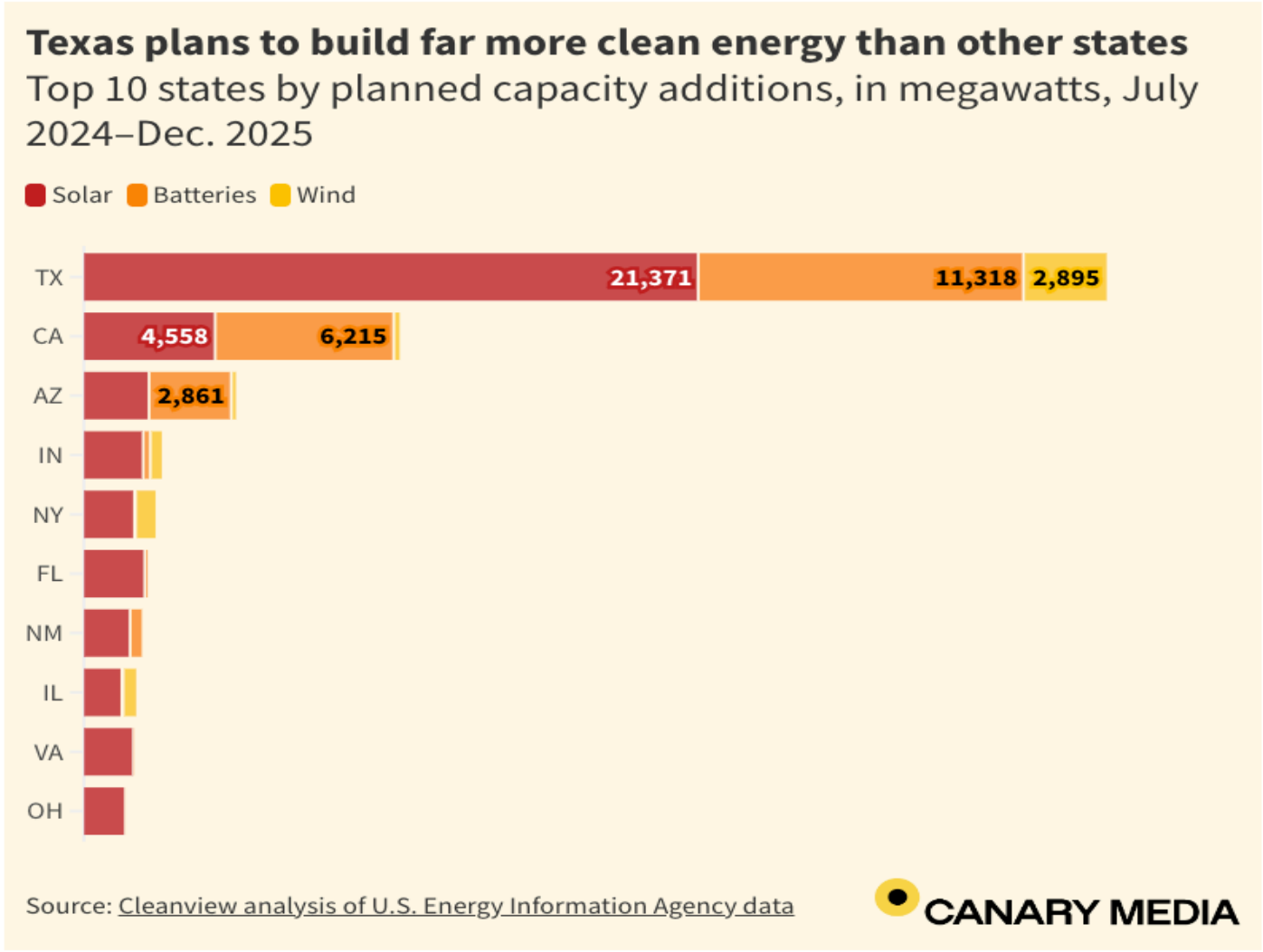
Advancing Access to Clean Energy and Greening the Grid



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

DATA CENTER COALITION

Clean Energy and Greening the Grid



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

DATA CENTER COALITION

Why Data Centers?

- Significant driver of Virginia's economy.
- Enable Digital Infrastructure that supports platforms, industries, and applications individuals and organizations rely on.
- Represent huge capital investments.

DATA CENTER COALITION

Why Data Centers?

- Generation of substantial tax revenue.
- Build and support larger ecosystems of suppliers, service providers, and other sectors of the economy.
    - **Each direct job in the data center industry supports more than six additional jobs**

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**



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Source: JLARC, Commonwealth of Virginia, "Data Centers in Virginia: 2024," December 9, 2024, https://jlarc.virginia.gov/pdfs/reports/Rpt598-2.pdf

Data Center Industry Drives Job Creation & Workforce Development

THE WALL STREET JOURNAL. SIGN IN SUBSCRIBE



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

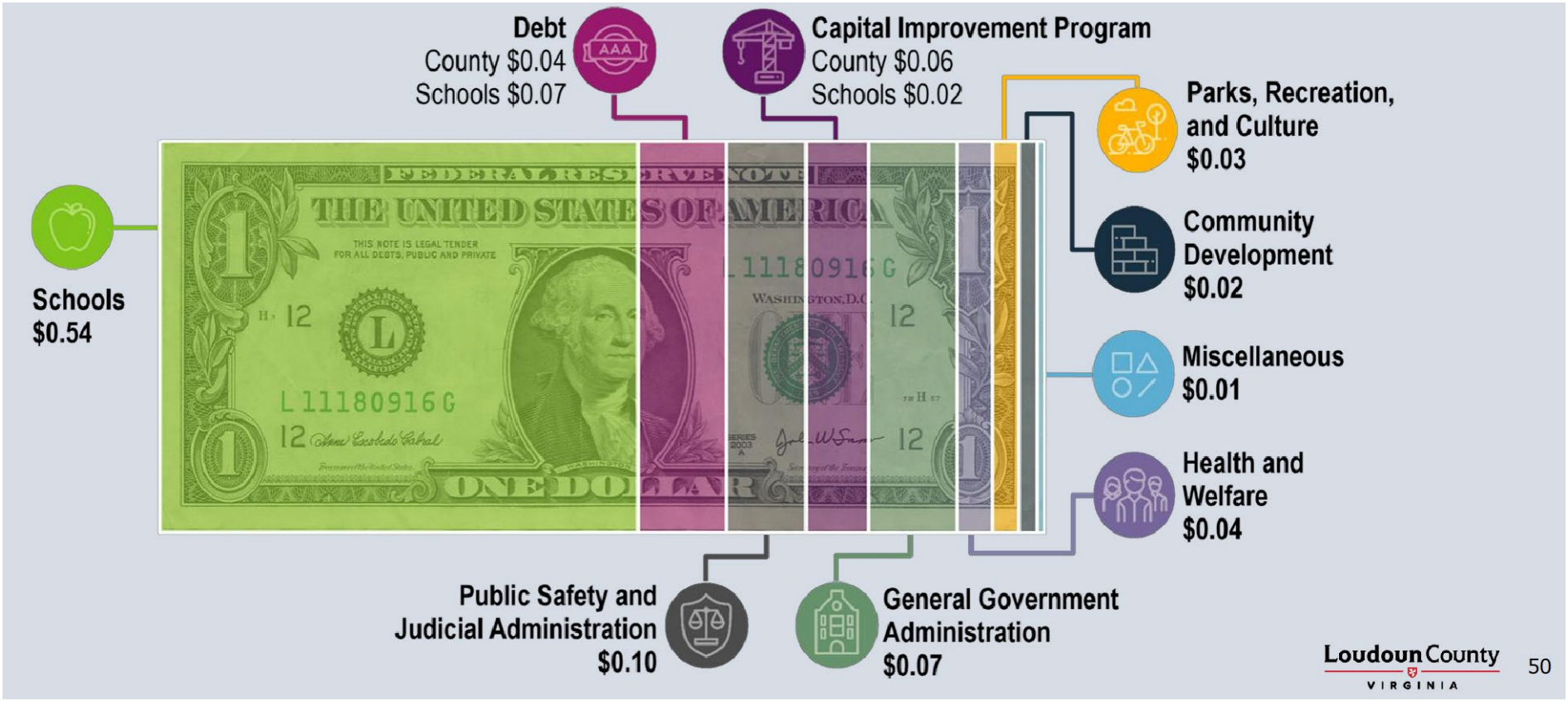
By Te-Ping Chen Follow
Nov. 29, 2025 8:00 pm ET



DATA CENTER COALITION

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

Data Center Tax Revenues Help Address Local Priorities



Source: Loudoun County FY25 Proposed Budget, https://www.loudoun.gov/DocumentCenter/View/190248/FY-2025-Proposed-Budget-Presentation

Data Center Tax Revenues Help Address Local Priorities

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

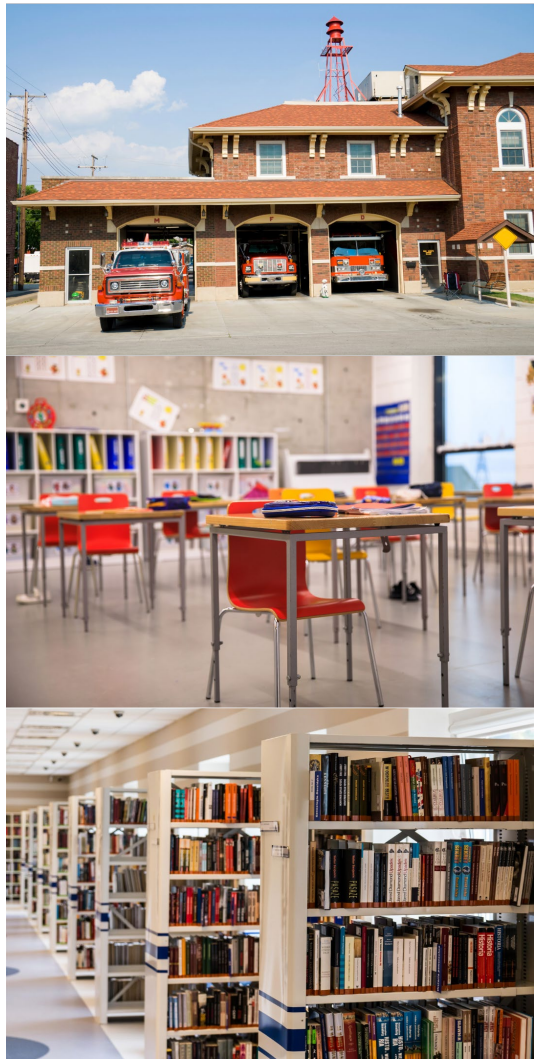
Loudoun County

$1.00 → $26.00

Prince William County

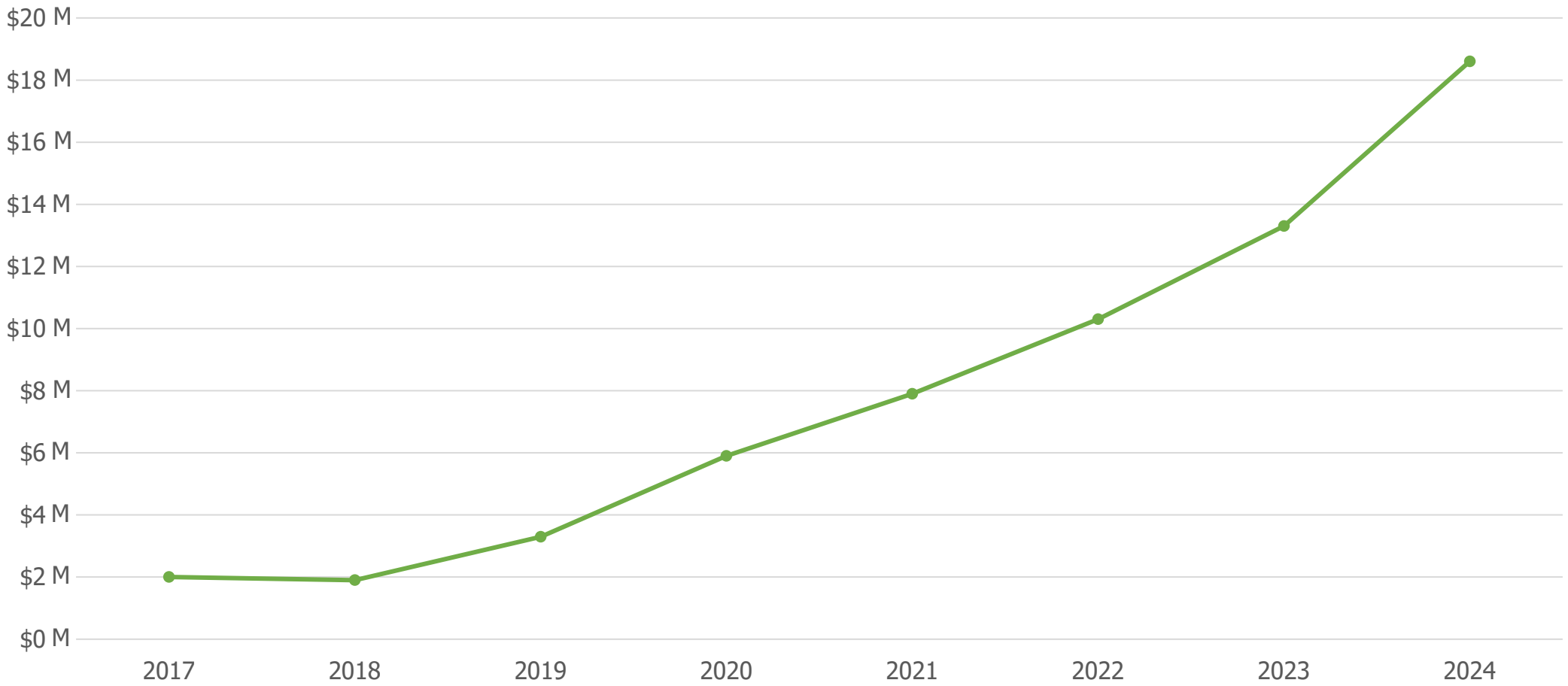
$1.00 → $13.00





Source: NVTC Report: The Economic and Fiscal Contribution that Data Centers Make to Virginia, January 2024 (Mangum Economics)

Henrico County:
Total Data Center Tax Revenue ($Millions) per Tax Year

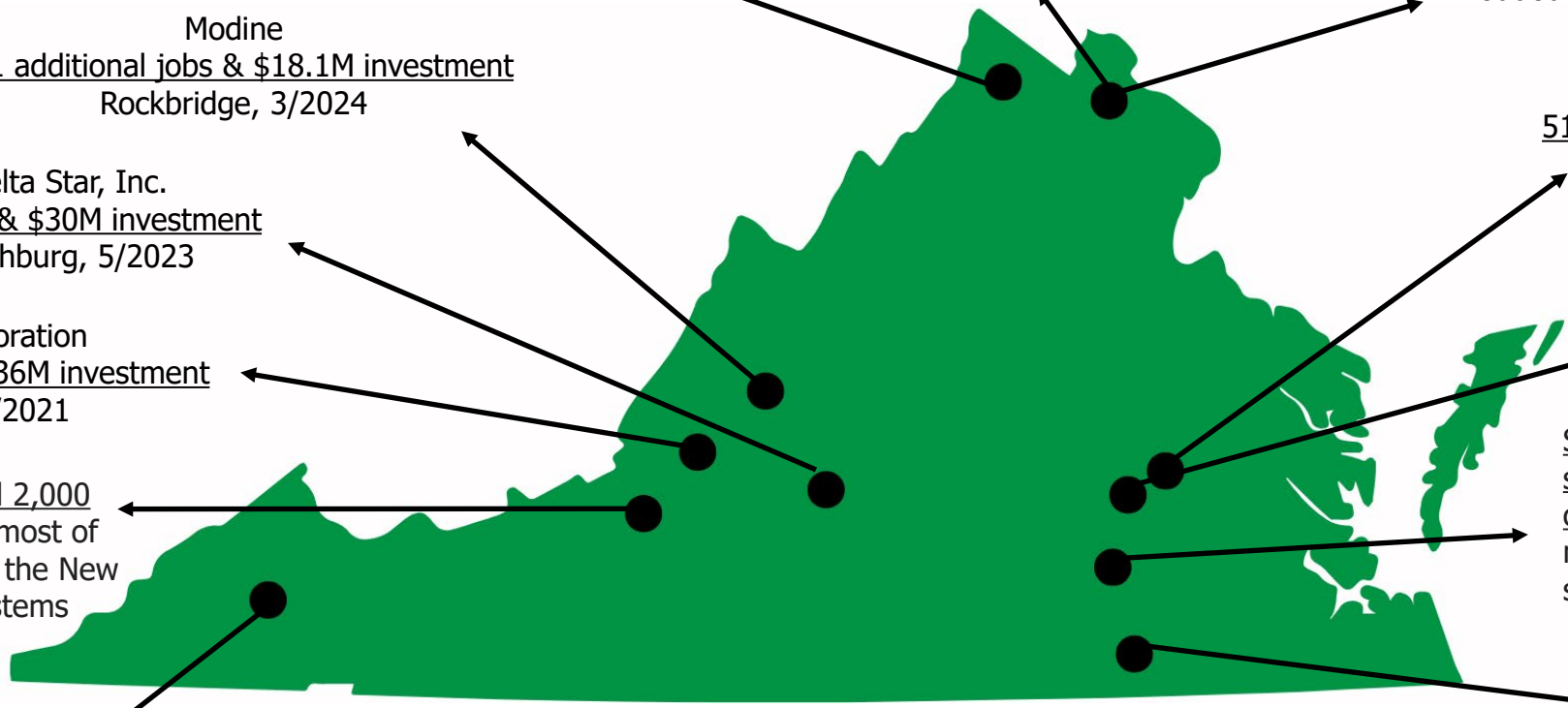


*Total Column may not foot due to rounding

Source: Henrico EDA, May 9, 2024

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.



Axys
46 jobs & $2.2M investment
Winchester, 10/2024

Aggreko
Data Center Division's NA Headquarters
Loudoun, 6/2021

Hanley Energy
343 jobs & $8M investment
Loudoun, 6/2023

Modine
211 additional jobs & $18.1M investment
Rockbridge, 3/2024

Anord Matrix
51 jobs & $900K investment
Henrico, 1/2019

Delta Star, Inc.
149 jobs & $30M investment
Lynchburg, 5/2023

Condair Group
180 jobs & $57.2M investment
Chesterfield, 6/2024

Munters Corporation
200 jobs retained & $36M investment
Botetourt, 3/2021

SteelFab has purchased 2,000 tons of metal decking, most of which was produced at the New Millennium Building Systems plant in Salem.

SteelFab has purchased 75,000 tons of structural steel for data center construction in the past few years — much of it from the Gerdau Petersburg steel mill in Dinwiddie County.

Tate, Inc.
170 jobs & $14.9M investment
Russell, 11/2023

SteelFab
18 additional jobs
$2.14M additional investment
Emporia, 3/2017

6 jobs are created for every job in the data center industry

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

Sources: Bluefield Research, https://www.bluefieldresearch.com/ns/data-center-electricity-demand-nearly-doubles-to-8-9-by-2030/
S&P Global, https://www.spglobal.com/energy/en/news-research/latest-news/electric-power/103124-data-centers-account-for-half-of-us-clean-energy-procurement-but-only-20-in-europe-report
S&P Global, https://www.spglobal.com/energy/en/news-research/blog/energy-transition/042126-clean-energy-procurement-held-up-in-2025-with-more-diversified-approaches

DATA CENTER COALITION

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

Sources: Equinix, A Guide to Responsible Water Use in Data Centers, https://blog.equinix.com/blog/2026/03/19/a-guide-to-responsible-water-use-in-data-centers/

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



Sources: Fairfax County, Virginia, Water Reuse, https://www.fairfaxcounty.gov/publicworks/wastewater/water-reuse

Putting Data Center Water Use into Perspective

~39 BGY

Data center water use in 2025

2,500 BGY

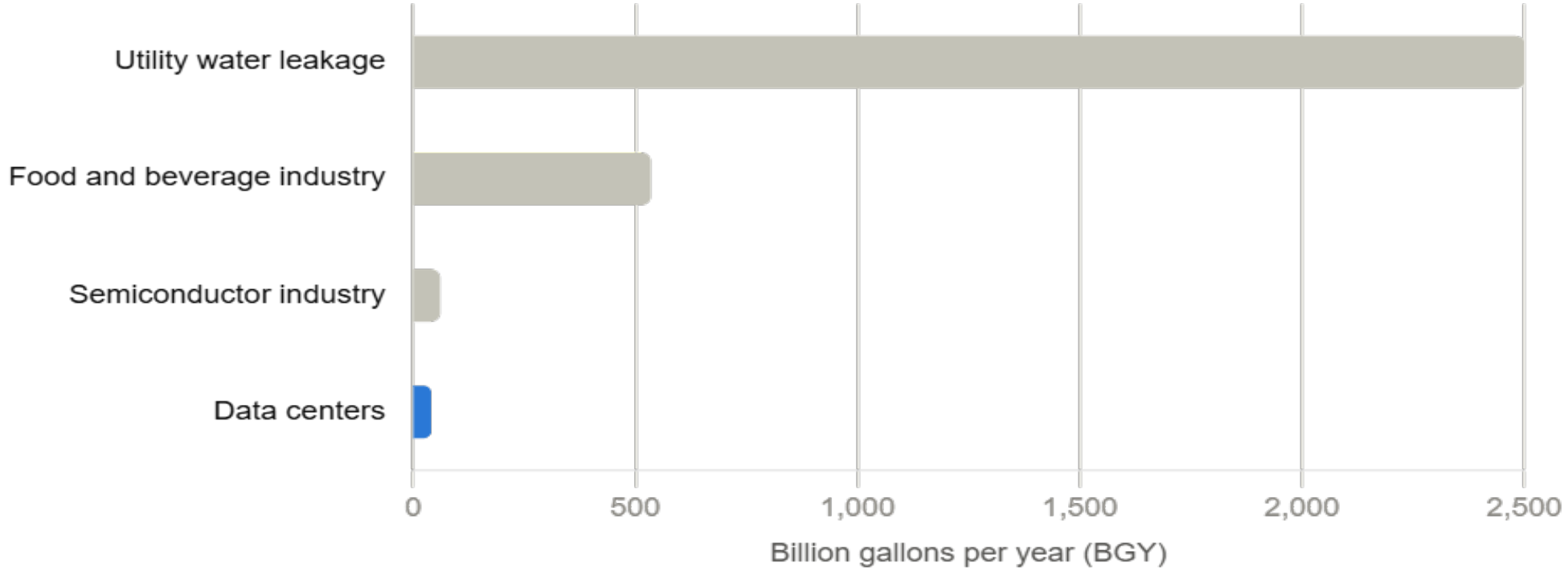
Utility water leakage

533 BGY

Food and beverage industry water use

59 BGY

Semiconductor industry water use



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Source: Bluefield Research, https://www.bluefieldresearch.com/research/u-s-water-for-data-centers-market-trends-opportunities-and-forecasts-2025-2030/

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)
  - 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:
  - Sand & gravel mining
  - Golf courses
  - Semiconductor manufacturing (which has a significant presence in the state)
  - Beverage facilities

Source: Joint Legislative Audit and Review Commission, https://jlarc.virginia.gov/landing-2024-data-centers-in-virginia.asp
Kyl Center for Water Policy, https://morrisoninstitute.asu.edu/copper-cattle-and-cotton-chips-and-cloud-computing-large-water-uses-central-arizona

DATA CENTER COALITION

Data Center Community Partnerships

Strengthening Resilience for All

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







Source: New Life Restoration, https://www.newlifehi.com/blog/what-to-do-if-you-have-water-damage-from-leaky-pipes
Agricultural Dive, https://www.agriculturedive.com/news/agtech-roundup-google-arable-fresh-del-monte-deere-habiterre/725786/
Trellis, https://trellis.net/article/amazon-cooling-data-centers-recycled-water/

State Policy related to Data Centers

- **HB 153/SB 94 (Thomas)**
- **Data centers - Site Assessment**
- Empowers localities to make more informed choices as they manage responsible data center development.
- Increases transparency in siting decisions for high energy users, including data centers
- Preserves Local Control
- Local governments must require new data centers proposed near homes and schools to submit site assessments
  - Sound modeling required
  - Other potential impacts water, energy, agricultural land, parks, & historic sites are authorized

DATA CENTER COALITION

Virginia Established Guardrails around Data Center Growth

ENERGY

Protecting Ratepayers by ensuring Data Centers Pay for All Their Costs

SITING OF DATA CENTERS

Empowering Localities to Make Informed Decisions

BACKUP GENERATORS

Protecting Virginia's Air Quality from Data Center Backup Generators

DATA CENTER COALITION

Virginia Established Guardrails around Data Center Growth

WATER

Preserving Virginia Water Resources by ensuring Responsible and Sustainable Water Use by Data Centers

SOUND

Guarding Virginians' Quality of Life

DATA CENTER COALITION

Local Considerations for new data center projects

- Review Existing Policies, Procedures, and Authority
- Financial capacity and development experience
- Setbacks and site design standards
- Plans for development and long-term operations such as sound
- Projected power needs
- Anticipated water demands
- Economic benefits for locality
- Account for changes in timing, market conditions

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Main Takeaways

1. Data centers bring significant economic benefits such as local tax revenue, job growth and a broader ecosystem of suppliers
2. Data center energy and water use is real, but it is a small piece of a much bigger picture
3. Localities are the authors of their own destiny
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

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Thank you!

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