Data Centers:

Powering the Internet & our Modern Economy

Council of State Governments Southern Legislative Conference

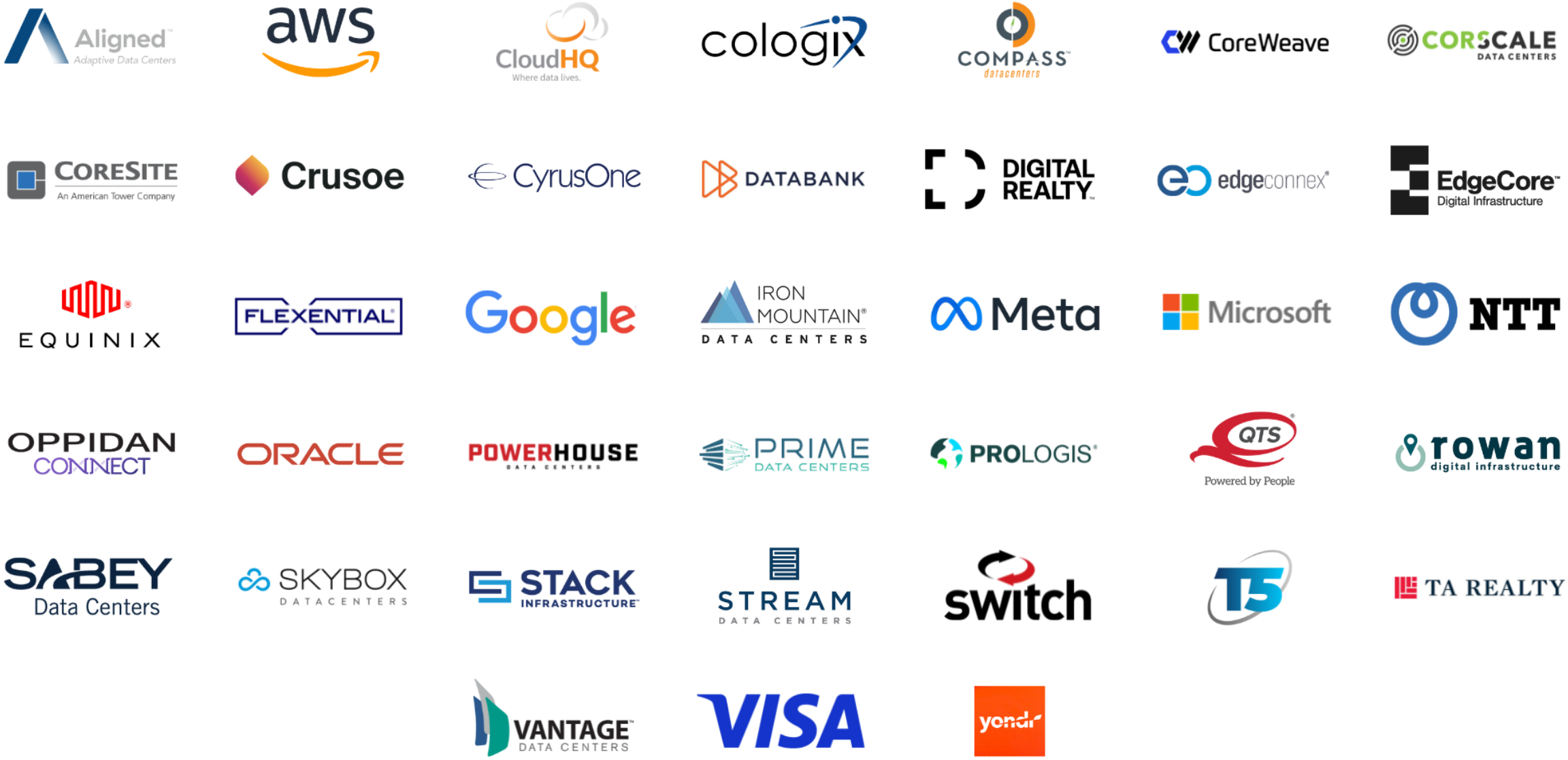
July 20, 2025

DATA CENTER COALITION

Data Center Coalition (DCC)

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

DCC members are leading data center owners and operators, as well as companies that lease large amounts of data center capacity.



What Do Data Center Providers Do?

Our members build, own, and operate data centers

For their own operations, one client, or many clients in a single building

Or for a single company or client on a campus

2 Main Types of Data Centers

Self-Perform/Enterprise

Business owns/controls servers and peripherals, may own facility

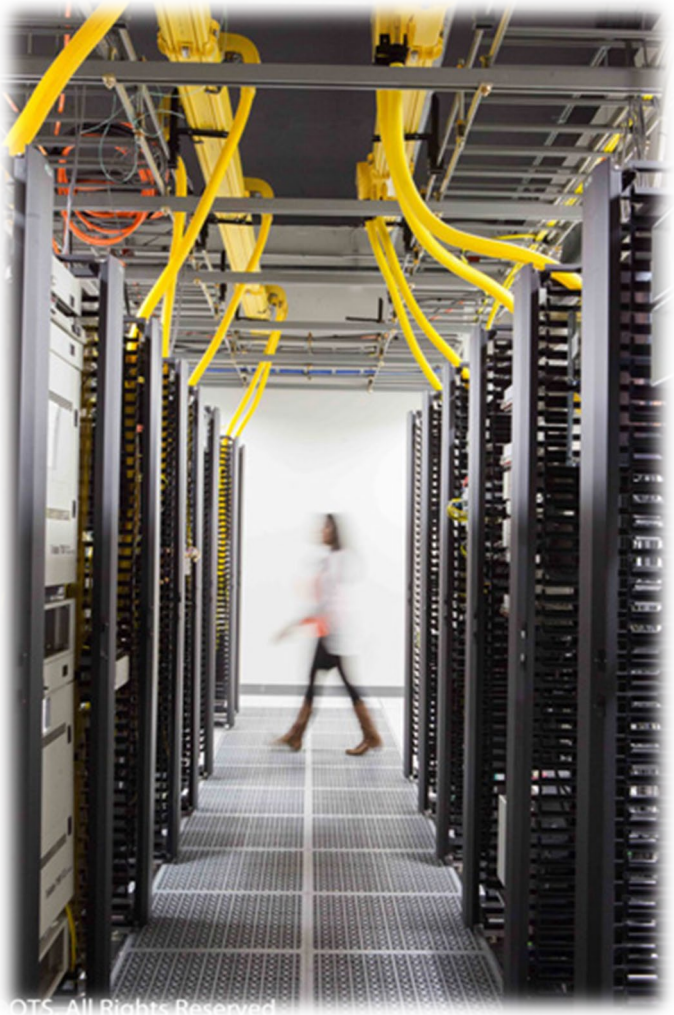
Multitenant and Build to Suit

Facility owner leases to one or more tenants

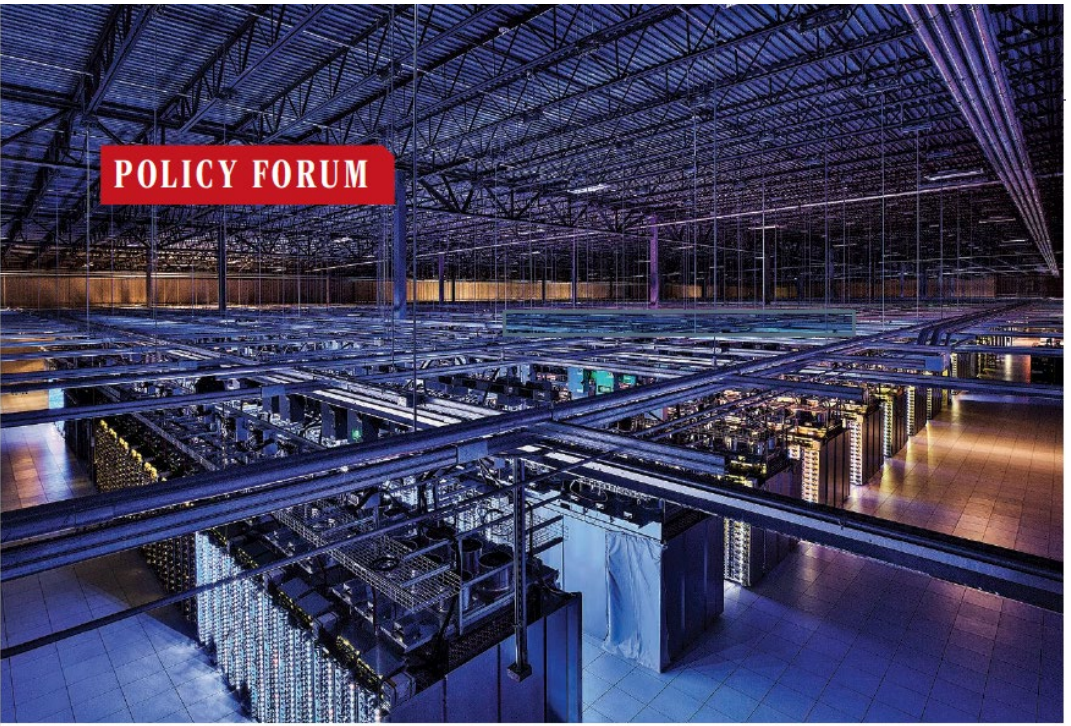
DATA CENTER COALITION

Inside a Data Center

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



Data Centers Are Highly Efficient Consumers of Energy



ENERGY

Recalibrating global data center energy-use estimates

Growth in energy use has slowed owing to efficiency gains that smart policies can help maintain in the near term

- "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

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.

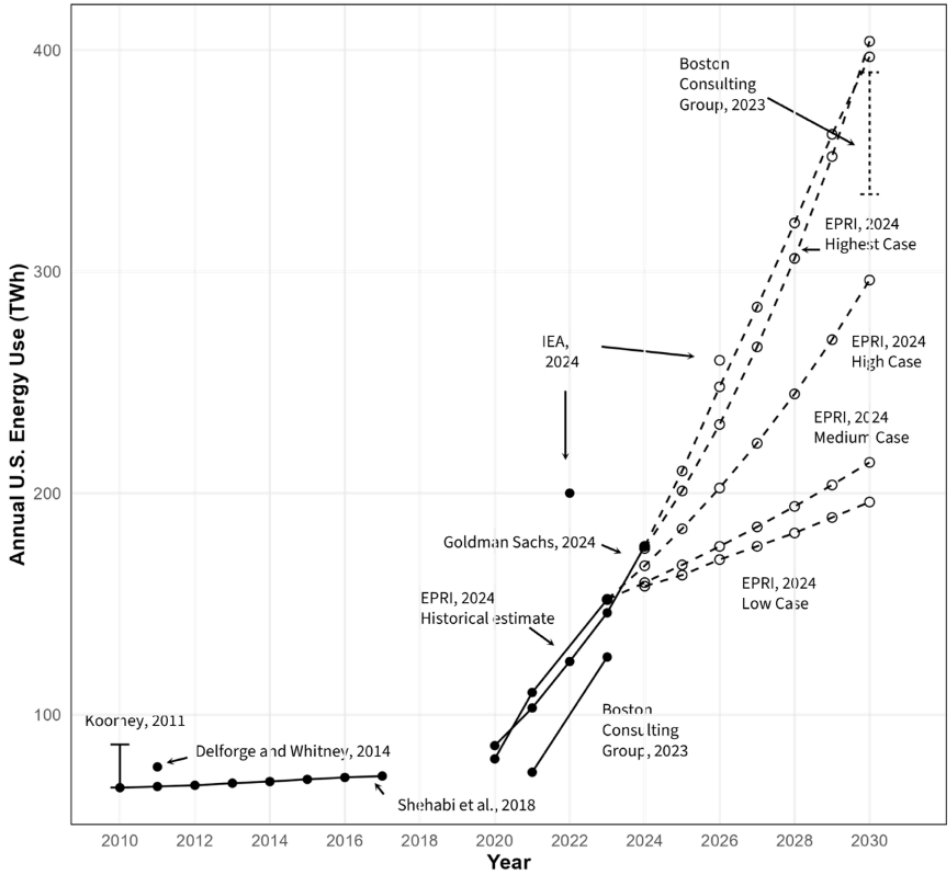


Figure 1.1. Academic and industry historical estimates of U.S. data center energy use.

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*

Image Source: Lawrence Berkeley National Laboratory, 2024 United States Data Center Energy Usage Report, December 2024, https://escholarship.org/uc/item/32d6m0d1

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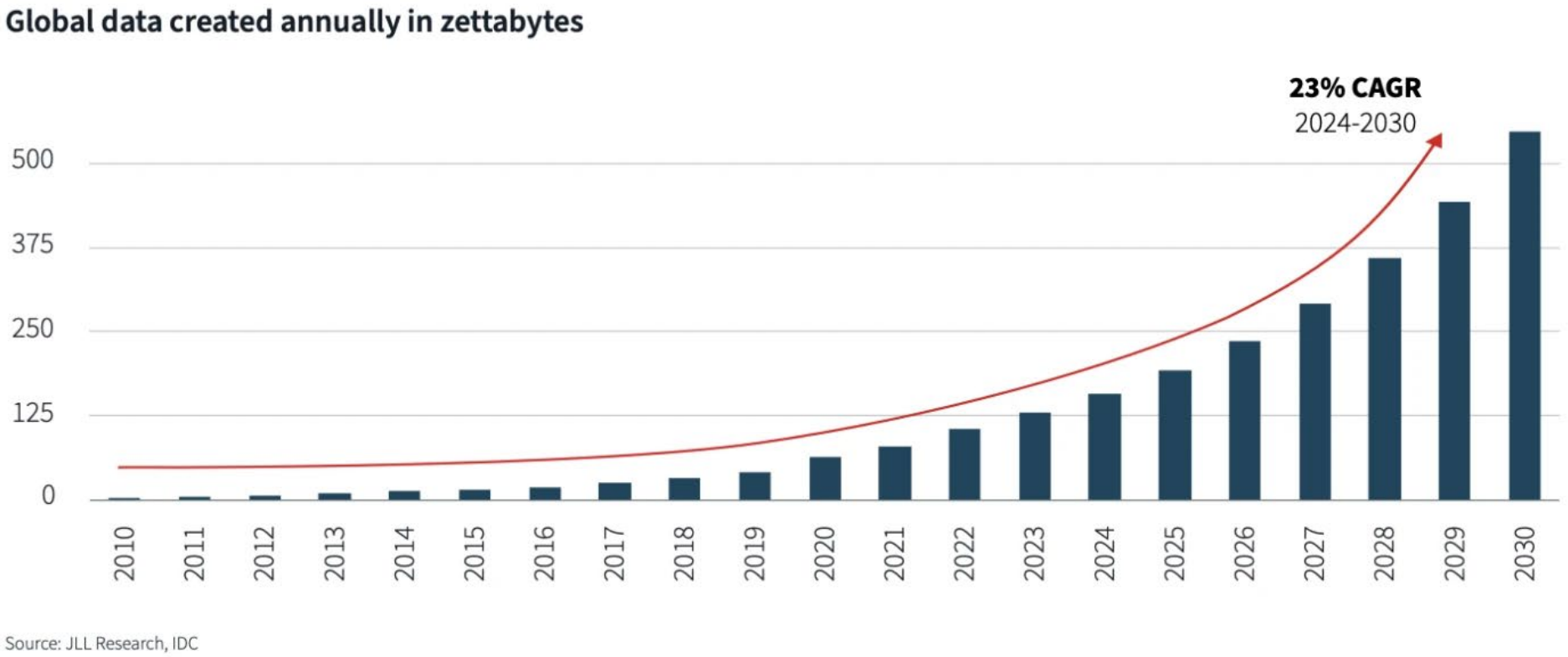
What Drives Data Center Demand?



Source: Urban Land, Nuclear Power Makes a Comeback as Data Centers Adapt to Rising Power Demands, October 14, 2024, https://urbanland.uli.org/resilience-and-sustainability/nuclear-power-makes-a-comeback-as-data-centers-adapt-to-rising-power-demands

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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.**"

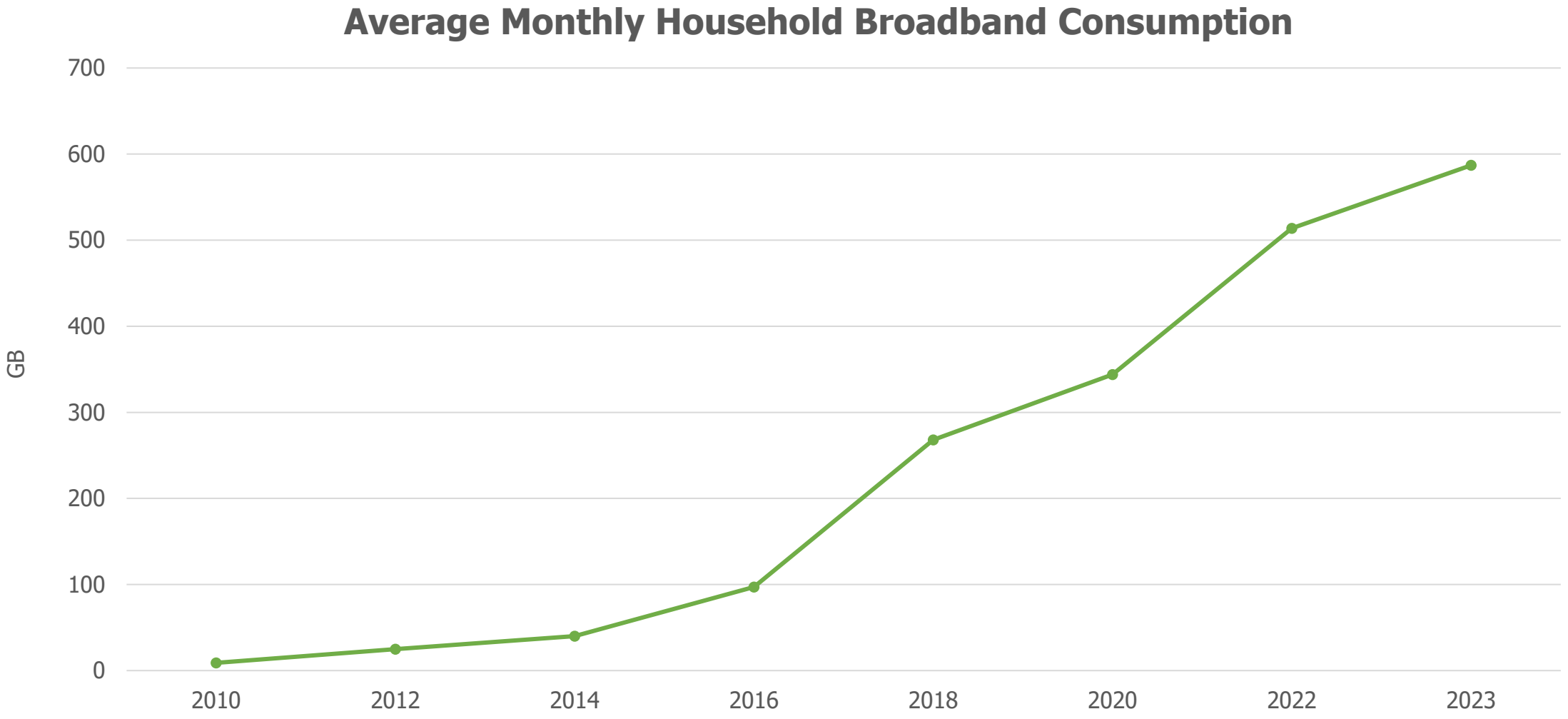
-JLL, *Data Centers 2024 Global Outlook*

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

Home Internet Use Drives Data Center Demand



Source: OpenVault Broadband Insights Report, OVBI Q4 2022 Report, https://openvault.com/resources/ovbi/

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!

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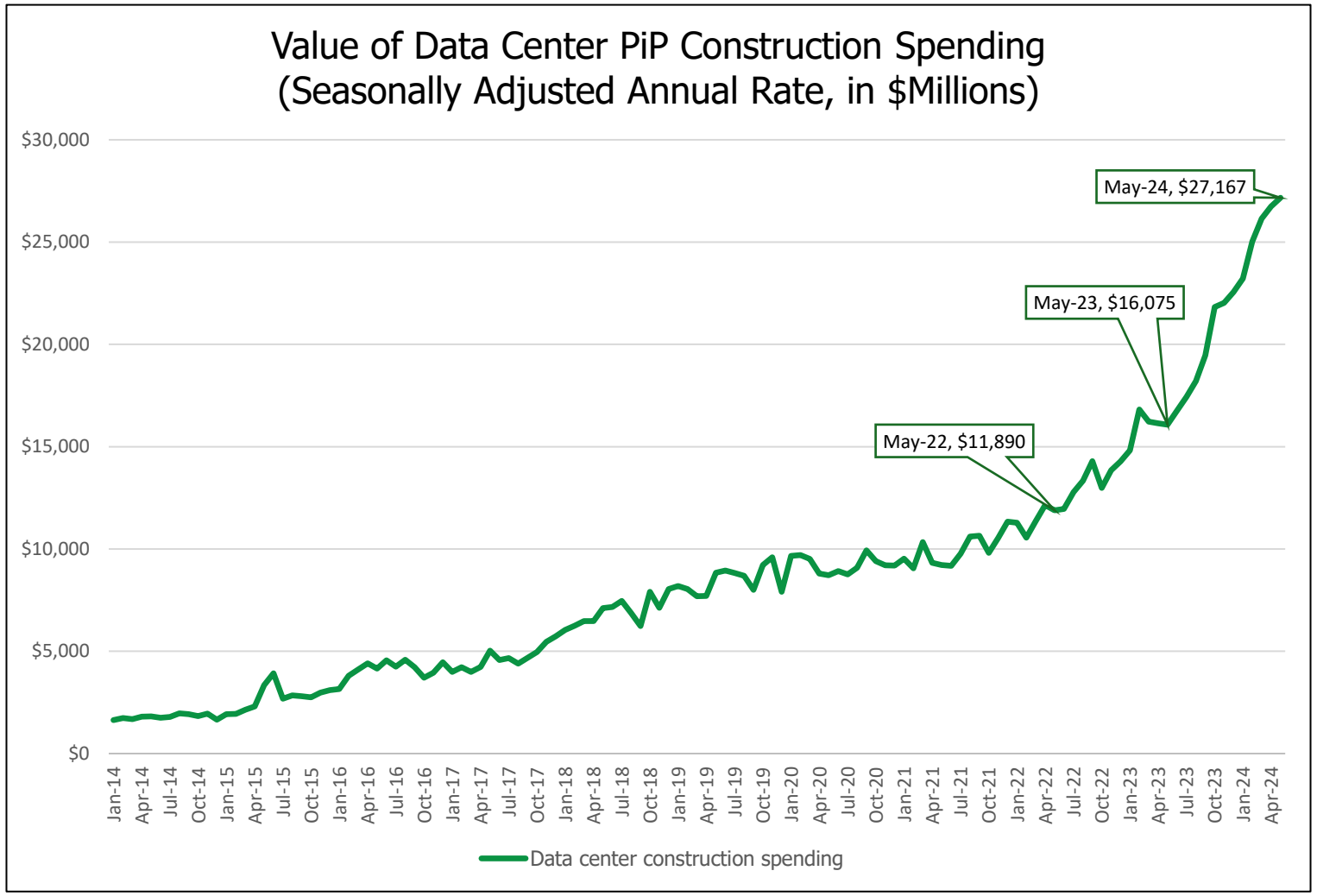
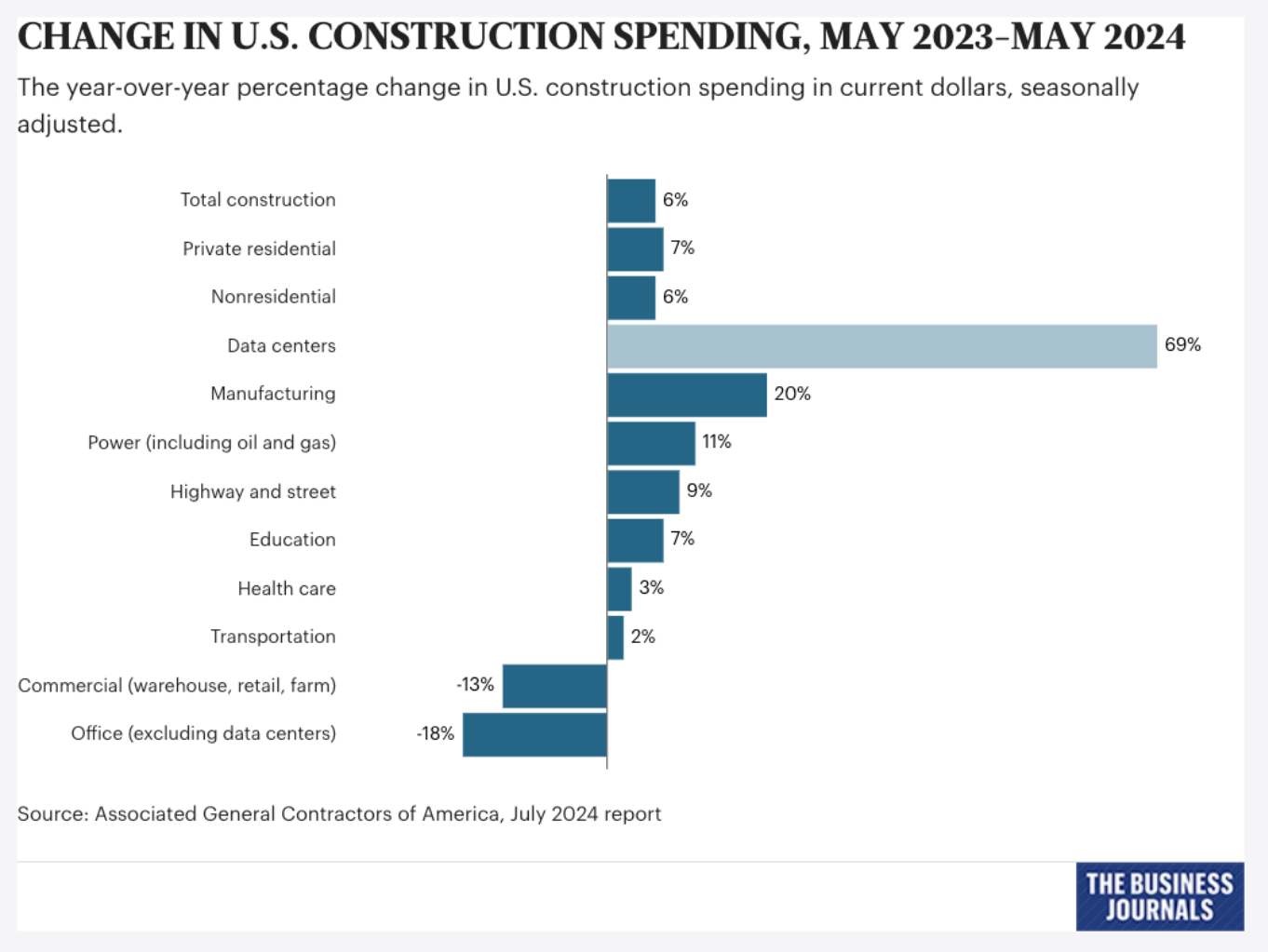
Growth in Data Center Construction Spending



Source: U.S. Census Bureau Construction Spending Data: Historical Value of Private Construction Put in Place (PiP), May 2024

Data Center Trends



Source: Atlanta Business Chronicle, $1B data centers adds to growing list of massive projects; offsets construction slowdown, Oct. 4, 2024, https://www.bizjournals.com/atlanta/news/2024/10/04/1b-data-center-pitched-for-coweta-county.html

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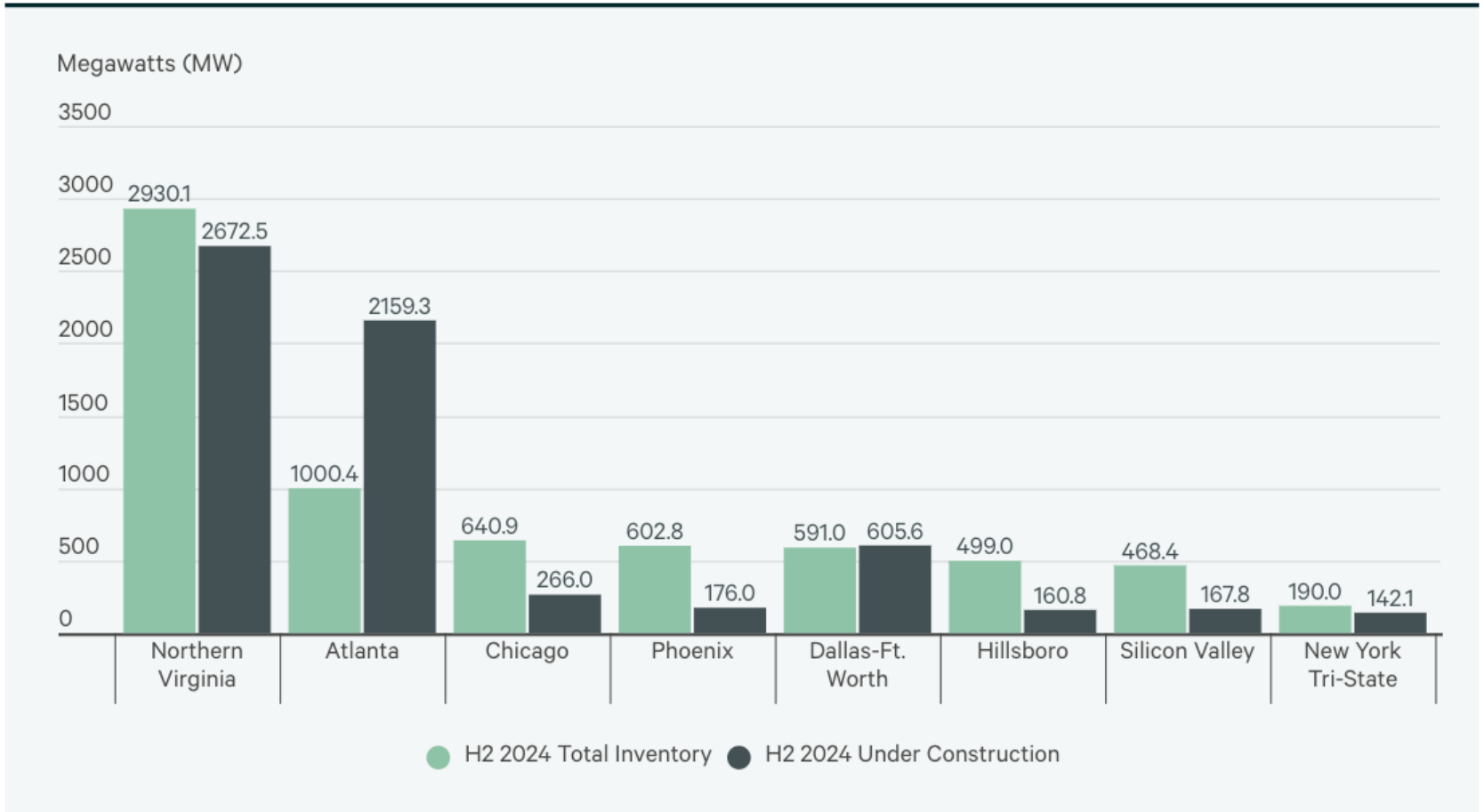
Key Siting Considerations Include

- 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 CENTER COALITION

Data Center Trends

Figure 6: Total Inventory vs. Under Construction by Primary Market, H2 2024



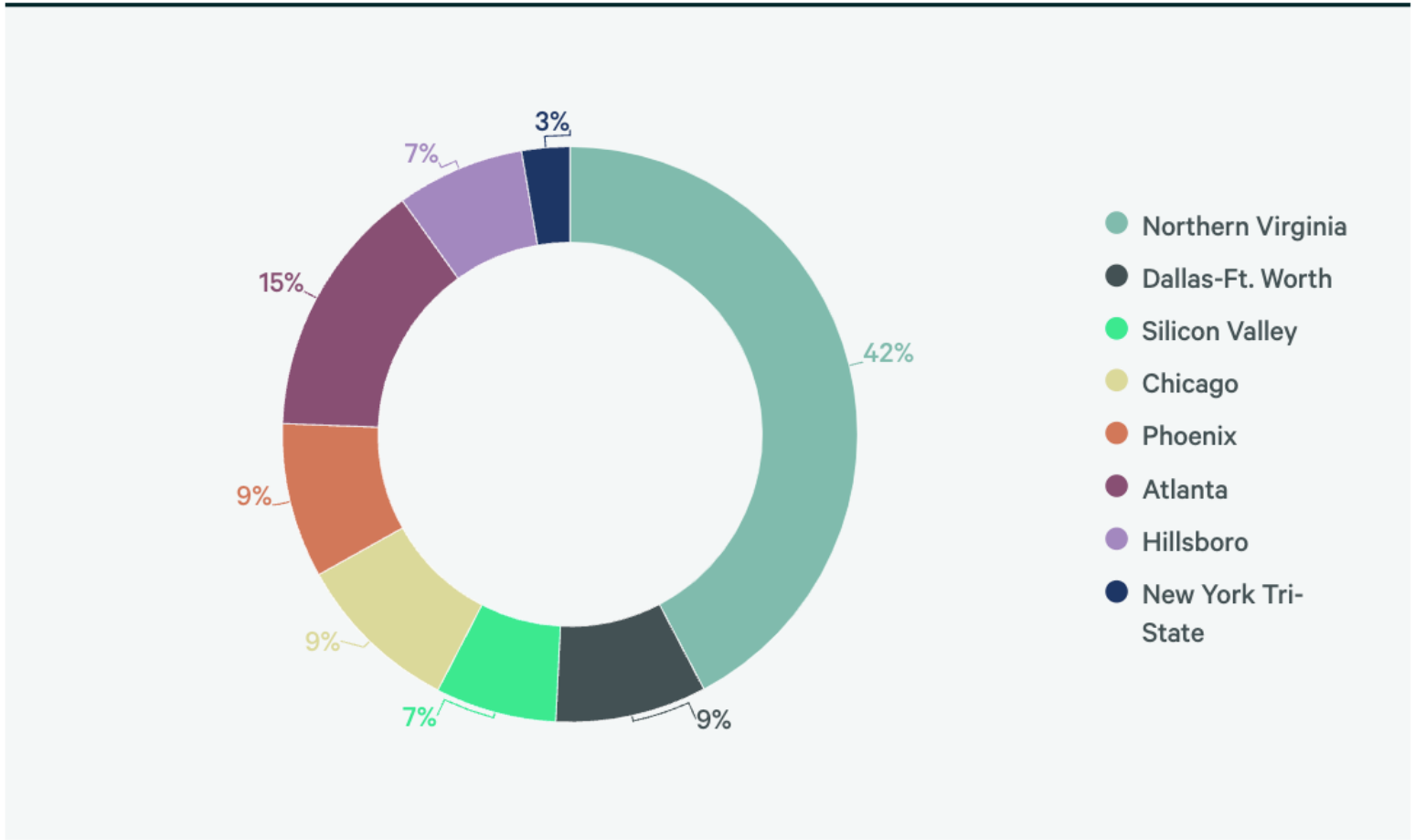
Source: CBRE Research, CBRE Data Center Solutions, H2 2024.

DATA CENTER COALITION

Source: CBRE, North America Data Center Trends H2 2024, February 26, 2025, https://www.cbre.com/insights/reports/north-america-data-center-trends-h2-2024

Data Center Trends

Figure 3: % of Total Primary Market Inventory

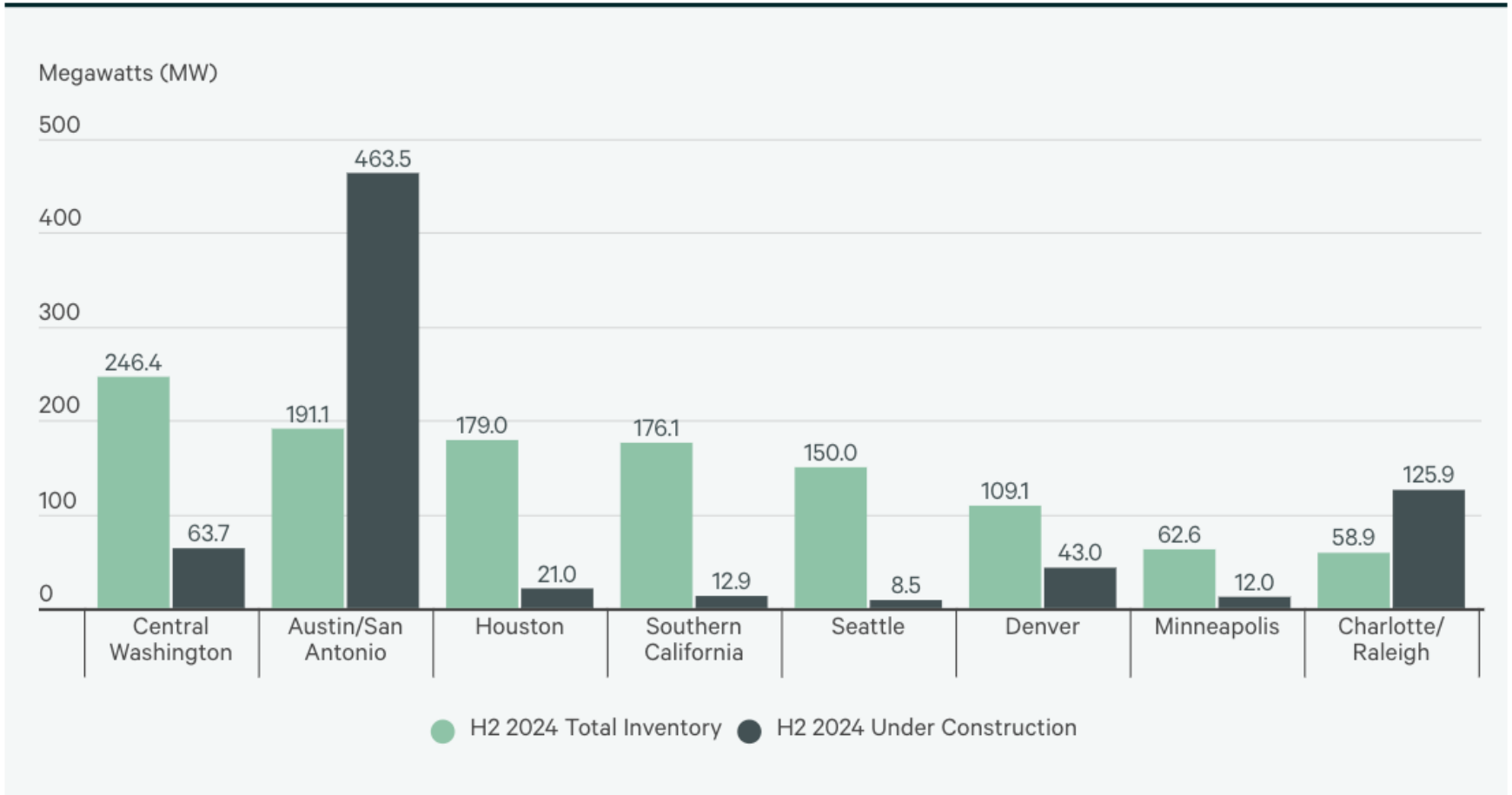


Source: CBRE Research, CBRE Data Center Solutions, H2 2024.

Source: CBRE, Phoenix, North America Data Center Trends H2 2024, February 26, 2025, https://www.cbre.com/insights/local-response/north-america-data-center-trends-h2-2024-market-profiles-phoenix

Data Center Trends

Figure 7: Total Inventory vs. Under Construction by Secondary Market, H2 2024

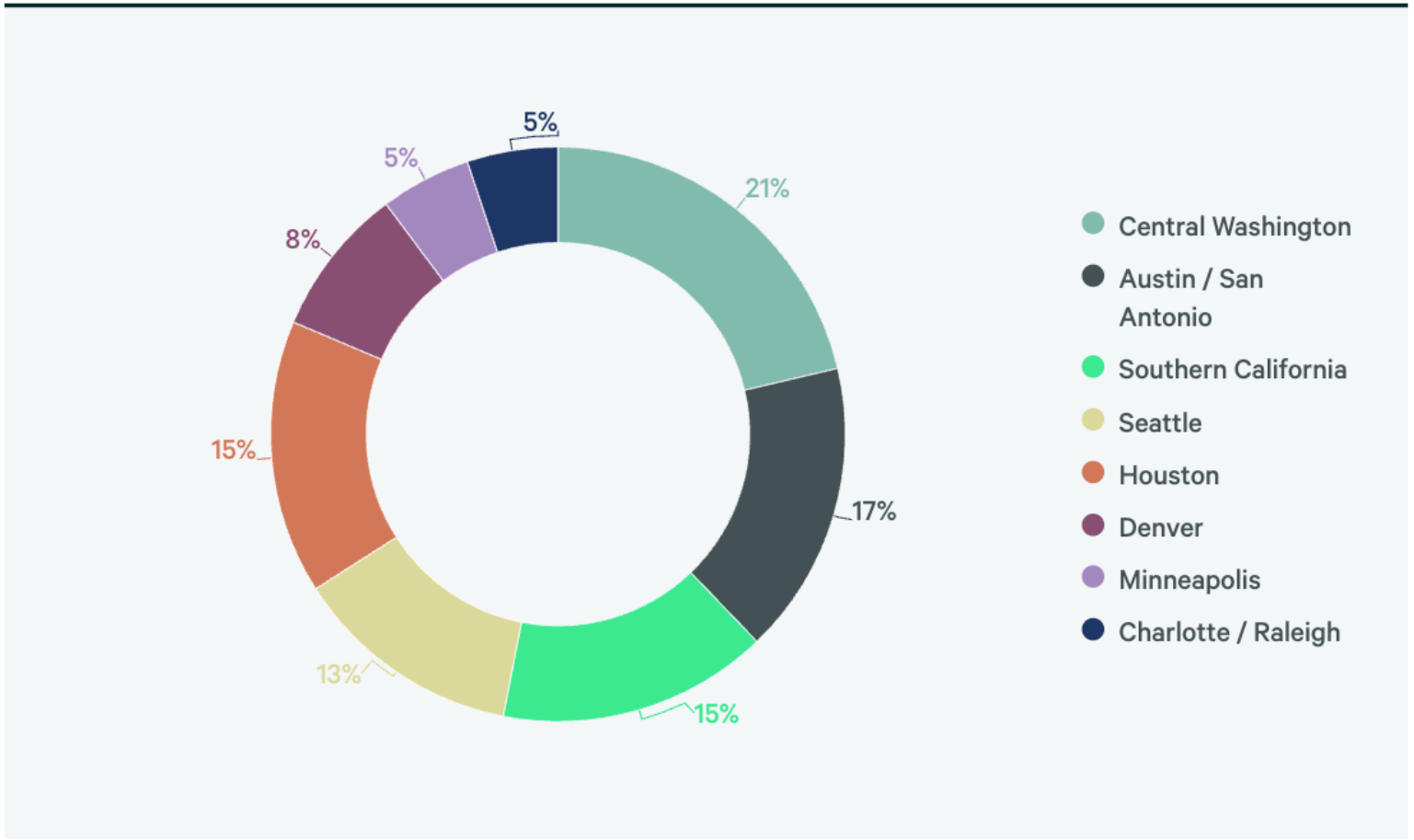


Source: CBRE Research, CBRE Data Center Solutions, H2 2024.

Source: CBRE, North America Data Center Trends H2 2024, February 26, 2025, https://www.cbre.com/insights/reports/north-america-data-center-trends-h2-2024

Data Center Trends

Figure 3: % of Total Secondary Market Inventory

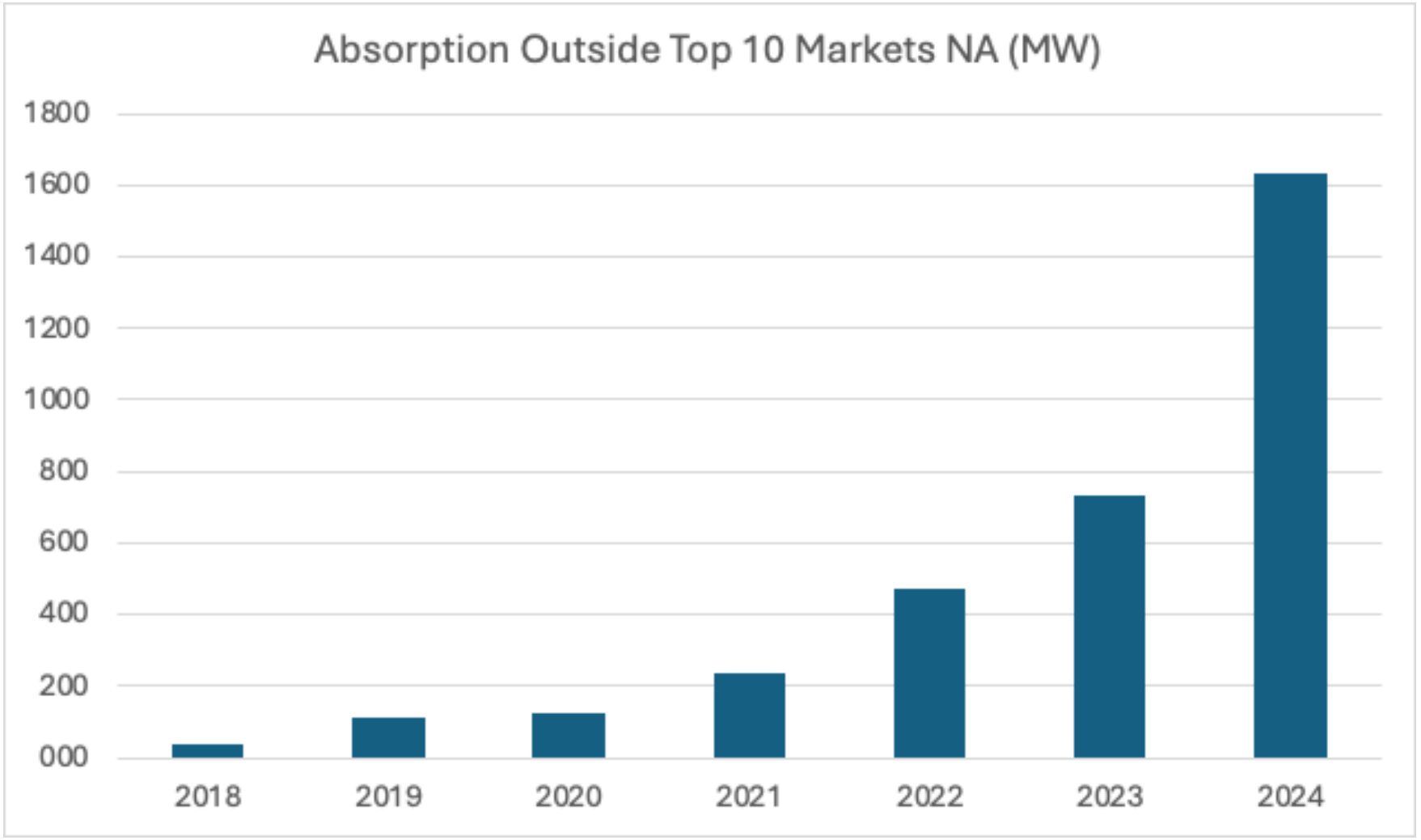


Source: CBRE Research, CBRE Data Center Solutions, H2 2024.

DATA CENTER COALITION

Source: CBRE, Austin/San Antonio, North America Data Center Trends H2 2024, February 26, 2025, https://www.cbre.com/insights/local-response/north-america-data-center-trends-h2-2024-market-profiles-austin-san-antonio

Data Center Trends

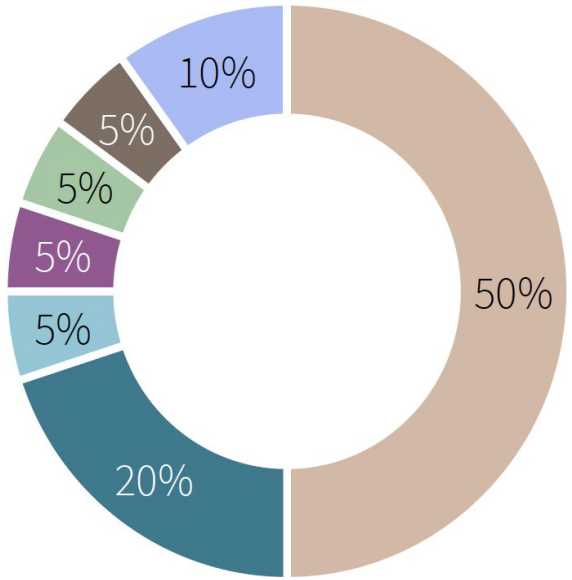


Source: datacenterHawk, https://datacenterhawk.com/

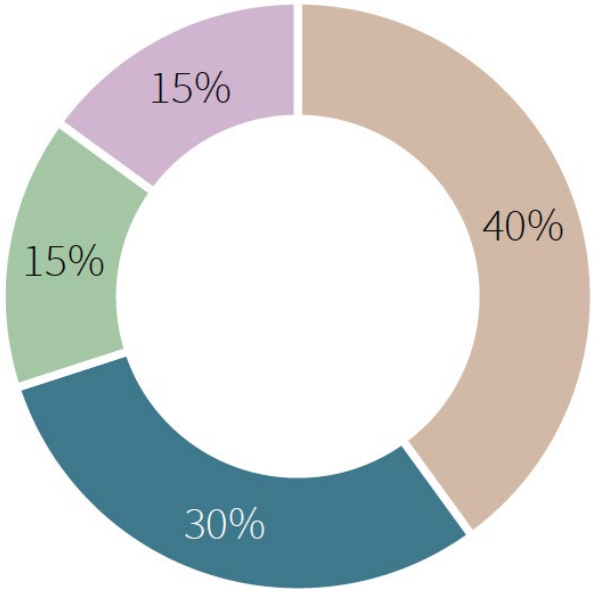
Data Center Trends

User Demand by Industry Varies Across Markets

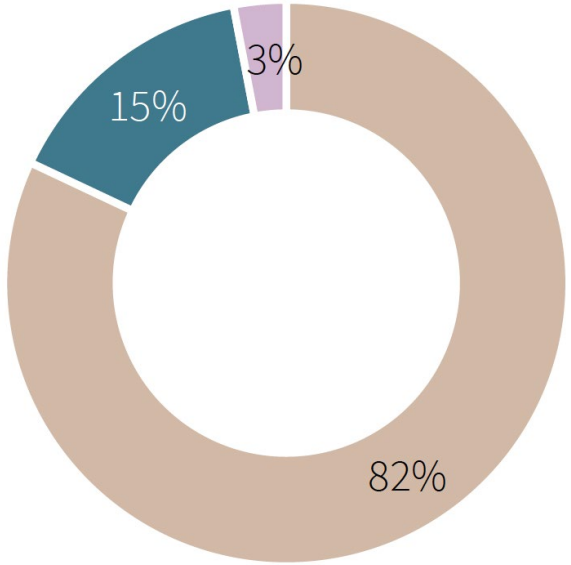
Atlanta



Dallas-Fort Worth



Northern Virginia



Source: JLL, North America Data Center Report, H2 2023, https://www.us.jll.com/content/dam/jll-com/documents/pdf/research/americas/us/jll-north-america-data-center-report-h2-2023.pdf

Primary Demand Drivers by Assesment Area

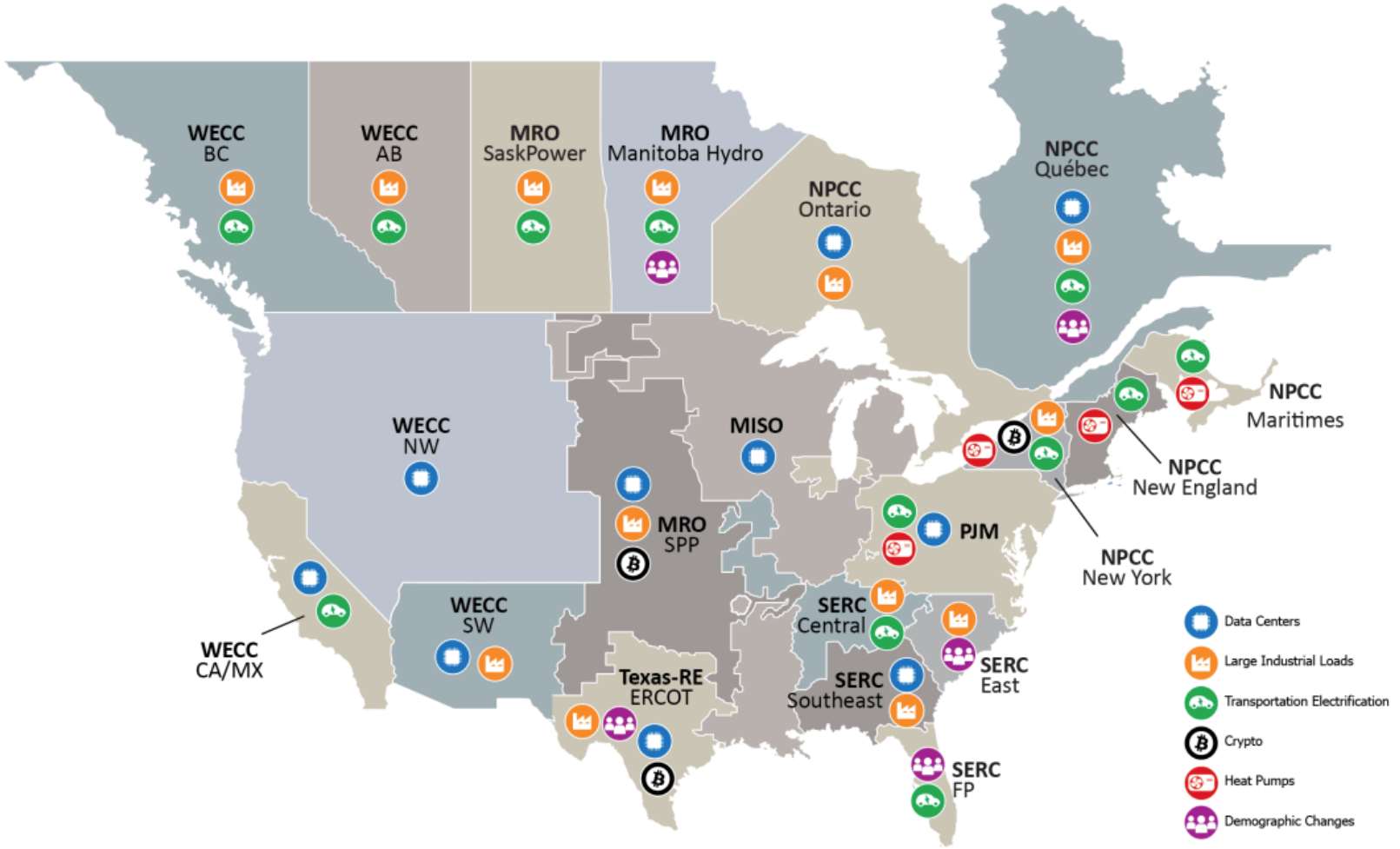


Figure 19: Primary Demand Drivers by Assessment Area

Source: NERC, 2024 Long-Term Reliability Assessment, December 2024,
https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf

DATA CENTER COALITION

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 Clean Energy Development

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U.S. Data Center Industry

Jobs

- **603,900 direct jobs** in 2023—51% increase from 2017
- **4.7 million in total employment** in 2023—60% increase from 2017
- **$404 billion in total labor income** in 2023—93% increase from 2017

GDP

- **$3.5 trillion in GDP impact** between 2017-2023

Taxes – Federal, State, and Local

- **$162.7 billion in total impact** in 2023 - 146% increase from 2017

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Source: PwC, "Economic Contributions of Data Centers in the United States, 2017-2023," February 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 CENTER COALITION

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

Georgia's Data Center Industry

Jobs

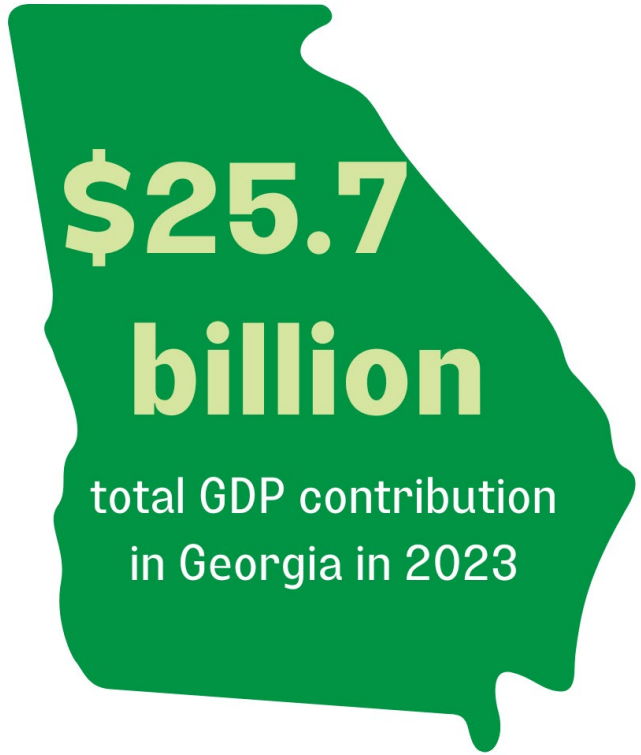
- 2023 **direct** employment: **30,070**
- 2023 **total** (direct, indirect, and induced) employment: **176,790**

Labor Income

- 2023 **total** labor income: **$14.1 billion**

GDP and Taxes Impact

- **$25.7 billion** to Georgia GDP in 2023
  - **11% increase** since 2022
- **$1.8 billion** in state and local tax revenues in 2023



DATA CENTER COALITION

Source: PwC, "Economic Contributions of Data Centers in the United States, 2017-2023," February 2025

Texas Data Center Industry

Jobs

- 2023 **direct** employment: **61,060**
- 2023 **total** (direct, indirect, and induced) employment: **363,820**

Labor Income

- 2023 **total** (direct, indirect, and induced) labor income: **$30.2 billion**

GDP and Taxes Impact

- **$52.6 billion** (direct, indirect, and induced) to Texas GDP in 2023
  - **9% increase** since 2022
- **$3.5 billion** (direct, indirect, and induced) in state and local tax revenues in 2023

DATA CENTER COALITION

Source: PwC, "Economic Contributions of Data Centers in the United States, 2017-2023," February 2025

Power Users: State Considerations for Data Centers

July 20, 2025

SERC Reliability Corporation

Council of State Governments: Southern Legislative Conference 2025

Tim Ponseti, Vice President, Operations

SERC

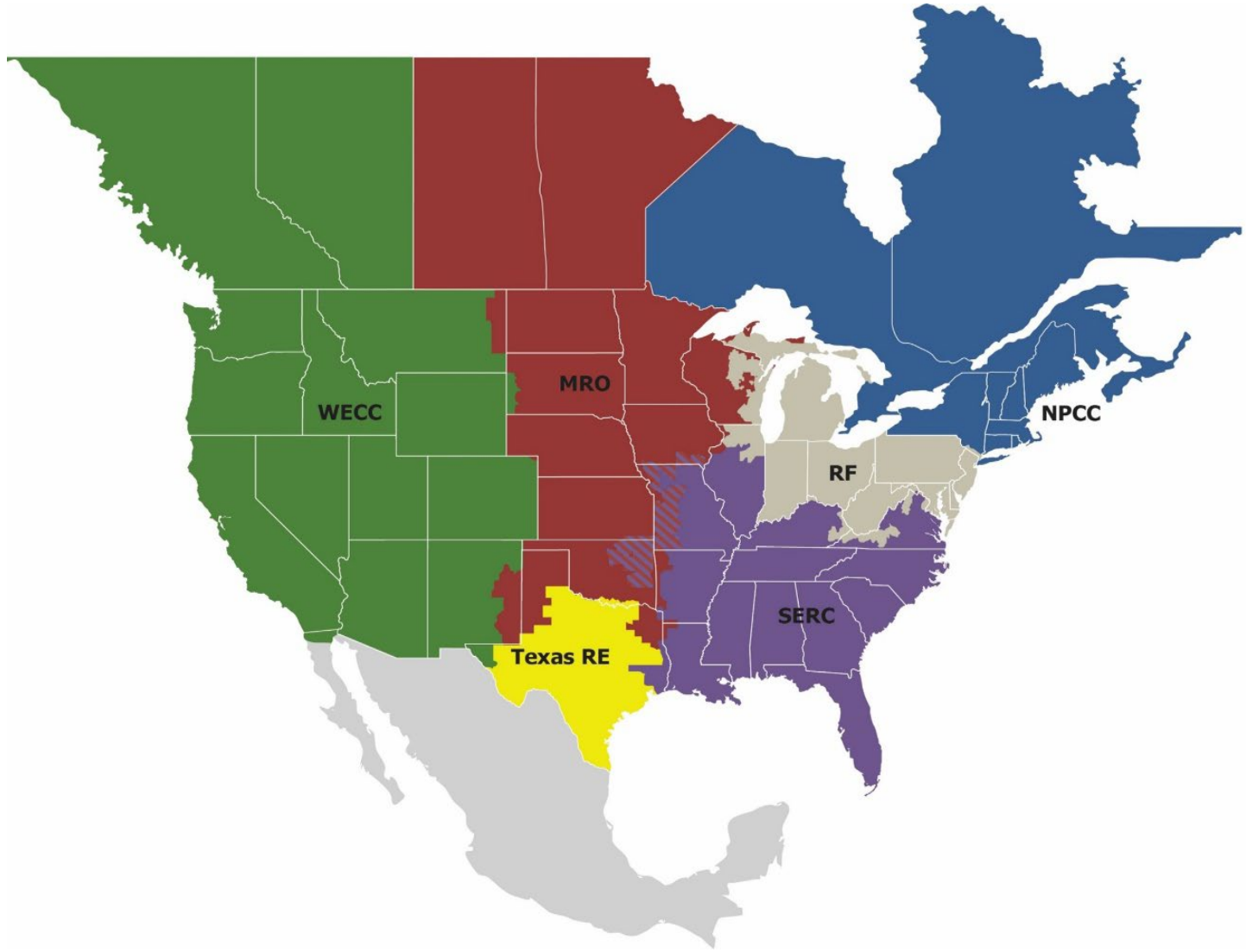
Electric Reliability Organization Enterprise

Our sole Mission is the Reliability and Security of the Bulk Electric System

We do not own or operate grid assets or energy markets

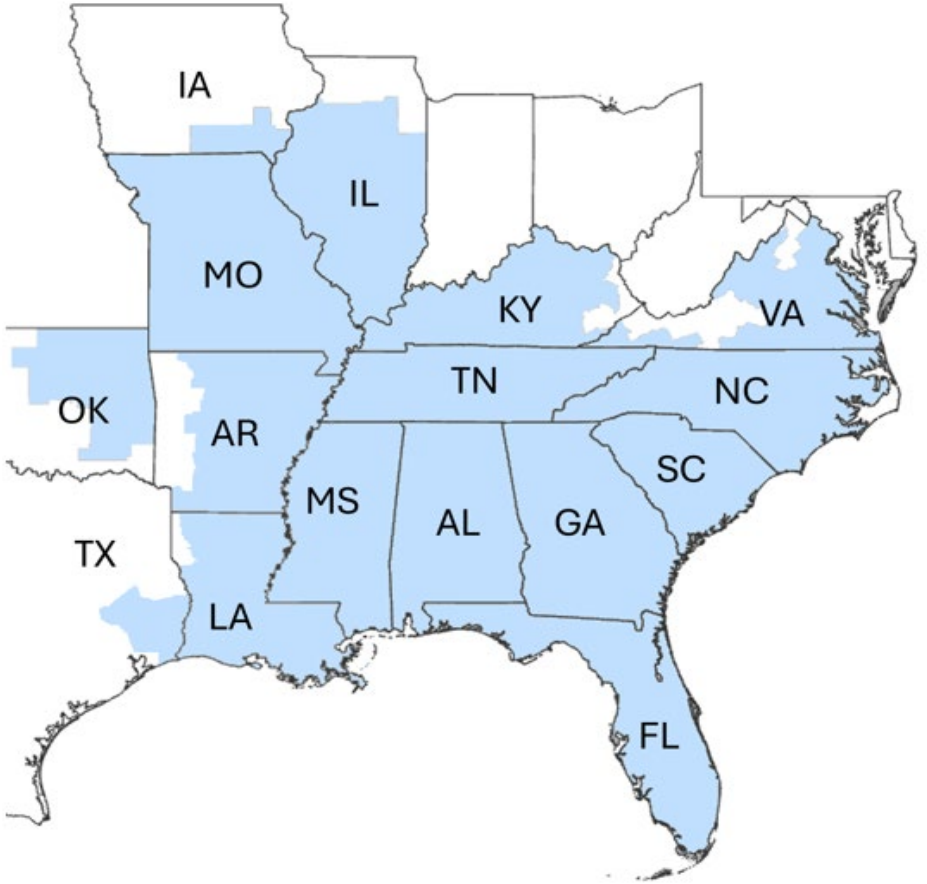
We are an objective and independent resource

We are regulators of the electric industry



SERC – by the Numbers

- **7** Reliability Coordinators
- **16** states
- **~100** million estimated Population
- **300+** Registered Entities
- **1370+** TWh annual energy
- **120,000+** miles of xmsn
- **260,000+** MW Load
- **320,000+** MW Generation



SERC's Mission is to assure effective and efficient reduction of risks to the reliability and security of the bulk power system.

SERC Top 10 Risks

Supply Chain Constraints: Increased risks from supplier dependencies, cyber threats, and natural disasters, require diversification, cybersecurity upgrades, and improved inventory management.

Extreme Weather Impacts: Extreme weather in the SERC region can damage infrastructure and disrupt fuel supply.

Resource Uncertainty: Accelerating changes in generating resources and fuel complicate planning and operations.

Shortage of Required Skillsets: This risk arises from a critical shortage of skilled staff in electrical operations, planning, and cybersecurity.

Exploitation of Vulnerabilities: Advanced tools and processes exploit bulk power system vulnerabilities, including ransomware.

Rapid Nontraditional Load Growth: Rapid load growth from new data centers and AI, is challenging the planning and operation of the BPS.

Lack of Fuel Diversity and Availability: Transition to natural gas and variable generation challenges energy adequacy.

Legacy Architecture Compatibility: Aging infrastructure struggles with compatibility and support from vendors.

Extreme Physical Events: Sabotage & Attacks: Deliberate disruptions to Bulk Electric System facilities and equipment.

Integrating Variable Energy Resources: Renewable energy integration requires backup planning due to weather dependencies.

Emerging Risks

1. Rapid non-traditional Load Growth
2. Lack of AI Governance
3. Coordination of Critical Gen or Load thru a single substation
4. Disruption of Cloud Services
5. Lack of Insider Threat Gov Prog

SERC Top 10 Risks – By Risk Profile

Energy Policy

- Supply Chain Constraints
- Resource Uncertainty
- Lack of Fuel Diversity and Availability
- Integrating Variable Energy Resources

Grid Transformation

- **Integrating Variable Energy Resources**
- **Lack of Fuel Diversity & Availability**
- **Rapid Non-Traditional Load Growth**
- **Resource Uncertainty**
- Supply Chain Constraints
- Legacy Architecture
- Extreme Physical Events: Sabotage & Attacks
- Shortage of Required Skillsets

Extreme Events

- **Extreme Weather Impacts**
- Lack of Fuel Diversity and Availability
- Extreme Physical Events: Sabotage & Attacks

Security Risks

- **Supply Chain Constraints**
- Exploitation of Vulnerabilities
- Legacy Architecture
- Extreme Physical Events: Sabotage & Attacks
- Shortage of Required Skillsets

Infrastructure Interdependencies

- Lack of Fuel Diversity & Availability
- Extreme Physical Events: Sabotage & Attacks
- Shortage of Required Skillsets
- Interdependence with Gas Pipeline

Deeper Dive - Load Growth

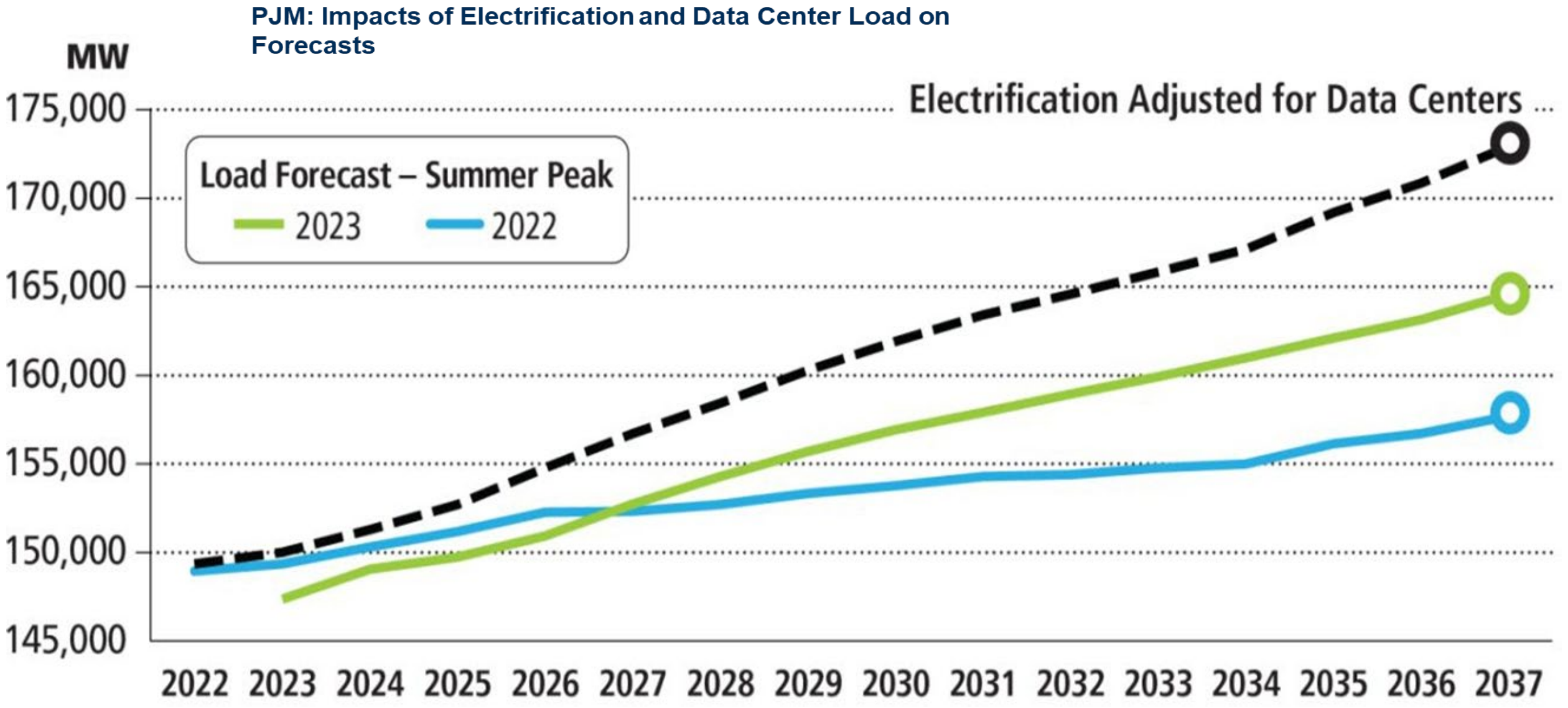
06

Rapid Nontraditional Load Growth

Rapid Nontraditional Load Growth: Rapid load growth from new data centers and AI, is challenging the planning and operation of the BES.

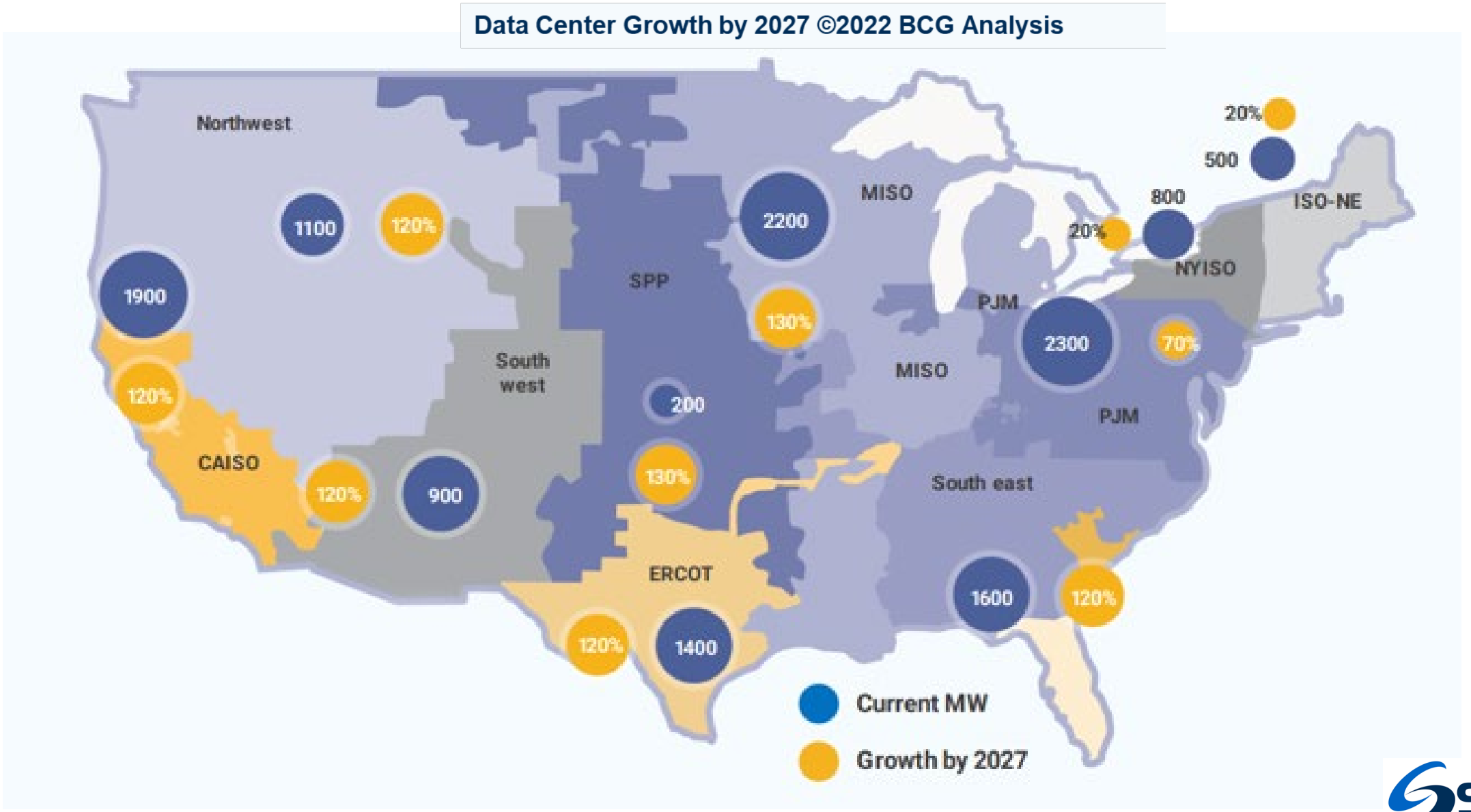
- Data Centers
- Manufacturing
- EV Charging
- Technology Advancements
- Population Growth
- Heating

Example of Projected Load Growth



Source: Energy Transition in PJM Resource Retirements, Replacements & Risks

What's All the Excitement About Data Centers?

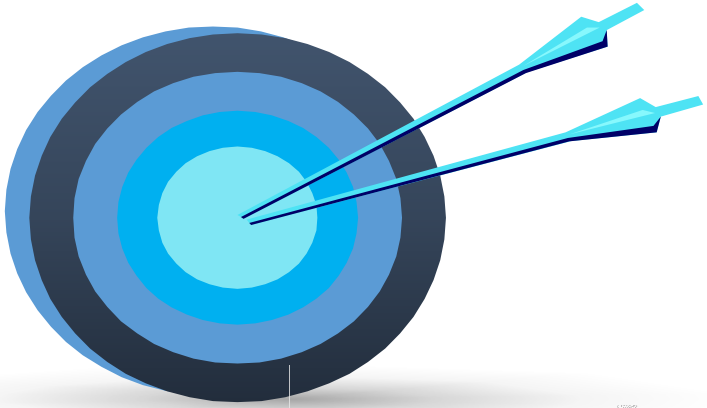


Source: Grid Strategies The Era of Flat Power Demand is Over, December 2023

Partners in Risk Management

SERC

STAKEHOLDERS



SERC Reliability's Official Training and Outreach Platform

COURSE CATALOG
All Available Training

FULL TRAINING CATALOG

NERC ACCREDITED
NCSO CEH Provider

NERC CEH CATALOG

ASIS ACCREDITED
Certified CPE Provider

ASIS CPE CATALOG

SERC
Upcoming SERC Events

SERC CALENDAR

MY COURSES
Continue or Start

VIEW MY COURSES

IN-PERSON TRAINING
Instructor Led Training

ILT CATALOG

SERC OUTREACH
Outreach & Assistance

NEED ASSISTANCE

MY DASHBOARD
Training Metrics

SEE MY METRICS

MY PROFILE
Your Information

VIEW & EDIT

State Outreach

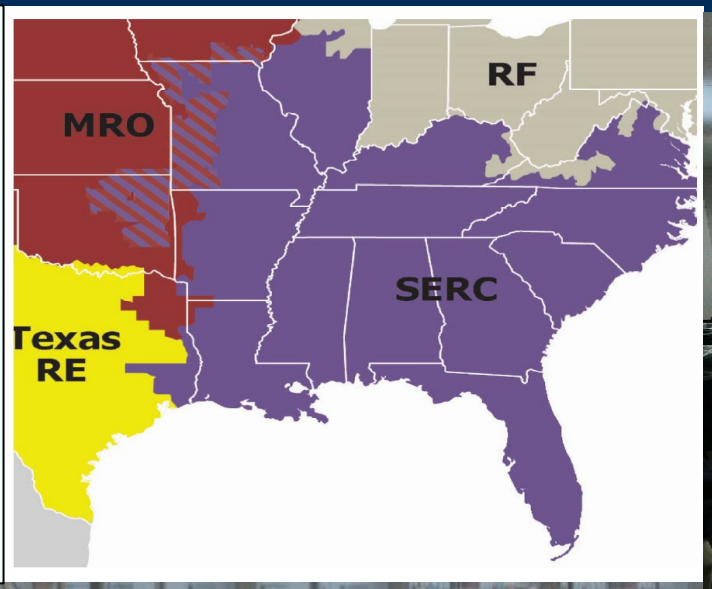
Joint Interest in Reliability

- Adequacy- sufficient resources to provide continuous supply of electricity
- Security- infrastructure to withstand sudden or unexpected disturbance from physical or cyber attacks

Beneficial Impact

- North Carolina Utilities Commission Order on non-Bulk Electric System solar in response to Odessa disturbance report
- South Carolina report on the resiliency of its electric and natural gas infrastructure
- Mississippi Commissioner shares State of Reliability Report findings in newsletter to constituents
- Asked to Speak at 2023 Southern States Energy Board (SSEB)
- Asked to Testify at House Subcommittee Field Hearing

Successful - Together



End Goal….

…Keep the Lights On

Upcoming Event

Scan me

Registration