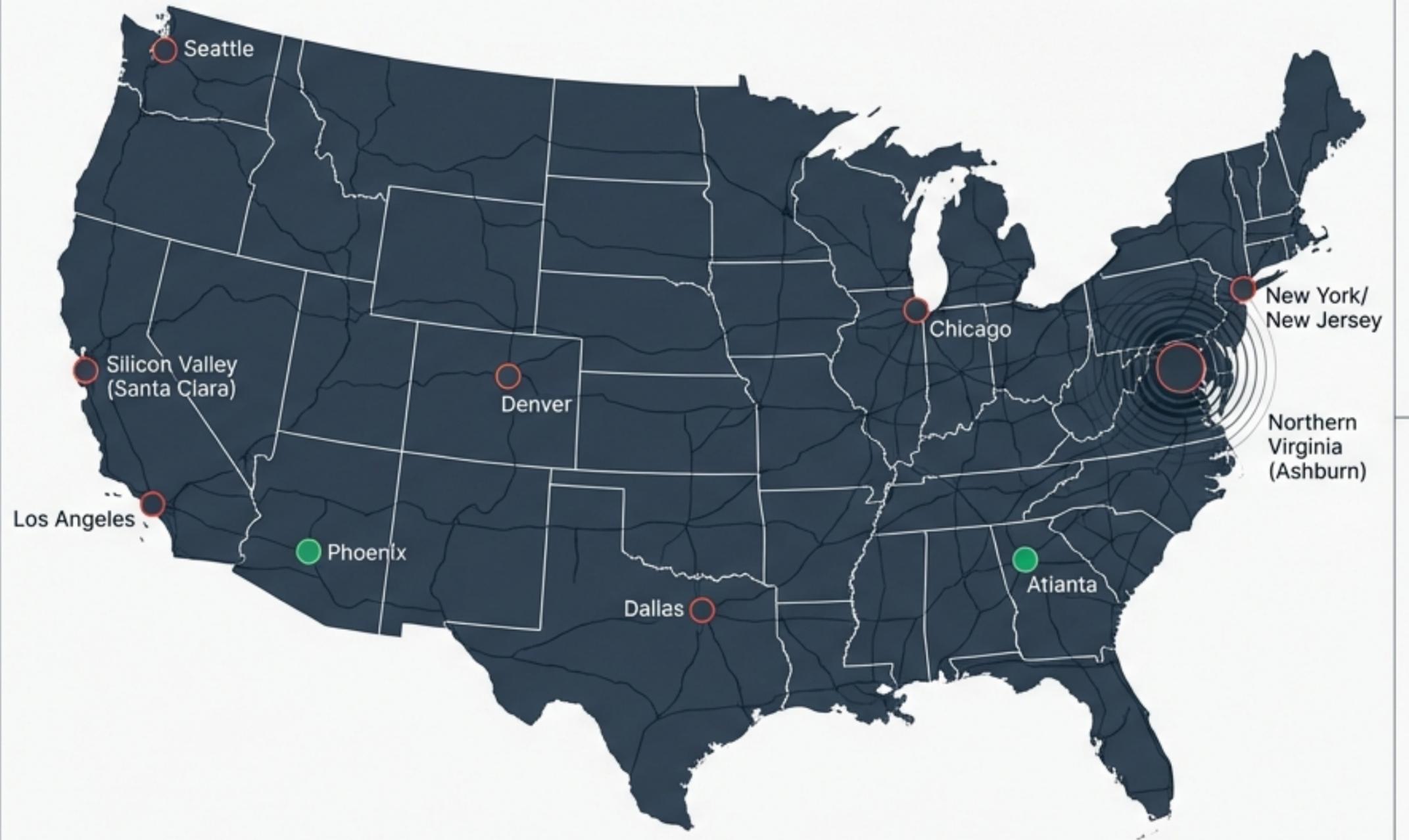


# The Infrastructure of the AI Era

Top 10 U.S. Data Center Markets: Infrastructure, Power, and Growth Outlook



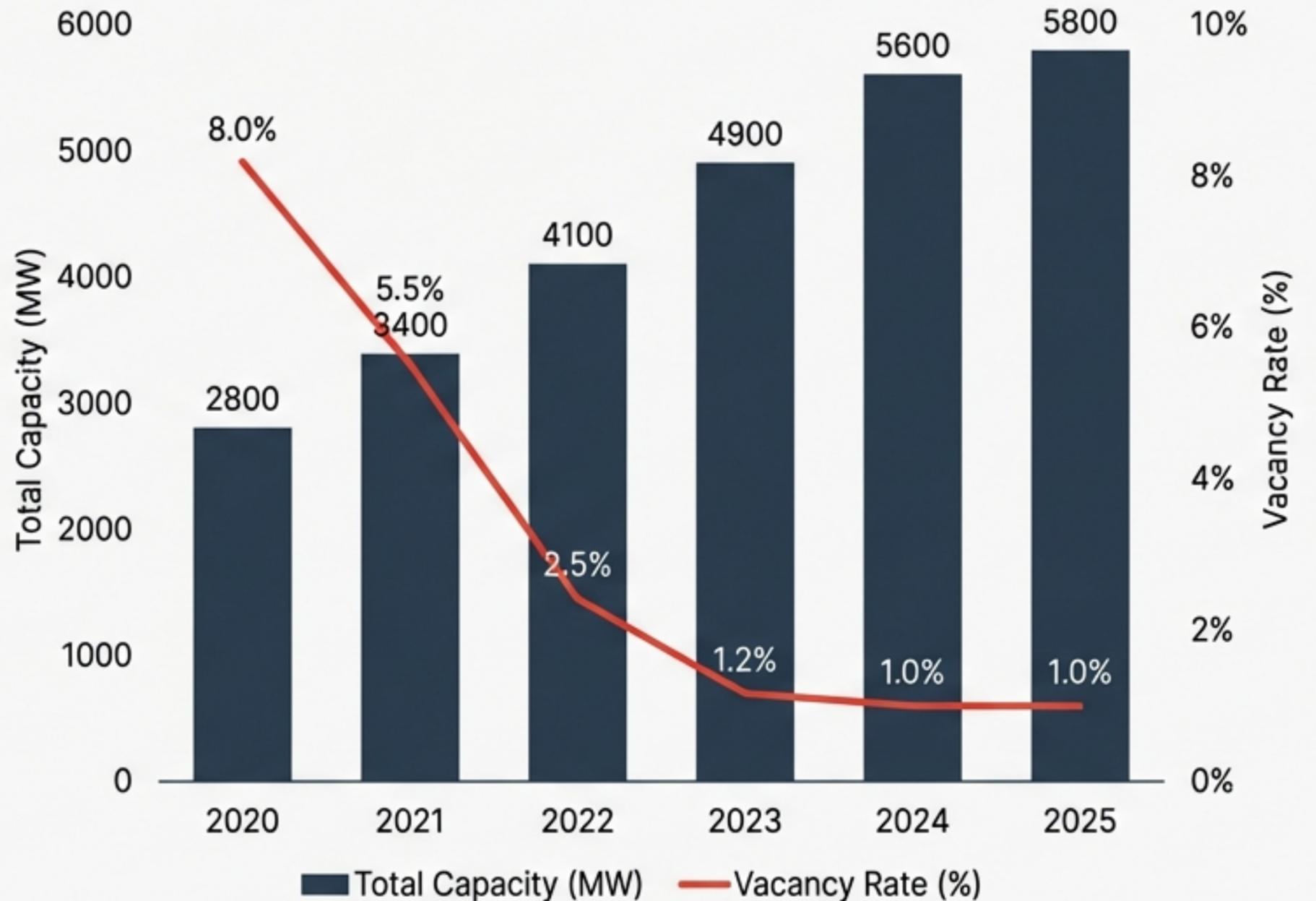
# Executive Summary: Unprecedented Demand Meets Physical Constraints

The U.S. data center industry is at a pivot point. Record absorption—driven by cloud and AI workloads—has pushed vacancy rates to historic lows (~1%). The primary site selection factor has shifted from fiber connectivity to Power Availability. While Northern Virginia remains the colossus, power-rich challengers like Atlanta and Dallas are seeing explosive relative growth.

## Key Insights

- **The Power Pivot:** Grid capacity is now the single biggest bottleneck.
- **The Absorption Record:** Primary markets added 34% more supply year-over-year.
- **The Shift:** Atlanta exceeded Northern Virginia in net absorption for the first time in 2024 (705.8 MW vs 451.7 MW).

### U.S. Primary Markets: Total Capacity vs. Vacancy Rate (2020-2025)



# Mapping Scale: Methodology & The Landscape



## Ranking Criteria

1. **Ecosystem Density:** Connectivity, IXPs, and cloud on-ramps.
2. **Power Cost & Availability:** Grid capacity, kWh rates, and renewable mix.
3. **Market Momentum:** Recent absorption and construction pipeline.

## Defining Capacity

Measured in Megawatts (MW). Primary ranking is based on Colocation Inventory + Hyperscale Self-Build overlays.

## The Hyperscale Overlay

Distinguishes between multi-tenant leased space (Colo) and massive owner-operated campuses (AWS, Google, Meta).

Total Capacity

**2,930 MW**

5.6 GW Total w/ Hyperscale

Vacancy

**<1% (Historic Low)**

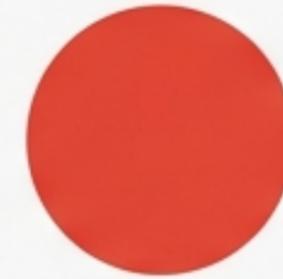
Pricing

**\$0.06–\$0.08 / kWh**

Absorption '24

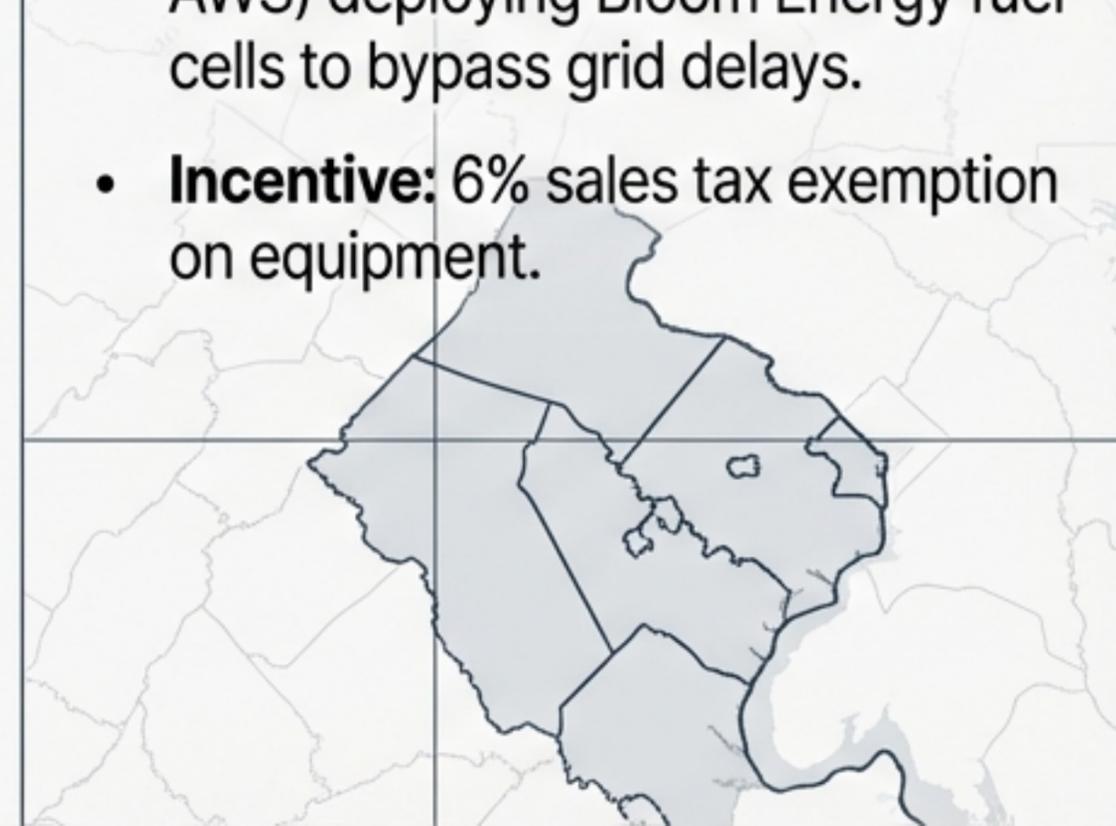
**451.7 MW**

The world's largest hub by a wide margin, hosting "Data Center Alley" in Loudoun County. It handles ~70% of global daily internet traffic. However, the region is straining under its own weight. Power delivery delays from Dominion Energy are forcing a slowdown, pushing development to the periphery.



## SEVERE CONSTRAINT

- **Constraint:** Multi-year delays for new substations.
- **Workaround:** Operators (e.g., AWS) deploying Bloom Energy fuel cells to bypass grid delays.
- **Incentive:** 6% sales tax exemption on equipment.



Total Capacity

**~1.5 GW**

Vacancy

**~1–2% (Tight)**

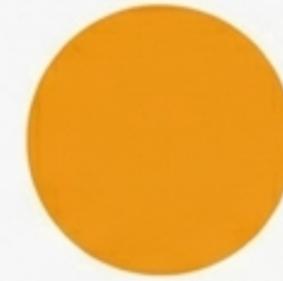
Pricing

**\$0.05–\$0.07 / kWh**

Trend

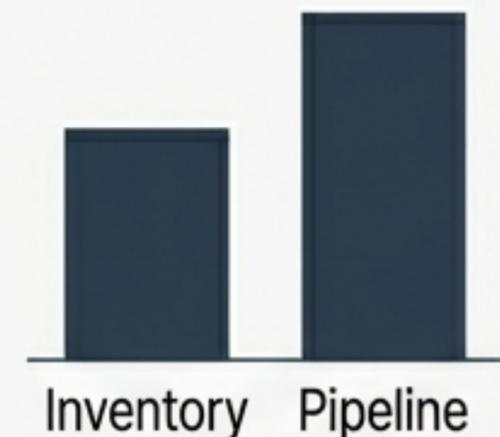
**Monster Growth**  
**(300 MW absorbed in 2024)**

A well-rounded hub balancing Retail, Wholesale, and Hyperscale demands. Its central geography offers low latency to both coasts. DFW is capitalizing on speed-to-market, with a pipeline that could nearly double the market size by 2026.



## TIGHTENING

- **Context:** ERCOT grid is robust but facing competition for substations.
- **Constraint:** Water usage for cooling is the emerging concern in the post-2021 freeze environment.
- **Incentive:** State sales tax exemption for projects >\$200M investment.



Inventory

**~600 MW**

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Pipeline

**1.3 GW**

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Vacancy

**1.9%**

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Pricing

**\$0.065–\$0.075 / kWh**

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Growth

**Inventory up 67% YoY**

The go-to alternative for West Coast demand, offering faster builds and lower costs than Silicon Valley.

Major hyperscale expansion (Microsoft, Google) has propelled Phoenix into the top tier.

Grid Status



**AVAILABLE**

- Utility: APS/SRP infrastructure is reliable.

**Critical Constraint: WATER**

Scrutiny on water-intensive cooling is forcing a shift toward waterless/air-cooled technologies.



Note: Meta paused a project in Mesa due to water concerns.

Capacity

**805–1,120 MW**

Vacancy

**<3%**

Pricing

**\$0.06–\$0.07 / kWh**

Anchor

**350 East Cermak**  
(Major Interconnection Hub)

A mature, strategic hub vital for financial trading and Midwestern coverage. While growth is steady rather than explosive, it remains a top choice for enterprise deployments requiring central U.S. coverage.

Power &amp; Regulatory

Grid Status

**UPGRADES  
NEEDED****Context:**

ComEd grid requires upgrades to handle density in areas like Elk Grove Village.

**Incentive:**

'Data Center Investment Program' offers 100% sales tax exemption for >\$250M investment + renewable energy procurement.



Capacity

# ~1 GW

Absorption '24

# 705.8 MW (#1 in US)

Pricing

# \$0.05-\$0.06 / kWh (Ultra-Low)

Trend

# 222% Inventory Growth in 2024

The star of 2024. Atlanta beat Northern Virginia in leasing volume, driven by explosive demand from AI and GPU-as-a-Service firms. It has become the relief valve for East Coast hyperscale demand.

## Power & Regulatory

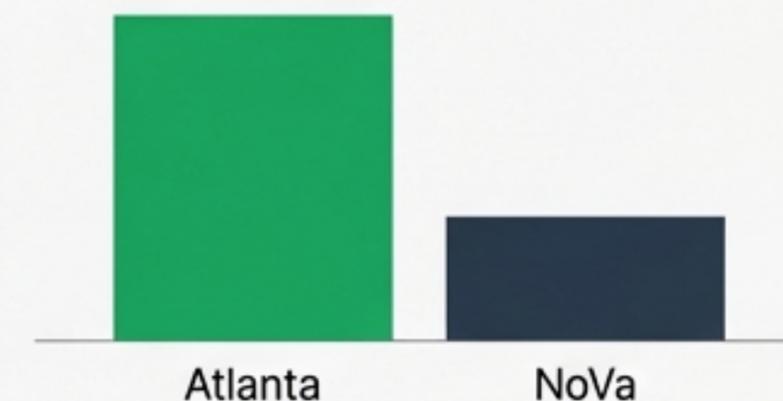
Grid Status

 **ROBUST**

**Power Source:** Georgia Power offers abundant capacity via a mix of nuclear (Vogtle) and renewables.

**Incentive:** Generous tax exemptions and fast permitting in counties like Douglas and Fulton.

Absorption 2024



# 06 | Silicon Valley

# The Innovation Paradox

Left Zone (Data)	Center Zone (Narrative)	Power & Regulatory
<p>Capacity</p> <p><b>~500 MW</b></p>	<p>The premier location for R&amp;D and Tech HQs, but practically impossible to build new large capacity. Demand is driven by latency-sensitive AI development that must sit near engineering teams.</p>	<p>Grid Status</p> <p> <b>CRITICAL</b></p> <p><b>Constraint:</b> Silicon Valley Power (SVP) and PG&amp;E face severe transmission limits.</p> <p><b>Innovation:</b> Operators are forced to use on-site generation (Bloom Energy fuel cells) to bypass the grid entirely.</p> <p></p>
<p>Vacancy</p> <p><b>5.5% (Stranded Capacity)</b></p>		
<p>Pricing</p> <p><b>\$0.15–\$0.25 / kW-month (Highest in US)</b></p>		
<p>Wait Time</p> <p><b>5+ Years</b> for utility power</p>		

Capacity

**~475 MW**

Vacancy

**0.2% (Lowest in US)**

Pricing

**\$0.05–\$0.06 / kWh**

Load Growth

**16% YoY**

Functioning as “Silicon Valley North,” Hillsboro combines direct transpacific connectivity with massive renewable power. It is an emerging hyperscale destination with virtually zero available vacancy.

Grid Status



**Power Source:** Portland General Electric (PGE) supports growth with hydro/wind.

**Incentive:** No Sales Tax + Enterprise Zone property tax abatements.

**Connectivity:** Direct subsea cables to Asia.



# 08 | Northern New Jersey (Tri-State)

# The Financial Fortress

Left Zone (Data)

Capacity

**~450–500 MW**

Vacancy

**6.5%**

Pricing

**\$0.11–\$0.16 / kWh (Expensive)**

Growth

Slowest of primary markets

Center Zone (Narrative)

A specialized market driven by Wall Street latency requirements rather than general cloud compute. While critical for the finance vertical, high operational costs limit hyperscale expansion here.



Right Zone (Power & Regulatory)

Grid Status

**EXPENSIVE**

Condition: Power is available but cost-prohibitive for AI training models.

Outlook: Future growth will focus on network-rich, edge connectivity rather than massive server farms.

## Left Zone (Data)

### Colo Capacity

~200 MW

Neue Haas Grotesk Display

### Total Capacity

2,000 MW+

Neue Haas Grotesk Display

### Growth

1,800% since 2020

Inter

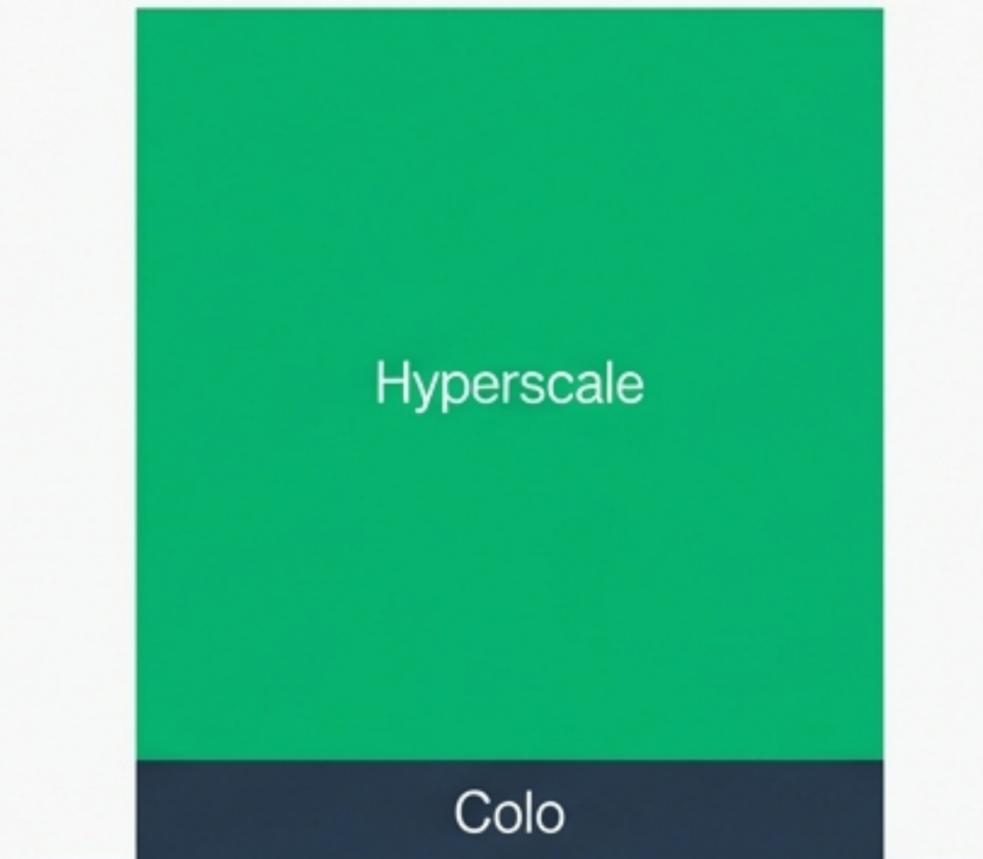
### Vacancy

~0% (Fully Leased/Owned)

Inter

## Center Zone (Narrative)

A "Hyperscale Super-Cluster" disguised as a secondary market. Growth is driven almost entirely by single-tenant campuses (e.g., Meta's Project Prometheus). It is on a trajectory to become the second-largest hub in the Great Lakes region.



Hyperscale Overlay

## Right Zone (Power & Regulatory)

### Grid Status

● **SCALABLE**

**Context:** Unconstrained land and access to the PJM grid.

**Drivers:** AWS, Google, and Meta Self-Builds.

**Incentive:** Data Center Sales Tax Exemption utilized by all major cloud providers.

# 10 | Central Texas (Austin/San Antonio)

# The New Frontier

## Left Zone (Data)

Capacity

**~921 MW  
(Austin)**

Growth

**500% since 2020**

Pipeline

**463+ MW Under  
Construction**

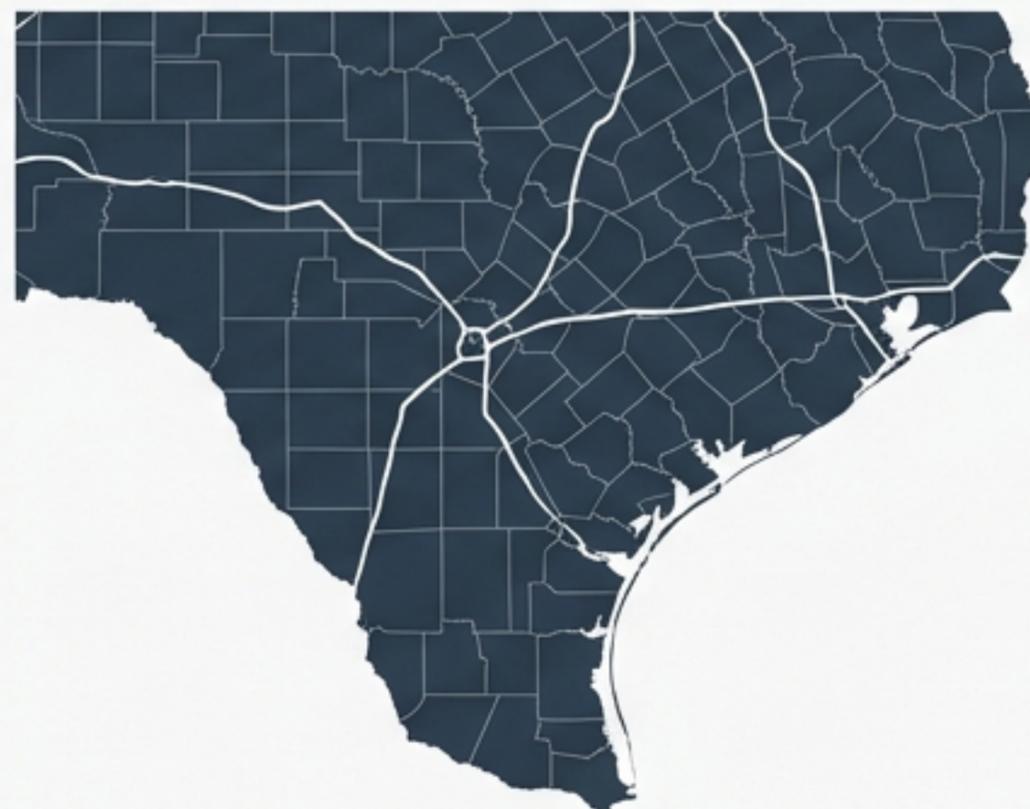
Tenants

**Microsoft, Oracle, Tesla**

## Center Zone (Narrative)

Inter

Combining Austin's tech ecosystem with San Antonio's military/infrastructure heritage. A spillover market from Dallas that has become a Tier 1 cluster in its own right.



## Right Zone (Power & Regulatory)

Grid Status



**RESOURCE  
STRAIN**

Planning

Utilities (Austin Energy/CPS) planning for 10x load increase by 2033.

Risk

Acute scrutiny over water usage during droughts; push for reclaimed water systems.

# The Next Wave: Markets to Watch

## Las Vegas/Reno, NV

### The Green Giant

Land + Geothermal Power.  
Top overflow candidate.

## Salt Lake City, UT

### Silicon Slopes

Cheap power (\$0.05/kWh) +  
cool climate.

## Indiana / Northern Louisiana

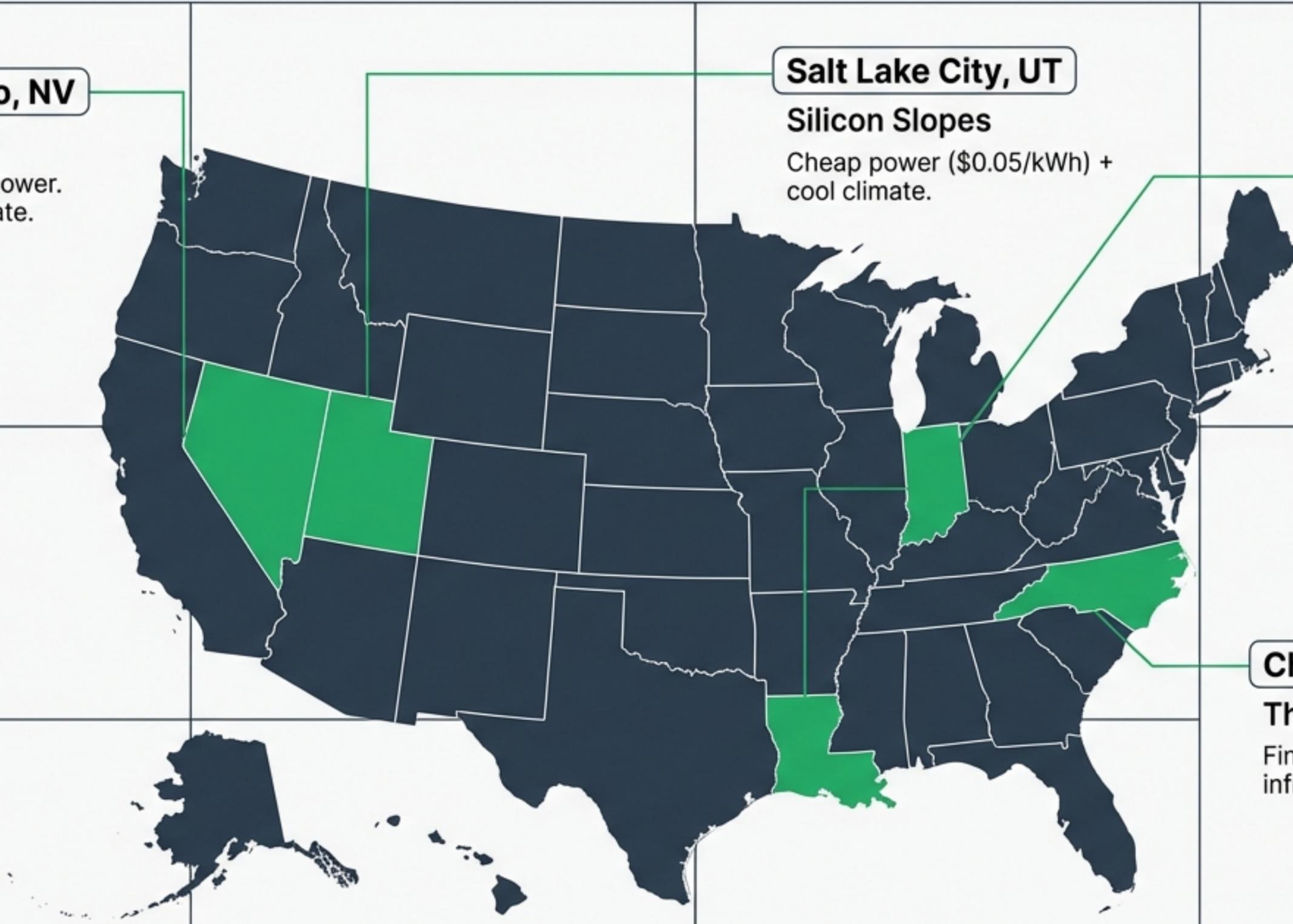
### The Value Play

The hunt for cheap land  
and power is pushing  
hyperscalers into  
unexpected territories.

## Charlotte, NC

### The Nuclear Option

Financials + Nuclear power  
infrastructure.



# State of the Market: The Power Equation

Rank	Market	Inventory (MW)	Vacancy %	Primary Constraint
<b>01</b>	<b>Northern Virginia</b>	~2,930 (5.6GW Total)	<1%	● Power Transmission (Red Dot #E74C3C)
<b>02</b>	<b>Dallas–Fort Worth</b>	~1,500	~1–2%	● Tightening Grid (Yellow Dot #F39C12)
<b>03</b>	<b>Phoenix</b>	~600	1.9%	● Water (Green Dot #27AE60)
<b>04</b>	<b>Chicago</b>	~805	<3%	● Distribution Upgrades (Yellow Dot #F39C12)
<b>05</b>	<b>Atlanta</b>	~1,000	N/A	● None - Robust (Green Dot #27AE60)
<b>06</b>	<b>Silicon Valley</b>	~500	5.5%	● Power Unavailable (Red Dot #E74C3C)
<b>07</b>	<b>Hillsboro</b>	~475	0.2%	● Renewable Supply (Green Dot #27AE60)
<b>08</b>	<b>NJ (Tri-State)</b>	~450	6.5%	● High Cost (Yellow Dot #F39C12)
<b>09</b>	<b>Columbus</b>	~2,000 (Total)	~0%	● None - Scalable (Green Dot #27AE60)
<b>10</b>	<b>Central Texas</b>	~921	~2%	● Water/Heat (Yellow Dot #F39C12)

Final Takeaway: The era of selecting sites based solely on fiber is over. The future belongs to markets that can solve the Power + Permitting equation to support the gigawatt-scale demands of the AI age.