Exploring Without Deploying: Public Power and Data Center Demand

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A New Source of Load: Data Centers

Data centers are not a new concept, but their current scale and increasing adoption of Artificial Intelligence (AI) may be redefining their role as customers and how they fit within the public power universe. We expect them to remain top of mind for municipal electric utility operators and bond investors alike. The rapid growth and concentration of data center load, along with the resulting political debate at the state and local level, will shape how public power systems and their ratepayer bases are affected.

The risk to utilities would come from high fixed costs should capacity be overbuilt (data center load may require the host utility to multiply its existing generation capacity) without contractual provisions to protect against load losses or early contract termination. Primary market supply totaled 8,155 megawatts (MW) in the first half of 2025, up 43.4% year-over-year underscoring continued end-user demand, particularly from hyperscalers.[1]

Capital expenditure (CapEx) driving demand for generation Capital spending by the "Big Four" hyperscalers (Meta, Alphabet, Amazon, and Microsoft) is driving the need for electric generation to meet existing and future computing capacity. It is expected that hyperscale capital spending will reach $700 bn in 2026, about 6.0x 2022 spending, and expected to grow by 17.0% in 2027.[2]

Technology driving electricity consumption Data centers have sizeable electricity requirements and are projected to increase with the advancements being made in AI model training. Two key components in data centers that are driving this thirst for energy include servers (equipped with high performance Central Processing Units (CPUs), Graphics Processing Units (GPUs) and custom-designed chips built for specific tasks), and cooling equipment which account for approximately 75.0% and 7.0% of consumed electricity, respectively.[3]

Power sector realignment From 2008 to 2020, efficiency standards and the shift to a less-intensive services focused economy tempered electric demand growth from a growing population and expanding economy.

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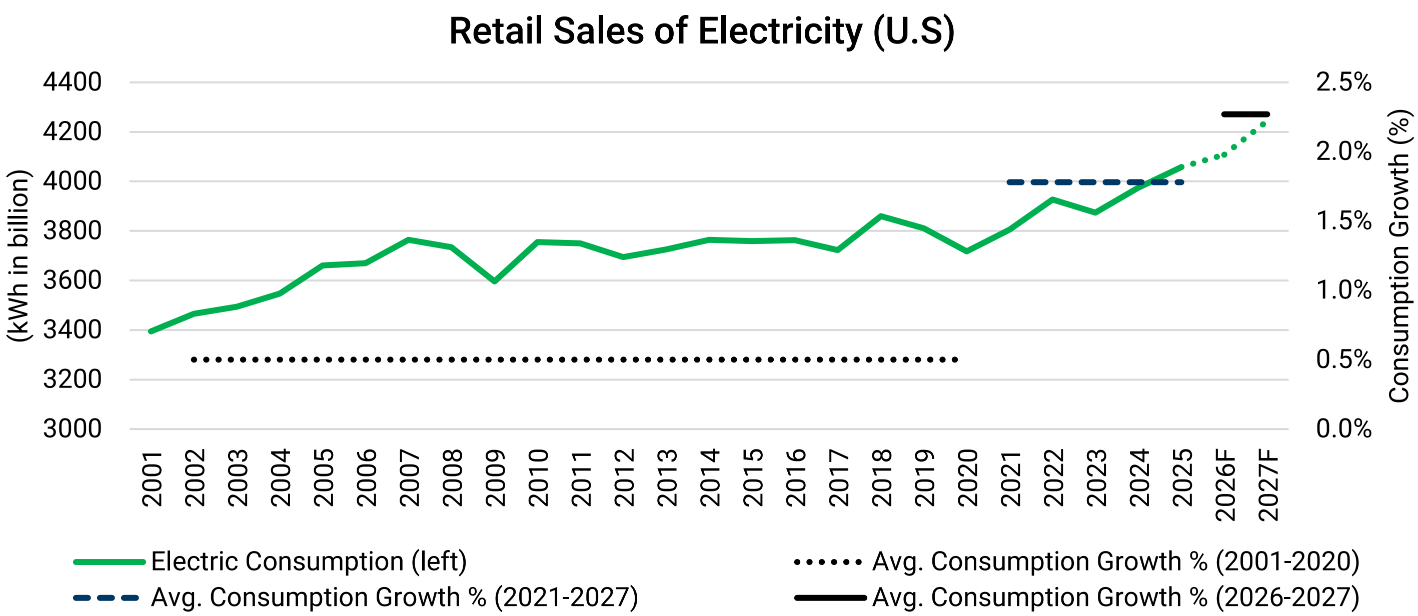
[1] North America Data Center Trends H1 2025, CBRE, September 8, 2025.
[2] Tech Giants' Capital Spending Surging to $700 billion Amid Robust AI Demand, Moody's Ratings, March 11, 2026.
[3] World Energy Outlook Special Report, International Energy Agency, April 2025.

Average electricity consumption grew by 0.32% annually for the period 2005-2020 but rose on average by 1.78% annually for the period 2021-2024. The Energy Information Administration (EIA) projects electricity usage to grow by 1.23% and 3.31% in 2026 and 2027, respectively.[4]

Chart 1: Electricity Sales and Growth



Sources: PTAM, Energy Information Administration (EIA).
Note: Sales to ultimate customers include residential, commercial, industrial and transportation. Does not include direct use of onsite generation.

De-coupling of consumption and revenue Electric utilities were not generating incremental revenue because of the stagnant demand for electricity and therefore rates started to rise. The combination of Environment Protection Agency (EPA) emissions standards equipment retrofitting, legacy unit replacement, and inflation have continued to drive the fixed costs higher with the average retail price reaching 13.63 cents/ kWh in 2025, from 9.83 cents in 2010.[5] That would equate to $1,375/ year (899 kWh usage/ mo.) or 1.64% of median household income (2024), still considered affordable at the median. This affordability metric underpins financial flexibility should utilities need it.

Findings

The rapid expansion of AI load, mostly met with investor-owned utility generation because they have the capacity to respond more quickly to hyperscaler needs, is forcing municipal utilities to reconsider their resource planning. Public power systems are inherently more cautious and navigating the AI data center boom more carefully because their overarching mission is to provide a public good that is affordable and reliable.

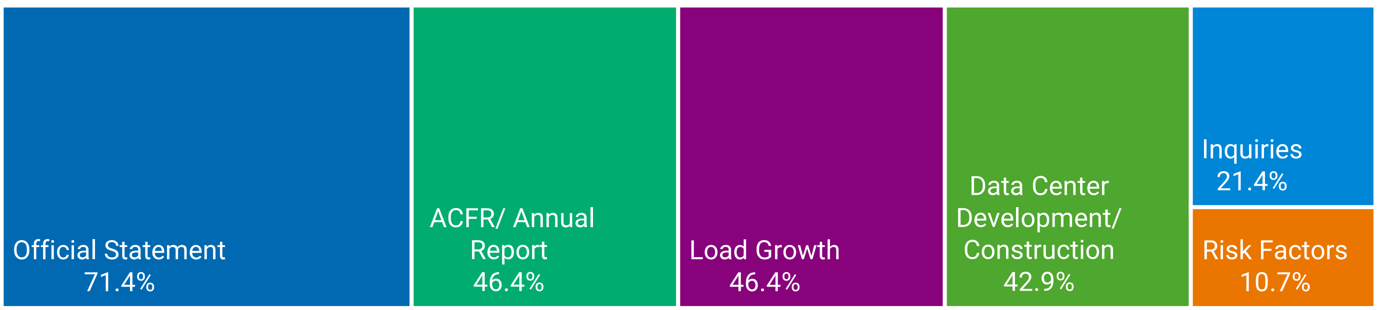
To gauge the importance of data center load and utility engagement across the sector, using disclosure as a proxy, we analyzed 52 issuers with public disclosure[6]—representing over $100 billion of combined par outstanding across 24 states and system types (vertically integrated retail systems, joint action agencies, and cooperatives).

[4] Short-Term Energy Outlook, U.S. Energy and Information Administration (EIA), April 2026. Sales to ultimate customers include residential, commercial, industrial and transportation. Does not include direct use of onsite generation.
[5] Electricity Data Browser, US Energy and Information Administration.
[6] Disclosure documents include official statements, annual comprehensive financial reports (ACFR), annual reports, and budgets.

Approximately 54% of the utilities reviewed (28 of 52) included at least one reference to data centers in public disclosures, though mentions are unevenly distributed across credits and disclosure types. References are most frequently observed in official statements, with more limited inclusion in audits and risk factor sections, suggesting that data centers are not yet consistently framed as a core credit consideration.

Where disclosed, commentary is generally limited in detail but clusters around a consistent set of themes: load growth within service territories, inquiries from data center developers, and, less frequently, active development or construction activity. This pattern indicates that while data centers are increasingly entering the disclosure narrative, engagement remains preliminary and largely exploratory rather than fully embedded in utility planning at this time.

Chart 2: Data Center Mention Breakdown



Sources: PTAM, Issuers (ACFR, Annual Reports, Budgets and Official Statements).
Note: Percentages do not equal 100% because a utility may have multiple references across “mention” categories.

Building to Serve Versus Serving from Excess Capacity

Data center sizeable load AI is a rapidly evolving space and while capitalizing on the opportunity to serve additional load, overinvesting to meet “speculative load” could leave a utility with stranded assets and associated fixed costs over a long period of time. Hyperscale data centers are large relative to a median utility’s peak demand. It is estimated that data center electricity demand would double in 2026 and double again by 2030, accounting for 11.7% of total electric consumption, up from 5.2% in 2005.[7]

Table 1: Data Center Needs Relative to Midsized and Large Utilities

Factors	Large Retail Utility with Generation (Median)	Midsize Retail Utility with Generation (Median)	Average Hyperscale Data Center[8] *(MW relative to midsize utility)*		
Peak Demand (MW)	3,110	448	250 *(53%)*	500 *(105%)*	750 *(158%)*
System size (O&M mn)	$1,800	$300	Projects continue to demand more power. About 2,078 MW are under construction in Northern Virgina alone in 1H 2025.		
Customer accounts (units)	575,000	98,000			
Debt service coverage (x)	3.20	2.70			
Days cash on hand (days)	166	151			

Sources: PTAM, North America Data Center Trends H1 2025, CBRE, September 8, 2025.

Sizeable load requirements introduce risks to public utilities, namely capital spending, liquidity requirements, and cash flow coverage of debt service. The cost of construction together with capitalized interest during construction and at minimum a debt service reserve fund could quickly balloon the size of a bond issuance.

[7] Scaling Bigger, Faster, Cheaper Data Centers with Smarter Designs, McKinsey & Company, August 1, 2025
[8] North America Data Center Trends H1 2025, CBRE, September 8, 2025.

Speculative data center loads The potential impact from hyperscale data center load could differ across utilities because of other considerations including terms for the contracted load, financial strength of credit, and service area fundamentals. Credits at the top of the credit quality stack may be better positioned to absorb speculative load risk, relative to a mid-quality credit.

To demonstrate the hypothetical impact of speculative load on a mid-sized median utility, we assumed that a 250MW gas fired unit would be constructed, and the project would be fully funded with debt proceeds (30 years, level debt service) and debt sizing would include a debt service reserve.

To isolate the financial impact of this speculative load, it is assumed that the plant operates at a lower capacity factor (CF) of 20.0% and a gas price of $3.00. Electric rates are held constant and not assumed to offset the revenues lost from underutilized generation capacity.

Table 2: Speculative Load Assumptions

New Capacity (MW)	Construction Cost/ kW ($)	Capacity Factor (%)	Fuel Type/ Price	Heat Rate (Btu/kWh)	Sources of Funds (% debt)
250	2,000	20	Natural Gas, $3.00	7,500	100

Source: PTAM, new capacity (EIA, as of July 2025), construction cost (GridLab, as of Sept. 2025), capacity factor & heat rate (EIA, as of Feb. 2024), natural gas price (Bloomberg, as of 05/06/2026).
Note: Data used may be subject to rounding.

Sensitivity: Debt Service Coverage (x) for a Midsized Utility Adding 250MW Gas Generation

Natural Gas Price ($/mmBtu)

Capacity Factor (%)	$ 1.00	$ 2.00	$ 3.00	$ 4.00	$ 5.00	$ 6.00	$ 7.00
0%	1.24	1.24	1.24	1.24	1.24	1.24	1.24
10%	1.56	1.53	1.49	1.46	1.43	1.40	1.36
20%	1.88	1.82	**1.75**	1.69	1.62	1.56	1.49
30%	2.21	2.11	2.01	1.91	1.82	1.72	1.62
40%	2.53	2.40	2.27	2.14	2.01	1.88	1.75
50%	2.85	2.69	2.53	2.36	2.20	2.04	1.88
60%	3.18	2.98	2.79	2.59	2.40	2.20	2.01

Source: PTAM. Financial and operating data for a mid-sized utility as of Fiscal Year 2024.

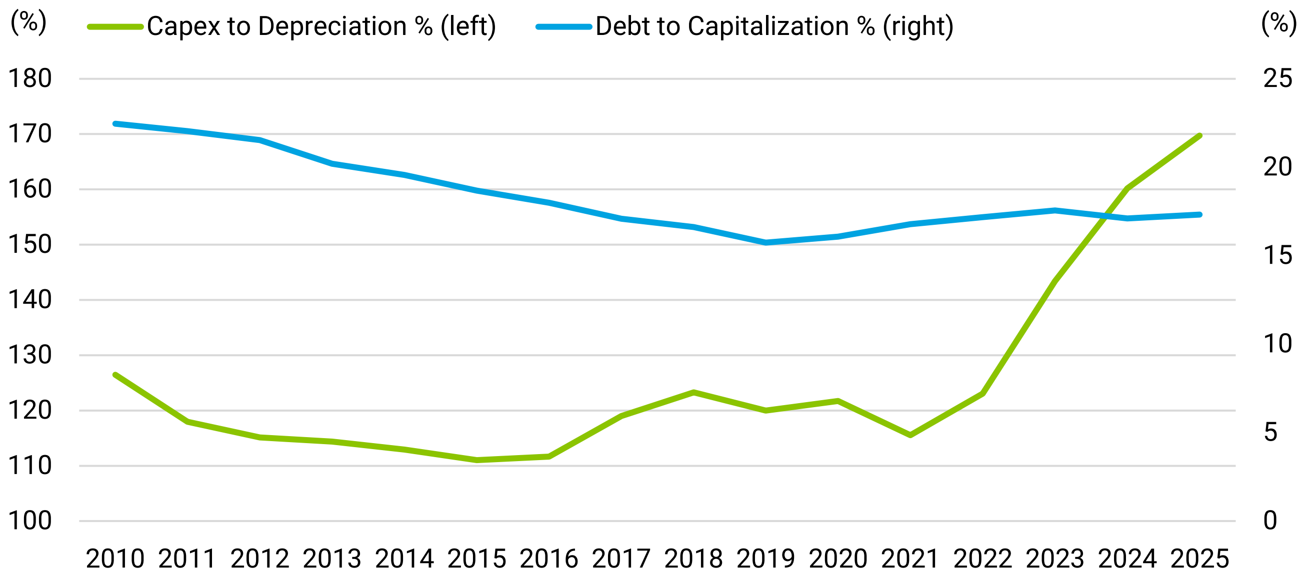
Fuel costs account for a meaningful portion of operating costs, and the capacity factor (unit actual energy output relative to its full potential) impacts profitability. Generally, a plant's economics improve as fuel is cheaper and as capacity factor is higher.

In this scenario, the addition of a 250MW gas-fired plant could reduce debt service coverage (DSC) for a mid-sized utility to 1.75x from about 3.10x pre-capacity expansion. This is a conservative estimate and does not account for savings from reducing existing purchased power, electric rate increases, equity funding, contractor skillset, and regional construction costs. The alternative is to serve new load from existing excess capacity which would not require the upfront and sizeable capital needs, and eliminate construction and ramp-up risk, and may ultimately boost cash flow from operations.

Convergence of pressure With the electrification of the U.S. economy, legacy plant retirements and capacity replacement, maintenance of aging infrastructure, climate hardening of assets, internet of things, and persistent inflation, there is financial pressure on utilities without even incorporating the urgent and sizeable demand for electricity from data centers.

[9] North America Data Center Trends H1 2025, CBRE, September 8, 2025.

Chart 3: Retail Electric Capital Spending



Source: PTAM.

Overcoming Complacency – Key Takeaways

The municipal landscape continues to evolve as new uncertainties are introduced, and existing stresses are magnified. Our research team maintains that through a rigorous analytical approach and credit selection, we are able to uncover nuances unique to certain credits and identify those that may be best suited to manage through economic, political, and social volatility.

- It is too early to conclude how data centers will be integrated more broadly into the public power complex.
- The longer-term resource planning mandate of public power systems is a mismatch for the rapid scaling of data centers, and therefore sufficient provisions to protect against reduced offtake or early contract termination are critical to credit quality.
- Importance of teasing out speculative versus real load.
- Rate affordability for retail customers, and rate-making flexibility is an essential anchor for utility credit.
- Utilities vary in size of operation, payor mix, size of customer base, and financial flexibility. The impact of such load, should a utility undertake it, will vary across credits.

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