Investment Insights | October 2025

Voya Direct Infrastructure Credit: AI's Race for Energy

Available power is now a real chokepoint on the growth of much-needed data center capacity. As tech companies prioritize securing reliable electricity, there is a growing convergence between data center and power projects—and an exceptional opportunity for private capital.

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Key takeaways

- U.S. electricity demand—and prices—are growing at rates not seen since the 1980s, driven in large part by ambitious data center development plans and widespread AI adoption.
- Power is the key to scaling AI further, and the forecast shortage emerging in near-term availability is driving a rush for any and all energy solutions—and forging new partnerships between data center developers and power developers.
- Hyperscalers are prioritizing speed to market, which leads to an immediate need for billions of dollars of private infrastructure financing.
- Voya's Direct Infrastructure Credit team has an established track record of financing critical energy and digital infrastructure projects, and has longstanding partnerships with borrowers at the forefront of new generation development.

America's power crisis

The past couple years have seen the slow-moving electric power sector, accustomed to decades of flat growth, have to quickly adapt to the "move fast and break things" ethos of Big Technology.

AI, the switch from cable to streaming video, crypto mining, and the increasing dominance of cloud computing have all meant that big tech companies are planning ever more data center capacity—and those data centers all need power. The U.S. is estimated to see overall electricity demand compound annual growth rate (CAGR) of 3.8% from 2024-2029, driven by a 2.4% growth in all other forms of power demand and a 23.6% CAGR in data center power demand (Exhibit 1).

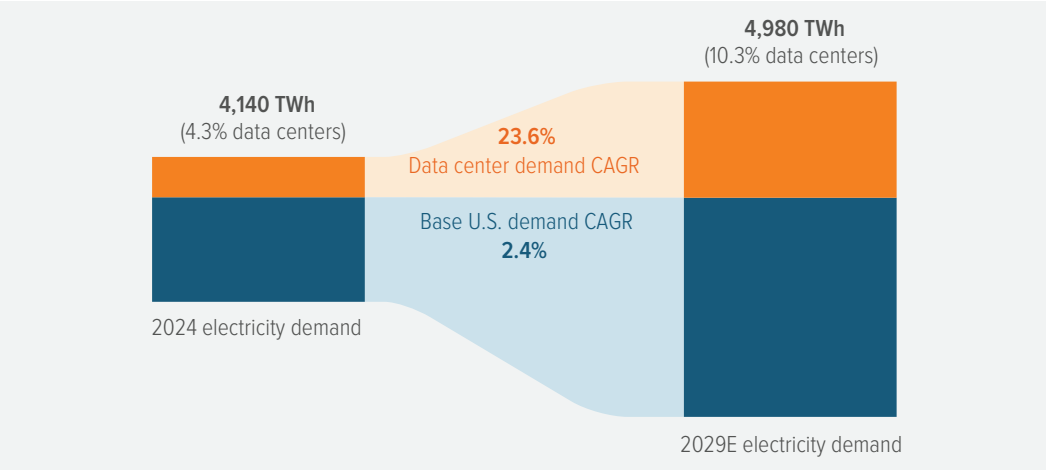
The crunch is already here. Vacancy rates in data centers are practically nonexistent, hitting a record low 1.6% in the first half of this year; further, nearly 75% of newly completed colocation and hosting capacity was contracted before it was even available. The average asking rental rate for data center space in primary markets has risen 57% since 2021 (Exhibit 3).[1]

As the market responds with accelerating investment in data centers, power has emerged as the key constraint to future development. This critical bottleneck is affecting the infrastructure market in four significant ways:

- Data center developers and hyperscalers are increasingly choosing to directly procure power either via captive generation or power purchase agreements.
- Data center and power developers are focused on speed to market, which has resulted in continued demand for clean energy projects since they are the fastest to build and connect to the grid.
- Data center developers are pursuing partnerships with energy developers due to their experience siting and obtaining approvals for large power loads.
- Growth in digital infrastructure and energy projects require increased funding from private capital sources across the capital structure.

[1] CBRE, "North America Data Center Trends H1 2025," 09/08/25.

Exhibit 1: Data center demand is pushing up U.S. electricity needs



As of 09/11/25. Source: FERC, Grid Strategies, EIA, Goldman Sachs. Fun fact: data centers already consume as much energy as the entire state of California.

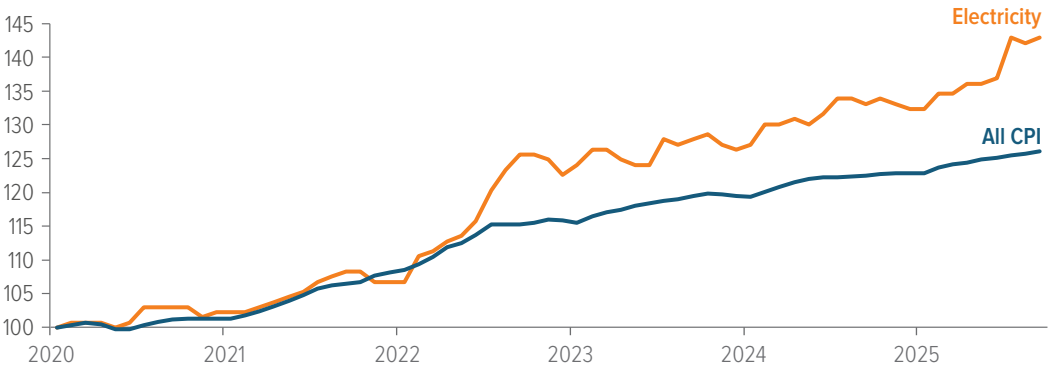
At the same time, many regional transmission organizations in data center hotspots, such as large mid-Atlantic grid PJM, have cumbersome interconnection request approval processes that are slowing the addition of new resources to the grid.

Federal policy is also impacting the development of new electricity infrastructure on several fronts, from changes in tax credits to tariff policies which impact supply chains.

The overall effect has been to drive electricity prices sharply higher in most U.S. markets over the past two years as demand exceeds supply (Exhibit 2). And it's likely to get worse: ICF forecasts retail electricity rates will rise 15-40% by 2030 across various utility service areas.[2]

Exhibit 2: Residential electricity prices have been rising much faster than CPI since the end of 2022

Average urban residential electricity price per kWh versus CPI (% change since January 2020)



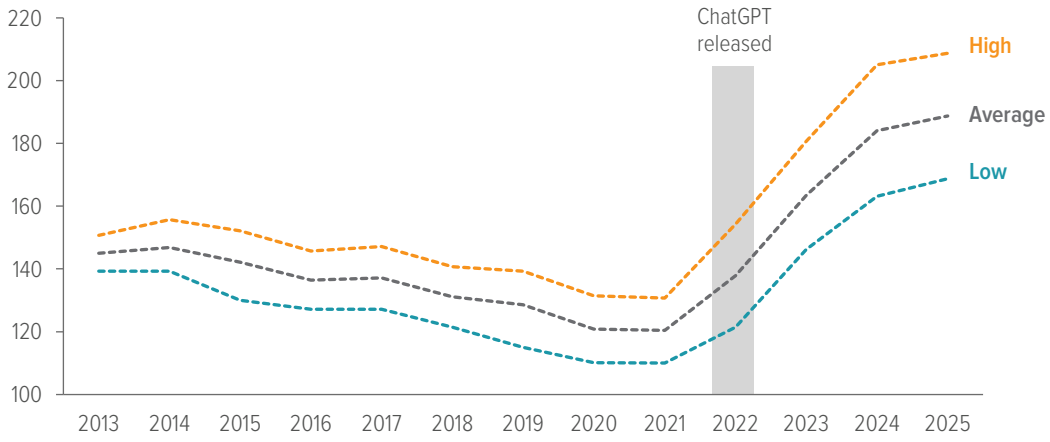
As of 10/24/25. Source: BLS.

Rising electricity prices are likely to accelerate the trend of large corporates securing their own electricity supply with power purchase agreements (PPAs) or captive generation. January 2025's total of 119 GW of corporate-contracted clean power was already a 68% rise year on year, and a further 11.5 GW contracted in the following five months (Exhibit 4).

[2] ICF, "Rising current: America's growing electricity demand," 05/21/25.

Exhibit 3: Supply/demand imbalance is also pushing data center rental rates sharply upwards

Average data center asking rental rate in primary markets, $ kW/month

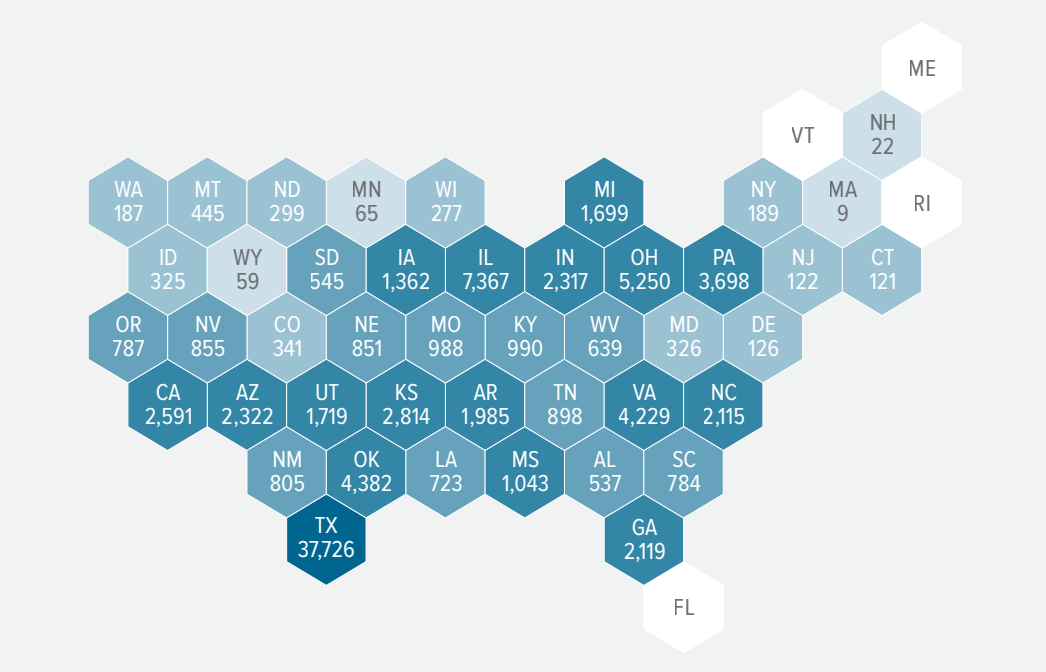


As of 09/09/25. Source: CBRE.

This trend is dominated by large tech companies (Amazon, Microsoft, Meta, and Google alone are responsible for 84 GW), but hardly limited to them—entities ranging from MGM's Las Vegas casinos to McDonalds and Ford Motor Company are also increasing their share of privately-contracted clean power.

Exhibit 4: Corporations across the U.S. have signed agreements for 130 GW of clean power

Corporate power purchase agreements by state (MW)



Source: S&P Global. As of 07/10/25

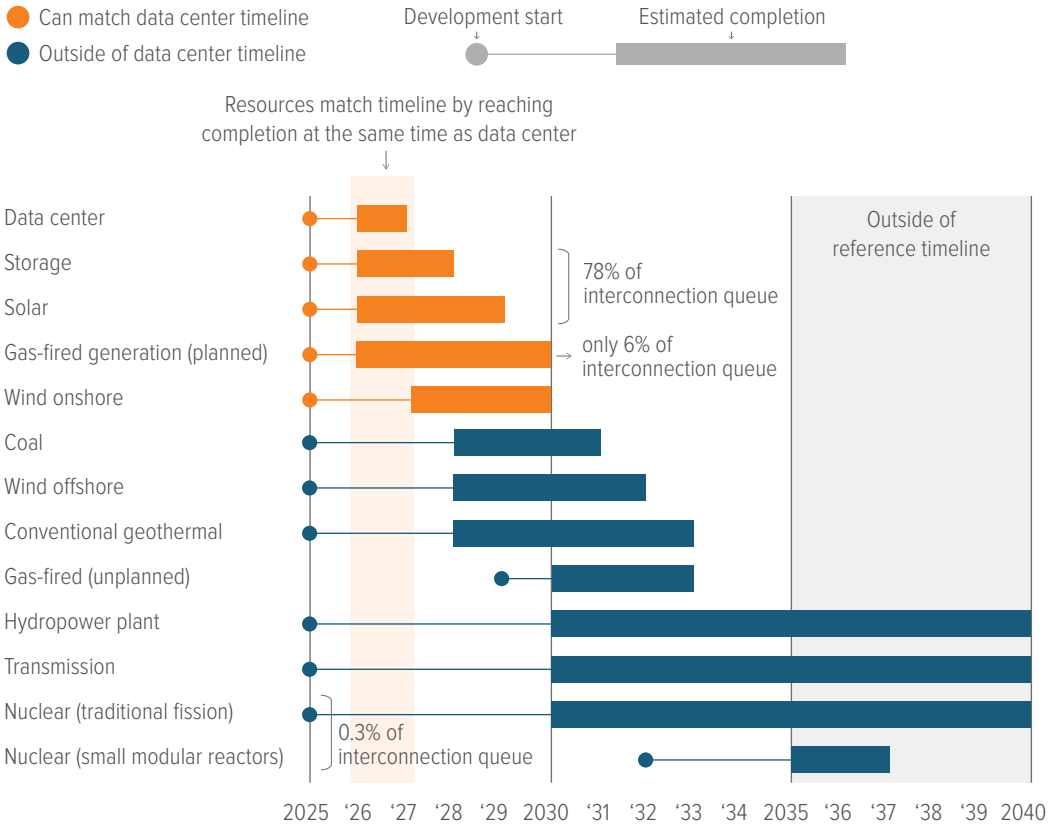
Powering the AI race

America's looming electricity deficit requires an all-energy solution. Gas development is already restarting after years of underinvestment, but long equipment lead times (5+ years) and increased build costs are major bottlenecks (Exhibit 5) to new, previously unplanned gas-fired generation projects. Nuclear is promising, but unlikely to deliver power for 5-10 years.

For data centers, speed to market is paramount—and renewable energy remains the fastest (and cheapest) power solution. Many data center clients also still have long-term sustainability targets which remain important to them.

Renewables also feature long-term PPAs that allow buyers to hedge against rising power prices (PPAs for gas generators are significantly shorter due to variable fuel supply costs) and typically have a shorter and less onerous permitting process than natural gas.

Exhibit 5: Few energy resources align with data center timelines



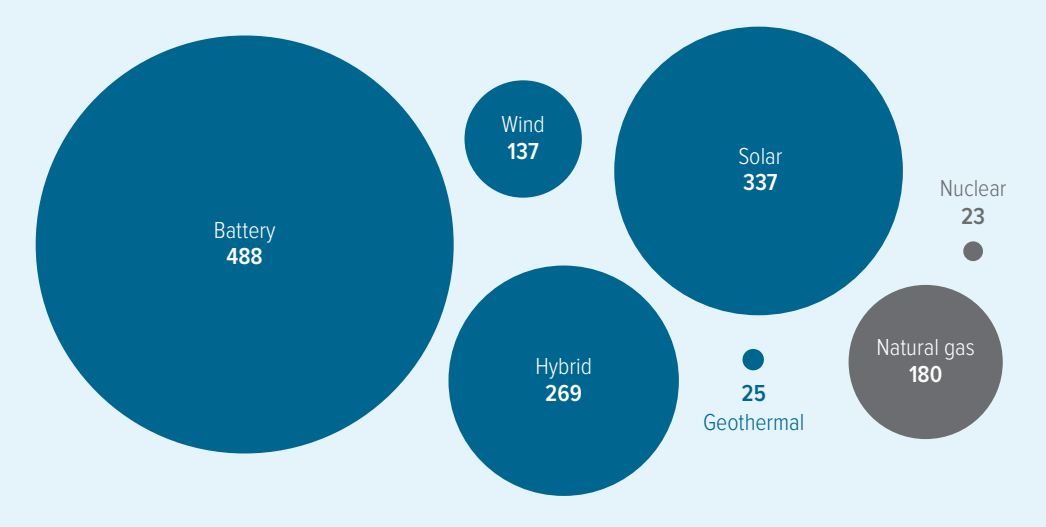
As of 07/15/25. Source: Deloitte; interconnection.fyi.

Power developers know this: 81% of new projects submitted to U.S. interconnection queues since the current administration took office have been solar, wind, storage, or a hybrid (Exhibit 6).

But are renewable energy and storage projects only a short-term or stopgap solution? An April 2025 Deloitte survey of both power company and data center executives indicates that industry players are looking to renewable energy and storage projects not just for the next few years, but as the majority of meaningful additions to the grid for the next decade (Exhibit 7).

Exhibit 6: Early-stage renewable generation and storage projects are still entering the interconnection queue under the new administration

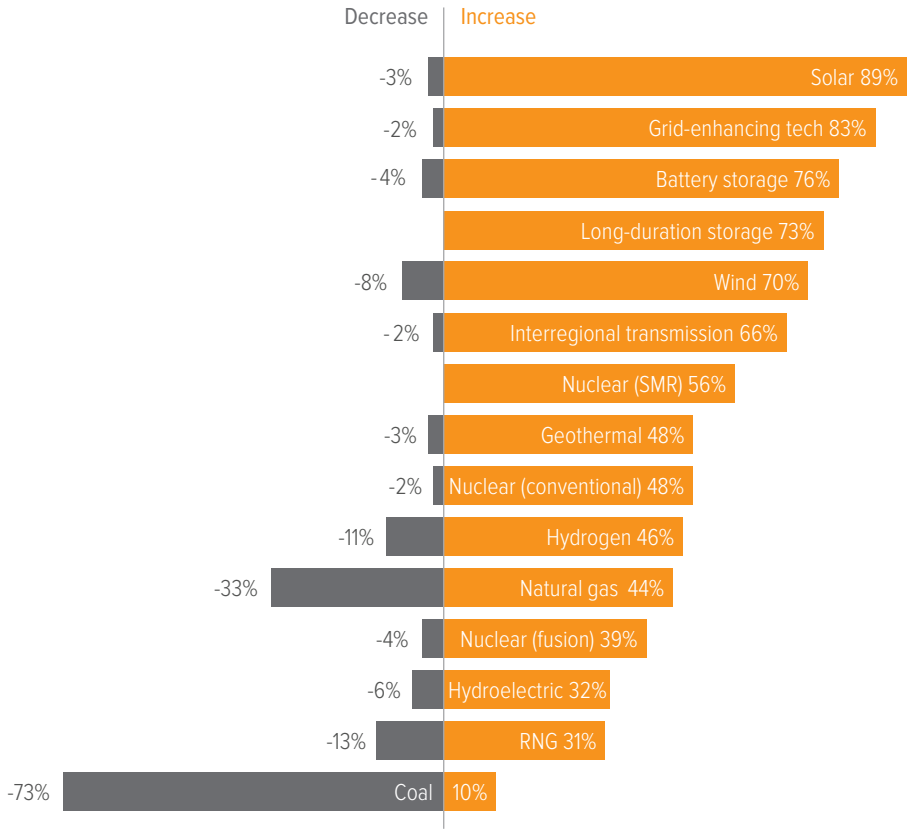
Solar, wind, hybrid, and battery projects make up 81% of all interconnection queue submissions since January 20th



As of 10/15/25. Source: Interconnection.fyi.

Exhibit 7: Data center and power company executives see renewable energy as the leading long-term solution to data center power demand

"How do you believe your resource mix and grid will evolve to meet data center energy consumption through 2035?"



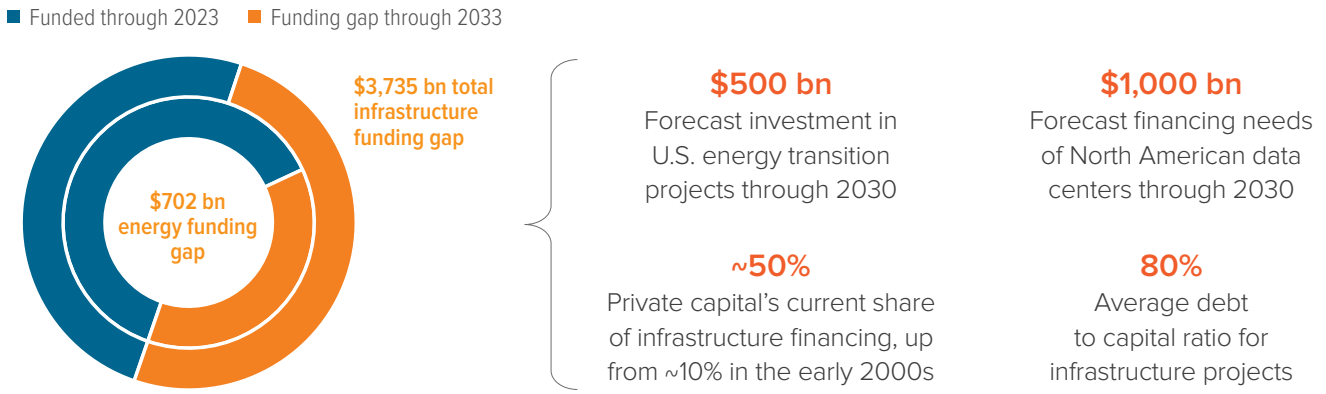
As of 07/14/25. Source: Deloitte survey of 60 power company and 60 data center executives undertaken in April 2025.

The opportunity for private capital in the convergence of energy and digital

A truly staggering amount of capital is needed to equip America with the data centers it needs to win the AI race—and the energy to power those data centers. JLL estimates a financing need of up to $1 trillion for North American data centers in the next five years.[3]

The power situation is even worse, both due to the ageing nature of American energy infrastructure (rated D+ in the latest American Society of Civil Engineers study) and the stepback in infrastructure funding by the current administration—which has caused the energy infrastructure funding gap through 2033 to widen by over $125 billion just in the last year alone. At least $702 billion is needed over the next eight years purely for critical energy infrastructure.[4]

Exhibit 8: The infrastructure spending gap



As of 10/15/25. Source: American Society of Civil Engineers, S&P Global Commodity Insights, JLL, Infralogic data, World Bank Group, Voya Investment Management.

Private nonbank lenders are an increasingly important source of infrastructure financing. This is a significant change from the early 2000s, when banks dominated the project finance market—and where much of Voya's direct lending team started. But the overall rise in private AUM (especially from medium to long term investors) as well as specific disincentives to bank infrastructure lending in Basel III have shifted the playing field, especially in energy lending.

Energy is the key to maintaining America's tech supremacy. The strong macro momentum behind America's digital infrastructure power need creates a massive opportunity set for private capital. Once again, demand outstrips supply. Annual North American private infrastructure investment and current infrastructure fund dry powder are both estimated at under $150 billion.[5]

Strong market fundamentals are creating compelling investment opportunities for Voya's Direct Infrastructure Credit strategy. Many of its borrowers have been at the forefront of new generation development for the past decade and are now partnering with data center developers to power their campuses. These borrowers are sitting directly at the convergence between digital and power, with a deep understanding of energy markets and experience working with key stakeholders (developers; landowners; utilities; interconnecting authorities) to effectively site and develop large loads for data centers.

Voya's Direct Infrastructure Credit team has an established track record of financing critical infrastructure projects addressing energy and digital infrastructure needs. The following pair of case studies illustrate Voya's activity at the nexus of energy and digital infrastructure.

[3] As of 08/18/25. Source: JLL, "Data center availability crisis deepens as vacancy hits historic low."
[4] As of 03/25/25. Source: ASCE, "Report Card for America's Infrastructure" and "Bridging the Gap."
[5] As of 10/15/25. Estimates from World Bank and Prequin.

Case study 1: Project Corona

Sponsor/developer: Experienced utility-scale solar developer. The company has been successfully developing and building projects since 2009.

Origination: Directly originated through Voya relationship network.

Investment: Voya provided a bridge loan to finance development and construction of the company's mature pipeline of projects.

Investment thesis:

- Experienced developer: Highly experienced developer, builder and operator of solar projects. To date, the company has successfully developed and constructed 20 projects totaling 817 MW and has a pipeline of over 2.9 GW of utility-scale solar projects. Additionally, the company is vertically integrated and able to provide construction services to projects it develops.
- Strong collateral: The company has a valuable and diversified pipeline of solar projects exceeding 1.7 GW that collateralizes the loan. Two of the projects, representing 420 MW, are under construction and expected to reach COD in 2026. Another 555 MW of projects are nearly shovel ready with site control, key permits and interconnection agreements secured.
- Strong market position: The company's projects are particularly valuable given their location in PJM, a highly desirable power market due to forecast load growth from new data center demand. The company has secured a corporate PPA and is actively negotiating additional PPAs with several hyperscalers with large footprints in PJM (mid-Atlantic).

Investment outcome: Sponsor successfully sold several projects to a large independent power producer that needed to procure clean energy to meet the demands of a large hyperscaler client. Voya's facility was repaid in full with the proceeds of that transaction, and realized additional upside participation.

Case study 2: Project Gateway

Sponsor/developer: Experienced developer, owner and operator of data centers, backed by a leading sponsor.

Origination: Directly originated through Voya relationship network.

Investment: Voya provided a term loan facility to fund data center expansion, growth capex, and provide additional working capital. Financing enabled the company to execute on near-term growth plans and optimize its capital structure.

Investment thesis:

- Experienced developer: Highly experienced developer and operator. Currently owns and operates 100 MW of operating data centers across 40 locations in 14 markets and 20 cities in the U.S.
- Strong collateral: The company's diversified portfolio of operating data centers benefits from 3,000 customer contracts with a weighted average remaining term of 3.4 years. The company has realized low historical churn with a weighted average customer tenure of over 8 years. The operating data centers provide strong asset-level cash flows.
- Strong market position: The company has an established footprint in key markets across the US. The portfolio has 76 MW of near-term expansions planned across six existing sites, supported by recently executed contracts and a robust pipeline of executable opportunities.

Investment outcome: Active.

A note about risk

The principal risks are generally those attributable to bond investing. Holdings are subject to market, issuer, credit, prepayment, extension and other risks, and their values may fluctuate. Market risk is the risk that securities may decline in value due to factors affecting the securities markets or particular industries. Issuer risk is the risk that the value of a security may decline for reasons specific to the issuer, such as changes in its financial condition.

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