

Beyond the building: A value-chain approach to data center sustainability assessments

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Understanding water and power requirements is just the tip of the iceberg for investors seeking to understand the sustainability impact of new-build data centers.

Fast reading

- Global data center build-out is gaining pace and has now entered the mainstream as a capital markets story.
- Responsible investors need to look beyond the financial credentials of issuers to understand issues such as water and power usage and CO₂ emissions.
- Given the speed of roll-out, issuer disclosure is often limited. Our team addresses this gap through a proprietary value-chain framework.

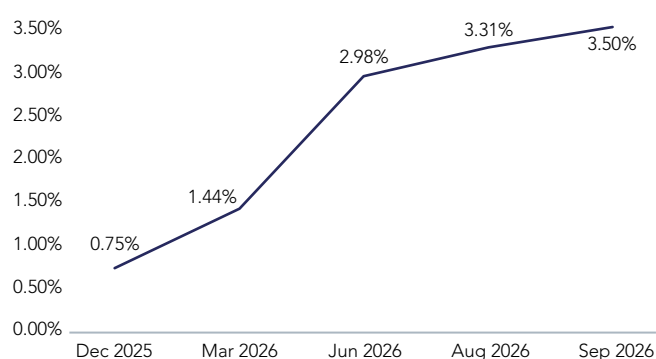
AI has moved out of the experimentation phase and into full commercial deployment, and, with that shift, demand for the computing power that trains and runs these models has surged. The scale of that adoption is stark: ChatGPT alone grew from 400 million weekly users in February 2025 to surpassing 900 million by March 2026, and McKinsey reports that 88% of businesses regularly used AI by the end of 2025, up from 78% a year earlier. Global enterprise AI spending is projected to grow by another 44% in 2026 alone, rising from US\$1.76tn to US\$2.53tn, with the non-infrastructure spending portion increasing by 47% in 2026. That demand, and the expectation that it will keep compounding, has triggered a land grab for data centers and all the components needed to run them.

By the end of 2027, the power demand of data centers in the US is anticipated to double from 31 GW in 2025 to 66 GW,¹ while the largest AI providers' capital expenditures are expected to close in on US\$1tn that same year.² Hyperscalers are racing to lock down power, land, and hardware ahead of demand they expect to keep climbing, even as lawmakers oscillate between pro-business policies and outright building moratoriums.

Data centers have existed for decades to support centralized computing and cloud storage; this new generation of centers is technically distinct not in function, but in scale. The IEA projects that their global electricity consumption will more than double by 2030, from roughly 415 TWh to 945 TWh, with water use following a similar trajectory, rising from an estimated 560bn liters annually to 1.2tn, equivalent to the yearly consumption of more than four million US households. That scale of resource demand is why sustainability credentials matter to investors, and why these projects have become socially controversial.

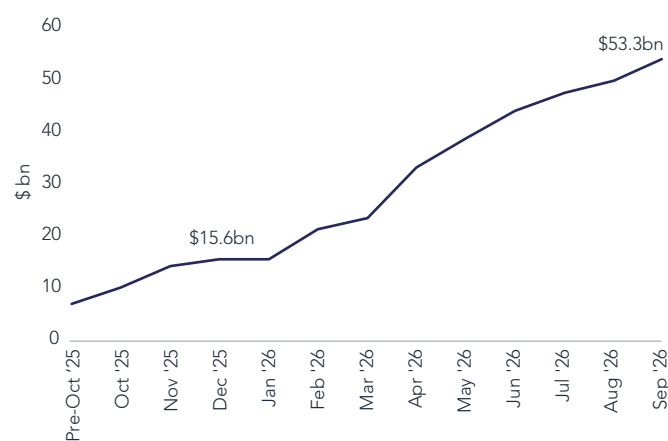
This build-out is also increasingly a story about capital markets. AI data center bond issuance has grown from effectively nothing just over a year ago to nearly US\$50bn today, with close to US\$35bn issued since the start of 2026. The vast majority of this is index-eligible, now representing approximately 2.1% of the Global High Yield Bond Index and 3.3% of the U.S. High Yield Bond Index.³ Based on the public capex figures for AI and data center development, we expect this share to keep climbing. The top five hyperscalers are guiding to roughly US\$730bn of capex this year, up nearly 80% from 2025, and 2027 capex is already projected at over US\$900bn.⁴ Even with high yield bonds capturing only a portion of that total spending, we expect that data center bond issuance will keep outgrowing the rest of the high yield market.

Figure 1: Data center share in the US High Yield Benchmark



Source: Bloomberg U.S. Corporate High Yield Index, Dec. 2025-Aug. 2026.

Figure 2: Cumulative data center high yield bond issuance (US\$bn)



Source: FHI Research based on Bloomberg U.S. Corporate High Yield Index, Oct. 2025-Aug. 2026.

¹ <https://www.goldmansachs.com/insights/articles/us-data-center-power-demand-projected-to-double-by-2027>

² <https://www.goldmansachs.com/insights/articles/what-the-capex-boom-means-for-stock-investors>

³ FHI Research based on Bloomberg U.S. Corporate High Yield Index 2% Issuer Cap

⁴ <https://www.jpmorgan.com/insights/markets-and-economy/economy/economic-trends>

From a credit standpoint, data centers represent a new type of asset class, and the standard approaches we use to analyze sustainability credentials were not built for them. Given the sector's growing size and the outsized environmental and social impacts these facilities could have, we have developed a new framework specific to data centers. Doing so lets us consistently score and compare issuers and gives us a concrete basis for engagement.

Closing the disclosure gap

Over the past 12 months, this corner of the market has grown by orders of magnitude, evolving from a handful of one-off deals into a new subsector. Many of these issuers are small-portfolio developers using special-purpose vehicles created to raise capital for a facility destined for hyperscaler use. These firms are leanly staffed, so the availability of detailed sustainability disclosure is not always a given. The credit analysis itself structurally differs from a typical corporate bond too. Corporate credit generally assumes a company will be an ongoing, profitable enterprise. In this case, deals more closely resemble project finance, where our analysis is tailored to a single asset. As a result, we are often left piecing together a puzzle from partial information.

Our process around understanding the sustainability credentials of issuers in this space began with us identifying the four areas most material to whether a data center build is genuinely sustainable:

- 1 Energy efficiency (via Power Usage Effectiveness)
- 2 Carbon emissions (both grid-drawn and behind-the-meter)
- 3 Water usage (via Water Usage Effectiveness, cooling methodology, and regional water stress)
- 4 Human capital management, specifically the health and safety of the construction workforce.

Our solution was to look beyond the issuer and draw material sustainability factors from other stakeholders across the value chain. Typically, with data centers, the end user is a hyperscaler, such as Alphabet, AWS, Microsoft, or Oracle. These companies usually provide detailed disclosure on their own data center footprints, sometimes even at a site-by-site level. This covers renewable sourcing, water and cooling strategy, and circularity commitments. Offering documents will often reference design changes made at the tenant's request, providing a glimpse into how hyperscaler standards shape the physical design of the building.

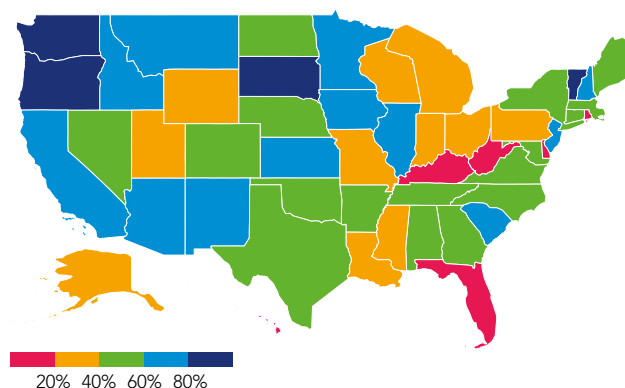
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The look-through on CO₂

When examining the carbon intensity of a data center, we have found it useful to consider two distinct sources: behind-the-meter power and grid-drawn power. Where behind-the-meter or stranded renewable power exists, it is usually disclosed, because it is material to the credit. However, for grid-connected projects, the single biggest determinant of a facility's emissions baseline often has nothing to do with the developer at all; it's the carbon intensity of the local grid.

This single consideration makes site selection one of the most consequential sustainability decisions a developer can make. A facility sited in Washington State or New York, for instance, where hydro and nuclear power dominate the generation mix, will carry a fraction of the emissions baseline of an identical facility sited in a coal-heavy grid such as West Virginia's, even before accounting for any efficiency measures the developer implements.

Figure 3: US: low carbon energy share by state



Source: [Choose Energy: "Electricity Generation and Sources by State"](#), updated Aug. 7, 2026, based on EIA data, May 2026.

Water matters

Water usage follows the same logic. Developer disclosure on cooling strategy tends to be light on detail, so hyperscaler project-level disclosures are often the next-best place to go. Here, recent developments in chip design are beginning to make a crucial difference: air cooling is no longer sufficient for some of the newer designs. This is the case for Nvidia's Blackwell-based systems, for instance, which draw so much power per rack that closed-loop direct-to-chip liquid cooling is now a mandatory design requirement across most new builds, regardless of location.

Another consideration around water usage is whether the disclosed approach to cooling is a good fit for the facility's location. Evaporative cooling in a water-stressed region, for instance, is a poor fit. Increasingly, we see the best-run builds tailoring their approach to geography.

Contractor assessment

Construction sites present a different challenge entirely. The issuer itself typically employs no one on site, since the workforce belongs to the general contractor. This distinction matters for more than reputational reasons. Safety incidents and labor disputes translate directly into project delays, which in turn affect a project's revenue-generation timeline. Best practice, then, is to assess the contractor directly.

The contractors on these projects tend to be established, multinational construction companies, well accustomed to the disclosure demands of much bigger clients and investors, which means metrics like Total Recordable Incident Rate are typically available. This data reflects the contractor's overall safety record across its portfolio rather than conditions specific to any one site. Given this, we treat this information as a reasonable proxy rather than a guarantee.

Local voices

Beyond the credit and disclosure factors above, community pushback can stall a project regardless of its underlying fundamentals. Opposition tends to center on the same issues that matter for the sustainability assessment: power draw, water use, noise, and land use. It can also play out through local politics.

Texas offers the clearest example of this: after developers requested roughly 474 gigawatts of grid capacity, ERCOT⁵ flagged a surge in projected peak demand. This resulted in Governor Greg Abbott pausing new data center approvals in August 2026 pending audits of power, water use, and community impact. Statewide polling found more than half of Texans would oppose a data center being built in their community, with opposition strongest in rural areas. For investors, this emphasizes that a project's power and water footprint are direct sources of credit risk.

Figure 4: Sustainability Materiality Assessment Table

Assessment Area	Primary Data Source	Evaluation Criteria	Strong Performer Indicators	Weak Performer Indicators
Carbon Intensity	State grid generation mix, issuer disclosures, utility data	Power Usage Effectiveness (PUE), renewable penetration, carbon intensity of local grid	PUE <1.20, location in low-carbon grid, renewable behind-the-meter	No PUE or PUE >1.50, location in coal-intensive grid (West Virginia, Kentucky, Indiana), reliance on fossil generation
Water Usage	Hyperscaler disclosures, facility design, water stress data	Cooling technology & alignment with local water conditions	Closed-loop liquid cooling, minimal Water Usage Effectiveness (WUE), located in low-water-stress area	Evaporative cooling in water-stressed regions, high expected water consumption, limited disclosure
Health & Safety	General contractor sustainability and safety reports	Workforce safety metrics and practices	Total Recordable Incident Rate (TRIR) below industry average, transparent reporting, strong training and contractor oversight	Elevated incident rates, limited disclosure, history of major violations
Community & Permitting	Local government filings, media reports, stakeholder engagement records	Community acceptance, resource footprint	Proactive stakeholder engagement, community grants, limited opposition, and clear resource planning	Significant local opposition, permitting delays, concerns over grid strain, water demand, noise, or land use

Source: Federated Hermes, September 2026.



⁵ [The Electric Reliability Council of Texas \(ERCOT\)](#), the non-profit organization that manages the flow of electric power to most of the state of Texas.

In conclusion

By gathering tenant disclosure, grid and water context, and contractor-level labor data, we form a far more complete sustainability picture of the issuer than we would by using issuer disclosure alone. This process also lets us differentiate rather than treat the entire subsector as a single, undifferentiated bloc.

Assessed in this way, some issuers now stand above the rest and merit a place in our sustainable fund range. We view this framework as our best approximation of a genuine sustainability assessment given how nascent the asset class remains, and we expect to refine it as disclosure standards mature and a longer track record of issuance becomes available.

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