PORTFOLIO ANALYSIS

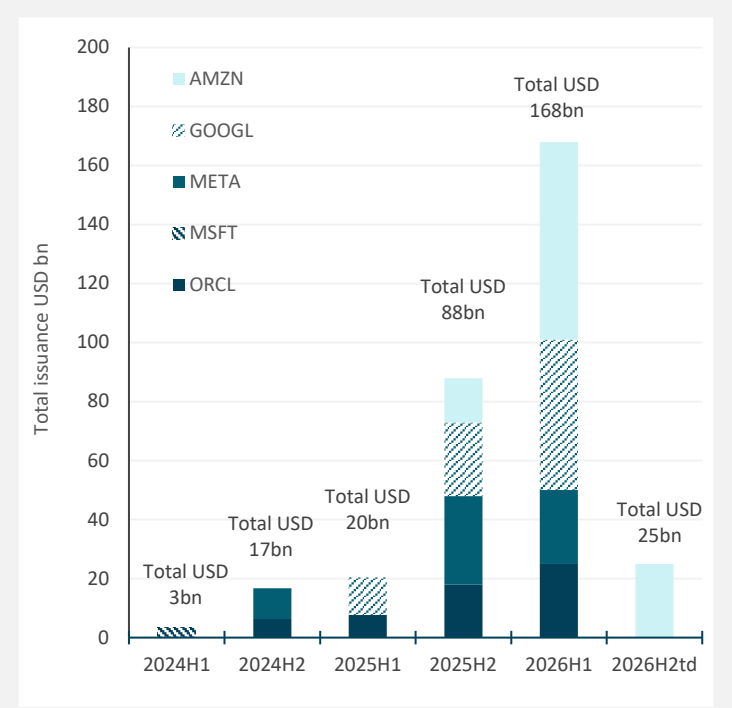
Data centre debt: bondholder leverage to shape AI energy strategy

Josephine Richardson* | 29 Jul 2026 | 24 minute read

SUMMARY

- US corporate bond index exposure to hyperscaler debt is +63% YoY and set to keep growing given future capex guidance. Some ESG funds have the highest weights.
- All issuers are publicly committed to securing a supply of renewable energy, visible through lower market-based Scope 2 emissions amid rising energy usage, but strategies vary.
- Increased reliance on debt markets gives investors leverage to improve the resilience of that energy strategy and reduce financial risk associated with residual fossil fuel reliance.

Figure 1. Hyperscaler recent issuance. Source: Bloomberg Finance L.P., accessed 21 Jul 2026.



The growth in electricity demand to power data centres has the potential to shape near-term energy strategy.[1] The hyperscalers are all using debt-funded capex to secure supply, but techniques vary:

Amazon: self-reported largest corporate clean energy portfolio, but also largest hyperscaler energy footprint.

Alphabet: largest annual growth in location-based emissions, slight fall in market-based. Seems focused on securing supply rather than quality of renewables, including an investment in carbon capture.

Meta: reports zero emissions at each data centre asset individually, suggesting granular procurement.

Microsoft: recently changed policy against use of spot Energy Attribution Certificates and thus increased market-based emissions in 2025. This may represent a focus on additionality of new project generation.

Oracle: the only hyperscaler to report <100% renewables matched, so potentially struggling with supply. The company has made an investment in fossil gas powered fuel cells described as 'clean energy'.

By increasing reliance on debt market capital, these (often still founder-controlled) companies have given a voice to bond investors. Investment in cheaper and more flexible renewable technologies reduces financial risk. If investors can differentiate capital flows depending on the energy strategies of hyperscalers, bondholders have the potential to secure the energy transition and improve credit performance.[1]

[1] "The Race to Power Data Centers", Colombia Business School, 23 Jan 2026.

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Introduction

In the rush to capitalise on the AI boom, five large technology companies — Amazon, Alphabet, Meta, Microsoft, and Oracle — are transforming their previously asset-light balance sheets. These companies are building data centres, designed to house the processors to support AI growth.

This power-hungry infrastructure is driving growth in electricity demand: in the IEA's base case, data centres will use just under 3% of total global electricity in 2030.[2] As the largest marginal buyer of power, their procurement and demand will be highly relevant for the energy transition in the next few years. Their choice of power source has an impact on emissions, but also on financial returns. For example, projected demand has led to a large pipeline of gas-fired power plants in development in the US, with longer lead times and higher costs than renewables and battery storage could provide, creating financial risk.[3]

Building this infrastructure requires a transformation of the balance sheet of the traditional technology company. Together the hyperscalers are projected (by S&P Global) to increase total annual capex from USD261bn in 2024 (18% of revenues) to nearly USD1trn in 2029 (34% of revenues).[4]

Apart from Microsoft, the rating agency predicts this will drive near-term declining free cash flow, which could result in weakened financial capacity. Oracle is most exposed, and indeed was downgraded in July.[5]

To fund their data centre investments, these five companies have turned to bond markets (Microsoft to a lesser extent), using their strong balance sheets to borrow money at attractive levels. The credit health of these companies will depend on how quickly this investment capex can be turned into resilient revenue growth.

The sudden increase in issuance is changing investor portfolios, creating significant exposure to a new business model. The model is both historically underanalysed by credit markets — due to prior low issuance and perceived low risks — and also undergoing an unprecedented change as the role of AI in society unfolds.

In this note we examine recent issuance by these five companies. We will examine how benchmarked investor exposure has changed, and review the electricity policies of each issuer to understand where the greatest financial and emissions-related risks may lie.

Data centre bonds

We limit our universe to the five hyperscalers, generally considered to be Amazon, Alphabet, Meta, Microsoft, and Oracle. We note two other large tech companies are also issuing substantial debt (Apple and Nvidia) which will also contribute to a shift in index-investing exposure to technology, but those businesses have different sustainability concerns.

Recent issuance

Figure 1 (on the front page) summarises issuance since the start of 2024, showing the substantial growth.

[2] "Energy Demand from AI", IEA, 2025.
[3] "U.S. bet on gas plants to meet uncertain AI energy demand risks $85 billion in stranded assets", Global Energy Monitor, Feb 2025.
[4] "Credit FAQ: Will Weakened Cash Flow Hurt Ratings On The Hyperscalers?", S&P Global, 21 Apr 2026.
[5] "Oracle Corp. Downgraded To 'BBB-/A-3' From 'BBB/A-2' On Rising Business Risk And Weaker Cash Flow; Outlook Stable", S&P Global, 9 Jul 2026.

Amazon's eight-tranche deal in early July, with total size USD25bn, already takes H2 issuance above the total for 2024, and well illustrates the sheer scale of issuance.

Bond performance

The rise in supply does seem to be impacting prices. As reported by Bloomberg, 79% of bonds sold since early 2025 have widened. Going further, "*the debt is underperforming on almost every metric [..] and rank among the worst performers in the indexes this year*".[6] Credit Default Swaps (CDS), derivatives tied to the expected default rates of these bonds, have soared to record highs, suggesting further investor concerns.[7]

Perhaps the most notable case study in how these new issuances are changing the market is Alphabet's century bond, a 100-year GBP1bn bond issued in February 2026. The GBP5.5bn five-tranche deal issued on this day took Alphabet to the second-largest GBP corporate issuer in the UK investment grade index.[8] This transaction brought a new issuer to the GBP market, with debt from a leverage-increasing and changing business, at a maturity point offering very limited comparison pricing points. Despite being 9.8x oversubscribed, and pricing described by Fidelity as "*towards the cheaper end of the plausible range*",[8] the bond is now trading 10% lower than issuance,[9] and has widened to around 138bp versus benchmark.[10]

Going beyond the supply/demand dynamics of these bonds, there is also growing attention on the high concentration levels in data centre supply. What looks like traditional fixed income financing of infrastructure investments is underpinned by very few end clients, each of whom is relying on high and accelerating levels of growth.[11] A blog from July, featured in FT Alphaville, likens this to the 2008 sub-prime mortgage crisis, and a deterioration of terms or access to financing could be enough to break the 'bubble'.[12] Whether or not the analogy holds, it is clear that while these new issuances look like highly-rated corporate bonds, they are backed by unprecedented technology advancements, the uncertainty of which may increasingly feed into pricing.

SPV data centre financing

In addition to the direct issuance analysed above, all five hyperscalers are accumulating substantial off-balance sheet liabilities via future lease commitments, estimated to include USD662bn (by Moody's ratings) on leases that have not yet begun. These are therefore entirely unrecognised on the balance sheet.[13]

The lease commitments, often structured at shorter terms than the infrastructure assets being built, are being used to underpin SPV financing.[14] That issuance is also substantial, and a recent deal from Meta reportedly needed to price at higher yields due to lower investor demand. Indeed, in S&P's recent

[6] "Hyperscalers Drag Down Bond Gauges Across Global Markets", Bloomberg, 17 Jul 2026.
[7] "Big Tech credit risks rise sharply as AI spending soars", Financial Times, 27 Jul 2026.
[8] "Alphabet's Century Bond: Fair value and what it means for Sterling credit", Fidelity, 19 Feb 2026.
[9] "Alphabet's Century Bond Has Now Lost a 10th of Its Face Value", Bloomberg, 23 Jul 2026.
[10] Note the benchmark is UKT 1.125% 2073s, the longest gilt, which is also down around 10% but on a face value around 30. This highlights how difficult the pricing of long dated bonds is.
[11] "This is nuts when's the crash?", FT Alphaville, 24 Jul 2026.
[12] "The Second Derivative: Why No One Understands the AI Boom", Groundbreaker, 2 Jul 2026.
[13] The underlying Moody's report is behind a paywall, but it is reported in "Moody's flags $662 billion risk at the heart of the data center build-out by just 5 companies", Fortune, 25 Feb 2026.
[14] For details on two transactions from Meta and market reaction please see "A closer look at the record-smashing 'Hyperion' corporate bond sale", Financial Times, 30 Oct 2025 and "Meta faces higher borrowing costs in latest $12bn data centre financing", Financial Times, 24 Jul 2026.

downgrade of Oracle, the rating agency explicitly incorporated lease commitments starting between 2027-2029 in the company's debt, which increased the leverage figures.[5]

Summary

The five hyperscalers have been substantially increasing the volume of their issued debt. With supply continuing to rise, there are reports that investor demand is becoming more reserved, resulting in poor price performance and potentially wider issuance spreads. The direct issuance is also only part of the story, as lease commitments are being used to secure SPV financing, where pricing is also reported to be deteriorating. In summary, this is a story of high investment-grade rated debt, notionally funding stable infrastructure capex, but underpinned by high growth expectations in AI-driven income.

Portfolio level exposure

Such a rise in benchmark issuance will be increasing weights in indexes, and by association passive and active funds. We will now analyse index and ETF holdings, to see how this is impacting portfolio exposure.

Index exposure

To observe a broad range, we use two global indexes: LEGATRUU (global aggregate) and LGCPTRUU (global corporate bonds). We also explore LUACTRUU (USD corporate bonds) and LG05TREU (EUR corporate bonds). Results are in Figure 3 (continues overleaf), with a summary in Table 1.

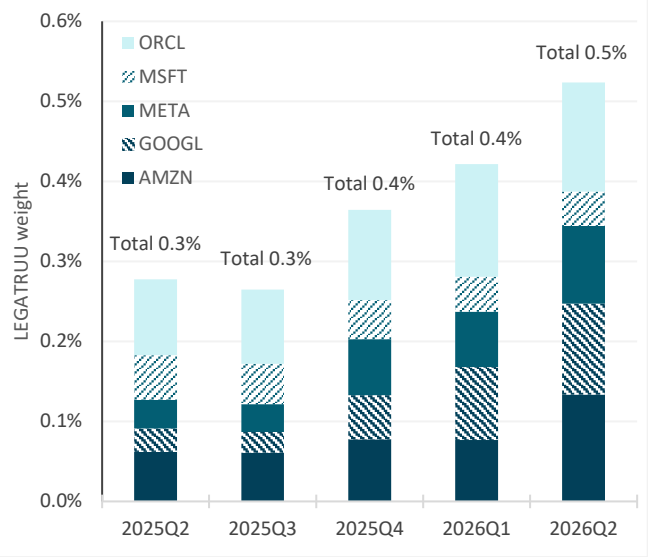
Table 1. Total hyperscaler weight and change. Source: Bloomberg Finance L.P., AFII, accessed 21 Jul 2026.

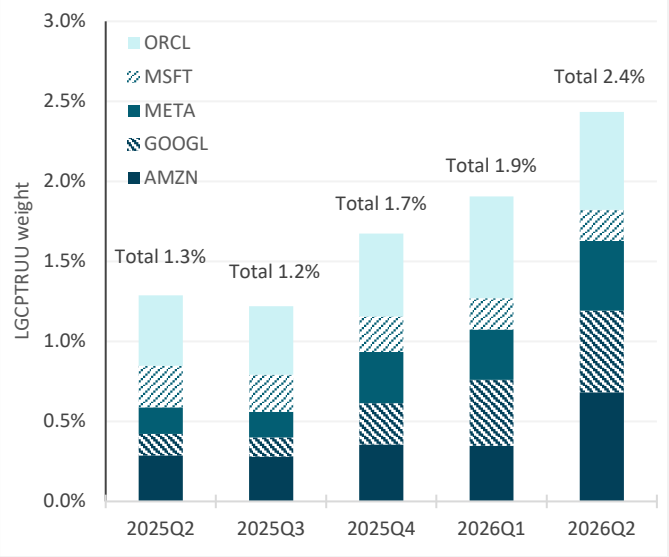
Index	Type	2025Q2	2026Q2	Change
LEGATRUU	Global aggregate	0.22%	0.40%	+84%
LGCPTRUU	Global corporates	1.20%	2.18%	+83%
LUACTRUU	USD corporates	2.08%	3.39%	+63%
LP05TREU	EUR corporates	0.27%	0.98%	+260%

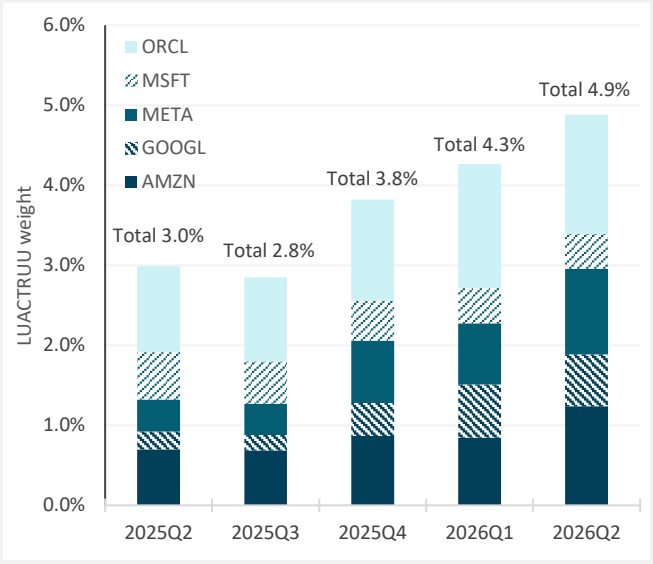
In all indexes exposure has grown, as the substantial issuance has been included in the last year.

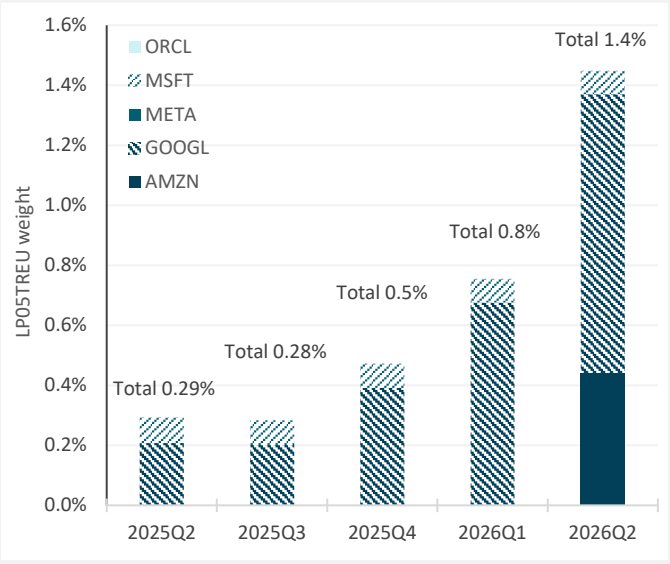
For global and US indexes, the increase YoY is around +60-80%, however for EUR corporates it is +260% as there were virtually no eligible bonds before.

Figure 2. Index weight by market value of hyperscaler bonds over the past year, for Global aggregate (LEGATRUU), Global aggregate corporates (LGCPTRUU), USD corporates (LUACTRUU) and EUR corporates (LP05TREU). Source: Bloomberg Finance L.P., accessed 21 Jul 2026.









ETF holdings

Table 2 (overleaf) gives details on hyperscaler bond exposure for a selection of the largest ETFs that invest in USD corporate bonds without a maturity restriction. Five are vanilla, and six have some ESG attribute, and are generally of smaller size. The benchmark for each fund is included in the table.

One immediate observation is that weights do vary. Even for the five vanilla ETFs, the total weight ranges from 3.53% to 7.35%. The top two use a benchmark of 'liquid' IG bonds, which typically excludes bonds above a given age, so overweights recently issued bonds. Such index construction would create higher weights on sectors that are growing in issuance.

One might expect ESG funds to have higher exposure to hyperscaler bonds. Typical ESG business screens remove exposure to some (usually non-technology) issuers, leaving a higher weight to the remaining. This seems to apply to a Vanguard fund with ticker VCEB, which applies only business exclusions and no tilting. **This fund has the highest exposure across our universe, at 7.88%, despite not using a liquid benchmark.**

However, for the one ESG fund that uses a 'liquid' fund benchmark, PUIG, total exposure of 4.53% is lower than the 'liquid' non-ESG funds, and it has zero exposure to META. One other fund (USDC) also has zero exposure to META, and FEIG has zero exposure to AMZN. VCEB has 1.89% and 2.02% weights to these two issuers respectively. We note that the three funds which have zero weight to one hyperscaler are also the smallest funds, and it may be the small transaction size needed restricts ability to trade in all securities.

Perhaps most notably in this sample is the observation that the range of exposures within ESG funds is wider than for the non-ESG funds (2.49% to 7.88%) suggesting there are different ways ESG fund managers are interpreting the sector, and the individual performers within.

Table 2. Hyperscaler weights and details for select USD corporate bond ETFs. Source: Bloomberg Finance L.P., AFII, accessed 27 Jul 2026.

Index	Name	General Attribute	AUM (USDbn)	Benchmark	AMZN	GOOGL	META	MSFT	ORCL	TOTAL
LQD US Equity	iShares iBoxx USD Investment Grade Corporate Bond ETF		33.7	iBoxx USD Liquid Investment Grade	1.67%	1.05%	1.88%	0.50%	2.25%	**7.35%**
XDGU LN Equity	Xtrackers USD Corporate Bond UCITS ETF		1.4	Bloomberg USD Liquid Investment Grade Corp	1.67%	1.00%	1.75%	0.47%	2.14%	**7.02%**
SPBO US Equity	State Street SPDR Portfolio Corporate Bond ETF		2.1	Bloomberg US Corporate Total Return	1.27%	0.65%	1.10%	0.30%	1.41%	**4.74%**
VTC US Equity	Vanguard Total Corporate Bond Fund		1.7	Bloomberg US Corporate Total Return	1.28%	0.71%	1.06%	0.27%	1.40%	**4.73%**
USIG US Equity	iShares Broad USD Investment Grade Corporate Bond ETF		17.3	ICE BofA US Corporate Index	0.88%	0.49%	0.81%	0.26%	1.10%	**3.53%**
VCEB US Equity	Vanguard ESG U.S. Corporate Bond ETF	ESG business exclusions, no tilting	1.1	Bloomberg MSCI US Corporate SRI Select Index	2.02%	1.08%	1.89%	0.45%	2.43%	**7.88%**
FEIG US Equity	FlexShares ESG & Climate Investment Grade Corp Core Fund	Proprietary ESG Score, explicit climate-transition risk tilt	0.05	Northern Trust ESG & Climate IG US Corporate Core Index	0.00%	1.43%	1.30%	0.66%	2.29%	**5.69%**
SPPU GY Equity	SS SPDR Bloomberg US Corporate Scored UCITS ETF	State Street R-Factor score, optimizes ESG rating, excludes severe controversies	0.4	Bloomberg SASB US Corporate Scored Select Index	1.21%	0.62%	1.10%	0.60%	1.45%	**4.97%**
PUIG LN Equity	Invesco USD IG Corporate Bond ESG Climate Transition UCITS ETF	MSCI-based, $1bn min bond size, excludes low ratings and severe controversies	0.04	Bloomberg MSCI USD Liquid Corporate ESG	1.19%	0.65%	0.00%	0.42%	2.27%	**4.53%**
SUSC US Equity	iShares ESG Aware USD Corporate Bond ETF	MSCI-based, tilts toward higher ESG ratings, matches parent index risk/return	1.3	Bloomberg MSCI US Corporate ESG Focus Index	0.54%	0.23%	0.51%	0.41%	1.01%	**2.69%**
USDC LN Equity	L&G USD Corporate Bond Screened UCITS ETF	J.P. Morgan ESG score, tilts toward higher-rated issuers, excludes weakest	0.1	ESG IG USD Custom Maturity Index	0.67%	0.34%	**0.00%**	0.27%	1.21%	**2.49%**

Summary

Increasing issuance from the hyperscalers has led to rising exposure in key benchmarks. An unintuitive consequence of 'liquid' indexes, or those that overweight more recent issuances, may be a larger growth in exposure.

Exposure varies significantly by fund. ESG funds with business exclusion criteria that have not excluded any hyperscalers have increased weights to the smaller issuer universe (see VCEB as an example). What is more notable amongst our sample of ESG ETFs is how wide the range of exposures is, both at the aggregate and the individual level. For example, META appears not to be included in two of the ETFs analysed (but they are small funds), however VCEB has a 1.89% weight to this name.

Where exposure varies it is a chance to understand individual selection criteria, to ensure they are aligned with investor preference and market views, as bond issuance from these hyperscalers is likely to stay in the headlines for the foreseeable future.

Emissions

GHG emissions have long been a metric used to track climate alignment of portfolios. While there are various ways to combine emissions into a portfolio score (e.g. financed emissions, implied temperature rise), a Weighted Average Climate Intensity (WACI) measure, or the emissions intensity weighted by portfolio investment, offers a figure which is simple to calculate and easy to compare.

LSEG portfolio research has observed an annual decrease in fixed income portfolio WACI of 20% from FY 2016 to FY 2023,[15] alongside more comprehensive disclosures. For Paris-Aligned Benchmarks, regulations state that an annual decarbonisation rate of 7% is required.[16]

We will not debate the focus that investors have on portfolio decarbonisation, but rather investigate the impact higher investment in data centres may have on portfolio metrics.

Data centre emissions

What makes the emissions analysis for a data centre relatively straightforward is that the primary source is electricity usage, which is reported as Scope 2 emissions, and so usually split out in reporting.

Table 3. Summary hyperscaler details. Source: Bloomberg Finance L.P., company reports, accessed 24 Jul 2026.

Issuer	Ticker	Rating	Market Cap (USDtrn)	Latest annual revenue (USDbn)	Total bonds (USDbn)	Latest annual Scope 2 emissions (market-based) (MMT)	Latest annual Scope 2 emissions (location-based) (MMT)
Amazon	AMZN	AA/A1/AA-	2.6	716.9	157.5	3.74	21.82
Alphabet	GOOGL	AA+/Aa2	3.8	402.8	99.6	2.82	15.15
Meta	META	AA-/Aa3	1.5	201.0	84.0	0.00	5.97
Microsoft	MSFT	AAA/Aaa	2.9	281.7	46.1	2.71	12.03
Oracle	ORCL	BBB-/Baa2/BBB	0.3	67.4	120.5	0.24	1.60

Table 3 gives some summary details for our universe of hyperscalers, including latest reported Scope 2 emissions, both market-based and location-based. We have used the unit MMT, millions of metric tons of CO_2 equivalent. For context, using the average US EPA grid factor for delivered energy, 1MMT is equivalent to 2,545GWh of power.[17]

Emissions calculation methods

Scope 2 emissions, those from energy use, are often reported in two ways: location-based and market-based.[18] All five hyperscalers use market-based in total emissions calculations, but generally provide location-based data as well.

Calculating location-based emissions is simple. Users multiply electricity consumption by a grid-average emission factor for the specific grid region. This factor is not supplier-specific, reflecting the average emissions intensity of all generation on that shared grid.

[15] "Decarbonisation in portfolio benchmarks: Tracking the portfolio carbon transition", LSEG, Sep 2025.
[16] "EU Paris-Aligned Benchmark (PAB)", MSCI, accessed 27 Jul 2026.
[17] Average delivered grid power is 867.5 lbs CO_2 / MWh = 0.393 tCO_2e/MWh => 1MMT is equal to 2,545GWh. Grid factor sourced from "Greenhouse Gas Equivalencies Calculator - Calculations and References", US EPA, accessed 27 Jul 2026.
[18] Ch 6 "GHG Protocol Scope 2 Guidance", GHG Protocol, 20 Jan 2015.

Market-based emissions rely on an individual's strategy to procure energy. Emissions are calculated for each unit of energy using emission factors from the specific contractual instruments the user holds. The contractual instruments can be Power Purchase Agreements (PPA) where users buy energy from specific suppliers. They can also be Energy Attribute Certificates (EAC) that are purchased to confer the emissions benefit of renewable energy generation. The certificates need to match usage across location and time. Currently, the location is usually national boundary, and the time period is annual. The GHG protocol has a live consultation to tighten the matching to hourly which may impact matching feasibility.[19]

Where EACs are used for a claim over the low-emissions units of electricity, grid factors can be updated to reflect the residual mix, meaning the generation not already claimed through specific certificates.[20] In practice, this relies on jurisdictions tracking and calculating these factors, and so may not be complete.

Companies also talk about percentage of energy usage matched with renewables. The individual calculation method can vary, but typically uses more relaxed matching. Being 100% renewables energy matched is not inconsistent with non-zero market-based emissions, if the location matching is not perfect.

Comparing WACI

To provide some context on the size of hyperscaler WACI, we will calculate hypothetical WACIs on the basis of the data in Table 3. These calculations are shown in Table 4 below.

Table 4. Summary hyperscaler details and hypothetical WACI. Source: Bloomberg Finance L.P., company reports, AFII accessed 24 Jul 2026.

Issuer	Latest annual revenue (USDbn)	Estimated percentage of revenue attributable to data centres	2025 Scope 2 emissions (market-based) (MMT)	2025 Scope 2 emissions (location-based) (MMT)	Market-based WACI (t/USDmn)	Location-based WACI (t/USDmn)	Location-based WACI on data centre revenue (t/USDmn)
Amazon	716.9	20.7%	3.74	21.82	5.2	30.4	147.0
Alphabet	402.8	20.7%	2.82	15.15	7.0	37.6	181.7
Meta	201.0	100.0%	0.00	5.97	0.0	29.7	29.7
Microsoft	281.7	65.7%	2.71	12.03	9.6	42.7	65.0
Oracle	67.4	50.4%	0.24	1.60	3.5	23.7	47.1

The market-based and location-based WACI are given emissions figures divided by total revenue. We then go a step further by calculating a hypothetical location-based WACI for the business portion containing data centres, assuming all emissions are generated from this revenue, for illustration. Estimated percentages of revenue attributable to data centres are detailed later in the paper in the individual profiles of each company.[21]

Table 5 (overleaf) helps contextualise these figures by giving the average WACI (Scope 1 + 2) by sector used in the LSEG portfolio analysis discussed earlier.[15]

[19] "Public Consultation – Scope 2", GHG Protocol, 20 Oct 2025.
[20] Pg 8 "GHG Protocol Scope 2 Guidance", GHG Protocol, 20 Jan 2015.
[21] Meta provides no business revenue breakdown so we have assigned 100% revenue to this illustration. Amazon does provide a revenue breakdown for its cloud business but no emissions split, and arguably its non-cloud businesses could create meaningful Scope 2 emissions, through warehouse and logistics power for example, so the allocation of all Scope 2 emissions to its cloud revenue is likely an aggressive illustration.

Using market-based emissions, the hyperscalers are among those with the very lowest WACI in that index, with emissions roughly the same as financials. When including all location-based emissions, their WACI shifts in line with low emissions sectors, such as technology, telecommunications, and consumer staples.

When applying emissions only to the cloud portion of revenue, the hyperscalers' businesses begin to look more emissions intensive, with Amazon and Alphabet around the average of the index, and higher than industrials. This is what the WACI could look like if those businesses were spun off into standalone entities.

This illustration serves to highlight the importance of the quality of energy procurement and whether it achieves true emissions reductions. Where poor and non-matched offsets are used, then the emissions intensity of hyperscalers could impact average WACI for investors.

Table 5. Sector average 2023 WACI for bond issuers in FTSE WorldBig Corp. Source: LSEG.

Industry	WACI (t/USDmn)
All Industry	157
Basic Materials	482
Consumer Discretionary	48
Consumer Staples	43
Energy	469
Financials	5
Health Care	16
Industrials	130
Real Estate	90
Technology	32
Telecommunications	34
Utilities	1,181

Summary

Data centre market-based emissions may not tell the full story of the impact that hyperscaler power decisions will have on the energy transition. Exact rules on energy matching and use of offsets can impact the reporting but may not reveal the additionality of power procurement and investments.

When considering the full location-based emissions allocated only to cloud revenue the WACI of these companies could be comparable with average index emissions, highlighting how relevant their energy investment and procurement decisions will be.

Individual profiles

We will now dig deeper into each of the five hyperscalers. We will look into how revenue, capex, and emissions are projected to grow, how each company is considering managing its renewable supply, and the governance framework for investors. A summary is shown in Table 6.

Table 6. Summary hyperscaler analysis. Source: AFII.

Issuer	Rating	2026Q2 reporting	Financials comment	Emissions comment	Governance comment
Amazon	AA/A1/AA-	30-Jul-26	AWS revenue >20%, capex growing, FCF marginally positive	Self-reported largest corporate clean energy portfolio, but also largest hyperscaler energy footprint	Single share class, no founder control
Alphabet	AA+/Aa2	22-Jul-26	Google Cloud revenue >20%, 2026 capex guide cUSD200bn, FCF negative	Largest annual growth in location-based emissions, slight fall in market-based. Seems focused on securing supply rather than quality of renewables, including an investment in CCS	Triple share class, founder majority control
Meta	AA-/Aa3	29-Jul-26	Data centres not directly linked to revenue, 2026 capex guide cUSD135bn, double YoY	Reports zero emissions at each data centre, using granular procurement	Dual share class, founder majority control
Microsoft	AAA/Aaa	29-Jul-26	Cloud revenue 65% of total, +29% YoY, 2026 capex guide USD190bn	Increase in market-based emissions driven by discontinued use of spot EACs	Single share class, no founder control
Oracle	BBB-/Baa2/BBB	10-Jun-26	Cloud revenue 50% of total, +39% YoY, guide capital raise USD40bn in 2027	Only hyperscaler reporting <100% renewables matching	Single share class, founder substantial control

1) Amazon

Ticker AMZN – AA/A1/AA- – Total bonds USD157.5bn – 2025 Scope 2 emissions 3.74MMT

Amazon reported Q1 2026 results on 29 Apr 2026 (Q2 are expected on 30 Jul 2026). It reported USD181.5 billion in quarterly revenue, of which AWS (Amazon Web Services) contributed USD37.6 billion (just over 20%). In Q1 2025 AWS contributed USD29.3bn of sales to the USD155.7bn total, 18.8%.[22]

For that quarter Amazon's CFO commented: "*Our cash capex is $43.2 billion in Q1. This primarily relates to AWS and generative AI as we invest to support strong customer demand. We'll continue to make significant investments, especially in AI, as we believe it to be a massive opportunity with the potential to drive long-term revenue and free cash flow.*"[23] Alongside this, trailing twelve-month free cash flow remains marginally positive, but has reduced USD1.2 billion from USD25.9 billion a year earlier.[22]

Emissions

Amazon's 2025 sustainability report gives total emissions of 80.85MMT. This is split into Scope 1= 15.4MMT, Scope 2 (market-based)= 3.7MMT, and Scope 3= 61.7MMT.[24] The accompanying footnotes explain that Scope 1 was reduced 41.2MMT and Scope 3 by 143MMT year-on-year through certificates, primarily sustainable fuel certificates for aircraft, marine fuel, and diesel.

In terms of electricity usage, location-based reporting is not provided in the main report. A footnote of the verification report provides a figure of 21.82MMT for 2025.[25] This, along with other historical figures sourced from earlier verification statements, is shown in Table 6.

Table 7. Amazon Scope 2 emissions. Source: Amazon GHG verification certificates.

GHG emissions ($MMTCO_2e$)	2019	2020	2021	2022	2023	2024	2025	YoY change
Scope 2 (location-based)	not disclosed	not disclosed	not disclosed	12.77	15.67	17.76	21.82	+22.9%
Scope 2 (market-based)	5.50	5.27	4.07	2.89	2.79	2.80	3.74	+33.6%
Ratio				4.4	5.6	6.3	5.8	

The qualitative commentary around electricity usage centres on the company's goal to match 100% of electricity consumed with renewables, which has been achieved as of 2023 (the target date was 2030).[26] Amazon's website reports it to be the "*largest carbon-free energy portfolio of any corporation globally*", with over 40GW of generation capacity.[27]

While this statement appears to contradict the company's reporting of non-zero market-based emissions, this is actually a manifestation of the earlier explanation of how EACs can be offset with grid generation. It seems that Amazon could be directly procuring a high portion of the electricity it consumes itself, but finding it difficult to match the certificates that generation creates with the usage, leaving residual emissions. It is

[22] "Amazon.com Announces First Quarter Results", Amazon, 29 Apr 2026.
[23] "Amazon Q1 FY2026 earnings call transcript", Amazon, 29 Apr 2026.
[24] "Amazon 2025 sustainability report", Amazon, 21 May 2026. Note the date of release was not present in the report, but the accompanying AI chatbot was able to provide the date.
[25] "GHG verification report", Amazon, 21 May 2026.
[26] "Renewable Energy Assurance", Amazon, 21 May 2026.
[27] "Carbon-free energy Progress", Amazon, accessed 23 Jul 2026.

interesting to see that Amazon does not purchase additional credits to achieve zero emissions, relying solely on its generation and procurement matching.

Governance

Amazon has a single share class, and its founder owns 8.2% so does not have effective control. However, this does not mean the company prioritises investor engagement.

At its AGMs in 2024, 2025, and 2026, a number of shareholder proposals were presented, and all were rejected. In 2024 there were 14 proposals including on emissions disclosures and AI oversight.[28] In 2025 there were eight rejected proposals, including on AI oversight and Scope 3 emissions reporting.[29] In 2026 only four proposals were presented, and all were rejected, including a request for greater climate transparency.[30]

2) Alphabet

Ticker GOOGL – AA+/Aa2/ – Total bonds USD99.6bn – 2025 Scope 2 emissions 2.82MMT

Alphabet, the parent company of Google, reported Q2 results on 22 Jul 2026. It reported a record USD120bn (versus USD96bn in Q2 2025) of quarterly revenue, of which over 20% (14.1% Q2 2025) came from Google Cloud, the segment containing data centre operations.[31]

In accompanying comments, the company raised future capex guidance to an estimated USD195-205bn for full year 2026,[32] and said it will continue increasing significantly in 2027.[33] Alongside negative free cash flow for the quarter, it therefore seems likely that capital markets will be tapped to fund such investments.[34]

Emissions

Alphabet's 2025 environmental report includes details of its 'ambition-based carbon footprint', a customised metric "*derived from [..] GHGP-aligned emissions from scope 1, scope 2 (market-based), and scope 3, with scope 3 adjustments for boundary exclusions and market instrument reductions.*"[35]

On Scope 2, the company reports market-based emissions of 2.815 MMT, 19% of total emissions. Historical details for Scope 2 market-based and location-based emissions are shown in Table 7.

Table 8. Alphabet Scope 2 emissions. Source: Alphabet

GHG emissions ($MMTCO_2e$)	2019	2020	2021	2022	2023	2024	2025	YoY change
Scope 2 (location-based)	5.17	5.85	6.50	7.96	9.09	11.07	15.15	+36.9%
Scope 2 (market-based)	0.79	0.92	1.77	2.43	3.29	2.90	2.82	-2.9%
Ratio	6.6	6.3	3.7	3.3	2.8	3.8	5.4	

[28] "Amazon investors reject all 14 outside proposals at meeting", Reuters, 22 May 2024.
[29] "Amazon shareholders reject oversight proposals as Andy Jassy disputes AI cutback claims", GeekWire, 21 May 2025.
[30] "Amazon Shareholders Back Board as Jassy Touts AI, AWS Growth at Annual Meeting", MarketBeat, 21 May 2026.
[31] "Alphabet Announces Second Quarter 2026 Results", Alphabet, 22 Jul 2026.
[32] "Google burns through $6bn in cash as AI spending climbs again", Financial Times, 22 Jul 2026.
[33] "Google CFO: capex spending will continue to 'increase significantly' in 2027", Yahoo Finance, 22 Jul 2026.
[34] Alphabet has already said it will tap equity markets for capital, but it may use debt as well "Alphabet plans to raise $80 billion from stock sales to fund AI build-out", CNBC, 1 Jun 2026.
[35] Pg 82 "Environmental report 2026", Alphabet, Jun 2026.

Using either measure, emissions have grown substantially, by around +200% in this six-year period. The large difference between measures, at 80%, also shows how material Alphabet's offsetting strategy is to its total emissions. The reductions are reported as split between long-term clean energy agreements (81%), and market-purchased Granular Certificates (GCs, 19%). It is reported that GCs are matched to the same hour and within the same grid region as electricity consumption.[36]

Alphabet's location-based emissions grew at the fastest rate among the hyperscalers YoY, alongside a small reduction in market-based emissions. Its matching of GCs seems more robust than some standards, however it concedes there may be double counting in its use of EACs combined with non-residual grid factors.[37]

Over and above its desire to procure clean energy, Alphabet seems the most concerned with ensuring it can procure sufficient energy of any kind to keep its data centres in operation. In December 2025, Alphabet spent USD4.75bn in cash, plus existing debt, to acquire Intersect Power, a clean energy developer. It is reported that this was motivated not just to power its data centres with clean energy, but also to secure electricity supply where US grids may struggle to meet demand.[38] In October 2025 Alphabet signed the first corporate deal to buy fossil gas generated power bundled with carbon capture and storage to remove the emissions.[39] While this may technically be emissions-free power, it comes at the cost of not investing in true renewables.

Governance

Alphabet has three classes of shares outstanding. Class A shares hold one vote, and Class C shares hold zero votes, and both are publicly traded. Class B shares each hold 10 votes, and remain privately held. Recent SEC reporting confirms that founders Larry Page and Sergey Brin own 27.4% and 25.3% of voting power respectively, and so retain effective control of the company.[40]

This ownership structure limits the influence equity investors can have. As bondholders, and an ongoing supply of capital, becomes more important for Alphabet's ongoing growth and business model, so bondholder stewardship tools can be utilised for investor engagement objectives with the company.[41]

3) Meta

Ticker META – AA-/Aa3 – Total bonds USD84bn – 2025 Scope 2 emissions 0.00MMT

At Meta, investments in data centres do not explicitly generate revenue at present as the company does not rent out space or sell data,[42] however it has announced this is in development.[43] Instead currently its data centres act as the engines that power its apps, target advertisements, and train its AI models. In its Q1 2026 results, reported 29 Apr 2026, total revenue was up 33% YoY, with ad impressions up 19%, and average price per ad up 12% (all figures to which data centre investments are contributing).[44] Q2 2026 results are expected on 29 Jul 2026.

[36] Pg 22 and 23 "Environmental report 2026", Alphabet, Jun 2026.
[37] Pg 83 "Environmental report 2026", Alphabet, Jun 2026.
[38] "Alphabet to Buy Data Center Partner Intersect for $4.75 Billion", Bloomberg, 22 Dec 2025.
[39] "Google backs US gas power plant with carbon capture for Midwest data centers", Reuters, 23 Oct 2025.
[40] "Alphabet Schedule 14A", 24 Apr 2026.
[41] For more information please see our toolkit "Finding your voice: tools for better bondholder engagement on climate and nature risk", AFII, 5 Dec 2025.
[42] "Why is Meta Investing $600bn in AI Data Centres?", Data Centre Magazine, 10 Nov 2025.
[43] "Meta Is Planning a Cloud Business to Sell AI Computing Power", Bloomberg, 1 Jul 2026.
[44] "Meta Reports First Quarter 2026 Results", Meta, 29 Apr 2026.

The Q1 results also highlight growth in capex. 2026 full year guidance was increased to USD125-145bn, driven by "*expectations for higher component pricing this year and, to a lesser extent, additional data centre costs to support future year capacity*".[44] This is a near doubling of the 2025 figure of USD72bn, and the 2024 figure of USD39bn.[45]

Emissions

Meta's latest emissions reporting is from 2025, in a report released September 2025.[46] The emissions reporting stands out in comparison to others (details in Table 8), primarily as market-based emissions are near-zero. Its total location-based emissions are lower than Alphabet's or Amazon's (likely due to data centres being less of a core revenue-generation business), but the rate of growth is similar.

Table 9. Meta Scope 2 emissions. Source: Meta.

GHG emissions ($MMTCO_2e$)	2020	2021	2022	2023	2024	YoY change
Scope 2 (location-based)	2.72	3.08	3.92	5.14	5.97	+16.1%
Scope 2 (market-based)	0.009	0.002	0.000	0.002	0.001	-18.1%
Ratio	302	1,239	14,365	3,101	4,394	

The granularity of reporting in Meta's emissions data is impressive. It offers market-based and location-based Scope 2 emissions for each data centre, showing that for each of the 18 named centres the market-based emissions are zero. The residual figures are allocated to 'other data center-related facilities' and 'offices'.

The company does not seem directly to invest in renewables generation, but does employ an energy matching to renewables. It is also an active investor in nature-based solutions which it supplements with more traditional carbon credits (disclosed to be a modest 50,000 tons in 2025).[47] No direct figures for emissions from the nature investments seems to be given.

Meta's near-zero market-based emissions are especially noteworthy given its data centres are not revenue-generating in its current business model, rather offering computing capacity to internal business lines. We note there are reports that Meta plans to begin selling data centres services in the near future.[43]

Governance

Meta has a dual-share class listing, with virtually all Class B shares still owned by founder Mark Zuckerberg. He currently owns an estimated 13.5% of the company but has 60.8% of voting power.[48]

This limits the influence that equity investors can have in guiding the company. But as debt issuance grows, fixed income investors can have influence.

[45] "Meta's sustainability surprise", computing.co.uk, 23 Jun 2026.
[46] "Environmental Data Index", Meta, Sep 2025.
[47] "Reflections on Three Years of Supporting Carbon Removal", Meta, 17 Jun 2024.
[48] Pg 63 "Meta Schedule 14A", SEC, 16 Apr 2026.

4) Microsoft

Ticker MSFT – AAA/Aaa – Total bonds USD120.5bn – 2025 Scope 2 emissions 2.71MMT

Microsoft reported Q1 2026 results on 29 Apr 2026 (Q2 are expected on 29 Jul 2026). It reported USD82.9bn in quarterly revenue (+18% YoY), with cloud revenue of USD54.5bn (+29% YoY). The AI business was separately called out with an annual revenue run rate of USD37bn (+125% YoY).[49]

The company also raised guidance for 2026 full-year capex to USD190bn, citing increased component pricing, an increase of 61% from 2025.[50]

On that earnings call, Microsoft's CEO spoke of their investments to add data centre capacity, reporting that the company had "*added another gigawatt of capacity this quarter […] and we've announced new data center investments across four continents*".[51]

The investor narrative is further focused on "*aggressively*"[51] investing to respond to demand signals in data centre services.

Emissions

Table 6 shows Microsoft's recent emissions reporting, from its 2026 environmental data sheet.[52] In 2024 the company reduced its market-based emissions to 2.6% of its location-based emissions. In 2025, however, Microsoft reduced a smaller total quantity of emissions, and has seen an increase in market-based emissions in 2025. This is despite achieving, in February 2026, the target of 100% renewable matching of its energy usage,[53] an increase from 78% in 2024.

Table 10. Microsoft Scope 2 emissions. Source: Microsoft.

GHG emissions ($MMTCO_2e$)	2020	2021	2022	2023	2024	2025	YoY change
Scope 2 (location-based)	4.33	5.01	6.38	8.08	9.96	12.03	+20.8%
Scope 2 (market-based)	0.46	0.43	0.29	0.39	0.26	2.71	+945.0%
Ratio	9.5	11.7	22.2	20.5	38.4	4.4	

Microsoft's reporting details a number of tools to reduce market-based emissions, "*including on-site generation, spot Energy Attribution Certificates (EACs), green power products, PPAs, and other long-term contracts for environmental attributes*".[52,54] In 2025 the company stopped buying Spot EACs and carbon removal credits from existing projects to focus on longer-term, higher-impact investments. This is the explanation given for the increase in market-based emissions, and seems to represent a focus on true additionality and emissions reductions, rather than credit usage.

[49] "FY26 Q3", Microsoft, 29 Apr 2026.
[50] "Microsoft (MSFT) Q3 earnings report 2026", CNBC, 29 Apr 2026.
[51] "Microsoft Corporation (MSFT) Q3 FY2026 earnings call transcript", Microsoft, 29 Apr 2026.
[52] "2026 Environmental Data Fact Sheet", Microsoft, 9 Jul 2026.
[53] "A milestone achievement in our journey to carbon negative", Microsoft, 18 Feb 2026.
[54] We note Microsoft has also used nature-based solutions as offsets, for example it was the offtaker in the World Bank Amazon Re-forestation outcome bond, as described in "World Bank Amazon Reforestation Bond: Concession financial risk and complexity", AFII, 23 Sep 2024.

While Microsoft's YoY market-based emissions have increased the most, this seems underpinned by the decision no longer to use spot EACs as an offset, rather than a change in strategy around generating renewable power.

Governance

Microsoft has a single share-class which is publicly listed, with current ownership split 71.7% institutional investors, 22.1% retail investors, and 6.2% Microsoft insiders.[55]

There have been concerns raised that Satya Nadella is both CEO and Chairman, and a recurring request for an independent chair was blocked at the AGM in December 2025.[56] This concentrated influence combined with Microsoft's potential conflicts in its interactions with OpenAI, with whom it is an investor, customer, and competitor, may create conflicts in the future.[57]

5) Oracle

Ticker ORCL – BBB-/Baa2/BBB – Total bonds USD67.4bn – 2025 Scope 2 emissions 0.24MMT

Oracle's fiscal year end is 31 May, and it reported its 2026 results on 10 Jun 2026.[58] Its annual revenues were USD67.4bn, up 17% YoY in USD whereas its Cloud revenues were USD34.0bn, up 39% YoY in USD underpinned by cloud infrastructure revenue of USD18.1bn (up 77% YoY).

The commentary notes: "*Oracle's capital investment program supports the pursuit of unprecedented opportunities in AI Cloud Infrastructure*", and explains that the company expects to raise USD40bn of combined debt and equity financing in fiscal year 2027.

Emissions

Oracle updates and seems to overwrite its sustainability data documents, and so Table 6 gives the data from its 2025 datasheet. Note this includes a switch from calendar year (CY) to fiscal year (FY) reporting.[59]

Overall emissions are lower than for other hyperscalers, but a similar portion is offset to Alphabet and Amazon.

Table 11. Oracle Scope 2 emissions. Source: Oracle.

GHG emissions ($MMTCO_2e$)	CY2020	FY2024	FY2025	YoY change
Scope 2 (location-based)	0.70	1.23	1.60	+29.6%
Scope 2 (market-based)	0.44	0.27	0.24	-12.5%
Ratio	1.6	4.6	6.7	

Oracle made a pledge in 2021 to achieve 100% renewable energy usage by 2025.[60] This target was not achieved; the figure for 2025 energy use in the cloud was 92%, and that for its real estate and facilities was lower.[59] It is the only hyperscaler in our universe that did not achieve this goal in 2025.

[55] "Microsoft Corp Stock Ownership - Who owns Microsoft?", Wall Street Zen, 21 Jul 2026.
[56] "Microsoft in Rare Move Skips SEC Input to Bar Investor Plan", Bloomberg, 29 Oct 2025.
[57] "Microsoft feared being too dependent on OpenAI Musk-Altman trial testimony reveals", CNBC, 13 May 2026.
[58] "Oracle Announces Record Q4 and FY 2026 Results Driven by Cloud Infrastructure & Cloud Applications", Oracle, 10 Jun 2026.
[59] "Oracle Environmental and Social Impact FY25 Datasheet", Oracle, Feb 2026.
[60] "Oracle Commits to Powering Its Global Operations with Renewable Energy by 2025", Oracle, 23 Jun 2021.

In its desire to procure more renewable energy, Oracle has contracted to buy Bloom Energy fuel cells to power a campus in New Mexico.[61] This technology is fuel-flexible, and can run on fossil gas, biogas, or hydrogen, however in practice they currently use fossil gas.[62] This energy investment seems to have been called out in the latest reporting as "*Oracle is building data centers that are intended to use clean energy from natural gas fuel cells to generate electricity with minimal emissions*".[63] In our view, it remains controversial to refer to this technology categorically as clean energy.

The actions of other hyperscalers in relation to fuel cells suggests they share these concerns. Amazon recently cancelled a contract to power three of its Oregon data centres with fuel cells.[64] Microsoft has tested the cells in a prototype capacity, but using hydrogen rather than fossil gas.[65] We see no evidence that Alphabet or Meta have invested in this technology.

To sum up, Oracle reports 92% of energy being matched with renewables, the only hyperscaler that has not achieved 100%. Alongside this, the company has made an investment in fossil gas powered fuel cells described as 'clean energy'.

Governance

Oracle has a single-class share structure, however Larry Ellison, co-founder Chairman and CTO, owns 40.2% of outstanding shares. This may not give him a full voting majority, but it does give him substantial control through economic ownership. See for example the media reports that he was personally involved in securing additional Nvidia chips which facilitated the substantial contract with OpenAI signed in September 2025.[66]

Non-financial risks

It is becoming clear that the second-order effects of data centre expansion go beyond pure emissions.

A running concern is that many existing reporting and analysis cycles are set up with time lags based on historical data. In a situation that is both rapidly changing and lacking any well-accepted transparency and reporting metrics, the forward-looking impact may be poorly understood.

Water

Data centres use large quantities of water, both directly to cool their servers, and also indirectly to cool energy generation facilities used to power them. There are two typical measures of water usage, withdrawals (all water extracted from source) and consumption (the volume not returned to the original source, i.e. lost through evaporation).

In 2025, data centres' electricity consumption was estimated to have a water footprint of 4.5trn litres.[67] This can be added to their direct water usage, which is currently estimated to be 560bn litres per year, potentially

[61] "Oracle BorderPlex and Bloom Energy to Power Project Jupiter with Cleaner Water-Efficient Fuel Cell Technology", Oracle, 27 Apr 2026.
[62] "Bloom Energy secures 1GW fuel cell supply deal with AEP", 15 Nov 2024.
[63] "Oracle Announces Record Q4 and FY 2026 Results Driven by Cloud Infrastructure & Cloud Applications", Oracle, 10 Jun 2026.
[64] "Amazon cans scheme for gas-powered fuel cells at Oregon data centers", Data Centre Dynamics, 22 Jul 2026.
[65] "Caterpillar Demonstrates Viability of Using Hydrogen Fuel Cell Technology for Backup Power at Microsoft Data Center", 19 Jan 2024.
[66] "Larry Ellison and Elon Musk 'begged' Nvidia's CEO for more GPUs | Fortune", Fortune, 16 Sep 2024 and "Why the Oracle-OpenAI deal has set 'AI Bubble' alarm bells ringing", Fortune, 16 Sep 2025.
[67] "The Environmental Cost of AI's Energy Use: Carbon Water and Land Footprints", UNU INWEH, 3 Jun 2026.

rising to 1.2trn litres per year by 2030.[70] For context this is around 60% of the annual water withdrawals of the UK.[68,69]

This depleted fraction is also very high for data centre direct usage, estimated to be as high as 80%,[70] much higher than 4% estimated for thermoelectric power generation,[71] or 10% for residential usage.[67] It also seems that a record proportion of data centres in the US are now located in water stress areas.[70]

Where data centres are competing for water, that can threaten local residential water supplies, agriculture, and overall energy production.

Social

Large data centres have the potential to change the communities in which they are being built.

In the US, in Q1 2026 at least 75 data centre projects were blocked or delayed due to local opposition.[72] This highlights the need to secure social support, in order to proceed.[73] The primary concern, and one considered a relevant factor for the US midterm elections, is the impact on utility bills for residents.[74] Additional concerns include water use, energy consumption, and noise.

There are also ongoing protests around planned developments in Scotland,[75] with concerns focused on whether the grid supply can manage these projects, pollution from backup diesel generators, and the impact on house prices.

Given the speed with which hyperscalers are attacking the data centre build-out, delays can be financially material.

In terms of how AI usage can impact people, this has been on the agenda for Microsoft. At its AGM in December 2025 two human rights-related shareholder resolutions received over a quarter of votes. The first called for a report on data centre expansion in Saudi Arabia and nations with similar human rights records. It also asked whether Microsoft technology could be used for state surveillance or repression. The second sought an assessment of Microsoft's human rights due diligence efforts, to assess the effectiveness of processes to prevent customer misuse of AI.[76] As one case study, the company did remove access for an Israeli military unit after there was evidence it was used for surveillance of Palestinian civilians.[77]

Governance

As highlighted in the five individual profiles, two hyperscalers are majority controlled by founders (Alphabet and Meta), with one substantially controlled (Oracle). By requesting capital from bond markets, these companies are opening up a new route through which investors can exert influence.

[68] "World Bank Open Data", World Bank Open Data, accessed 27 Jul 2026.
[69] Incidentally the comparison also roughly works on emissions. Total Scope 2 location-based emissions are 56.6MMT which using an average US grid factor of 0.39t/MWh implies equivalent power of 144TWh. UK's annual electricity consumption is estimated to be 280TWh.
[70] "How AI Demand Is Draining Local Water Supplies", Bloomberg, 8 May 2025.
[71] "Water use across the conterminous United States water years 2010–20", US Geological Survey, 2025.
[72] "$130 Billion In AI Data Centers Stalled. The Bottleneck Is Consent", Forbes, 22 Jul 2026.
[73] The need to secure a Social License to Operate is a theme we explore in this case study "Rio Tinto: a just transition case study", AFII, 8 Jun 2026.
[74] "Voters' anger at high electricity bills and data centers looms over 2026 midterms", AP News, 8 Nov 2025.
[75] "Scottish data centre boom spurs backlash", Financial Times, 28 Jul 2026.
[76] "Filing: Human rights proposals win more than 25% of votes at Microsoft shareholder meeting", GeekWire, 9 Dec 2025.
[77] "Microsoft cuts off Israeli military's access to tech that was reportedly used in Palestinian surveillance", GeekWire, 25 Sep 2025.

Going further, with Anthropic and OpenAI IPOs eagerly anticipated, the hyperscalers themselves can have influence as suppliers, investors, and customers able to promote structures for good ongoing governance of these companies. For institutional investors concerned about the governance restrictions of complex share structures and the overriding control of founders, using their debt investment 'voice' could be one of the only potential routes of influence.[78]

Summary

The key concerns for investors in data centres goes beyond emissions and renewable power generation.

As exposure increases, so these risks will only grow in relevance for institutional investors, as the true impact of these new business models continues to evolve.

Conclusions

Bond exposure to the hyperscalers has grown very fast due to a rise in issuance. Weights in ETFs vary, with some sustainable funds reporting higher weights than vanilla indexes.

Due to tight spreads, there is limited investment upside, and media reports that investor demand is beginning to wane, resulting in undifferentiated bond underperformance. While revenue growth will be a key determinant in individual company performance, the security of clean energy supply can also further differentiate the credit risk within this universe.

Projected growth in energy demand from this sector will shape energy strategy in the next few years. Focusing on clean energy has the potential both to reduce emissions, but also improve credit outcomes by not locking in fossil technology beyond the expected lifetime of the data centres that need powering.[79]

Bond investors have a chance to differentiate their investment demand, and therefore financing costs, for hyperscalers that prioritise lower-risk renewables investment. For a small group of companies still largely controlled by their founders, this bond issuance spree may give investors a way in.

[78] For example, concerns were raised about the SpaceX IPO and its share structure as described in "Institutional investors have governance concerns about SpaceX IPO", ESG Dive, 8 Jun 2026.
[79] "The Race to Power Data Centers", Colombia Business School, 23 Jan 2026.

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