Goldman Sachs Research

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GLOBAL TECHNOLOGY

Global Data Center Capacity update: Increasing capacity estimates

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We update our global data center capacity forecasts using the latest data from 451 Research's database, and we now forecast 273GW of global data center supply by 2030 (v. 217GW prior from our last update in July 2026), representing 170GW of additional capacity after 2025 and 2026/27/28 net additions of 25GW/32GW/35GW. The increase is mostly a result of scaling up 451 Research's outer year forecasts to account for projects that have not been announced yet as we do not expect the pace of net additions to moderate in the medium-term. This addition of 170GW would represent $8.5 tn of capex over 5-years, assuming a $50B/GW rule-of-thumb while acknowledging that IT infrastructure costs continue to see upward pressure.

For the US alone, we forecast 152GW of capacity by 2030 (v. 125GW prior), representing 103 GW of additional capacity post 2025. While the increase was predominantly due to higher outer year estimates as we scale up our estimates for unannounced projects, the increase was also partly driven by cloud/neocloud/crypto/wholesale/retail net adds (+11.8 GW in new cumulative net adds from 2026-2030), which we believe reflects the rapid scaling of neocloud providers to support GPU demand. We expect High-Performance Computing (HPC) data centers (which are typically associated with AI-workflows) to drive the majority of capacity net additions in the U.S., with projects >=75 MW accounting for 75% of net adds by 2028. The total US 5-year cumulative net additions of 103 GW of capacity would represent $5.2 bn of capex, assuming a $50B/GW rule-of-thumb. We see this capex covered by current consensus expectations for U.S. hyperscaler capex (~$1.51 tn/year on average), which has historically been revised higher and does not include private AI lab capex, and data center platform capex, although it does not exclude international capex.

We recognize rising execution risk of building and delivering data centers from power supply issues, regulatory uncertainty, and high leverage. That said, we still see potential for sustained, outsized growth in capacity through projects with high visibility into power and permitting.

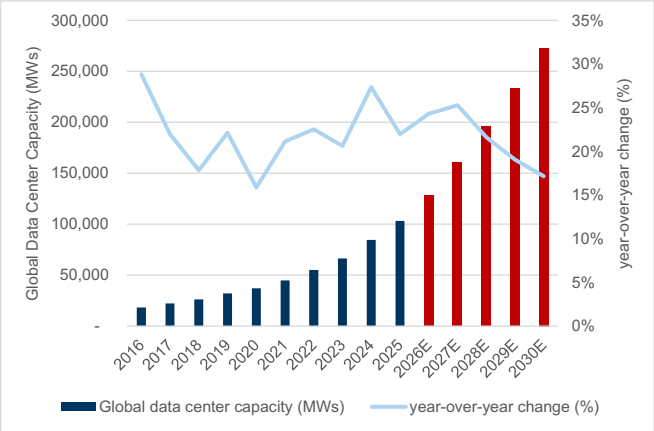
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Increasing global data center capacity to 273 GW by 2030 (v. 217 GW prior)

We update our global data center capacity forecasts using the latest updates to 451 Research's data center tracker (through C2Q26). Using 451 Research data center project tracking, we now expect ~273 GW of live global data center capacity by 2030, implying growth from ~103 GW in 2025 at a 21% 2025-2030 CAGR. This +170 GW of capacity net addition over the next 5 years implies ~$8.5 tn of cumulative capex at an assumed $50 bn/GW (all-in), which is above the forecast average ~$1.51 tn U.S. hyperscaler capex (per annum, using Visible Alpha Consensus Data). However, this historically has been revised higher and does not include international hyperscalers (e.g. Alibaba, Tencent), private AI lab capex, and data center platform capex.

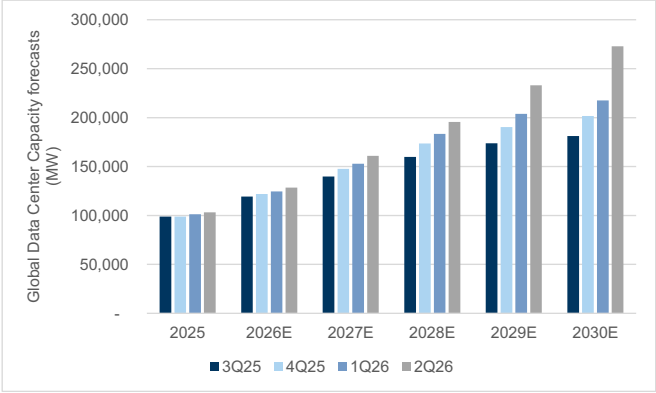
2Q26 451 Research forecasts for global data center capacity net adds were revised upwards v. our 1Q26 update by 8% in 2026 and by 14% in 2027 and 2028. We scale-up 451 Research's outer year forecasts to adjust for projects that have not been announced. Global data center capacity additions should predominantly be from HPC data centers (projects >=75MW scaling to ~66% of global net adds by 2028) and be located in the US (~60-70% of total global net adds through 2030).

Exhibit 1: Global Data Center Capacity should scale to ~273 GW by 2030 (+170 GW v. 2025)
Gloabl Data Center Capacity (MWs) & year-over-year change (%)



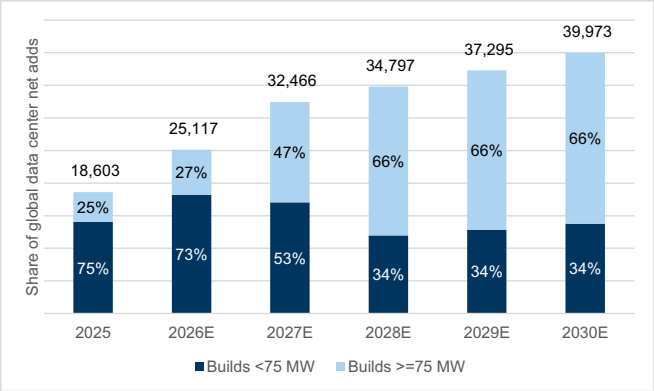
Source: 451 Research, Goldman Sachs Global Investment Research

Exhibit 2: Global Data Center Capacity forecasts for 2026-2030 have been raised significantly over time (+11% on average v. 1Q26, +17% on average v. 4Q25, and +26% v. 3Q25
Global Data Center Capacity forecast estimates over time (MW)



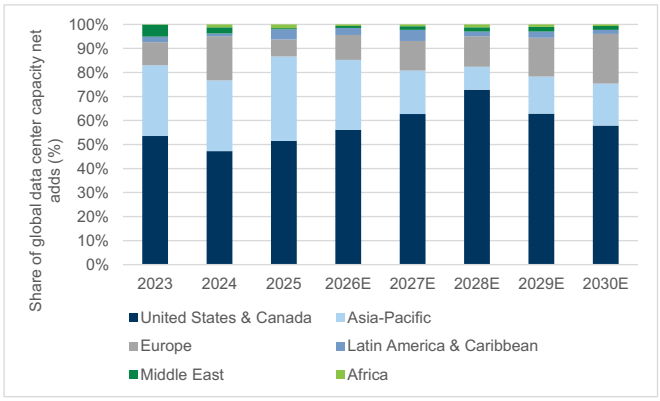
Source: 451 Research, Goldman Sachs Global Investment Research

Exhibit 3: Global data center capacity net adds should be predominantly from projects >=75MW, which are typically assoicated with High-Performance Computing data centers and AI workflows



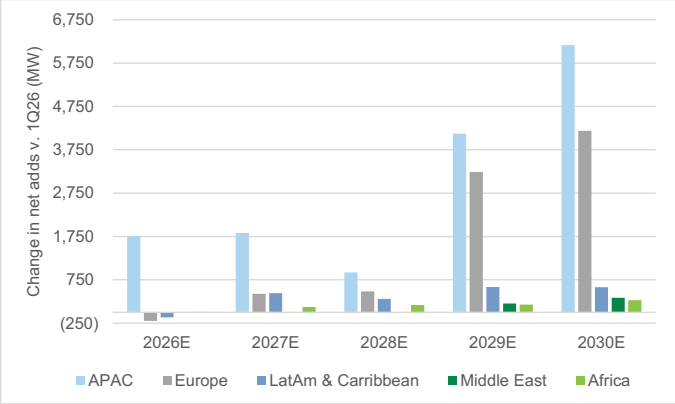
Source: 451 Research, Goldman Sachs Global Investment Research

Exhibit 4: Global data center capacity net adds should predominantly be in North America
Share of global data center capacity net adds by region (%)



Source: 451 Research, Goldman Sachs Global Investment Research

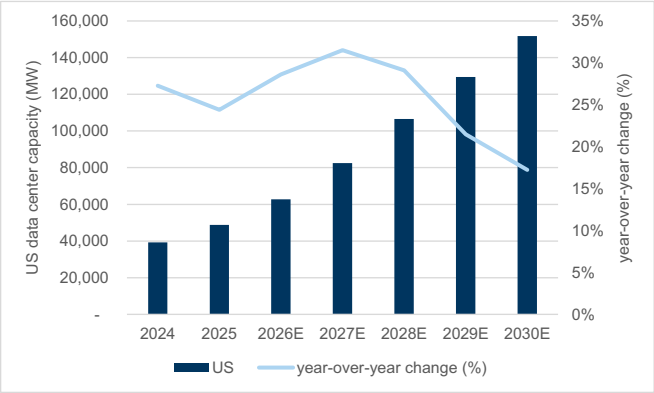
Exhibit 5: Greater visibility into APAC net adds, while Europe sees increased net adds in the outer years
Net add revisions v. 1Q26



Source: 451 Research, Goldman Sachs Global Investment Research

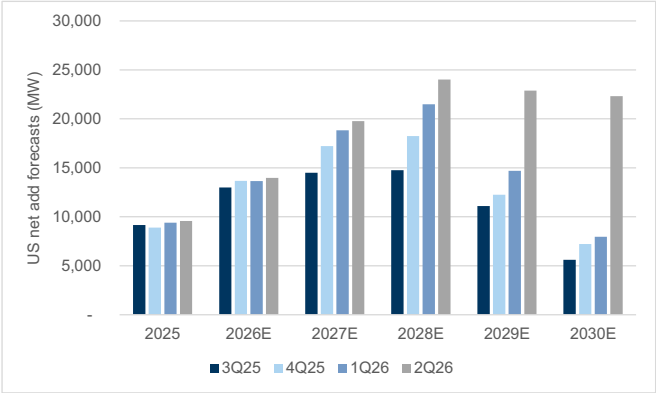
For the US alone, we forecast 152GW of capacity by 2030 (v. 125GW prior), representing 103GW of additional capacity post 2025. 2Q26 451 Research forecasts for US data center capacity net adds were revised upwards by 2% in 2026, 5% in 2027, and 12% in 2028 v. 1Q26. We scale-up 451 Research's outer year forecasts to adjust for projects that have not been announced and increase our US net add estimates by 56% in 2029 and 180% in 2030 v. our last update. The change was largely driven by cloud/neocloud/crypto/wholesale/retail net adds (+11.8 GW in new cumulative net adds from 2026-2030), which we believe reflects the rapid scaling of neocloud providers to support GPU demand. Forecasted US hyperscaler net adds also saw a cumulative upward revision of 9.4 GW from 2026-2030. We expect HPC data centers to drive the majority of capacity net additions in the U.S., with projects >=75 MW accounting for 75% of net adds by 2028.

Exhibit 6: US data center capacity should grow to ~152 GW by 2030 (+103 GW from 2025)
US data center capacity (MW) & year-over-year change (%); end of period capacity



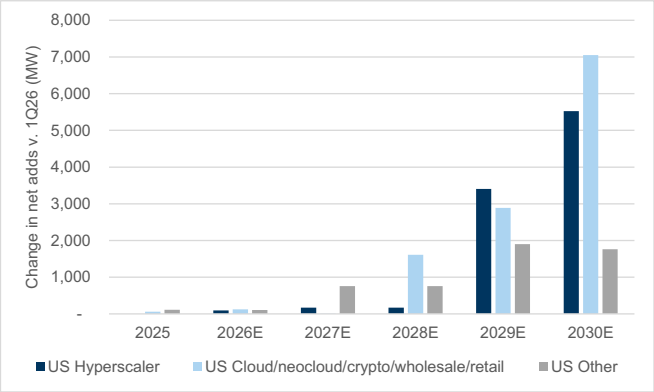
Source: 451 Research, Goldman Sachs Global Investment Research

Exhibit 7: US capacity net add forecasts have been revised upwards over time (51% on average v. 1Q26, 69% v. 4Q25, and 102% v. 3Q25
US net add forecasts (MW)



Source: 451 Research, Goldman Sachs Global Investment Research

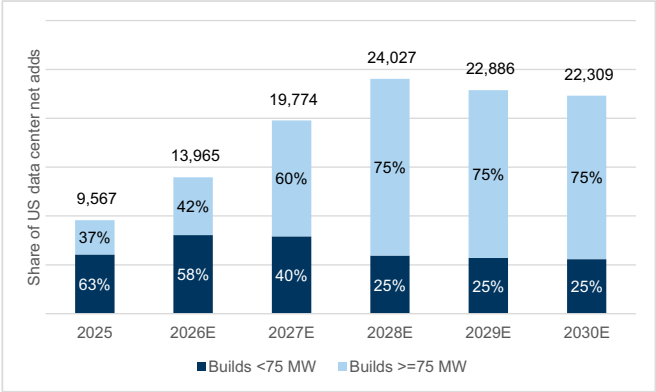
Exhibit 8: US cloud/neocloud/crypto/wholesale/retail net adds saw the most upward revisions
US net add revisions v. 1Q26



US Other includes interconnect, powered shell, reseller, system integrator, and telco

Source: 451 Research, Goldman Sachs Global Investment Research

Exhibit 9: Projects >=75 MW should account for 75% of net adds by 2028



Source: 451 Research, Goldman Sachs Global Investment Research

Exhibit 10: AI/Cloud player spend should grow to ~$1.74 trillion by 2030 at a 31% 2025-2030 CAGR
Consensus capex estimates on select AI players/Cloud players ($, mn)

Select US cloud	2024	2025	2026E	2027E	2028E	2029E	2030E
AAPL	10,264	12,033	10,664	12,967	14,024	15,074	15,469
AMZN	82,999	131,819	228,406	300,605	335,093	342,771	345,751
META	37,256	69,691	138,411	214,307	234,266	234,337	244,428
GOOGL	52,535	91,447	201,011	331,600	379,322	385,748	394,791
MSFT	54,514	90,250	155,010	213,051	244,948	262,221	267,938
ORCL	14,041	38,439	74,557	100,146	96,286	83,529	73,370
SPCX	5,633	12,712	74,452	298,100	315,000	334,401	342,992
CRWV	8,702	10,309	35,666	47,387	47,950	50,887	58,028
Total capex ($, mn)	**265,944**	**456,699**	**918,177**	**1,518,163**	**1,666,889**	**1,708,969**	**1,742,766**
Year-over-year growth	*57%*	*72%*	*101%*	*65%*	*10%*	*3%*	*2%*

Estimates as of 10/30/2026

Source: Visible Alpha Consensus Data

We recognize rising execution risk of building and delivering data centers from power supply issues, regulatory uncertainty, and high leverage. That said, we still see potential for sustained, outsized growth in capacity through high visibility projects. A key area of investor push-back to our data center capacity model has been that our estimates are conservative which we attribute to a higher barrier to entry for a project's inclusion in 451 Research's pipeline. Accordingly, we expect the increased execution risk to disproportionally impact projects that were not originally considered in our forecasts.

- **Power supply constraints.** Recently, Microsoft exited a lease commitment due to a delayed RFS date as a result of power supply issues (see WSJ article from 10/19/2026) and Oracle's New Mexico project has faced challenges over power supply permitting (see WSJ article from 9/25/2026). T**he ability to have visibility into secured power is becoming more important as a result.**
- **Community concerns.** We have received a rising volume of investor questions regarding potential delays related to the data center directives by governors in Texas and Pennsylvania, both of which effectively paused their respective fast-track approval processes. **We view the primary burden falling on speculative builds, although we flag ongoing headline risk and the potential for slower project development.** The GS Sustain team recently authored a report detailing the key areas of community push back to data center development, along with potential mitigating solutions. The team noted that the solutions may not fully allay community concerns, where perception of the societal and/or economic impacts of AI, transparency of the individual data center development process and broader NIMBY push back could supersede innovation/solutions.
- **High leverage.** HPC data center construction is typically highly levered (80-90% loan-to-cost) which means returns are highly sensitive to compression in the debt yield spread. We continue to monitor further pressure on hyperscaler bond yields, and on industry yields from increased headline delays. **We foresee increased focus on lease duration and credit-quality of the tenant with data center asset as a response to rising cost of credit**, with asset-backed debt from high quality data center projects providing access to 15-30 year contracted cash flows from investment-grade tenants. In addition, once projects mature, **capital recycling offers developers a path to monetize existing projects to finance new development at a lower cost of capital.**

Exhibit 11: Summary of the key areas of community push back to data center development with potential mitigating solutions

Perceived Risks	Rationale	Regional Variability	Mitigating Solutions
Power Outages 	Greater power demand can = greater grid stress	Fairly ubiquitous concern	Data center agrees to power interruptions if necessary; behind-the-meter capacity *
Higher Power Prices 	Greater utility capex or tightening power supply/ demand can = higher rates	Fairly ubiquitous concern	Take-or-pay tariff structures; capacity market reform; behind the meter capacity *
Drain on Water Supply 	Cooling modern data centers can be water intensive	Less of a concern in areas of water abundance	Closed-loop, waterless or less water-intensive cooling systems
Noise Pollution 	HVAC & onsite power gen increase local ambient noise	Most acute in landscapes with proximity between DCs and residences.	Zoning adjustments, acoustic barriers, sound-dampening fans
Localized Warming 	Thermal output of datacenters can ↑ local heat stress	Less of a concern in cold climates or where heat recycling infrastructure exists	Waste heat capture for district heating or other recycling solutions, where possible

* ongoing debate on the long-term efficacy of behind-the-meter solutions

Source: Goldman Sachs Global Investment Research, GS Sustain

Please reach out via email for a copy of our global data center capacity model.

Disclosure Appendix

Reg AC

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