

Data centre electricity on course to double by 2030: what the IEA reports

We observe the IEA's 2025 and 2026 figures: around 415 TWh in 2024, 485 TWh in 2025 and around 950 TWh projected for 2030.

950 TWh

Data centre electricity consumption projected for 2030 in the IEA's updated projections [2]

485 TWh

Data centre electricity consumption in 2025 [2]

+50%

Growth in 2025 of consumption from AI-focused data centres [2]

Coverage: global · Sources: IEA, Energy and AI (Apr 2025) and Key Questions on Energy and AI (16 Apr 2026)

WHAT WE OBSERVE

In Energy and AI (April 2025), the IEA estimated data centre electricity consumption at around 415 terawatt-hours (TWh) in 2024, about 1.5% of global electricity consumption, having grown at 12% per year over the previous five years [1]. In its Base Case, the IEA projected that consumption would double to around 945 TWh by 2030, just under 3% of global electricity consumption, growing by around 15% per year from 2024 [1]. Electricity consumption in accelerated servers, mainly driven by AI adoption, was projected to grow by 30% annually in the Base Case, against 9% for conventional servers [1]. China and the United States account for nearly 80% of global growth to 2030; consumption rises by around 240 TWh (up 130%) in the United States and around 175 TWh (up 170%) in China [1].

For 2035, the IEA's sensitivity cases run from around 700 TWh (Headwinds Case) to above 1,700 TWh (Lift-Off Case), with the High Efficiency Case at around 970 TWh [1].

In Key Questions on Energy and AI (16 April 2026), the IEA reports that global data centre electricity demand grew by 17% in 2025, and that consumption from AI-focused data centres grew by 50% [2, 3]. The IEA's updated projections see consumption roughly doubling from 485 TWh in 2025 to 950 TWh in 2030, around 3% of global electricity demand, with AI-focused data centres tripling over the period [2]. The IEA says the central projection remains close to its 2025 trajectory, while bottlenecks across the value chain reduce the likelihood of more aggressive near-term scenarios [2].

A year on, the IEA's 2030 projection has barely moved: 945 TWh in the 2025 report, 950 TWh in the 2026 update.

Data centre electricity consumption, TWh: estimates and 2030 projections [1, 2]



Dark teal: estimates. Light teal: projections. Values are approximate, as the IEA states them.

Sources: IEA, Energy and AI (Apr 2025) [1]; IEA, Key Questions on Energy and AI (16 Apr 2026) [2].

WHY IT MATTERS

Data centres remain a small share of global electricity, around 3% by 2030 in both IEA publications [1, 2]. Growth is concentrated in a few places: the IEA notes that data centres, unlike electric vehicles, cluster in specific locations, which can make grid integration more challenging [1]. The 2026 update adds a constraint: bottlenecks in grids, equipment and chips limit how fast capacity can expand in the near term [2, 3].

METHOD

Sources: two IEA web pages and an IEA press release, fetched and read on 26 Oct 2026 [1-3]. Figures and case names are as the IEA states them; the 2030 values come from different publications and are labelled by source. Chart data are in chart-data.csv. Framing follows AIO Watch method note AIO-M01, v1.2 [4].

REFERENCES

[1] International Energy Agency. Energy and AI, "Energy demand from AI", April 2025. <https://www.iea.org/reports/energy-and-ai/energy-demand-from-ai>. Accessed 26 Oct 2026.

[2] International Energy Agency. Key Questions on Energy and AI, "Executive summary", 16 Apr 2026. <https://www.iea.org/reports/key-questions-on-energy-and-ai/executive-summary>. Accessed 26 Oct 2026.

[3] International Energy Agency. Press release, 16 Apr 2026. <https://www.iea.org/news/data-centre-electricity-use-surged-in-2025-even-with-tightening-bottlenecks-driving-a-scramble-for-solutions>. Accessed 26 Oct 2026.

[4] AIO Research Team. AIO Watch method note AIO-M01, v1.2, 25 Oct 2026.