# AI fuels global data-centre boom—but energy, water and talent strains loom



New research from Singapore-based M Capital Group paints a stark picture of a data-centre landscape undergoing rapid transformation. The report, *Data Centres – Breathtaking Drive: Exhausting Energy, Water and Brains*, argues that artificial intelligence, digital sovereignty and infrastructure expansion are forcing a “once-in-a-generation structural realignment” in how and where data is processed.

Global data-centre market value is forecast to reach $387 billion by the end of 2025, with hyperscalers and sovereign-backed providers racing to build AI-ready facilities capable of supporting trillion-parameter models. M Capital warns that AI workloads alone could account for nearly half of global data-centre electricity use by year-end. To meet demand, operators are embracing advanced cooling, denser server racks and localisation-compliant designs.

“The AI era will not be cloud-native. It will be infrastructure-native,” said Christian Mouchbahani, Managing Partner at M Capital Group. “Those who can localise, optimise and operationalise at scale will define the next two decades of digital power brains.”

That scale comes with growing energy and regulatory challenges. According to the International Energy Agency, global electricity use by data centres could hit 945 TWh by 2030—about 3% of total demand. Accelerated servers driven by AI are expected to dominate the increase. While efficiency improvements may offset some of the impact, the sector’s power needs are climbing, raising the stakes for clean-energy sourcing and grid planning.

Independent forecasts echo these concerns. Analysis by Digiconomist’s Alex de Vries-Gao suggests AI could drive data centres to consume nearly 49% of their total electricity use by the end of 2025, excluding crypto-mining. He links the surge to GPU power draw and cooling requirements, cautioning that regulatory changes or tech breakthroughs could still shift the trajectory.

Deloitte’s 2025 Predictions note that generative AI could significantly escalate electricity demand unless the industry accelerates innovations in efficiency and clean-energy integration. The consultancy highlights the need for alignment across tech providers, utilities and governments to balance performance with sustainability. The Middle East is emerging as a key growth zone. PwC reports that regional capacity could triple by 2030, led by sovereign investment in the UAE and Saudi Arabia. National initiatives, strategic partnerships and abundant energy are drawing hyperscalers and regional players, though challenges remain in talent, supply chains and grid capacity. Reuters adds that access to advanced semiconductors and international collaboration will be vital to realising the Gulf’s AI ambitions.

One major project already underway is Equinix’s planned $1 billion investment in a Saudi data centre, delivering 100 MW of capacity in Jeddah. Unveiled at Riyadh’s Leap summit, the initiative reflects how global firms are aligning with regional strategies to position themselves at the heart of AI infrastructure growth.

The UK faces a parallel opportunity. Industry analysts say the convergence of rising AI demand, sovereign data policies and sustainable infrastructure creates an opening for Britain to lead. A strong science base, dynamic energy networks and supportive regulation could attract AI-focused investment, provided the country couples growth with stringent data governance, low-emission energy and next-generation cooling.

Yet the path forward is not without friction. Higher density systems will increase both power and water use. Managing this impact will require progress in energy efficiency, water stewardship and workforce development. Skills in system design, operations and optimisation will be crucial as complexity scales.

The trajectory is clear: smarter energy, smarter cooling and smarter regulation will define how responsibly the digital infrastructure of AI develops. The sector is more than a story of growth. It is a test of whether innovation can expand in step with resilience, accountability and climate goals. If the UK seizes this moment, it can help shape a future where data centres power progress without exhausting the systems that sustain it.

Created by [Amplify](https://www.hbmadvisory.com/amplify): AI-augmented, human-curated content.

## Bibliography

1. <https://datacenternews.asia/story/ai-drives-data-centre-surge-to-387-billion-by-end-of-2025> - Please view link - unable to able to access data
2. <https://www.theguardian.com/environment/2025/may/22/ai-data-centre-power-consumption> - An analysis by Digiconomist founder Alex de Vries-Gao, cited by The Guardian, projects AI could account for around 49% of global datacentre electricity use by the end of 2025, excluding cryptocurrency mining. The article links this forecast to chip power demands from Nvidia and AMD, alongside data-centre cooling and server workloads. It notes the International Energy Agency’s expectation that AI will drive substantial energy needs, potentially equalling Japan’s current annual consumption by the decade’s end. The piece also highlights uncertainties, such as potential accelerations in efficiency, export controls on hardware, and geopolitical shifts shaping sovereign AI initiatives in coming years.
3. <https://www.iea.org/reports/energy-and-ai/energy-demand-from-ai> - IEA's Energy and AI analysis outlines how data centres currently consume about 415 terawatt-hours of electricity annually (2024), representing roughly 1.5% of global demand, and how AI accelerates this trajectory. It presents three scenarios (Lift-Off, High Efficiency, Headwinds) to model future demand through 2030 and beyond, with accelerated servers responsible for nearly half of the net increase in datacentre electricity use in the base picture. By 2030, global consumption could reach around 945 TWh, with growth concentrated in the US, China and Europe. The report emphasises the integration of renewables and grid constraints in projections to inform policy and investment to inform policy and investment.
4. <https://www2.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2025/genai-power-consumption-creates-need-for-more-sustainable-data-centers.html> - Deloitte argues that the AI electricity surge will push data centres to compete for cleaner power, noting that data centres currently account for about 2% of global electricity consumption, with AI-driven demand set to push total 2025 consumption toward roughly 536 TWh and potentially exceed 1,000 TWh by 2030 if growth continues. The article highlights hyperscalers’ capex activity—reportedly around US$200 billion in 2024 and projected above US$220 billion by 2025—driving investment into AI-focused infrastructure. It urges collaboration among technology, electricity providers and policy makers to pursue lower-emission energy sources, advanced cooling, and efficiency, while maintaining reliability across global data centres.
5. <https://www.pwc.com/m1/en/media-centre/articles/unlocking-the-data-centre-opportunity-in-the-middle-east.html> - PwC notes the Middle East is emerging as a data centre powerhouse as cloud and AI demand intensifies, supported by strategic regulation and sovereign investment. The region is projected to triple capacity from about 1 GW in 2025 to around 3.3 GW within five years, with UAE and Saudi Arabia driving growth through initiatives such as CCSEZ and AI-focused projects. The article highlights energy costs, connectivity, and access to capital from SWFs and private equity, alongside regulatory incentives and partnerships. It also discusses challenges such as power capacity, supply chains and talent, while outlining opportunities for hyperscalers and regional operators.
6. <https://www.reuters.com/breakingviews/middle-east-ai-dream-depends-luring-brainpower-2024-03-22/> - Reuters Breakingviews argues that while Gulf states aspire to become AI hubs, their plans hinge on attracting global talent and securing access to advanced semiconductors and data-centre infrastructure. The piece notes large-scale investment by AWS and other funds, and highlights the strategic tension between domestic energy abundance and international chip supply controls. It discusses the need for skilled workers and policy alignment to realise data-centre and AI ambitions, with the UAE and Saudi Arabia pursuing partnerships to cement a regional role in AI, cloud, and HPC, subject to geopolitical and supply-chain constraints amid shifting sanctions and export controls worldwide today.
7. <https://www.datacenterdynamics.com/en/news/equinix-plans-1bn-saudi-data-center/> - Equinix announces plans to invest over US$1 billion in a Saudi data centre, to be located in Jeddah and delivering about 100 MW of capacity. The announcement came at the Leap summit in Riyadh, with leadership emphasising how the new facility will serve hyperscale and enterprise customers in Saudi Arabia and the wider Middle East. The move is part of an escalation in AI and data infrastructure investment across the region, supported by government backing and a growing ecosystem of cloud providers, chipmakers and system integrators, as Saudi Arabia aims to become a regional hub for future growth and resilience.