

Stargate UAE's first gigawatt would use triple the power of all UAE data centres

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For most of the AI boom , the bottleneck was chips . Increasingly, it is electricity .

In the US, the world's largest data centre market , the grid interconnection queue holds about 2,300GW of projects, and new AI campuses can wait years for the electricity they need.

TrendForce estimates that by 2030, global data centre demand could exceed available grid capacity by more than 250GW.

That shift has made the UAE's natural advantage – abundant energy and the ability to build quickly – valuable. The question is whether that advantage can be sustained.

What is being built

Two projects are often confused. The UAE-US AI Campus is the master plan, a site of about 26 square kilometres near Abu Dhabi designed to host up to 5GW of data centres. Stargate UAE is its first phase, a 1GW cluster built by G42 with OpenAI, Oracle, Nvidia, Cisco and SoftBank. Its first 200MW are expected to come on line this year. Everything beyond that first phase remains on paper.

The power ledger

Abundance is a claim that should be tested with numbers. The UAE consumed about 173TWh of electricity in 2025, according to Wood Mackenzie. Data centres used about 3TWh hours of that, or 2 per cent.

What AI demand means for the UAE grid

The maths is striking. Running at full load, Stargate's first gigawatt alone would use almost three times as much electricity as every data centre in the country does today. The full campus would add demand equal to a quarter of current national consumption. No country has that much spare capacity sitting idle. It has to be built.

The UAE is building it, and that is where the advantage becomes concrete. This year, Masdar and the Emirates Water and Electricity Company (Ewec) reached financial close on a \$6.1 billion project that pairs 5.2GW of solar with 19GWh of batteries to deliver 1GW of round-the-clock power. Due in 2027, it is the first project of its kind at this scale. Taqa and Ewec are also building a 1GW gas-fired plant at Al Dhafra, financed at \$980 million, specifically to supply data centres. Add Barakah's nuclear baseload and existing gas-fired capacity, and few markets can assemble firm, low-cost power as quickly.

Speed is the real competitive edge. In the UAE, state-backed entities plan generation, transmission and much of the demand together. In the US, a developer can wait years in a queue behind other projects. That co-ordination, more than the energy itself, is the advantage competitors find hardest to copy.

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Capacity is not delivery

Generating power is one task. Delivering it reliably and cleanly to the right sites is another. Wood Mackenzie notes that the UAE does not yet permit corporate or virtual power purchase agreements, and that renewables are

procured only through utility auctions. For hyperscalers with clean-energy commitments, that limits how they can buy green power – a gap rival hubs may close first.

The regional war has added a harder test. In March, Iranian strikes damaged two Amazon Web Services data centres in the UAE, and in April an Iranian military video named Stargate as a target.

In September, Reuters reported that the UAE was reworking the 5GW master plan into a network of smaller sites, with underground facilities, air defences and duplicated power and cooling. The first phase is going ahead, though it is unclear how far it has progressed.

This month, Mohsen Rezaei, a former commander of Iran's Islamic Revolutionary Guard Corps, warned that data centres and AI facilities across the region could be targeted if the conflict resumed.

Dispersal changes the power equation. Every additional site needs its own grid connection, backup generation and cooling. Large AI training runs also work best when chips sit close together, so splitting clusters can reduce performance. The UAE's power advantage now has to be delivered to more places, at higher cost, and defended by military force.

What would make the advantage last

Keep supply ahead of demand . The 2027 round-the-clock solar project and new gas capacity are the right signals. Further phases of the campus should be matched, gigawatt for gigawatt, with committed new generation.

Open the market for clean power . Allowing corporate power purchase agreements would let global tech companies meet their own climate targets in the UAE, removing a reason to build elsewhere.

Price resilience into the offer . Hardened, redundant sites cost more, but that protection is also a selling point. Few markets can promise capacity that is protected by design.

Secure the chips that use the power . The UAE's access to advanced US chips without individual licences runs until about April 2027. Power without processors is idle capacity.

The verdict

The UAE does not control the world's energy for AI. But it holds a natural advantage in abundant, low-cost power, and a structural one in its ability to plan and build at speed.

On current evidence, that combination is real and is already attracting the world's leading AI companies. It becomes a lasting strategic advantage only if the UAE proves it can deliver that power securely, to dispersed sites, through a regional war. That is the test of the next two years.

Andrea Zanon is senior adviser to entrepreneurs and global leaders, with more than 20 years of experience in economic strategy, market access and geopolitical risk