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India wants more data centres. But does it have enough power to support them?

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India's data centre story has moved from promise to construction site. Installed capacity has nearly tripled in five years, from about 520 MW in 2020 to close to 1.5 GW today, and is projected to reach 4.5 to 6.5 GW by 2030, with some industry estimates running closer to 9 or 10 GW. Committed investments between 2019 and 2025 have crossed USD 95 billion. The Union Budget 2026 has added a long-term tax holiday for data centre and cloud investments extending to 2047, building on the infrastructure status granted earlier. The intent is unambiguous: India wants to be a global data centre and AI hub.

The harder question sits one layer below the announcements. Every megawatt of data centre capacity is, in effect, a claim on the power system. The real test of India's data centre ambition will not be land, capital, or demand. It will be whether the grid can deliver

clean, reliable, and affordable electricity round the clock at the pace the sector is growing.

The arithmetic of demand is changing quickly:

Data centres consumed roughly half a per cent of India's electricity in 2025. That figure looks modest, but it is projected to more than double by 2030, by which point the sector could account for close to 3 per cent of national consumption. Projections shared at a Central Electricity Authority meeting in May 2026 suggest data centre capacity across eleven major states could grow from about 1.6 GW today to 35.7 GW by 2039-40. This is arriving on top of an already steep national curve, with the CEA expecting peak power demand to rise from 289 GW in 2026-27 to 459 GW by 2035-36.

What sets data centres apart is not simply their need for uninterrupted power, which is also the case for hospitals, airports or railways, but the kind of power their customers expect. Leading cloud and AI companies are increasingly seeking data-centre capacity backed by round-the-clock clean energy, with some moving towards matching their electricity consumption with clean power on an hourly basis. This is becoming an important factor in investment and location decisions.

Power is often the largest operating expense for a data centre and can account for up to 60–70 per cent of operating costs. Any disruption to power supply can trigger financial penalties, interrupt services and even reputational damage. A single large facility can draw as much electricity as a small town, but the real concern is where that demand lands. It concentrates on city distribution networks that are already stretched, which means local substations, feeders and last-mile infrastructure must be strengthened in step, not just national generation.

The world is hitting the same wall:

India is not facing this challenge alone. Data centres are becoming a major source of electricity demand across the world, and their power needs are expected to rise sharply over the coming years. Countries such as Ireland, Singapore and Malaysia have tightened approval or grid-connection requirements, while the European Union has introduced energy and water reporting obligations for larger facilities. The experience of these markets shows that, as the sector grows, regulators increasingly need to manage its wider impact on power and water systems. India can build those guardrails before the strain arrives, not after.

The real constraints are clean round-the-clock power and last-mile delivery:

The government deserves credit for its strong push towards the clean energy transition. India's installed non-fossil power capacity has reached nearly 292 GW, against the national target of 500 GW by 2030.

However, for the data centre industry, which requires absolute 24/7 uptime, adding raw generation capacity is only half the battle. The fundamental challenge remains the variable nature of solar and wind power. Meeting a facility's total annual energy consumption is one thing; supplying uninterrupted, firm clean power on an hour-by-hour basis is an entirely different mandate. To address this challenge and deliver true round-the-clock (RTC) green energy, India must urgently prioritise large-scale investment in Long-Duration Energy Storage (LDES) solutions. Without robust storage infrastructure to support the grid during peak-demand periods and hours of low renewable generation, the ambition to become a global data hub could outpace the grid's ability to power it reliably.

The second is delivering that power reliably to where it is needed. Data centres cluster heavily in Mumbai, Chennai, Delhi-NCR, Hyderabad and Bengaluru, where power networks are already under pressure. The industry continues to face supply disruptions, delays in approvals for higher power loads, and slow grid connections. As a result, data centres keep diesel generators on site for backup. Under pollution control norms these run only as standby, and a facility that actually leans on diesel for routine power would fail the round-the-clock clean-energy standards its global customers now demand. They are insurance against an unreliable grid, not a routine source of supply.

Four shifts that could close the gap:

First, **data centre demand should be included clearly in power planning.** The CEA has taken useful steps by asking states and distribution companies to include future data centre demand in their power plans. It has also proposed treating data centres as critical facilities that need backup connections and uninterrupted supply. These proposals now need to be implemented quickly by states. Although about fifteen states have data centre policies, most focus more on financial incentives than on ensuring reliable power supply.

Second, **make clean energy procurement predictable.** Harmonised rules across states, stable charges and consistent power-banking provisions would give investors more confidence than additional capital subsidies.

Third, **the Storage Imperative: A Tech-Agnostic Approach to RE-RTC:** The bridge between intermittent green energy and the 24/7 demands of data centres is robust storage infrastructure. However, to scale this rapidly, policy frameworks must remain strictly technology-agnostic and regulations should simply demand the outcome: firm, dependable RTC green power. Concurrently, India must aggressively build domestic capabilities across a diverse range of these storage technologies, ensuring our critical digital infrastructure isn't dependant on imported supply chains.

Fourth, **link incentives to clear performance targets. India offers strong support to data centres through tax benefits, subsidies, land support and duty waivers.** However, most of these incentives do not require companies to improve their power use. In future, incentives could depend on some measurable commitments. USA (states like Virginia) is already considering tying its data centre tax exemptions to efficiency and clean energy criteria. India can make its fiscal generosity work harder.

The window is now:

India is not short of demand, capital, or ambition. The choices made now on power planning and clean energy access will decide whether this growth is globally competitive and sustainable. Power is the foundation of the digital economy India is building. It deserves the same urgency as the buildings themselves.