

India's data centre boom is hitting an invisible ceiling

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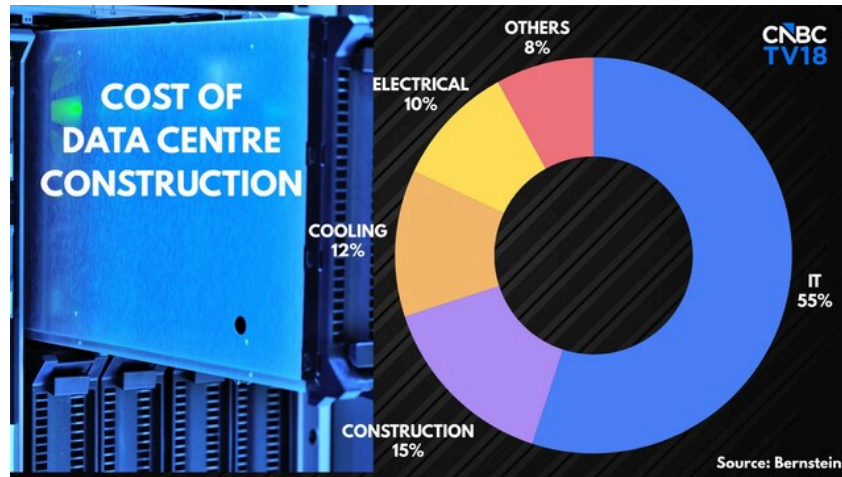
Data centres are mushrooming in India, at an unprecedented scale and speed, driven by a cost advantage and optimism about the impending demand from accelerating digitisation and artificial intelligence (AI). Yet, beneath this momentum lies a growing tension.

The emerging constraint is no longer capital or intent, but infrastructure readiness. "The cost of building data centre capacity in India has increased compared to a year earlier, primarily due to higher power infrastructure costs, land prices, and the need for AI-ready, high-density deployments," Vijay Sampath Kumar, Chief Business Officer at the Hyderabad-based cooling solutions provider, Refroid Technologies, told CNBC-TV18.

As data centres become more compute-dense and AI-ready, experts believe that the share of active information technology (IT) and networking equipment in total project cost is rising, making budgets more sensitive to component-level price movements.

Fluctuations in global memory pricing have also raised the cost of active infrastructure, including servers, storage platforms, and networking equipment, which account for a significant share of overall capital expenditure.

Those interested in investing in India's booming data centre business may benefit identifying these gaps and the companies that may be able to fill them.



Yet, both demand and costs in India are encouraging enough for the scheduled explosion in data centre capacity. According to a recent CareEdge Ratings report, construction costs are estimated to be 30–40% lower than in markets such as the US and China, aided by lower land prices and competitive electricity tariffs.

Industry estimates suggest that India’s capacity could grow from roughly 1.2 GW in 2025 to around 4 GW by 2030, reflecting a multi-fold expansion in a relatively short period.

CBRE, one of the world's largest commercial real estate services and investment firms, estimates that \$54 billion in new data centre investments in India will be committed in 2026 alone.

In 2026, only India’s total data centre stock across major cities is projected to increase by about 30% (YoY), supported by an estimated 500 MW of new supply addition, according to CBRE’s India Alternate Sectors Outlook 2026 report.

Market	Operational MW	Pipeline MW (to 2030)
Australia	1,395	2,771
Malaysia	1,063	3,252
India	1,565	3,053
Japan	1,531	3,143
Mainland China	4,694	2,030

While India's generation capacity has expanded, transmission infrastructure and last-mile delivery remain bottlenecks in several regions. Upgrading transmission networks typically takes multiple years, creating a lag between demand and the availability of infrastructure.

"Access to reliable grid power is likely to remain the biggest constraint in the data centre story. As workloads shift to more intensive, AI-driven GPU deployments in the coming quarters, the existing power infrastructure may come under pressure," Anshuman Magazine, Chairman & CEO for India, South-East Asia, Middle East & Africa at CBRE, said.

The invisible ceiling: power transmission

As capacity scales, the most critical constraint emerging is not generation but transmission and distribution of power. Data centres require an uninterrupted, high-quality, redundant power supply.

Industry estimates suggest that data centres could account for approximately 2.5% of India's total electricity consumption by 2030. As AI-driven workloads increase, compute intensity and power demand are expected to rise further, adding pressure on existing grids.

The stress will be higher in key markets such as Mumbai, Chennai, Delhi-NCR, and Bengaluru, which account for nearly 90% of the country's tier-I data centre capacity.

"Transmission constraints are binding data centre growth in already concentrated markets like Mumbai and Chennai," Prateek Aggarwal, Programme Lead at The Council on Energy, Environment and Water (CEEW), a not-for-profit policy think tank based in New Delhi.

Mumbai alone contributes over half of the operational inventory, aided by strong subsea connectivity and reliable power infrastructure.

CEEW's Aggarwal has suggested three measures to address the problem.

First, states should establish real-time transmission capacity portals so investors can identify available grid headroom before committing to a site.

Second, India needs dedicated data centre parks with a pre-built electrical backbone, where substations lead demand rather than follow it.

Third, developers should adopt on-site storage as a bridging solution, enabling facilities to begin phased operations on partial grid connections and scale up as full infrastructure becomes available.

Faced with transmission limitations, operators are not waiting for long-term grid upgrades. Instead, they are increasingly adopting alternative strategies to secure a reliable power supply.

The emerging needs would make the state-owned [Power Grid](#), India's largest transmission network builder, a significant player in developing the ecosystem. The stock is up over 6.6% even as the Nifty 50, the index of India's biggest blue-chip stocks, has fallen over 15% since the start of the year.



Share price chart as at 12:45 pm on April 2.

The company [plans to spend ₹82,000 crore by March 2028 in adding transmission network](#), and it already has ₹1.48 lakh crore worth of orders in hand.

Peers like [Tata Power](#), [GE Vernova](#), [Torrent Power](#), and [Hitachi Energy](#) will also be in play. These have also been outlier stocks in the recent market rout triggered by the war between Iran and Israel (backed by the US).

Stock	This year so far
Hitachi Energy	32.51%
GE Vernova T&D	17.86%
Siemens Energy India	1.7%
Torrent Power	-1.3%
Nifty 50	-14.5%

A key trend is the direct procurement of renewable energy through partnerships with solar and wind providers.

Hybrid energy models combining renewables with storage solutions are also gaining traction, allowing data centres to reduce dependence on the grid while maintaining continuity of supply.

Magazine added, "With India planning to add more renewable power capacity, the scale is being met through strategic partnerships with renewable energy firms for an uninterrupted power supply necessary to handle these advanced workloads."

India added a record 44.5 GW of renewable capacity in 2025, nearly doubling the previous year's addition. The likes of Warree Energies, Premier Energies, and Adani Green will be among those to watch out for in this regard.

Power strategy is becoming a core component of data centre planning, rather than a downstream consideration.

Connectivity: A second layer of constraint

Beyond power, connectivity infrastructure is another critical factor shaping scalability. Low-latency, high-capacity fibre networks are essential for hyperscale and AI workloads.

However, as demand grows, operators are increasingly exploring expansion into tier-II cities such as Ahmedabad, Indore, and Visakhapatnam. While these locations offer advantages in land availability and costs, their fibre ecosystems are still developing.

C S Krishnadas, Chief Executive Officer, Umiya Buildcon Limited, said, "The push towards edge data centres in tier-II cities is a step in the right direction, but it must be complemented by continued investments in fibre densification and network modernisation."

Over time, improvements in long-haul fibre networks and edge infrastructure are expected to support this geographic diversification, but the transition remains gradual.

Companies like [L&T](#), [Railtel](#), and [Rail Vikas Nigam Limited](#), which have the experience required to build fibre networks, may benefit from new orders in the long run. Even cable makers like [Polycab](#), [KEI Industries](#), and [Havells](#) may also find business in the process.

India's data centre capacity per million internet users is approximately 1.2 MW, compared to the global average of around 5 MW.

The gap highlights both the opportunity and the constraint. On one hand, it signals significant headroom for growth, while on the other, it underscores the scale of infrastructure required to bridge this divide.

The ceiling India faces is not about the ability to build data centres - but about the ability to power, connect, and sustain them reliably across regions.