

Data centres: US turns to captive, India backs grid

SAURAV ANAND
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THE GLOBAL RACE to power energy-intensive AI data centres is reviving the captive power model in the United States — but India is charting a fundamentally different course, anchoring its digital infrastructure growth to its 520-gigawatt unified national electricity grid, among the largest interconnected power systems in the world.

While US President Donald Trump has publicly urged technology companies to arrange power for their own AI data centres — signalling a move towards on-site generation and dedicated energy ecosystems — Indian officials maintain that the country's integrated grid has both the scale and system flexibility to absorb the coming surge in commercial power demand.

"Unlike Europe, which lacks

a unified transmission backbone, and the US, which operates fragmented regional grids, India runs on a single synchronised national grid," a senior official said.

"This structural advantage positions India as a preferred destination for data centres. The system has adequate generation depth and transmission strength to reliably meet rising demand across agriculture, industry, commercial establishments — including hyperscale data centres and global capability centres," the official added.

Demand projected to jump over thirteenfold

The scale of upcoming demand growth is significant.

In a written reply to the Rajya Sabha, Minister of State for Power Shripad Naik said data centres currently consume about 1 GW of electricity nationwide, a figure projected

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■ The US is leaning towards captive power plants, while India depends on its unified national electricity grid

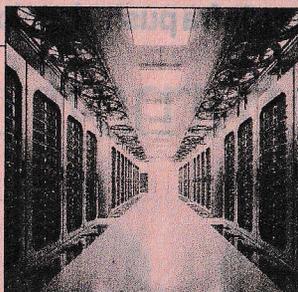
■ India's 520 gigawatt national grid provides a reliable and flexible power supply

■ This positions the country favourably for data centre demand growth, which is projected to rise to 13.56 GW

Government policy emphasises reinforcing the grid and expanding transmission capabilities rather than shifting towards dedicated captive ecosystems

to climb sharply to 13.56 GW by FY2031-32 as new facilities come online.

"Presently, power requirement of data centres in the country is approximately 1 GW which is estimated to increase up to 13.56 GW by



■ India's integrated grid allows efficient transmission of renewable and thermal power across states

FY2031-32 on account of upcoming data centres," Naik told Parliament.

The minister noted that while captive generation arrangements exist for certain self-consuming users, electricity usage by data centres is not

centrally tracked at present, underscoring the sector's rapid and decentralised expansion.

Grid-first strategy contrasts US pivot

The diverging approaches reflect structural differences in power systems. In the US, grid congestion, permitting bottlenecks and regional fragmentation have increasingly pushed hyperscale technology firms towards captive generation — ranging from gas-based plants to nuclear-adjacent power procurement.

Policy focus remains on grid expansion

Government planning remains centred on strengthening inter-state transmission, accelerating renewable capacity and reinforcing grid stability. The projected data-centre load increase is being absorbed into long-term gen-

eration and network expansion models rather than triggering a policy shift toward dedicated captive ecosystems.

"India is continuing to add large volumes of new generation capacity every year, and this momentum is expected to sustain. With a robust 500-GW national grid and ample supply depth, there is no structural need for captive power for data centres — the grid has adequate capacity to reliably support rising AI and digital infrastructure demand alongside overall economic growth," said Parag Sharma, CEO, Resolven.

For now, India's pitch to global technology investors is straightforward: unlike in many developed markets, power availability is not the binding constraint.

As AI-led data demand accelerates, the country is betting that its unified grid — not on-site generation — will remain the backbone of the digital economy.