

Aligning compute, power and policy

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Published on: Aug 29, 2026, 15:29:26 IST

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Artificial Intelligence (Representative)

India's AI future will depend not just on model development, but on the infrastructure that powers, cools, connects, and sustains it at scale. India's AI journey has now entered a new phase, where the focus is shifting from building capability to enabling consistent, reliable outcomes. The question is no longer whether India can develop

models or talent, but whether it can create the infrastructure required to support them at scale.

Important groundwork has already been laid. Under the IndiaAI Mission, more than 38,000 high-end GPUs have been onboarded and made available to eligible users at a subsidised average rate of ₹65 per hour. India's data-centre capacity has also expanded from about 375 MW in 2020 to around 1,500 MW by 2025. These are significant steps towards democratising access to advanced computing and strengthening the foundations of sovereign AI.

The next opportunity is to convert this growing capacity into usable AI infrastructure. A GPU, by itself, represents processing capacity. Its real value emerges only when it is supported by high-performance storage, low-latency networking, efficient cooling,

dependable power and an infrastructure platform capable of orchestrating workloads securely and efficiently.

In other words, India's AI advantage will not be determined only by how much compute it can assemble, but by how effectively the complete infrastructure around that compute work as one system.

This is where power becomes part of the AI architecture. AI workloads are more concentrated and power-intensive than traditional enterprise computing. High-density GPU clusters require reliable electricity, advanced thermal management and facility

design that can support sustained utilisation over many years. The government estimates that electricity demand from data centres could reach 13.56 GW by 2031–32, and this anticipated demand is already being factored into national planning.

The task, therefore, is not to question the direction India has chosen, but to deepen the coordination already under way.

Compute procurement can move relatively quickly. Transmission infrastructure, substations, land development and utility connections work on longer planning cycles. Data-centre construction, cooling design and regulatory approvals follow their own timelines. Aligning these different clocks can help India bring new AI capacity into productive use faster and with greater cost certainty.

This alignment should begin at the planning stage. Large AI infrastructure projects can be evaluated not merely as data-centre investments, but as integrated digital and industrial infrastructure.

Location decisions should account for grid readiness, network connectivity, clean-energy availability, water conditions, talent access and proximity to major centres of demand. Shared forecasting between technology planners, power utilities, state authorities and infrastructure providers can help each layer develop in step with the others.

Efficiency must also become as important as capacity.

The future of AI infrastructure will not be measured only by the number of GPUs installed, but by how much useful computation they deliver for every unit of power, space, cooling and capital. Technologies such as direct-to-chip liquid cooling, immersion cooling and high-density rack design are already helping improve the efficiency and sustainability of advanced computing facilities.

Better orchestration can further improve utilisation by dynamically allocating resources across model training, inference and high-performance computing workloads. A balanced infrastructure stack can therefore generate considerably more value than an environment in which compute, storage, networks and software are planned separately.

This also creates an important opportunity for Make in India.

While advanced processors will continue to be part of global supply chains, India can build deeper domestic capabilities in system design, integration, power-aware architecture, cooling, storage, networking, cybersecurity and infrastructure software. These capabilities are not secondary to AI. They determine whether AI systems can be deployed reliably across enterprises, research institutions and public infrastructure.

The objective should not be restricted to assembling more compute. It should be to strengthen India's ability to design, operate and optimise the entire infrastructure surrounding that compute.

AI models may change rapidly, but the infrastructure created around them compounds over time. A well-designed compute platform can support multiple generations of models, applications and scientific workloads. It can serve startups today, enterprises tomorrow and entirely new use cases in the years ahead.

This is why the infrastructure layer deserves to be viewed not simply as a technology input, but as a long-term national capability.

India has already demonstrated that it can build digital public infrastructure at population scale and make advanced technology broadly accessible. The same institutional strength can now help shape the next phase of AI. By bringing compute, power, cooling, connectivity and policy onto a common planning horizon, India can transform affordable compute access into lasting national competitiveness.

The missing layer in India's AI mission is therefore not ambition, nor is it a lack of progress. It is the opportunity to make every part of the AI infrastructure ecosystem move together.

If India succeeds in doing that, it will not merely participate in the global AI race. It will build the foundation on which many future races are run.

(The views expressed are personal)

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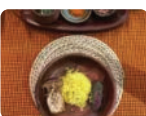
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