

Powering Artificial Intelligence: India-Singapore Cooperation on Sustainable Digital Infrastructure

Karthik Nachiappan and Mriganika Singh Tanwar

Summary

India and Singapore can combine scale, capital, standards and expertise to develop efficient data centres, strengthen resilience and advance sustainable AI infrastructure through bilateral cooperation.

Digital infrastructure has become a high-stakes political economy and infrastructure challenge. States are competing for control over data flows, cloud platforms, semiconductor supply chains and artificial intelligence (AI) systems while investing heavily in data centres, submarine cables and computing capacity. Data centres underpin cloud platforms, digital payments, streaming services, enterprise applications and AI workloads. Yet, their expansion is placing immense pressure on electricity grids, energy supplies and water resources. As AI models and cloud workloads become more demanding, data-centre sustainability can no longer be treated solely as a matter of corporate efficiency. Governments increasingly view it as central to economic resilience, energy security and climate strategy.

As AI demand accelerates, data centre expansion has become a salient feature of industrial planning, climate policy, and bilateral diplomacy for countries like India and Singapore. In India, data centre expansion is being pursued alongside a much broader digital economy and AI agenda. Singapore as a regional hub for digital connectivity is redesigning its data centre growth to align with its sustainability goals. Can both countries cooperate on this critical issue?

India

The Indian government is pushing for data centre growth to transform the country into a global data centre hub. India generates nearly one-fifth of the world's data but [hosts only 1.2 per cent](#) of the global data centre capacity. In 2024, [IndiaAI Mission](#) was launched to foster a robust sovereign AI ecosystem, including building hardware and compute capacity through data centres.

Driven by the India AI mission and conditional data localisation rules, the installed data centre capacity has nearly tripled since 2020, [reaching 1.5 gigawatts](#) (GW) and projected to reach [6.5 GW by 2030](#). As part of the draft National Data Center Policy, the government is planning to create dedicated [Data Center Economic Zones](#) to decentralise infrastructure away from traditional metro cities, streamline regulatory approvals, and create an ecosystem of hyper-scale data centres, cloud service providers, IT companies and Research

and Development units. State governments like Maharashtra, Tamil Nadu, Karnataka and Uttar Pradesh have rolled out land and fiscal incentives and policies to attract data centres.

That said, progress in India's data centre space has been significant but uneven; increasingly, the data centre frenzy has sparked environmental concerns. These facilities generally [consume](#) immense amounts of electricity and [water](#), which heavily strains local grids and aquifers in water-stressed regions. Besides energy and water constraints, state-level competition is pushing data centre projects into locations that appear sub-optimal and unsustainable. Despite viewing data centres as strategic assets for AI deployment, India lacks mandatory sustainability reporting, robust power usage effectiveness and water usage effectiveness benchmarks, and coordinated oversight across the power, water, environment and industry sectors to manage the impacts of planned and existing facilities.

Singapore

Singapore is driving its digital infrastructure through a strict 'Green First' approach, projecting itself as a trusted, secure and sustainable global hub for AI and cloud services. As a small island state, Singapore's energy and land resources are limited. Hence, the approach balances the growing demand for digital and AI infrastructure with strict sustainability standards and quality-selective growth.

Data centres consumed about [seven per cent](#) of the country's total electricity. Concerned over the unsustainable proportion of the country's energy and water resources, the government imposed a temporary pause on the development of new facilities and the release of state land. The [2019 moratorium](#) was a pivotal intervention which allowed the government to recalibrate the sector's footprint and forced the industry to mature rapidly. The scarcity compelled the operators to build hyper-efficient, multi-story vertical facilities, which processed high-value workloads.

As land and power constraints persist, Singapore has [extended its digital ecosystem regionally](#) through cross-border partnerships with neighbouring hubs like Johor Bahru in Malaysia and Batam in Indonesia. These partnerships allow data operators to tap into renewable energy grids while keeping latency low and operations heavily integrated. Singapore can regulate demand efficiently, improve standards, and steer operators toward greener technologies, but its long-term ability to scale data centres is likely to remain dependent on external energy supply, whether through imports, regional grids, or other decarbonised sources.

India-Singapore Cooperation in Sustainable Digital Infrastructure

India-Singapore cooperation on digitalisation and sustainability has grown. The [third India-Singapore Ministerial Roundtable in August 2025](#) discussed potential pathways to deepen bilateral collaboration digitalisation, sustainability, connectivity, and skills, including cross-border data flows and regulatory sandboxes. Singapore brings capital, standards, operational expertise, and a tested model for sustainable data-centre governance. While India brings scale, market demand and the opportunity to build green digital infrastructure. Additionally, Singapore's data centre governance model can serve as a template for quality-

focused regulations in Indian states; India offers a large testing ground for Singaporean companies looking for investment and scaling opportunities. Bilateral cooperation can be expanded in several ways:

1. Next-generation cooling systems: AI workloads in tropical climates require energy- and water-intensive cooling. India and Singapore could jointly develop seawater-based thermal systems, liquid-to-chip cooling and AI-optimised microgrids.
2. Shared Reporting Framework: India and Singapore could establish a shared reporting framework to standardise sustainability disclosures, benchmark operators, and improve investment quality to reduce the risk of greenwashing in a rapidly expanding sector.
3. AI-specific digital infrastructure governance: India and Singapore can draft standards for compute-sharing, green AI model hosting, and trusted cross-border data arrangements that support innovation without undermining sovereignty or security.

.

Dr Karthik Nachiappan is a Research Fellow at the Institute of South Asian Studies (ISAS), an autonomous research institute at the National University of Singapore (NUS). He can be contacted at isaskn@nus.edu.sg. Ms Mriganika Singh Tanwar is a Research Analyst at the same institute. She can be contacted at m.tanwar@nus.edu.sg. The authors bear full responsibility for the facts cited and opinions expressed in this paper.