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GRI DATA CENTRES INDIA 2025

Key insights into infrastructure challenges, investment strategies, and growth opportunities

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INTRODUCTION

Since 1998, GRI Club's exclusive networking events have been providing unique opportunities for the industry's decision makers to exchange valuable insights and experiences, igniting deal flow and potential using the real estate market.

GRI Club reports provide the key takeaways from these events, including the most valuable insights, the most ardent discussions, and the most intriguing strategies.

This report presents the insights from **GRI Data Centres India 2025**, a **GRI Club India** conference where top developers, investors, and operators came together to explore innovative strategies and share insights into the main challenges, biggest growth opportunities, and the exciting future of this rapidly-evolving sector.

CHECK OUT ALL THE PHOTOS FROM **GRI DATA CENTRES INDIA 2025**

INFRASTRUCTURE CONSTRAINTS CHALLENGE INDIA'S DATA CENTRE EXPANSION

India is emerging as a major data centre hub in the Asia-Pacific region, attracting hyperscale cloud operators, AI-driven computing, and enterprise workloads.

Cost efficiencies in construction and operations make the country a prime investment destination, but power constraints, cooling inefficiencies, and regulatory hurdles threaten to slow momentum.

To remain competitive against regional rivals such as Malaysia and Indonesia, India must future-proof its infrastructure, streamline regulatory frameworks, and integrate sustainable solutions.

As these challenges remain both the biggest constraint and the greatest opportunity, industry leaders stress its critical role in shaping the sector's future, with one executive stating that "whoever solves India's energy and cooling challenges will lead the next phase of data centre growth."

» Powering India's digital infrastructure

India's installed power capacity exceeds 450 GW, yet regional imbalances, grid congestion, and a lack of interconnectivity continue to hinder reliable and cost-effective electricity supply to major data centre hubs.

While states such as Rajasthan, Gujarat, and Tamil Nadu generate large volumes of renewable energy, high-density data centre clusters in Maharashtra, Karnataka, and Delhi-NCR face transmission delays and grid bottlenecks, forcing operators to either procure expensive short-term energy contracts or delay expansion plans due to power shortages.

This challenge is further compounded by the energy-intensive nature of AI workloads, which require high-voltage power configurations and extreme rack densities, placing additional strain on an already stretched grid.

As data centre workloads shift towards AI training and hyperscale cloud deployments, the demand for 24/7 high-capacity power will continue to rise, requiring a fundamental rethink of India's energy infrastructure strategy.

Image: GR Club

» The roadblocks to sustainability

Sustainability is now a decisive factor for both investors and tenants, with many occupiers expecting clear commitments to renewable energy and carbon reduction. Centres that fail to integrate green solutions and high-efficiency systems risk losing contracts to competitors who prioritise ESG mandates.

However, despite significant progress in solar, wind, and hybrid power adoption, India's renewable energy transition remains hindered by transmission inefficiencies, regulatory hurdles, and fragmented policies.

The absence of a uniform national framework for renewable energy integration keeps pan-India power transfer costly and complex, with some states adopting favourable open-access policies, while others impose restrictions on power banking, transmission wheeling charges, and grid interconnectivity.

This challenge is further compounded by the gap between sustainability commitments and India's current power mix. While hyperscalers and AI enterprises have pledged to reach 100% renewable energy consumption by 2030, coal and thermal power still dominate the national grid, making round-the-clock access to clean energy difficult at a commercially viable scale.

As renewable energy alone cannot fully support the 24/7 high-density power demands of AI-focused data centres, operators are adopting hybrid energy procurement strategies that integrate on-site solar and wind generation, long-term power purchase agreements (PPAs), and emerging technologies, such as nuclear power, green hydrogen, bioenergy solutions, and microgrid-based energy storage to enhance energy reliability and sustainability.

Nuclear power offers a stable, high-capacity energy source, but regulatory barriers, public perception challenges, and long development timelines limit its immediate feasibility. Small Modular Reactors (SMRs) are emerging as a potential alternative, though widespread implementation remains years away.

Green hydrogen is gaining traction as a carbon-free, on-demand power source, particularly for backup energy and long-term storage, yet high production costs and infrastructure constraints make widespread adoption economically unfeasible in the near term.

A more practical and immediate solution lies in microgrid ecosystems, which integrate battery energy storage, AI-driven power optimisation, and decentralised generation models. These systems allow real-time workload shifts and dynamic power adjustments, enhancing uptime stability, reducing costs, and improving sustainability metrics.

» Cooling efficiency and supply chain resilience

With India's high ambient temperatures and humidity increasing thermal management challenges, cooling infrastructure is becoming a focal point of sustainability efforts.

Operators are turning to immersion cooling, airflow optimisation, and AI-powered thermal regulation to reduce energy consumption and environmental impact, with investments in smart cooling systems, high-efficiency HVAC, and waste heat recovery solutions further improving efficiency across data centre operations.

The industry is also re-evaluating supply chain strategies, as the push for local technology sourcing is gaining traction. Operators are working closely with global manufacturers to set up domestic production of power distribution units, cooling systems, and modular infrastructure components, aiming to reduce dependency on imports and strengthen India's role in global data centre manufacturing - a move that aligns with the broader Make in India initiative.

Image: GRI Club

CAN INDIAN DEVELOPERS MEET TENANT EXPECTATIONS?

As India's data centre industry matures, tenant priorities are shifting. Cost-effective colocation is no longer enough, with occupiers now demanding scalable, high-performance, and sustainability-driven solutions that align with long-term digital strategies.

To stay competitive, operators must move beyond simply providing space and power and instead position themselves as strategic partners in their tenants' growth.

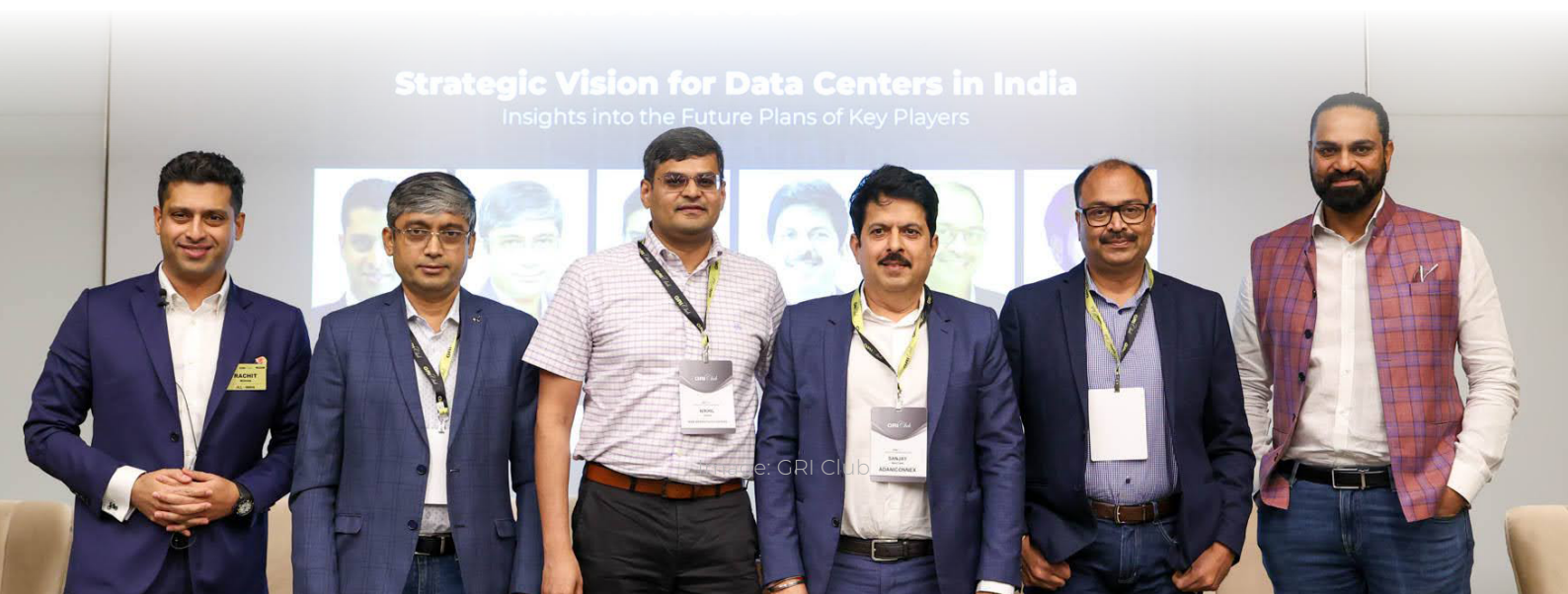
» Scaling up for hyperscale growth

Data centre scalability expectations have changed dramatically over the past decade, particularly among hyperscale tenants, who now require significantly larger power capacities and infrastructure flexibility.

Contracts that once ranged between 3 to 5 MW are now standard at 30 MW, with future deals expected to exceed 100 MW, provided power supply chains and infrastructure can support such expansion.

In global data centre hubs, capacity planning happens years in advance, with massive pre-emptive investments in land acquisition, power grid enhancements, and fibre network expansion. India's real estate and infrastructure ecosystem must follow suit, ensuring that large-scale developments are future-proofed against growing tenant demand.

A key trend shaping this shift is the rise of the campus model, where operators develop multi-phase, large-scale campuses rather than standalone facilities. This modular expansion strategy reduces costs while allowing operators to scale efficiently without the delays of securing new land or power connections for each phase of growth.



Source: GRI Club

» Connectivity and cloud strategies

Beyond power and space, networking and connectivity have become critical factors in the decision-making processes of tenants. As AI-driven applications and edge computing workloads grow, enterprises require ultra-low-latency interconnection to ensure seamless data transmission between cloud providers, enterprise networks, and submarine cable landing stations.

Tenants now expect high-speed fibre connectivity, direct cloud on-ramps to hyperscale platforms, and cross-connect flexibility to support high-bandwidth, multi-cloud infrastructure.

The ability to dynamically deploy workloads across regions while ensuring system reliability and failover protection has become a core requirement for modern data centres.

At the same time, cloud repatriation is gaining momentum, with enterprises shifting workloads from public cloud providers to private or hybrid data centres for greater control over cost, security, and performance.

This trend is forcing operators to balance hyperscale demand with enterprise-specific infrastructure needs, requiring customised solutions that prioritise flexibility without compromising efficiency.

» Data security and regulation compliance

Security and compliance have also become critical concerns for tenants in regulated industries such as financial services, healthcare, and government, where strict data protection laws govern how information is stored and processed.

With growing scrutiny on data privacy regulations, enterprises increasingly require data centres that meet internationally recognised compliance standards, such as ISO 27001 (information security management), SOC 2 (controls for data security, availability, and confidentiality), and GDPR (General Data Protection Regulation, which sets data privacy requirements for companies handling EU citizens' information).

Highly secure Tier IV-certified facilities, considered the gold standard in reliability, are now the preferred choice for occupiers handling highly sensitive workloads. These facilities feature fully fault-tolerant infrastructure with no single point of failure, ensuring continuous uptime.

Additionally, AI-powered cybersecurity measures, such as automated threat detection and response systems, are becoming essential in preventing data breaches and cyberattacks.

Beyond security, data sovereignty is an increasing concern, with tenants requiring assurances that their infrastructure and data remain within Indian jurisdiction to comply with local data protection laws.

» Flexible leasing models

Tenant expectations are also evolving when it comes to commercial agreements. Many occupiers are moving away from rigid, long-term leases in favour of dynamic, consumption-based contracts that allow them to scale infrastructure on demand.

Hybrid colocation models, where enterprises combine private and public cloud infrastructure, are gaining traction, while on-demand power provisioning enables tenants to adjust energy consumption based on workload intensity.

At the same time, Infrastructure-as-a-Service (IaaS) models are expanding, offering fully managed solutions such as AI-powered workload balancing, predictive analytics, and automated failover systems.

Image: GRI Club

INVESTMENT TRENDS IN THE DATA CENTRE INDUSTRY

With highly leveraged returns, both institutional investors and private equity firms see data centres as a lucrative opportunity. However, unlike traditional real estate, where rental yields drive returns, the sector requires patient capital, as facilities can often take six to seven years to generate stable revenue.

Geopolitical factors are also shaping investment decisions, such as US-imposed restrictions on advanced GPUs, essential for AI computing, and the redirection of global AI capital amid tightening semiconductor export controls and data sovereignty laws.

Despite uncertainties, India remains a top destination for data centre expansion, driven by its growing digital economy, skilled workforce, and improving infrastructure.

To ensure long-term financial viability and market stability, industry leaders emphasised that collaboration between developers, investors, and policymakers will be essential.

» The shift towards debt financing

Traditionally, data centre projects in India have been financed primarily through equity, given their capital-intensive nature, long payback periods, and complex risk profile.

But, as the sector matures and demand for digital infrastructure accelerates, debt financing is emerging as a key driver of large-scale expansion, offering developers greater financial flexibility.

A major catalyst for this shift has been the Indian government's reclassification of data centres as infrastructure assets, enabling large financial institutions, sovereign wealth funds, and international banks to participate more actively in funding.

This move aligns with India's broader ambition to position itself as a global data centre hub, attracting foreign investment while ensuring sustainable industry growth. Access to infrastructure financing mechanisms - previously unavailable to the sector - has improved liquidity and increased scalability for new developments.

Nonetheless, India's lending ecosystem is still catching up. Unlike in established global markets, where data centres are considered mature assets, Indian banks and financial institutions are still developing the expertise required to underwrite these projects effectively. Many domestic lenders remain cautious about extending large-scale credit, citing a lack of historical performance data for the country's sector.

This hesitancy stems from the unique risk profile of the asset class. In contrast with commercial real estate, for example, where value is largely tied to land and built structures, most data centre costs are allocated to IT infrastructure, energy provisioning, and operational expenses, with real estate accounting for a smaller portion.

Another challenge is the mismatch between debt repayment schedules and tenant lease durations. While hyperscaler contracts typically last 5 to 7 years, debt repayment timelines extend 13 to 15 years, creating uncertainty around future occupancy and revenue stability. Without long-term tenant commitments, lenders remain wary of vacancy risks and revenue fluctuations.

Technological obsolescence adds another layer of risk, since data centres require continuous upgrades to remain competitive. The rise of AI workloads and high-density computing is shortening hardware life cycles, driving higher capital expenditure needs.

As a result, lenders must reassess risk evaluation metrics, considering hardware depreciation, power availability, and tenant agreements, which play a much greater role in long-term financial performance than in traditional property investments.

While domestic banks refine their capabilities, international lenders and alternative financing platforms are stepping in. Developers are increasingly seeking offshore capital and structured debt instruments, including green financing and long-term credit facilities, to diversify funding sources and lower capital costs.

Despite certain challenges, debt financing is expected to be central to the sector's next phase of growth, reducing reliance on equity-heavy capital structures and enabling faster, more scalable development.

Image: GRI Club

» Exploring emerging funding models

Innovative financing structures are emerging, allowing developers to optimise capital efficiency and scale more effectively. Investors are now leveraging Infrastructure Investment Trusts (InvITs), Non-Convertible Debentures (NCDs), and structured lease agreements to diversify funding sources and unlock liquidity.

InvITs, which have already gained traction in roadways, renewable energy, and transmission infrastructure, allows developers to monetise operational data centre assets, freeing up capital for new developments while providing stable returns to investors.

Yet, given that data centres are still a relatively new asset class in India, structuring an InvIT model requires greater clarity on revenue predictability, contract renewals, and long-term asset valuation.

NCDs provide a hybrid debt solution, allowing developers to raise capital without diluting equity while offering predictable returns to investors. This model has been particularly appealing to institutional investors looking for fixed-income opportunities in the data centre space.

Meanwhile, structured lease agreements, where hyperscalers and enterprise tenants commit to multi-year leaseback arrangements, are emerging as an alternative to traditional financing by offering banks and financial institutions a more predictable revenue stream.

Speculative financing and development for large-scale projects was another key point of debate. A shift from a built-to-suit model, developers are increasingly building large-scale facilities speculatively, betting on future demand from hyperscalers, cloud providers, and AI enterprises.

Image: GRI Club

This trend is particularly evident in Chennai and Hyderabad, where a wave of speculative data centre development is taking place. The bet is that India's rapidly growing AI and cloud computing industries will absorb this capacity, but this approach carries risks, particularly if demand projections do not materialise as expected.

Another particularly innovative approach gaining traction is the split ownership model, where different components of a data centre - real estate, IT infrastructure, and energy assets - are financed separately, lowering capital intensity for developers and allowing them to secure specialised financing for each component of the project.

In this model, real estate investment funds may finance the land and shell structure, IT equipment leasing firms can fund the computing infrastructure, and energy investors can finance the power generation components, distributing risk across multiple stakeholders.

Additionally, green financing is playing a bigger role in capital allocation, with institutional investors prioritising ESG-compliant projects. Many lenders are tying financing terms to sustainability benchmarks, incentivising operators to integrate carbon-neutral energy solutions and high-efficiency technologies.

Image: GRI Club

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REAL ESTATE

Founded in 1998 in London, GRI Club currently brings together more than 19,000 senior executives spread across 100+ countries, operating in both real estate and infrastructure markets.

GRI Club's innovative discussion model allows free participation of all executives, encouraging the exchange of experiences and knowledge, networking, and business generation.

GRI Club Members also have access to our exclusive online platform to learn more about other members and their companies, correspond, schedule meetings, and receive unrestricted access to all GRI Club content.

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