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Assessment of MEP segment within construction industry in India with focus on data centre

Final report

11th September 2026

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Macroeconomic overview

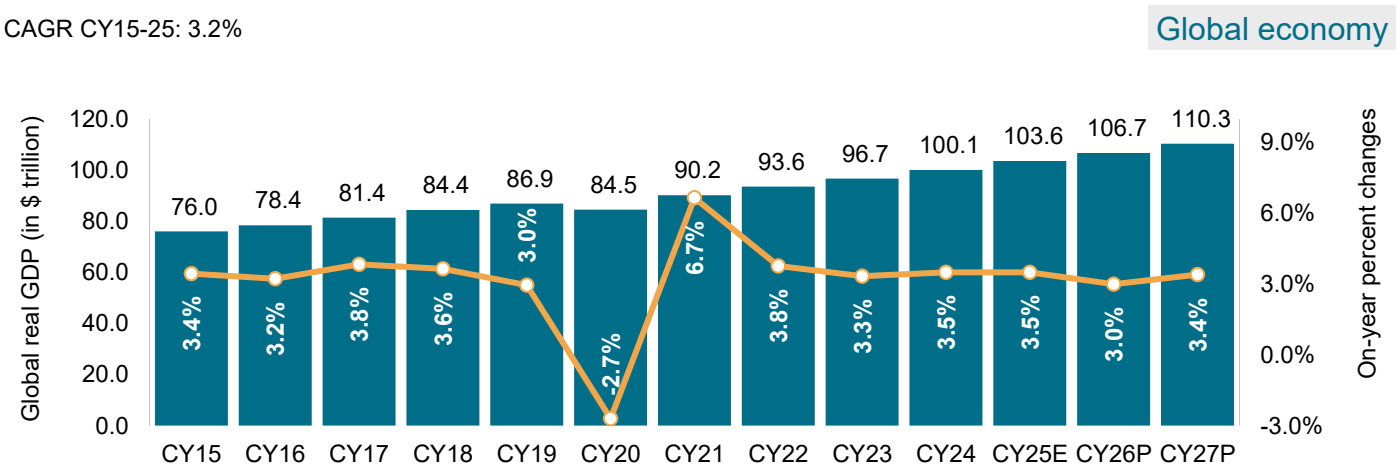
Global GDP projected to grow 3% in CY26 and 3.4% in CY27

According to the International Monetary Fund's (IMF) World Economic Outlook: July 2026 update, the global economy is being shaped by two contrasting developments with varying implications across countries. The West Asia conflict has created a negative supply-side shock, disrupting commodity markets and trade flows. In contrast, rapid advances in artificial intelligence (AI) and its growing adoption across industries have strengthened the global technology cycle, boosting economic activity. Although the impact varies by economy, the IMF projects global GDP growth of 3.0% in calendar year (CY) 2026, rising to 3.4% in 2027. This improvement is expected to be driven by technology-led investment and demand, which will partly offset the conflict's adverse economic effects. Global headline inflation is forecast to increase to 4.7% in 2026 before easing to 3.9% in 2027.

The IMF's projections are based on four key assumptions: (i) maritime trade through the Strait of Hormuz gradually resumes from mid-July, with conditions returning broadly to pre-conflict levels by March 2027; (ii) current trade policy measures, including those initially introduced as temporary arrangements, remain in effect throughout the forecast period; (iii) geopolitical tensions and policy uncertainty stay elevated through 2027 and (iv) momentum in the AI-driven technology cycle gradually moderates, with no additional exogenous boost to productivity growth.

Risks to the global outlook remain tilted to the downside. Potential upside factors include faster-than-expected stabilisation of energy markets, stronger investment in technology and innovation, renewed international cooperation that lowers trade barriers and structural reforms that improve long-term growth prospects. Conversely, downside risks stem from a resurgence or escalation of the West Asia conflict, which could prolong commodity price volatility, disrupt global supply chains, tighten financial conditions, intensify trade fragmentation, increase inflationary pressures and weaken economic growth. A correction in expectations for technology-led growth could dampen investment sentiment and adversely affect economic activity, too.

Figure 1: Global real GDP trend and outlook (CY15-27)



Note: E—estimated, P—projection
Source: IMF, World Economic Outlook Update, April 2026; Crisil Intelligence

India among the fastest-growing major economies

Based on nominal gross domestic product (GDP) in 2025, the United States (US) is the world's largest economy, followed by China, while India ranks sixth. Among the 10 largest economies by nominal GDP recorded for 2025, India has recorded the fastest growth since 2021. According to the IMF's World Economic Outlook: July 2026 update, the country is expected to maintain this lead in 2027.

Table 1: On-year real GDP growth of the world's largest economies by 2025 nominal GDP (2016-2027P)

Top 10 economies by nominal GDP 2025	Real GDP growth (on-year percent changes) according to IMF											
	Estimates										Projections	
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
US	1.8%	2.5%	3.0%	2.6%	-2.1%	6.2%	2.5%	2.9%	2.8%	2.1%	2.3%	2.2%
China	6.8%	6.9%	6.8%	6.1%	2.3%	8.6%	3.1%	5.4%	5.0%	5.0%	4.6%	4.1%
Germany	2.2%	2.8%	1.1%	1.0%	-4.1%	3.9%	1.8%	-0.9%	-0.5%	0.2%	0.7%	1.0%
Japan	0.7%	1.6%	0.8%	-0.3%	-4.3%	3.6%	1.3%	0.7%	-0.2%	1.1%	0.6%	0.7%
UK	2.2%	3.0%	1.6%	1.3%	-10.0%	8.5%	5.1%	0.3%	1.0%	1.4%	1.0%	1.3%
India	8.3%	6.8%	6.5%	3.9%	-5.8%	9.7%	7.6%	7.2%	7.1%	7.7%	6.4%	6.7%
France	0.7%	2.3%	1.6%	2.1%	-7.6%	6.8%	2.8%	1.6%	1.4%	0.9%	0.6%	0.9%
Italy	1.2%	1.6%	0.8%	0.4%	-8.9%	8.9%	4.8%	0.9%	0.8%	0.5%	0.5%	0.5%
Russia	0.2%	1.8%	2.8%	2.2%	-2.7%	5.9%	-1.4%	4.1%	4.9%	1.0%	1.1%	1.1%
Brazil	-3.3%	1.3%	1.8%	1.2%	-3.3%	4.8%	3.0%	3.2%	3.4%	2.3%	2.4%	2.2%

Note: For India, data and projections are presented on a fiscal-year basis, fiscal 2024–2025, beginning in April 2024, has been shown in the 2024 column

Source: IMF's World Economic Outlook – April 2026 Update, Crisil Intelligence

Macroeconomic overview of India

We expect India's GDP to grow 6.6% in fiscal 2027

In February 2026, the Ministry of Statistics and Programme Implementation (MoSPI) released a new national accounts series with fiscal 2022-2023 as the base year, reflecting a recent post-COVID normal year. The revision was undertaken to capture structural changes in the Indian economy and leverage more comprehensive sectoral data. As a result, the new series not only improves estimation methods but also incorporates updated data sources, enhancing the coverage and accuracy of national accounts.

Under the 2022-2023 series, India's real GDP increased from Rs 261.2 trillion in fiscal 2023 to Rs 323.1 trillion in fiscal 2026, clocking a compound annual growth rate (CAGR) of 7.4% over the period. According to the National Statistics Office's (NSO) Provisional Estimates (PE), real GDP grew 7.7% in fiscal 2026, driven by the secondary and tertiary sectors, which expanded 8.8% and 9.3%, respectively. Manufacturing, trade, repair, hotels, transport, communication, broadcasting and storage and financial, real estate and professional services sectors recorded double-digit growth at both constant and current prices in fiscal 2026.

Our initial forecast for fiscal 2027 considered three scenarios, with the base case projecting India's GDP growth at 7.1%. However, as the West Asia conflict has persisted for more than two months, downside risks to the economy have begun to materialise. Accordingly, we have developed the following macroeconomic outlook for fiscal 2027.

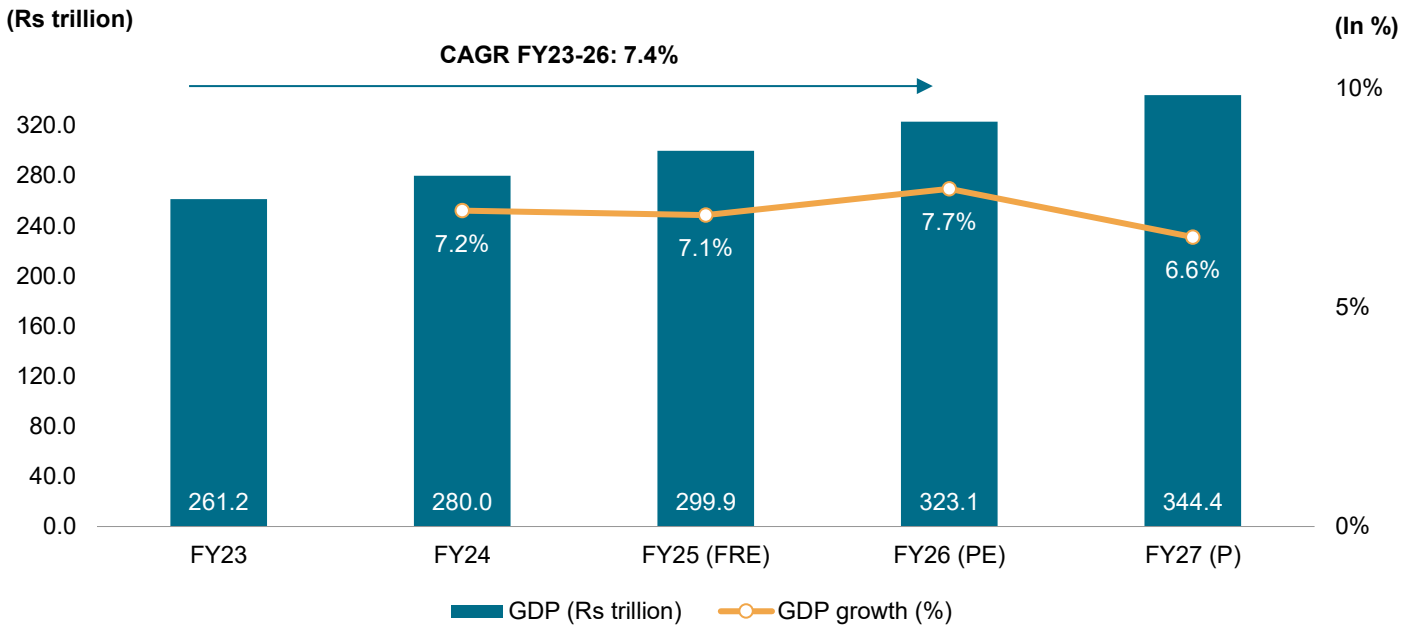
Our fiscal 2027 projections for India

Macroeconomic variables	Estimated for FY26	Forecast for FY27
Real GDP growth (%)	7.6	6.6
CPI inflation (%)	2.0%	5.1%
10-year government security (G-sec) yield (March average, %)	6.7%	7.0%
Current account balance (% of GDP)	-0.8%	-2.2%
Exchange rate (March average, Rs/$)	92.8	93.5

Source: Crisil Intelligence

In addition to the direct impact of the ongoing West Asia conflict, India is being affected by global supply chain disruptions, rising freight and insurance costs, weakening external demand for exports, below-normal monsoon conditions due to El Niño and the manufacturing sector's high dependence on imported inputs.

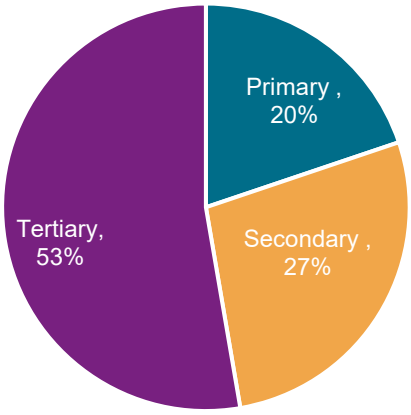
India's real GDP at constant prices (base year: 2022-2023), fiscal 2023-2027P



Notes:
FRE – first revised estimates, PE – provisional estimates, P – projected
India's fiscal 2027 projection is our forecast
Source: MoSPI, Crisil Intelligence

Share of industrial GVA stood at 27.0% in fiscal 2026

Total GVA FY26(PE): Rs. 249.91 trillion



As of fiscal 2026 provisional estimate (PE), gross value added (GVA) at constant prices reached Rs 294.9 trillion, up from Rs 237.64 trillion in fiscal 2023, clocking a CAGR of ~2% during fiscal 2023-2026.

The share of the agricultural economy, comprising agriculture, livestock, forestry and fishing, declined from ~20% in fiscal 2023 to ~18% in fiscal 2026 (PE). In contrast, the services sector's contribution to GVA increased from 52% to 53%, highlighting its growing importance. In absolute terms, services sector GVA rose to Rs 155.4 trillion in fiscal 2026 (PE) from Rs 123.20 trillion in fiscal 2023.

The industry sector was the second-largest contributor, accounting for ~27% of GVA in fiscal 2026 (PE). Within the sector, construction represented 9.06% of total GVA in the fiscal 2026 (PE).

Source: MOSPI, Crisil Intelligence

PFCE maintains leading share in GDP, reflects sustained domestic demand

PFCE at constant prices (2022-23 series), fiscal 2023-26

Year	FY23	FY24	FY25(FRE)	FY26(PE)
PFCE (In Billion)	149,228.3	157,852.6	166,998.5	179,938.7
% Share of GDP	57.1%	56.4%	55.7%	55.7%

Note: FRE: First Revised Estimates; PE: Provisional Estimates
Source: MoSPI, Crisil Intelligence

India’s private final consumption expenditure (PFCE) grew 6.4% between fiscal 2023 and fiscal 2026, with 7.7% growth between fiscal 2025 and fiscal 2026. This consumption growth was supported by goods and services tax (GST) rate rationalisation, stable employment, rising real purchasing power, sustained rural demand driven by strong agricultural performance and a gradual recovery in urban consumption aided by direct and indirect tax rationalisation.

Fundamental growth drivers of GDP

Forces that helped India

Demography	1	India has the potential to reap demographic dividends: In 2023, the country's working-age population stood at 849.9 million, representing 59.1% of the total population. It is expected to peak in 2034 at 967.7 million, when it will account for ~69.2% of the country's total population.
Rising urbanisation	2	India's population is turning increasingly urban: In 2001, the country's urban population made up 27.9% of its total population (300.8 million). According to the World Population Prospects (WPP) 2024, the country's urban population is likely to grow to 567.7 million by 2030, making up 37.2% of the country's total population.
Growing per capita income	3	India's per capita income, a broad indicator of living standards, clocked a CAGR of 6.6% between fiscal 2023 and fiscal 2026, rising from Rs 159,557 to Rs 193,152 . Growth was led by better job opportunities, propped up by overall GDP growth.

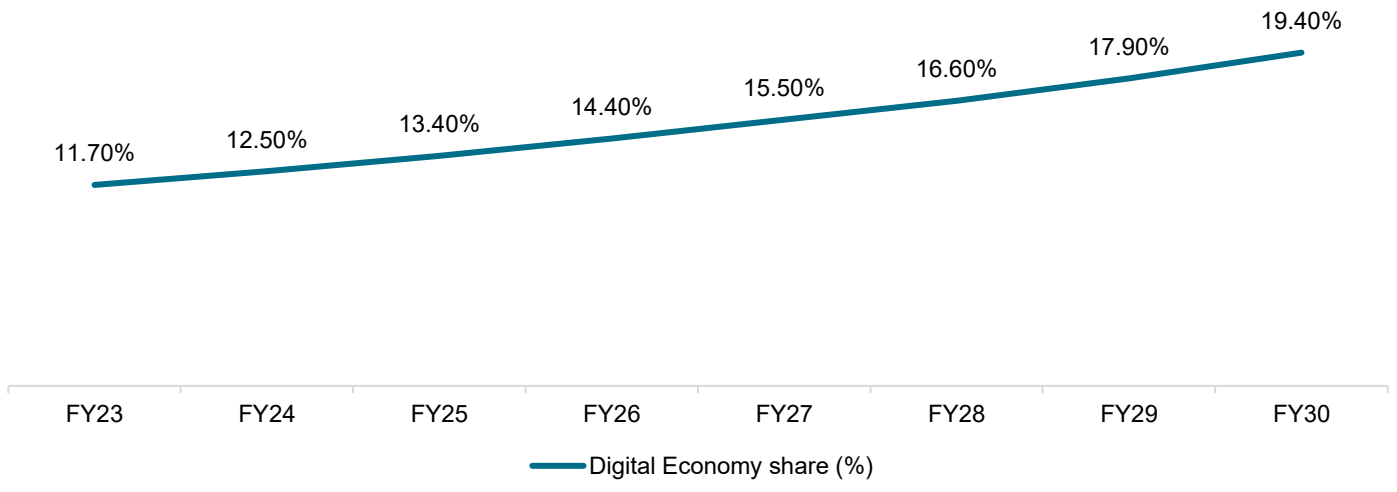
Source: Crisil Intelligence

Digital economy of India

India is the third-largest digital economy in the world, with the digital sector projected to contribute ~20% of the nation's economic output by 2030

India's digital economy is expected to play an increasingly important role in economic growth, with its share of total GVA projected to rise from 11.7% in fiscal 2023 to 19.4% in fiscal 2030. This marks a more than threefold increase over seven years, outpacing overall economic growth and reinforcing the sector's position as a key driver of economic expansion. The rise in both its contribution and GVA share indicates that digital-led sectors will account for an increasingly larger proportion of India's economic activity in future.

Projections of India's digital economy share in total GVA

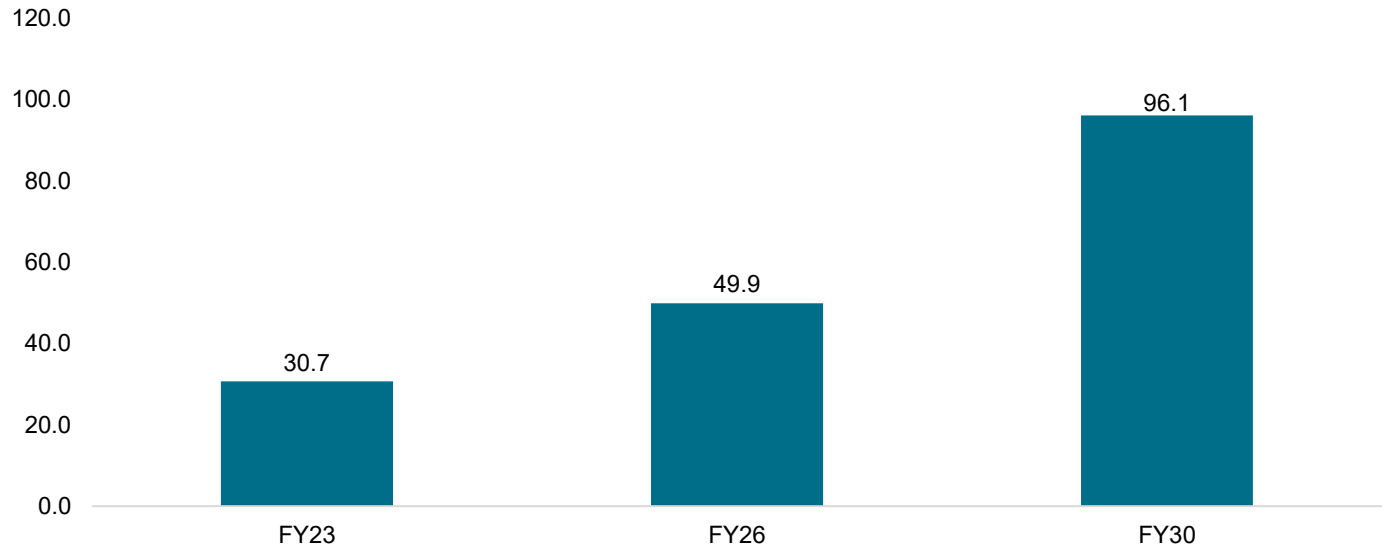


Source: The Ministry of Electronics and Information Technology (MeitY) report titled "Estimation and Measurement of India's Digital Economy"; Crisil Intelligence

This structural shift is reflected in the digital economy's contribution to GDP, which is projected to increase from Rs 30.7 trillion in fiscal 2023 to Rs 96.1 trillion by fiscal 2030. This growth trajectory indicates that the digital economy is expected

to grow faster than the broader economy, strengthening its position as a major source of value creation and an increasingly significant contributor to India's economic output over the medium term.

Digital economy contribution in GDP (Rs trillion)



Source: MeitY report titled "Estimation and Measurement of India's Digital Economy", Crisil Intelligence
Notes: GDP at current prices for fiscal 2023 and fiscal 2026P has been considered as the base. IMF growth projections through CY29 have been applied to estimate GDP for fiscal 2030 based on fiscal 2026 provisional figures

Factors supporting India's digital economy and growth of data centres

Increasing broadband subscribers, developing requisite support infrastructure and tariff hikes

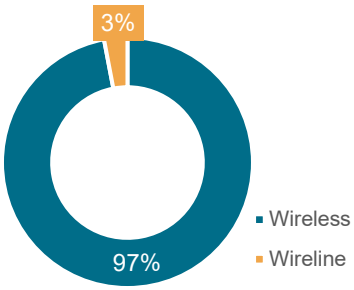
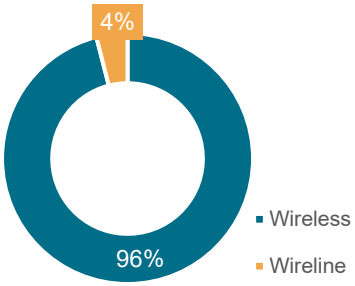
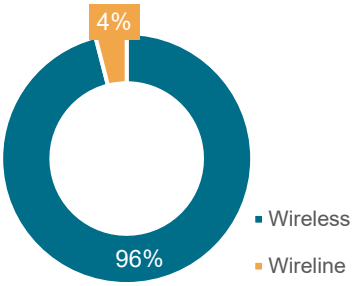
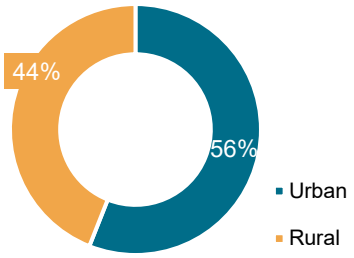
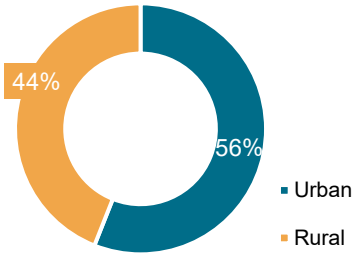
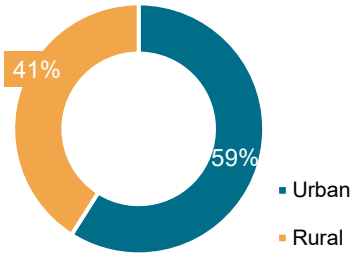
India's telecom sector has evolved from basic connectivity to a data-driven digital ecosystem. Broadband subscribers are projected to grow from 687 million in fiscal 2020 to more than 1.06 billion by fiscal 2026, while total telecom subscribers are expected to reach 1.33 billion over the same period. This growth is driven by widespread wireless broadband adoption, which accounts for ~96% of broadband subscribers and is expanding access to digital services across urban and rural India. As internet penetration deepens, digital platforms spanning e-commerce, OTT streaming, digital payments, social media, online education, healthcare and enterprise applications are becoming integral to daily life, driving a sharp increase in data generation and consumption.

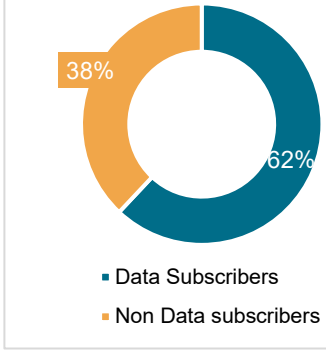
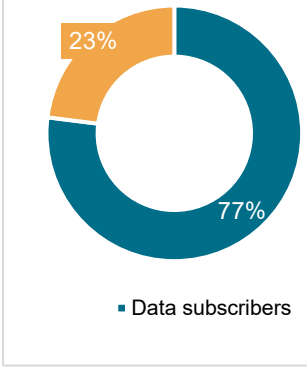
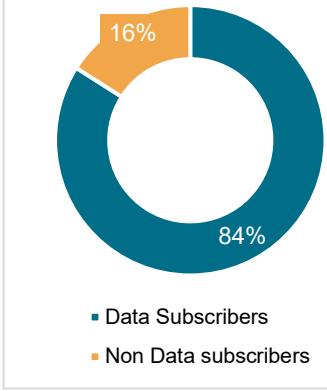
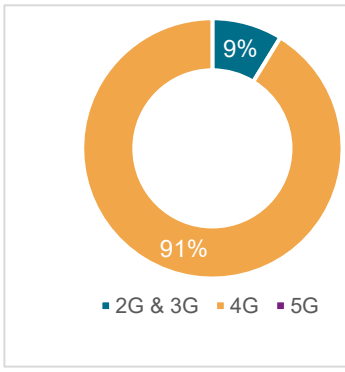
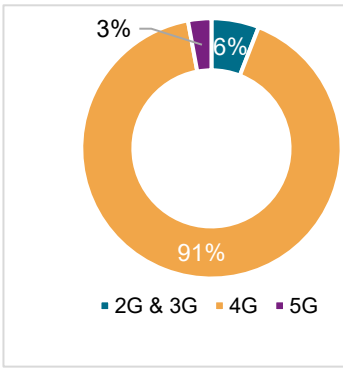
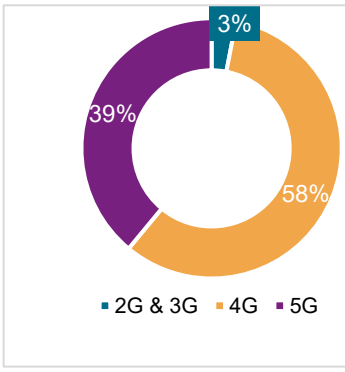
Usage patterns have also evolved significantly, with India transitioning from a voice-centric market to a data-first economy. The share of data subscribers is expected to increase from 62% in fiscal 2020 to 84% by fiscal 2026, reflecting increasing dependence on digital services. At the same time, migration to high-speed networks is accelerating, with 5G projected to account for ~39% of data subscribers by fiscal 2026, alongside continued 4G adoption. This technology upgrade is enabling bandwidth-intensive applications such as high-definition video streaming, cloud gaming, Internet of Things (IoT) solutions, real-time collaboration tools and cloud-based enterprise workloads, significantly increasing the volume of data traversing across telecom networks.

The impact of these trends is reflected in rising data consumption patterns. Average wireless data usage per subscriber is expected to increase from 11 GB per month in fiscal 2020 to nearly 26 GB per month by fiscal 2026, driven by growing digital engagement among consumers and enterprises. Beyond conventional internet use, organizations are increasingly adopting cloud computing, advanced analytics, automation and digital platforms to support operations, generating large

volumes of structured and unstructured data. As digital adoption expands across sectors, the need to process, store, secure and analyse this data is growing rapidly.

Looking ahead, the rapid adoption of AI and Generative AI (GenAI) is expected to further accelerate data infrastructure demand. Businesses are increasingly using large datasets to train and deploy AI models, while consumers are adopting AI-powered applications for content creation, search, personalisation and productivity. Compared with traditional applications, AI workloads are significantly more compute- and storage-intensive, requiring substantial processing power, data storage and networking capacity. As a result, the combined impact of rising broadband penetration, increasing 4G and 5G adoption, growing data consumption, accelerating cloud migration and expanding AI usage is creating a strong tailwind for India's data centre industry. With data volumes continuing to grow exponentially, demand for data centres is expected to rise significantly, reinforcing their role as a critical pillar of India's digital infrastructure and economic growth.

Key segments	FY20	FY23	FY26
Broadband subscriber base (in million, %) ^	Subscriber base: 687 million 	Subscriber base: 847 million 	Subscriber base: 1,066 million 
Telephone subscriber base split across urban and rural (in million)	Subscriber base: 1,178 million 	Subscriber base: 1,172 million 	Subscriber base: 1,331 million 

Key segments	FY20	FY23	FY26
Split across data subscriber and non-data subscriber (in %)	Subscriber base: 1,178 million 	Subscriber base: 1,172 million 	Subscriber base: 1,331 million 
Share of data subscribers across different technologies (in million)^^			
Average wireless data usage per wireless data subscriber per month	**11 GB**	**17.36 GB**	**25.70 GB**

Source: TRAI, Crisil Intelligence

Notes:

^ Wireline subscribers include fixed wired access such as DSL, FTTx, Ethernet/LAN, cable modem and ILL. Wireless subscribers comprise fixed wireless access (5G FWA, Wi-Fi, Wi-Max, radio/UBR and satellite) as well as mobile wireless access (handset, dongle and M2M-based 3G/4G/5G)

^^ Instead of fiscal 2020 the numbers used are for fiscal 2021

Long-term focus on digital infrastructure

India's digital infrastructure push represents one of the most ambitious and accelerated national transformations, driven by the twin engines of the National Broadband Mission (NBM) 2.0 (2025-30) and the Union Budget 2026-27's landmark incentives. This initiative builds on the foundation of digital public infrastructure (DPI), including the 'India Stack' of Aadhaar, Unified Payments Interface (UPI) and open application programming interfaces (APIs), while aggressively scaling physical and compute layers to support data growth, AI adoption and a $5 trillion-plus digital economy target.

At the core of the connectivity layer of India's digital infrastructure is NBM 2.0, launched in January 2025 as an evolution of the original mission of calendar year 2019. It has already delivered transformative results ; length of the optical fibre cable (OFC) network more than doubled from around 19.35 lakh route km in December 2019 to over 42.36 lakh route km in December 2025, broadband subscribers surged from 668 million to nearly 1.01 billion during same period , the median mobile broadband download speed jumped from 10.71 Mbps in December 2019 to an impressive 131.47 Mbps in October 2025, and the average monthly data consumption per wireless data subscriber increased 399 times from 61.66 MB in March 2014 to 25.7 GB in March 2026 (one of the highest in the world). India's 5G rollout is one of the fastest globally, with over 5.08 lakh base transceiver stations (BTS) deployed, achieving 99.9% district coverage and 85% population coverage, and serving approximately 450 million 5G users out of a total of 1.2 billion telecom subscribers. The mission explicitly targets fiberisation of towers, rural 5G expansion, satellite broadband for remote areas, and integration with power sector assets such as optical ground wire (OPGW). It also includes capacity-building for 5G use cases in education, healthcare and agriculture, alongside the 'Call Before u Dig' app to protect underground infrastructure.

Complementing this is the boom in data centres and cloud infrastructure, which are explicitly recognised as critical national infrastructure in the Union Budget 2026-27. India's operational capacity has crossed 1.5 GW and is projected in the range of 5-6 GW by fiscal 2030, fuelled by AI workloads, hyperscaler demand, 5G-driven data explosion and data-localisation policies. The budget introduces a tax holiday until FY 2047 for foreign companies providing global cloud services from India-based data centres (with Indian resellers for domestic customers), alongside a safe-harbour regime and incentives for data centres and cloud services.

AI infrastructure is being treated as the next frontier of DPI. Under the IndiaAI Mission (approved in March 2024 and actively scaled in FY 2025-26), the government is developing sovereign compute capacity, providing around 38,000 graphics processing units (GPUs) and 1,050 tensor processing units (TPUs) at subsidised rates of under Rs 100. This infrastructure is already accessible through the IndiaAI Compute Portal, alongside the AIKosh platform, which hosts thousands of datasets and models. The IndiaAI Impact Summit 2026 has further accelerated public-private partnerships, integrating AI with core DPI layers (Aadhaar, UPI, DigiLocker, Bhashini for multilingual AI) to enable predictive governance, fintech innovation, and sector-specific applications in health, agriculture and education.

Data centres and the strategic importance of MEP systems

Overview of the data centre industry

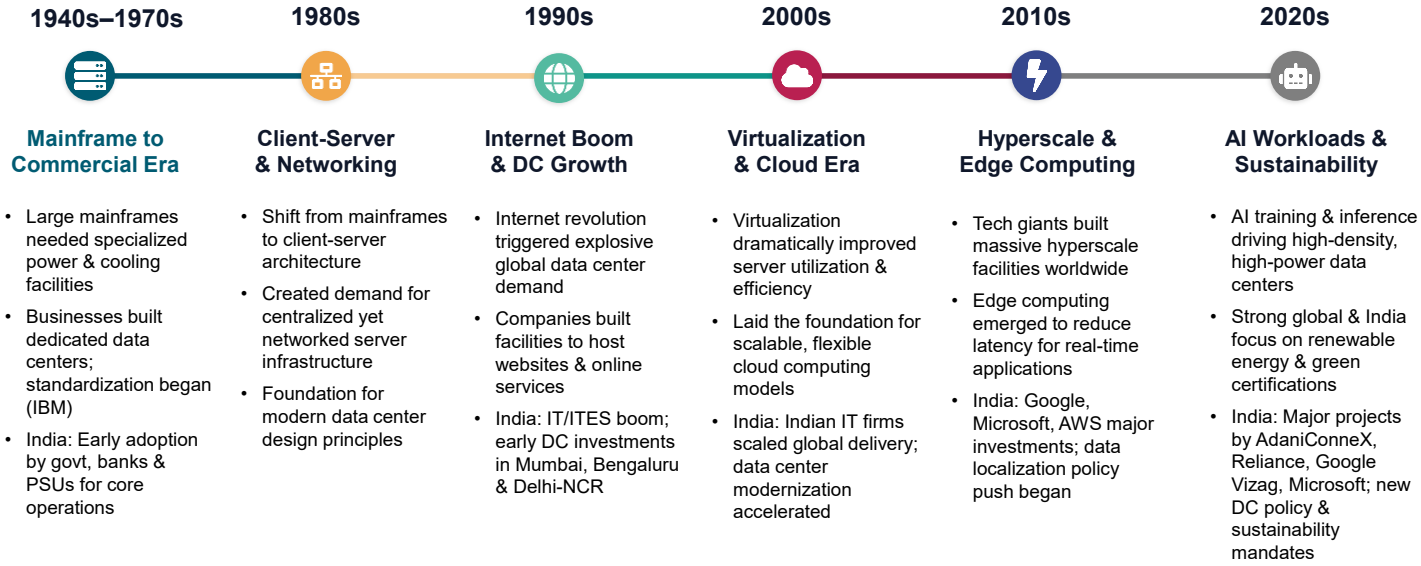
A data centre is a specialised facility that houses computing, storage, networking and security infrastructure required to process, store and transmit digital information. It forms the backbone of the digital economy by enabling organisations to run applications, manage data, and deliver digital services reliably and securely.

Data centres have evolved from traditional facilities built around physical servers to highly virtualised and cloud-enabled environments. Modern data centres operate across on-premises infrastructure, private clouds, public clouds and edge locations, creating an interconnected ecosystem capable of supporting diverse and rapidly changing business requirements. This evolution has significantly improved scalability, resource utilisation and operational flexibility.

The rapid growth of digital technologies, including AI, e-commerce, digital payments, social media platforms, video streaming and IoT, is generating unprecedented volumes of data. As a result, there is an increasing need for high-capacity, low-latency and geographically distributed data centre infrastructure that can efficiently process, store and deliver data in real time. Consequently, data centres have become critical enablers of digital transformation, supporting the growing demand for cloud computing, AI-driven workloads and data-intensive applications across industries.

The data centre industry has evolved significantly over the past eight decades, driven by advances in computing technology and growing digital infrastructure requirements. During the 1940s-1970s, large mainframe systems required dedicated facilities and specialised power and cooling infrastructure. During the 1980s, organisations transitioned to client-server architectures, increasing demand for centralised yet networked computing environments and laying the foundation for modern data centre designs.

Evolution of the data centre industry



The internet revolution of the 1990s accelerated global data centre investments as businesses moved online. This was followed by the cloud and virtualisation era of the 2000s, which improved server utilisation and enabled scalable computing models. In the 2010s, hyperscale and edge data centres emerged to support cloud adoption, real-time applications and an exponential increase in data volumes. The 2020s are characterised by AI-driven workloads, high-

density computing and sustainability initiatives, with operators increasingly focusing on renewable energy, energy efficiency and advanced infrastructure to support the growing demands of AI and digital transformation.

Types of data centres

01 | Hyperscale Data Centers

- Massive, cloud-native facilities designed to deliver high computing, storage, and networking capacity for large-scale digital workloads.
- Typically owned and managed by hyperscalers such as AWS, Google, Microsoft, Meta, and emerging Indian operators including AdaniConneX and Reliance.
- Usually range from 50 MW to over 200 MW IT load, featuring standardized, modular architectures that enable rapid expansion and operational efficiency.
- Support public cloud platforms, AI model training and inference, big data analytics, and other compute-intensive applications, with increasing adoption of high-density racks and liquid cooling solutions.
- Rising adoption of AI, cloud computing, digital services, and enterprise digitization is accelerating demand for hyperscale capacity globally and across India.

02 | Colocation Data Centres (Multi-Tenant Facilities)

- Colocation data centres are third-party operated facilities where multiple organizations lease space, power, cooling, and connectivity infrastructure for their IT equipment.
- Provides power, cooling, physical security, and network connectivity, allowing customers to focus on managing their IT workloads rather than facility operations.
- Available in both retail colocation (racks or cages for smaller capacity requirements) and wholesale colocation (dedicated suites or large data halls for enterprise-scale deployments).
- Serves enterprises, telecom operators, cloud providers, content delivery networks, and digital service companies seeking scalable and interconnected infrastructure
- Reduces upfront capital investment, accelerates time-to-market, and enables businesses to expand capacity without building their own facilities.

03 | Enterprise Data Centres (Captive Data Centres)

- Enterprise data centres are dedicated facilities owned and operated by individual organizations to support their internal IT applications and business-critical workloads.
- Typically developed and managed by banks, government entities, PSUs, large enterprises, and other organizations handling sensitive or mission-critical workloads
- Designed to meet specific business, security, compliance, and performance requirements, offering full ownership over infrastructure and data.
- Commonly used for core banking systems, government platforms, enterprise applications, confidential databases, and other workloads requiring strict governance
- Enables organizations to maintain direct control over sensitive information, helping address regulatory, privacy, and compliance requirements

04 | Edge Data Centres

- Edge data centres are compact, geographically distributed facilities located closer to end-users and data sources. By processing data near the point of generation or consumption, they reduce latency, improve response times, and support real-time digital applications.
- Smaller facilities, typically ranging from a few kilowatts to low megawatt capacities, deployed across multiple locations closer to users and devices
- Commonly established at telecom points of presence (PoPs), enterprise campuses, smart cities, industrial facilities, and emerging 5G/6G network nodes
- Supports latency-sensitive applications such as AI inference, IoT, AR/VR, autonomous systems, gaming, and content delivery by processing data locally before transferring it to central cloud or data centre facilities
- Works alongside centralized data centres and cloud platforms to optimize network performance, reduce bandwidth requirements, and enhance user experience

Source: Industry reports, Crisil Intelligence

Data centre tier ratings

Rated tier	Infrastructure configuration	Resilience and maintenance capability	Availability	Annual downtime	Deployment complexity	Typical applications
Rated 1 (Basic infrastructure)	Single distribution path for power and cooling with no redundant components (N)	Any planned maintenance or equipment failure can disrupt operations; facility generally requires complete shutdown for maintenance activities	**~99.67%**	Up to ~29 hours	Low (~3 months)	Small businesses, startups, branch offices, and workloads with limited uptime requirements
Rated 2 (Redundant components)	Single power and cooling path supported by redundant critical components (N+1)	Can withstand failure of select equipment; some maintenance can be carried out without full facility shutdown, though interruptions may still occur	**~99.74%**	Up to ~22 hours	Moderate (3-6 months)	Mid-sized enterprises, hosting providers, and organisations requiring improved service continuity

Rated tier	Infrastructure configuration	Resilience and maintenance capability	Availability	Annual downtime	Deployment complexity	Typical applications
Rated 3 (Concurrently maintainable)	Multiple distribution paths for power and cooling, with redundant systems (N+1) and one active path at a time	Enables maintenance on critical infrastructure without impacting IT operations; unplanned incidents may still affect service availability	**~99.98%**	Up to ~2 hours	High (15-20 months)	Large enterprises, cloud providers, digital commerce platforms and financial institutions
Rated 4 (Fault tolerant)	Fully redundant power and cooling architecture with dual active paths and isolated systems (2N / 2N+1)	Designed to sustain operations despite multiple component failures; planned maintenance and most unplanned events have no impact on critical workloads	**~99.99%**	Less than ~0.5 hours	Very high (15-20 months)	Hyperscale cloud operators, mission-critical financial systems, government infrastructure, healthcare and high-availability digital services

Source: Telecommunication Industry Association, industry reports, Crisil Intelligence

Data centres are classified into different category rating levels based on infrastructure redundancy, operational resilience, and the ability to ensure continuous service during maintenance or equipment failures. As facilities progress from Rated 1 to Rated 4, redundancy levels increase from a basic single-path architecture to fully fault-tolerant designs with independent power and cooling systems. This progression significantly improves uptime, reducing annual downtime from nearly 29 hours in Rated 1 facilities to less than 30 minutes in Rated 4 facilities.

Higher-rated data centres are increasingly preferred by enterprises operating business-critical applications, cloud platforms, AI workloads, digital payment ecosystems and financial services. While Rated 1 and Rated 2 facilities are generally suited for organisations with moderate uptime requirements and budget considerations, Rated 3 and Rated 4 facilities offer the reliability, maintainability and resilience required for continuous operations where service disruption can have substantial operational or financial consequences. This has led to growing demand for enterprise-grade and hyperscale facilities as digital infrastructure requirements continue to increase.

Types of data centres (AI vs non-AI)

Traditional data centres were primarily designed to support enterprise applications, cloud storage, web hosting, databases and business-critical IT workloads. These facilities are largely central processing unit (CPU)-driven and are optimised for predictable computing requirements, moderate power consumption and standardised cooling systems. In contrast, AI data centres are purpose-built to support computationally intensive workloads such as large language models (LLMs), machine learning training, computer vision and real-time inference applications. To meet these requirements, AI facilities rely heavily on GPUs and specialised accelerators capable of processing thousands of parallel computations simultaneously.

Key differentiating characteristics for AI data centres

- **AI-optimised compute infrastructure:** Unlike traditional data centres that predominantly rely on CPUs for handling enterprise applications and storage workloads, AI data centres are designed around high-performance GPUs and specialised AI accelerators capable of processing massive volumes of data in parallel. While CPUs remain essential for workload orchestration and latency-sensitive tasks, AI model training and inferencing increasingly depend on GPU clusters and custom AI chips that provide significantly higher computational throughput. This shift has fundamentally altered data centre architecture, driving demand for denser server deployments, higher power capacity and specialised supporting infrastructure

- **Higher power density and advanced cooling requirements:** AI workloads generate substantially greater heat than conventional computing environments due to the intensive processing demands of GPUs and accelerator chips. As a result, AI data centres operate at considerably higher rack densities and power loads than traditional facilities. Conventional air-cooling systems alone are often insufficient to manage these thermal conditions, leading operators to adopt advanced cooling technologies such as in-row cooling, direct-to-chip cooling, immersion cooling and hybrid liquid-cooling architectures
- The growing importance of thermal management has elevated cooling infrastructure from a supporting utility to a strategic design consideration. Mechanical, electrical and plumbing (MEP) providers are increasingly required to engineer integrated power and cooling ecosystems that optimise heat dissipation, maintain equipment reliability and improve overall energy efficiency
- **AI-driven operational intelligence and resource optimisation:** Modern AI data centres increasingly leverage AI to optimise facility operations in real time. AI-powered monitoring platforms continuously analyse workload patterns, power consumption levels, equipment performance and thermal conditions to improve resource allocation across servers, storage systems and networking infrastructure. Predictive analytics enables dynamic management of cooling and power systems based on actual demand, reducing energy waste and enhancing equipment utilisation. By continuously monitoring operating conditions, these systems can proactively identify inefficiencies and optimise infrastructure performance, helping operators improve energy efficiency while supporting increasingly complex computing requirements
- **Predictive maintenance, cost optimisation and enhanced security:** AI is also transforming operational management by enabling predictive maintenance and automated infrastructure monitoring. Through continuous analysis of equipment, sensor and operational data, AI systems can identify potential failures before they occur, reducing unplanned downtime and limiting maintenance costs. Simultaneously, intelligent workload orchestration allows operators to optimise server utilisation, dynamically distribute workloads and minimise excess energy consumption
- Beyond operational efficiency, AI is strengthening data centre security through real-time anomaly detection and automated threat response. Advanced analytics platforms can rapidly identify unusual activity, assess potential risks and initiate predefined response protocols, improving resilience and security of critical digital infrastructure while reducing reliance on manual intervention.

The defining feature of AI data centres is not merely the deployment of GPUs, but the creation of an integrated ecosystem that encompasses high-density compute infrastructure, advanced cooling technologies, intelligent power management, predictive operations and automated security systems. These facilities are purpose-built to support the growing computational intensity of AI workloads while maintaining scalability, efficiency, reliability and sustainability.

Overview of MEP in construction of data centres

A data centre is a purpose-built facility designed to host critical IT infrastructure, including servers, storage systems, racks and networking equipment. It enables secure data processing, storage and connectivity for enterprises and digital platforms. Constructing a data centre involves specialised design considerations, including high load-bearing floors, raised flooring for cable management, precision cooling systems, fire suppression and robust power backup mechanisms (e.g., DG sets, UPS and dual power feeds). It must also meet stringent security, redundancy and uptime standards.

Key work done under MEP

Mechanical Systems	Electrical Infrastructure	Plumbing & Water Systems	Power & Energy Management
• Precision cooling system design and deployment (CRAC, CRAH, Chillers) • Liquid cooling infrastructure for high-density AI/GPU workloads • Ventilation and airflow management solutions • Fire detection and suppression system integration • Mechanical systems testing, balancing & commissioning	• Utility power intake, substations & transformer installations • UPS systems, battery energy storage & backup power solutions • DG sets and emergency power infrastructure • Power distribution units (PDUs), busways & switchgear deployment • Electrical testing, commissioning and reliability validation	• Chilled water piping and cooling water distribution networks • Water treatment and purification systems for cooling infrastructure • Drainage and condensate management systems • Sustainable water management and recycling solutions • Plumbing system commissioning and performance testing	• Energy-efficient data centre infrastructure design • Building & Data Centre Infrastructure Management Systems (BMS/DCIM) • Power usage effectiveness (PUE) monitoring and optimization • Renewable energy integration and energy storage solutions • Real-time energy monitoring and control systems

Network & Connectivity Infrastructure	Testing, Commissioning & Operations	Sustainability & Green Infrastructure	Safety & Security Systems
• Structured cabling and fiber network deployment • Interconnection and cross-connect infrastructure design • Telecom and carrier-neutral connectivity integration • Network operations and communication systems deployment • Security and monitoring infrastructure (CCTV, access control, sensors)	• Integrated systems testing (IST) and commissioning • Mechanical, electrical and plumbing system validation • Reliability, redundancy and failover testing • Performance optimization and operational readiness assessment • Preventive maintenance and lifecycle management support	• Green data centre design and certification support (LEED/IGBC) • Water conservation and heat recovery solutions • Low-carbon and energy-efficient infrastructure design • Waste management and environmental compliance systems • Sustainable cooling technologies and renewable power integration	• Physical security and access management systems • Fire protection, smoke detection and emergency response systems • Environmental monitoring and risk management solutions▪ Compliance with uptime, reliability and regulatory standards • Disaster recovery and business continuity infrastructure support

Note: The above tables are not comprehensive and provide only a sample representation of the information from the sector.
Source: Crisil Intelligence

Operationally, data centres require 24/7 power, monitoring, skilled facility and IT staff, energy optimisation strategies (e.g., hot/cold aisle containment), strict service-level agreements (SLAs), and compliance with global standards. Seamless integration between physical infrastructure and digital controls is also key to ensuring reliability, efficiency and scalability.

MEP systems form the backbone of a data centre, accounting for a significant share of the facility's construction cost and operational performance. Unlike conventional buildings, data centres require highly reliable power distribution, precision cooling systems, backup power infrastructure, water management systems, fire protection and building management systems to ensure uninterrupted operations. MEP infrastructure directly influences key performance parameters, such as uptime, energy efficiency, reliability, cooling effectiveness and power usage effectiveness (PUE), making it one of the most critical components of data centre design and operation.

As data centres evolve into high-density digital infrastructure hubs, MEP systems are becoming a key differentiator in ensuring operational resilience, sustainability and energy efficiency. Greater focus on reducing carbon emissions, improving energy utilisation and integrating renewable power sources is increasing investments in smart energy management systems, advanced cooling solutions, water conservation technologies and automated building management platforms. Consequently, the rapid growth of hyperscale, cloud and AI-driven data centres is creating significant opportunities for MEP service providers across design, engineering, installation, commissioning and long-term maintenance activities.

Key areas of MEP involvement in modern data centres

AI, cloud computing and high-performance workloads are leading to a surge in power consumption, rack densities and heat generation within data centres. Consequently, MEP providers have become critical in supporting this demanding ecosystem. Their role extends beyond traditional building services to designing the infrastructure required to support performance, scalability and operational reliability and developing integrated power, cooling, networking and sustainability infrastructure for next-generation data centres.

1. Designing high-density power and thermal management ecosystems

As AI workloads push rack densities from traditional levels of ~10-15 kW per rack to 40 kW and beyond, MEP providers are responsible for designing the complete power and cooling ecosystem required to support these environments

On the electrical side, MEP firms design UPS systems, transformers, backup generators, switchgear, busways and power distribution networks capable of handling significantly higher loads. Simultaneously, they design sophisticated cooling infrastructure comprising chillers, cooling towers, pumps, HVAC (heating, ventilation and air conditioning) systems and precision cooling equipment to maintain optimal operating temperatures.

Traditional cooling solutions such as Computer Room Air Conditioners (CRACs), Computer Room Air Handlers (CRAHs) and precision air conditioning (PAC) systems continue to be deployed widely, while in-row cooling and hot aisle/cold aisle containment systems are increasingly adopted to improve thermal efficiency and airflow management in high-density environments.

For AI and high-performance computing (HPC) deployments, MEP providers are at the forefront of implementing liquid cooling architectures, including:

- Direct-to-chip cooling
- Direct contact liquid cooling
- Immersion cooling systems

These technologies are becoming increasingly important as conventional air-based cooling approaches reach their practical limits for high-performance computing environments.

2. Developing scalable and modular infrastructure platforms

Data centre operators increasingly seek facilities that can be scaled rapidly as computing demand rises. MEP providers enable this through modular design principles covering mechanical and electrical systems.

This includes:

- Modular power distribution architecture
- Expandable cooling plants
- Prefabricated MEP modules
- Flexible utility distribution networks

Such designs allow operators to add capacity in phases without major infrastructure redesigns while accommodating future increases in server density and cooling requirements.

3. Engineering rack, cabling and connectivity infrastructure

AI clusters require significantly greater networking capacity and fibre connectivity than traditional enterprise workloads. MEP firms play a key role in designing the physical infrastructure required for these deployments.

The scope includes:

- High-density cable tray systems
- Fibre and power routing infrastructure
- Equipment room layouts
- Containment systems and service corridors

The objective is to support growing cable densities while maintaining airflow efficiency, ease of maintenance and future scalability of the facility.

4. Creating zoned and resilient data centre architecture

Modern facilities are increasingly designed around dedicated workload zones, each with different infrastructure requirements.

MEP providers design:

- Dedicated AI and HPC zones
- Enterprise and cloud compute zones
- Redundant power and cooling pathways
- Isolation and containment systems

This approach enables operators to optimise power consumption, cooling performance and reliability while ensuring infrastructure resilience across critical workloads.

5. Delivering sustainable and energy-efficient data centres

With power consumption emerging as one of the biggest challenges for the industry, sustainability has become a core consideration in MEP design.

Key MEP-led initiatives include:

- Energy-efficient cooling systems
- Water-optimised cooling infrastructure
- Renewable energy integration
- Intelligent building management systems (BMS)
- Waste heat recovery and reuse systems
- PUE optimisation and energy monitoring solutions

Compared with traditional data centres, AI-enabled facilities require significantly higher capital and operating expenditure due to their substantially greater power and cooling requirements. AI workloads operate at much higher rack densities and GPU utilisation levels, necessitating larger substations, transformers, switchgear, UPS systems, backup generators and advanced power distribution infrastructure.

In addition, the intense heat generated by AI servers requires sophisticated cooling technologies such as liquid cooling, direct-to-chip cooling, immersion cooling, precision thermal management systems and higher-capacity chillers. All increase upfront infrastructure investment and ongoing energy consumption. As a result, AI-focused data centres are considerably more MEP-intensive than conventional facilities, creating greater demand for advanced electrical and cooling systems through the project lifecycle.

Overview of key mechanical segments and their use in data centres

The mechanical segment of India's MEP ecosystem comprises a range of infrastructure systems that may be considered integral to modern construction activity and, increasingly, to the development of data centre facilities.

The steady expansion of India's data centre sector is supported by growing cloud computing adoption, ongoing enterprise digital transformation initiatives, government data localisation requirements and continued hyperscale investment across key metropolitan hubs. This growth is likely to contribute to the rising relevance of specialised mechanical sub-systems that support data centre operations in terms of security, efficiency and the resilience levels associated with Tier 3 and 4 environments.

The subsystems detailed in this section represent key components within this ecosystem; each serves distinct functional roles while collectively enabling buildings and mission-critical facilities to operate safely, efficiently and reliably.

MEP subsystems	Description
MEPF modular support systems	• **Overview:** MEPF (mechanical, electrical, plumbing and fire protection) modular support systems constitute the structural framework that holds, routes and secures building services within a facility. These systems include pipe supports, duct hangers, cable tray brackets, conduit supports and fire protection pipe clamps, all of which are designed and organised to carry the weight and dynamic loads of MEPF installations while ensuring code compliance and spatial coordination
	• **Application in data centres:** The role of these support systems in data centres can be particularly relevant given the density of overhead services and the objective of minimising on-site disruption during fit-out. The adoption of building information modelling (BIM) may have contributed to enhancing the utility of modular MEPF supports, enabling clash detection, pre-coordinated layouts and off-site fabrication that could optimise installations through shorter timelines and more consistent quality
Structural ceiling grid systems	• **Overview:** Structural ceiling grid systems are heavy-grade suspended ceiling frameworks, typically constructed from extruded aluminium or galvanised steel, that provide an architectural ceiling finish and a robust structural platform for the attachment of MEP services, lighting, containment barriers, cable trays, busways and partitioning tracks
	• **Application in data centres:** These grids may be considered relevant to white space design, providing a coordinated overhead plane capable of supporting the reconfigurable service infrastructure often associated with hyperscale and co-location facilities. The India modular ceilings market is projected to grow, supported by the expansion of commercial real estate, IT infrastructure and institutional construction across metropolitan and Tier II cities • Geographically, demand remains concentrated in metro regions such as Mumbai, Bengaluru, Hyderabad, Chennai and the National Capital Region, which host the largest concentration of data centres, IT campuses and high-end commercial buildings
Security caging and partitioning systems	• **Overview:** Security caging and partitioning systems are modular, wire-mesh or solid-panel enclosure solutions designed to create physically secure perimeters around sensitive IT infrastructure, server racks, and critical equipment within data centres, co-location facilities, telecommunications rooms and enterprise server environments • These systems provide a layered or 'defence-in-depth' physical security model, complementing digital access controls by restricting unauthorised physical access to hardware assets

MEP subsystems	Description
	• **Application in data centres:** Caging systems enable multi-tenant separation in co-location data centres, allowing individual customers to occupy discrete, locked cage environments within a shared facility while maintaining shared cooling and fire suppression infrastructure • As India's data centre market accelerates, demand for professional-grade co-location security caging is rising sharply, particularly in hyperscale and carrier-neutral data centre campuses in Mumbai, Chennai, Hyderabad and Pune
Server room structural false ceiling	• **Overview:** A server room structural false ceiling, also referred to as a suspended or drop ceiling within data centre white space, is a purpose-engineered, heavy-grade suspended ceiling system installed within the data hall to serve a dual function. It not only encloses the ceiling plenum but also acts as a structural grid on which critical overhead infrastructure can be suspended and attached
	• **Application in data centres:** Server room structural false ceilings have gained significance since data centre operators specify integrated overhead infrastructure platforms that reduce field coordination across trades, accelerate installation timelines and support the dynamic reconfiguration needs of hyperscale and co-location environments
Hot aisle containment systems	• **Overview:** Hot aisle containment systems (HACS) are a category of airflow management infrastructure used in data centres to separate and isolate the hot exhaust air expelled by server equipment from the cool supply air delivered to server intakes, thereby preventing hot and cold air mixing and improving cooling efficiency
	• **Application in data centres:** In a typical data centre HACS configuration, end-cap panels, overhead canopy barriers and sliding or hinged door assemblies form a sealed enclosure over the hot aisle. These direct server exhaust air into the return air path of the data centre's CRAC, CRAH or in-row cooling units. This containment approach may enable data centre operators to raise supply air temperatures within ASHRAE-recommended ranges, achieve lower PUE ratios, reduce the installed cooling capacity required per megawatt of IT load and support the higher rack densities • An important recent development is the convergence of hot aisle containment with structural overhead support systems; products such as structural hot aisle containment combine floor-mounted frames, MEP overhead support, containment canopies and accessories into a single coordinated system, reducing the need for multi-trade field coordination and compressing construction timelines
Cable management systems (trays, conduits and raceways)	• **Overview:** Cable management systems encompass the full range of physical infrastructure used to support, route, protect and organise electrical power cables, data cables and fibre optic lines within commercial, industrial, data centre and infrastructure environments. • India's domestic manufacturing base for standard cable trays, PVC ducts and cable ties is growing, with production clusters concentrated in Gujarat, Maharashtra, Tamil Nadu and the NCR, though the market remains partially import-dependent for high-specification products such as fire-rated raceways, high-grade cable glands and precision cable carriers
	• **Application in data centres:** The main product categories deployed in data centres include cable trays (ladder, perforated, solid-bottom, wire mesh and (Fiber Reinforced Plastic) FRP variants used for overhead and under-floor routing), cable raceways (enclosed metallic or PVC channels for segregated power and data pathways) and electrical conduits (rigid and flexible protective tubing).

Source: Crisil Intelligence

Importance of DfMA prefabricated systems in data centre construction

Design for manufacture and assembly (DfMA) is a quantitative tool for the systematic analysis and maturation of design concepts into fully developed designs that optimise for assembly time and manufacturing cost to ensure consistent quality. In the MEP segment, DfMA offers a structured pathway to overcome persistent industry challenges including low productivity, quality inconsistencies, labour shortages, safety risks and schedule overruns.

The MEP segment represents one of the most complex and coordination-intensive aspects of building construction. Traditional MEP installation involves extensive on-site labour, intricate sequencing among multiple trades and significant coordination challenges, often resulting in rework, delays and cost escalation. DfMA addresses these challenges by encouraging designers and engineers to consider how MEP components will be manufactured and assembled at the very inception of the design process, rather than treating manufacturing and assembly as downstream afterthoughts.

The application of DfMA tools and supporting systems across the manufacturing industry helps reduce the time it takes to bring a new product to market and lower risk. This is accomplished by shifting away from a lone-designer approach, bringing varied disciplines into a cross-functional development team, and by making product and process design activities more efficient. These changes encourage knowledge sharing throughout the product development cycle and allow for feedback to be received and solutions discussed when design modifications are both cheaper and easier to implement.

DfMA combines two separate but interrelated ideologies:

- **Design for assembly (DfA):** Focuses on simplifying the assembly process and reducing the number of parts, minimising assembly operations and designing components that are easy to handle, orient and fit together
- **Design for manufacture (DfM):** Focuses on simplifying the manufacturing of individual components—selecting appropriate materials, reducing manufacturing complexity and optimising processes for cost and quality.

Data centres are well suited for DfMA adoption

Data centres are defined by high component density, extensive design repetition, congested service reservations, exacting reliability standards and delivery programmes shaped by client capacity commitments. Each attribute impacts how the MEP scope is designed, fabricated and installed; collectively, they establish a strong basis for a DfMA-led delivery model.

Mapping data centre project characteristics to DfMA suitability in MEP

Characteristic	Implication for DfMA application
High component density	MEP encompasses multiple discrete items across piping, ducting, cabling, supports, valves and controls. Rationalising and standardising this inventory through DfMA reduce procurement complexity, shortens installation cycles and limits interface risk.
Design repetition	Server halls, chilled water loops, power trains, and rack arrays recur across floors, halls and campuses, offering a natural basis for modularisation and factory replication.
Coordination intensity	Multiple trades operate concurrently within constrained plant rooms and service galleries, where DfMA's front-loaded analysis resolves interface conflicts before they migrate to site.
Reliability requirements	Extended operational lifespans and stringent uptime obligations demand build consistency that controlled factory environments are better positioned to achieve than site-based execution.

Characteristic	Implication for DfMA application
Labour dependency	Installation of chillers, UPS trains, busbar systems, containment and process piping is labour-intensive, and prefabrication transfers a material share of this effort to controlled settings with higher productivity.
Programme compression	Client go-live commitments and capacity ramp schedules impose tight delivery windows, which parallel offsite fabrication and onsite works are structured to accommodate.

Source: Crisil Intelligence

These structural attributes translate into a defined set of commercial and operational outcomes. The scale and repetition inherent in a data centre's MEP scope make standardisation and modularisation effective mechanisms for reducing design effort and procurement expenditure.

- Prefabricated assemblies, including skid-mounted pump packages, packaged electrical rooms and modular cooling blocks compress installation timelines while lowering unit cost
- Reference designs can be redeployed across hyperscale campuses and colocation portfolios with limited redesign effort, and a narrower parts catalogue simplifies supply chain administration across sequential build phases
- The value proposition extends across quality, safety, schedule, and sustainability dimensions. Factory-controlled fabrication delivers the tolerance discipline required by standards, and pre-tested assemblies materially shorten commissioning duration.
- Concurrent offsite fabrication and onsite construction compress the critical path and accelerate time-to-revenue, a priority for operators scaling capacity against contracted commitments.

Potential benefits of DfMA adoption across data centre MEP lifecycle

Characteristic	Implication for DfMA application
Cost efficiency	Front-loaded design resolution avoids late-stage rework that impacts certification and commissioning, while modular standardisation compresses procurement costs.
Installation velocity	Prefabricated busway systems, containment and pipework networks are deployed at a materially faster rate than site-fabricated equivalents.
Design productivity	Validated reference designs are redeployed across campuses and phases with reduced iteration cycles.
Supply chain simplification	A rationalised parts catalogue reduces inventory holding, logistics complexity and administrative overhead across project phases.
Reduced onsite work-in-progress	Streamlined assembly sequences lower staging footprint and mitigate handling damage to sensitive plant.
Quality assurance	Controlled fabrication environments deliver the consistency required for Uptime Institute Tier compliance and TIA-942 conformance.

Characteristic	Implication for DfMA application
Site safety	Offsite migration of scope reduces personnel exposure to elevated-risk activities near operational infrastructure.
Schedule certainty	Parallel fabrication and site works shorten the critical path and improve programme predictability.
Sustainability alignment	Reduced material wastage, lower site emissions, and design-for-disassembly principles support PUE, WUE and net-zero commitments.
Risk mitigation	Design refinement at the concept stage limits downstream coordination, quality and logistics exposures.

Source: Crisil Intelligence

The structural attributes of data centres, the outcomes DfMA delivers and the technologies (BIM, DfMA software platforms, robotic fabrication and CNC machining, laser scanning and reality capture) that enable it to constitute a coherent delivery framework. Hence, in a data centre, where operational downtime carries direct revenue and reputational consequences, this framework has potential to strength the delivery certainty and execution.

In India, DfMA adoption is gradually gaining momentum as developers, contractors and asset owners recognise its benefits in reducing project timelines, improving quality consistency, minimising on-site labour dependence and enabling greater cost predictability. These advantages are particularly relevant for data centres, where speed-to-market, scalability and reliability are critical success factors.

As the Indian data centre ecosystem continues to mature and project complexities increase with the rise of hyperscale and AI-driven facilities, DfMA adoption is expected to accelerate. Over the medium to long term, the extent of DfMA integration in Indian data centre construction could move closer to that observed in more mature markets, where prefabrication and modular construction have already become integral to project delivery strategies.

Assessment of the data centre industry globally and in the Gulf Cooperation Council (GCC)

Global data centre capacity and impact of AI on their energy requirements

By calendar year 2030, global data centre capacity is projected at 226 GW, representing an addition of nearly 129 GW from 97 GW in CY 2024, at an overall CAGR of ~15.1%. This growth is driven by AI adoption, cloud expansion and accelerating digitalisation across economies.

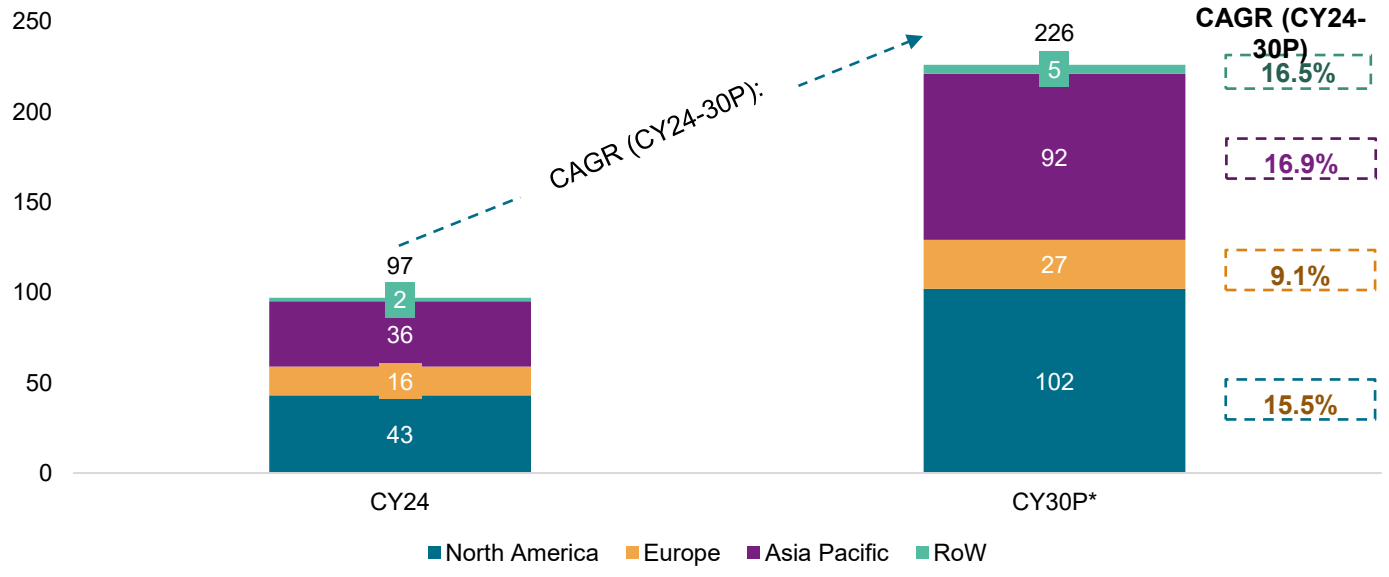
According to the IEA, global installed data centre capacity in 2024 was led by North America (43 GW), followed by Asia Pacific (36 GW), Europe (16 GW) and rest of the world (2 GW). North America's dominance reflects its mature hyperscale ecosystem and the concentration of major cloud and technology companies that invest heavily in AI-ready computing infrastructure.

Growth is expected to be broad-based, though regional trajectories differ significantly. Asia Pacific is projected to be the fastest-growing market (~16.9% CAGR), expanding to 92 GW from 36 GW, supported by rapid digitalisation, increasing cloud adoption and growing AI investments across India, China and Southeast Asia. North America is expected to nearly double to 102 GW (~15.5% CAGR), maintaining its position as the largest market owing to sustained demand for hyperscalers and AI.

Growth in Europe is forecast to be moderate at a CAGR of ~9.1%, reaching 27 GW. This reflects energy availability constraints, sustainability requirements and regulatory considerations in several key markets. Meanwhile, the rest of the world is expected to expand to 5 GW from 2 GW at a CAGR of ~16.5%, indicating rising investments in emerging data centre hubs across the Middle East, Latin America and Africa.

Overall, the projected capacity expansion underscores the increasingly strategic role of data centres as the foundational infrastructure, supporting AI workloads, cloud services and the broader digital economy.

Global data centre capacity (GW)



Base case numbers are based on IEA report on Energy and AI (2025)

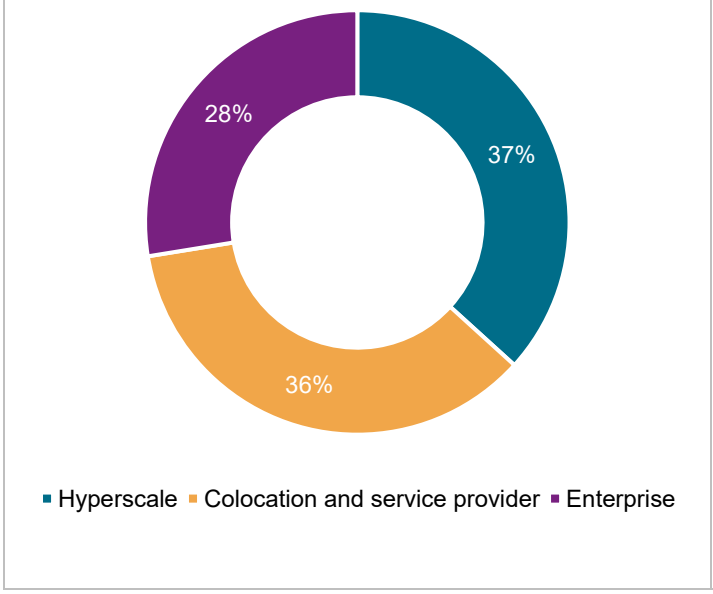
Source: IEA, Crisil Intelligence

The global data centre market is undergoing a structural shift, with capacity increasingly moving away from traditional enterprise-owned facilities towards hyperscale, colocation and service-provider-led infrastructure. According to the IEA, hyperscale data centres accounted for the largest share at 37%, followed closely by colocation and service providers at 36%, while enterprise data centres contributed 28%. This indicates that enterprise data centres, which are typically operated by businesses or institutions for internal IT requirements, now form a much smaller part of the global capacity base compared with earlier years, reflecting the gradual migration of workloads to more scalable and efficient third-party and cloud-based infrastructure.

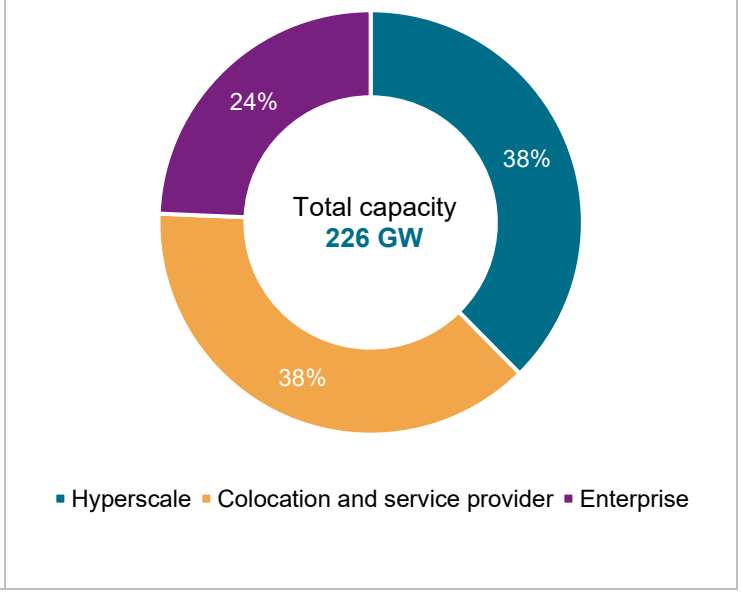
The global data centre capacity mix is expected to favour large-scale shared and cloud-led infrastructure. Hyperscale data centres are projected to account for 38% of total capacity by calendar year 2030. Simultaneously, colocation and service-provider data centres are also expected to rise to 38%, together representing over three-fourth of global installed capacity. This shift is being driven by rising demand for cloud computing, AI workloads, enterprise digital transformation and the need for high-density, scalable and energy-efficient facilities. In contrast, the share of enterprise data centres is expected to decline further to 24%, as organisations increasingly outsource infrastructure requirements to hyperscalers, cloud platforms and colocation operators.

The rapid expansion of hyperscale infrastructure is being led by major technology and cloud companies such as Amazon Web Services (AWS), Google, Meta, Oracle and Microsoft, which are investing in large-scale campuses to support AI model training, cloud services, web hosting and other compute-intensive workloads. Several mega-scale projects are also emerging globally, including campuses of 1 GW capacity or more, highlighting the growing power and infrastructure intensity of next-generation data centres. In India as well, large players are announcing sizeable investments in renewable-energy-powered and AI-ready data centre infrastructure, reflecting the country's growing relevance as a digital and cloud infrastructure hub.

Split across type of data centres (CY24)



Split across type of data centres (CY30P*)

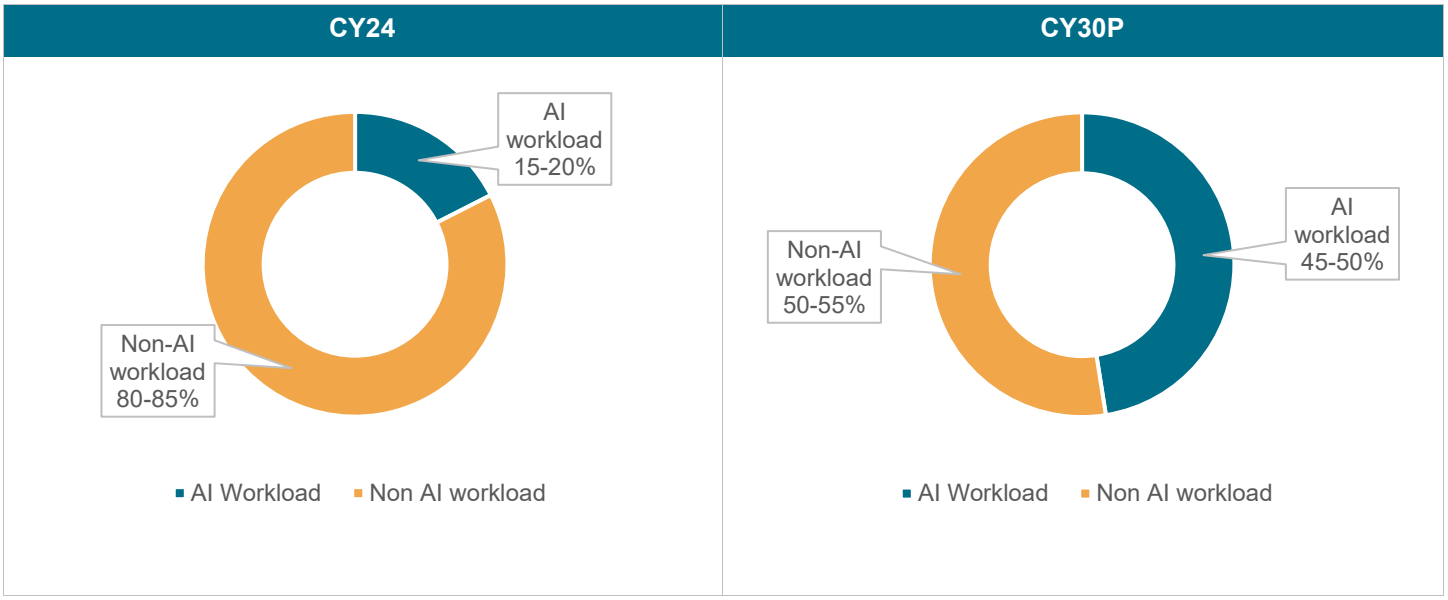


**Base case numbers are based on IEA report on Energy and AI (2025)*
Source: IEA, Crisil Intelligence

The global data centre industry is expected to witness a significant shift in workload mix, with AI-led workloads emerging as a major driver of future capacity addition and infrastructure design requirements. In calendar year 2024, AI workloads

were estimated to account for 15-20% of global data centre capacity, while non-AI workloads constituted 80-85%. However, with rapid adoption of GenAI, high-performance computing, cloud-based AI applications and enterprise AI use cases, the share of AI workloads is projected to increase to 45-50% by calendar year 2030. Consequently, non-AI workloads are expected to moderate to 50-55% of global data centre capacity, indicating that AI will become almost equivalent to traditional cloud, enterprise and digital workloads in terms of capacity requirement.

Split of global data centre capacity based on AI and non-AI workload



E – estimated, P – projected
Source: Crisil Intelligence

The transition is expected to materially change the way data centres are designed, constructed and operated. Unlike conventional data centres, AI data centres require significantly higher power density per rack due to the deployment of GPUs, accelerators and high-performance servers. As rack power density increases, the requirement for robust electrical infrastructure, high-capacity power distribution, advanced backup systems and redundancy architecture is also expected to rise. This will increase the scope and complexity of MEP works, particularly across electrical systems, power management, energy efficiency solutions, cooling infrastructure and building management systems. As overall data centre capex increases, the value contribution of MEP service providers is also expected to expand, given that power, cooling and reliability are central to AI-ready data centre operations.

The rising share of AI workloads will also increase the need for technological advancement among MEP service provider companies. Higher heat generation from AI servers will require advanced technologies such as liquid cooling, direct-to-chip cooling, immersion cooling, hybrid air-liquid systems, high-capacity chillers and precision cooling solutions. Traditional air-cooling systems may remain relevant for non-AI workloads, but AI-intensive facilities will require customised and more engineering-intensive cooling architectures. This is expected to create opportunities for MEP players with capabilities in design optimisation, thermal management, modular electrical systems, automation, energy efficiency and mission-critical project execution.

Further, as hyperscalers and colocation players expand AI-ready facilities, construction timelines will become increasingly critical. Large-scale data centre operators will need faster execution to bring capacity online quickly, particularly as demand for AI compute accelerates. This is likely to increase the adoption of prefabricated and modular MEP structures, including pre-assembled electrical rooms, modular cooling units, skid-mounted systems, prefabricated pipe racks, modular support systems and DfMA-based construction practices. Such solutions can help reduce on-site construction time, improve quality control, minimise installation complexity and support faster scalability.

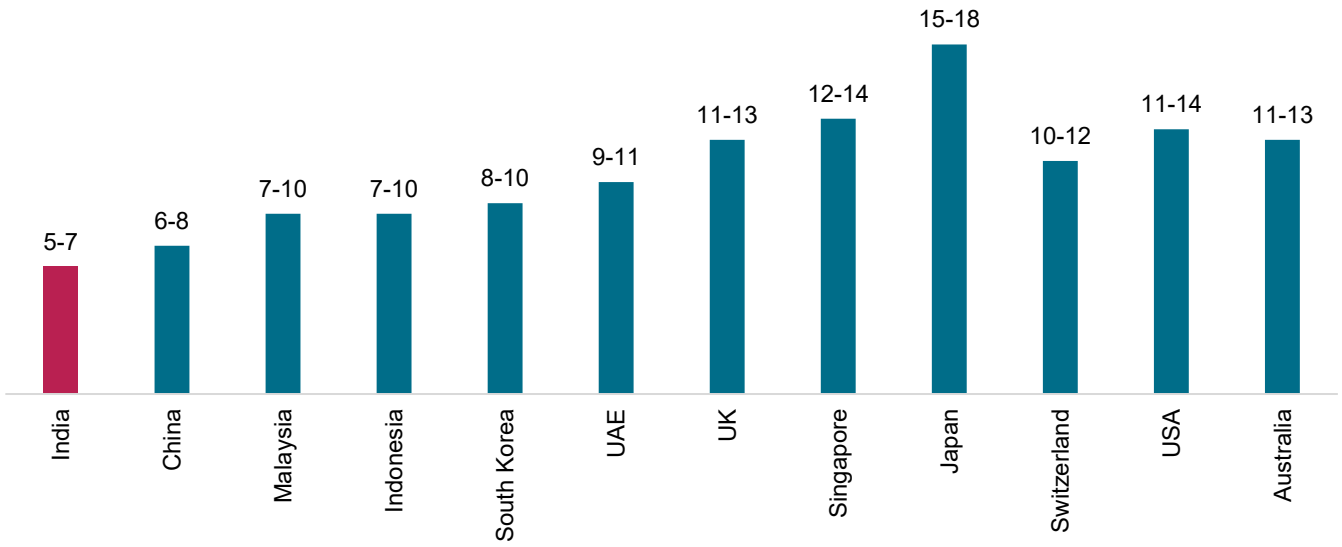
Comparative cost analysis positions India favourably within Asia's data centre development landscape

India remains one of the most cost-efficient destinations globally for data centre construction, with shell-and-core development costs estimated at $5-7 million per MW, substantially below those of other established data centre markets such as China, Singapore, the United States (US), Japan and Australia. As hyperscale and AI-driven campuses become larger and more capital-intensive, construction economics is increasingly emerging as a key consideration alongside traditional site selection criteria such as power availability, connectivity, latency and proximity to end-users.

India's competitive positioning is underpinned by lower labour costs, a mature construction ecosystem and relatively economical land and development expenses. The availability of a large pool of engineering, technical and construction talent enables developers to deliver projects at a lower cost compared with mature markets across North America, Europe, Japan and Singapore. In contrast, construction costs across developed economies remain relatively elevated due to higher labour expenses, more stringent building regulations and increased installation and compliance-related costs.

Data centre development involves a wide range of capital-intensive activities, including land acquisition, site preparation, civil works, power infrastructure deployment, cooling systems installation, electrical distribution networks and connectivity infrastructure. Consequently, cost competitiveness can have a meaningful impact on project viability, particularly as operators seek to scale capacity rapidly to support growing cloud adoption, digitalisation and increasingly compute-intensive AI workloads.

Comparative cost of construction of data centre per $ million per MW



Note: The cost estimates provided are indicative in nature and include shell-and-core construction costs. Actual project expenditure may differ based on site-specific factors, project scope and scale, design specifications and prevailing market conditions at the time of execution.
Source: Company reports, Crisil Intelligence

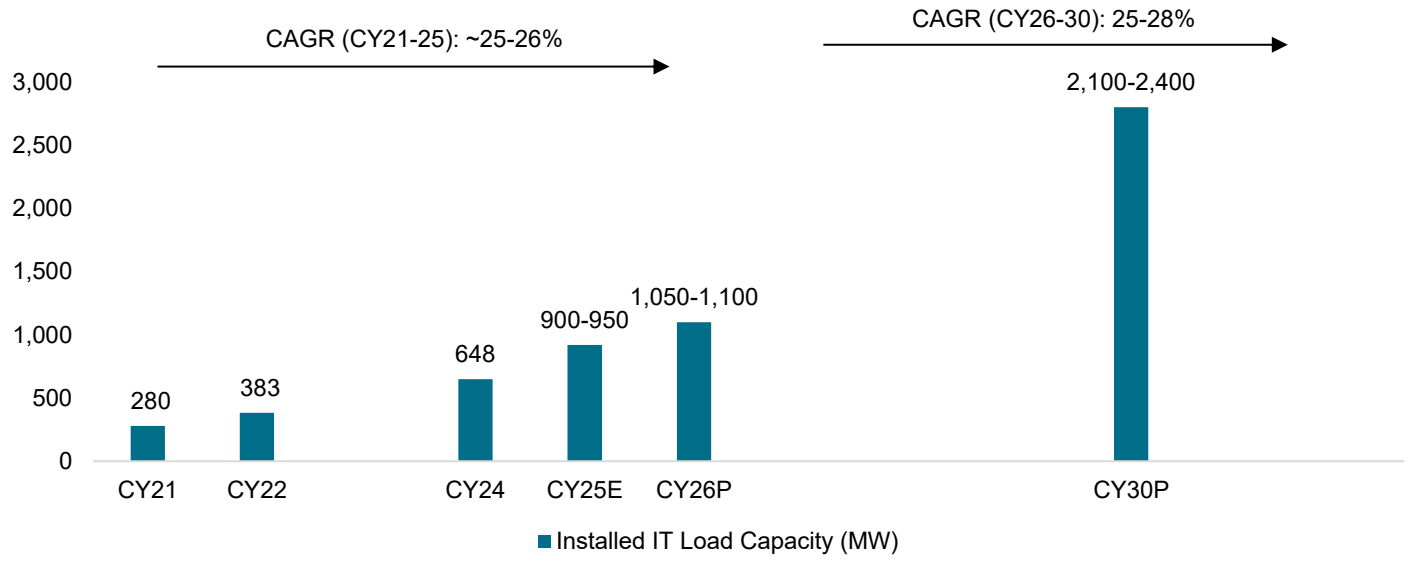
Overview of the data centre construction market in GCC

The data centre sector within the GCC is experiencing substantial growth in alignment with global industry trends. Governments across the six-member states are adopting an exceptionally proactive approach, not only facilitating expansion through regulatory frameworks but also accelerating development via supportive policies, highly business-friendly environments and significant financial investments, particularly in AI. As countries in the region strive to position themselves as leading global AI hubs, considerable public funding is being allocated to support this ambition.

This commitment is exemplified by the specific targets of the two largest GCC economies: The United Arab Emirates and Saudi Arabia have publicly pledged to derive 12% to 14% of their GDP from AI-driven activities by calendar year 2030. Such prioritisation is reflected in robust policy backing and direct investment in digital infrastructure, with data centres recognised as essential pillars of comprehensive digital transformation strategies. Consequently, governments throughout the GCC region are approaching data centre development as a strategic national priority rather than merely a commercial prospect, expediting project delivery and attracting local and international capital.

The total installed data centre capacity across the GCC region is estimated to be 830-850 MW in calendar year 2025 from 383 MW in 2022. This rapid expansion underscores the sector's strong momentum in recent years. With typical construction timelines of two years or less, industry forecasts indicate that the regional market will surpass 1 GW before the close of calendar year 2026. This growth path translates to an impressive average annual increase of 25-26% between calendar years 2021-2025, emphasising the sector's robust performance and prospects.

Data centre capacity in GCC region (MW)



E – estimated, P – projected
Source: Industry analysis, Crisil Intelligence

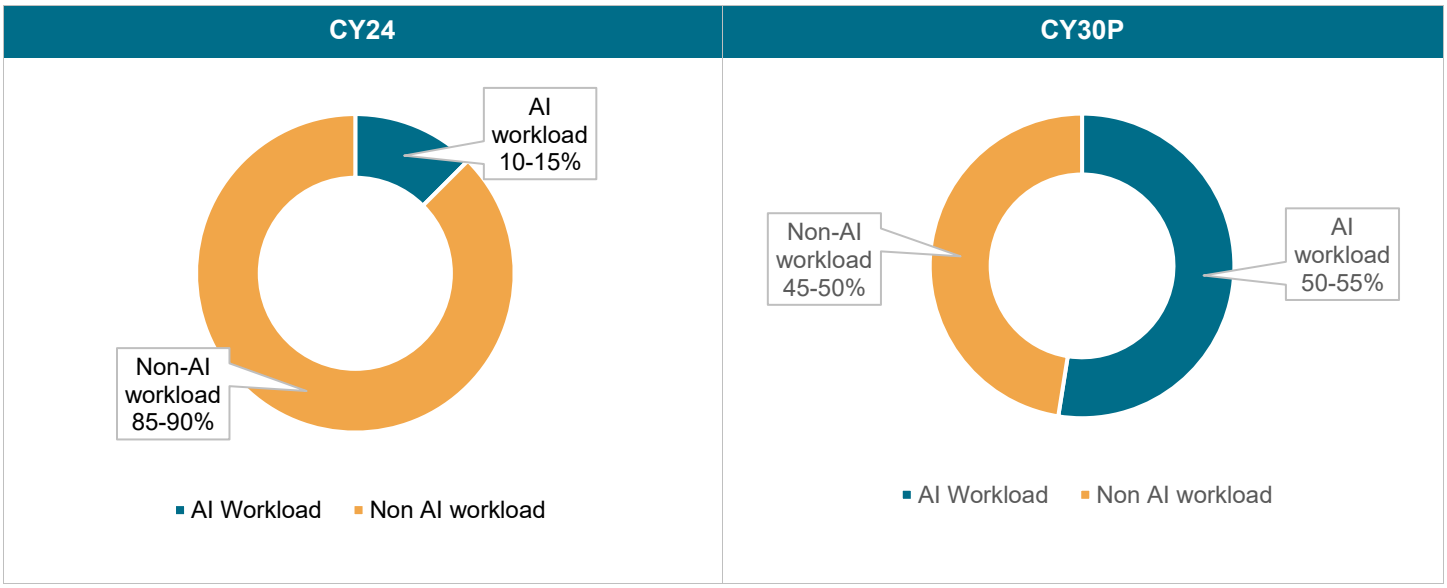
When examining the distribution of capacity across individual countries, Saudi Arabia has edged ahead to become the largest single market in the GCC. Saudi Arabia and the UAE have surpassed 250 MW each. Within Saudi Arabia, the eastern province, centred around Dammam, stands out as a particularly significant cluster, representing a market of close to 100 MW on its own. Qatar has also developed meaningful scale, with capacity now exceeding 70 MW. The remaining markets of Oman, Bahrain and Kuwait are smaller in absolute terms but are characterised by notably high growth rates, indicating expansion across the entire region.

The projected increase in AI-related capacity to 50-55% by calendar year 2030 from 10-15% in 2024 highlights the rapidly growing demand for AI computing infrastructure across the GCC. Governments, hyperscalers and technology companies are investing heavily in large-scale AI ecosystems to support GenAI, ML, advanced analytics and sovereign AI initiatives. This transition is fundamentally reshaping the region's data centre landscape, with future capacity additions increasingly designed around high-performance AI workloads rather than conventional enterprise or colocation requirements.

The scale of announced projects clearly demonstrates this trend. In Saudi Arabia, HUMAIN and NVIDIA have unveiled plans to develop AI factories with up to 500 MW of capacity over the next five years, while AWS and HUMAIN have announced investments exceeding $5 billion to establish an AI zone within the Kingdom. Similarly, the UAE is positioning

itself as a regional AI hub through large-scale initiatives such as G42's 5 GW UAE-US AI Campus, OpenAI's Stargate UAE project, which includes a 1 GW AI cluster in Abu Dhabi and the planned deployment of an initial 200 MW phase by 2026. In parallel, Microsoft and G42 have announced an additional 200 MW of data centre capacity to support growing cloud and AI demand.

Split of GCC data centre capacity based on AI and non-AI workload



E – estimated, P – projected
Source: Crisil Intelligence

The surge in AI infrastructure investments is also accelerating hyperscaler-led expansion across the GCC region. Global cloud providers, including Microsoft, AWS, Google, Oracle and OpenAI, are rapidly increasing their presence, creating substantial demand for wholesale and hyperscale facilities. Unlike traditional cloud workloads, AI applications require significantly greater computing power, higher rack densities, advanced networking architecture and sophisticated cooling systems. Consequently, operators are developing larger facilities with enhanced power and cooling capabilities to accommodate increasingly compute-intensive AI clusters.

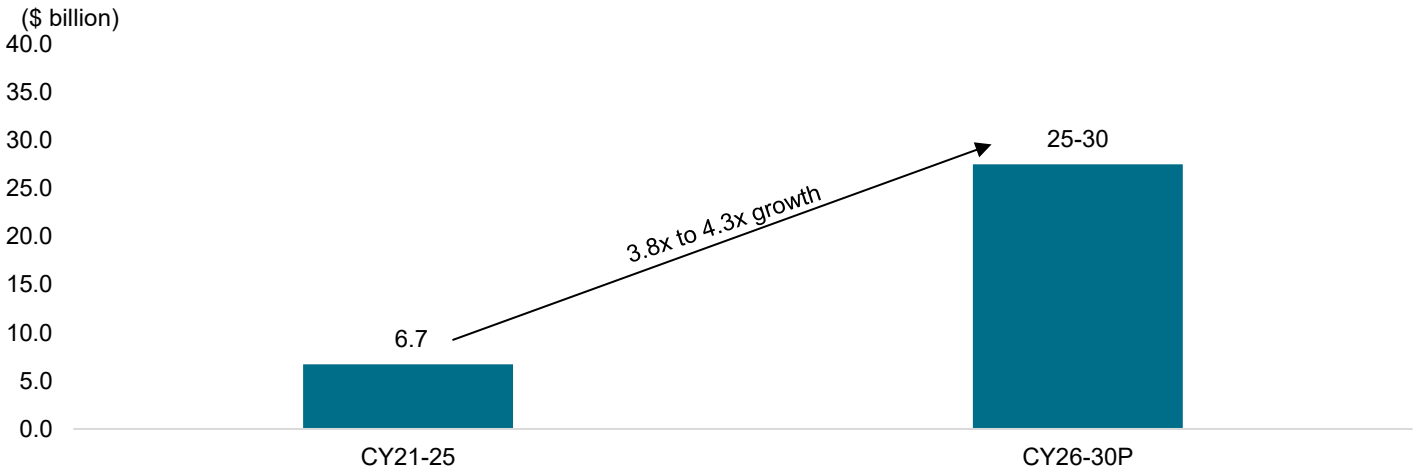
This shift is already influencing facility design and capacity planning. Data centre operators are moving toward significantly larger campuses and higher-density environments capable of supporting next-generation AI hardware. A notable example is Khazna's planned 100 MW AI-focused data centre in Ajman, which has been specifically designed to address the elevated power, cooling and infrastructure requirements associated with AI workloads. As AI increasingly becomes the dominant demand driver, the GCC data centre market is expected to witness a structural transition from traditional colocation-driven growth to hyperscale and AI-led capacity expansion, resulting in substantially higher investments across power, cooling, connectivity and specialised MEP infrastructure.

Investment in data centre construction sector in GCC

According to Crisil Intelligence, investments in data centre construction across the Gulf Cooperation Council (GCC) are expected to increase significantly, with cumulative capex projected to rise to $25–30 billion over calendar years 2026-2030 from $6.7 billion over calendar years 2021-2025, a 3.8x–4.3x increase. This growth reflects rising demand for digital infrastructure and the substantial capital required to support rapid capacity expansion across hyperscale, sovereign, edge and enterprise data centres.

AI workloads and hyperscale cloud infrastructure are key drivers for this investment. Compared with conventional data centres, AI-enabled facilities can require up to 40% higher investment due to their significantly greater infrastructure requirements. While traditional colocation data centres are primarily designed for storage and standard computing applications, AI-ready facilities must support GPU-intensive workloads that require substantially higher power densities, advanced cooling systems, ultra-high-speed connectivity and robust electrical infrastructure.

Projected data centre construction capex

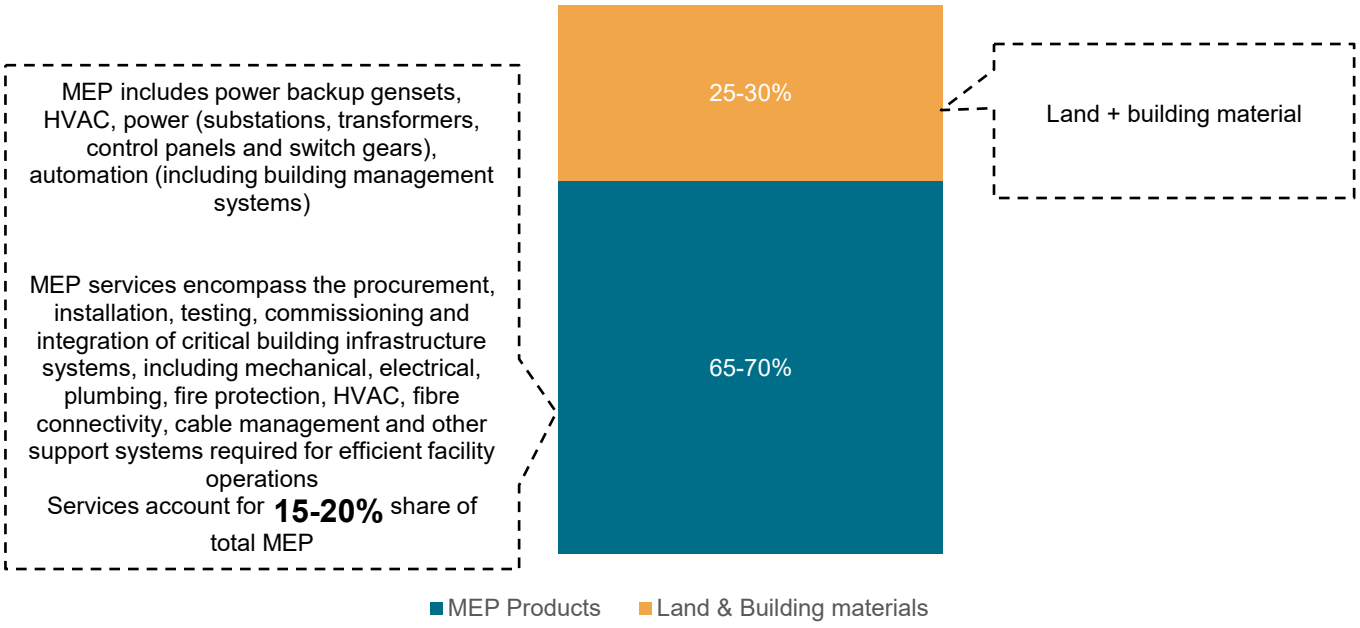


Note: The above figure includes only the capex towards new data centre construction inclusive of land
Source: Crisil Intelligence

Data centres are among the most MEP-intensive asset classes within the GCC construction market, with MEP products and services collectively accounting for an estimated 60–70% of total project costs in calendar year 2025. MEP products, which include critical equipment such as power backup systems, generators, transformers, switchgear, HVAC systems, cooling infrastructure, control panels and building management systems, represent the largest cost component, at 50–55% of the overall project expenditure. The high share is driven by the significant power and cooling requirements of modern data centres, particularly as operators deploy higher-density racks and AI workloads that require enhanced electrical and thermal management infrastructure.

Beyond equipment costs, MEP services account for an additional 10–15% of project costs, reflecting the complexity involved in designing, procuring, installing, testing, commissioning and integrating multiple systems sourced from various original equipment manufacturers (OEMs) into a fully operational facility. MEP contractors play a critical role in implementing electrical, mechanical, plumbing, fire protection, HVAC, fibre connectivity, cable management and automation systems, while ensuring seamless interoperability across the facility. The growing adoption of hyperscale and AI-focused data centres is further increasing demand for specialised MEP services, as these facilities require more sophisticated power distribution, advanced cooling technologies, greater automation and higher levels of system redundancy to ensure uninterrupted operations and maintain stringent uptime requirements.

MEP in data centre construction industry in calendar year 2026



Source: Company reports, Crisil Intelligence
Notes: MEP includes power set-up, cooling units, fibre connectivity, racks etc.

Investment activity in the GCC data centre sector gains traction

The GCC's strategic push into digital transformation, supported by Vision 2030 in Saudi Arabia, the UAE's AI and digital economy strategies and attractive incentives such as tax breaks and reliable power supply, has triggered a surge in hyperscale and colocation developments by global players. This growth is accelerating the adoption of sustainable practices, including renewable energy integration and water-efficient cooling solutions, which, while environmentally beneficial, are adding further complexity and cost to MEP packages. As AI and cloud adoption accelerate across the region, data centre MEP intensity is expected to remain the highest among all building segments, significantly influencing overall construction cost structures in the GCC.

The GCC region is experiencing substantial capital deployment in the data centre sector, with investment activity characterised by participation from sovereign wealth funds, international technology corporations, telecommunications operators and infrastructure investors. Transaction structures included joint ventures between regional entities and global operators, acquisition of existing facilities by infrastructure funds and direct investments by hyperscale cloud service providers establishing a regional presence.

The Kingdom of Saudi Arabia and the United Arab Emirates (UAE) have attracted bulk of the capital flows, with state-backed entities such as the Public Investment Fund committing resources to develop facilities that comply with data sovereignty requirements. Sale and leaseback arrangements have provided liquidity to operators while enabling them to retain operational control. The expansion of cloud computing adoption, regulatory mandates concerning data localisation, and the development of submarine cable infrastructure have supported investment momentum. Government procurement of digital services and the deployment of 5G mobile networks continue to generate demand for compliant data centre capacity across member states, indicating sustained capital inflow in the sector.

Some of the key announcements/partnerships related to data centres in the GCC are covered in the table below:

Recent data centre investment announcements and infrastructure developments in the GCC

Country	Project name	Announcement year	Description
Saudi Arabia	SDAIA Hexagon Data Centre, Riyadh	2026	• The Saudi Data and Artificial Intelligence Authority (SDAIA) has commenced development of the Hexagon Data Centre in Riyadh, a flagship government AI and cloud infrastructure project • The facility is being developed as a Tier 4 government data centre with a 480 MW capacity • Built across a site exceeding 30 million sq ft, the project is intended to host government digital services, support large-scale AI workloads, strengthen national data sovereignty and provide highly resilient infrastructure for Saudi Arabia's transformation into a data- and AI-driven economy under Vision 2030
Bahrain	Batelco–Qareeb Edge Data Centre, Data Oasis	2026	• Batelco by Beyon and Qareeb Data Centres signed a strategic partnership to launch Bahrain's first edge data centre • Qareeb will manage and operate the facility through a long-term lease of Batelco's new facility within Beyon's Data Oasis in Southern Bahrain • The facility offers 6,000 sq m of scalable space and is intended to provide sovereign, low-latency and AI-ready colocation services for enterprises, cloud providers and digital platforms across the GCC
UAE	DIEZ–VOLT UAE AI-ready Data Centre, Dubai Silicon Oasis	2026	• Dubai Integrated Economic Zones Authority announced a joint venture with VOLT UAE to develop an advanced AI-ready data centre in Dubai Silicon Oasis • The project, spanning 60,000 sq m will be developed in two phases, with an initial 29 MW readily available capacity, followed by an additional 100 MW of committed power • Schneider Electric will support advanced electrical systems, power distribution and smart data-centre infrastructure
Oman	Sustainable Hyperscale AI Data Centre	2026	• During Oman Sustainability Week 2026, RINA Consulting, Vitali Spa, Forte Secur Group, Ahlam Group and Corpolgia signed a joint development agreement to establish an AI-focused sustainable hyperscale data centre in Oman • The project is planned as a 150 MW facility and aims to integrate AI infrastructure, cyber security, energy efficiency and renewable energy solutions, supporting Oman's ambition to become a regional digital economy hub
UAE	Stargate UAE	2025	• Announced by G42, OpenAI, Oracle, NVIDIA, Cisco and SoftBank as a next-generation AI infrastructure cluster in Abu Dhabi • Stargate UAE will run in the newly established 5 GW UAE–US AI Campus in Abu Dhabi
UAE	Microsoft–G42 / Khazna Data Centre expansion	2025	• Announced by Microsoft and G42, with capacity to be delivered through Khazna Data Centres • The project involves a 200 MW expansion of data centre capacity in the UAE as part of Microsoft's broader $15.2 billion investment announcement in the country. • The expansion is expected to start coming online before the end of 2026 and is aimed at strengthening AI, cloud and sovereign digital infrastructure

Country	Project name	Announcement year	Description
UAE	du Hyperscale Data Centre	2025	• Announced by du / Emirates Integrated Telecommunications Company • The project is a new hyperscale data centre in the UAE to be built and operated at a cost of around AED 2 billion, with capacity to be delivered in tranches and Microsoft as the main tenant
Saudi Arabia	AWS–HUMAIN AI Zone	2025	• Announced by AWS and HUMAIN, the partnership involves more than $5 billion of investment to build an AI Zone in Saudi Arabia, including dedicated AWS AI infrastructure, servers, UltraCluster networks, AI services and training/talent development • This collaboration aligns with Saudi Arabia's Vision 2030 and builds upon the Kingdom's pledge in 2024 to invest in building an AI-powered economy, representing a significant step towards realising its ambitions to become a global AI leader
Saudi Arabia	DataVolt–NEOM Oxagon AI Factory	2025	• Announced by NEOM and DataVolt, the project involves a $5 billion initial investment for Phase 1 of a net-zero AI factory campus in Oxagon • The facility is planned as a 1.5 GW AI factory, integrating high computing densities, energy-efficient architectures and renewable-energy-powered infrastructure • Phase 1 is expected to be operational by 2028
Qatar	Brookfield–QAI AI Infrastructure Partnership	2025	• Announced by Brookfield and QAI, a subsidiary of Qatar Investment Authority, the partnership establishes a $20 billion joint venture focused on AI infrastructure in Qatar and select international markets. • Under the partnership, Brookfield and QAI will contribute capital and operating expertise to invest in AI infrastructure in Qatar, including the development of fully integrated AI facilities, to support the country's rapidly expanding digital and AI ecosystems
Saudi Arabia	Groq / Aramco Digital AI Inference Data Centre	2024 / 2025 expansion	• Announced by Aramco Digital and Groq, the project is described as an AI inferencing data centre in Saudi Arabia using Groq language processing unit (LPU) AI inference technology • In 2025, Groq announced a $1.5 billion commitment from Saudi Arabia for expanded delivery of LPU-based AI inference infrastructure from its Dammam data centre.
Qatar	QIA–Blue Owl Digital Infrastructure Partnership	2025	• Announced by Qatar Investment Authority and Blue Owl Capital, QIA's contribution is expected to help launch a digital infrastructure platform with more than $3 billion of initial data centre assets, with the platform intended to grow over time and support hyperscaler demand, cloud and AI transformation
UAE	Khazna–ADIO Mafraq Data Centre	2024	• Announced by the Abu Dhabi Investment Office and Khazna Data Centres under the Musataha programme • Khazna will build and operate an advanced data centre in Mafraq, Abu Dhabi, with an initial capacity of 30 MW on government-owned land • The facility is expected to become operational by mid-2026, and will add data capacity to Abu Dhabi's digital infrastructure

Country	Project name	Announcement year	Description
Oman	Equinix–Omantel Salalah SN1	2024	• Announced by Equinix and Omantel, the SN1 facility in Salalah is Oman's second carrier-neutral data centre and Equinix's sixth facility in the Middle East • It is positioned as a connectivity hub between Asia, Africa, Europe and Australia, with direct fibre connectivity to Equinix's MC1 data centre in Muscat • Omantel stated it has invested more than $1 billion over the past decade in international networks and data centres

Source: Company disclosures, government websites, Crisil Intelligence

Key growth drivers in GCC's data centre market

Growth drivers	Overview
Strong government support and digital economy initiatives	• Governments across the region are prioritising digital infrastructure development as part of broader economic diversification agendas, positioning data centres, cloud computing and AI as key pillars of future economic growth • Strategic initiatives such as Saudi Arabia's Vision 2030, the UAE's digital transformation programmes and large-scale smart city developments are fostering a supportive investment environment through policy support, streamlined approvals, and long-term visibility for developers and investors. Saudi Arabia's $100 billion AI-led Project Transcendence further highlights the region's commitment to building world-class digital infrastructure • AI is rapidly emerging as a national priority across the region, with both Saudi Arabia and the UAE targeting AI to contribute 12–14% of GDP over the coming decade, driving significant investments in AI-ready data centre capacity and supporting infrastructure
Rapid expansion of cloud regions and hyperscale infrastructure	• Cloud adoption continues to be a major demand driver across the region as enterprises and government entities migrate workloads from on-premises infrastructure to public and hybrid cloud platforms. Global hyperscalers such as AWS, Microsoft, Google, Oracle, Alibaba and OpenAI have either established or announced cloud regions across the region, creating sustained demand for large-scale data centre capacity • Saudi Arabia alone has attracted more than $5.3 billion of planned investment from AWS, while major cloud regions have already been deployed in the UAE, Qatar, Bahrain and Kuwait. This influx of hyperscaler investment is driving the development of larger wholesale and hyperscale facilities capable of supporting future cloud demand
Digital transformation and growing data consumption	• The region continues to witness rapid digitalisation across government, enterprises and consumers, resulting in a sustained increase in data generation, processing and storage requirements. Rising adoption of digital services, e-commerce, fintech platforms, online entertainment and enterprise digitisation initiatives is creating long-term demand for local data centre capacity • The region's relatively young demographic profile, with approximately half of the population below 30 years of age, further supports faster adoption of emerging digital technologies and cloud-based services

Growth drivers	Overview
Strategic geographic location and global connectivity	• The region is at a strategically important location between Europe, Asia, and Africa, placing more than three billion people within easy network reach. This geographic advantage has enabled the region to develop into a major intercontinental connectivity hub. Countries such as Saudi Arabia, Oman, the UAE, Bahrain and Qatar continue to strengthen their positions through extensive investments in subsea cable infrastructure, internet exchanges, and carrier-neutral connectivity ecosystems. Oman currently hosts one of the region's most extensive subsea cable networks, while Saudi Arabia has emerged as a major connectivity hub with 16 operational cables and multiple additional projects under development. This robust connectivity infrastructure enhances the attractiveness of the GCC as a destination for hyperscale, cloud and AI investments
Data sovereignty and localisation requirements	• Governments across the region are increasingly implementing data residency and sovereignty regulations that require sensitive data to be stored and processed within national borders. These regulatory requirements are driving demand for local cloud regions and domestic data centre infrastructure, particularly from government agencies, financial institutions, healthcare providers and other regulated industries. The increasing focus on digital sovereignty is creating a structural demand base for new capacity across the region
Competitive power economics and energy infrastructure	• Availability and affordability of power remain among the most important factors influencing data centre site selection. The region benefits from relatively competitive electricity tariffs, averaging approximately $0.057/kWh, making it an attractive destination for power-intensive cloud and AI workloads • In addition, countries in the region continue to invest heavily in generation capacity, transmission infrastructure, renewable energy, battery storage systems and grid modernisation to support growing demand for electricity from digital infrastructure. Saudi Arabia alone operates more than 92 GW of installed power capacity and is targeting ~130 GW of renewable energy additions by 2030, while the UAE, Oman, Qatar and Kuwait are also significantly expanding their power infrastructure

Source: Crisil Intelligence

The key growth drivers supporting the GCC data centre market are also creating significant opportunities for MEP service providers and equipment suppliers. As governments, hyperscalers and enterprises accelerate investments in cloud infrastructure, AI, digital transformation and sovereign data ecosystems, demand for advanced power, cooling, electrical and connectivity infrastructure is increasing substantially. The development of larger hyperscale and AI-focused facilities requires extensive deployment of MEP products such as transformers, switchgear, UPS systems, generators, HVAC and liquid cooling solutions, alongside specialised MEP services covering engineering, procurement, installation, testing, commissioning and system integration. As a result, the strong expansion of data centre capacity across the GCC is expected to drive sustained growth for MEP companies throughout the project lifecycle—from design and construction to operations and maintenance.

Key challenges in data centre market of Gulf Cooperation Council

Challenges	Overview
Power availability and grid readiness	• As hyperscale and AI data centres scale up across the region, access to reliable power is increasingly emerging as one of the most critical constraints on capacity expansion. AI workloads require significantly higher power densities and continuous electricity supply, placing growing pressure on regional power infrastructure. While countries continue to invest heavily in generation and grid capacity, ensuring timely availability of large-scale power connections remains a key challenge for developers seeking to accelerate project deployment
Extreme climate conditions and water management	• The harsh operating environment poses unique challenges for data centre construction and operations. High ambient temperatures, often exceeding 45°C during summer months, increase cooling requirements and reduce the efficiency of Heating, Ventilation and Air Conditioning (HVAC) and power systems, while dust and sand exposure necessitate advanced filtration and facility protection measures • Water scarcity across the region places additional pressure on cooling infrastructure, particularly as data centre capacity continues to expand. Although next-generation cooling technologies such as liquid cooling and direct-to-chip cooling can significantly improve efficiency and reduce water consumption, they introduce additional design, installation and operational complexities
Shortage of skilled talent and technical expertise	• The transition towards high-density, AI-ready facilities is increasing demand for specialised engineering and operational talent. Advanced data centres require expertise across electrical systems, mechanical infrastructure, cooling technologies, controls and commissioning activities. However, the availability of skilled personnel capable of deploying and operating next-generation AI facilities remains limited globally. This talent gap is particularly visible in specialised areas such as liquid cooling, high-density power systems and mission-critical infrastructure management, prompting many developers to supplement local capabilities with international expertise
Supply chain constraints and rising construction costs	• The rapid growth of global data centre development has placed pressure on supply chains for critical equipment, including transformers, generators, switchgear, cooling systems and other MEP infrastructure. Long lead times for key components, coupled with rising material costs and increasing demand from hyperscale operators, continue to impact project schedules and construction economics. Geopolitical developments, logistics disruptions and evolving compliance requirements can further contribute to procurement challenges and project delays
Geopolitical and investment risks	• Although the region remains one of the fastest-growing data centre markets globally, geopolitical uncertainties continue to influence investment decisions. Disruptions to trade routes, supply chains and broader regional security dynamics can increase project execution risks, insurance costs and financing requirements. Investors and operators are, therefore, placing greater emphasis on risk assessment, project location selection and long-term resilience planning when evaluating new developments
Sustainability and decarbonisation requirements	• Governments, hyperscalers and enterprise customers are increasingly prioritising sustainability targets and lower-carbon operations. However, achieving these objectives can be challenging in a region where data centres operate in high-temperature environments and require significant cooling and power infrastructure. Operators are, therefore, investing in renewable energy integration, energy-efficient cooling technologies, battery storage systems and advanced energy management solutions to improve sustainability performance while maintaining operational reliability

Source: Crisil Intelligence

Assessment of domestic data centre industry

India’s data centre capacity to grow at 30–32% CAGR by fiscal 2030

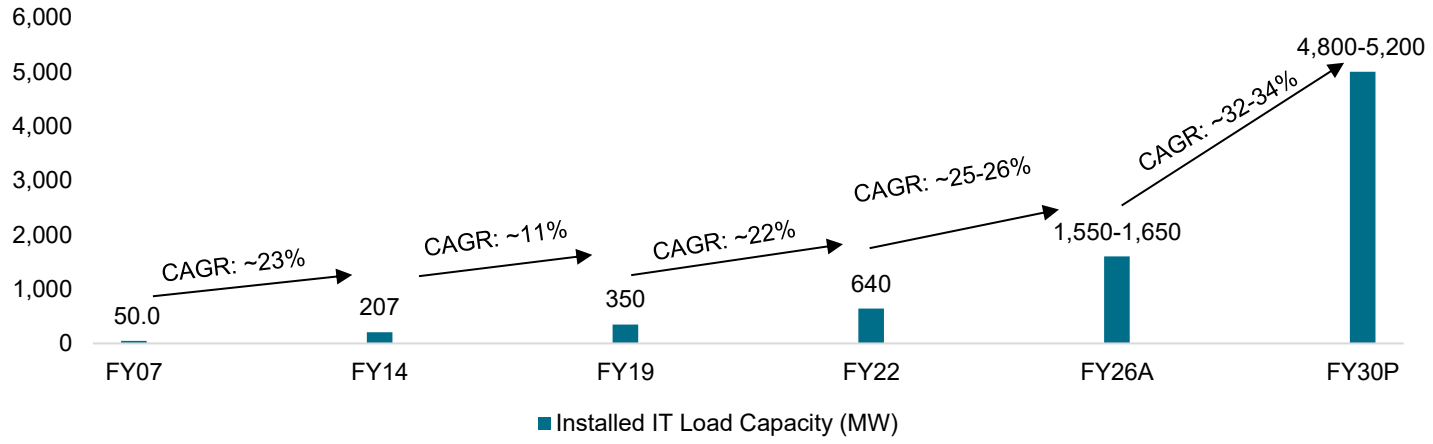
The data centre industry has become a critical component of the digital economy, underpinned by cloud computing, AI, 5G connectivity, IoT applications and an expanding range of digital services. As enterprises and consumers increasingly rely on data-intensive applications, demand for secure, scalable and low-latency digital infrastructure continues to rise. Globally, the rapid adoption of AI and accelerating digital transformation are driving the development of larger, higher-density and future-ready data centres capable of supporting increasingly complex computational workloads.

India is experiencing a similar transformation, supported by rising internet penetration, growing digital consumption, cloud adoption and one of the highest mobile data usage levels worldwide. Installed data centre capacity has expanded more than threefold since fiscal 2019 to reach 1,550–1,650 MW by fiscal 2026 and is expected to increase to 4,800–5,200 MW by fiscal 2030. Mumbai continues to be the country's primary data centre hub because of its strong connectivity infrastructure and multiple submarine cable landing stations, while Chennai, Hyderabad, Delhi NCR, Pune and Kolkata are emerging as important growth markets.

The next phase of growth is expected to be driven by AI workloads. AI currently accounts for only a small proportion of installed capacity, but its share is projected to increase significantly over the coming years as enterprises deploy generative AI (GenAI) applications, LLM training environments, inference clusters and advanced analytics platforms. This shift is expected to alter infrastructure requirements, resulting in greater demand for high-density facilities equipped with enhanced power delivery systems, advanced cooling technologies and higher rack capacities.

Increasing cloud adoption, data localisation requirements, enterprise digitalisation initiatives and government-led programmes such as Digital India and the National AI Mission are expected to sustain strong long-term demand. Despite the rapid pace of development, India's data centre density remains significantly lower than mature global markets, indicating substantial headroom for future expansion and positioning the country as one of the fastest-growing data centre markets in the Asia-Pacific region.

Data centre capacity in India - MW (fiscal 2007–fiscal 2030P)

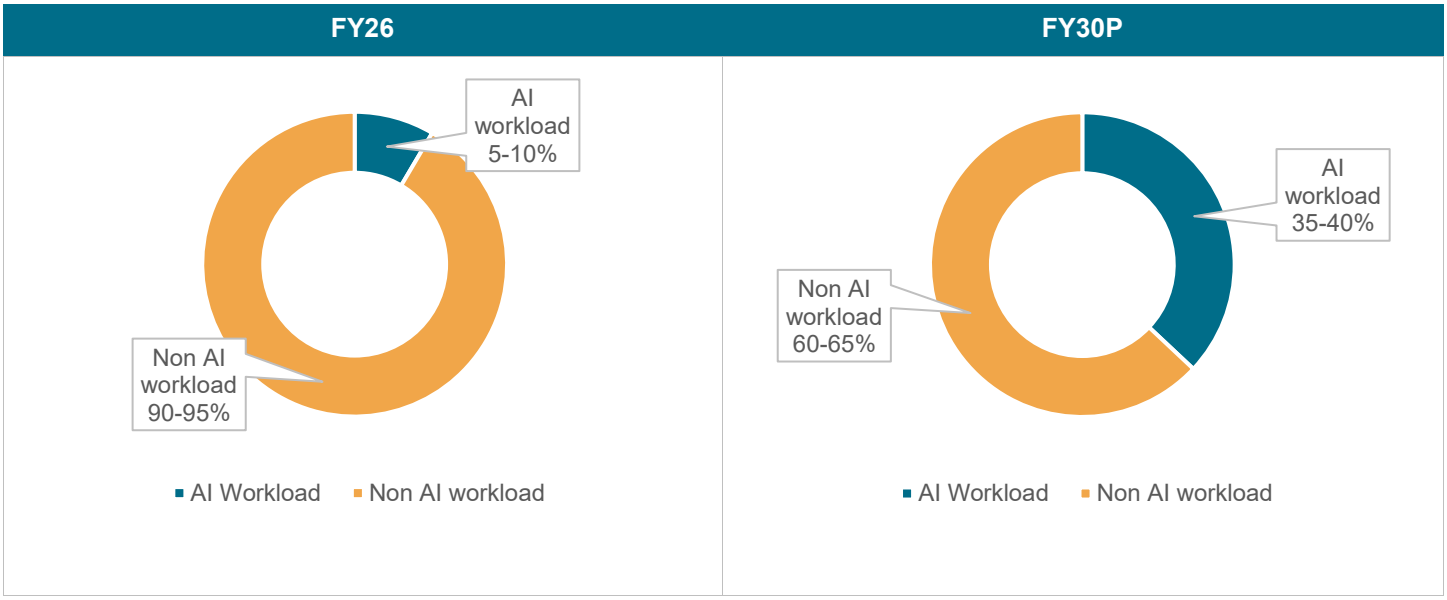


Note: E: Estimated; P: Projected
Source: Crisil Intelligence

The composition of data centre demand is expected to undergo a significant shift over the next decade. As illustrated below, AI workloads account for only 5–10% of India's installed data centre capacity as of fiscal 2026, with traditional cloud, enterprise and colocation workloads representing the remaining 90–95%. However, by fiscal 2030, AI-related

applications are projected to contribute 35–40% of total capacity demand, reflecting the rapid adoption of GenAI, machine learning, high-performance computing and advanced analytics use cases across industries. This evolution is expected to significantly influence facility design and infrastructure requirements as AI environments typically require much greater power density, enhanced cooling systems and more sophisticated electrical architecture than conventional data centres. As a result, future capacity additions are increasingly being planned with AI-readiness in mind, even if the facilities initially operate with predominantly non-AI workloads.

Data centre capacity as per AI and non-AI workload



Note(s): E: Estimated, P: Projected
Source: Crisil Intelligence

Investment in data centre construction

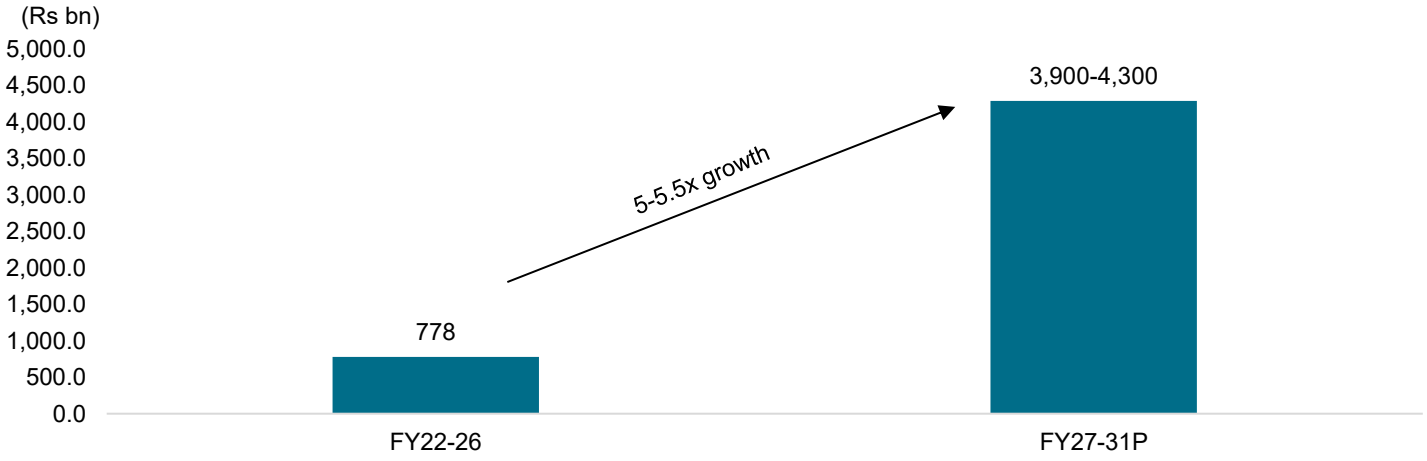
India's data centre industry is entering a substantial construction-led investment cycle as developers expand capacity to cater to rising cloud, colocation and AI-driven demand. The total capex towards new data centre development is estimated to increase from approximately Rs 778 billion in the fiscal 2022 to fiscal 2026 period to Rs 3,900–4,300 billion in the fiscal 2027 to fiscal 2031 period, implying a 5–6x increase in construction-related investments. This investment momentum is expected to generate significant opportunities across the broader ecosystem, including civil construction, engineering, procurement and construction (EPC) contractors, MEP service providers, equipment vendors and commissioning specialists.

While data centre capacity is expected to grow rapidly, capex is likely to increase at an even faster pace due to the growing adoption of AI-ready infrastructure. AI-oriented facilities generally require higher power densities, larger electrical redundancies, advanced monitoring systems, liquid cooling compatibility, enhanced heat rejection systems and more sophisticated mechanical and electrical infrastructure. Industry estimates indicate that AI-capable facilities can entail 20–30% higher development costs compared with traditional data centres, based on rack density and cooling architecture.

A significant proportion of data centres currently under development or in the planning stage are being designed as AI-ready facilities, even though many may initially operate with conventional cloud and colocation workloads. Developers are increasingly provisioning additional power infrastructure, reserve floor loading capacities and future cooling provisions at the design stage to accommodate subsequent AI deployments. As these facilities begin hosting AI workloads over time, operators may progressively invest in advanced thermal management solutions such as liquid cooling, rear-door heat exchangers, direct-to-chip cooling systems and higher-capacity chilled water infrastructure, resulting in additional infrastructure spending during the operational phase.

The increasing complexity of AI-ready facilities is expected to significantly enhance the role of MEP contractors. Cooling infrastructure, electrical distribution systems, backup power architecture, fire protection systems, automation platforms and integrated building management systems are becoming critical components of the overall project costs. As a result, MEP's share in total project expenditure is expected to remain high, creating substantial opportunities for specialised engineering and infrastructure service providers supporting the data centre ecosystem.

Projected data centre construction capex



Note: Above figures include only the capex towards new data centre construction inclusive of land
Source: Crisil Intelligence

Growing importance of MEP infrastructure amid AI-led capacity expansion

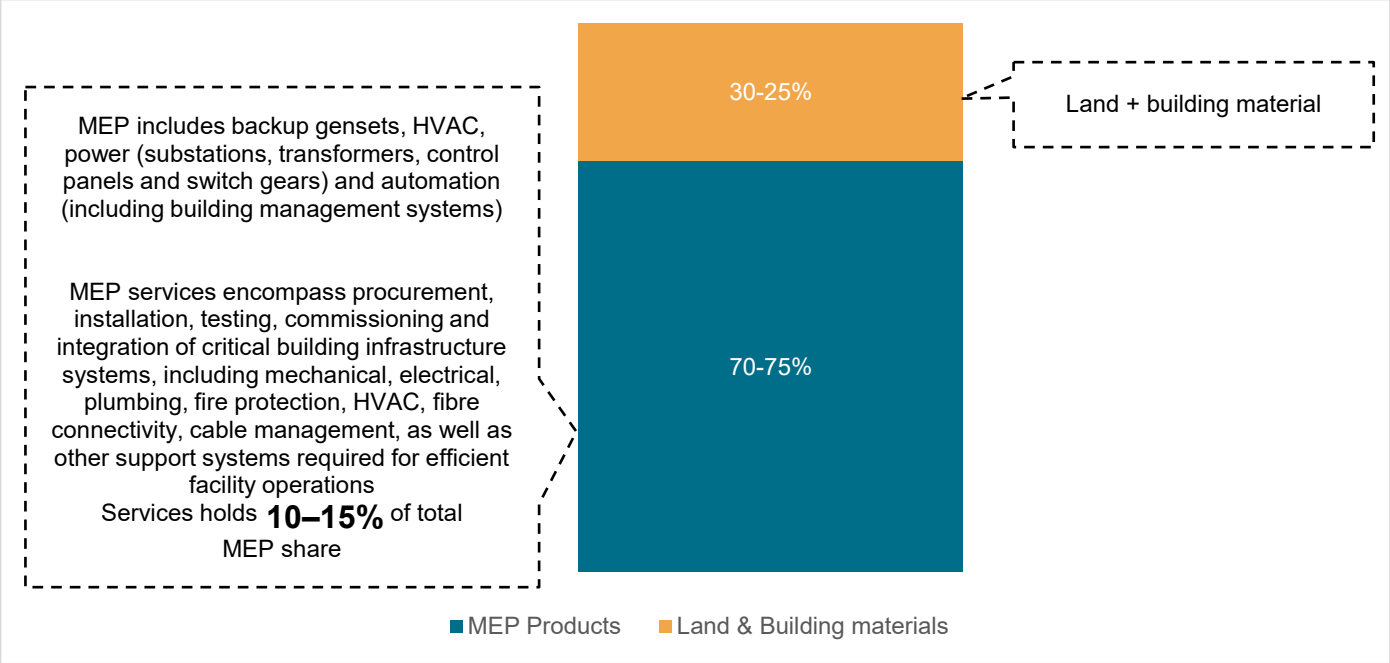
MEP infrastructure represents the largest cost component in data centre construction in India, accounting for approximately 70–75% of total project expenditure, while land and building-related costs constitute 25–30%. Unlike several developed markets in North America, Europe and parts of West Asia, where land values can represent a more significant portion of project costs, India's comparatively lower land acquisition costs result in a greater concentration of investment towards mission-critical infrastructure systems. Consequently, project economics are influenced more by power availability, network connectivity, reliability requirements and infrastructure specifications than just land costs.

MEP infrastructure includes power systems, substations, transformers, switchgear, UPS systems, cooling and HVAC equipment, fire protection systems, fibre connectivity, cabling infrastructure, automation platforms and building management systems. Given the uptime requirements associated with data centre operations, these systems are designed with multiple layers of redundancy, resulting in significantly higher infrastructure intensity compared with conventional commercial or industrial buildings.

The dominance of MEP expenditure underscores the infrastructure-led nature of data centre development. As facilities grow larger and operational requirements become more stringent, developers continue to allocate a substantial share of

project budgets towards resilient power distribution networks, thermal management infrastructure, monitoring systems and automation technologies. This creates significant opportunities for equipment manufacturers, EPC contractors and specialised MEP service providers involved in the engineering, procurement, installation, testing and commissioning of these critical systems.

MEP share in data centre construction industry in fiscal 2026



Source: Company reports, Crisil Intelligence

Growth of AI-driven data centres in India and its impact on MEP infrastructure

India is witnessing a structural transformation in digital infrastructure, driven by the rapid adoption of cloud computing, AI, GenAI, HPC, 5G rollouts and digital services. This transformation is creating unprecedented demand for large, high-density and power-intensive data centres across the country. As global hyperscalers continue to expand their AI and cloud platforms, India has emerged as a strategic hub due to its strong digital ecosystem, favourable regulatory environment, availability of talent and rapid enterprise cloud adoption.

Hyperscalers such as AWS, Microsoft Azure, Google Cloud and Meta are expected to increase their India footprint significantly over the next decade. AI-led workloads, particularly Graphiocs Processing unit (GPU) -based compute, model training, inferencing and HPC clusters require power densities far beyond traditional enterprise applications. These advancements necessitate sophisticated electrical systems, enhanced redundancy, advanced cooling integration and scalable power management architecture.

To meet this increasing demand, India's leading data centre developers and colocation operators, including Nxtra by Airtel, NTT Global Data Centres, AdaniConneX, STT GDC and CtrlS, are undertaking large-scale expansion plans. Capacity additions in India are projected to accelerate over the coming years, with multiple hyperscale campuses (50–200 MW) already under development.

This industry expansion directly increases the need for specialised electrical EPC partners with deep capabilities in high-voltage infrastructure, power distribution and complex commissioning.

The emergence of AI-driven data centres, particularly those designed for GenAI, HPC and GPU-based workloads, is transforming the scale, complexity and growth trajectory of the domestic MEP industry. These AI workloads require

significantly higher compute power, resulting in fundamental changes in how data centres are designed, engineered and executed. This shift is creating large, sustained, multi-year opportunities for the MEP sector.

Key factors impacting the MEP sector amid AI-driven data centre growth

Factor	Description

High power requirement	• Traditional enterprise data centres operated at 3–7 kW per rack. AI data centres demand 20–50 kW per rack, with some hyperscaler deployments exceeding 70 kW per rack
	• This increase in power density requires:
	  ○ Larger and more complex high-voltage and medium-voltage substations
	  ○ More sophisticated power distribution architecture
	  ○ High-efficiency UPS systems and energy storage
	  ○ Enhanced redundancy (N+1/N+N/Tier-IV)
	  ○ Extensive bus ducting and high-capacity cabling
	• These upgrades directly expand the scope, revenue potential and technical sophistication required from MEP contractors, especially electrical EPC companies. Electrical EPC becomes more mission-critical, larger in value and technically intensive—driving strong growth for specialised MEP players

AI drives accelerated expansion with hyperscalers adding greenfield projects	• The accelerated expansion of hyperscalers, such as AWS, Azure, Google, Meta and Oracle, is driving growth in the MEP industry. These companies are expanding at unprecedented speed to support AI workloads, with India becoming a preferred destination due to growing digital adoption, cost advantage, renewable energy availability and proximity to enterprise demand. Hyperscalers are driving larger campuses (50–200 MW), faster development cycles (12–18 months) and bigger phase-wise expansions • Each new hyperscale building requires huge electrical and mechanical packages, directly benefiting the MEP industry. This results in more greenfield and brownfield expansions, leading to more EPC contracts and a sustained order book for MEP companies
Complex cooling requirements increase mechanical scope	• The increasing complexity of cooling requirements is a significant trend in the AI data centre industry. AI workloads generate far more heat due to GPUs, requiring advanced cooling technologies such as liquid cooling, immersion cooling, direct-to-chip cooling, higher-capacity CRAC/CRAH systems, hybrid cooling architectures and chilled water systems with high redundancy • These technologies add substantial value to the mechanical side of MEP, increasing both complexity and ticket size of contracts. In fact, AI data centres increase the mechanical engineering scope by 2–3x
Shift towards energy efficiency and sustainability leading to more MEP innovation	• AI data centres have extremely high power consumption, often crossing power usage effectiveness (PUE) targets aggressively • This requires MEP partners to design high-efficiency power systems, energy-optimised cooling, renewable integration, smart building management systems (BMS) and energy monitoring, and heat recovery systems • With demand for advanced MEP engineering, design, commissioning and long-term maintenance increasing, MEP's role is transitioning from installation to long-term lifecycle energy management

Factor	Description
Higher capex per MW leading to a direct increase in EPC contract value	• AI data centres cost significantly more to build, with traditional data centres costing USD 5–7 million per MW, while AI-ready hyperscale data centres cost USD 8–10 million per MW • A major part of this increase is due to electrical augmentation, enhanced cooling, higher redundancy and specialised cabling and power systems. As a result, MEP's share of total project costs increases, making each project larger in size, leading to higher revenue and improved margins
Additional talent and capability requirement	• AI-ready data centres require skilled engineers in HV/MV systems, power electronics, cooling technology, automation and controls and energy optimisation. This results in higher value engineering, better margins, long-term repeat business and deeper customer engagement

Investments announced in the data centre industry

The data centre industry in India has experienced traction for investments in recent years, propelled by the country's growing digital economy, increasing internet penetration and the government's push for digital transformation. Real estate players, global private equity (PE) funds, domestic and global data centre operators, to name a few, are investing in data centres. India's vast population and rising demand for digital services have made the country an attractive market for data centre infrastructure development. Recent announcements made in the industry are as follows:

Key data centre projects in India

Project name	Capacity planned (MW)	Location	Project cost (Rs billion)	Project stage
AdaniConneX and Google AI Data Centre Campus	1,500	Visakhapatnam, Andhra Pradesh	1,600.00	Planning
Artificial Intelligence Data Centre (Adavivaram & Mudasarlova) Project_Raiden Infotech India,	1,000	Visakhapatnam, Andhra Pradesh	500.00	Under construction
Artificial Intelligence Data Centre (Rambilli) Project_Raiden Infotech India	1,000	Rambilli, Ankapalli, Andhra Pradesh	214.00	Under construction
Data Centre Park (Rangareddy)_CtrlS Datacentres	600	Chandanvelly Industrial Park, Ranga Reddy	100.00	Planning
AI Data Centre (Hyderabad)_NTT Global Data Centres and Cloud Infrastructure India Private Limited	400	Hyderabad, Telangana	105.00	Planning
Data Centre (Navi Mumbai) [ACXNMI-01]_AdaniConneX	400	Thane, Maharashtra	152.00	Under construction
Data Centre and Technology Park (Madhurawada and Kapulauppada)_Vizag Tech Park	300	Visakhapatnam, Andhra Pradesh	218.44	Under construction
Data Centre (Ellikatta)_Giridhari Build Estate	384	Ellikatta, Ranga Reddy, Telangana	83.50	Planning
Data Centre (Peddavedu)_Amazon Data Services	278	Ranga Reddy, Telangana	70.33	Planning

Project name	Capacity planned (MW)	Location	Project cost (Rs billion)	Project stage
Data Centre (Greater Noida) [Yotta Delhi Data Centre Park]	200	Greater Noida, Uttar Pradesh	70	Under construction
Data Centre (Ambattur) [HDCI Chennai Data Centre]	166	Chennai, Tamil Nadu	28	Planning
AI Data Centre (Nava Raipur) Rackbank Datacentres	100	Nava Raipur, Chattisgarh	10	Under construction

Note(s): List mentioned above is not exhaustive
Source: Projects today, Crisil Intelligence

Key growth drivers for, and challenges facing, the data centre industry

Growth drivers

Parameters	Overview
Supportive policy environment	India has positioned data centres as strategic digital infrastructure through a combination of central and state-level policy initiatives. The grant of infrastructure status to data centres has improved access to long-term financing and project viability for developers. In addition, several states including Maharashtra, Tamil Nadu, Telangana, Uttar Pradesh and Gujarat have introduced policies offering incentives such as capital subsidies, concessional land allocation, power tariff concessions and stamp duty exemptions for setting up data centres. These measures are supporting faster project execution, attracting domestic and international investments, and encouraging the development of large-scale data centre campuses across key markets.
Data localisation and regulatory requirements	Increasing emphasis on data sovereignty, cybersecurity and domestic data processing is driving the need for data centre infrastructure within India. The Digital Personal Data Protection (DPDP) Act has strengthened the focus on managing and safeguarding personal data, encouraging organisations to enhance domestic data storage and processing capabilities. Further, sector-specific regulations such as the Reserve Bank of India (RBI)'s data localisation guidelines for payment system operators and the Security and Exchange Board of India's requirements for maintaining critical financial and market infrastructure data within India, are supporting the demand for local hosting infrastructure. Combined with the rapid growth of digital payments, e-commerce, cloud computing and enterprise digitalisation, these regulations are increasing the requirement for domestic computing and storage capacity, thereby supporting sustained growth in hyperscale, colocation and enterprise data centres.
Rise in the usage of AI	The rapid evolution of GPU technology is revolutionising the global data centre industry, particularly in the realm of AI and machine learning (ML). The latest advancements in GPU technology are boosting processing speeds and enabling AI systems to train on larger and more complex datasets. This, in turn, is leading to substantial improvements in AI language models and accelerating innovation in the field. As this trend gains momentum in India, data centre operators are focusing on building facilities optimised for AI workloads. The Indian government is also fostering growth of the AI ecosystem through various policy initiatives. For instance, the IndiaAI Mission has allocated Rs 103 billion over a period of five years (From FY 25 to FY29) to support AI-related projects. All these factors are poised to create a fertile ground for the growth of AI in India, with data centres playing a vital role in supporting the compute-intensive requirements of AI workloads. As the demand for AI-ready infrastructure continues to rise, data centre operators are well-positioned to capitalise on this trend and support the development of innovative AI solutions in the country.

Parameters	Overview
Expansion of data centres in Tier 2 cities	India's leading data centre operators are expanding their footprint in Tier 2 cities, with a growing focus on establishing greenfield projects in these locations. Cities such as Bhubaneswar, Guwahati and Lucknow, which boast large and rapidly growing digital consumer bases, are emerging as attractive destinations for data centre investments. By setting up smaller, edge data centres in these cities, operators aim to reduce latency and improve customer experience. This trend is expected to continue over the medium term, with investments in edge data centres rising as operators seek to bring their infrastructure closer to their customers. One notable example of this trend is the announcement by Reliance Group to establish a massive 3 GW data centre capacity in Jamnagar, Gujarat, which represents the largest single-campus capacity announcement to date. This development underscores the growing importance of Tier 2 cities in India's data centre landscape and highlights the opportunities for growth and expansion in these emerging markets.
Rise in internet penetration	Internet subscriptions and data consumption have grown at a strong pace, reflecting rapid digital adoption across India. The total subscriber base has expanded significantly to ~1,093 million by fiscal 2026 from ~637 million in fiscal 2019, highlighting robust connectivity expansion, network infrastructure build-out and increasing digital access. Simultaneously, internet penetration has grown to ~77% in fiscal 2026 from 49% in fiscal 2019, underpinned by growing smartphone penetration, affordable data tariffs and rollout of 4G and 5G networks. This expansion reflects deeper digital inclusion, particularly across rural and semi-urban markets. The rise in data consumption per user, coupled with wider access to high-speed connectivity, is accelerating digital engagement across sectors.
Increasing investment from global operators and Investors	India is increasingly being recognised as a strategic destination for data centre investments, attracting substantial capital from global operators, technology companies, infrastructure investors and PE funds. Several international data centre operators, including Equinix, Digital Realty, CapitaLand, Princeton Digital Group and Bridge Data Centres, have either entered the Indian market or expanded their presence through greenfield developments, partnerships and acquisitions. The sector has also witnessed the formation of large-scale joint ventures and investment platforms such as AdaniConnex (Adani-EdgeConneX) and Digital Connexion (Digital Realty-Brookfield-Reliance), highlighting growing confidence in India's long-term data infrastructure demand. Simultaneously, PE and real estate investors are increasing their exposure to the sector through strategic investments and partnerships. Google's proposed $15 billion AI-focused data centre investment in Andhra Pradesh, Meta's partnership with Sify to develop a 500 MW facility, and TCS's plans to invest ~$6.5 billion to establish a 1 GW data centre platform over the next 5-7 years underscore the scale of opportunities. These investments are not only supporting capacity expansion but also accelerating the development of hyperscale and AI-ready infrastructure, positioning India as one of the fastest-growing data centre markets globally.
Competitive construction economics in India	India offers several structural advantages that support the growth of the MEP ecosystem: • Relatively lower engineering and labour costs • Large pool of skilled technical manpower • Growing domestic manufacturing ecosystem • Availability of electrical and mechanical equipment suppliers • Established contractor base These advantages improve project economics and enhance India's attractiveness as a regional data centre destination. Industry assessments also highlight India's favourable construction cost positioning relative to several Asian markets. This creates sustained demand for domestic MEP contractors, while also attracting international players seeking local execution partners.

Source: Crisil Intelligence

Challenges

Parameters	Overview
Speculative capacity	The data centre industry in India is witnessing a surge in investments, leading to an increase in speculative capacity. This means many data centres are being built without confirmed demand, resulting in unused capacities. This can lead to a cash flow mismatch, as the revenue generated from these unused capacities may not be sufficient to cover the operational expenses, including power consumption, maintenance and staffing. The increasing competition in the sector is expected exacerbate this issue, making it challenging for data centre operators to maintain profitability.
Pricing risks	Although switching data centre providers is generally complex and expensive, limiting customer churn, pricing pressure may still emerge due to increasing industry capacity, competition for new business, and the bargaining power of large enterprise and hyperscale customers. Consequently, operators may need to offer discounts or more attractive pricing during customer acquisition and contract renewal negotiations, potentially affecting revenue growth and profitability.
Import dependence	The data centre industry in India is heavily dependent on imported equipment, including servers, storage systems and networking gear. The "Make in India" initiative aims to reduce dependence on imported equipment and promote domestic manufacturing by incentivising local production, attracting investment from global equipment manufacturers, and fostering the development of domestic supply chains While this is a positive development, it may take time to achieve significant reductions in import dependence, and data centre operators must manage the risks associated with relying on imported equipment.
Technological innovation and security risk	The data centre industry is rapidly evolving, with new technologies and innovations emerging regularly. While this presents opportunities for growth and improvement, it also poses risks, particularly with regards to data security. Data centre operators in India must ensure they have sufficient data security in place to protect against cyber threats and data breaches. However, the rapid pace of technological change also means equipment and systems can become obsolete quickly, making it essential for data centre operators to stay up to date with the latest technologies and innovations.
Sustainability regulations may increase compliance and operating costs	While the regulatory environment in India remains supportive of data centre development through infrastructure status, policy incentives and investment promotion measures, increasing emphasis on sustainability is expected to create additional compliance requirements over the long term. Data centres are energy intensive, with significant power consumption, making them increasingly subject to scrutiny with regard to energy efficiency, renewable energy adoption, carbon emissions and environmental performance. As the industry scales rapidly and AI-driven workloads increase power intensity, operators may face stricter sustainability standards and reporting requirements, potentially increasing both capital and operating expenditures. Compliance with evolving environmental regulations will, therefore, become an important consideration for developers and operators seeking to maintain long-term competitiveness.
Water availability and resource constraints could impact expansion	The availability of water is emerging as an important consideration for data centre development, particularly in regions experiencing water stress. Many facilities utilise water-based cooling infrastructure, including cooling towers and heat rejection systems, which can lead to significant water consumption depending on the facility size, IT load, climatic conditions and cooling technology deployed. As data centre capacity expands, developers will need to carefully evaluate long-term water availability during site selection and project planning. Establishing large facilities in water-scarce regions could increase pressure on local water resources, potentially leading to regulatory restrictions, higher operating costs or limitations on future capacity expansion. Consequently, water sustainability, efficient cooling technologies and responsible resource management are expected to become increasingly important considerations for the sector.

Source: Crisil Intelligence

Key growth drivers for, and challenges facing, the MEP industry supporting data centre construction

Growth drivers

Parameters	Overview
Rapid expansion of data centre capacity in India	India's installed data centre capacity is expected to witness significant growth over the coming years, supported by increasing cloud adoption, digital transformation, AI deployments, 5G rollout and rising data consumption. Our assessments indicate that India's installed data centre capacity could increase to 4.8-5.2 GW by fiscal 2030 , from around 1.6GW to 1.7GW in fiscal 26, implying a substantial pipeline of greenfield developments and capacity expansions. As MEP systems constitute a significant share of overall data centre construction costs, every MW of new capacity directly translates into demand for electrical systems, cooling infrastructure, firefighting systems, plumbing networks, building automation systems and testing and commissioning services. Consequently, growth in data centre capacity is the single largest driver of demand for MEP contractors and solution providers.
Emergence of AI data centres and higher MEP intensity	The rapid adoption of AI is fundamentally changing data centre design requirements. AI workloads require substantially higher rack densities, power loads and heat dissipation compared with traditional enterprise or cloud workloads. Industry reports indicate a growing shift toward liquid cooling, advanced thermal management solutions and significantly higher power densities. For MEP companies, this creates opportunities beyond simple capacity additions. AI-focused facilities require: • High-capacity transformers and switchgear • Advanced cooling systems (liquid cooling, rear-door heat exchangers, immersion cooling) • Higher redundancy electrical architectures • Sophisticated building management systems (BMS) • Precision environmental monitoring systems • Enhanced testing and commissioning requirements As a result, the MEP cost per MW for AI-ready facilities is expected to be materially higher than for traditional data centres.
Growth in hyperscalers	Large hyperscale operators and colocation providers continue to dominate new capacity additions in India. These facilities typically range from tens to hundreds of megawatts and are constructed to meet stringent up-time requirements. Hyperscale developments usually involve: • Multiple utility substations • Extensive power distribution networks • Large-scale HVAC installations • Backup generation systems • Modular MEP deployments • Redundant fire protection infrastructure The larger scale and technical complexity of such projects increase both the volume and value of MEP work, benefiting companies capable of handling mission-critical installations.

Parameters	Overview
Adoption of modular construction and DfMA	Data centre operators are increasingly adopting design for manufacturing and assembly (DfMA), prefabricated MEP modules and modular construction techniques to reduce construction timelines and improve quality consistency. Growth in modular data centre construction increases demand for: • Prefabricated electrical rooms. • Skid-mounted cooling systems. • Modular piping solutions • Pre-engineered containment solutions • Factory-built MEP assemblies This shifts MEP companies toward higher-value engineering and manufacturing-led delivery models.
Rising focus on energy efficiency and sustainability	Power and cooling represent the largest operational costs for data centres. Consequently, operators are increasingly adopting: • High-efficiency chillers • Liquid cooling solutions • Free cooling systems • Renewable energy integration • Smart energy management systems • Water-efficient cooling technologies Industry studies highlight growing adoption of advanced cooling and sustainability-focused infrastructure. This trend creates recurring opportunities for MEP providers in design, retrofits, system upgrades and operational optimisation.

Source: Crisil Intelligence

Challenges

Parameters	Overview
Shortage of specialised mission-critical talent	Data centres require significantly higher engineering precision than conventional commercial, residential or industrial projects. However, India has a limited pool of professionals with expertise in mission-critical electrical systems, redundancy design, precision cooling technologies, liquid cooling solutions, commissioning, testing and BIM-led coordination. As hyperscale and AI-ready projects increase, competition for experienced engineers, project managers, commissioning specialists and digital design professionals is intensifying. The shortage of specialised talent often results in longer recruitment cycles, rising labour costs, project execution risks and inconsistent quality standards across projects. Since data centre developers place substantial emphasis on uptime, reliability and compliance, the availability of skilled manpower remains one of the most critical challenges for MEP contractors.
Supply chain dependency and long procurement cycles	While India's electrical and mechanical equipment ecosystem is expanding, several critical data centre components have limited domestic manufacturing capabilities. Specialised cooling systems, high-capacity UPS systems, control systems, monitoring platforms and certain mission-critical electrical components often depend on a small number of international suppliers. As a result, MEP contractors face procurement uncertainty arising from long lead times, import dependencies, logistics disruptions, customs delays and commodity price volatility. Since many data centre projects follow aggressive construction schedules, delays in delivery of critical equipment can significantly impact commissioning timelines and overall project profitability.

Parameters	Overview
Margin pressure amid increasing competitive intensity	The Indian data centre opportunity has attracted participation from large EPC companies, international engineering firms, specialist MEP contractors and regional execution players. While project volumes increase, the growing number of bidders has intensified pricing pressure across the industry. Many projects are awarded through competitive bidding, where contractors assume significant execution, procurement and escalation risks under fixed-price contracts. Material price fluctuations, labour cost inflation, design modifications and delayed approvals can further compress margins, making profitability management a key challenge despite strong market growth.
Working capital and cash flow constraints	Data centre projects typically require substantial upfront investments in procurement, mobilisation, manpower deployment and subcontractor management. However, payment cycles are often milestone-based and may extend over long periods, depending on project progress and client approval processes. Additionally, retention money, warranty obligations, performance guarantees and inventory holding requirements can put more pressure on contractor cash flows. These challenges are pronounced for mid-sized MEP players seeking to increase operations and participate in larger hyperscale developments.
Stringent quality, reliability and compliance requirements	Unlike conventional construction projects, data centres are subject to stringent uptime and reliability requirements. MEP contractors must comply with multiple international and domestic standards, while simultaneously meeting project-specific technical specifications established by hyperscale operators, cloud service providers and colocation companies. Extensive testing, validation, integrated systems commissioning and documentation requirements increase project complexity and execution costs. Any deficiencies discovered during commissioning can result in delays, rework, contractual penalties and reputational risks, making quality management a critical differentiator for MEP companies.
Rapid technology evolution and capability upgradation	Data centre technologies are evolving at a rapid pace, driven by advancements in server architecture, cooling technologies, energy management systems and automation platforms. MEP contractors are required train, design capabilities, software tools and strategic partnerships to meet evolving customer requirements. The challenge lies not only in acquiring new technical expertise but also in ensuring organisations can successfully execute projects incorporating next-generation technologies without affecting project quality, reliability or timelines. Companies that fail to upgrade capabilities may face difficulties in qualifying for premium or technologically advanced projects.

Source: Crisil Intelligence

Key state-level policies supporting the data centre industry

State	Overview
Gujarat – Viksit Gujarat Data Centre Policy 2026–29 **Launched: July 9, 2026 (first dedicated policy)**	**Target:** The policy aims to attract Rs 6 trillion in investment and create 7.5 GW of data centre capacity over the policy period, with a strong focus on hyperscale and AI-ready infrastructure. Dholera has been positioned as the primary hub, and the state has already received interest from 14 investors. **Power incentives:** Eligible projects receive a Rs 1 per unit power tariff subsidy for 20 years, along with 100% reimbursement of electricity duty for the same period. **Fiscal incentives:** The policy offers a 2.5% capital subsidy on eligible fixed capital investment (with additional benefits in Dholera), up to 4% interest subsidy for 10 years (subject to an annual cap of Rs 250 crore) and 100% state GST reimbursement on plant and machinery, buildings, infrastructure, and operational services. Full exemption from stamp duty and registration charges is also provided. **Land and building incentives:** Relaxed building norms, additional Floor Space Index (FSI) and rooftop utility permissions are offered. **Green and sustainability:** Projects must source at least 51% of their electricity from renewable energy sources. Financial assistance is available for captive desalination plants (20% of eligible capex or Rs 20 million per million lire per day). **Non-fiscal support:** Single-window clearances with dedicated nodal officers, dual power supply, open access and 24×7 water supply assurance.
Uttar Pradesh – Data Centre Policy 2026 **Approved: July 2026 (replaces the 2021 policy)**	**Target:** The policy targets more than Rs 2 trillion in investment and addition of 2 GW of new data centre capacity. It aims to create ~7,500 long-term direct jobs and nearly 50,000 short-term construction jobs while positioning Uttar Pradesh as a green and AI-ready data centre hub. **Key focus areas:** Special emphasis has been placed on GPU-based infrastructure, energy efficiency, Tier/Rating-3 and Tier-4 data centres, and AI compute capabilities. **Incentives:** The policy provides AI Compute Booster incentives, Green and Sustainable Operations incentives and additional benefits for projects located in the Bundelkhand and Purvanchal regions to promote balanced regional development. It builds on the success of the previous policy under which seven projects have already become operational.
Haryana – Data Centre Policy 2026 **Notified: May 2026**	**Target:** The policy aims to attract around Rs 100 billion in investment over five years to boost digital infrastructure and cloud computing capacity in the state. **Power incentives:** Data centres have been granted essential service and infrastructure industry status. Dual-grid electricity supply is provided to ensure high uptime and reliability. **Fiscal incentives:** Hyperscale data centres (above 10 MW) are eligible for 20% capital assistance (capped at Rs 250 million per unit) and 50% operational assistance (up to Rs 80 million annually). Core data centres receive 10% capital assistance and 30% operational assistance. Data centre parks get 20% capital reimbursement (capped at Rs 150 million), along with a 5% interest subsidy on term loans. **Land and building incentives:** Floor area ratio (FAR) relaxation of up to 500%, ground coverage of 60% and no restrictions on building height are permitted to support high-density development. **Non-fiscal support:** Fast-track approvals and single-window facilitation are available. The policy is aligned with Haryana's broader push to attract global capability centres in the Gurugram-NCR region.
Maharashtra – Integrated Green Data Centre Parks Policy (Expanded 2026)	**Target:** The state has a massive pipeline of ~Rs 16.69 trillion across 44 projects and aims to develop 30-40 GW of green energy-based data centre capacity by 2047 under its long-term vision. **Power incentives:** Integrated green data centre parks with Rs 300 billion investment receive Rs 1 per unit electricity tariff subsidy for 10 years. Parks with Rs 600 billion or more investment get the same subsidy for 20 years.

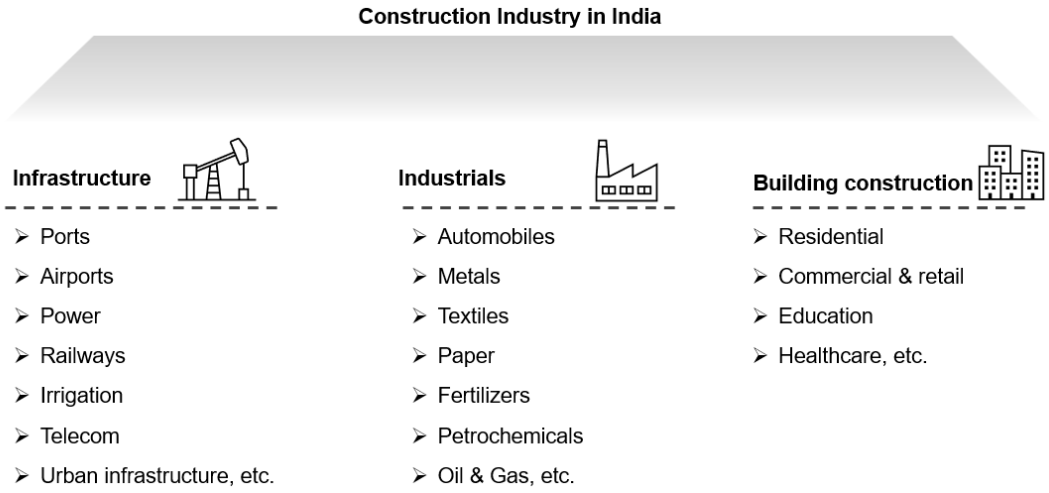
State	Overview
	Fiscal incentives: Parks investing Rs 600 billion or above are eligible for an industrial promotion subsidy equivalent to 75% of eligible fixed capital investment and a 4% interest subsidy on term loans for 10 years (capped at Rs 250 million annually). **Key changes in 2026:** The number of eligible parks has increased from 3 to 20, and the policy has been expanded from the Mumbai Metropolitan Region to the entire state. The mandatory green power requirement for core operations has been relaxed from 100% to 51%. Cumulative investment by landowners, developers and units is now considered for eligibility.
Tamil Nadu – Data Centre Policy 2021 (Active)	**Eligibility:** Minimum investment of Rs 5 billion with at least 30% renewable energy consumption to avail full power benefits. **Power incentives:** 100% electricity tax waiver for five years on power purchased from TANGEDCO or generated through captive sources. 50% concessional open-access charges and dual power supply from two different grids for a sanctioned load of 50 MW and above (additional feeder for loads above 100 MW) are provided. Reduced cross-subsidy surcharge applies to renewable power. **Land and fiscal incentives:** Stamp duty concession of 50% in A/B districts and 100% in C districts. Land cost subsidy of 50% is available in Category C districts. IT/ITeS FSI parity and building flexibility are offered.
Telangana – Data Centres Policy + TS-iPASS Framework	**Target:** Strong focus on execution with significant capacity growth in Hyderabad and plans for a dedicated data centre city spread over 1,500 acres. **Power and reliability incentives:** Dual power grids are mandated for resilience. Data centres are declared essential services with exemption from statutory power cuts and access to up to 100% renewable energy at subsidised tariffs. **Fiscal and land incentives:** 100% stamp duty and registration fee reimbursement is provided. Land costs are generally 40% lower than in other major metros. Capital subsidies and customised packages are available for mega projects through TS-iPASS negotiation.
Karnataka – IT Policy Incentives for Data Centres	**Framework:** Specific incentives provided under the Karnataka IT/ITeS Policy. **Power incentives:** 100% electricity duty exemption for five years from the date of commercial operation. Green power tariff reimbursement of Rs 0.50 per unit is available for consumption of above 50% renewable energy (for five years, subject to caps). Industrial power tariff (instead of commercial) is applicable if the project maintains a minimum 30% green energy component. **Land incentives (outside Bengaluru Urban district):** 100% exemption on land conversion fees from agriculture to industrial use. 100% stamp duty exemption up to 10 acres and 10% land subsidy (capped at Rs 30 million) are provided. **Capital incentives (outside Bengaluru):** One-time 7% capital subsidy up to Rs 100 million on the value of fixed assets (excluding land and building).

Note: This list is not exhaustive.
Source: Crisil Intelligence

Overview of the construction industry in India

The industry can be broadly categorised into three main segments—infrastructure, industrial and building construction. The infrastructure segment encompasses projects such as ports, airports, power plants, railways and irrigation systems, which are crucial for the country's economic growth and development. This segment has witnessed significant investment in recent years, with the government launching several initiatives to improve the country's infrastructure, including Bharatmala Pariyojana for road development, Sagarmala for port development and UDAN for regional airport development.

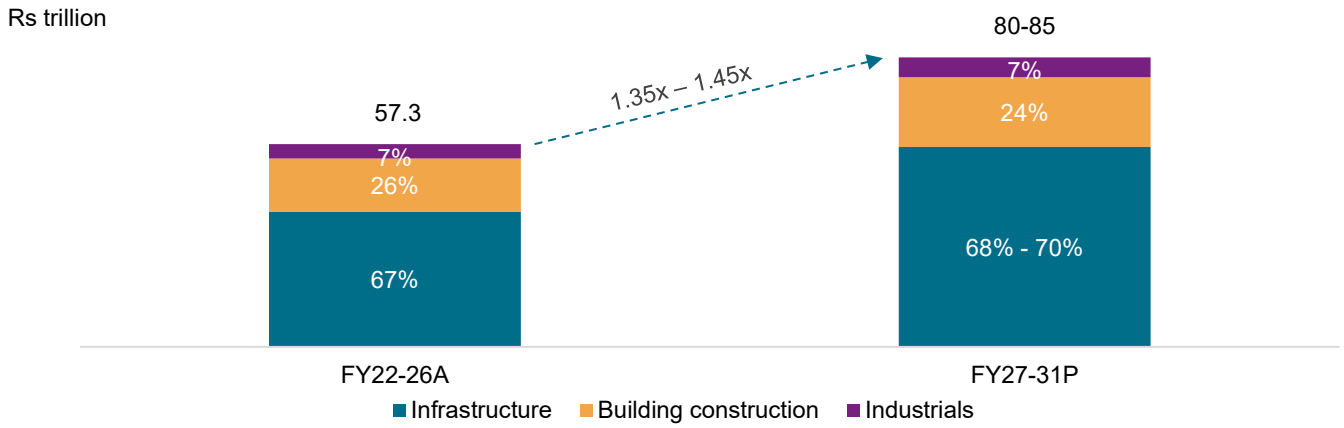
Structure of the Indian construction industry



Note: For this report, the focus segments are industrials and building construction.
Source: Crisil Intelligence

The construction industry in India is expected to grow a steady 5-7% on-year annually between fiscals 2026 and 2031, driven by increased spending on infrastructure projects such as roads and railways, supported by both central and state government investments.

Break-up of the domestic construction sector



A – actual; P – projected
Note: Numbers in the chart above represent cumulative investments for the specific period.
Source: Crisil Intelligence

Building construction to grow 1.2-1.3x between fiscals 2027 and 2031

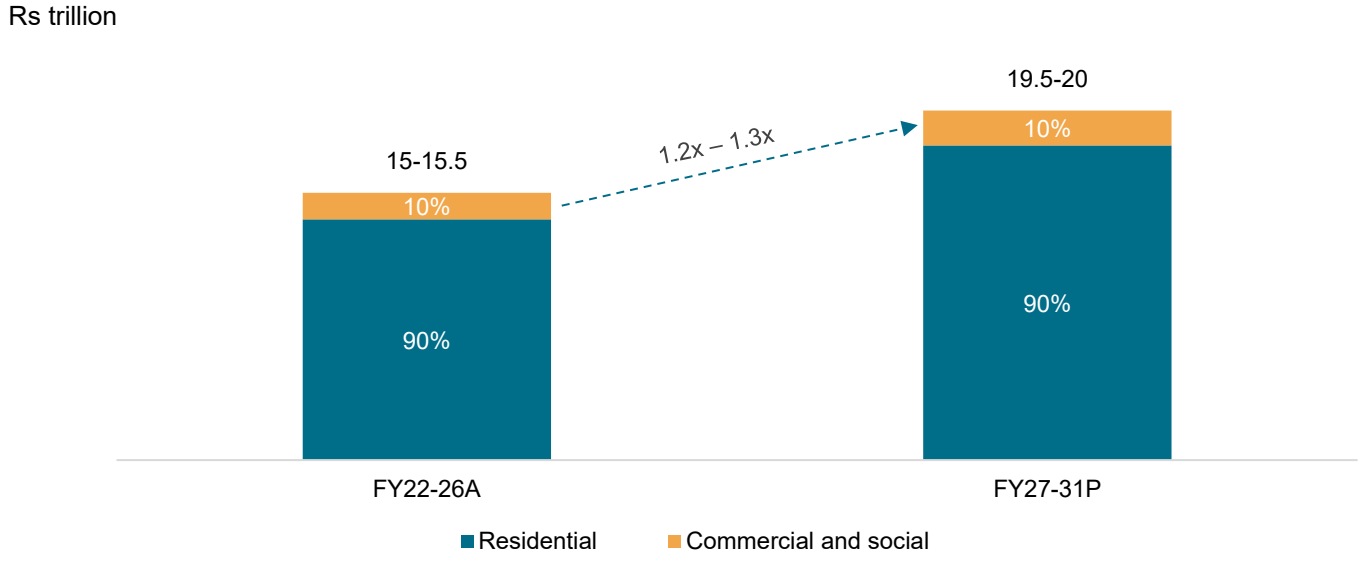
The building construction segment is largely dominated by investments in the residential real estate space with a share of ~90% as of fiscal 2026. Long-term investment in building construction is projected to increase at an average annual rate of 3-5% between fiscals 2027 and 2031, in line with growth in residential demand.

One of the primary drivers of growth in the building construction segment is the office sector, which saw a significant surge in gross leasing between January and September 2024. This represents a significant increase compared with the same period in 2023. The demand for office space is driven by both global and local occupiers, who are expanding their operations and consolidating their facilities to enhance their market presence.

Technology companies are leading the charge, accounting for one-fourth of total office leasing, followed by flexible space operators and banking, financial services and insurance (BFSI) firms. India's top office markets have experienced a notable surge in rentals, driven by robust demand and the simultaneous infusion of high-end, quality supply. After a dip during the pandemic, rentals have seen considerable growth since 2024, surpassing pre-pandemic levels.

The growth in the office sector is expected to continue, with investment in office spaces projected to increase 1.2-1.3x between fiscals 2027 and 2031, driven by the growing demand for quality office spaces and their limited supply in key markets. As a result, the building construction segment is likely to see significant activity in the coming years, aided by the office sector's strong growth prospects and increasing demand for commercial and social infrastructure construction.

Share of major segments in building construction spending (%)



A – actual; P – projected
Source: Crisil Intelligence

Share of MEP in building construction

The building construction industry in India encompasses a wide range of activities, including the construction of residential homes, commercial offices, retail outlets, educational institutions and healthcare facilities. Within this industry, the MEP segment plays a crucial role in transforming skeletal frames into welcoming environments that are tailored to the needs of their occupants. In Indian commercial building construction encompassing GCCs, offices, malls and hospitals, MEP systems typically constitute one-third to nearly half of total project costs. This significant share underscores their pivotal role in ensuring operational reliability, occupant comfort, energy efficiency, and adherence to stringent building codes in high-density, technology-driven environments.

The MEP proportion increases due to rising project complexity, such as high-rise designs requiring advanced HVAC zoning, escalators or medical gas systems in hospitals; sustainability and regulatory pressures mandating green certifications, renewable integration and smart automation; material and supply-chain volatility, especially for imported chillers, transformers or copper wiring; and design or coordination inefficiencies that lead to costly rework and delays.

Conversely, the MEP share can be reduced through proactive design optimisation using BIM for clash-free coordination, along with local sourcing and modular prefabrication to minimise on-site labour and waste. Further cost and schedule control can be achieved with simplified yet effective system configurations, robust procurement and project management, and economies of scale in large-scale or standardised developments, where bulk purchasing and shared infrastructure reduce per-unit expenses.

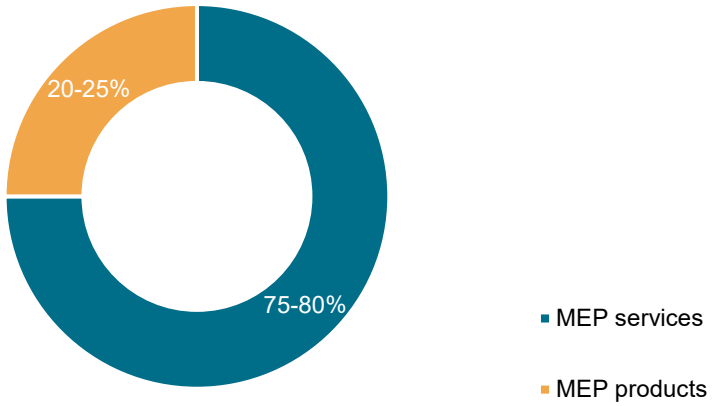
In India, MEP systems accounted for an estimated 20-25% of the total capex for building construction in fiscal 2025. The primary drivers of MEP are expected to be office spaces, retail spaces and high-rise residential apartments. However, the overall share of MEP costs is anticipated to remain relatively low due to the dominant presence of low-rise residential apartments and independent housing in India's building construction sector, which tend to have lower MEP requirements.

Share of MEP in overall building construction is in the range of 20-25% (fiscal 2026)

Residential (>12 floors)	**30-35%**	• Key contributors to this cost include elevators, pressurized fire suppression and smoke control systems, vertical risers for plumbing, HVAC, and electrical systems, centralized HVAC with energy recovery, and smart metering systems. • These components, along with sustainability features like solar integration, collectively drive the majority of the costs in this segment
Residential (<12 floors)	**15-20%**	• MEP cost is relatively lower due to simpler setups. • The key components driving this cost include basic HVAC systems, standard plumbing, electrical wiring, and minimal fire systems. • Adding green features like rainwater harvesting or LED lighting can increase costs, the overall lower complexity of these systems results in reduced coordination and prefabrication needs, keeping the MEP cost relatively lower
Office Space	**35-40%**	• For office spaces, particularly those in the GCCs sector, MEP costs are notably high due to the tech-heavy requirements. • Major drivers include redundant electrical systems, advanced HVAC with variable air volume (VAV) zoning and air quality sensors, smart lighting and plumbing, and specialized fire suppression systems. • Additionally, the need for LEED or IGBC certifications, which require energy modeling and BIM, further adds to the cost. With high occupant density and 24/7 operations, these spaces demand robust and reliable system.
Retail Space	**25-30%**	• MEP costs are significantly higher due to the need to accommodate large public occupancy. • Major cost drivers include extensive HVAC systems, elaborate lighting, escalators, and elevators, as well as advanced fire life safety systems and integrated building management systems (BMS), and compliance with the National Building Code (NBC). • These complex systems, combined with high energy demands and the need for premium materials and IoT sensors.
Others	**25-30%**	• The complexity and specialized nature of these systems, including HVAC, medical gases, and VAV systems, drive up costs. • Additionally, the need for infection control, efficiency, and accreditation in healthcare facilities, as well as the importance of creating a safe and healthy learning environment in schools, also contribute to higher MEP costs..

Source: Crisil Intelligence

Share of MEP services vs MEP products in building construction (fiscal 2026)



Source: Crisil Intelligence

Overview of the GCC landscape in India

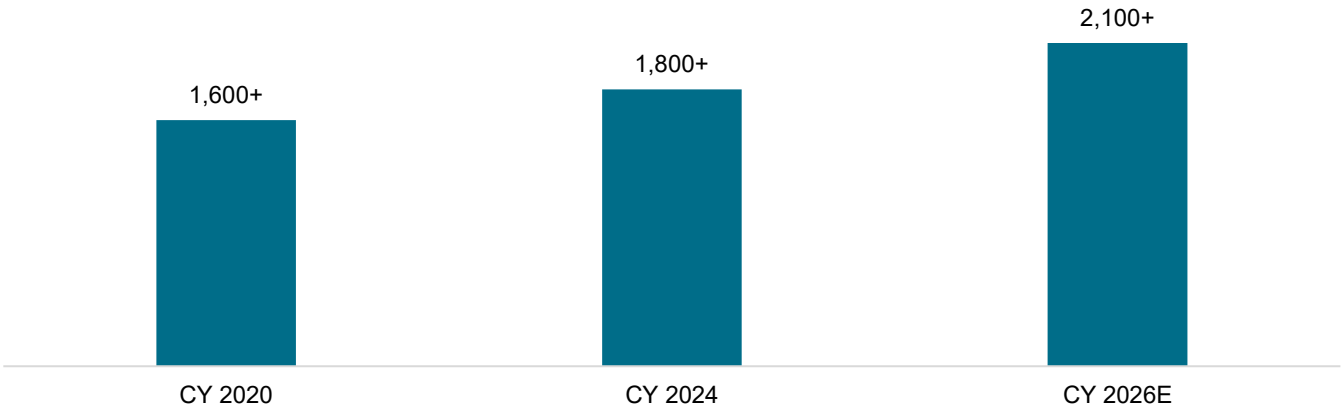
India is emerging as a favourable destination for GCCs

Global capability centres (GCCs) are wholly owned offshore centres established by multinational corporations to perform strategic, technology, engineering and business support functions for their global operations. India has emerged as the preferred destination for GCCs owing to its large talent pool, strong digital ecosystem, cost competitiveness and mature services infrastructure. Over the past three decades, GCCs in India have evolved beyond their traditional role as cost-arbitrage centres into integral contributors to enterprise-wide innovation, product development, research and development (R&D), analytics, cybersecurity and digital transformation initiatives. Today, these centres function as strategic extensions of global headquarters, driving operational excellence and creating intellectual property, while supporting critical decision-making across the enterprise.

The Indian GCC landscape has witnessed robust growth, with the number of centres increasing from ~1,600 in calendar year 2020 to over 1,800 in 2024 and expected to exceed 2,100 by the end of 2026. This reflects continued confidence among multinational corporations in India's capabilities. The sector is led by software and internet companies, followed by BFSI, industrial, automotive, telecom and engineering-focused organisations, highlighting the broadening scope of activities being undertaken from India. Furthermore, GCCs are no longer concentrated solely in traditional IT functions; they increasingly undertake high-value activities such as AI and machine learning, advanced engineering design, cloud architecture, digital product development and global R&D, reinforcing India's position as a global innovation and capability hub.

From a geographical perspective, GCC investments are predominantly driven by corporations headquartered in the Americas, followed by Europe and Asia Pacific, underscoring India's strategic importance within global operating models. The ecosystem comprises both brownfield GCCs, which continue to expand and optimise existing operations, and greenfield GCCs, which are being established by new entrants seeking to leverage India's skilled workforce and business environment. Going forward, the increasing adoption of digital technologies, AI-led transformation, engineering R&D, and the need for resilient global operating models are expected to further accelerate GCC expansion in India. This will strengthen India's role as a key destination for multinational corporations seeking to centralise high-value, knowledge-intensive functions.

GCCs in India



Source: Nasscom, PIB, Crisil Intelligence

Some recent investments in the GCC space in India

- Brookfield is investing more than $1 billion to develop Asia's largest GCC campus in Powai, Mumbai. Spread across approximately 2 million sq ft on a 6-acre site, the project is expected to be completed by 2029 and will reportedly serve as the GCC hub for a leading multinational bank through a 20-year lease agreement
- AstraZeneca expanded its global hub in Bengaluru with an investment of Rs 166 crore. The expansion adds capacity for 1,300 employees, including 400 new roles with a strong focus on AI-driven innovation in R&D, global business services, IT and digital health
- Medtronic set up a GCC in Pune exclusively for its diabetes operations. The company plans to invest $50 million over five years, hire over 300 for service and software jobs in the first year and double the workforce in subsequent years
- DAZN announced a facility in Hyderabad with an investment of Rs 500 crore over three years. It is expected to create more than 3,000 jobs by the end of 2026, focusing on sports technology, global operations and innovation
- Vanguard expanded its presence in Hyderabad and plans to hire 2,500 professionals. A new permanent facility was inaugurated in November 2025, centred on AI, cloud engineering, data analytics and technology capabilities
- UBS undertook a major expansion in Hyderabad, targeting more than 3,000 new hires over two years in areas such as AI, technology, finance and operations
- Sanofi expanded its operations in Hyderabad with an investment of €400 million. The company aims to grow to over 2,600 employees by 2026, focusing on digital transformation, data science and global clinical operations
- Rakuten committed at least $100 million to expand its India operations, primarily in Bengaluru, with an 8% increase in workforce to support technology, infrastructure and global business functions
- Other notable activity includes new or expanded GCCs by companies such as LPL Financial and HCA Healthcare in Hyderabad, along with scaling up by media and advertising groups such as WPP, which is significantly growing its India GCC capabilities with a strong AI focus

State policies supporting GCCs

Policy	Overview
Karnataka GCC Policy 2024-2029	It aims to attract 500 new GCCs, create 3.5 lakh jobs and generate $50 billion in economic output by 2029. The policy focuses on expanding GCCs to tier-II/III cities (Mysuru, Mangaluru, Hubballi, etc) through targeted incentives; offers capital, operating expenses (opex) and payroll subsidies; fast-track clearances; and runs the Nipuna Karnataka skilling programme for deep-tech talent. The policy emphasises R&D, AI and global innovation mandates.
Maharashtra GCC Policy 2025	The policy targets around 400 new GCCs with a strong push into tier-II/III cities such as Nagpur, Nashik and Chhatrapati Sambhajinagar. It provides capital subsidies, rental assistance (10–20% for 5 years), payroll subsidies (with diversity incentives), power tariff benefits and support for patents and green certifications. The policy is designed to position the state as a leading hub for high-value GCC operations and is projected to attract significant investment and create nearly 4 lakh jobs.
Haryana GCC Policy 2026	It offers tiered capex and opex support, with higher incentives for locations outside Gurugram and in transit-oriented development zones. Key features include local employment subsidies of Rs 1 lakh per employee per year for up to 10 years for GCCs where at least 15% of the workforce comprises Haryana-domiciled employees; research and development (R&D) incentives of up to Rs 50 crore; 100% Employees' Provident Fund (EPF) reimbursement through the Haryana Kaushal Rozgar Nigam (HKRN); and binding timelines for incentive disbursement. The policy targets the establishment of more than 100 new GCCs and the creation of over 30,000 jobs, while promoting balanced regional development and ease of doing business through an AI-enabled single-window system.
Uttar Pradesh GCC Policy 2024-2029	The policy focuses on attracting large-scale GCC investments through differentiated land subsidies (30–50%, higher in backward regions), capital subsidy up to Rs 25 crore, opex support up to Rs 40–80 crore per year for 5 years and payroll subsidies with incentives for local and women hiring. It promotes cluster development in Noida, Lucknow and other emerging hubs, with a strong emphasis on domicile employment and integration with national security and economic priorities.
Gujarat GCC Policy 2025-30	It aims to attract 250+ new GCCs, generate 50,000 jobs and draw over Rs 10,000 crore in investment. It offers substantial capex support (up to Rs 200 crore), opex assistance, local hiring incentives, skill development reimbursements, electricity duty exemption and EPF support. The policy leverages the GIFT City ecosystem and focuses on high-value areas such as AI, fintech, analytics and R&D.
Andhra Pradesh IT & GCC Policy 4.0	The policy provides job creation subsidies (up to Rs 3 lakh per hire), rental support, power tariff discounts and the LIFT land incentive scheme. It offers tailor-made packages for large projects (2,000+ jobs or 1 million+ sq ft) and focuses on developing Visakhapatnam and other locations as GCC hubs through plug-and-play infrastructure and employment-linked incentives.

Note: List is not exhaustive
Source: Crisil Intelligence

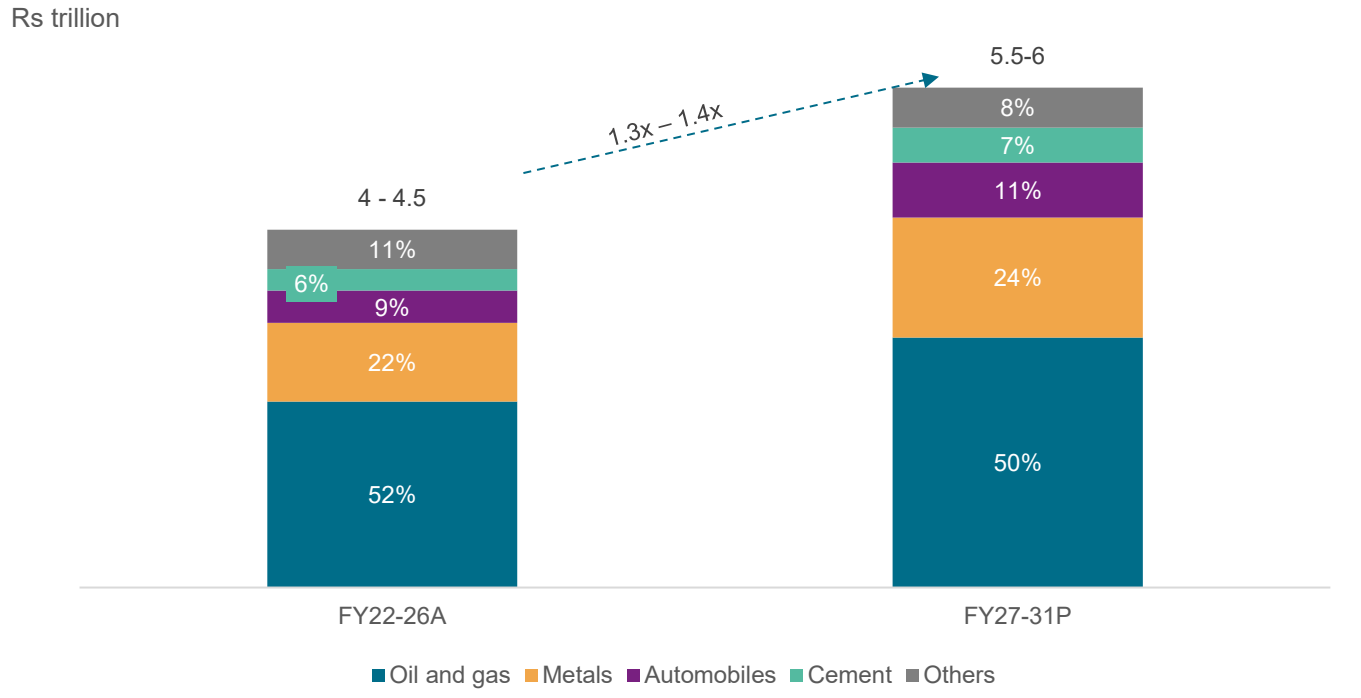
Investments in oil and gas to drive the industrial construction sector

Capex in industrial construction is expected to be driven by the oil and gas sector, led by investments in refining and marketing, followed by contributions from the metal, automobile and cement sectors. The capex peaked in fiscal 2025 due to a sharp increase in investments in the automobile sector, alongside sustained momentum in the oil and gas and metal segments. However, capex is expected to have eased in fiscal 2026 and fiscal 2027, too, as investment activity reverts to more sustainable levels following the elevated spending seen in fiscal 2025.

Based on an analysis of eight key sectors, between fiscals 2027 and 2031, we estimate construction investment in the industrial segment to rise 1.3–1.4 times from the levels seen in fiscals 2022–2026 to around Rs 5-5.6 trillion. Investment growth is expected to be led by the metal sector, where upcoming capital expenditure will largely focus on brownfield expansion aimed at enhancing production capacities and improving operational efficiencies. Furthermore, the growth is driven by capacity addition in refineries. In fiscal 2026, India's refining capacity was 258 (million metric tonne per annum) MMTPA. During fiscals 2026–2030, 30–50 MMTPA of refining capacities are expected to be commissioned, taking the capacity to 290–310 MMTPA. The rise in investments is expected to be driven by the inclusion of the Production Linked Incentive (PLI) scheme in the capex of the industrial sector.

While the PLI scheme entails 13 sectors, we have only considered auto and auto components, textiles and specialty steel three capex-intensive sectors in our estimates.

Share of spending on industrial construction in major segments



A – actual; P – projected
Source: Crisil Intelligence

Overview of MEP in the industrial construction segment

The share of mechanical, electrical and plumbing (MEP) in industrial construction is expected to be 40–45% by fiscal 2025, with the oil and gas segment being the primary driver. This sector is anticipated to account for approximately 55% capex of the industrial construction segment, and it has a particularly high MEP share of 50-55%.

The high MEP costs in oil and gas can be attributed to the requirement of complex and specialised systems such as high-pressure lines, compressors, substations, Supervisory Control and Data Acquisition (SCADA) systems and cooling water. Furthermore, factors such as remote or offshore logistics, the need for flares and safety redundancies, and the requirement for 24/7 uptime and reliability also contribute to the high costs, making the oil and gas sector a significant contributor to the MEP share in industrial construction.

This share can also be attributed to the high demand for electrical equipment, precision mechanical equipment and other specialised systems that are essential for the smooth operation of industrial facilities. The increasing complexity of industrial processes and the need for efficient and reliable systems have led to a growing requirement for advanced MEP solutions. Furthermore, the rising adoption of automation and technology in industries such as automobiles, metals and petrochemicals has resulted in a higher demand for specialised electrical and mechanical equipment, thereby driving up the MEP share in industrial construction.

The MEP component is typically even higher in newer and sunrise sectors such as semiconductor fabrication facilities, electronics manufacturing, battery gigafactories, EV component plants and other advanced manufacturing setups. These facilities require highly controlled operating environments—including cleanrooms, ultra-pure water systems, precision HVAC and filtration systems, process gases, advanced automation, real-time monitoring and stringent quality-control infrastructure—to maintain product consistency and yield. Additionally, the need for uninterrupted power supply, redundant utility systems, environmental controls and compliance with global manufacturing standards increases the complexity and cost contribution of MEP services.

As India expands its footprint in high-tech manufacturing under initiatives such as semiconductor and advanced electronics production, MEP systems are expected to account for a significant share of project costs when compared with conventional industrial facilities.

The MEP share increases with process complexity and integration, such as extensive process piping, instrumentation and control systems in refineries and petrochemical plants; high-power and reliability demands requiring robust substations, backup generators and heavy-duty cabling in metals and fertilisers; automation and safety systems including SCADA, fire and gas detection and explosion-proof installations; and environmental and regulatory compliance mandating emissions control, effluent treatment and energy-efficient utilities. Supply chain dependencies on specialised, often imported, components also elevate costs.

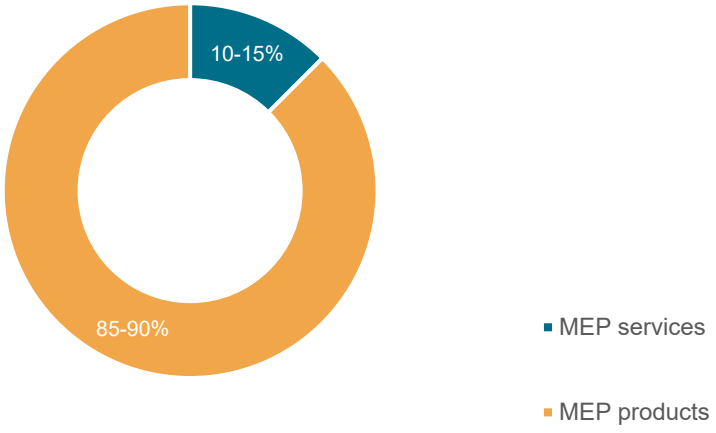
Conversely, the MEP proportion decreases through the use of pre-engineered buildings (PEB) and modular construction that simplify structural and utility interfaces; local sourcing and standardization of electrical panels, motors and piping materials; optimised design and value engineering to eliminate over-specification in non-critical areas; strong EPC project management ensuring phased procurement and minimal rework; and economies of scale in large greenfield projects where shared infrastructure such as central utilities, substations or cooling towers serves multiple units efficiently.

Share of MEP in industrial construction capex to be 35–40% (fiscal 2026)

Oil & Gas	**50-55%**	• Major cost drivers include mechanical and piping systems, due to the need for high-pressure lines and compressors. Electrical and instrumentation systems, including substations and SCADA, are the second most costly segment, while plumbing systems, such as cooling water, etc. accounts for rest. • The high costs are further driven by remote or offshore logistics, flare and safety redundancies, and the need for 24/7 uptime and reliability, which also drives the cost higher
Pharmaceutical	**40-45%**	• Major cost drivers include mechanical and HVAC systems, due to the need for HEPA clean air systems. • Electrical systems, and plumbing systems, such as pure water and steam, account for a significant portion. • The high costs are further driven by the need for sterile validation and commissioning, high-purity systems like RO/DI water, and biosafety loads that require 2-3 times more power than office spaces, which also drives the cost higher.
Cement	**30-35%**	• Major cost drivers include mechanical systems, due to the need for kilns and grinders. Electrical systems, including high-HP motors, plumbing systems, such as slurry lines, account for a smaller portion. • The costs are further driven by the need for dust and HVAC controls, waste heat recovery, and raw material grinding energy.
Metals	**30-35%**	• Major cost drivers include mechanical systems, due to the need for furnace casting, Electrical systems, including arc power and substations, are primary drivers, while plumbing systems, such as cooling, account for other major segments. • Costs are further driven by the need for electrification and green hydrogen, high-voltage demands for arc furnaces, and melting heat loads, which also drives the cost higher.
Automobiles	**25-30%**	• Major cost drivers include mechanical and HVAC systems, due to the need for paint booths and conveyors. Heavy power electrical systems required for shop floor machinery including robotics, and plumbing systems, such as body shop water, and etc. • The high costs are further driven by the need for battery testing, automation zoning, and robotics, which also drives the cost higher, although lean prefab approaches can provide some offsets

E – estimated
Source: Crisil Intelligence

Share of MEP services vs MEP products in industrial construction



Source: Crisil Intelligence

Overview of the electrical panel market in India

An electrical panel (also referred to interchangeably as an electric control panel, switchboard or switchgear panel assembly) is a metal-enclosed, modular assembly of electrical components, circuit breakers, busbars, contactors, relays, meters, surge protective devices and protection relays that receives, distributes, controls and protects the flow of electrical power from a source (utility, transformer, generator or renewable plant) to downstream loads. In the Indian construction and MEP space, electrical panels form the backbone of power distribution and motor control in industrial plants, commercial real estate, infrastructure projects, data centres, healthcare facilities and residential complexes.

Key components of an electrical panel

Component	Description
Enclosure/cubicle	Made of 14/16 Standard Wire Gauge (SWG) and Cold Rolled Close Annealed CRCA sheet steel (or engineered plastic for low-rating panels), powder-coated through a 7-tank pre-treatment process, with IP54/IP65/IP66 protection depending on indoor or outdoor use
Busbars	Copper or aluminium conductors that distribute current within the panel, sized to the rated current (typically 100A up to 6,300A) and short-circuit withstand level (commonly 50–80 kA)
Switching and protection devices	Air circuit breakers (ACBs), moulded case circuit breakers (MCCBs), miniature circuit breakers (MCBs), residual current devices, motor protection circuit breakers, changeover switches, fuses and contactors
Control and measurement devices	Multifunction meters, current transformers (CTs), potential transformers (PTs), digital protection relays, timers, push buttons, indicator lamps, selector switches and HMIs
Automation and communication elements	PLCs, VFDs/AC drives, soft starters, communication gateways (Modbus, Profibus, IEC 61850), surge protective devices and energy management modules in smart panels
Internal wiring and accessories	FRLS-grade control cables, terminal blocks, ferrules, cable glands, earthing bars, and labelling, engineered to maintain electrical and mechanical safety per IEC/IS standards

Source: Crisil Intelligence

Types of low voltage electrical panel

Components	Description	Applications
Power control centre (PCC) panels	Used for distribution of electrical power to feeders and load centres, generally equipped with circuit breakers and metering instruments	• Industrial plants • Commercial buildings • Data centres • Infrastructure projects
Motor control centre (MCC) panels	Centralised assemblies of motor starters (DOL, star-delta, VFD, soft-starter) with overload relays for industrial motors in plants, refineries, water treatment facilities and HVAC systems	• Process industries • HVAC systems • Oil and gas
Automatic power factor correction (APFC) panels	Capacitor-bank assemblies with automatic controllers used to improve power factor, reduce reactive power penalties and lower electricity bills	• Applications include industrial and commercial facilities with inductive loads
Power distribution unit (PDU)	Panels designed for data centres to manage power distribution with circuit protection and monitoring	• Data centres • IT infrastructure • Server farms

Components	Description	Applications
Distribution boards (main/sub/final)	Smaller assemblies such as MDBs, SDBs and FDBs, that distribute LV power to lighting, small power and HVAC circuits in commercial and residential buildings	• Offices • Retail outlets • Residential complexes
PLC/SCADA automation panels	Process automation panels housing PLCs (Allen-Bradley, Siemens, Schneider, Modicon, GE Fanuc), HMIs and I/O for industrial process control	• Packaging • Water treatment • Production lines
Variable frequency drive (VFD) panel	Used to control motor speed and torque, with built-in protection and control systems	• Pumps, fan and motors • Conveyors • Process automation
DG synchronising and load-sharing panels	Panels for synchronising multiple power sources, such as generators and grid supply	• Industrial campuses • Data centres
Feeder pillar/outdoor panel	Floor-mounted (dominant for industrial and PCC/MCC applications), wall-mounted (~36% of enclosure shipments, used in commercial fitouts and metro stations), and modular aisle-based systems	• Street lighting • Public utilities • Substations

Source: Crisil Intelligence

Electric panel market is projected to grow to Rs 81-84 billion by fiscal 2030

The electrical panels market in India has shown impressive and consistent growth over recent years. Valued at Rs 32.7 billion in fiscal 2020, the market expanded to Rs 59.6 billion in fiscal 2026, propelled by rapid urbanisation, industrial expansion, infrastructure development projects and increasing investments in power generation, transmission and distribution networks.

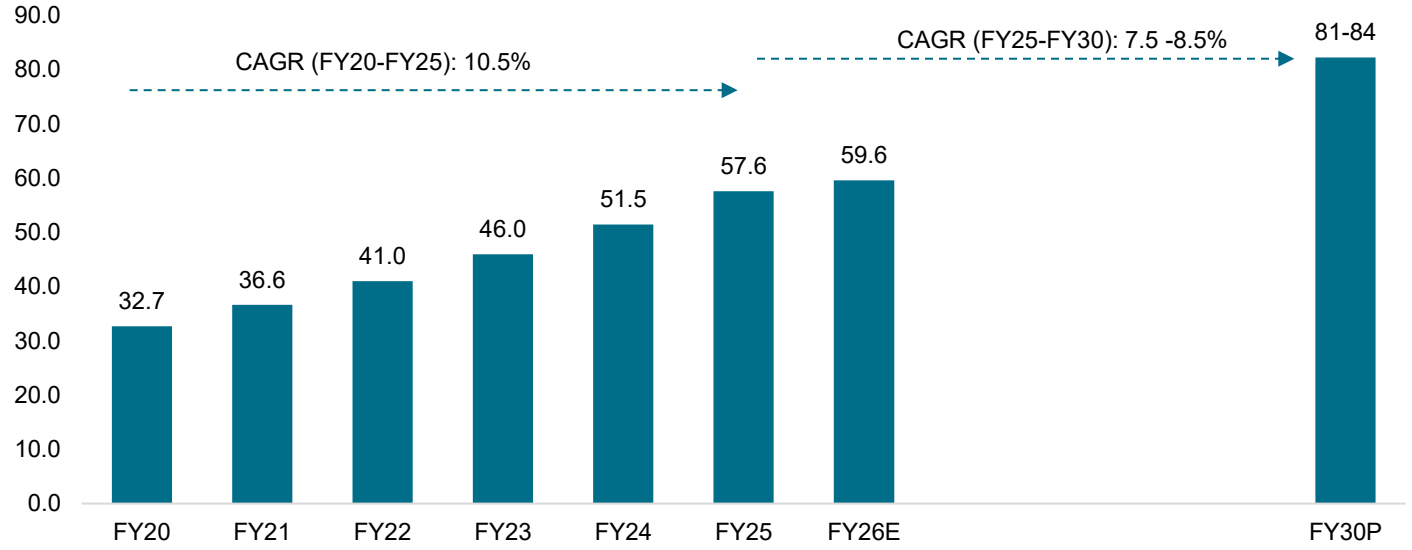
The market encompasses both low-voltage (LV) and high-voltage (HV) electrical panels. LV panels dominate residential, commercial and light industrial applications due to their widespread use in distribution boards, motor control centres and automation systems. HV panels are critical for heavy industries, substations and utility-scale power projects.

Both LV and HV segments have contributed significantly to this upward trajectory, though they cater to distinct needs within the ecosystem. LV panels, typically operating below 1kV, have benefited from the boom in real estate, data centres and smart buildings, where reliable power distribution and safety features are paramount. HV panels (above 1kV), on the other hand, support large-scale infrastructure such as renewable energy integration (solar and wind farms), railways and manufacturing plants requiring robust protection and control systems.

Government initiatives such as the Revamped Distribution Sector Scheme (RDSS), PLI for manufacturing and the push towards electrification have accelerated demand across both categories, resulting in improved product innovations, including intelligent and modular panel designs.

The Indian electrical panel market is poised to reach Rs 81-84 billion by fiscal 2030, from Rs 59.6 billion in fiscal 2026, driven by continued policy support, rising capacity additions in renewable energy, implementation of smart grids and growing industrial automation. The LV segment is expected to maintain strong momentum due to ongoing urbanisation and housing projects, while the HV segment will likely witness faster growth from mega infrastructure initiatives and the need for efficient high-capacity power handling. Overall, the industry offers lucrative opportunities for domestic manufacturers, technology providers and investors, positioning electrical panels as a vital component in India’s journey toward energy security and sustainable development.

Electrical panels market in India (Rs billion)



E – estimated; P – projected
Source: Indian Electrical And Electronic Manufacturer Association (IEEMA), Crisil Intelligence

Low voltage (LV) electrical panels continue to dominate the domestic market, accounting for 65-67% share. This significant majority reflects their extensive application across residential complexes, commercial buildings, small and medium industries, data centres, and infrastructure projects, where power distribution requirements are typically below 1kV.

LV panels are preferred for their cost-effectiveness, ease of installation, safety features, and compatibility with modern automation and smart building technologies.

In contrast, high voltage (HV) electrical panels, representing 33-35% of the market, are crucial for utility-scale applications, heavy industries, power substations, renewable energy projects and large manufacturing facilities that require robust systems operating above 1kV for efficient power transmission and protection.

Hence, while LV panels is benefiting from the country's considerable housing, urbanisation and digital economy expansion, the HV segment is gaining traction due to the government's ambitious renewable energy targets, railway electrification and development of industrial corridors.

Both categories are also witnessing technological advancements, such as modular designs, IoT integration and enhanced safety standards, as manufacturers look to meet evolving regulatory requirements and customer expectations for reliability and efficiency.

But even as the overall market grows, the segment-wise share is expected to remain relatively similar. Continued policy support, including schemes promoting domestic manufacturing and green energy, will likely drive both LV and HV segments. Stakeholders investing in R&D, localised production and sustainable solutions are well-positioned to capitalise on these opportunities, further strengthening India's electrical panels industry as a cornerstone of national development.

Split across low- and high-voltage panel markets in India (Rs billion)

Source: IEEMA, Crisil Intelligence

Key growth drivers and trends in the Indian electrical panel market

Driver / trend (theme)	Description
Government infrastructure push and national pipelines	• Sustained capital outlay under the National Infrastructure Pipeline, Gati Shakti, Smart Cities Mission, AMRUT 2.0 and large public projects such as metro rail networks, dedicated freight corridors, expressways and new airports have created continuous demand for LT/MV power distribution and motor control panels across substations, pumping stations, signalling rooms and station electrical rooms
Industrial Automation and Industry 4.0	• Adoption of PLC, SCADA, VFD and IoT systems across manufacturing, FMCG, pharmaceuticals, automotive and food processing is shifting demand from conventional motor starters towards intelligent MCCs and PLC-integrated automation panels with remote diagnostics, predictive maintenance and energy analytics built in
Data centre room	• India's data centre capacity is expanding rapidly, supported by hyperscaler investments, data localisation rules and cloud adoption. Each incremental megawatt of IT load requires multiple LV panels, busway systems, UPS bypass panels, PDU panels and remote power monitoring assemblies, with strong preference for prefabricated, factory-tested aisle-based panel systems
Shift towards smart and digital switchgear	• Leading OEMs are launching smart panels with embedded power-quality metres, communication gateways (modbus, profibus) and cloud dashboards. Buyers increasingly demand condition monitoring, asset management and predictive maintenance capabilities, especially for mission-critical sites such as data centres, airports and hospitals
Rural and universal electrification	• Continued investments under successor programmes to Deen Dayal Upadhyaya Gram Jyoti Yojana and Saubhagya, together with agriculture feeder solarisation under PM-Kusum, are sustaining demand for distribution boxes, agriculture pump-set panels and rural feeder pillars across Tier-2 and -3, and rural geographies

Driver / trend (theme)	Description
BIS mandatory standards and tightened regulations	• The progressive expansion of mandatory Bureau of Indian Standards conformity, including under the Machinery and Electrical Equipment Safety Order, is gradually formalising the market, pushing buyers towards organised players that can demonstrate type-test certificates, ISI marks and IEC 61439 compliance

Source: Crisil Intelligence

Key risks and challenges in the Indian electrical panel market

Risk / challenge	Description
Highly fragmented market with unorganised sector dominance	• A large share of the Indian electrical panel industry is served by small, unorganised panel builders operating without consistent quality systems or full IEC 61439 type-testing. This price-led competition compresses margins for organised players and creates uneven safety and reliability outcomes for end users
Proliferation of counterfeit and sub-standard components	• Counterfeit MCBs, MCCBs, contactors and relays, often sold as branded, undermine panel reliability and pose serious fire and electrical safety risks. This is a persistent issue cited by industry bodies and OEMs, particularly in price-sensitive residential, rural and Tier-3 markets
Import dependence for high-end components	• India remains structurally import-dependent for advanced components such as high-end ACBs/MCCBs, digital protection relays, communication gateways, vacuum interrupters, specialised polymer enclosures, and certain IEC 61850-compliant devices, sourced primarily from China, Germany, South Korea and Japan. This exposes the value chain to currency, lead-time and geopolitical risks
Extended lead times and supply chain disruptions	• Post-pandemic, global lead times for MV switchgear extended to 26-32 weeks against pre-Covid-19 levels of 12-16 weeks, LV component lead times have also lengthened. Container freight volatility, semiconductor shortages for digital relays and geopolitical disruptions create execution risk for time-bound projects such as metros and data centres
Skilled labour and design engineering shortage	• There is a recognised shortage of skilled panel-shop technicians, type-test engineers and protection-relay configuration specialists, particularly outside the Maharashtra, Gujarat and Tamil Nadu clusters. This constrains capacity ramp-up for complex engineered-to-order and IEC-compliant assemblies
Technology disruption and obsolescence	• Rapid migration to SF6-free MV switchgear (e.g., dry air, AirPlus mixtures), solid-state breakers, DC distribution for data centres and BESS, and software-defined power has the potential to make legacy product lines obsolete, forcing significant R&D and tooling investment that smaller players struggle to fund

Source: Crisil Intelligence

Assessment of competitive landscape of MEP players involved in the building and industrial construction markets in India

Overview of key players

In this section, we have analysed some of the key players operating in the domestic MEP industry. Data has been sourced from publicly available information, including annual reports and investor presentations of listed players, regulatory filings, rating rationales and/or company websites.

The financials in the competitive section have been re-classified by us, based on annual reports and filings of the players. Financial ratios used in this report may not match with the reported financial ratios of the players on account of standardisation and re-classification done by us.

Note: competitive landscape peer list considered in this section is not exhaustive

Operational overview

Overview of key players in the MEP industry in India

Company name	Estd.	Geographical presence	Data centre presence	Overview and product offerings
Bluestar Limited	1949	International	Present	**Business overview:** The company manufactures and distributes air-conditioning and commercial refrigeration and provides MEP contracting solutions. The company provides central air conditioning systems, chillers, refrigeration products and integrated mechanical-electrical-plumbing services across sectors. **Product offerings in MEP:** HVAC systems, electrical systems, plumbing systems, firefighting systems and extra low voltage systems (BMS, fire detection, security)
Crescon Projects and Services Private Limited	2011	Pan India	Present	**Business overview:** The company delivers EPC and turnkey solutions across India. **Product offerings:** Plans, designs and supervises the construction of a range of services, including HVAC, MEP, and fire and life safety works for industrial projects
Electromech Infraprojects Limited	2013	Pan India	Present	**Business overview:** The company provides MEP solutions for digital infrastructure projects in India. It undertakes technical design, execution, testing and commissioning activities for data centres, AI data centres, global capability centres, and commercial and industrial establishments. The service offerings include high- and low-voltage electrical works, mechanical works, fire protection systems, and related civil and interior fit-out works. These capabilities enable it to execute projects across end-user segments in accordance with applicable quality, safety and operational requirements. **Product offerings:** The business operations are organised across three principal disciplines – Electrical, Mechanical and Interior Fit-outs – which are typically deployed together on an integrated basis for its MEP assignments across data centres, global capability centres, and commercial and industrial establishments.

Company name	Estd.	Geographical presence	Data centre presence	Overview and product offerings
				Its service offerings include electrical HT and industrial works, electrical LT works, data centre and IT infrastructure, extra-low voltage (ELV) works, including public address, access control, CCTV, fire alarm and other security systems, warehouse and hospitality projects, annual maintenance contract services, HVAC and public health engineering (PHE) works, fire protection systems and interior fit-outs.
HTL Aircon Private Limited	1996	International	Present	**Business overview:** It is an MEP engineering firm, delivering turnkey solutions across India, the Middle East and Africa. **Product offerings:** HVAC, MEP, cleanrooms, biopharma, commercial and industrial (C&I) interior fit-out, virtual project management, base build, operations and management.
Listen Lights Private Limited[$]	2018	Pan India	Present	**Business overview:** Provides MEP contracting and project services for commercial, industrial and infrastructure projects. Operates from Mumbai, with regional offices in Bengaluru, Chennai, Hyderabad, the NCR and Pune. **Product offerings in MEP:** Electricals + ELV, HVAC systems, HSD, FAPA + FPS, PHE and C&I
Orbittal Electromech Engineering Projects Private Limited	2007	Pan India	N.A.	**Business overview:** Provides turnkey solutions for electrical, instrumentation and MEP works for manufacturing and C&I clients. Incorporated in 2007 and headquartered in Pune, with projects across India. **Product offerings in MEP:** Electrical Installation and maintenance, HVAC systems, fire protection systems, PHE, integrated building management system (IBMS), and utility piping system
Shubham EPC Private Limited	1997[#]	Pan India	Present	**Business overview:** The Pune-based EPC company, which was founded in 1997 as a proprietorship entity and incorporated in 2010. In October 2020, changed its name from Shubham Civil Projects Private Limited to Shubham EPC Private Limited because of the addition of MEP and healthcare work to its portfolio. **Product offerings**: It offers turnkey solutions in the industrial, institutional and public sectors, providing solutions from conceptual design to the final project handover.
Sterling & Wilson Data Center Private Limited	2023*	International	Present	**Business overview:** Sterling & Wilson Data Center Private Limited (SWDCPL) provides EPC services for data centres. It was established in 2016 as a strategic business unit within Sterling and Wilson Private Limited (SWPL). The division was created to address the demand for data centre infrastructure. The business was separated from SWPL in October 2024 and transferred to SWDCPL as an independent entity, enabling it to focus on expanding its data centre EPC operations. **Product offerings**: The company's offerings include design and build, modular construction, AI-powered smart operations, sustainability execution and round-the-clock O&M services.
Universal MEP Projects & Engineering Services	1983	Pan India	N.A.	**Business overview:** The company operates as part of Voltas group, executing power and commercial projects. It undertakes EPC and services for electrical and instrumentation projects. **Product offerings in MEP:** HVAC, electrical and ELV systems, including fire alarm and protection, CCTV, access control systems, audio-visual

Company name	Estd.	Geographical presence	Data centre presence	Overview and product offerings
Limited (subsidiary of Voltas Limited)				equipment, etc. Fire-fighting systems, IBMS, elevators, plumbing and sanitary systems.

** Geographical presence is based on international offices mentioned on the company's website.*

 # Shubham EPC Private Limited was founded in 1997 as a proprietorship entity and was later incorporated in 2010

** SWDC started in 2016 as a part of Sterling & Wilson Pvt Ltd, later incorporated in December 2023 and spun off from SWPL and transferred to SWDCPL in October 2024*

$ Listenlights Private Limited was established as partnership firm and later in 2018 was converted into a private limited company.

***The list of key projects/ clients is only indicative and not exhaustive*

Source: Credit ratings, company websites and company annual reports, Crisil Intelligence

Order book

Company name	Orderbook
Blue Star Limited	The orderbook was Rs 61.07 billion as of March 31, 2026, as per the fiscal 2026 annual report
Electromech Infraprojects Limited	The company reported an orderbook of Rs 8.3 billion as of March 31, 2026.
Listenlights Private Limited	The orderbook was Rs 6 billion as of March 31, 2026, as per the June 2026 rating rationale
Shubham EPC Private Limited	The orderbook was Rs 16 billion as of March 31, 2026, as per the July 2026 rating rationale
Sterling & Wilson Data Center Private Limited	The orderbook was Rs 22.79 billion as of December 31, 2025, as per the February 2026 rating rationale
Universal MEP Projects & Engineering Services Limited	The orderbook was Rs 61 billion as of December 31, 2025, as per the March 2026 rating rationale

Note: Other companies that are not mentioned have not published their order books

Source: Company annual reports, credit ratings, Crisil Intelligence

Financial overview

Revenue from operations and growth

Revenue from Operations (Rs million)	FY24	FY25	FY26	CAGR (FY24-FY26)
Blue Star Limited*	96,853.6	119,676.5	124,019.9	13.16%
Crescon Projects and Services Private Limited	5,065.2	5,548.0	N.A.	N.A.
Electromech Infraprojects Limited *	2,619.5	4,085.1	4,270.5	27.68%
HTL Aircon Private Limited*	2,013.9	2,256.6	N.A.	N.A.
Listenlights Private Limited	4,167.5	7,107.4	6460.0[1]	N.A.
Orbittal Electromech Engineering Projects Private Limited	2,112.2	3,751.3	N.A.	N.A.
Shubham EPC Private Limited	4,443.8	5,084.6	N.A.	N.A.
Sterling & Wilson Data Center Private Limited*#	N.A.	3,324.5	N.A.	N.A.
Universal MEP Projects & Engineering Services Limited	28,682.0	28,399.2	29,582.3	1.56%

Note: For Electromech Infra Projects Limited, FY26, FY25 and FY24 numbers are on consolidated basis
** Consolidated basis*
 # The company was incorporated in December 2023 and did not have any revenue from operations in FY24
N.A. – Not available;
1. Value represents provisional operating income reported in the rating rationale dated June 2026
Source: Company annual reports, Crisil Intelligence

Operating profit before depreciation, interest and taxes

OPBDIT (Rs million)	FY24	FY25	FY26	CAGR (FY24-FY26)
Blue Star Limited*	6,301.6	8,688.0	9,149.1	20.49%
Crescon Projects and Services Private Limited	316.6	412.9	N.A.	N.A.
Electromech Infraprojects Limited *	203.6	393.0	480.1	53.56%
HTL Aircon Private Limited*	163.9	121.4	N.A.	N.A.
Listenlights Private Limited	481.0	658.4	N.A.	N.A.
Orbittal Electromech Engineering Projects Private Limited	231.7	627.3	N.A.	N.A.
Shubham EPC Private Limited	444.7	549.4	N.A.	N.A.
Sterling & Wilson Data Center Private Limited*#	-33.7	666.7	N.A.	N.A.
Universal MEP Projects & Engineering Services Limited	2,894.6	2,774.0	3,064.5	2.89%

Notes:
1) Financials have been re-classified by Crisil, based on annual reports available in the public domain/ filed with the RoC and financial filings by the relevant players
2) Numbers may not match with the reported financial numbers by the players on account of standardisation and re-classification done by Crisil
3) For Electromech Infra Projects Limited, FY26, FY25 and FY24, the numbers are on consolidated basis
** Consolidated basis*
N.A. – Not available
 # The company was incorporated in December 2023 and did not have any revenue from operations in FY24

OPBDIT = Revenue from operations – Total expenses
Source: Company annual reports, Crisil Intelligence

Profit after tax

PAT (Rs million)	FY24	FY25	FY26	CAGR (FY24-FY26)
Blue Star Limited*	4,143.1	5,912.8	5,273.3	12.82%
Crescon Projects and Services Private Limited	205.6	277.2	N.A.	N.A.
Electromech Infraprojects Limited *	184.3	294.8	361.9	40.13%
HTL Aircon Private Limited*	100.7	78.9	N.A.	N.A.
Listenlights Private Limited	304.0	446.6	6.0[1]	-85.94%
Orbittal Electromech Engineering Projects Private Limited	144.2	462.2	N.A.	N.A.
Shubham EPC Private Limited	256.0	296.4	N.A.	N.A.
Sterling & Wilson Data Center Private Limited*#	-33.7	-185.1	N.A.	N.A.
Universal MEP Projects & Engineering Services Limited	2,150.8	2,026.3	2,351.1	4.55%

Note: Note: For Electromech Infraprojects Limited, FY26 numbers are on consolidated basis and FY25 and FY24 numbers are on standalone basis
** Consolidated basis*
 # The company was incorporated in December 2023 and did not have any revenue from operations in FY24
N.A. – Not available
1. Value represents provisional profit after tax reported in the rating rationale dated June 2026
Source: Company annual reports, Crisil Intelligence

Financial Ratios (fiscal 2024)

Company name	OPBDIT	PAT margin	RoE	RoCE	Gearing ratio	Interest coverage ratio
Blue Star Limited*	6.51%	4.26%	22.08%	27.41%	0.07	12.27
Crescon Projects and Services Private Limited	6.25%	4.04%	34.20%	38.41%	0.64	6.16
Electromech Infraprojects Limited *	7.77%	6.97%	57.11%	55.63%	0.44	94.71
HTL Aircon Private Limited*	8.14%	4.97%	23.48%	29.57%	0.37	6.09
Listenlights Private Limited	11.54%	7.27%	56.14%	49.00%	0.54	7.52
Orbittal Electromech Engineering Projects Private Limited	10.97%	6.80%	47.62%	71.11%	0.00	12.05
Shubham EPC Private Limited	10.01%	5.75%	31.91%	29.56%	0.64	6.21
Sterling & Wilson Data Center Private Limited*#	n.m.	n.m.	n.m.	-0.97%	n.m.	-
Universal MEP Projects & Engineering Services Limited	10.09%	7.47%	40.75%	59.50%	0.00	29.86

Notes:
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2) Numbers may not match with the reported financial numbers by the players on account of standardisation and re-classification done by Crisil
3) Note: For Electromech Infraprojects Limited, FY26 numbers are on consolidated basis and FY25 and FY24 numbers are on standalone basis
** Consolidated basis*
 # The company was incorporated in December 2023 and did not have any revenue from operations in FY24.
n.m. – Not meaningful

OPBDIT margin = Operating Ebitda/ revenue from operations
PAT margin = PAT / total Income
RoE = PAT / average tangible net worth
RoCE = RoCE: PBIT / average capital employed
Interest coverage ratio = Profit before depreciation, interest and tax / interest expenses
Gearing ratio = Total debt / tangible net worth
Source: Company annual reports, Crisil Intelligence

Financial ratios (fiscal 2025)

Company name	OPBDIT	PAT margin	RoE	RoCE	Gearing ratio	Interest coverage ratio
Blue Star Limited*	7.26%	4.91%	21.88%	28.87%	0.07	19.92
Crescon Projects and Services Private Limited	7.44%	4.97%	32.90%	35.30%	0.38	5.73
Electromech Infraprojects Limited *	9.62%	7.18%	53.54%	59.60%	0.17	30.82
HTL Aircon Private Limited*	5.38%	3.45%	14.83%	19.13%	0.40	5.30
Listenlights Private Limited	9.26%	6.25%	48.34%	43.07%	0.78	10.71
Orbittal Electromech Engineering Projects Private Limited	16.72%	12.23%	76.84%	105.35%	0.02	34.70
Shubham EPC Private Limited	10.80%	5.81%	27.48%	29.42%	0.67	5.50
Sterling & Wilson Data Center Private Limited*#	20.05%	-5.42%	-10.11%	-2.62%	0.00	20.10
Universal MEP Projects & Engineering Services Limited	9.77%	7.09%	29.60%	45.04%	0.00	13.71

Notes:
1) Financials have been re-classified by Crisil, based on annual reports available in the public domain/ filed with the RoC and financial filings by the relevant players
2) Numbers may not match with the reported financial numbers by the players on account of standardisation and re-classification done by Crisil.
3) For Electromech Infraprojects Limited, FY26 numbers are on consolidated basis and FY25 and FY24 numbers are on standalone basis
** Consolidated basis*
 # The company was incorporated in December 2023 and did not have any revenue from operations in FY24.
OPBDIT margin = Operating Ebitda/ revenue from operations
PAT margin = PAT / total income
RoE = PAT / average tangible net worth
RoCE = RoCE: PBIT / average capital employed
Interest coverage ratio = Profit before depreciation, Interest and tax / interest expenses
Gearing ratio = Total debt / tangible net worth
Source: Company annual reports, Crisil Intelligence

Financial Ratios (fiscal 2026)

Company name	OPBDIT	PAT margin	RoE	ROCE	Gearing ratio	Interest coverage ratio
Blue Star Limited*	7.38%	4.23%	17.26%	22.26%	0.20	13.34
Electromech Infraprojects Limited *	11.24%	8.41%	33.14%	43.57%	0.00	23.17
Universal MEP Projects & Engineering Services Limited	10.36%	7.88%	28.24%	40.08%	0.00	231.72

Notes:
1) Financials have been re-classified by Crisil, based on annual reports available in the public domain/ filed with the RoC and financial filings by the relevant players

2) Numbers may not match with the reported financial numbers by the players on account of standardisation and re-classification done by Crisil
3) Note: For Electromech Infraprojects Limited, FY26 numbers are on consolidated basis and FY25 and FY24 numbers are on standalone basis
** Consolidated basis*
OPBDIT margin = Operating Ebitda/ revenue from operations
PAT margin = PAT / total income
RoE = PAT / average tangible net worth
RoCE = RoCE: PBIT / average capital employed
Interest coverage ratio = Profit before depreciation, interest and tax / interest expenses
Gearing ratio = Total debt / tangible net worth
Source: Company annual reports, Crisil Intelligence

Cash conversion cycle

Company name	FY24	FY25	FY26
Blue Star Limited*	25.56	16.15	39.76
Crescon Projects and Services Private Limited	14.26	5.38	N.A.
Electromech Infraprojects Limited *	20.73	12.22	32.73
HTL Aircon Private Limited*	60.26	86.48	N.A.
Listenlights Private Limited	28.10	66.72	N.A.
Orbittal Electromech Engineering Projects Private Limited	-9.93	26.87	N.A.
Shubham EPC Private Limited	48.07	58.26	N.A.
Sterling & Wilson Data Center Private Limited*	N.A.	-39,978.47	N.A.
Universal MEP Projects & Engineering Services Limited	-23.68	-41.59	-51.69

Notes:
1) Financials have been re-classified by Crisil, based on annual reports available in the public domain/ filed with the RoC and financial filings by the relevant players.
2) Numbers may not match with the reported financial numbers by the players on account of standardisation and re-classification done by Crisil.
3) Note: For Electromech Infraprojects Limited, FY26 numbers are on consolidated basis and FY25 and FY24 numbers are on standalone basis
** Consolidated basis*
 # The company was incorporated in December 2023 and did not have any revenue from operations in FY24.
N.A. – Not available
Cash conversion cycle= Inventory days+ receivable days – payable days
Source: Company annual reports, Crisil Intelligence

Key observations

- Over fiscals 2022-2026, 910-1,010 MW of data centre capacity was added in India. During this period, Electromech Infraprojects Limited provided MEP services of nearly 135 MW incremental data centre capacity construction (13-15% of new capacity), with its role ranging from one of many subcontractors to an end-to-end turnkey MEP solution provider. The company provides MEP services ranging from mechanical, electrical and plumbing works to complete turnkey MEP solutions, depending on the project requirements
- **Electromech Infraprojects Limited's**:
    - Revenue from operations rose at 13.16% CAGR between fiscals 2024 and 2026, the second highest among the considered players that released their fiscal 2026 financials
    - OPBDIT rose at 20.49% CAGR between fiscals 2024 and 2026, the second highest among the considered players that released their fiscal 2026 financials
    - PAT rose at 12.82% CAGR between fiscals 2024 and 2026, the second highest among the considered players that released their fiscal 2026 financials

- PAT margin was the second highest among the considered players in fiscal 2025, at 7.18%
- RoE was the second highest among the considered players in fiscal 2025, at 53.54%
- RoCE was the second highest among the considered players in fiscal 2025, at 59.60%
- Interest coverage ratio was the second highest among the considered players in fiscal 2025, at 30.82
- PAT margin was the third highest among the considered players in fiscal 2024, at 6.97%
- RoE was the highest among the considered players in fiscal 2024, at 57.11%
- RoCE was the third highest among the considered players in fiscal 2024, at 55.63%
- Interest coverage ratio was the highest among the considered players in fiscal 2024, at 94.71

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Crisil Intelligence is a leading provider of research, consulting, risk solutions and advanced data analytics, serving clients across government, private and public enterprises. We leverage our expertise in data-driven insights and strong benchmarking capabilities to help clients navigate complex external ecosystems, identify opportunities and mitigate risks. By combining cutting-edge analytics, machine learning and AI capabilities with deep industry knowledge, we empower our clients to make informed decisions, drive business growth and build resilient capacities.

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