



# INDUSTRY RESEARCH REPORT: INFRASTRUCTURE

Client: **AFCONS Infrastructure Ltd.**

Oct - 2024



## Contents

<b>Chapter 1: Macro-Economic Overview .....</b>	<b>1</b>
Global Macro-Economic Overview .....	1
India's Macro-Economic Overview .....	2
<b>Chapter 2: Global Infrastructure Construction Industry Overview .....</b>	<b>6</b>
Global Construction Market Overview .....	6
Emerging market to drive Global Construction Growth, wherein India is projected to be the fastest growing construction market in the world.....	9
Outlook on MENA region .....	12
Outlook on Central and Eastern Europe region .....	12
Outlook on SSA region .....	12
Outlook on APAC region .....	13
<b>Chapter 3: Indian Construction Infrastructure Industry Overview .....</b>	<b>16</b>
Assessment of Overall Construction Industry in India.....	16
EXIM Bank to support Indian project exporters .....	20
Assessment of Infrastructure Construction Segment .....	22
Outlook on Indian Infrastructure.....	25
Roads and Highways .....	29
Railways.....	32
Urban Infrastructure .....	35
Ports.....	46
Hydro-electric Power .....	50
Oil and Gas Construction Segment Overview .....	52
Irrigation Construction Segment Overview.....	54
Conclusion .....	56
<b>Chapter 4: Brief Profile of Afcons Infrastructure Limited .....</b>	<b>58</b>
<b>Chapter 5: Competitive Mapping of Key Indian Infrastructure Players .....</b>	<b>66</b>
<b>List of Abbreviations .....</b>	<b>75</b>

## Chapter 1: Macro-Economic Overview

### Global Macro-Economic Overview

#### **World Bank's Global Economic Prospect (GEP), June 2024: India to remain the fastest-growing among the world's largest economies.**

As per the latest World Bank's Global Economic Prospect (GEP), June 2024; economic growth projection for India is at 6.8% for FY2026-27. India's economy has been buoyed by strong domestic demand, with a surge in investment, and robust services activity. After a high growth rate in FY2023/24, steady growth of 6.7% per year, on average, is projected for the three fiscal years beginning in FY2024/25. This moderation is mainly due to a slowdown in investment from a high base. However, investment growth is still expected to be stronger than previously envisaged and remain robust over the forecast period, with strong public investment accompanied by private investment. Private consumption growth is expected to benefit from a recovery of agricultural production and declining inflation. Government consumption is projected to grow only slowly, in line with the government's aim of reducing current expenditure relative to GDP. India will remain the fastest-growing major economy with FY2026-27 real GDP growth rate forecast at 6.8% as per World Bank.

World Bank Real GDP Growth Projections (% change from previous year)						
	CY2021	CY2022	CY2023e	CY2024f	CY2025f	CY2026f
<b>World</b>	<b>6.3</b>	<b>3.0</b>	<b>2.6</b>	<b>2.6</b>	<b>2.7</b>	<b>2.7</b>
<b>Advanced economies</b>	<b>5.5</b>	<b>2.6</b>	<b>1.5</b>	<b>1.5</b>	<b>1.7</b>	<b>1.8</b>
United States	5.8	1.9	2.5	2.5	1.8	1.8
Euro area	5.9	3.4	0.5	0.7	1.4	1.3
Japan	2.6	1.0	1.9	0.7	1.0	0.9
<b>Emerging market and developing economies</b>	<b>7.3</b>	<b>3.7</b>	<b>4.2</b>	<b>4.0</b>	<b>4.0</b>	<b>3.9</b>
East Asia and Pacific	7.6	3.4	5.1	4.8	4.2	4.1
China	8.4	3.0	5.2	4.8	4.1	4.0
Indonesia	3.7	5.3	5.0	5.0	5.1	5.1
Thailand	1.6	2.5	1.9	2.4	2.8	2.9
Europe and Central Asia	7.2	1.6	3.2	3.0	2.9	2.8
Latin America and the Caribbean	7.2	3.9	2.2	1.8	2.7	2.6
Middle East and North Africa	6.2	5.9	1.5	2.8	4.2	3.6
Saudi Arabia	4.3	8.7	-0.9	2.5	5.9	3.2
South Asia	8.6	5.8	6.6	6.2	6.2	6.2
<b>India<sup>1</sup></b>	<b>9.7</b>	<b>7.0</b>	<b>8.2</b>	<b>6.6</b>	<b>6.7</b>	<b>6.8</b>
Bangladesh <sup>1</sup>	6.9	7.1	5.8	5.6	5.7	5.9
Sub-Saharan Africa	4.4	3.8	3.0	3.5	3.9	4.0
Nigeria	3.6	3.3	2.9	3.3	3.5	3.7
South Africa	4.7	1.9	0.6	1.2	1.3	1.5
Angola	1.2	3.0	0.9	2.9	2.6	2.4

Source: World Bank Global Economic Prospects, June 2024 (e: Expected; f = Forecast)

<sup>1</sup> GDP growth rates are on a fiscal year basis. For India and Bangladesh, the column for 2022 refers to FY2022/23.

Global growth is projected to stabilize at 2.6% in CY2024, holding steady for the first time in three years despite flaring geopolitical tensions and high interest rates. It is then expected to edge up to 2.7% in CY2026 amid modest growth in trade and investment. Global inflation is projected to moderate—but at a slower clip than previously assumed, averaging 3.5% in CY2024. Given continued inflationary pressures, central banks in both advanced economies and emerging market and developing economies (EMDEs) will likely remain cautious in easing

monetary policy. At the national level, persistent inflation risks underscore the need for EMDE monetary policies to remain focused on price stability. High debt and elevated debt-servicing costs will require policymakers to seek ways to sustainably boost investment while ensuring fiscal sustainability. To meet development goals and bolster long-term growth, structural policies are needed to raise productivity growth, improve the efficiency of public investment, build human capital, and close gender gaps in the labour market.

## India's Macro-Economic Overview

### Gross Domestic Product (GDP)

According to the 'Provisional Estimates of Annual GDP for FY2024 and Quarterly Estimates of GDP for Q4 of FY2024' released by the National Statistical Office (NSO), Ministry of Statistics & Programme Implementation (MoSPI) on 31<sup>st</sup> May, 2024, Real GDP or GDP at Constant Prices is estimated to attain a level of INR 173.8 trillion in the year FY2024, against the First Revised Estimates (FRE) of GDP for the year FY2023 of INR 160.7 trillion. The growth rate in Real GDP during FY2024 is estimated at 8.2% as compared to 7.0% in FY2023. Nominal GDP or GDP at Current Prices is estimated to attain a level of INR 295.4 trillion in the year FY2024, against INR 269.5 trillion in FY2023, showing a growth rate of 9.6%.

Private final consumption expenditure (PFCE) registered a moderate growth of 4.0% in FY2024. Government final consumption expenditure (GFCE) growth at 2.5% remained muted as the Government of India (Government) continued a consolidation path to restore fiscal health, while stepping up capital expenditure to support growth and investment. The improvement in the quality of expenditure bodes well for sustainability and de-risking of growth going forward. Gross fixed capital formation (GFCF) remained strong with a growth of 9.0% in FY2024, primarily aided by the government's thrust on infrastructure. As a result, the ratio of real GFCF to GDP increased to 34.1% in FY2024 from 33.3% in the preceding year. India's exports, after exhibiting remarkable recovery post-COVID with a growth of 29.6% in FY2022, tapered to 2.6% in FY2024. The growth in imports at 10.9% in FY2024 outpaced the growth in exports.

Components	Components of GDP					
	Growth (per cent)					
	FY2019	FY2020	FY2021	FY2022	FY2023 (FRE)	FY2024 (PE)
<b>I. Total Consumption Expenditure</b>	<b>7.0</b>	<b>5.0</b>	<b>-4.6</b>	<b>9.8</b>	<b>7.1</b>	<b>3.8</b>
Private Final Consumption Expenditure (PFCE)	7.1	5.2	-5.3	11.7	6.8	4.0
Government Final Consumption Expenditure (GFCE)	6.7	3.9	-0.8	0.0	9.0	2.5
<b>II. Gross Capital Formation</b>	<b>6.2</b>	<b>-6.0</b>	<b>-10.6</b>	<b>25.4</b>	<b>5.5</b>	<b>9.4</b>
Gross Fixed Capital Formation (GFCF)	11.2	1.1	-7.1	17.5	6.6	9.0
Changes in Stocks (CIS)	27.3	-58.7	-76.4	525.4	14.5	5.9
Valuables	-9.7	-14.2	29.9	32.5	-19.1	21.2
<b>III. Net Exports</b>						
Exports	11.9	-3.4	-7.0	29.6	13.4	2.6
Imports	8.8	-0.8	-12.6	22.1	10.6	10.9
<b>IV. GDP</b>	<b>6.5</b>	<b>3.9</b>	<b>-5.8</b>	<b>9.7</b>	<b>7.0</b>	<b>8.2</b>

Source: NSO, MoSPI, RBI Annual Report FY2024

Note:

FRE: First Revised Estimates; PE: Provisional Estimates

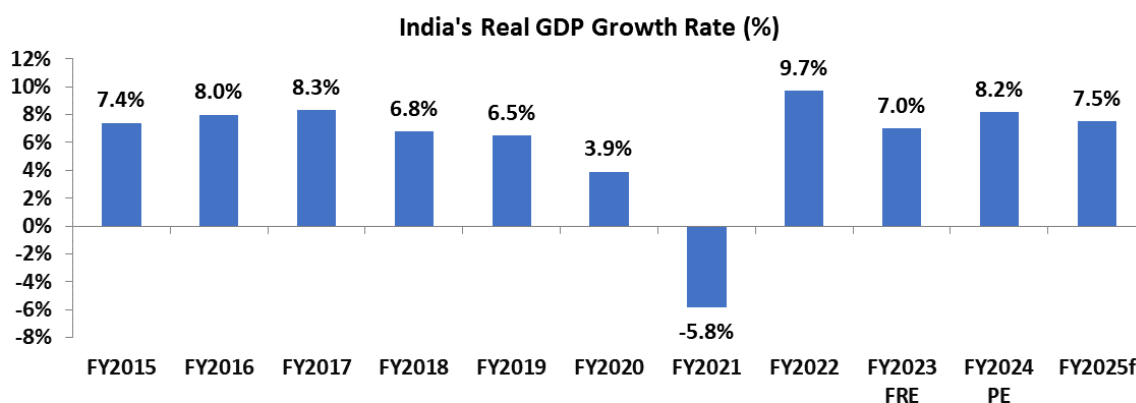
FY2023 and FY2024 numbers are as per FRE and PE numbers from 'Provisional Estimates of Annual GDP for FY2024 and Quarterly Estimates of GDP for Q4 of FY2024' released by the National Statistical Office (NSO), Ministry of Statistics & Programme Implementation (MoSPI) on 31<sup>st</sup> May, 2024

India Ratings and Research (Ind-Ra) expects real GDP to grow 7.5% year-over-year (y-o-y) in FY2025. The ongoing growth momentum led by government capex, deleveraged balance

sheets of corporates/ banks, and incipient private corporate capex cycle has now found support from the union government budget. The budget promises to bolster agricultural/ rural spending, improve credit delivery to MSMEs and incentivise employment creation in the economy. Ind-Ra believes these measures would help in broad basing the consumption demand which if not addressed can constrain the ongoing growth momentum.

Although the capex spending at INR 11.1 trillion in the union budget FY2025 is same as is in the interim budget FY2025, the government's sustained focus on capex continues. Even 26 states (excluding Arunachal Pradesh and Sikkim) have budgeted capex spending at INR 9.5 trillion for FY2025, after spending INR 8.8 trillion in FY2024RE (Revised Estimates).

A revival in the private sector capex may reduce the capex spending of the union government, but that is still some distance away. The private sector's greenfield capex barring few sectors has remained down and out now for several years. Some green shoots though are visible. As per the RBI Bulletin August 2024, in FY2024, approximately 944 projects received assistance from banks/ financial institutions (FIs), reaching a record high total project cost of INR 3.9 trillion. This is a significant increase compared to FY2023, when 547 projects were sanctioned with a total cost of INR 2.7 trillion. Besides capex in crude oil, base metals, power, and telecom, broad basing is visible with heightened capex activity across cement, chemicals, textile, healthcare, logistics etc.



Source: NSO, RBI, India Ratings and Research (Ind-Ra)

Note:

\*f=forecasted

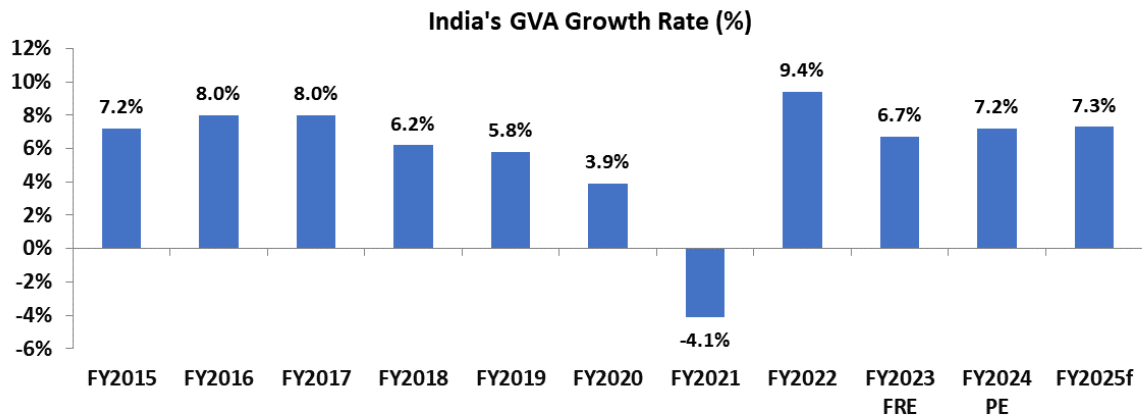
FRE: First Revised Estimates; PE: Provisional Estimates

Data for FY2023 First Revised Estimates and FY2024 is Provisional Estimates of Annual GDP

### Gross Value Added (GVA)

According to the 'Provisional Estimates of Annual GDP for FY2024 and Quarterly Estimates of GDP for Q4 of FY2024' released by the National Statistical Office (NSO), Ministry of Statistics & Programme Implementation (MoSPI) on 31<sup>st</sup> May 2024, real Gross Value Added (GVA) is estimated at INR 158.7 trillion in the year FY2024, against the FRE for the year FY2023 of INR 148.1 trillion, registering a growth rate of 7.2% as compared to 6.7% in FY2023. GVA growth was driven by growth in the construction and manufacturing sector. The construction sector has displayed a strong performance with a 9.9% growth in FY2024, and the manufacturing sector has witnessed a robust performance with a 9.9% growth in FY2024, contributing significantly to the overall GDP growth in FY2024. Nominal GVA is estimated to attain a level

of INR 267.6 trillion during FY2024, against INR 246.6 trillion in FY2023, showing a growth rate of 8.5%. Ind-Ra expects real GVA to grow 7.3% y-o-y in FY2025.



Source: NSO, RBI, India Ratings and Research (Ind-Ra)

Note:

\*f=forecasted

FRE: First Revised Estimates; PE: Provisional Estimates

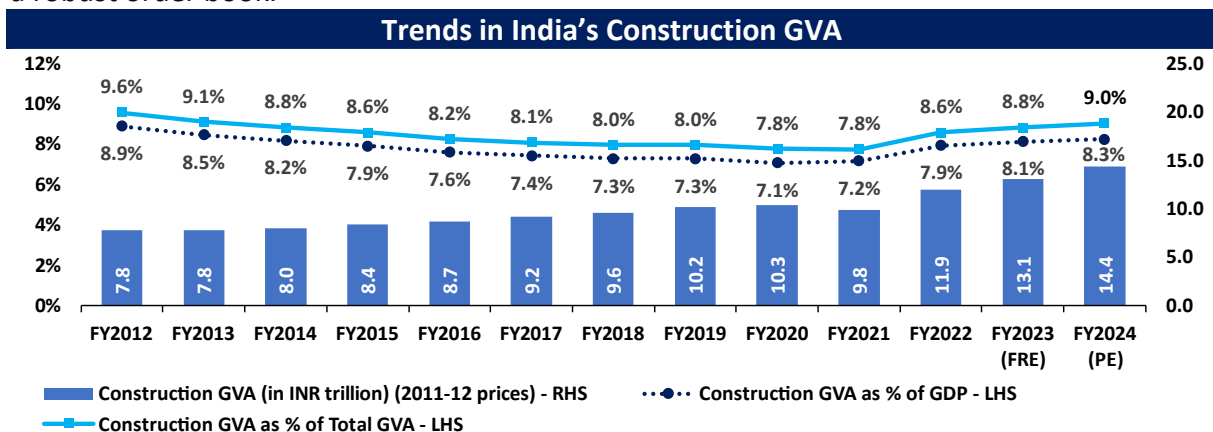
Data for FY2023 First Revised Estimates and FY2024 is Provisional Estimates of Annual GDP

Sector	Real GVA Growth				
	Growth (per cent)				
	FY2020	FY2021	FY2022	FY2023 (FRE)	FY2024 (PE)
Construction	1.6	-4.6	19.9	9.4	9.9
GVA at Basic Prices	3.9	-4.1	9.4	6.7	7.2

Source: NSO, MoSPI, RBI Annual Report FY2024

Note: FRE: First Revised Estimates; PE: Provisional Estimates; FY2023 and FY2024 numbers are as per FRE and BE numbers from 'Provisional Estimates of Annual GDP for FY2024 and Quarterly Estimates of GDP for Q4 of FY2024' released by the National Statistical Office (NSO), Ministry of Statistics & Programme Implementation (MoSPI) on 31<sup>st</sup> May, 2024

GVA in the construction sector increased from INR 7.8 trillion in FY2012 to INR 14.4 trillion in FY2024. Construction GVA witnessed growth of 9.9% y-o-y in FY2024. It is expected to grow at 9-11% in FY2025 owing to the government's emphasis on infrastructure development and a robust order book.

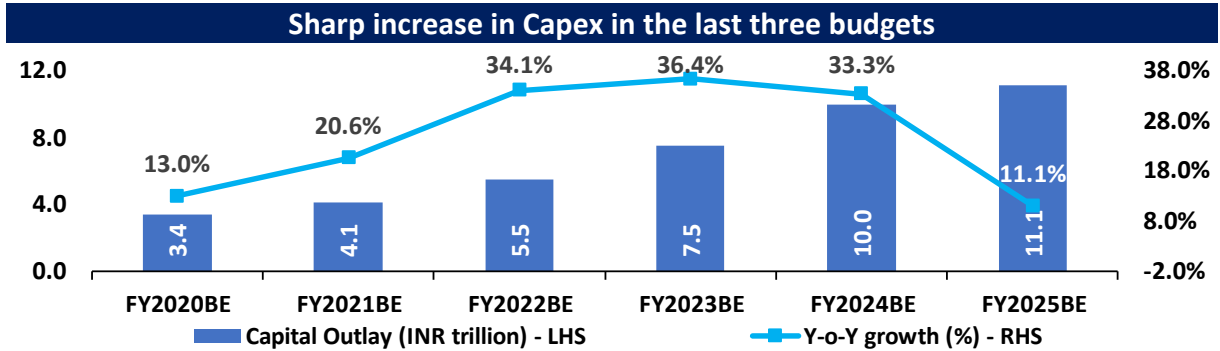


Source: NSO, RBI, FSIAPL; Note: FRE: First Revised Estimates; PE: Provisional Estimates;

Data for FY2023 First Revised Estimates and FY2024 is Provisional Estimates of Annual GDP

Growth in the upcoming year FY2025 will be supported by solid domestic demand and a pickup in capital investment. Compensating for the private sector's caution in capital

expenditure, the government raised capital expenditure substantially. Budgeted capital expenditure rose 3.3 times in the last 5 years, from FY2020 to FY2025, re-invigorating the capex cycle. The Central Government sharply raised capex in the last three budgets. Capital outlay increased from INR 3.4 trillion in FY2020 to INR 11.1 trillion in FY2025 as depicted in the chart below.



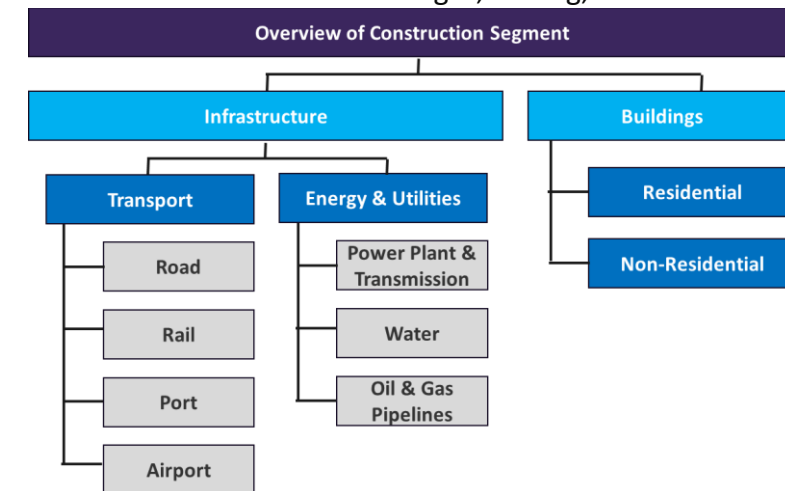
Source: Union Budget of India, FSIAPL; Note: BE- Budget Estimates



## Chapter 2: Global Infrastructure Construction Industry Overview

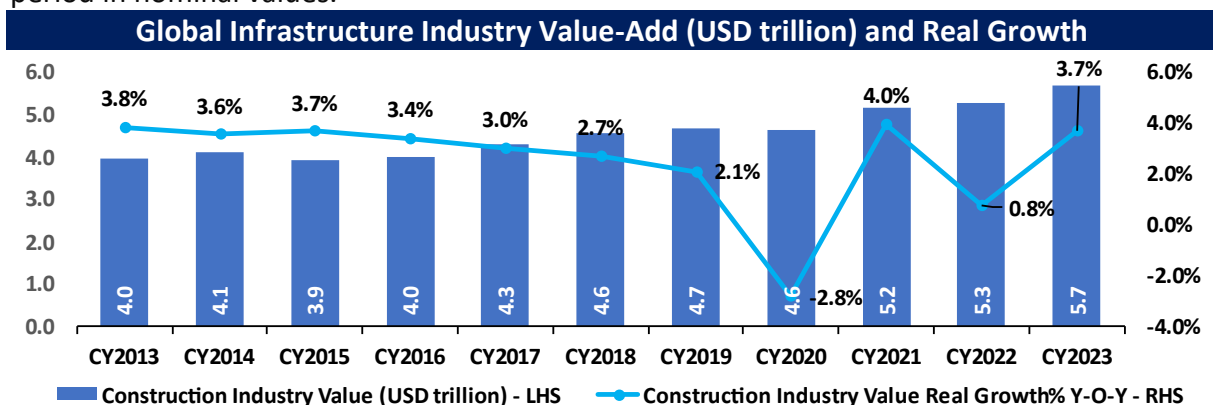
### Global Construction Market Overview

Broadly, there are two sectors of construction: Infrastructure construction and building construction. Building construction is usually further divided into residential and non-residential. Economic infrastructure includes transportation, power, water, and telecom systems that boost economic activity and provide essential services. Roads, ports, airports, rail, and telecom networks are needed for trade and mobility. Electricity fuels production, and clean water underpins public health. Apart from economic infrastructure, the broader definition of infrastructure also includes oil and gas, mining, and social infrastructure.



Source: FSIAPL

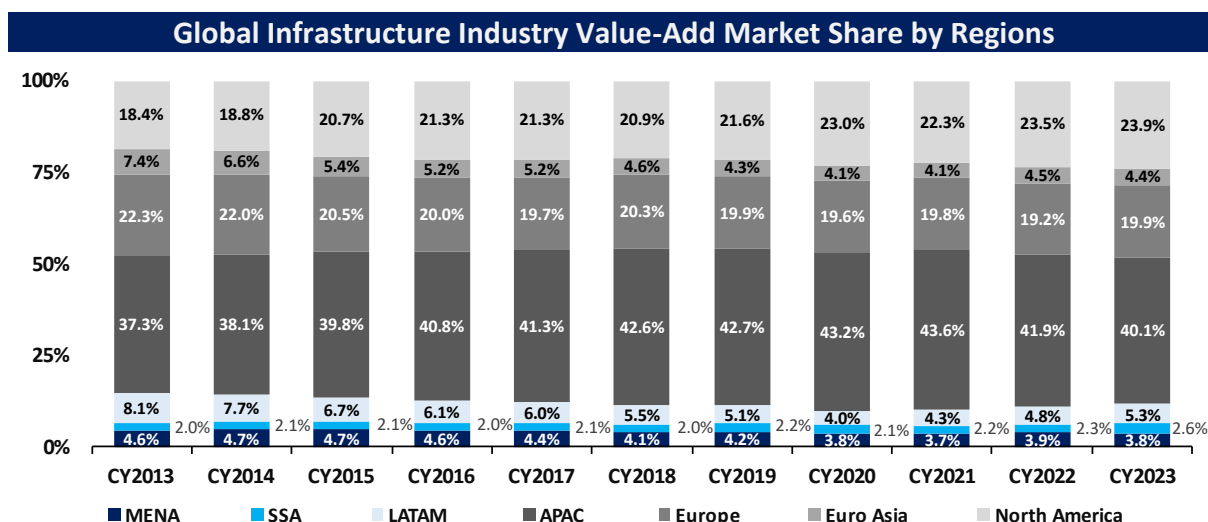
As per Fitch Solutions, the global construction industry value-add, comprising transport, power, water, telecom, oil and gas, mining, and construction, stood at USD 5.7 trillion at the end of CY2023, having grown from USD 4.0 trillion in CY2013. The construction data is derived from national accounts from each market's national statistics office (or equivalent) or from international organisations which compile national account data, most notably the UN. Specifically, it measures the GVA of the construction industry over the reported 12-month period in nominal values.



Source: Fitch Solutions

As per Fitch Solutions, the global construction industry has grown at a CAGR of 3.7% from USD 4.0 trillion in CY2013 to USD 5.7 trillion in CY2023.





Source: Fitch Solutions

**Note:**

1. MENA (Middle East and North Africa) includes Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Libya, Morocco, Oman, Qatar, Saudi Arabia, United Arab Emirates, and Yemen.
2. SSA (Sub Saharan Africa) includes Angola, Botswana, Cameroon, Côte D'Ivoire, Ethiopia, Gabon, Ghana, Kenya, Mozambique, Namibia, Nigeria, Rwanda, South Africa, Sudan, Tanzania, Tunisia, Uganda, Zambia, and Zimbabwe.
3. LATAM (Latin America) includes Argentina, Belize, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay, and Venezuela.
4. APAC (Asia Pacific) includes Australia, Bangladesh, Cambodia, China (Mainland), Hong Kong, China, India, Indonesia, Japan, Laos, Malaysia, Mongolia, Myanmar, New Zealand, Pakistan, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, China, Thailand, and Vietnam.
5. Europe includes Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.
6. Euro-Asia includes Bosnia & Herzegovina, Bulgaria, Croatia, Cyprus, Estonia, Israel, Kazakhstan, Latvia, North Macedonia, Romania, Russia, Slovakia, Slovenia, Türkiye, Turkmenistan, Ukraine, and Uzbekistan.
7. North America includes Canada and the United States.

Over 83.9% of the infrastructure market is comprised of the APAC region, North America, and Western Europe in CY2023. The share of APAC in the overall pie has increased from 37.3% in CY2013 to 40.1% in CY2023. China and USA dominated the overall infrastructure market and accounted for over 42.4% of the market in CY2023.

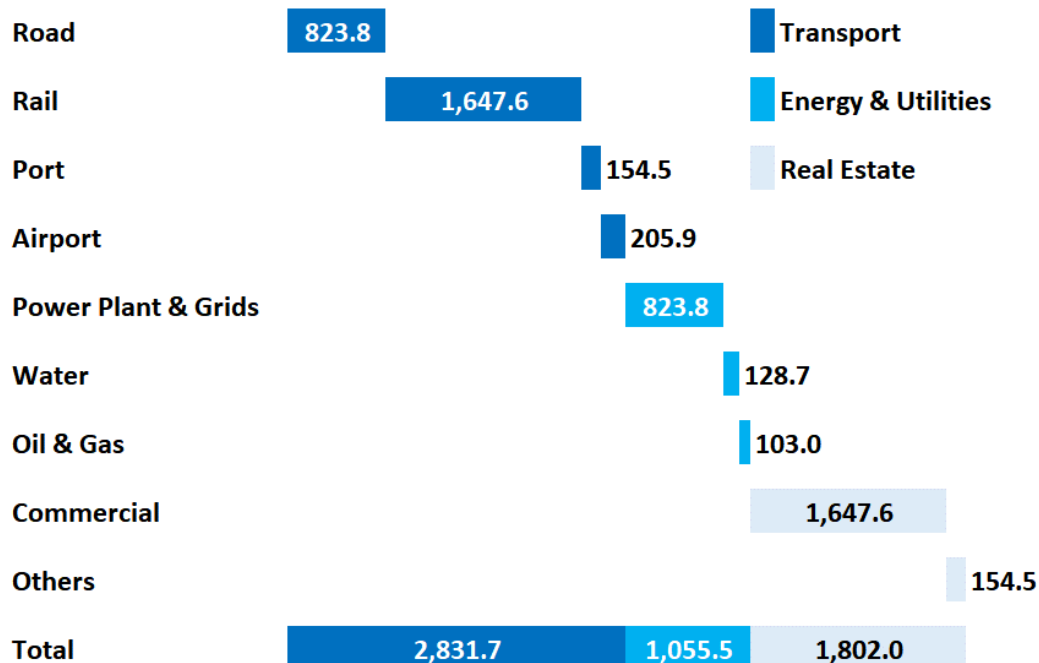
**Top 25 Countries by Infrastructure Market Share in CY2023**

Geography	Market Share	Geography	Market Share
China (Mainland)	21.3%	Spain	1.4%
United States	21.2%	Russia	1.4%
India	5.1%	Brazil	1.2%
Germany	4.4%	Turkiye	1.1%
Japan	3.9%	Saudi Arabia	1.0%
United Kingdom	3.2%	Netherlands	0.9%
Canada	2.7%	Poland	0.8%
France	2.7%	Switzerland	0.7%
Indonesia	2.3%	Bangladesh	0.7%
Mexico	2.1%	United Arab Emirates	0.7%
Australia	2.0%	Sweden	0.6%
Italy	1.9%	Nigeria	0.6%
South Korea	1.6%	Other	14.6%

Source: Fitch Solutions

FSIAPL has also tried to understand the sectoral break-up of the global construction market based on Fitch Solutions' proprietary Infrastructure Key Projects Data, a comprehensive catalogue of the major power, transport, utilities, residential, and non-residential projects in each market. However, a significant part of the residential construction could be under the unorganised sector.

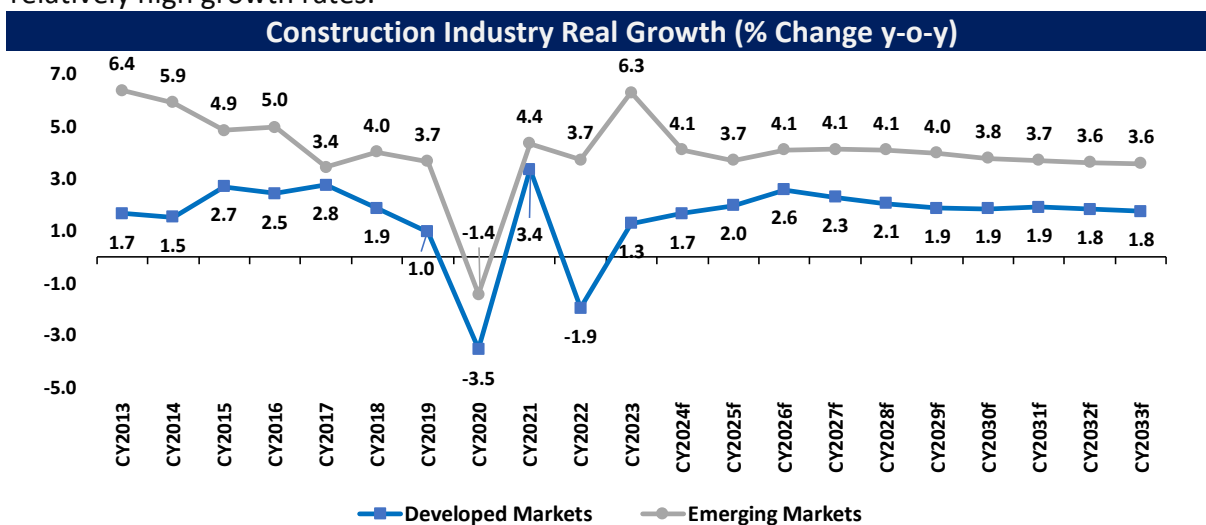
#### Approximate Break-up of Global Construction Market by Segments in USD Billion (CY2023)



Source: Fitch Solutions

## Emerging market to drive Global Construction Growth, wherein India is projected to be the fastest growing construction market in the world.

Global construction growth will largely be driven by expanding construction investment in emerging markets, with emerging market construction industry value expected to grow by an annual average real growth of 3.9% y-o-y between CY2024 and CY2033. This will mark slower growth compared to average annual growth of 4.2% y-o-y between CY2013 and CY2023. Emerging markets in the region will lead growth in the region with India, Indonesia, Vietnam, the Philippines, and Bangladesh among markets that will see the highest growth rates in the region over the coming decade. The strong growth of construction in emerging markets will be driven in large part by emerging markets in Asia, given the large size of these markets and relatively high growth rates.



f= Fitch Solutions forecast; Source: National Sources, Fitch Solutions

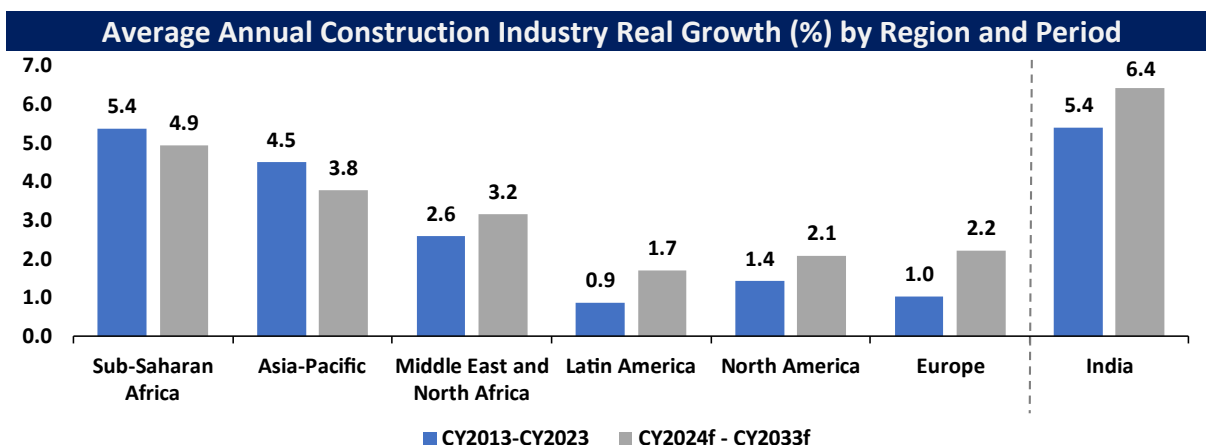
At the regional level, the Asia-Pacific region is set to drive the growth of the global construction industry. This will be the product of both the large size of the region's construction industry, which accounted for 40.0% of the global construction industry in USD terms in 2023, as well as robust growth for the region's construction industry over the coming years. FSIAPL forecasts that Asia's construction industry will grow by 4.5% y-o-y and 4.1% y-o-y in CY2024 and CY2025 respectively, and by an annual average of 3.8% y-o-y between CY2024 and CY2033.

Within the Asia-Pacific region, several Southeast Asian markets including the Philippines, Vietnam and Indonesia will see robust growth, supporting the industry overall, while the expansion of India's construction industry will also contribute. This will come despite a deceleration of India's construction industry growth rate, with the industry to see a forecast real growth of 8.5% y-o-y in CY2024 and 6.4% y-o-y in CY2025 and by a forecast annual average real growth of 6.4% y-o-y between CY2024 and CY2033. Mainland China's construction industry, in contrast, will see more modest growth, with average annual growth of 3.2% y-o-y forecast between CY2024 and CY2033.

While Asia-Pacific will drive global construction growth in part given its large size, Sub-Saharan Africa (SSA) will see the highest growth rate of any region globally, with the SSA construction industry value to grow in real terms by 5.6% y-o-y in CY2024 and 4.1% y-o-y in CY2025 and

see average annual growth of 4.9% y-o-y between CY2024 and CY2033. This will mark a slight moderation in growth for the region compared to average annual growth of 5.4% y-o-y between CY2013 and CY2023 but will put SSA as the strongest growing region globally over the coming decade. FSIAPL anticipates that growth will be concentrated in East and West Africa, with markets like Côte d'Ivoire, Tanzania, and Rwanda set to be global outperformers. Latin America will see a weakening of construction activity in CY2024 and CY2025, with the construction industry to contract in real terms decreasing by 2.3% y-o-y in CY2024 and 1.5% y-o-y in CY2025, respectively. This will be driven most notably by a sharp reduction in construction activity in Argentina due primarily to a sharp reduction in public investment under the country's new government. An expected moderation of construction activity in Mexico, the region's largest construction market, is also expected to contribute to this weakening of construction, as public investment declines as the current government's term ends later in CY2024 and priority projects near completion. Between CY2024 and CY2033, FSIAPL forecasts annual average growth of 1.7% y-o-y.

North America, and Europe will also see more modest growth in construction activity. In the case of North America, FSIAPL forecasts growth of 1.2% y-o-y and 1.8% y-o-y, respectively in CY2024 and CY2025 and average annual real growth of 2.1% y-o-y between CY2024 and CY2033. Underpinning this outlook is our expectation that the US construction industry will see modest growth in CY2024 and CY2025, continuing a recovery underway since CY2023. This will be supported by robust public investment, a strong expansion of manufacturing construction and particularly from 2025, by the effects of a loosening monetary policy. In the case of Europe, FSIAPL forecasts construction industry real growth of 2.4% y-o-y and 2.2% y-o-y respectively, with average annual real growth of 2.2% y-o-y between CY2024 and CY2033. India is projected to be the fastest-growing large construction market in the world as depicted in the graph below.

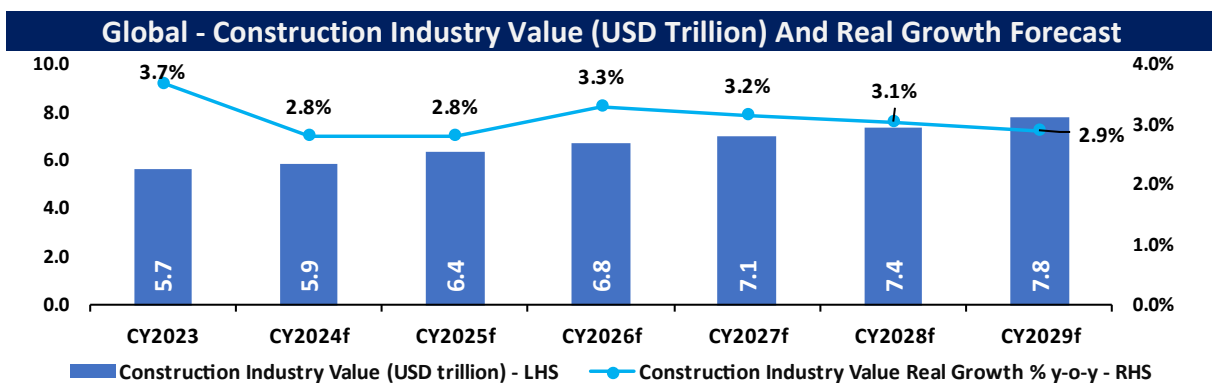


f= Fitch Solutions forecast; Source: National sources, Fitch Solutions

The construction industry market size of Sub-Saharan Africa is USD 147.0 billion, Asia Pacific is USD 2,282.9 billion, the Middle East, and North Africa is USD 214.3 billion, Latin America is USD 302.7 billion, North America is USD 1,359.0 billion, and Europe is USD 1,358.5 billion as of CY2023.

FSIAPL's construction industry growth forecasts for markets globally imply that the value of the global construction industry will grow in real terms by 2.8% y-o-y in CY2024 and by 2.8% y-o-y in CY2025. Over the next ten years, FSIAPL projects that the global construction industry will expand annually in real terms by 3.0% y-o-y on average. This highlights that the global construction industry will grow at a faster pace in the next ten-year period than the annual average of growth rate of 2.5% y-o-y over the previous ten-year period extending from CY2013 to CY2023. Some of the growth drivers for the global construction market include –

- While construction materials costs across the European region have seen broad, sustained disinflation since mid-CY2022, a lack of outright deflation will ensure that the input cost burden for industry participants remains acute. Amid an evolving view of the pace and extent of monetary policy loosening in the region during CY2024, the financing costs associated with new and ongoing project activity will remain similarly burdensome.
- Among the immediate implications of the disruption of Red Sea trade flows in recent months, and the subsequent reduction in Suez Canal traffic, is a weakening of revenues for the Canal and increased uncertainty around future revenue levels, thus creating a lasting challenge for plans to expand the Canal.
- With the reduction in traffic through the Suez Canal, there is potential for increased investment in alternative land corridors, although these alternatives are unlikely to capture a significant share of Canal traffic in the short to medium term. As trade routes shift towards the Cape of Good Hope, there is a greater likelihood of investment in port facilities along this path, particularly benefiting Atlantic-facing ports.
- The effects of tighter monetary policy seen across most markets since CY2022 will continue to weigh on construction activity globally, though a gradual loosening of financial conditions over the coming months will increasingly provide support.
- At the regional level, the Asia-Pacific region is set to drive the growth of the global construction industry, given the large size of the region's construction industry, while Sub-Saharan Africa's construction industry will see the highest growth in percentage terms.
- While China's construction industry is expected to underperform, India's construction industry will provide robust support for the growth of the region's construction industry value. Besides India, it is expected that the markets across the Southeast Asia region will increase their share of Asia's construction industry value.
- In comparison, Southern Africa will record relatively low construction industry growth over the next decade, due to South Africa, the sub-region's largest market's subdued performance.

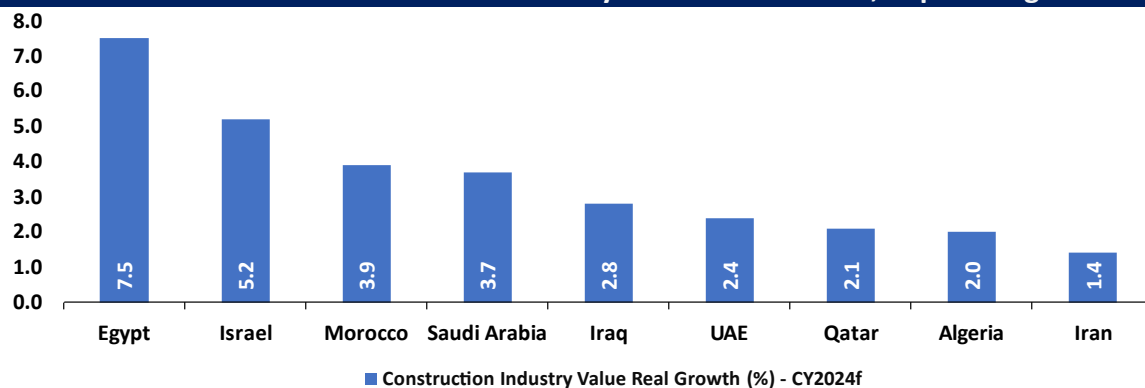


Source: National sources, Fitch Solutions; Note: f= Fitch Solutions forecast

## Outlook on MENA region

The Middle East and North Africa (MENA) markets are also set to see strong investment, as an uptick in revenues from the oil and gas industry allows for greater capital expenditure on construction and infrastructure projects. FSIAPL forecasts that the MENA construction industry will grow by 3.6% y-o-y in CY2024 and 3.3% y-o-y in CY2025, with average annual real growth of 3.2% y-o-y between CY2024 and CY2033. The MENA region hosts the fourth largest infrastructure project pipeline among regions globally, with much of this project activity situated across Gulf Cooperation Council markets and Egypt. Within MENA's transport infrastructure sector, FSIAPL expects that rail and roads will be the primary sectors of development, as the markets that lack adequate road connections in connecting to rural areas have substantial plans for road development.

### Select MENA Markets - Construction Industry Value Real Growth, Top 10 Largest Markets



f= Fitch Solutions forecast; Source: National sources, Fitch Solutions

## Outlook on Central and Eastern Europe region

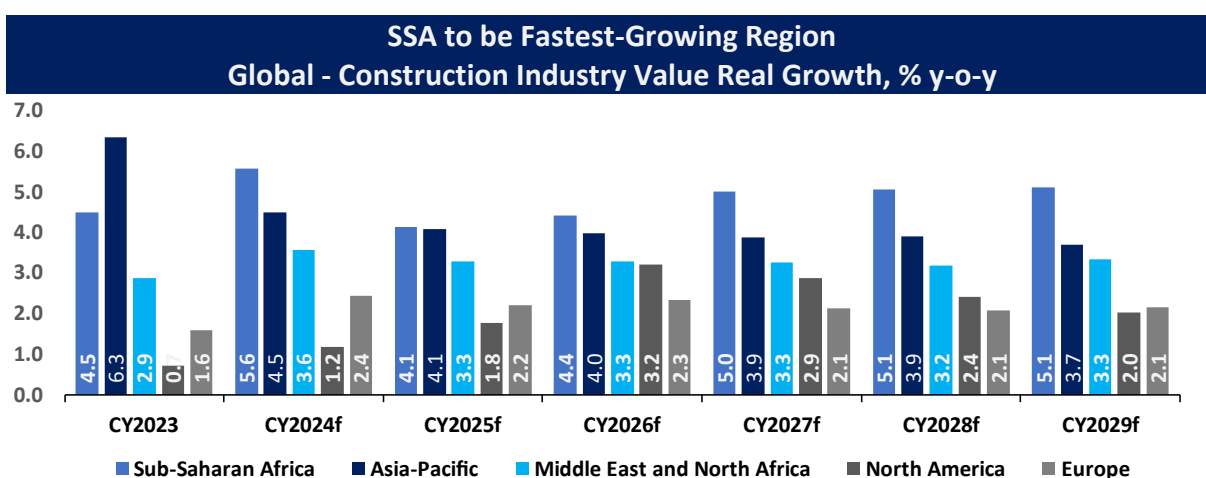
Europe exhibits a moderate near-term outlook across its respective construction industries, with the overall region forecast to see real growth of 2.4% y-o-y during CY2024. This would mark an acceleration from Europe's tepid growth figure for CY2023, 1.6% y-o-y, which saw the tightening of monetary policy conditions and prevailing inflationary pressures weigh on activity across several of the region's largest markets, such as Germany, France, and Italy.

While construction materials costs across the region have seen broad, sustained disinflation since mid-CY2022, a lack of outright deflation will ensure that the input cost burden for industry participants remains acute. Among comparable market-level data for construction materials costs for residential buildings, there is a continued disinflation through early CY2024. Data from the UK's Department for Business and Trade regarding construction materials for new housing, for example, show the index registered a 0.2% y-o-y decrease in March 2024, from a peak of 24% y-o-y increase in June 2022. Equivalent inflation series across Western Europe bear a similar trend since mid-CY2022, with the likes of Italy, Finland, and Norway seeing construction materials cost price inflation decline towards 0% y-o-y over the period.

## Outlook on SSA region

With average annual construction industry growth of 4.9% y-o-y from CY2024 to CY2033, SSA is set to record the fastest growth of all regions globally, driven by demographic tailwinds, growing middle classes, and high infrastructure investments in some markets, relative to their

construction industry value. This growth will be driven by a strong demographic outlook for the region, with a booming population and an accelerating urbanisation rate to support demand for residential construction, energy, and transport over our forecast period. To account for these dynamics, some regional markets continue to pursue ambitious infrastructure development strategies, despite a regional trend towards structurally lower government capital expenditure. These strategies will be aided by SSA's mining, oil, and gas sectors, which will help to attract infrastructure investments and support government capital expenditure. In particular, several fast-growth markets in East and West Africa are set to lead the region's construction industry growth, with Southern African growth prospects remaining relatively more muted. Despite this strong growth outlook, SSA will remain the smallest regional construction market throughout the forecast period, reaching a total share of 2.5% of the global construction industry in CY2033, up from just under 1.8% in CY2024.



*f = forecast. Source: National Sources, Fitch Solutions*

### Water supply projects funded by Indian Government's Lines of Credit (LOCs) in Africa

- Afcons Infrastructure Limited has completed 3 water supply projects worth INR 7.64 billion in Tanzania
- Afcons Infrastructure Limited is currently executing 6 water supply projects worth INR 21.61 billion in 5 countries in Africa.

### Outlook on APAC region

FSIAPL forecasts Asia's construction industry to grow by 4.5% y-o-y in CY2024, at an average rate of 3.8% between CY2024 and CY2033. This slowdown, relative to the pre-Covid growth trend, will largely be driven by Mainland China.

While China's construction sector is expected to underperform, India's construction industry will provide robust support for the growth of the region's construction industry value. FSIAPL forecasts India's construction industry to grow robustly over the coming decade at an annual average of 6.4% in real terms between CY2024 and CY2033. The government has set ambitious targets for the expansion of transport infrastructure. This will be supported by public and private investment in roads, rail, ports, and air transport infrastructure as the government aims to lower logistics costs, improve domestic connectivity, and reduce congestion. In the power sector, coal will continue to be the largest contributor to generation



growth due to its cost-effectiveness, owing to the market's abundant feedstock and its robust pipeline of coal power plant projects. Strong renewable electricity generation growth will be supported by feedstock availability, particularly for solar power, and an improving policy environment, including subsidy schemes and other incentives at both national and local government levels. FSIAPL expects India's industrial construction to benefit from increased investment as companies aim to diversify supply chains and adopt a China-Plus-One strategy.

Construction sector growth in Bangladesh will accelerate in CY2024, to 8.3%. This will fall below the industry's full potential given the macroeconomic headwinds facing the country. Weak private consumption will weigh on demand, while fiscal consolidation efforts will undermine investment in the sector. Even considering the market's sub-par business and operating environment, FSIAPL forecasts Bangladesh's construction industry to grow by an impressive annual average of 8.2% in real terms between CY2024 and CY2033, making Bangladesh one of the fastest-growing construction markets in Asia-Pacific over the next decade.

#### Indian Government's LOCs funded projects in Bangladesh:

India's infrastructure development engagement, both in terms of finance and nature of projects, has increased with Bangladesh over the past few years. As per the EXIM Bank of India website, Bangladesh has the highest level of exposure with around USD 7,862.0 million as of 12<sup>th</sup> December 2023.

The Government of India's LOC funded project details in Bangladesh is as follows:

S.No.	Year of Approval	Borrower	Purpose	Amount of Credit (in USD million)
1	2010-2011	Government of Bangladesh	Financing export of goods and projects including development of railway infrastructure, dredging, construction of bridges, procurement of buses, locomotives, coaches etc.	862.0
2	2015-2016	Government of Bangladesh	Financing various social and infrastructure development projects in Bangladesh [such as power, railways, road transportation, information and communication technology, shipping, health and technical education sectors]	2,000.0
3	2016-2017	Government of Bangladesh	Developmental Projects	4,500.0
4	2016-2017	Government of Bangladesh	Defence related Procurement	500.0
<b>Total Government of India's Lines of Credit (LOCs) (in USD million)</b>				<b>7,862.0</b>

Source: Exim Bank of India Website

Afcons Infrastructure Limited is executing 3 road projects and 1 rail project in Bangladesh with a total project value of INR 34.06 billion.

#### Sri Lanka

FSIAPL anticipates a robust return to positive growth for the construction sector in CY2024, following years of significant contractions due to the country's economic and political crisis. With a stronger economic recovery outlook for CY2024, FSIAPL projects the construction sector will grow by 6.8% in CY2024, followed by a 5.5% y-o-y increase in CY2025. However, the sector is expected to remain well below pre-crisis activity levels in the short to medium term. FSIAPL highlights that government funding for infrastructure projects will remain limited due to IMF-imposed spending restrictions, and political and economic uncertainties will continue to affect project finances and investor interest in the near term. Despite these challenges, FSIAPL maintains a positive long-term outlook for Sri Lanka, driven by substantial

infrastructure needs and significant investment from Mainland China, Japan, and India in transport infrastructure and non-residential building sectors. FSIAPL forecasts an annual average industry growth rate of 6.0% from CY2024 to CY2033, with the real construction industry value expected to reach USD 12.1 billion by CY2033, representing a partial recovery from an estimated low of USD 4.1 billion in CY2023 but still below the pre-crisis peak of USD 12.1 billion in CY2017.

**Greater Male Connectivity Project by Afcons Infrastructure Limited, Maldives (Ongoing):** Afcons Infrastructure Limited is engaged in the biggest infrastructure project in Maldives. The company is designing and building of Greater Male Connectivity – Male to Thilafushi Link Project under the Ministry of National Planning, Housing and Infrastructure, Maldives. The project is valued at INR 40.27 billion.

Country wise and sector wise details of the total project pipelines is as follows:

Summary of Total Project Pipeline (Amount in USD million)										
Country	Airports	Commercial Construction	Industrial Construction	Oil & Gas Pipelines	Ports	Power Plants & Grids	Rail	Roads & Bridges	Water	Grand Total
Vietnam	2,684.0	56,831.0	25,978.0	16,125.0	9,618.0	140,939.0	160,203.0	23,340.0	1,300.0	437,018.0
Saudi Arabia	8,036.0	32,227.0	39,252.0	-	533.0	8,730.0	37,982.0	-	3,380.0	130,140.0
Philippines	45,098.0	764.0	2,387.0	-	1,194.0	44,700.4	15,786.0	18,588.0	-	128,517.4
Democratic Republic of the Congo & Liberia	-	-	-	-	-	97,680.0	250.0	4,188.0	-	102,118.0
Mozambique	-	-	58,105.0	5,000.0	1,365.0	15,847.0	-	780.0	700.0	81,797.0
Tanzania	-	1,550.0	34,000.0	-	11,900.0	7,891.0	3,811.0	3,738.0	271.0	63,161.0
Ghana	-	7,300.0	5,200.0	-	1,350.0	5,755.0	32,496.0	-	-	52,101.0
Bangladesh	-	-	-	-	970.0	6,100.0	29,866.0	11,935.0	954.0	49,825.0
Bhutan, Nepal & Maldives	6,900.0	-	400.0	-	700.0	34,284.0	2,830.0	4,400.0	-	49,514.0
Romania	-	875.0	12,970.0	-	-	3,307.0	14,943.0	12,783.0	-	44,878.0
Laos	-	-	-	-	-	19,335.0	6,192.0	5,100.0	-	30,627.0
Cambodia	300.0	3,500.0	2,158.0	-	973.0	330.0	15,443.0	650.0	-	23,354.0
Sri Lanka	-	14,400.0	392.0	-	550.0	2,590.0	1,880.0	-	-	19,812.0
Bosnia & Herzegovina	-	300.0	289.0	-	-	6,940.0	287.0	3,815.0	-	11,631.0
Zambia	-	-	420.0	-	-	4,682.0	4,289.0	-	-	9,391.0
Armenia & Georgia	-	-	-	-	3,370.0	4,430.0	-	-	-	7,800.0
Uganda	-	-	900.0	-	-	2,125.0	-	1,930.0	-	4,955.0
Cote D'Ivoire	-	-	-	-	-	3,812.0	-	-	-	3,812.0
Gabon	-	-	1,000.0	-	-	401.0	-	1,529.0	-	2,930.0
<b>Grand Total of Total Project Pipeline (Amount in USD million)</b>										<b>1,253,381.4</b>

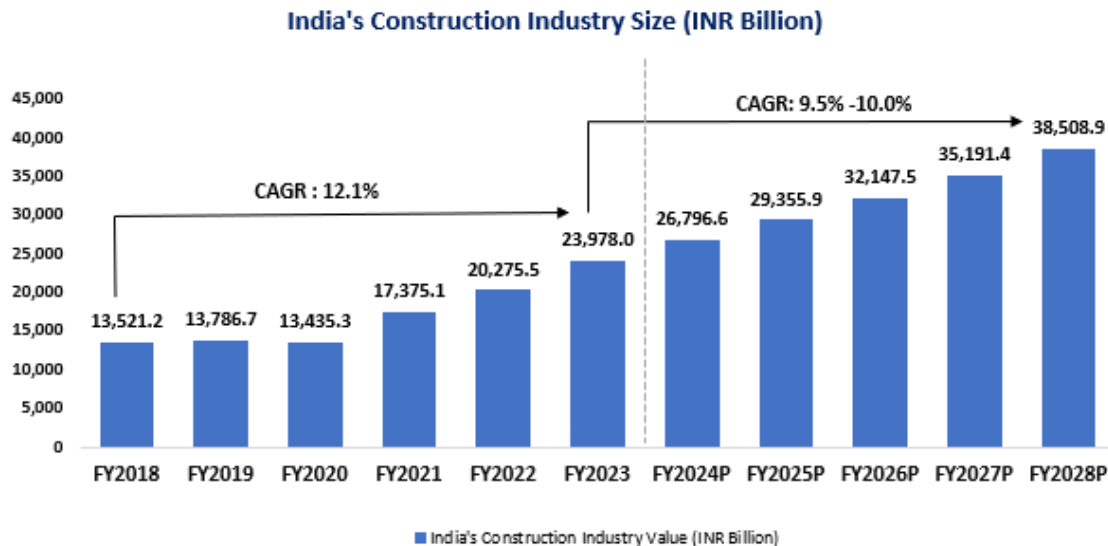
Source: Fitch Solutions

Note: This table includes projects above USD 250 million value only

## Chapter 3: Indian Construction Infrastructure Industry Overview

### Assessment of Overall Construction Industry in India

As per Fitch Solutions, the Indian Construction industry value stood at INR 23,978.0 billion as of FY2023, having grown at a CAGR of 12.1% from INR 13,521.2 billion as of FY2018. Growth in India's construction industry will be supported by high levels of urbanization, an expanding middle class, rising infrastructure investments, surging power demand and strong industrial growth.



Source: Reserve Bank of India, Fitch Solutions

Note: P= Projections

The breakdown of different categories forming part of the overall Indian construction industry is given in the table below. As of FY2023, Infrastructure industry forms 37.4% of the total construction industry, residential building industry forms 15.2% of the total construction industry and non-residential building industry forms 47.4% of the total construction industry in India.

Category wise break-up of Indian Construction Industry (FY2018 - FY2023)						
Year	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
Infrastructure industry value (INR Billion)	5,041.1	5,749.4	5,778.3	6,880.3	7,830.6	8,973.0
Infrastructure industry value, % of total construction	37.3%	41.7%	43.0%	39.6%	38.6%	37.4%
Residential building industry value (INR Billion)	2,872.5	2,730.6	2,519.8	2,723.4	3,157.8	3,647.7
Residential building industry value, % of total construction	21.2%	19.8%	18.8%	15.7%	15.6%	15.2%
Non-residential building industry value (INR Billion)	5,607.6	5,306.7	5,137.2	7,771.4	9,287.0	11,357.3
Non-residential building industry value, % of total construction	41.5%	38.5%	38.2%	44.7%	45.8%	47.4%
<b>India's Construction Industry Value (INR Billion)</b>	<b>13,521.2</b>	<b>13,786.7</b>	<b>13,435.3</b>	<b>17,375.1</b>	<b>20,275.5</b>	<b>23,978.0</b>

Source: Reserve Bank of India, Fitch Solutions

FSIAPL forecasts India's construction industry to grow at a CAGR of 9.5%-10.0% from INR 23,978.0 billion in FY2023 to INR 38,508.9 billion in FY2028 driven by stable government support for infrastructure development and expanded private involvement in key sectors and public-private partnerships. Near-term growth will be supported by strong Government push in the form of infrastructure development projects such as National Infrastructure Pipeline, Smart Cities Mission, Gati Shakti, UDAN, Bharatmala Pariyojana, Sagarmala and the Atal

Mission for Rejuvenation and Urban Transformation (AMRUT). These government programmes aim to enhance connectivity, upgrade urban infrastructure, develop transportation networks, and foster overall construction sector of India.

### Capital Outlay of the Overall Construction Industry in India (FY2023 – FY2025)

The FY2025 budget includes an increase of capital investment with a focus on improving transport and logistics infrastructure that is embedded in a wider push to increase manufacturing capacity, especially across higher value-add supply chain segments. The government has rightly announced coming out with a market-based financing framework and viability gap funding to spur private sector investment. For the road sector, PM Gram Sadak Yojana 4.0 has been announced that will help in providing all weather connectivity to 25,000 rural habitations. The table below signifies that various ministries have allocated higher budget for capital expenditures in FY2025.

### Capital Outlay of Core Infrastructure Ministries in India (INR Billion) – FY2023 to FY2025

Segments	Name of the Ministry	FY2023A	FY2024RE	FY2025BE	Growth % (FY2025BE v/s FY2024RE)
Infrastructure	Roads	2,059.9	2,645.3	2,722.4	2.9%
	Railways	1,592.6	2,400.0	2,520.0	5.0%
	Urban Infra	268.8	265.3	286.3	7.9%
	Ports	6.8	11.7	10.8	-7.6%
	Power	0.2	1.2	10.9	772.9%
	Irrigation	1.7	3.2	4.0	23.7%
Industrial	Oil & Gas	0.0	0.4	11.3	NM
	Metals & Minig	0.6	0.8	0.5	-40.5%
<b>Total Capital Outlay of Core Infrastructure Ministries (INR Billion)</b>		<b>3,930.5</b>	<b>5,327.9</b>	<b>5,566.1</b>	<b>4.5%</b>

Source: Union Budget, FSIAPL

Note: A- Actuals, RE – Revised Estimates, BE – Budgeted Estimates, NM- Not Meaningful

Out of the core 8 infrastructure ministries, the ministries which have been allocated higher share for capital expenditure in FY2025 are Ministry of Jal Shakti - Department of Water Resources, River Development and Ganga Rejuvenation (23.7% higher than FY2024RE), Ministry of Power (772.9% higher than FY2024RE), Ministry of Housing and Urban Affairs (7.9% higher than FY2024RE), Ministry of Railways (5.0% higher than FY2024RE), and Ministry of Road Transport and Highways (2.9% higher than FY2024RE). The table below highlights the historical compounded annual growth (CAGR) and expected CAGR of core infrastructure sectors in India:

Segment	Historical CAGR % (FY2018A-FY2023A)	Expected CAGR % (FY2023A-FY2028P)
National Highway	40 - 45%	5-6%
State Highway	8 - 10%	4-5%
Rural Roads	1-2%	1-2%
Irrigation	-12.5%	4.0%
Railways	29.7%	6.0%
Metals & Minig	-7.3%	4.2%
Urban Infra	11.9%	5.0%
Ports	30.1%	4.5%
Segment	Historical CAGR % (FY2018A-FY2023A)	Expected CAGR % (FY2025BE-FY2028P)
Oil & Gas	-100.0%	4.0% *

Source: Union Budget, FSIAPL

Note: \* Ministry of Petroleum and Natural Gas (Oil and Gas segment) has not allocated any capital outlay funds in FY2023A, hence the projection is calculated for 3 years from FY2025BE-FY2028P

### **Outlook on the Capital Outlay of Overall Construction Industry in India (FY2023 – FY2028)**

India continues to be a relatively attractive destination for investment in infrastructure and its project pipeline has expanded in recent years, which will support the growth forecasts going forward. FSIAPL has projected the capital outlay of core Infra Ministries in the table given below. FSIAPL expects the capital outlay for the road sector to increase at a CAGR of 6%, the railway sector to increase at a CAGR of 6%, Urban Infra to increase at a CAGR of 5% and the ports sector to increase at a CAGR of 4.5% during the period FY2023–FY2028. The irrigation, oil & gas and metals sector would post CAGR of 4–4.2% during the period FY2023–FY2028. For a detailed analysis of each sector, please refer to the sector wise sections in the subsequent pages.

### **Projection of Capital Outlay of Core Infra Ministries in India (INR Billion) FY2023 to 2028**

Segments	Name of the Ministry	FY2023A	FY2024RE	FY2025BE	FY2026P	FY2027P	FY2028P	CAGR % (2023A-2028P)
Infrastructure	Roads	2,059.9	2,645.3	2,722.4	2276.1	2503.8	2754.1	6.0%
	Railways	1,592.6	2,400.0	2,520.0	1759.8	1935.8	2129.3	6.0%
	Urban Infra	268.8	265.3	286.3	291.6	316.4	343.3	5.0%
	Ports	6.8	11.7	10.8	7.3	7.8	8.5	4.5%
	Power	0.2	1.2	10.9	0.3	0.3	0.3	5.0%
	Irrigation	1.7	3.2	4.0	1.8	1.9	2.0	4.0%
Industrial	Oil & Gas	0.0	0.4	11.3	11.7	12.2	12.7	4.0% *
	Metals & Minig	0.6	0.8	0.5	0.6	0.7	0.7	4.2%

Source: FSIAPL

Note: \* Ministry of Petroleum and Natural Gas (Oil and Gas segment) has not allocated any capital outlay funds in FY2023A, hence projection is calculated for 3 years from FY2025BE-FY2028P

### **Growth Drivers of overall Construction sector in India**

The Indian Construction industry is poised for growth driven by the government's sustained thrust on capital expenditure, sector-specific rebound in private capex and accelerated project execution supported by the likely reduced raw material price volatility. A few factors fostering the growth of Construction Industry in India are as follows:

### **Increased Budgetary allocation for the infrastructure sector**

As per the Union Budget of FY2025, the planned capital expenditure for FY2025 stands at INR 11.1 trillion, which is a 11.1% increase from last year. Substantial funding is expected to be earmarked for the road and rail sectors. The Union Budget of FY2025 allocated INR 2.8 trillion to the Ministry of Road Transport and Highways, a 2.8% increase from the previous year. Indian Railways was granted INR 2.6 trillion, following last year's historic allocation of INR 2.4 trillion. These funds are designated for developing three major economic railway corridors and various modernisation projects. Overall, the Government's strong support for the sectors underpins FSIAPL's positive outlook for medium-term transport infrastructure construction growth in India.

### **Rising FDI in the Infrastructure sector**

India's construction market's strong performance throughout the year was driven by the government's ongoing ambitious infrastructure investment programme and continued strong foreign direct investment (FDI) inflows, particularly in the market's manufacturing sector. In FY2024, FDI in India's construction sector almost doubled from the previous year.

### **Rapid urbanization has a significant impact on the Construction Industry**

According to Census 2011, the decadal growth of urban population was higher than rural population, with 31.2% of the population living in urban areas. There has been an increase in the number of large cities in India. As many as 53 cities in India has a million-plus population as per Ministry of Housing and Urban Affairs. The growth of urbanization in India has had a significant impact on various industries, including the construction industry. As urban populations continue to grow, the demand for new construction projects including housing, commercial buildings, infrastructure, smart cities, etc will increase. Government push in the form of infrastructure development projects such as National Infrastructure Pipeline, Smart Cities Mission, Gati Shakti, UDAN, Bharatmala Pariyojana, Sagarmala and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) will foster the growth of Construction activity in India.

### **Reforms Facilitating Private and Foreign Investment**

Growth opportunities arising from Indian Government's policy steps in recent years, domestic corporates focusing more on localisation and multi-nationals looking to reduce risk in global supply chains may attract higher private investment in the medium term. The Indian banking system's improved financial health and confidence in borrowers' credit profiles also positions it well for the higher credit growth needed to realise the corporates' spending plans.

Recent reforms of India's FDI regulations are positive for attracting investment and participation in the country's infrastructure sectors, which would be positive for overall growth given India's sizeable infrastructure needs. The cabinet approved revisions to the FDI regulations relaxing restrictions on foreign ownership of airlines, power exchanges and construction and real estate businesses. It was the latest reform to come as part of Make in India initiative, which previously also relaxed restrictions on FDI in the roads and railway sub-sectors. There is significant room for foreign companies to grow their presences in India's infrastructure sector, though FSIAPL acknowledges that FDI regulations are just one component of improving the market's attractiveness. Given India's immense infrastructure



deficit, the sector would benefit from capital and technical expertise that foreign investors and partners could bring.

### **Delays noticed in certain construction projects**

The Infrastructure and Project Monitoring Division (IPMD) under the Ministry of Statistics and Programme Implementation (MoSPI) is mandated by the Government to monitor central sector infrastructure projects costing INR 1,500.0 million and above based on the information provided on the Online Computerised Monitoring System (OCMS) by the project implementing agencies. According to the MoSPI report of March 2024; out of 1,873 projects, as many as 41.6% projects (779 projects) were delayed and 23.9% (449 projects) reported cost overruns (22–25% increase in cost over original cost). These 449 infrastructure projects have been hit by cost overruns of more than INR 5.0 trillion.

Out of the 779 delayed projects, 202 have overall delays in the ranges of 1-12 months, 181 have been delayed for 13-24 months, 277 projects for 25-60 months, and 119 projects have been delayed for more than 60 months. The average time overrun in these 779 delayed projects was 36.04 months. Reasons for time overrun include delay in land acquisition, obtaining forest and environment clearances, and lack of infrastructure support and linkages. Delays in tie-up for project financing, finalization of detailed engineering, change in scope, tendering, ordering and equipment supply, law and order problems are among other reasons. The result of these delays is cost overruns, which will reduce profitability of projects and increase financial pressures faced by contractors. Potentially lower profits may negatively impact interest from the private sector, especially in projects that are to be procured via PPPs.

### **EXIM Bank to support Indian project exporters**

EXIM Bank, on behalf of and with the support of the Government of India, extends Lines of Credit (LOC) to sovereign governments, regional development banks and overseas entities to promote development in partner countries. During the year FY2024, the Bank extended five LOCs aggregating USD 994.9 million, to support the export of goods, services, and projects from India to the Governments of Mongolia, Guyana, and Democratic Republic of Congo. These LOCs will support defence exports, construction of oil refinery plants, hydroelectric and solar power projects in the countries. As of FY2024, the Bank has a portfolio of 324 GOI-LOCs with credit commitments aggregating USD 31.2 billion, which are at various stages of implementation. With an ever-expanding reach, the LOCs have gained momentum in stimulating economic growth across 68 countries in Africa, Asia, Latin America, Oceania, and East Europe.

Some major projects of Afcons Infrastructure Limited funded by the Government of India – Lines of Credit (LOCs) through EXIM Bank include the following:

- Greater Male Connectivity – Maldives: Afcons Infrastructure Limited is engaged in the design and build of Greater Male Connectivity – Male to Thilafushi Link Project for the Ministry of National Planning, Housing and Infrastructure, Maldives. This is an EPC project which valued around INR 40,272.32 million.
- Road Project, Mozambique: Afcons Infrastructure Limited is engaged in the rehabilitation of road N280/N281 between Tica, Buzi and Nova Sofala in Sofala Province, Mozambique for National Roads Administration (ANE), Maputo, Mozambique. This is an item–rate



project which valued around INR 9,590.00 million. This is one of the most important road infrastructure projects in the country. It will reduce travel distance and time between capital city Maputo and provincial capital Beira.

- Afcons Infrastructure Limited is executing 3 road projects and 1 rail project in Bangladesh with a total project value of INR 34,055.97 million.
- Afcons Infrastructure Limited has completed 3 water supply projects worth INR 7,299.00 million in Tanzania
- Afcons Infrastructure Limited is currently executing 6 water supply projects worth INR 21,614.96 million in 5 countries in Africa.

EXIM Bank is supporting exports from India by offering buyer's credit to borrowers in overseas destinations on deferred payment terms and thus enabling development of market for merchandise exports and project exports from India. In FY2024, EXIM Bank approved loans aggregating USD 86.0 million to overseas buyers from various countries including UAE, Thailand, South Africa, and Nigeria, to finance exports from India to these countries under the Buyers Credit programme. Disbursements during the period aggregated USD 37.7 million. Buyer's Credit under the National Export Insurance Account (BC-NEIA) is a unique financing mechanism that provides a safe mode of non-recourse financing to Indian exporters and serves as an effective market entry tool to traditional as well as new markets in developing countries that need deferred credit on a medium or long-term basis. As on 31<sup>st</sup> March 2024, the Bank has sanctioned an aggregate amount of USD 3.4 billion, for thirty-six projects, valued at USD 3.7 billion under BC-NEIA. Under BC-NEIA, the Bank supported project exports from an Indian company for the construction of a transmission line for the Tambacounda – Kolda – Ziguinchor link in Senegal, as well as extensions and rehabilitation of networks in the regions. This project is strengthening the power infrastructure in Senegal and provides a substantial socioeconomic boost to the southern region of the country.

Some major projects of Afcons Infrastructure Limited funded by EXIM Bank under Buyer's Credit – NEIA Programme includes the following:

- **Zambia – Lusaka City Decongestion Project:** Afcons Infrastructure Limited was engaged in the construction, rehabilitation and widening of 91 km roads in Lusaka City, 29 km roads with dedicated bus lanes for Bus Rapid Transit (BRT) and improvement of 9 junctions along with 4 new flyovers for the Ministry of Local Government and Housing (MLGH), Zambia. This was an EPC project which valued around INR 17,585.87 million. This project was completed six months ahead of schedule in a pandemic year. Afcons had built Zambia's first flyovers, and this project was a strategic roads decongestion project in Africa.
- **Tema to Mpakadan Railway Project, Ghana:** Afcons Infrastructure Limited was engaged in the construction of single standard gauge railway line of 97.68 km from Port of Tema to Akosombo for the Ghana Railway Development Authority (GRDA). This was an EPC project which valued around INR 29,936.85 million. This is the largest railway project in Ghana and the project includes longest railway bridge (300m) in the country over Lake Volta. This is the first bridge to have raker pile foundations in Africa. This project is completed on 30<sup>th</sup> June 2024.

### Trends in the Tendering process of Infrastructure Projects in India

The Ministry of Finance (Procurement Policy Division, Department of Execution) introduced 'General Instructions on Procurement and Project Management' on 29<sup>th</sup> October 2021. The 2021 Guidelines aimed to reform the existing procurement and project management rules and procedures in the execution of public projects, which was affected for a long time by cost and time overruns. Changes introduced in the 2021 Guidelines are as follows:

**Scrapping the practice to rejecting a single bid during open tenders:** Previously, a single bid was not accepted according to the guidelines issued by the Central Vigilance Commission. In case the second round of tendering also fetched a single bid, the authority floating the tender was allowed to take a call on the bid. This practice has contributed majorly to the time and cost overruns. The government in the 2021 Guidelines, has scrapped the practice followed by public authorities to reject a single bid during open tenders, stating that it should be considered valid subject to some conditions. The reason for scrapping the practice to reject a single bid was to save time and cost.

### **Trends in Line of Credit for Infrastructure sector in India**

According to RBI's data on the sectoral deployment of Bank credit, credit growth to large industries posted a turnaround during FY2024, led by capital-intensive industries such as infrastructure, supported by the government's higher capex spending. According to Reserve Bank of India's Sectoral deployment of Bank credit FY2024 data, the pace of lending to the large industries was improved with credit growth of 6.4% in March 2024, due to their improved profitability and cash flows. Within the large industries segment, credit growth of the infrastructure segment increased from 4.8% in December 2023 to 5.4% in March 2024. The credit to units in basic metal and metal products, which contracted in FY2021 and FY2022, showed a reversal in trend with 19.6% y-o-y growth in FY2023. The basic metal and metal products credit growth later decelerated to 11.4% by the end of March 2024.

**Sectoral Credit Growth of SCBs (y-o-y % growth)**

Sector	2020-21*	2021-22**	2022-23#	2023-24											
				Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
<b>Non-food Credit</b>	5.5	9.7	15.4	16.1	15.6	16.3	14.8	15.0	15.3	15.3	16.3	15.8	16.2	16.5	16.3
A) Industry (Micro & Small, Medium and Large)	-0.4	7.5	5.6	7.0	6.0	8.0	5.1	6.0	6.6	5.4	6.1	8.1	7.9	8.8	8.5
(1) Micro & Small	7.5	23.0	13.2	9.9	9.8	13.2	10.2	10.8	10.1	16.5	16.8	14.7	16.0	15.1	14.6
(2) Medium	31.4	54.4	12.0	11.2	10.4	13.4	9.1	9.3	9.1	12.0	11.9	8.6	9.9	12.7	13.1
(3) Large	-3.1	2.0	3.1	5.8	4.6	6.1	3.4	4.5	5.4	2.2	3.0	6.4	5.7	6.8	6.4
(3.1) Infrastructure	1.1	9.1	0.4	3.2	1.9	1.7	0.3	1.0	1.9	-0.1	1.1	4.8	5.0	5.8	5.4
(3.2) Basic Metals & Metal Products	-8.8	-5.5	19.6	19.9	17.1	22.0	18.1	18.5	18.6	17.0	17.9	15.0	11.5	11.9	11.4

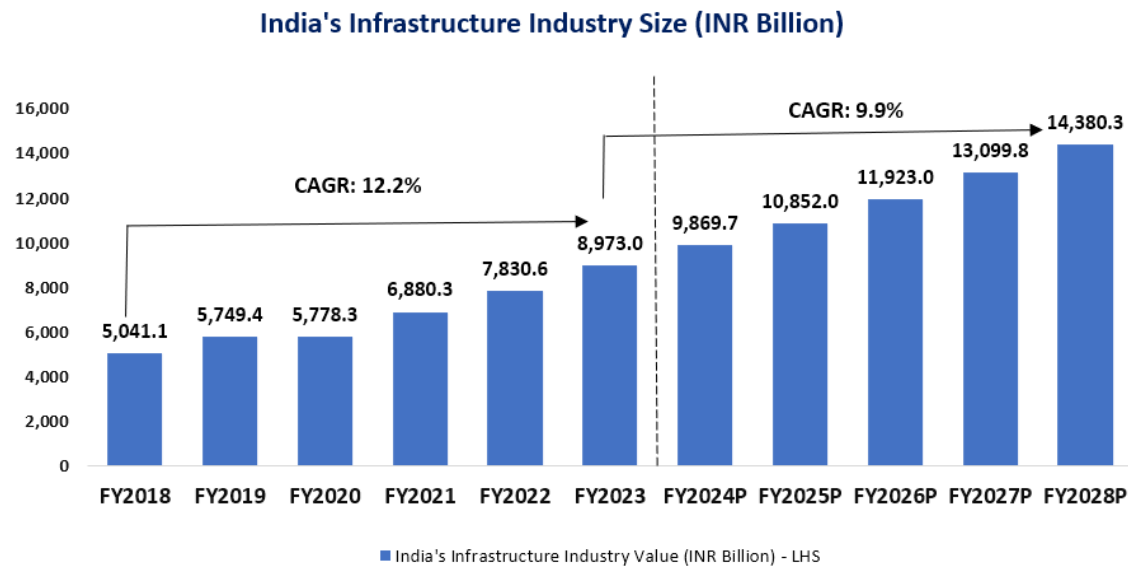
\*: March 2021 over March 2020; \*\*: March 2022 over March 2021, #: March 2023 over March 2022

Note: This growth excludes the impact of the July 2023 merger of HDFC with HDFC Bank.

Source: Reserve Bank of India

### **Assessment of Infrastructure Construction Segment**

The Government of India has been placing strong emphasis on India's Infrastructure sector as it is crucial to India's overall growth. The Indian Infrastructure Industry has grown at a CAGR of 12.2% from INR 5,041.1 billion in FY2018 to INR 8,973.0 billion in FY2023 as shown in the graph below.



Source: Reserve Bank of India, Fitch Solutions

Note: P= Projections

Sustained investment in infrastructure will help India gradually bridge its sizeable infrastructure deficit, which ranges from rural road and power access to strained urban transport systems. Ongoing regulatory reforms made as part of the Government's Make in India initiative are also opening up infrastructure sectors to greater foreign and private involvement, which will unlock greater pools of financing and improve operational efficiencies in the industry. Thus, FSIAPL estimates India's Infrastructure Industry to grow at a CAGR of 9.9% from INR 8,973.0 billion in FY2023 to INR 14,380.3 billion in FY2028.

Improved capacity utilisation, a pick-up in credit demand, and improved business expectations are pointing towards strengthening of investment activity in the Indian economy in the period ahead. On the downside, higher cost of capital owing to the tightening of monetary policy by various central banks including RBI, global uncertainty led by geopolitical tensions and risk of slowdown in major advanced economies could hamper investment activities. Overall, the investment cycle appears to be poised to gain momentum going ahead, but its sustainability needs to be monitored.

### Transport Infrastructure Construction to boost the infrastructure sector

Transport Infrastructure - Industry Size (India FY2018 - FY2023)							
Year	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	CAGR growth % (FY2018-23)
Transport Infrastructure Industry Size (INR billion)	2,255.2	2,612.4	1,826.7	2,942.8	3,354.8	3,852.3	11.3%
Roads and bridges Infrastructure Industry Size (INR billion)	1,618.9	1,362.4	973.7	1,710.4	1,948.7	2,246.9	6.8%
Railways Infrastructure Industry Size (INR billion)	577.9	736.6	640.3	1,078.0	1,230.5	1,404.3	19.4%
Airports Infrastructure Industry Size (INR billion)	38.6	496.6	163.1	113.8	130.1	149.7	31.1%
Ports, harbours, waterways Infrastructure Industry Size (INR billion)	19.9	16.7	49.7	40.6	45.5	51.5	20.9%

Source: Industry Sources, Fitch Solutions

India's Transport Infrastructure industry was at INR 2,255.2 billion as of FY2018. It grew at a CAGR of 11.3% from FY2018 to reach INR 3,852.3 billion as of FY2023. India's transport infrastructure construction sector is expected to expand by 9.7% y-o-y in FY2024. It is further

expected to grow at a CAGR of 9.6% from INR 3,852.3 billion in FY2023 to INR 6,092.0 billion in FY2028 supported by both public and private investment.

Transport Infrastructure - Industry Forecast (India FY2023 - FY2028)							
Year	FY2023	FY2024f	FY2025f	FY2026f	FY2027f	FY2028f	CAGR growth % (FY2023-28)
Transport Infrastructure Industry Size (INR billion)	3,852.3	4,226.3	4,636.0	5,078.8	5,566.8	6,092.0	9.6%
Roads and bridges Infrastructure Industry Size (INR billion)	2,246.9	2,469.3	2,712.1	2,976.7	3,265.3	3,579.8	9.8%
Railways Infrastructure Industry Size (INR billion)	1,404.3	1,536.1	1,681.9	1,838.0	2,014.3	2,201.3	9.4%
Airports Infrastructure Industry Size (INR billion)	149.7	165.1	181.6	198.7	216.6	234.6	9.4%
Ports, harbours, waterways Infrastructure Industry Size (INR billion)	51.5	55.8	60.4	65.4	70.7	76.2	8.2%

f = Fitch Solutions forecast; Source: Industry Sources, Fitch Solutions

## Energy & Utilities Infrastructure to witness robust growth

Energy and Utilities Infrastructure - Industry Size (India FY2018 - FY2023)							
Year	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	CAGR growth % (FY2018-23)
Energy and utilities infrastructure Industry Size (INR billion)	2,785.9	3,137.0	3,951.6	3,937.5	4,475.8	5,120.7	12.9%
Power plants and transmission grids infrastructure Industry Size (INR billion)	2,061.5	2,258.7	2,963.7	3,071.2	3,580.6	4,045.3	14.4%
Oil and Gas pipelines infrastructure Industry Size (INR billion)	167.2	219.6	237.1	157.5	223.8	256.0	8.9%
Water infrastructure Industry Size (INR billion)	557.2	658.8	750.8	708.7	671.4	819.3	8.0%

Source: Industry Sources, Fitch Solutions

Energy and Utilities Infrastructure - Industry Forecast (India FY2023 - FY2028)							
Year	FY2023	FY2024f	FY2025f	FY2026f	FY2027f	FY2028f	CAGR growth % (FY2023-28)
Energy and utilities infrastructure Industry Size (INR billion)	5,120.7	5,643.4	6,216.1	6,844.2	7,533.0	8,288.3	10.1%
Power plants and transmission grids infrastructure Industry Size (INR billion)	4,045.3	4,063.2	4,662.1	5,338.5	6,026.4	6,630.7	10.4%
Oil and Gas pipelines infrastructure Industry Size (INR billion)	256.0	395.0	373.0	273.8	376.7	414.4	10.1%
Water infrastructure Industry Size (INR billion)	819.3	1,185.1	1,181.1	1,232.0	1,130.0	1,243.3	8.7%

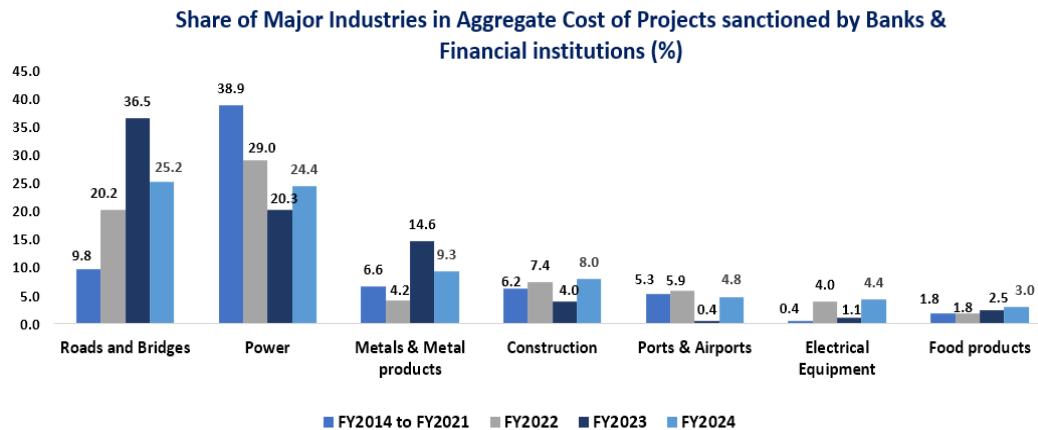
f = Fitch Solutions forecast; Source: Industry Sources, Fitch Solutions

India's Energy and utilities infrastructure industry was at INR 2,785.9 billion as of FY2018. It grew at a CAGR of 12.9% from FY2018 to reach INR 5,120.7 billion as of FY2023. FSIAPL forecast that India's energy and utilities infrastructure sector will continue to grow at a CAGR of 10.1% between 2023 and 2028. Growth in India's energy and utilities infrastructure sector over the coming decade will be driven by substantial investment in the upgrade and expansion of power plants, electricity transmission and distribution networks, and water utilities in order to meet growing demand caused by a growing population and increasing urbanisation.

## Infrastructure Sector continued to attract the maximum Capex Projects led by Roads, Bridges and Power sectors

RBI Bulletin of August 2024 indicated that during FY2024, about 944 projects got assistance from banks/FIs with a record high total cost of projects of INR 3.9 trillion, as compared to 547 projects sanctioned during the previous year having total cost of INR 2.7 trillion. The government's thrust on capex, besides various policy initiatives to revive the investment cycle and improved economic outlook provided a conducive environment for private corporates to undertake fresh capital investment. Out of the total cost of projects, 54% was planned to be invested by the end of FY2024, 30% is provided for FY2025, and the remaining 16% is envisaged to be invested in the subsequent years.

RBI stated that infrastructure sector continued to attract the maximum Capex projects led by roads, bridges, and power sectors.



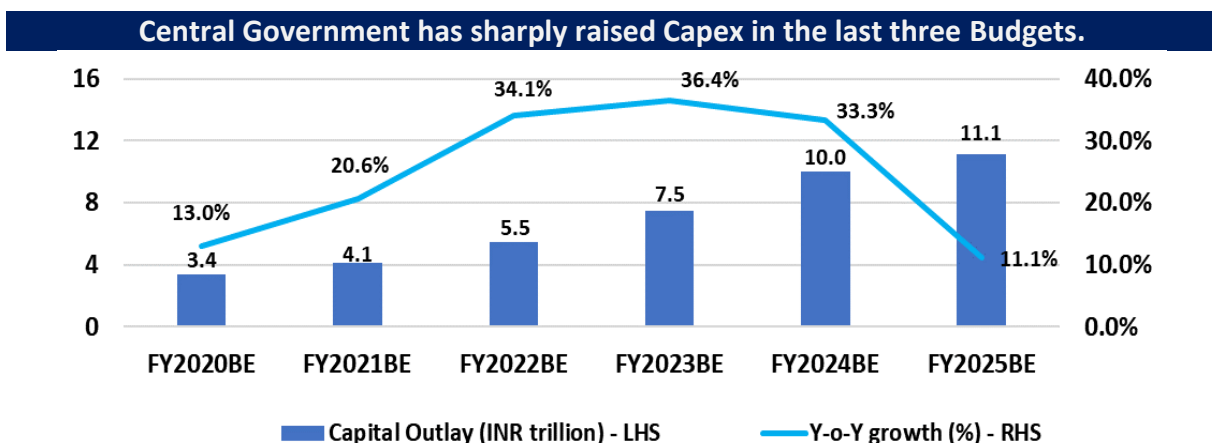
Source: Reserve Bank of India

RBI Bulletin of August 2024 also indicated that projected capital expenditure by private companies could rise significantly to INR 2.5 trillion in FY25, up from INR 1.6 trillion in FY24. RBI stated that healthy balance sheets of both corporates and banks, improved corporate profitability, sustained credit demand, rising capacity utilisation, optimism in business sentiments provide a conducive environment for private corporates to undertake investments going forward. However, on the downside, global financial market volatility, protracted geopolitical tensions and geo-economic fragmentation could dampen investment plans. State-wise distribution showed that the top five states of Gujarat, Maharashtra, Karnataka, Andhra Pradesh, and Uttar Pradesh together accounted for 55% share in total project cost during FY2024. In FY2024, Gujarat accounted for the highest share (14.7%) in the total cost of projects sanctioned by banks and financial institutions, followed by Maharashtra (11.7%), Karnataka (11.1%), Andhra Pradesh (10.1%) and Uttar Pradesh (7.6%).

## Outlook on Indian Infrastructure

### Increasing Central Government Capex to boost Indian Infrastructure Industry

Infrastructure spending have a multiplier effect on the economy. Hence, over the last decade, the government has been increasing the outlay for infrastructure. The Central Government sharply raised capex in the last three budgets. Capital outlay increased from INR 4.1 trillion in FY2021 to INR 11.1 trillion in FY2025.



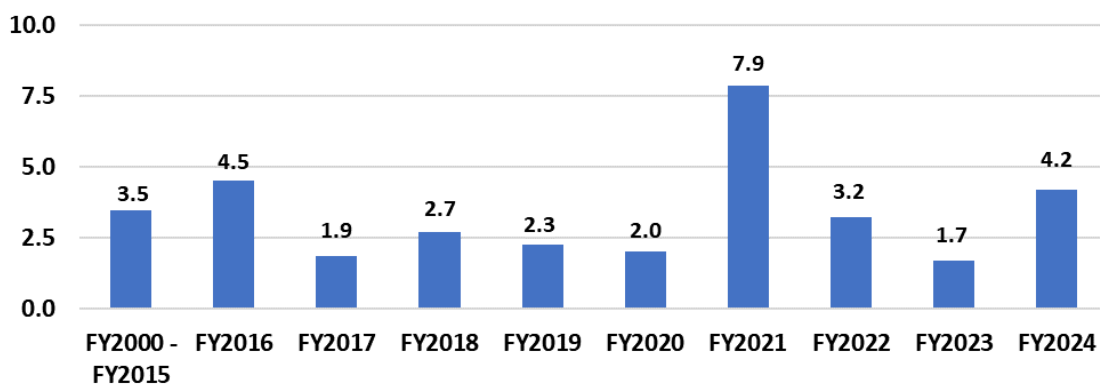
Source: Union Budget of India, FSIAPL, BE- Budget Estimates

A capex thrust in the last three budgets of the Government of India was not an isolated initiative meant only to address the infrastructure gaps in the country. The government's thrust on Capital expenditure, particularly in the infrastructure-intensive sectors like roads and highways, railways, and housing and urban affairs, has longer-term implications for growth. While on the one hand, capital expenditure strengthens aggregate demand and crowds-in private spending in times of risk aversion; it also enhances the longer-term supply-side productive capacity. With early signs of a rebound in private sector investments in recent months, capital expenditure has played its role. To push for enhancing Capex from all directions, the Centre announced several incentives to boost states' capital expenditure in the form of long-term interest-free loans and capex-linked additional borrowing provisions.

### Rising FDI in the Infrastructure sector

Much of the government's focus on transport infrastructure improvements form part of a wider push to attract foreign direct investment (FDI) and boost domestic manufacturing capacity. Companies globally continue seeking to diversify their supply chains to reduce their reliance on Mainland China, often adopting a China Plus One strategy that involves moving a portion of their supply chains to another attractive market like India or Vietnam. The government is attempting to attract FDI by expanding manufacturing capacity in the higher value-add segments and emerging industries like electric vehicle (EV) battery manufacturing and by removing logistics bottlenecks. Alongside, the government hopes that FDI will also flow into the infrastructure construction segment.

**Trends of FDI in Infrastructure Construction (USD billion)**



Source: DPIIT, FSIAPL

Note: Data includes FDI inflow received through Government Route + Automatic Route + acquisition of existing shares only

Recent reforms of India's FDI regulations are positive for attracting investment and participation in the country's infrastructure sectors, which would be positive for overall growth given India's sizeable infrastructure needs. The cabinet approved revisions to the FDI regulations relaxing restrictions on foreign ownership of airlines, power exchanges and construction and real estate businesses. It was the latest reform to come as part of Make in India initiative, which previously also relaxed restrictions on FDI in the roads and railway sub-sectors. Compared with many other emerging markets in Asia, India has one of the lowest rates of foreign participation and investment in its construction and infrastructure industries. This means that there is significant room for foreign companies to grow their presences in



India's infrastructure sector. Given India's immense infrastructure deficit, the sector would benefit from capital and technical expertise that foreign investors and partners could bring.

### **India at the cusp of new Private Capex cycle**

Indian economy is at the cusp of a new private corporate capex cycle. The Reserve Bank of India in its article 'Private Corporate Investment: Growth in FY2024 and Outlook for FY2025' forming part of the RBI Bulletin of August 2024 concludes that there has been a material improvement in private capex outlook. This is on the basis of data from project approvals by banks, data on project funding through ECBs and equity fund-raising by private companies. RBI highlights that the investment intentions of private corporates remained buoyant during FY2024 as reflected in rising total number of projects as well as the total cost of projects sanctioned by banks/FIs. During FY2024, about 944 projects got assistance from banks/FIs with a record high total cost of projects of INR 3.9 trillion, as compared to 547 projects sanctioned during the previous year having total cost of INR 2.7 trillion. Overall, investment plans of 1,505 projects were made during FY2024, with record investment intentions of INR 5.7 trillion, as against 982 projects in FY2023 with investment intentions of INR 3.5 trillion. The phasing profile of the pipeline projects finance suggests that the envisaged capex will increase significantly to INR 2.5 trillion in FY2025 from INR 1.6 trillion in FY2024. Investment in green field projects accounted for 89% in the total cost of projects financed by banks/FIs during FY2024, in line with the recent trends, which points to likely capacity expansion by private corporates going forward. The infrastructure sector continued to attract maximum capex projects, led by the road & bridges, power sector reflecting the Government's push towards infrastructure development. Several structural reforms implemented over the past few years such as Goods and Services Tax (GST), Insolvency and Bankruptcy Code (IBC), Digitisation, Corporate tax rationalisation and labour laws are expected to further support the investment growth trajectory.

### **Improvement in Contracts Arbitration and Dispute Resolution Mechanism**

India has already undertaken major structural reforms to facilitate ease of doing business recently, including legal reforms to revamp the existing arbitration framework. In 2021, the Parliament passed an Amendment to the Arbitration and Conciliation Act, 1996. Moreover, the Commercial Courts, Commercial Division and Commercial Appellate Division of High Courts Act, 2015 has been passed to fast-track commercial dispute resolution.

Government has also decided to implement a one-time settlement scheme called 'Vivad se Vishwas II (Contractual Disputes)' to effectively settle pending disputes. The scheme was announced in the Union Budget 2023-24 by the Union Finance Minister. The scheme will apply to all domestic contractual disputes where one of the parties is either the Government of India or an organisation working under its control. Under the scheme, for Court Awards passed on or before 30<sup>th</sup> April 2023 the settlement amount offered to the Contractor will be up to 85% of the net amount awarded/ upheld by the court. For Arbitral Awards passed on or before 31<sup>st</sup> January 2023, the settlement amount offered is up to 65% of the net amount awarded.

These initiatives by the government and the judiciary will help to improve the institutional capacity necessary to create a vibrant ecosystem to make India the next big hub for international commercial arbitration.



## Introduction of Quality-cum-Cost based selection for procurement of works and Non-consulting services

Generally during the tendering process of infrastructure projects in India, the contracts were awarded to the lowest bidder. Though the L1 system ensures that the least cost is incurred for the project, however the quality of work and other relevant consideration is often overlooked. It is not an efficient policy for awarding tender involving huge commercial value. The 2021 Guidelines revised earlier guidelines and extended the Quality cum Cost based Selection (QCBS) for procurement of works and non-consultancy services. Unlike the lowest bidder, QCBS evaluates a bidder based on a combination of technical and quality scores. However, the maximum weightage for non-financial parameters cannot exceed 30%. However, most infrastructure projects exceed the QCBS threshold of INR 100 million.

## Significant improvement in India's infrastructure

The dedicated programs for road connectivity (Bharatmala), port infrastructure (Sagarmala), electrification, railways upgradation, and operationalising new airports/ air routes (UDAN) have significantly improved the physical infrastructure in the last few years. With the National Infrastructure Pipeline (NIP) in FY2019 and the National Monetization Pipeline (NMP) in FY2021, a strong baseline for infrastructure creation and development has been put in place, providing a multitude of opportunities for foreign investment and engagement. The NIP was launched with 6,835 infrastructure projects with a projected infrastructure investment of INR 111 trillion for FY2020-25 for developing a comprehensive view of infrastructure development in the country, monitoring its progress at the highest levels in the government for timely completion, and enabling a pipeline view for investors for them to plan infrastructure investments. As per India Investment Grid website, NIP has expanded to over 9,830 projects across 59 sub-sectors with project value of INR 171.4 trillion (USD 2041.5 billion) as on 22<sup>nd</sup> August 2024. NIP covers economic and social infrastructure projects jointly funded by the Central Government, State Governments, and the private sector. With its strong forward and backward linkages, physical infrastructure will enhance the economy's productivity in the medium term.

Opportunity in key infrastructure segment in India is provided in the table below:

Sector	Subsector	No. of opportunities	Value of opportunities	Mode of implementation (No. of projects)
Roads & Highway sector	Road and Bridges	3,824 opportunities	USD 409.92 billion	EPC - 3040, PPP - 566, Private-7, Not disclosed-65, To be finalised-113, Others-33
Railway sector	Railway Track	732 opportunities	USD 205.08 billion	EPC - 578, PPP - 29, Private-17, To be finalised-76, , Others-32
	Railway Terminal Infrastructure	39 opportunities	USD 2.46 billion	EPC - 21, PPP - 4, Private-1, To be finalised-3, Others-10
	Railway rolling Stock	75 opportunities	USD 46.20 billion	EPC - 65, PPP - 6, Private-0, To be finalised-2, Others-2
Urban Infra sector	Metro	65 opportunities	USD 70.23 billion	EPC - 50, PPP - 3, To be finalised-11, Others-1
	Bus Terminals	61 opportunities	USD 2.6 billion	EPC - 37, PPP - 17, To be finalised-5, Others-2
	Regional Rapid Transport system	3 opportunities	USD 8.45 billion	EPC - 3
Energy sector	Integrated Transport Hub	13 opportunities	USD 9.8 billion	EPC - 10, PPP - 3
	Energy Generation (Renewable)	450 opportunities	USD 214.59 billion	EPC - 224, PPP - 51, To be finalised-20, Private-25, Others-130
Water sector	Energy Generation (Non-Renewable)	182 opportunities	USD 124.74 billion	EPC - 100, PPP - 6, To be finalised-5, Private-36, Others-35
	Water treatment plants	1522 opportunities	USD 68.61 billion	EPC -1415 , PPP -58 , To be finalised-31, Private-0, Others-18
	Irrigation segment	673 opportunities	USD 158.18 billion	EPC - 626, PPP - 4, To be finalised-6, Private-0, Others-37

Source: India Investment Grid website (Data as of 22<sup>nd</sup> August 2024)

## Roads and Highways

The pace of National Highway construction in India has increased consistently due to the systematic push through corridor-based National Highway development approach, from about 16.6 km/ day in FY2016 to about 34.0 km/ day in FY2024. FSIAPL expects India's pace of National Highways construction to increase to 35-36 km/ day in FY2025.

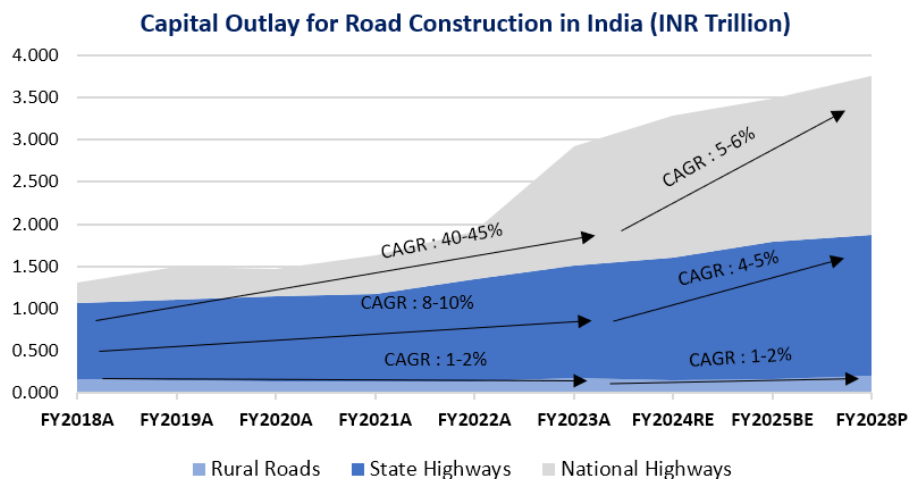
Road transportation in India has gradually increased over the years with improvement in connectivity between cities, towns, and villages. The total length of all road networks in India increased from 5.47 million kms as of FY2015 to 6.35 million kms as of FY2024. The total length of National Highways increased from 0.10 million kms as of FY2015 to 0.15 million kms as of FY2024.

**Total length and break-down of Road Network in India (in million Kms)**

Year	National Highways	State Highways	Other Roads	Total
FY2015	0.10	0.17	5.21	5.47
FY2016	0.10	0.18	5.33	5.60
FY2017	0.11	0.18	5.61	5.90
FY2018	0.13	0.19	5.90	6.22
FY2019	0.13	0.18	6.02	6.33
FY2020	0.13	0.19	6.17	6.49
FY2021	0.14	0.18	5.90	6.22
FY2022	0.14	0.17	6.06	6.37
FY2023	0.14	0.17	6.02	6.33
FY2024	0.15	0.18	6.02	6.35
<b>CAGR % (FY2015 - FY2024)</b>	<b>4.5%</b>	<b>0.8%</b>	<b>1.6%</b>	<b>1.7%</b>

Source: Ministry of Road Transport and Highways of India

## Capital Outlay for Road Construction in India (FY2018 - FY2028P)



Source: Union Budget, State Budgets, FSIAPL

Note: Note: A- Actuals, RE – Revised Estimate, BE – Budgeted Estimate, P – Projected

The capital outlay on National Highway construction in India has increased at a CAGR of 40-45% between FY2018–FY2023. Driven by robust Government funding, the Indian road sector will be a key driver of transport infrastructure development in India over the coming 5 years. FSIAPL expects capital outlay for National Highways to increase at a CAGR of 5-6% between FY2023 and FY2028 led by Expressway execution. Capital outlay of State Highways is expected to increase at a CAGR of 4-5% and capital outlay of Rural Roads is expected to increase at a CAGR of 1–2% between FY2023 and FY2028.

The large pipeline of road projects reflects the government’s aim to modernise Indian Highways and upgrade the quality of roads, with government projections pointing to USD 270.0 billion of spending over the next five years as part of the country’s National Infrastructure Pipeline. Additionally, MoRTH received a push with the Union Budget raising the allocation for the road sector by 5.4% to around INR 2.7 trillion for FY2025 from INR 2.6 trillion in FY2024. MoRTH has recently also announced plans to construct 74 new tunnels, spanning 273 km, at an estimated cost of INR 1.0 trillion.

#### **Capital Outlay for Roads and Bridges in Key states:**

States' spending on roads and bridges as a proportion of GSDP has remained static at around 0.5-0.6% for the past decade. Fiscal constraints, revenue expenditure and focus on the agricultural economy are the main cause for states spending less on roads and bridges. Few states tend to spend more on infrastructure for the rural sector, agriculture and irrigation sector. The table below highlights the Capital outlay by key states for road and bridge projects from FY2021 to FY2025:

Capital Outlay for Roads and Bridges in Key States					(Amount in INR Million)	
Name of the State	2020-21 (Actuals)	2021-22 (Actuals)	2022-23 (Budget Estimates)	2022-23 (Revised Estimates)	2023-24 (Budget Estimates)	2024-25 (Budget Estimates)
Maharashtra	117,638.4	204,876.1	201,328.8	271,698.3	226,622.3	378,980.0
Uttar Pradesh	180,206.3	227,490.6	321,504.2	316,519.0	318,778.6	406,860.0
Madhya Pradesh	54,018.9	70,862.6	55,104.5	64,272.5	70,273.4	90,430.0
Rajasthan	30,049.3	41,618.6	55,051.7	31,381.3	54,231.8	90,000.0
Gujarat	54,517.0	53,285.0	53,300.9	58,869.5	133,187.1	168,160.0
Tamil Nadu	127,482.3	133,855.3	163,110.1	138,474.8	174,209.7	178,890.0
Karnataka	105,489.7	98,068.3	80,780.9	113,338.3	82,083.6	72,120.0
Andhra Pradesh	738.1	4,193.1	27,134.2	6,664.4	33,571.6	34,203.6

Source: Reserve Bank of India, Respective State Budgets

#### **Upcoming Key Road projects in India:**

Details of top upcoming road projects in India as per the Fitch Solutions Infrastructure Key Projects Data (as on 26<sup>th</sup> Aug 2024) are as follows:

Project Name	States	Project Type	Project Cost (USD Mn)	Size (Kms)	Project Status
Kaliagura - Baunsagar Expressway Section	Odisha	Highway/Motorway	17,800.0	240	At planning stage
Baunsagar - Baraja Expressway Section	Odisha	Highway/Motorway	13,400.0	-	At planning stage
Shaktipeeth Expressway Project, Nagpur - Goa	Maharashtra, Goa	Highway/Motorway	10,071.0	760	At planning stage
Haldia - Raxaul Expressway	Bihar, Jharkhand, West Bengal	Highway/Motorway	7,192.0	719	At planning stage
Mago - Thingbu - Vijaynagar Highway Project (Arunachal Frontier Highway)	Arunachal Pradesh	Highway/Motorway	6,498.0	1,500	At planning stage
Bengaluru - Pune Expressway Project	Karnataka, Maharashtra	Highway/Motorway	6,091.0	700	At planning stage
Nagpur - Hyderabad - Bengaluru Expressway	Maharashtra, Telangana, Karnataka	Highway/Motorway	5,437.0	1,100	At planning stage
Hyderabad - Warangal Industrial Corridor, Telangana	Telangana	Road	5,030.0	116	At planning stage
Narmada Expressway Project, Chhattisgarh - Madhya Pradesh - Gujarat	Chhattisgarh, Gujarat, Madhya Pradesh	Highway/Motorway	4,217.0	1,300	At planning stage
Hyderabad - Nagpur Industrial Corridor	Maharashtra, Telangana	Road	4,070.0	585	At planning stage
Gorakhpur - Forbesganj - Islampur Highway Project	Uttar Pradesh, Bihar, West Bengal	Highway/Motorway	3,906.0	519	In tender/Tender launched
Ludhiana - Delhi Expressway	Punjab, Delhi	Highway/Motorway	3,664.0	357	At planning stage
Pune Ring Road Project	Maharashtra	Road	3,652.0	173.7	In tender/Tender launched
West Kameng - Vijaynagar Highway Project, Arunachal Pradesh	Arunachal Pradesh	Highway/Motorway	3,628.0	2,500	At planning stage
Peripheral Ring Road (PRR) Project	Karnataka	Road	3,123.0	74	At planning stage
Amaravati Outer Ring Road Project	Andhra Pradesh	Road	2,992.0	189	At planning stage
Jalna-Nanded Expressway Project, Maharashtra	Maharashtra	Highway/Motorway	2,682.0	179.9	In tender/Tender launched
Virar-Alibaug Multimodal Corridor, Maharashtra	Maharashtra	Highway/Motorway	7,482.0	126	In tender/Tender launched
Ahmedabad - Jawaharlal Nehru Port Expressway	Gujarat, Maharashtra	Highway/Motorway	2,480.0	473	At planning stage
Hyderabad - Indore Expressway Project	Madhya Pradesh, Telangana	Highway/Motorway	2,165.0	687	At planning stage

Source: Fitch Solutions

### Upcoming Key Bridges/Flyovers/Elevated Road projects in India:

Project Name	State	Project Cost (INR Billion)	Current status of the project
Versova-Virar Sea Link Project	Maharashtra	352.4	Announced
Talegaon-Chakan-Shikrapur Elevated Flyover Project (NH-548D)	Maharashtra	110.0	Announced
Wagholi-Shikrapur-Viman Nagar Flyover Project	Maharashtra	100.0	Announced
Jnanabharathi-Varthur Kodi Elevated Corridor Project (Bengaluru East-West Corridor 2)	Karnataka	69.6	Announced
Mahim-Malad Elevated Road Project (Western Express Highway)	Maharashtra	55.0	Announced
Signature Bridge-DND Flyway Elevated Corridor Project	Delhi	30.0	Announced
Pune-Shirur Six Lane Elevated Highway Project (NH-753F) (Package-III)	Maharashtra	29.0 ^	Under Bidding
Ghatkopar-Kopri Elevated road project	Maharashtra	29.0	Announced
Pune-Shirur Six Lane Elevated Highway Project (NH-753F) (Package-II)	Maharashtra	26.5 ^	Under Bidding
Digha-Sonepur Six Lane High Level-Extra Dosed Cable Bridge Project(NH-139W)	Bihar	26.4	Under Bidding
Chheda Nagar (Ghatkopar) -Thane Elevated Eastern Freeway Extension Project	Maharashtra	25.6 ^	Under Bidding
Chatham Island-Bambooflat Link Road Project	Andaman & Nicobar	20.0	Announced
Delhi East-West Corridor Project	Delhi	20.0	Announced
Sariska Tiger Reserve Elevated Road Project	Rajasthan	20.0	Announced
Pune-Shirur Six Lane Elevated Highway Project (NH-753F) (Package-I)	Maharashtra	19.7 ^	Under Bidding
Kalimandir-Baliguma Four Lane Double Decker Elevated Road Project (NH-33)	Jharkhand	18.8	Under Bidding
Madh-Versova Four Lane Creek Bridge Project	Maharashtra	18.0	Under Bidding
Elevated Road and Expansion of Ghodbunder Road (Ghodbunder to Gaimukh) till Thane	Maharashtra	17.0	Announced
Anand Nagar-Saket Elevated Road Project (Eastern Express Highway in Thane City)	Maharashtra	14.5 ^	Under Bidding
Khar Subway-Bandra Terminus Elevated Road Project	Maharashtra	13.0 ^	Under Bidding
Rajgir Elevated Corridor Project	Bihar	13.0	Announced
Anandnagar-Saket Elevated road project	Maharashtra	12.8	Announced
Somasila-Siddheshwaram cable-stay-cum-suspension bridge Project (NH-167K)	Telangana, Andhra Pradesh	10.8	Announced
Kundalika Creek Bridge [Revas-Redi Coastal Highway Project]	Maharashtra	10.6 ^	Under Bidding
Mumbai-Pune-MTHL Interchange (Chirle) Elevated Road Project	Maharashtra	10.0	Under Bidding

Note: ^ represents the bid project cost

Source: Indian Infrastructure

## Railways

### **Spending on Railway Construction in India (FY2018 - FY2028P)**

Railway construction work majorly includes the construction of new lines, gauge conversion, doubling, yard remodeling, road safety works, level crossings work, road over work, under bridge work, track renewals, bridge and tunnel work, electrification projects, electrical works, traction distribution work, signal, and telecommunication work etc.

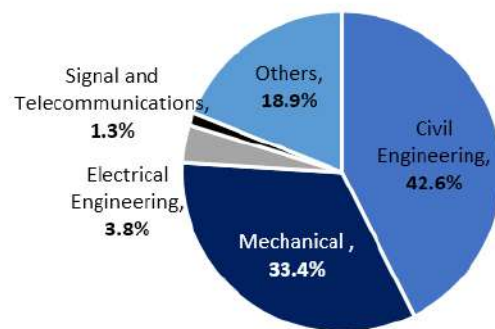
Expenditure of Railways is generally financed through:

- i. Internal resources (freight and passenger revenue)
- ii. Budgetary support from the Central Government
- iii. Extra-budgetary resources (borrowings, institutional financing and public-private partnerships).

Railways' working expenses (salaries, pension, and asset maintenance) are met through its internal resources. Railways generate some surplus, which is not enough to cover its capital expenditure plans. Capital expenditure is supported by the Grant from the Central Government and Extra-Budgetary resources.

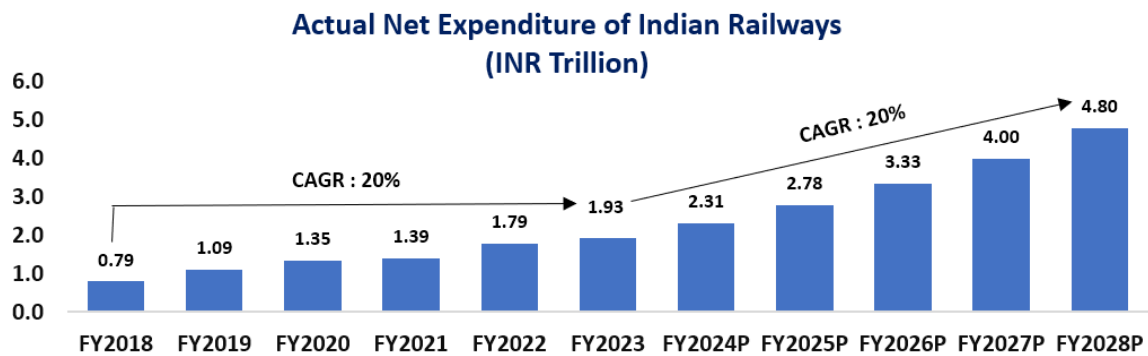
Ministry of Railways has highlighted the details of the actual net expenditure of Indian Railways in its FY2023 annual report. FY2024 Annual report of Indian Railways is not yet published in the public domain. The actual net expenditure of Indian Railways has increased at a CAGR of 20% from INR 0.79 trillion in FY2018 to INR 1.93 trillion in FY2023. As of FY2023 Civil engineering work constitutes major share of 42.6% of the actual net expenditure; followed by Mechanical works (33.4%), Electrical Engineering (3.8%), Signal and Telecommunication (1.3%) and other expenses (18.9%). Other expenses include computerization expense, railway research expenses, amenities expenses, training expenses, specified work expenses, investment in non-government undertakings etc.

#### **Actual Net Expenditure of FY2023**



Source: Ministry of Railways

FSIAPL expects the actual net expenditure of Indian Railways to increase at a CAGR of 20% from INR 1.93 trillion in FY2023 to reach INR 4.80 trillion by FY2028.



Source: Annual Reports of Ministry of Railways

### Key railway projects

The following table gives a summary of the total project cost of upcoming rail projects within different rail project types in India:

Project Type	Project Cost (USD Mn)
Commuter Rail Projects	7,500
Freight Rail Projects	800
High Speed Rail Projects	89,277
Mainline Rail Projects	30,393
Metro Rail Projects	25,364
Monorail Rail Projects	408

Source: Fitch Solutions

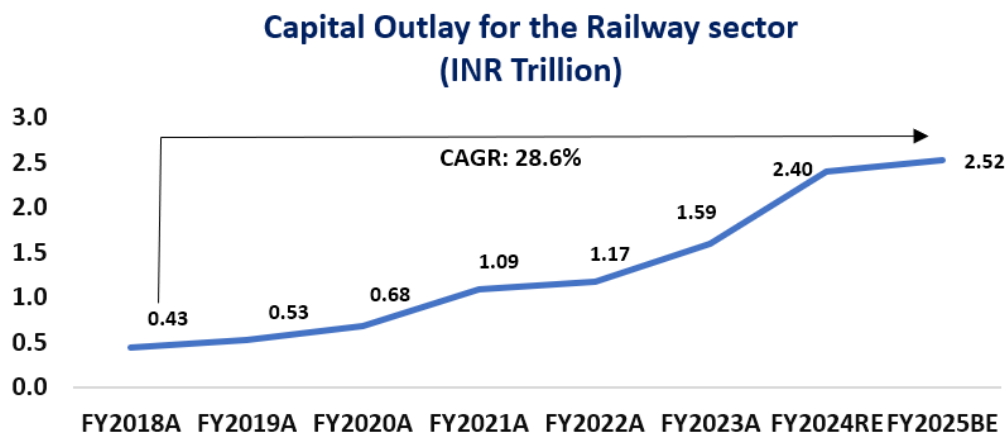
List of 20 key railway projects in India as per the Fitch Solutions Infrastructure Key Projects Data (as on 26<sup>th</sup> August 2024) is provided below:

Project Name	Project Type	Project Cost (USD Mn)	Size (Kms)	Project Status
Delhi - Chennai High-speed Railway Line	High Speed	32,600.0	1,754	At planning stage
Delhi - Agra - Lucknow - Varanasi - Bihar High Speed Railway Project	High Speed	23,000.0	991	At planning stage
Mysuru - Chennai Bullet Train Project	High Speed	15,133.0	435	At planning stage
Bilaspur-Manali - Ladakh (Leh) Rail Project	Mainline	11,342.0	489	At planning stage
Mumbai - Pune Hyperloop Project, Maharashtra	High Speed	10,176.0	140	At planning stage
Thiruvananthapuram - Kasaragod Semi High Speed Rail Line (Silver Line)	Mainline	8,472.0	529.5	At planning stage
Delhi - Amritsar High Speed Railway Project	High Speed	8,368.0	465	At planning stage
Dehradun - Haridwar - Rishikesh Metro Line, Uttarakhand	Metro	5,276.0	73	At planning stage
Delhi - Rewari - Alwar Regional Rapid Transit Line	Commuter Rail	4,563.0	164	At planning stage
Delhi - Haryana (Sonapat - Panipat) Regional Rapid Transit Line	Commuter Rail	2,937.0	103	At planning stage
Pune - Nashik Semi High Speed Rail Line Project, Maharashtra [id=7637]	Mainline	2,131.0	235	At planning stage
Mumbai Metro Line 11, Wadala - CST (General Post office)	Metro	1,927.0	12.8	At planning stage
CSMT - Panvel Elevated Rail Corridor, Maharashtra	Other	1,874.0	55	At planning stage
Indore - Manmad Railway Line	Mainline	1,400.0	362	At planning stage
Poonamallee - Parandur Metro Project, Tamil Nadu	Metro	1,292.0	44	At planning stage
Bengaluru Metro, Phase 3, Nagawara - Kempegowda International Airport (KIA)	Metro	1,217.0	25	At planning stage
Bengaluru Metro, Phase 3, MG Road - Hope Farm, Karnataka	Metro	1,169.0	16	At planning stage
Gurgaon - Manesar - Bawal Metro Rail Project, Haryana	Metro	1,098.0	-	At planning stage
Madurai Metro Rail Project, Thirumangalam - Othakadai, Tamil Nadu	Metro	1,039.0	31	At planning stage
Hyderabad Metro - Phase III, Part A (Uppal - Bibinagar), Telangana	Metro	934.0	25	At planning stage

Source: Fitch Solutions

## Review of Capital Outlay for the Railways Sector

The Union Budget allocated INR 2.52 trillion capital outlay for the Ministry of Railways for FY2025. This allocation is 5.8 times (CAGR of 28.6% from FY2018) the budgetary allocation of INR 0.43 trillion in FY2018.



Source: Union Budgets

Note: BE- Budgeted Estimate, A – Actuals, RE – Revised Estimate

Railways' capital expenditure includes investments for constructing new lines, procuring wagons, doubling of lines, and renewing tracks. The share of capital expenditure in total expenditure of Indian Railways has consistently increased in recent years. The table below highlights that the increase in Capital Expenditure has been funded through budgetary support from the central government and extra budgetary resources. Extra budgetary resources funded more than 50% of capital expenditure between FY2018 and FY2021. Hence, the Union Government has made efforts to increase the budget support from FY2022 onwards.

### Budget details of Ministry of Railways (INR Trillion)

Year	Budget Support	Internal and External Budgetary Resources (IEBR)	Total
Actual FY2022-2023	1.59	0.44	2.03
Budget FY2023-2024	2.40	0.52	2.92
Revised FY2023-2024	2.40	0.20	2.60
Budget FY2024-2025	2.52	0.13	2.65
<b>CAGR % (Budget FY2024-2025 v/s Actuals FY2022-2023)</b>	<b>25.9%</b>	<b>-45.6%</b>	<b>14.3%</b>

Source: Ministry of Railways Budget document

### Highlights of the budgetary policy for the Railways are:

- Railways will mainly focus on new projects, connectivity with Kashmir, as well as connecting all capitals of Northeastern States. Railways will emphasise on procuring new rolling stock, developing Vande Bharat, Amrit Bharat trains and Vande Metro in FY2025.
- With approvals on Kavach 4.0 which have been received, the pace of installation of the Automatic Train Protection system will be rapid.



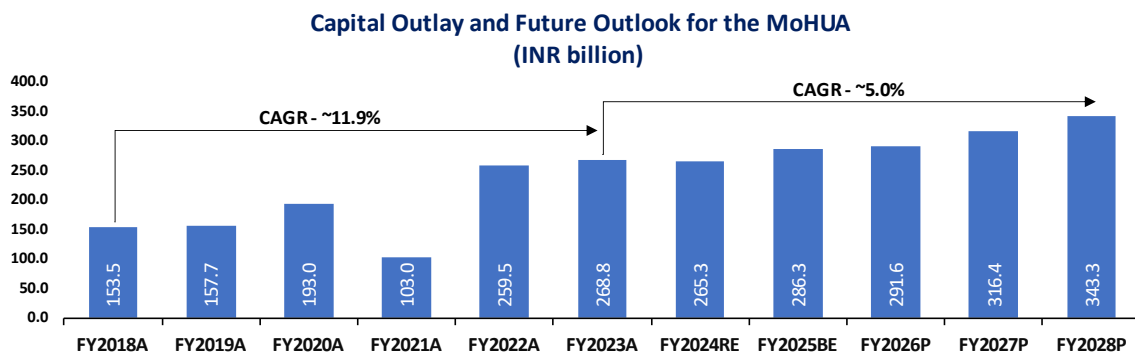
- Ministry of Railways aims to increase the number of Vande Bharat trains, introducing hydrogen-powered trains, laying new tracks, and completing the Ahmedabad–Mumbai bullet train project.
- The budget also allocated additional funds to promote industrial development across strategic nodes in India. Key initiatives include enhancing infrastructure for industrial clusters along major corridors such as the Vishakhapatnam-Chennai Industrial Corridor, Hyderabad-Bengaluru Industrial Corridor and Amritsar-Kolkata Industrial Corridor. These efforts are aimed at bolstering economic growth in the eastern regions of India.
- Under the PM Gati Shakti Mission, the government has identified three economic railway corridors - energy, mineral, and cement; port connectivity; and high traffic density corridors. This initiative aims to enhance multi-modal connectivity, reduce logistics costs, and improve passenger safety and experience across the country.

## Urban Infrastructure

### Overview of Urban Infrastructure

Urban infrastructure consists of Metro, Smart City, Water Supply, and Sanitation (WSS) projects, and others.

### Capital outlay for urban infrastructure in India (FY2018 – FY2028)



Source: Union Budget Documents, FSIAPL Analysis

Note: MoHUA - Ministry of Housing and Urban Affairs; A - Actuals; RE - Revised Estimates; BE - Budgeted Estimates; P - Projected

The actual capital outlay for the Ministry of Housing and Urban Affairs (MoHUA) has increased at a CAGR of ~11.9% from INR 153.5 billion in FY2018 to INR 268.8 billion in FY2023. As per Fitch Solutions, the capital outlay in the MoHUA is projected to increase at a CAGR of ~5.0% from FY2023 to INR 343.3 billion in FY2028.

### Key announcement under Union Budget 2024-25

- The government will maintain strong fiscal support for infrastructure over the next five years, while balancing other priorities and fiscal consolidation. An allocation of INR 11.1 trillion for capital expenditure, which is 3.4% of GDP, has been made this year.
- The government will encourage states to provide similar scale support for infrastructure, aligning with their development priorities. A provision of INR 1.5 trillion for long-term interest-free loans has been made this year to assist states in their resource allocation. Investment in infrastructure by the private sector will be promoted through viability gap funding and supportive policies and regulations. A market-based financing framework will also be introduced.

- **Urban Housing:** Under the PM Awas Yojana Urban 2.0, housing needs of 10 million urban poor and middle-class families will be addressed with an investment of INR 10.0 trillion. This will include the central assistance of INR 2.2 trillion in the next 5 years. A provision of interest subsidy to facilitate loans at affordable rates is also envisaged.
- **Water Supply and Sanitation (WSS):** In partnership with the State Governments and Multilateral Development Banks, government will promote water supply, sewage treatment, and solid waste management projects and services for 100 large cities through bankable projects.

### Overview of Metro Segments

The swift urbanization, and growing population densities in Indian cities have presented numerous challenges, such as significant traffic congestion and environmental pollution. However, the metro rail system has emerged as a promising solution for countless urban residents, providing them with a dependable, efficient, and environmentally conscious means of travel. Prior to 2014, only five cities in India had a modest 248 km of metro rail networks with the average rate of metro line construction being just 600 meters per month. In the past decade, 700 km of new Metro lines have been made operational, increasing the total operational length to 945 km, and expanding Metro services to 21 cities nationwide. As per the Indian government, India currently holds the 3<sup>rd</sup> position globally in terms of the length of its operational Metro network, following China and the USA and India is on track to become the country with the 2<sup>nd</sup> largest metro network in the world.

The Union Cabinet recently approved three major Metro Rail projects including:

- **Bengaluru Metro Project:** 44 km expansion comprising two corridors.
- **Thane Metro Project:** 29 km network aimed at reducing congestion on the roads of Thane.
- **Pune Metro Project:** A 5.5 km route to further improve urban mobility in the city.

As per the Union Minister for MoHUA, India has developed four state-of-the-art manufacturing facilities of metro coaches that have produced over 1,000 Metro coaches in the last five years, supporting various Metro rail systems across the country. With the approval of these new projects, India now has 1,018 km of metro lines under construction as of 17<sup>th</sup> Aug 2024.

In addition to domestic achievements, there is a growing international interest in India's expertise in Metro rail systems. The Delhi Metro Rail Corporation (DMRC) is presently developing a Metro rail system in Bangladesh and has offered consultancy services in Jakarta. Additionally, countries such as Israel, Saudi Arabia (Riyadh), Kenya, and El Salvador have expressed interest in collaborating with DMRC on their Metro development projects.

As per Union Minister for MoHUA, the first Rapid Rail Transit System (RRTS) corridor of 82 km between Delhi and Meerut has been sanctioned at a cost of INR 302.7 billion. With the addition of an 8 km stretch, a total of 42 kilometres of the corridor is operational as of August 2024, connecting nine stations from Sahibabad in Ghaziabad to Meerut South in Meerut, with the 'NaMo Bharat' train running on this network. The entire 82 km long Delhi-Ghaziabad-Meerut RRTS corridor will be operational by June 2025 as per National Capital Region Transport Corporation (NCRTC).

To address the imperative for an extensive metro network across India, the Metro Rail Policy was instituted in 2017, serving as a blueprint for the nationwide expansion and modernization of metro networks. The emphasis on domestic manufacturing of metro coaches under the "Make in India" initiative has also yielded manifold advantages. Not only has it bolstered the domestic manufacturing sector, but it has also fostered self-reliance and diminished the country's dependence on imports.

**Elevated Metro: Key Operational/ Under Constructions Projects with Estimated Project Cost**

City & State	Projects Details	Proposed Network Length (Km)	Type	Estimated Project Cost
Agra Metro	Line-1 (Yellow Line)_ Phase 1: Sikandra – Taj East Gate	6.8	Elevated	INR 83.8 billion (Line-1)
	Line-2 (Blue Line)_ Phase 1: Agra Cantt. – Kalindi Vihar	15.4		
Ahmedabad Metro	Operational Lines - Phase 1			
	Line-1 (Blue Line): Vastral Gam – Thaltej (Station: Vastral Gam – Apparel Park & Old High Court - Thaltej)	21.2	Elevated	INR 129.0 billion
	Line-2 (Red Line): Motera – APMC	18.5		
	Under Construction Lines (Phase 1, Phase 2)			
	Line-1 (Blue Line): Thaltej – Thaltej Gam	1.4	Elevated	INR 75.0 billion
	Line-2 (Red Line): Motera – GNLU – Mahatma Mandir	22.0		
	Line-3 (Eastern Spur of Line-2): Gujarat National Law University (GNLU) – GIFT City	5.4		
	Proposed Lines			
	Line-4 (Eastern Spur of Line-2): Koteswar Road – Sardar Vallabhbhai Patel Internati	5.0	NA	NA
Bangalore Metro	Operational, Ongoing & Under Constructions Lines			
	Line-1 (Purple Line)_ Reach 1A: KR Puram – Whitefield (Kadugodi)	13.7	Elevated	INR 138.5 billion (Phase 1)
	Line-1 (Purple Line)_ Reach 1B: Baiyyappanahalli – KR Puram	2.1		
	Line-1 (Purple Line)_ Reach 1: Baiyyappanahalli – MG Road	6.7		
	Line-1 (Purple Line)_ Reach 2: Magadi Road – Mysore Road	6.4		
	Line-1 (Purple Line)_ Reach 2A: Mysore Road - Kengeri	7.5		
	Line-1 (Purple Line)_ Reach 2A: Kengeri - Challaghatta	2.1		
	Line-2 (Green Line)_ Reach 3C: Madavara - Nagasandra	3.8		
	Line-2 (Green Line)_ Reach 3B: Nagasandra - Peenya Industry	2.5		
	Line-2 (Green Line)_ Reach 3A: Peenya Industry - Yeshwanthpura	4.8		
	Line-2 (Green Line)_ Reach 3: Yeshwanthpura - Sampige Road	5.1		
	Line-2 (Green Line)_ Reach 4: National College -Rashtreeya Vidyalaya Road	4.1		
	Line-2 (Green Line)_ Reach 4A: Rashtreeya Vidyalaya Road - Yelachenahalli	3.9		
	Line-2 (Green Line)_ Reach 4B: Yelachenahalli - Silk Institute	6.3		
	Line-3 (Yellow Line): RV Road (Rashtreeya Vidyalaya Road) – Bommasandra	18.8		
	Line-4 (Pink Line)_ Phase 1: Gottigere (Kalena Agrahara) – Tavarekere	7.5		
	Line-5 (Blue Line)_ Phase-2A: Central Silkboard – KR Puram (“ORR Line”)	18.2		
	Line-5 (Blue Line)_ Phase-2B: KR Puram – Hebbal – KIAL Terminals (“Airport Line”)	37.0	Elevated, At-Grade and Underground (within the airport)	
	Upcoming Projects			
	Orange Line or ORR-West Line (Phase-3): Hebbal - J.P. Nagar 4th Phase	31.0	Elevated	INR 156.1 billion (Phase 3)
	Silver Line (Phase-3): Hosahalli - Kadabagere	12.0		
	Red Line (Phase-3A): Hebbal - Sarjapura	19.0		INR 284.1 billion
Bhopal Metro	Bhopal Metro Phase 1 Lines (Approved)			
	Line-2 (Orange Line): Karond Circle – AIIMS	13.4	Elevated	INR 69.4 billion
	Line-5 (Blue Line): Bhadbhada Square – Ratnagiri Tiraha	14.2		
	Bhopal Metro Proposed Lines			
	Line-1 (Green Line): Baigarh – Awadhपुरi		NA	NA
	Line-3 (Red Line): Bhauri Bypass (NH12 Junction) – Vasant Kunj Bus Stop	NA		
	Line-4 (Yellow Line): Ashok Garden Auto Stand – Mother Teresa School			
	Line-6 (Brown Line): Habibganj Naka – Mandideep			
Chennai Metro	Phase 1 Project			
	Line-1 (Blue Line): Washermenpet - Chennai Airport	8.8	Elevated	INR 145.0 billion
	Line-2 (Green Line): Chennai Central – St. Thomas Mount	22.0	Elevated & Underground	
	Phase 1 Extension			
	Line-1 (Blue Line): Washermanpet – Wimco Nagar	9.1	Elevated & Underground	INR 37.7 billion
	Phase 2 Project			
	Line-3 (Purple Line): Madhavaram – SIPCOT 2	18.7	Elevated	INR 618.4 billion
	Line-4 (Orange Line): Light House – Poonamallee Bus Depot	16.0		
	Line-5 (Red Line): Madhavaram – Sholinganallur	38.8		
	Phase 2 - Extension			
	Line-4 (Orange Line): Poonamallee Bus Depot - Parandur	43.6	Elevated	INR 107.1 billion
	Line-5 (Red Line): Koyambedu – Avadi	16.1		INR 67.4 billion
	Siruseri - Kilambakkam	23.5		INR 54.6 billion
	Chennai International Airport - Poonamallee	16.0		NA
	Madhavaram Milk Colony - Ennore	16.0		
Delhi Metro	Phase 1 Project			
	Line-1 (Red Line): Shahdara – Rithala	22.1	Elevated & At Grade	INR 105.7 billion
	Line-3 (Blue Line): Dwarka Sector-9 – Indraprastha	23.5	Elevated	
	Dwarka Sub-city (Dwarka – Dwarka VI)	6.5		
	Phase 2 Project			
	Line-1 (Red Line): Shahdara – Dilshad Garden	3.1	Elevated	INR 238.1 billion
	Line-2 (Yellow Line): Vishwavidyalaya – Jahangipuri	6.4		
	Line-2 (Yellow Line): Millenium City Centre - Qutab Minar	15.8		
	Line-2 (Yellow Line): Chhatarpur			
	Line-2 (Yellow Line): Qutab Minar - Central Secretariat	11.8		
	Line-4 (Blue Line): Yamuna Bank – Vaishali	25.8		
	Line-5 (Green Line): Inderlok – Mundka	14.2		
	Line-5 (Green Line): Kirti Nagar – Ashok Park Main	3.4		
	Line-6 (Violet Line): Central Secretariat – Badarpur	20.2		
	Line-x (Airport Express Line): New Delhi – Dwarka Sector 21			
	Line-x (Airport Express Line): Dhauia Kuan & Delhi Aerocity	22.9		



City & State	Projects Details	Proposed Network Length (Km)	Type	Estimated Project Cost	
Delhi Metro	Phase 3 Project				
	Line-1 (Red Line): Dilshad Garden – Shaheed Sthal (New Bus Adda)	9.6	Elevated	INR 485.7 billion	
	Line-2 (Yellow Line): Jahangirpuri – Samaypur Badli	4.5			
	Line-3 (Blue Line): Noida City Centre – Noida Electronic City	6.8			
	Line-5 (Green Line): Mundka – Brig. Hoshiar Singh	11.2	Elevated		
	Line-6 (Violet Line): Badarpur Border - Escorts Mujesar	13.6			
	Line-6 (Violet Line): Escorts Mujesar - Raja Nahar Singh	3.5			
	Line-7 (Pink Line): Majlis Park – Durgabai DeshmukhSouth Campus	21.6	Elevated & Underground		
	Line-7 (Pink Line): Durgabai DeshmukhSouth Campus - Lajpat Nagar	8.5			
	Line-7 (Pink Line): Trilokpuri Sanjay Lake - Shiv Vihar	17.9	Elevated		
	Line-7 (Pink Line): Lajpat Nagar - Mayur Vihar Pocket I	9.6	Elevated & Underground		
	Line-7 (Pink Line): Mayur Vihar Pocket I - Trilokpuri Sanjay Lake	1.7	Elevated		
	Line-8 (Magenta Line): Kalkaji Mandir – Janakpuri West	24.8	Elevated & Underground		
	Line-8 (Magenta Line): Botanical Garden - Kalkaji Mandir	12.6			
	Line-9 (Grey Line): Dwarka – Najafgarh	4.3			
	Phase 4 Project				
	Line-10 (Golden Line): Aerocity – Tughlakabad	4.3	Elevated	INR 84.0 billion	
	Line-8 (Magenta Line): Janakpuri (West) – R.K. Ashram	19.5			
	Line-7 (Pink Line): Mukundpur – Maujpur	12.6			
	Phase 4 Project - Approved Extensions				
	Line-5 (Green Line): Inderlok – Indraprastha	12.4	Elevated		
	Line-10 (Golden Line): Lajpat Nagar – Saket G Block	8.4			
	Line-1 (Red Line): Rithala – Narela - Kundli	27.3			
	Phase 4 Project - Proposed Extensions				
	Line-3 (Blue Line): Noida Electronic City - Sahibabad	5.2	Elevated		
	Line-5 (Green Line): Kirti Nagar – Bamnoli Village	19.1			
Gurgaon (Gurugram) Metro	Line-1: Moulisari Avenue (Cybercity) – Sector 55-56	12.1	Elevated	INR 24.2 billion	
	Proposed Lines				
	New Line: HUDA City Centre – Palam Vihar – Moulisari Avenue	28.8	NA	INR 52.3 billion	
	New Line: Gurgaon – Manesar – MBIR	82.0	NA		
	New Line: Gurgaon – Faridabad	31.0	NA	NA	
	New Line: Sector 21 Dwarka – IFFCO Chowk Gurgaon	12.2	NA	INR 51.5 billion	
	New Line: HUDA City Centre – Gurugram Railway Station	11.2	NA	NA	
	New Line: HUDA City Centre – Dwarka	27.5	NA		
	Extn of Line-1: Sector 55/56 – Vatika Chowk	6.3	NA		
	New Line: Bhondsi village – Gurugram Railway Station	17.0	NA	INR 55.0 billion	
	New Line: Golf Course Extension Road - Sector 5	13.0	NA		
Hyderabad Metro	Phase 1 Project				
	Line-1 (Red Line): Miyapur – LB Nagar	29.2	Elevated	~INR 335.9 billion	
	Line-2 (Green Line): JBS Parade Ground – MG Bus Sation	11.0	Elevated		
	Line-3 (Blue Line): Nagole – Raidurg	27.0	Elevated		
	Phase 2 Project (New Phase 2 Plan)				
	Airport Express Line: Mindspace Junction – Rajiv Gandhi International Airport (RGIA)	28.5	Elevated	INR 62.5 billion	
	Red Line Extension: Miyapur – Lakdikapul	26.0	Elevated	INR 84.5 billion	
	Blue Line Extension: Raidurg – Mindspace	1.0	Elevated		
	Blue Line Extension: Nagole – LB Nagar	5.0	Elevated		
	Phase 2 Project (Old Phase 2 Plan)				
	New Line: Tarnaka – ECIL	7.0	NA		
	Line-1 – Red Line Extension: LB Nagar – Hayathnagar	7.0	NA		
	Line-1 – Red Line Extension: Miyapur – BHEL – Patancheru	13.0	NA		
	Line-3 – Blue Line Extension: Nagole – LB Nagar – Falaknuma – Shamshabad Airport	28.0	NA		
	Line-3 – Blue Line Extension: Raidurg – Gachibowli – Shamshabad Airport	30.7	NA		
Indore Metro	Indore Metro Phase 1 Lines (Approved)				
	Line-3 (Yellow Line): Bengali Square - Palasia – Airport - Vijay Nagar - Radisson Square - Khajarana - Bengali Square (Ring Line)	24.06	Elevated	INR 75.0 billion	
	Indore Metro Proposed Lines				
	Line-1A: Sri Aurobindo Hospital – Collectorate office – Indore Bypass 1	NA	NA	NA	
	Line-1B: Sri Aurobindo Hospital – Collectorate office – Regional Park (1B)	NA	NA	NA	
Jaipur Metro	Line-2: Dewas Naka – Juni Indore – MHOW	NA	NA	NA	
	Line-4: MR9 – Indore Railway Station – Indore Bypass 4	NA	NA	NA	
	Phase-I (East West Corridor): Mansarovar - Badi Chaupar	9.1	Elevated	INR 31.5 billion	
Phase-II (North South Corridor): From Sitapura to Ambabari	18.0	INR 65.8 billion			
Kanpur Metro	Corridor 1 (Orange Line): IIT Kanpur – Naubasta	23.8	Elevated	INR 110.8 billion	
	Corridor 2 (Blue Line): Rawatpur Railway Station – Jaurali	8.4	Underground and Elevated		
Kochi Metro	Kochi Metro Operational Line (Phase 1 & 1A)				
	Line-1 (Blue Line): Aluva – S.N. Junction	25.6	Elevated	INR 62.2 billion	
	Kochi Metro Under Construction Line (Phase 1B)				
	Line-1 (Blue Line): S.N. Junction – Tripunithura	1.2	Elevated		
Kolkata Metro	Kochi Metro Approved Lines (Phase 2)				
	Line-2 (Pink Line): JLN Stadium – Infopark II	11.8	Elevated	INR 23.1 billion	
	Line-1 (Blue Line): Noapara - Kavi Subhash (New Garia)	23.2	At-Grade & Elevated	INR 4.2 billion	
	Line-2 (Green Line): Howrah Maidan - Saltlake Sector V	5.8	Elevated	INR 85.8 billion	
	Line-3 (Purple Line): Joka - Esplanade	8.5	Elevated	INR 26.2 billion	
	Line-4 (Yellow Line): Noapara - Barasat	18.1	Elevated	NA	
	Line 5 (Pink Line): Baranagar - Barrackpore	12.5	Elevated	INR 20.7 billion	
Lucknow Metro	Line-6 (Orange Line): Kavi Subhash - Hemanta Mukhopadhyay	32.0	Elevated	INR 42.6 billion	
	Lucknow Metro Phase 1A Route (Operational)				
	Line-1 (Red Line): CCS Airport – Munshi Pulia	19.4	Elevated	INR 69.3 billion	
Lucknow Metro	Lucknow Metro Proposed Routes Phase 2				
	Line-2 (Blue Line): Lucknow Railway Station (Charbagh) – Vasant Kuni	4.3	Elevated	INR 58.8 billion	

City & State	Projects Details	Proposed Network Length (Km)	Type	Estimated Project Cost
Lucknow Metro	<b>Lucknow Metro Phase 2 Routes (Proposed)</b>			
	Extn of Line-1: Munshi Pulla – Jankipuram	NA	NA	NA
	Extn of Line-2: Charbagh – SGPGI (Sanjay Gandhi Postgraduate Institute of Medical Sciences)			
	New Line-3: IIM Lucknow – Rajajipuram			
	<b>Lucknow Metro Phase 3 Routes (Proposed)</b>			
Meerut Metro	Indiranagar – CG City South	NA	NA	NA
	Airport – Atal Bihari Vajpayee Ekana Cricket Stadium			
	Secretariat – CG City South			
	Line-1: Meerut South – Modipuram Depot (Under Construction)	14.8	Elevated	INR 302.7 billion
	Line-2: Shradhapuri Phase II – Jagriti Vihar (Proposed)	10.7		
Mumbai Metro	<b>Mumbai Metro – Operational Lines</b>			
	Line-1 (Blue Line): Versova – Ghatkopar	11.4	Fully Elevated	INR 23.6 billion
	Line-2A (Yellow Line): Dahisar (East) – D.N. Nagar, (Andheri West)	18.6		INR 64.1 billion
	Line-7 (Red Line): Gundavali (Andheri East) – Ovaripada	16.5	Elevated	INR 62.1 billion
	<b>Mumbai Metro – Under Construction, Approved and Proposed Lines</b>			
	Line-2B (Yellow Line): D.N. Nagar – Bandra – Mandale	23.6	Fully Elevated	INR 109.9 billion
	Line-4 (Green Line): Bhakti Park (Wadala) – Kasaravadavali	32.3		INR 145.5 billion
	Line-4A (Green Line): Gownpada – Gaimukh	2.9	Elevated	INR 9.5 billion
	Line-5 (Orange Line): Kapurbawdi (Thane) – Bhiwandi – Kalyan	24.9	Fully Elevated	INR 84.2 billion
	Line-6 (Pink Line): Swami Samarth Nagar – Vikhroli (EEH)	14.7		INR 67.2 billion
	Line-8 (Gold Line): Chhatrapati Shivaji Maharaj International Airport (CSIA) – Navi Mumbai	35.0	NA	NA
	Line-9 (Red Line): Pandhurang Wadi – Mira Bhayandar	11.4	Fully Elevated	INR 66.1 billion
	Line-10 (Green Line): Gaimukh – Shivaji Chowk (Mira Road)	9.0		INR 44.8 billion
	Line-11 (Green Line): Bhakti Park (Wadala) – CSMT	4.0	Elevated	INR 87.4 billion
	Line-12 (Orange Line): Kalyan – Dombivali – Taloja	20.7		INR 58.7 billion
	Line-13 (Purple Line): Shivaji Chowk (Mira Road) – Virar	23.0	Fully Elevated	INR 69.0 billion
	Line-14 (Magenta Line): Vikhroli – Kanjurmarg – Badlapur	45.0		INR 135.0 billion
	<b>Mumbai Monorail – Operational Lines</b>			
	Phase I: Wadala - Chembur	8.8	Elevated	INR 24.6 billion
	Phase II: Sant Gadge Maharaj Chowk - Wadala	11.2		
Nagpur Metro	<b>Nagpur Metro Phase 1 Routes</b>			
	Line 1 (Orange Line): Automotive Square – Khapri	19.7	Elevated & At Grade	INR 92.8 billion
	Line 2 (Aqua Line): Prajapati Nagar – Lokmanya Nagar	18.6	Elevated	
	<b>Nagpur Metro Phase 2 Routes</b>			
	Line-1 (Orange Line) Reach 1A: Khapri – MIDC ESR	18.5		
	Line-1 (Orange Line) – Reach 2A: Automotive Square – Kanhan River	13.0	Elevated	INR 67.1 billion
	Line-2 (Aqua Line) – Reach 3A: Lokmanya Nagar – Hingna	6.7		
Navi Mumbai Metro	<b>Navi Mumbai Metro Routes (Operational)</b>			
	Line-1: CBD Belapur – Pendhar	11.1	Elevated	INR 40.7 billion
	<b>Navi Mumbai Metro Future Network</b>			
	Line-2: Taloje MIDC – Khandeshwar (extension to airport proposed)	10.3		INR 15.1 billion
	Line-3: Interlink between Pendhar and MIDC	2.0	Elevated	INR 5.7 billion
Noida Metro	Line-4: Khandeshwar – Navi Mumbai International Airport (NMIA)	4.2		INR 12.7 billion
	<b>Noida Metro Operational Route</b>			
	Line-1 (Aqua Line): Noida Sector 51 – Greater Noida	29.7	Elevated	INR 55.0 billion
	<b>Noida Metro Approved and Proposed Routes</b>			
	Noida Sector 51 - Knowledge Park V Corridor	15.0		INR 26.0 billion
Patna Metro	Sector - 142 - Botanical Garden Corridor	11.5	Elevated	INR 22.5 billion
	Depot Station to Boraki corridor	3.0		INR 4.2 billion
	<b>Patna Metro Phase 1 Route</b>			
	Line-1 (East – West Line) (Red Line): Danapur Cantonment – Khemni Chak	9.4	Elevated	INR 134.1 billion
	Line-2 (North – South Line) (Blue Line): Patna Junction Railway Station – New ISBT	6.0		
Pune Metro	<b>Operational Routes</b>			
	Line-1 (Purple Line): Pimpri Chinchwad Municipal Corporation (PCMC) – Swargate	11.5	Elevated	INR 114.2 billion
	Line-2 (Aqua Line): Vanaz – Ramwadi	15.7		
	<b>Under Constructions, Approved and Proposed Routes</b>			
	Line-3: Hinjawadi – Civil Court	23.2		INR 83.1 billion
	Line-1 A Extension (Purple Line): PCMC – Nigdi	4.5		INR 3.4 billion
	Line-1 Extension (Purple Line): Swargate – Katraj	5.5	Elevated	INR 29.5 billion
	Line-3 Extension: Shivaji Nagar – Kadam Wakwasti	18.0		INR 42.0 billion
	Line 4: Swargate to Khadakwasla	25.0		NA
	Line 5: Hinjewadi-Shivajinagar	19.0		NA
Surat Metro	<b>Surat Metro Rail Project Phase - 1</b>			
	Line-1: Sarthana – Dream City	15.14	Elevated & At Grade	INR 120.2 billion
	Line-2: Bhesan – Saroli	18.74		
Kanpur Metro	Line-1 (Orange Line) Phase 1: IIT Kanpur – Naubasta	14.7	Elevated	INR 110.8 billion
	Line-2 (Blue Line) Phase 1: Agriculture University – Barra-8	4.0		
Coimbatore (Koval) Metro	Line-1: Kaniyur to Ukkadam Bus Stand	26.0		
	Line-2: Bilichi to Ukkadam Bus Stand	24.0		
	Line-3: Karanampettai to Thannerpanthal	42.0	Elevated	INR 90.0 billion
	Line-4: Ganesapuram – Karunyanagar	44.0		
	Line-5: Vellalore – Ukkadam	8.0		
Guwahati Metro	Line 1: Dharapur – Narangi	22.6		
	Line 3: Jalukbari – Khanapara	19.4	Elevated	INR 180.2 billion
	Line 4: ISBT – Paltan Bazar	9.4		
	<b>Additional potential lines being explored:</b>			
	Dharapur – Guwahati Airport	NA	NA	NA
	North Guwahati – AIIMS	NA	NA	



City & State	Projects Details	Proposed Network Length (Km)	Type	Estimated Project Cost
Madurai Metro	<b>Phase-1: Proposed Metro Rail Routes in Madurai</b>			
	Line 1: Tirumangalam - Chittampatti Junction	26.0	Elevated	INR 85.0 billion
	<b>Phase-2: Proposed Metro Rail Routes in Madurai</b>			
	Line 2: Kattapuli Nagar - Madurai International Airport	20.0	NA	NA
	Line 3: Manalur - Chekanurani	23.0		
Uttarakhand (Devbhoomi) Metro project	ISBT (Dehradun) - Kandholi Depot	11.4	Elevated & At-Grade	INR 16.7 billion
	FRI - Raipur	14.0		INR 18.7 billion
	GK University - Rishikesh	33.0		INR 38.8 billion
	Nepali Farm - Vidhan Sabha	34.5		INR 35.7 billion

Source: The Metro Rail Guy, accessed on August 28, 2024, New Articles, Gujarat Metro Rail Corporation (GMRC), Uttar Pradesh Metro Rail Corporation Limited (UPMRC), Pune Metro project, Maharashtra Metro Rail Corporation Limited (MAHA-METRO), Patna Metro Rail (PMRL), Noida Metro Rail Corporation Ltd. (NMRL), Nagpur Metro Rail Project, Mumbai Metropolitan Region Development Authority (MMRDA), Maha Mumbai Metro Operation Corporation Limited (MMMOCL), Mumbai Metro Rail Corporation Limited (MMRC), Kolkata Metro Rail Corporation Ltd. (KMRL), Ministry of Housing and Urban Affairs (MoHUA), Jaipur Metro Rail Corporation Ltd. (JMRC), Rajasthan Transport, L&T Metro Rail (Hyderabad) Limited, Delhi Metro Rail Corporation (DMRC), Chennai Metro Rail Limited (CMRL), Bangalore Metro Rail Corporation Limited (BMRL), Guwahati Metro Rail Corporation Limited (GMRC), Uttarakhand Metro Rail Corporation (UKMRC)

Note: NA – Not Available; APMC: Agricultural Produce Market Committee; Cantt.: Cantonment; GNLU: Gujarat National Law University; KR Pura: Krishnarajapuram; MG Road: Mahatma Gandhi Road, KIAL: Kempegowda International Airport Limited, ORR: Outer Ring Road, J P Nagar: Jayaprakash Nagar, AIIMS: All India Institute of Medical Sciences, NH12: National Highway 12, SIPCOT: State Industries Promotion Corporation of Tamil Nadu Limited, MBIR: Manesar Bawal Investment Region, IFFCO: Indian Farmers Fertilizer Cooperative Limited, LB Nagar: Lal Bahadur Nagar, JBS: Jubilee Bus Station, MG Bus Station: Mahatma Gandhi Bus Station, MHOW: Military Headquarters Of Warfare, RGIA: Rajiv Gandhi International Airport, ECL: Electronics Corporation of India Limited, BHEL: Bharat Heavy Electricals Limited, IIT: Indian Institutes of Technology, JLN Stadium: Jawaharlal Nehru Stadium, CCS Airport: Chaudhary Charan Singh International Airport, SGPGI: Sanjay Gandhi Postgraduate Institute of Medical Sciences, IIM: Indian Institutes of Management, CG City South: Chhattisgarh City South, D.N. Nagar: Dadabhai Naoroji Nagar, EEH: Eastern Express Highway, CSIA: Chhatrapati Shivaji Maharaj International Airport, NMIA: Navi Mumbai International Airport, MIDC: Maharashtra Industrial Development Corporation, CSMT: Chhatrapati Shivaji Maharaj Terminus, CBD Belapur: Central Business District of Belapur, ISBT: Inter-State Bus Terminus, PCMC: Pimpri Chinchwad Municipal Corporation, FRI: Forest Research

**Underground Metro:** Underground metro, as the name suggests the tracks are below the ground surface. Underground metro is generally proposed in older dense parts of cities where roads are narrow and sharp turn is there which doesn't allow elevated rail alignment without major demolitions. The power consumption is about ten times more for an underground metro system mainly due to Environmental Control System (ECS) and Tunnel Ventilation System (TVS). Underground metro has minimal visual impact and encroachment of the already congested city space. Cityscape is maintained, further beautification is possible, green cover can be increased, reduces the traffic congestion and overall quality of life is improved.

## Underground Metro: Key Operational/ Under Constructions Projects with Estimated Project Cost

City & State	Projects Details	Proposed Network Length (Km)	Type	Estimated Project Cost
Agra Metro	Line-1 (Yellow Line)_ Phase 1: Sikandra – Taj East Gate	7.2	Underground	INR 83.8 billion
Ahmedabad	<b>Operational Lines - Phase 1</b>			
	Line-1 (Blue Line): Vastrapur – Thaltej (Station: Shahpur - Kankaria East)	6.5	Underground	INR 129.0 billion
Bangalore Metro	<b>Operational, Ongoing &amp; Under Constructions Lines</b>			
	Line-1 (Purple Line)_UG 1: M G Road - Magadi Road	5.1	Underground	INR 138.5 billion (Phase 1)
				INR 360.0 billion (Phase 2)
	Line-2 (Green Line)_UG 2: Sampige Road - National College	4.0		INR 52.3 billion (Phase 2A)
				INR 96.2 billion (Phase 2B)
	Line-4 (Pink Line)_Phase 2: Dairy Circle – Nagawara	13.8		INR 160.4 billion (Phase 3)
	<b>Upcoming Projects</b>			
	Red Line (Phase-3A): Hebbal - Sarjapura	17.0	Underground	INR 284.1 billion (Phase 3A)
Bhopal Metro	<b>Bhopal Metro Phase 1 Lines (Approved)</b>			
	Line-2 (Orange Line): Karond Circle – AIIMS	3.4	Underground	INR 69.4 billion
Chennai Metro	<b>Phase 1 Project</b>			
	Line-1 (Blue Line): Washermenpet - Chennai Airport	14.3	Underground	INR 146.0 billion
	<b>Phase 2 Project</b>			
	Line-3 (Purple Line): Madhavaram – SIPCOT 2	26.7	Underground	INR 618.4 billion
	Line-4 (Orange Line): Light House – Poonamallee Bus Depot	10.1		
	Line-5 (Red Line): Madhavaram – Sholinganallur	5.8		
Delhi Metro	<b>Phase 1 Project</b>			
	Line-2 (Yellow Line): Vishwavidyalaya – Central Secretariat	10.8	Underground	INR 105.7 billion
	Line-3 (Blue Line): Dwarka Sector-9 – Indraprastha	2.2		
	<b>Phase 3 Project</b>			
	Line-5 (Violet Line): Mandi House - Central Secretariat	3.2	Underground	INR 485.7 billion
	Line-6 (Violet Line): Mandi House - ITO	1.0		
	Line-6 (Violet Line): Kashmere Gate - ITO	5.1		
	Line-9 (Grey Line): Najafgarh – Dhansa Bus Stand	0.9		
	Airport Express Line (Orange Line): Dwarka Sec-21 – Yashobhoomi - Dwarka Sector 25	1.9		



City & State	Projects Details	Proposed Network Length (Km)	Type	Estimated Project Cost
Delhi Metro	<b>Phase 4 Project</b>			
	Line-10 (Golden Line): Aerocity – Tughlakabad	19.3		
	Line-8 (Magenta Line): Janakpuri (West) – R.K. Ashram	9.4	Underground	INR 84.0 billion
Hyderabad Metro	<b>Phase 2 Project (New Phase 2 Plan)</b>			
	Airport Express Line: Mindspace Junction – Rajiv Gandhi International Airport (RGIA)	2.5	Underground	INR 62.5 billion
Indore Metro	<b>Indore Metro Phase 1 Lines (Approved)</b>			
	Line-3 (Yellow Line): Bengali Square - Palasia – Airport - Vijay Nagar - Radisson Square - Khajurana - Bengali Square (Ring Line)	7.48	Underground	INR 75.0 billion
	Line-3 (Yellow Line): Bengali Square - Palasia – Airport - Vijay Nagar - Radisson Square - Khajurana - Bengali Square (Ring Line)			
Jaipur Metro	<b>Phase-I (East West Corridor):</b> Mansarovar - Badi Chaupar	2.8		INR 31.5 billion
	<b>Phase-II (North South Corridor):</b> From Sitapura to Ambabari	5.1	Underground	INR 65.8 billion
Kolkata Metro	Line-1 (Blue Line): Noapara - Kavi Subhash (New Garia)	15.4		INR 4.2 billion
	Line-2 (Green Line): Howrah Maidan - Saltlake Sector V	10.8		INR 85.8 billion
	Line-3 (Purple Line): Joka - Esplanade	6.3	Underground	INR 26.2 billion
	Line-4 (Yellow Line): Noapara - Barasat	NA		NA
	Line-6 (Orange Line): Kavi Subhash - Hemanta Mukhopadhyay	32.0	Terminal Station at Airport will be Underground	INR 42.6 billion
Lucknow Metro	<b>Lucknow Metro Phase 1A Route (Operational)</b>			
	Line-1 (Red Line): CCS Airport – Munshi Pulia	3.4	Underground	INR 69.3 billion
	<b>Lucknow Metro Proposed Routes Phase 2</b>			
Meerut Metro	Line-2 (Blue Line): Lucknow Railway Station (Charbagh) – Vasant Kunj	6.9	Underground	INR 58.8 billion
	Line-1: Meerut South – Modipuram Depot (Under Construction)	8.8		
	Line-2: Shradhapuri Phase II – Jagriti Vihar (Proposed)	4.3	Underground	INR 302.7 billion
Mumbai Metro	<b>Mumbai Metro – Under Construction, Approved and Proposed Lines</b>			
	Line-3 (Aqua Line): Colaba - Bandra - SEEPZ	33.5	Underground & At Grade	INR 372.8 billion
	Line-7A (Red Line): Andheri (East) – CSIA Terminal 2	3.2		INR 66.1 billion
	Line-11 (Green Line): Bhakti Park (Wadala) – CSMT	8.8	Underground	INR 87.4 billion
Patna Metro	<b>Patna Metro Phase 1 Route</b>			
	Line-1 (East – West Line) (Red Line): Danapur Cantonment – Khemni Chak	7.5		
	Line-2 (North – South Line) (Blue Line): Patna Junction Railway Station – New ISBT	8.0	Underground	INR 134.1 billion
Pune Metro	<b>Operational Routes</b>			
	Line-1 (Purple Line): Pimpri Chinchwad Municipal Corporation (PCMC) – Swargate	5.1	Underground	INR 114.2 billion
Surat Metro	<b>Surat Metro Rail Project Phase - 1</b>			
	Line-1: Sarthana – Dream City	6.47	Underground	INR 120.2 billion
Kanpur Metro	Line-1 (Orange Line) Phase 1: IIT Kanpur – Naubasta	8.1		
	Line-2 (Blue Line) Phase 1: Rawatpur Railway Station – Jaurali	4.2	Underground	INR 110.8 billion
Guwahati Metro	Line-2: M. G. Road to Khanapara	10.0	Underground	INR 180.2 billion
Madurai Metro	<b>Phase-1: Proposed Metro Rail Routes in Madurai</b>			
	Line 1: Tirumangalam - Chittampatti Junction	5.0	Underground	INR 85.0 billion
Uttarakhand (Devbhoomi) Metro project	GK University - Rishikesh	1.2	Underground	INR 38.84 billion

Source: The Metro Rail Guy, accessed on August 28, 2024, New Articles, Gujarat Metro Rail Corporation (GMRC), Uttar Pradesh Metro Rail Corporation Limited (UPMRC), Pune Metro project, Maharashtra Metro Rail Corporation Limited (MAHA-METRO), Patna Metro Rail (PMRL), Noida Metro Rail Corporation Ltd. (NMRL), Nagpur Metro Rail Project, Mumbai Metropolitan Region Development Authority (MMRDA), Maha Mumbai Metro Operation Corporation Limited (MMMOCL), Mumbai Metro Rail Corporation Limited (MMRC), Kolkata Metro Rail Corporation Ltd. (KMRCL), Ministry of Housing and Urban Affairs (MoHUA), Jaipur Metro Rail Corporation Ltd. (JMRC), Rajasthan Transport, I&T Metro Rail (Hyderabad) Limited, Delhi Metro Rail Corporation (DMRC), Chennai Metro Rail Limited (CMRL), Bangalore Metro Rail Corporation Limited (BMRL), Guwahati Metro Rail Corporation Limited (GMRC), Uttarakhand Metro Rail Corporation (UKMRC)

Note: NA – Not Available; APMC: Agricultural Produce Market Committee; Cantt.: Cantonment; GNLU: Gujarat National Law University; KR Pura: Krishnarajapuram; MG Road: Mahatma Gandhi Road, KIAL: Kempegowda International Airport Limited, ORR: Outer Ring Road, J P Nagar: Jayaprakash Nagar, AIIMS: All India Institute of Medical Sciences, NH12: National Highway 12, SIPCOT: State Industries Promotion Corporation of Tamil Nadu Limited, MBIR: Manesar Bawal Investment Region, IFFCO: Indian Farmers Fertilizer Cooperative Limited, LB Nagar: Lal Bahadur Nagar, JBS: Jubilee Bus Station, MG Bus Station: Mahatma Gandhi Bus Station, MHOW: Military Headquarters Of Warfare, RGIA: Rajiv Gandhi International Airport, ECIL: Electronics Corporation of India Limited, BHEL: Bharat Heavy Electricals Limited, IIT: Indian Institutes of Technology, JLN Stadium: Jawaharlal Nehru Stadium, CCS Airport: Chaudhary Charan Singh International Airport, SGPGI: Sanjay Gandhi Postgraduate Institute of Medical Sciences, IIM: Indian Institutes of Management, CG City South: Chhattisgarh City South, D.N. Nagar: Dadabhai Naoroji Nagar, EEH: Eastern Express Highway, CSIA: Chhatrapati Shivaji Maharaj International Airport; NMIA: Navi Mumbai International Airport, MIDC: Maharashtra Industrial Development Corporation, CSMT: Chhatrapati Shivaji Maharaj Terminus, CBD Belapur: Central Business District of Belapur, ISBT: Inter-State Bus Terminus, PCMC: Pimpri Chinchwad Municipal Corporation, FRI: Forest Research Institute, ITO: Income Tax Officer, SEEPZ: Santacruz Electronics Export Processing Zone

## Huge upcoming opportunity in Metro projects in India

The following tables are the approved route figures include routes approved at least by the state government:

### Large pipeline of projects (over USD 250 million)

Project Status	Project Cost (USD millions)
Approved	5,971.0
At planning stage	25,364.0
Cancelled	2,098.0
Completed	8,588.0
Contract Awarded	1,521.0
Under construction	25,530.0
<b>Total Project Cost (USD million)</b>	<b>69,072.0</b>

Source: Fitch Solutions

Details of metro project pipeline value at each project status is as follows:

Project Name	City, State	Project Cost (USD millions)	Status
Pune Metro Extension Project - Phase II, Swargate - Katraj, Maharashtra	Pune, Maharashtra	1,623.0	Approved
Thane Integral Ring Metro Rail Project, Maharashtra	Thane, Maharashtra	1,455.0	Approved
Hyderabad Metro - Phase II, BHEL - Lakdikapul, Telangana	Hyderabad, Telangana	1,039.0	Approved
Ahmedabad - Dholera Metro Project, Gujarat	Ahmedabad, Gujarat	819.0	Approved
Lucknow Metro - Phase II, Vasantkunj - Charbagh, Uttar Pradesh	Lucknow, Uttar Pradesh	536.0	Approved
Meenambakkam - Kilambakkam Metro Line Extension, Tamil Nadu	Meenambakkam, Tamil Nadu	499.0	Approved
<b>Total Project Cost</b>		<b>5,971.0</b>	

Source: Fitch Solutions

Note: BHEL - Bharat Heavy Electricals Limited

Project Name	City, State	Project Cost (USD millions)	Status
Dehradun - Haridwar - Rishikesh Metro Line, Uttarakhand	Dehradun, Uttarakhand	5,276.0	At planning stage
Mumbai Metro Line 11, Wadala - Chhatrapati Shivaji Maharaj Terminus (General Post office), Maharashtra	Mumbai, Maharashtra	1,927.0	At planning stage
Poonamallee - Parandur Metro Project, Tamil Nadu	Poonamallee, Tamil Nadu	1,292.0	At planning stage
Bengaluru Metro, Phase 3, Nagawara - Kempegowda International Airport (KIA), Karnataka	Bengaluru, Karnataka	1,217.0	At planning stage
Bengaluru Metro, Phase 3, MG Road - Hope Farm, Karnataka	Bengaluru, Karnataka	1,169.0	At planning stage
Gurgaon - Manesar - Bawal Metro Rail Project, Haryana	Gurgaon, Haryana	1,098.0	At planning stage
Madurai Metro Rail Project, Thirumangalam - Othakadai, Tamil Nadu	Madurai, Tamil Nadu	1,039.0	At planning stage
Hyderabad Metro - Phase III, Part A (Uppal - Bibinagar), Telangana	Hyderabad, Telangana	934.0	At planning stage
Hyderabad Metro - Phase III, Part A (Shamshabad Junction Metro station - Kothur - Shadnagar), Telangana	Hyderabad, Telangana	822.0	At planning stage
Hyderabad Metro - Phase III, Part A (Shamshabad International Airport - Kandukur), Telangana	Hyderabad, Telangana	798.0	At planning stage
Koyambedu - Mogappair - Avadi Metro Project, Tamil Nadu	Koyambedu, Tamil Nadu	769.0	At planning stage
Hyderabad Airport Express Metro, Mindspace Junction - Shamshabad Airport, Telangana	Hyderabad, Telangana	765.0	At planning stage
Hyderabad Metro - Phase III, Part C (Jubilee Bus Station - Tumkurta), Telangana	Hyderabad, Telangana	688.0	At planning stage
Thiruvananthapuram Light Metro Project, Technocity (Pallipuram) - Karamana, Kerala	Thiruvananthapuram, Kerala	641.0	At planning stage
Jaipur Metro - Phase II, Orange Line (Sitapura - Amba Bari), Rajasthan	Jaipur, Rajasthan	619.0	At planning stage
Pune High Capacity Mass Transit Route (HCMTR), Maharashtra	Pune, Maharashtra	608.0	At planning stage
Bengaluru Metro, Phase 3 Extension, Bannerghatta Line - Jigani, Karnataka	Bengaluru, Karnataka	584.0	At planning stage
Hyderabad Metro - Phase III, Part A (LB Nagar - Hayathnagar - Peddamberpet), Telangana	Hyderabad, Telangana	544.0	At planning stage
Hyderabad Metro - Phase III, Part C (Paradise Junction - Kandlakoya), Telangana	Hyderabad, Telangana	543.0	At planning stage
Pune Metro Extension Project, Nigdi - Swargate, Maharashtra	Pune, Maharashtra	542.0	At planning stage
Faridabad - Palwal Metro Project, Haryana	Faridabad, Haryana	527.0	At planning stage
Mumbai Metro - Line 3 Extension, Cuffe Parade - Navy Nagar, Maharashtra	Mumbai, Maharashtra	394.0	At planning stage
Hyderabad Metro - Phase III, Part A (BHEL - Patancheru - Isnapur), Telangana	Hyderabad, Telangana	393.0	At planning stage
Dwarka Sector 21 (Delhi) - IFFCO Chowk, Gurgaon (Haryana) Metro Line	Delhi, Haryana	359.0	At planning stage
Dehradun - Haridwar - Rishikesh Metro Line - Stage I, Haridwar - Rishikesh, Uttarakhand	Dehradun, Uttarakhand	347.0	At planning stage
Noida Metro Aqua Line Extension, Uttar Pradesh	Noida, Uttar Pradesh	308.0	At planning stage
IGI Airport Inter Terminal Air Train, Delhi	Delhi	300.0	At planning stage
Bengaluru Metro, Phase 3 Extension, Whitefield - Katamanallur/Hoskote, Karnataka	Bengaluru, Karnataka	292.0	At planning stage
Palam Vihar (Gurgaon, Haryana) - Dwarka Sector 21 (Delhi) Metro Project	Haryana, Delhi	291.0	At planning stage
Hyderabad Metro - Phase III, Part A (Tarnaka - ECIL X Road), Telangana	Hyderabad, Telangana	278.0	At planning stage
<b>Total Project Cost</b>		<b>25,364.0</b>	

Source: Fitch Solutions

Note: CSIA - Chhatrapati Shivaji Maharaj International Airport, HCMTR - High Capacity Mass Transit Route, LB Nagar - Lal Bahadur Nagar, KIA - Kempegowda International Airport, BHEL - Bharat Heavy Electricals Limited, KR Puram - Krishnarajapuram, D.N. Nagar - Dadabhai Naoroji Nagar, YMCA - Young Men's Christian Association, ECIL - Electronics Corporation of India Limited, IFFCO - Indian Farmers Fertilizer Cooperative Limited

Project Name	City, State	Project Cost (USD millions)	Status
Chandigarh Metro Rail Project, Chandigarh	Chandigarh	2,098.0	Cancelled
<b>Total Project Cost</b>		<b>2,098.0</b>	

Source: Fitch Solutions

Project Name	City, State	Project Cost (USD millions)	Status
Lucknow Metro - Phase I, Lucknow Airport - Munshipullia, Uttar Pradesh	Lucknow, Uttar Pradesh	1,081.0	Completed
Mumbai Metro - Line 2A (Dahisar East - DN Nagar Section), Maharashtra	Mumbai, Maharashtra	959.0	Completed
Kochi Metro Rail Project, Phase - I (Aluva - Petta), Kerala	Kochi, Kerala	938.0	Completed
Mumbai Metro - Line 7, Andheri East - Dahisar East, Maharashtra	Mumbai, Maharashtra	930.0	Completed
Noida Metro - Line 1 (Aqua Line), Sector 71 - Gr. Noida Depot, Uttar Pradesh	Noida, Uttar Pradesh	774.0	Completed
Mumbai Metro Phase I - Line 1, Versova - Andheri - Ghatkopar, Maharashtra	Mumbai, Maharashtra	732.0	Completed
Chennai Metro - Phase I Extension Project, Washermanpet - Thiruvottriyur/Wimco Nagar Section, Tamil Nadu	Chennai, Tamil Nadu	511.0	Completed
Delhi Metro - Phase III, Violet Line Extension, Badarpur (Delhi) - YMCA Chowk (Faridabad) Section	Delhi	475.0	Completed
Jaipur Metro - Phase I, Pink Line (Mansarovar - Badi Chaupar), Rajasthan	Jaipur, Rajasthan	428.0	Completed
Delhi Metro - Phase III, Green Line Extension, Mundka (Delhi) - Bahadurgarh (Haryana)	Delhi	374.0	Completed
Gurgaon Rapid Metro Line 1 Extension, Sikanderpur - Sector 55-56, Haryana	Gurgaon, Haryana	373.0	Completed
Delhi Metro - Red Line Extension, Dilshad Garden (Delhi) - Ghaziabad (Uttar Pradesh)	Delhi	355.0	Completed
Kolkata Metro Line 2 (East-West Corridor) - Phase I, West Bengal	Kolkata, West Bengal	341.0	Completed
Jaipur Metro - Phase IA, Pink Line (Mansarovar - Chand Pole), Rajasthan	Jaipur, Rajasthan	317.0	Completed
<b>Total Project Cost</b>		<b>8,588.0</b>	

Source: Fitch Solutions

Note: CSIA - Chhatrapati Shivaji Maharaj International Airport, HCMTR - High Capacity Mass Transit Route, LB Nagar - Lal Bahadur Nagar, KIA - Kempegowda International Airport, BHEL - Bharat Heavy Electricals Limited, KR Puram - Krishnarajapuram, D.N. Nagar - Dadabhai Naoroji Nagar, YMCA - Young Men's Christian Association, ECIL - Electronics Corporation of India Limited, IFFCO - Indian Farmers Fertilizer Cooperative Limited

Project Name	City, State	Project Cost (USD millions)	Status
Bangalore (Namma) Metro - Phase II-A, Silk Board - K.R. Puram Metro Line, Karnataka	Bengaluru, Karnataka	838.0	Contract Awarded
Hyderabad Airport Metro Rail Extension, Raidurg - Rajiv Gandhi International Airport, Telangana	Hyderabad, Telangana	683.0	Contract Awarded
<b>Total Project Cost</b>		<b>1,521.0</b>	

Source: Fitch Solutions

Note: KR Puram - Krishnarajapuram

Project Name	City, State	Project Cost (USD millions)	Status
Mumbai Metro - Line 3, Colaba-Bandra-SEEPZ, Maharashtra	Mumbai, Maharashtra	4,200.0	Under construction
Bangalore (Namma) Metro - Phase II, Silk Board - Kempegowda International Airport Metro Line, Karnataka	Bengaluru, Karnataka	1,996.0	Under construction
Mumbai Metro - Line 4, Wadala - Ghatkopar - Kasarvadavali, Maharashtra	Mumbai, Maharashtra	1,886.0	Under construction
Chennai Metro - Phase II, Light House - Poonamallee Line (Corridor 4), Tamil Nadu	Chennai, Tamil Nadu	1,830.0	Under construction
Mumbai Metro - Line 2B (DN Nagar - Mandala (Mandale)), Maharashtra	Mumbai, Maharashtra	1,649.0	Under construction
Bengaluru Metro, Phase-2B, KR Puram - Kempegowda International Airport Metro line, Karnataka	Bengaluru, Karnataka	1,503.0	Under construction
Bangalore (Namma) Metro - Phase II-B, Kasturi Nagar - Kempegowda International Airport Metro Line, Karnataka	Bengaluru, Karnataka	1,330.0	Under construction
Mumbai Metro Line 5, Thane - Bhiwandi - Kalyan, Maharashtra	Mumbai, Maharashtra	1,260.0	Under construction
Kolkata Metro Line 2 (East-West Corridor), West Bengal	Kolkata, West Bengal	1,168.0	Under construction
Indore Metro Rail Project, Bengali Square - Palasia Line, Madhya Pradesh	Indore, Madhya Pradesh	1,049.0	Under construction
Mumbai Metro Line 6, Lokhandwala - Jogeshwari - Kanjurmargin, Maharashtra	Mumbai, Maharashtra	1,000.0	Under construction



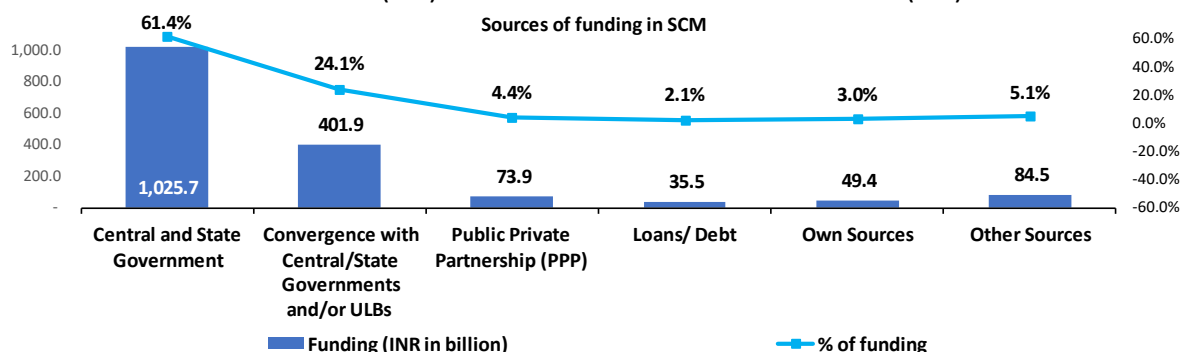
Project Name	City, State	Project Cost (USD millions)	Status
Pune Metro - Line 3 (Hinjewadi - Shivaji Nagar), Maharashtra	Pune, Maharashtra	934.0	Under construction
Mumbai Metro Line 7A, Andheri - CSIA Section, Maharashtra	Mumbai, Maharashtra	891.0	Under construction
Mumbai Metro Line 9, Dahisar - Mira Bhayander Section, Maharashtra	Mumbai, Maharashtra	780.0	Under construction
Bhubaneswar Metro Project, Bhubaneswar - Cuttack, Odisha	Bhubaneswar, Odisha	752.0	Under construction
Chennai Metro - Phase II, Madhavaram - Sholinganallur Line (Corridor 5), Tamil Nadu	Chennai, Tamil Nadu	709.0	Under construction
Mumbai Metro - Line 12, Kalyan - Taloja, Maharashtra	Mumbai, Maharashtra	708.0	Under construction
Huda City Centre - Cyber City Metro Line Project, Gurugram, Haryana	Gurgaon, Haryana	657.0	Under construction
Navi Mumbai Metro Line 1, Belapur - Pendhar, Maharashtra	Mumbai, Maharashtra	482.0	Under construction
Kolkata Metro Line (Noapara-Barasat), West Bengal	Kolkata, West Bengal	436.0	Under construction
Kolkata Metro Line 3, Purple Line, Mominpur - Esplanade, Kolkata, West Bengal	Kolkata, West Bengal	310.0	Under construction
<b>Total Project Cost</b>		<b>25,530.0</b>	

Source: Fitch Solutions

Note: CSIA - Chhatrapati Shivaji Maharaj International Airport, HCMTR - High Capacity Mass Transit Route, LB Nagar - Lal Bahadur Nagar, KIA - Kempegowda International Airport, BHEL - Bharat Heavy Electricals Limited, KR Puram - Krishnarajapuram, D.N. Nagar - Dadabhai Naoroji Nagar, YMCA - Young Men's Christian Association, ECL - Electronics Corporation of India Limited, IFFCO - Indian Farmers Fertilizer Cooperative Limited

## Proposed Investments

The 100 cities under the Smart City Mission (SCM) are executing around 8,000 projects worth over INR 1.6 trillion. The Mission guidelines mandates SPV to adopt innovative sources of financing for implementing SCM projects. Thus, many SPVs have leveraged government grants received from both centre and state to attract private capital and developed Public Private Partnership (PPP) projects. In addition, few smart city SPVs have also helped the respective Urban Local Bodies (ULBs) raise funds through debt/loans, commercial borrowings, municipal bonds, land monetization, etc. The distribution of funding envisaged from different sources is as follows: Central and State Government: INR 1,025.7 billion (61%), Convergence funding from other missions, programs of the Central/ State Governments and/ or ULBs: INR 401.9 billion (24%), Funds from PPP: INR 73.9 billion (4%), Loans/Debt: INR 35.5 billion (2%), Own Sources: INR 49.4 billion (3%) and Other sources: INR 84.5 Billion (5%).

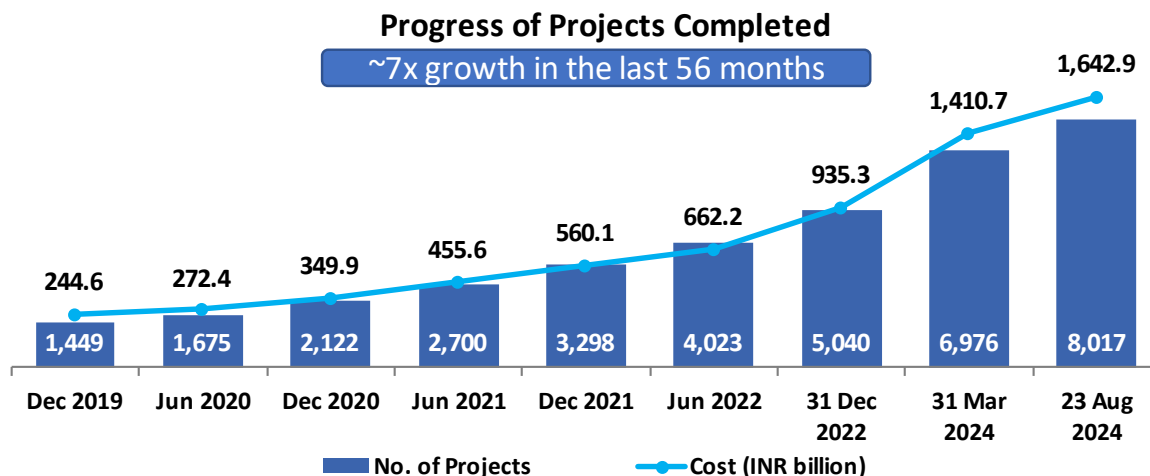


Source: MoHUA Annual Report 2023-24. FSIAPL Analysis

## Current Implementation Status – Projects

Under the SCM, 100 Smart Cities have been selected in four Rounds based on All India Competition. All 100 cities have incorporated Special Purpose Vehicles (SPVs), Smart City Advisory Forums (SCAFs) and appointed Project Management Consultants (PMCs). The Mission witnessed excellent progress in project implementation and completion during FY2024. As on 31<sup>st</sup> March 2024, 6,976 projects worth INR 1,410.7 billion had been completed. Only 1,055 projects worth INR 271.7 billion were ongoing, which are in advanced stage of implementation. After successfully achieving 100% work orders in FY2023, the focus of FY2024 was on project completion. 1,440 projects worth INR 373.0 billion were completed during FY2024. As on 23<sup>rd</sup> August 2024, work orders were issued in 8,017 projects worth

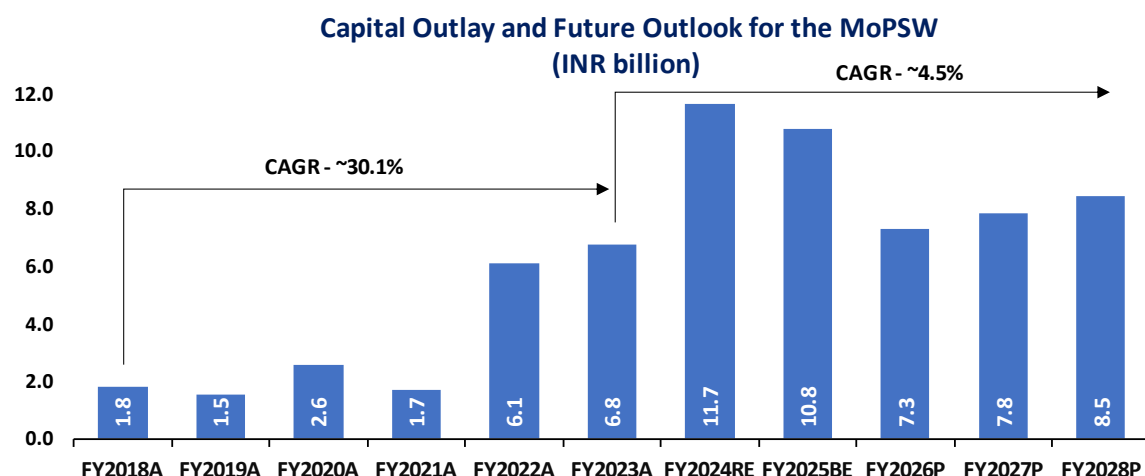
around INR 1,642.9 billion, of which 7,241 projects worth INR 1,453.0 billion have been completed.



Source: MoHUA Annual Report 2023-24; Smart Cities Mission - Dashboard, FSIAPL Analysis

## Ports

### Capital outlay for ports sector in India (FY2018 – FY2028)



Source: Union Budget Documents, FSIAPL Analysis

Note: MoPSW- Ministry of Ports, Shipping and Waterways; A – Actuals; RE - Revised Estimates; BE – Budgeted Estimates; P – Projected

The exponential growth in the ports industry is illustrated by the capital outlay on ports, lighthouses, shipping, and other transport services. The actual capital outlay for MoPSW has increased at a CAGR of ~30.1% from INR 1.8 billion in FY2018 to INR 6.8 billion in FY2023. Based on the historical trend and as per FSIAPL's analysis, the capital outlay in the port industry is projected to increase at a CAGR of 4.5% from INR 6.8 billion in FY2023 to INR 8.5 billion in FY2028.

### Synopsis of Projects under Sagarmala Programme

Overall, currently there are 839 projects worth an investment of INR 5.8 trillion for implementation under the Sagarmala Programme by 2035. These include projects being implemented through various funding arrangements including Equity, Internal Resources, Grant in Aid, PPP mode etc. Out of which, 262 projects worth INR 1.4 trillion have been

completed and remaining projects are under various stages of implementation and development. (data as on 24<sup>th</sup> Apr 2024)

Summary of projects under Sagarmala Programme

Pillar	Completed		Under Implementation		Under Development		Grand Total	
	No. of Projects	Total Project Cost (INR billion)	No. of Projects	Total Project Cost (INR billion)	No. of Projects	Total Project Cost (INR billion)	No. of Projects	Total Project Cost (INR billion)
Port Modernization	98.0	320.7	62.0	756.5	74.0	1,826.5	234.0	2,903.7
Port Connectivity	91.0	580.0	57.0	680.1	131.0	803.7	279.0	2,063.7
Port led Industrialization	9.0	458.7	3.0	92.5	2.0	7.8	14.0	558.9
Coastal Community Development	21.0	15.6	32.0	61.7	28.0	38.5	81.0	115.7
Coastal Shipping & IWT	43.0	29.6	63.0	46.7	125.0	69.8	231.0	146.0
<b>Grand Total</b>	<b>262.0</b>	<b>1404.4</b>	<b>217.0</b>	<b>1637.4</b>	<b>360.0</b>	<b>2746.2</b>	<b>839.0</b>	<b>5,788.0</b>

Source: Ministry of Ports, Shipping and Waterways (MoPSW), Sagarmala Programme Website (as on 24<sup>th</sup> Apr 2024)

## Overview of other key ongoing and proposed projects

### 1. International Container Transshipment Port (ICTP) at Galathea Bay, Andaman and Nicobar Island

The MoPSW, as part of the holistic development of the Great Nicobar Island, is working towards the development of a Mega International Container Transshipment Port (ICTP) at Galathea Bay of the Great Nicobar Island of the Andaman & Nicobar Islands in the Bay of Bengal. Recently, the Ministry of Environment, Forest, and Climate Change (MoEFCC) granted Stage I environmental clearance for the project. The proposed facility is expected to cost INR 440.0 billion and will be developed in four phases. Kolkata-based Syama Prasad Mookerjee Port is the nodal agency for the implementation of this project. With a handling capacity of approximately 4 million 20-foot equivalent units (TEUs), Phase I is expected to be put into service in 2028. Later, this capacity will be enhanced to 16 million TEUs. Phase I of the project is expected to cost around INR 180.0 billion and it will involve building breakwaters, dredging, reclamation, berths, storage areas, buildings, and utilities, as well as purchasing and installing equipment and developing a port colony with the support of the government.

The project focuses on three key drivers, which can result in making it a leading container transshipment port, that is –

- Strategic location in terms of proximity (40 nautical miles from Malacca Strait) with the international shipping trade route,
- Availability of natural water depth of over 20 metres and
- Carrying capacity of transshipment cargo from all ports in the proximity, including Indian ports

India urgently needs a transshipment hub to prevent revenue loss, improve logistics efficiency, and create an opportunity to become a major hub for container traffic between Asia and Africa, as well as Asia and the US/Europe. Currently, about 75% of the nation's transshipped cargo is handled at ports outside the country. The development of the Galathea Bay port project could enable Indian ports to save approximately USD 200.0 million to USD 220.0 million annually in transshipment cargo. Additionally, several related businesses, such as ship chandlery and supplies, ship repair, crew change facilities, logistics value-added services, warehousing, and bunkering, are planned for this transshipment port.

(Source: India Infrastructure article named 'New Potential: Developing India as a container transshipment hub'; Financial Express article named 'Government to build International Container Transshipment Port in

*Great Nicobar Island'; 'Shri Sarbananda Sonowal visits Galathea Bay in Great Nicobar Island and reviews progress of proposed International Container Transshipment Port (ICTP)' by PIB Delhi)*

## 2. Vizhinjam International Container Transshipment Terminal, Kerala

The Vizhinjam International Container Transshipment Terminal in Kerala also holds the potential to become a big transshipment hub. Adani Ports and Special Economic Zone Limited is developing Vizhinjam Port as India's first mega transshipment container terminal. At present, around 75.0% of the total work on the port has been completed. In addition, about 33.0% of the dredging is over.

(Source: <https://indianinfrastructure.com/2023/04/26/new-potential-developing-india-as-a-container-transshipment-hub/#:~:text=Upcoming%20container%20transshipment%20projects%20in%20india&text=The%20proposed%20facility%20is%20expected,put%20into%20service%20in%202028.>)

Adani Ports and Special Economic Zone Ltd (APSEZ), which is part of the Adani Group, is responsible for the construction, operation, and maintenance of the port. Vizhinjam, located about 14 km from Kerala's capital city of Trivandrum, has a natural depth of over 18 m and is located just ten nautical miles (18 km) from the international shipping route from West Asia, Africa, and Europe to the far eastern regions of the world. Additionally, the availability of a 20-metre contour within one nautical mile from the coast, minimal littoral drift along the coast, the natural depth that excludes the need for maintenance dredging, potential for better road, and rail transport link potential make Vizhinjam a strategic well-suited for the greenfield project. Vizhinjam is envisaged to be an all-weather, multipurpose, deepwater, mechanised, greenfield port that seeks to garner the lion's share of the Indian transshipment cargo now being handled by the nearby foreign ports and emerge as the future transshipment hub of the country.

On July 11, 2024, Vizhinjam Port welcomed its first mothership, 'San Fernando' from Maersk, the world's second-largest shipping company, carrying over 2,000 containers. The first phase of the port, featuring a 3,000-metre breakwater and an 800-metre container berth, is completed in July 2024. Vadhavan Port, set to become one of the world's top 10 container ports with a capacity of 23.2 million TEUs, will be developed along both the West and East Coasts.

The INR 76.0 billion transshipment deepwater multipurpose seaport project in Vizhinjam is being executed by Adani Ports and SEZ Private Limited on a design, build, finance, operate, and transfer (DBFOT) model. Vizhinjam Port is recognized as the first semi-automated container terminal in the country and will serve as a global bunkering hub, supplying clean and green fuels like hydrogen and ammonia. Full-fledged commercial operations at the facility are expected to commence within a few months. Completion of the second and third phases of the project is planned for 2028, positioning it as one of the greenest ports in the world. Additionally, the port's strategic location, just 10 nautical miles from the international shipping route connecting Europe, the Persian Gulf, and the Far East, enhances its significance.

The Central and State governments together are providing a grant of INR 16.4 billion (about 40% of the project cost) under the Viability Gap Funding (VGF) scheme for public-private projects (PPP). VGF is a government grant provided to support infrastructure



projects viewed as 'economically justified but fall short of "financial viability"'. The Kerala government is expected to spend about INR 34.4 billion for basic infrastructure civil works such as the breakwater, quay wall, dredging, reclamation, rail, and road access to the port. (Source: India Infrastructure article named 'New Potential: Developing India as a container transshipment hub'; Swarajya article named 'Explained: The significance of Vizhinjam Transshipment Port in Kerala, first phase of project set to be fully commissioned by May 2024'; Business Today article named "New era in India's maritime logistics...": Gautam Adani hails berthing of first mothership at Vizhinjam Port')

### 3. Dockyards in Cochin port

The central government has decided to increase the depth of dockyards in Cochin port to facilitate anchoring of huge ships. For this, the centre has announced an investment worth INR 3.8 billion by including the project in the Sagarmala scheme. The proposed project will elevate Kochi port to a transshipment hub, thereby contributing to the trading sector. The current depth of the dockyard in Cochin port is 14.5 metres, which will be increased to 16 metres in the first phase of the project. Besides, this will help improve the container management capacity of the Vallarpadam terminal from 1 million TEUs to 2 million TEUs.

Increasing the depth of the dockyard in Cochin will adversely affect the Colombo port in Sri Lanka. Currently, most of the international cargo vessels are being docked at the Colombo port to transport containers to the Cochin port. By improving the dockyard in Kochi port, these huge cargo vessels can arrive in Cochin directly. The distance from the international ship route to Kochi port is only 49 nautical miles, while the distance to the Port of Colombo is 110 nautical miles.

(Source: India Infrastructure article named 'New Potential: Developing India as a container transshipment hub';)

In January 2024, Prime Minister Narendra Modi inaugurated a 310-meter dry dock and an international ship-repair facility (ISRF) by Cochin Shipyard Limited (CSL). Additionally, he also inaugurated an LPG import terminal of the Indian Oil Corporation at Puthuvype. The combined cost of these projects is approximately INR 40.0 billion. The new dry dock at Cochin Shipyard, constructed at a cost of INR 18.0 billion, measures 310 meters in length, 75/60 meters in width, and 13 meters in depth. It has the capacity to accommodate the construction of aircraft carriers displacing up to 70,000 tonnes. The dry dock will also feature a Goliath 600 MT gantry crane, which will transform the Kochi skyline.

(Sources: The Hindu article named 'Kochi set to become a maritime hub')

### 4. Other key proposed projects (over USD 250 million) are as follow:

Project Name	City/ State	Project Category	Project Cost (USD millions)	Status
Vadhavan Port, Palghar, Maharashtra	Maharashtra	New Port	9,134.0	Approved
Wadhwan (Vadhvan) Port Project, Maharashtra	Maharashtra	New Port	8,860.0	Approved
Mundra Port Capacity Expansion, Gujarat	Gujarat	Port Expansion	5,286.0	At planning stage
Nakkapalli Container Port, Visakhapatnam, Andhra Pradesh	Visakhapatnam, Andhra Pradesh	New Port	4,866.0	At planning stage
Colachel Port Project, Enayam, Tamil Nadu	Enayam, Tamil Nadu	New Port	4,128.0	In tender/Tender launched
Tajpur Deep - Sea Port, West Bengal	West Bengal	New Port	3,138.0	At planning stage
Mega Container Transshipment Port - Phase I, Galathea Bay, Great Nicobar Islands, A. & N. Islands	A. & N. Islands	New Port	2,160.0	In tender/Tender launched
Krishnapatnam Port Project, Phase III, Andhra Pradesh	Andhra Pradesh	New Port	1,836.0	At planning stage
Colachel Port Project, Phase II, Enayam, Tamil Nadu	Enayam, Tamil Nadu	New Port	1,727.0	At planning stage
Water Transport Corridor Project, Odisha	Odisha	Inland Waterway	1,462.0	At planning stage
Colachel Port Project, Phase III, Enayam, Tamil Nadu	Enayam, Tamil Nadu	New Port	1,416.0	At planning stage
Paradip Outer Harbour Project, Odisha	Paradip, Odisha	New Port	1,226.0	At planning stage
Salaya Port Expansion Project, Gujarat	Gujarat	Port Expansion	997.0	At planning stage
Colachel Port Project, Phase I, Enayam, Tamil Nadu	Enayam, Tamil Nadu	New Port	985.0	At planning stage
Tuticorin Port Outer Harbour Project, Tamil Nadu	Tuticorin, Tamil Nadu	Port Expansion	920.0	At planning stage
Chidambaranar Port (Tuticorin Port) Expansion, Tamil Nadu	Tuticorin, Tamil Nadu	Port Expansion	900.0	At planning stage
Astaranga Port Project, Puri, Odisha	Puri, Odisha	New Port	887.0	At planning stage
Project Name	City/ State	Project Category	Project Cost (USD millions)	Status
Tuticorin Port Outer Harbour Container Terminal Development, Tamil Nadu	Tuticorin, Tamil Nadu	Port Expansion	851.0	In tender/Tender launched
Chidambaranar (Tuticorin) Port Redevelopment Project, Tamil Nadu	Tuticorin, Tamil Nadu	Port Expansion	846.0	Approved
Jawaharlal Nehru Port - Fifth Container Terminal, Maharashtra	Maharashtra	Port Expansion	823.0	At planning stage
Chennai Port Mega Container Terminal Project, Tamil Nadu	Chennai, Tamil Nadu	Port Expansion	739.0	At planning stage
Dahej Port, Bharuch, Gujarat	Bharuch, Gujarat	New Port	674.0	At planning stage
Belekeri Port Project, Karwa, Karnataka	Karwa, Karnataka	New Port	595.0	In tender/Tender launched
Tuticorin Port Outer Harbour Container Terminal Development - Stage II, Tamil Nadu	Tuticorin, Tamil Nadu	Port Expansion	542.0	In tender/Tender launched
Nargol Port Project, Gujarat	Nargol, Gujarat	New Port	512.0	In tender/Tender launched
Riverine Port, Mahanadi River, Kendrapada, Odisha	Kendrapada, Odisha	New Port	500.0	At planning stage
Keni Port Project, Karnataka	Keni, Karnataka	New Port	494.0	Contract Awarded
Kulpi Container Port, West Bengal	Kulpi, West Bengal	New Port	427.0	At planning stage
Dahej Port, Phase I, Bharuch, Gujarat	Bharuch, Gujarat	New Port	415.0	At planning stage
Jawaharlal Nehru Port - Liquid Cargo Terminal, Nhava Island, Maharashtra	Maharashtra	Port Expansion	404.0	At planning stage
Honnarav Port Project, Uttara Kannada, Karnataka	Karnataka	New Port	375.0	At planning stage
Haldia Dock II Project, West Bengal	Haldia, West Bengal	Port Expansion	311.0	At planning stage
Tuticorin Port Outer Harbour Container Terminal Development - Stage I, Tamil Nadu	Tuticorin, Tamil Nadu	Port Expansion	309.0	In tender/Tender launched
Diamond Harbour Container Terminal Project, Kolkata Port, West Bengal	West Bengal	Port Expansion	281.0	At planning stage
Riverine Port, Phase I, Mahanadi River, Kendrapada, Odisha	Kendrapada, Odisha	New Port	261.0	At planning stage
Dahej Port, Phase II, Bharuch, Gujarat	Bharuch, Gujarat	New Port	259.0	At planning stage
<b>Total Project Cost</b>			<b>59,546.0</b>	

Source: Fitch Solutions

Note: A. &amp; N. Islands - Andaman and Nicobar Islands

## Hydro-electric Power

### Hydro Capacity Addition by 2030

Considering the unique advantages of hydropower (including Pump Storage Projects - PSP) and the increasing need of hydropower for grid stability/ balancing, the Government has envisaged to add 69 number of hydro schemes with an aggregate Installed capacity of around 55.65 GW (including 31 number of Pumped Storage Schemes of 42.92 GW).

### Summary (Hydro)

(All figures in MW)	Central	State	IPPs	Total
2024-25	800.0	320.0	-	1,120.0
2025-26	396.0	1,433.5	390.0	2,219.5
2026-27	4,918.0	490.0	-	5,408.0
2027-28	1,040.0	48.0	-	1,088.0
2028-29	1,022.0	300.0	-	1,322.0
2031-32	2,880.0	-	-	2,880.0
<b>Total</b>	<b>11,056.0</b>	<b>2,591.5</b>	<b>390.0</b>	<b>14,037.5</b>

### Summary (PSP)

(All figures in MW)	Central	State	IPPs	Total
2024-25	1,000.0	-	1,200.0	2,200.0
2025-26	-	500.0	-	500.0
<b>Total</b>	<b>1,000.0</b>	<b>500.0</b>	<b>1,200.0</b>	<b>2,700.0</b>

Source: MoP Annual Report 2023-24

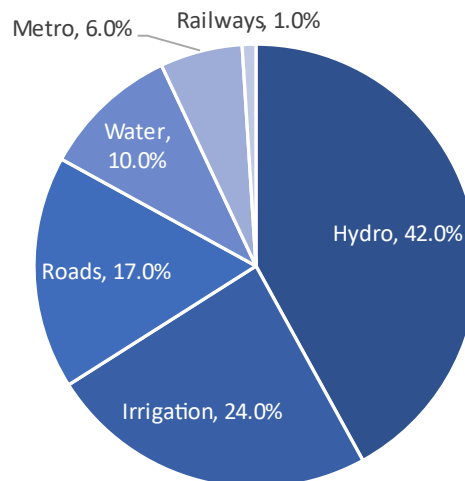
Note: IPPs – Independent Power Producers

### Tunnelling projects in Hydropower and Irrigation Sector

According to projects tracked by India Infrastructure Research, as of May 2024, India has more than 1,470 completed and operational tunnels spanning over 3,400 km. A sector-wise analysis indicates that the hydropower sector has the highest share of completed tunnels with over 1,100 km, followed by metro rail (more than 840 km), irrigation (more than 550 km), railways (more than 500 km), water and sewerage (more than 260 km) and roads (more than 120 km).

As of May 2024, according to India Infrastructure Research, the tunnelling segment presents a promising pipeline with over 1,140 tunnels covering approximately 1,750 km, including both planned and under-bidding projects. Of these tunnels, 89% are categorized as planned, while the remaining 11% are under bidding. In terms of length, about 10% are under bidding, and 90% are in the planning stage. The sector is estimated to require an investment of around Rs 3.5 trillion, as per India Infrastructure Research.

### Sector-wise share of upcoming tunnels (based on the total length)



Source: India Infrastructure Research

Note: Project under planned and bidding categories have been considered

According to India Infrastructure Research, an analysis of the distribution of upcoming tunnels across various sectors reveals that the hydropower sector holds the largest share at approximately 42.0%. This is followed by the irrigation sector with 24.0%, roads with 17.0%, water and sewerage with 10.0%, metro rail with 6.0%, and railways with 1.0%.

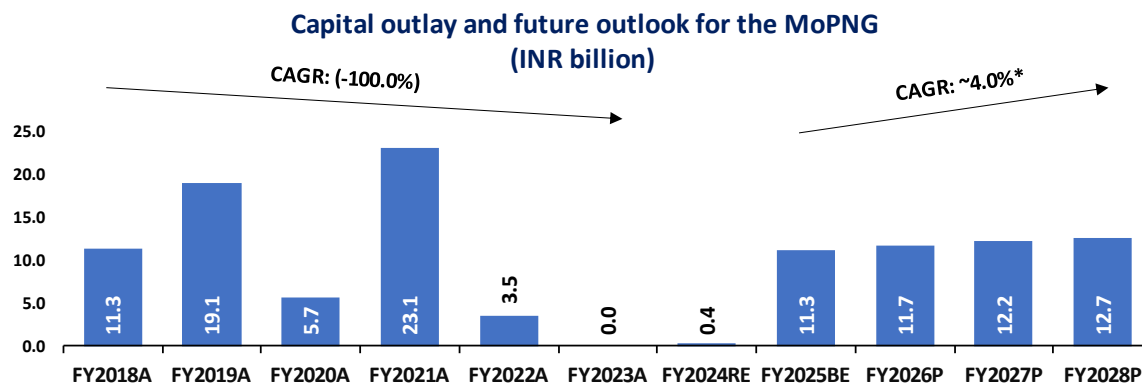
### Outlook of construction spend on Hydro-electric power in India over the past five years (FY2019 to FY2024):

#### Key constructions investments on hydro-electric power projects in India

- NHPC has laid the foundation stone of 2,880 MW Dibang Multipurpose Project for INR 319 billion in Arunachal Pradesh, which will be the largest hydropower project in the Country.
- NHPC has signed an MoU with Department of Energy, Govt. of Maharashtra for the development of Pumped Storage Schemes (PSP) and other Renewable Energy Source Projects in Maharashtra. The MOU envisages development of four Pumped Storage Projects aggregating to 7350 MW namely Kalu-1150 MW, Savitri-2250 MW, Jalond-2400 MW & Kengadi-1550 MW and other Renewable Energy Source Projects in the state.
- A Memorandum of Agreement (MoA) was signed with Government of Arunachal Pradesh for development of two mega projects i.e. 1,605 MW Subansiri Upper Hydroelectric Project and 1,720 MW Kamala Hydroelectric Project.
- NHPC has signed an MoU with Andhra Pradesh Power Generation Corporation Limited (APGENCO) for Implementation of Pumped Hydro Storage Projects and Renewable Energy Projects under joint venture mode in Andhra Pradesh.
- NHPC has signed an MoU with ONGC for “Cooperation in exploration & development of Pumped Hydro Storage & other Renewable Projects”.
- NHPC has signed an MoU with Gujarat Power Corporation Limited for proposed investment of INR 40.0 billion in Kuppia Pumped Storage Project (750 MW), Chhota Udaipur, Gujarat. NHPC secured a significant achievement by securing a 200 MW capacity solar project in the 1,125 MW Gujarat State Electricity Corporation Limited (GSECL) Solar Park at Khavda, Gujarat.
- NHPC is exploring to develop around 20,000-22,000 MW of pumped hydro energy storage projects in Odisha, Maharashtra, Madhya Pradesh, and Andhra Pradesh.
- SJVN Ltd. (Satluj Jal Vidyut Nigam) has bagged five hydropower projects in Arunachal Pradesh's Dibang Basin. The investment in these projects, totalling 5,097 megawatts, will be more than INR 500.00 billion. Construction of these projects will reduce carbon emissions by around 1.1 million tonnes per year.
- 2,000 MW Subansiri Upper HEP and 1,800 MW Kamala HEP have been allotted to NHPC by Government of Arunachal Pradesh
- NHPC is also committed for the commissioning of two mega Projects i.e. 2000 MW Subansiri Lower HEP and 800 MW Parbati-II HEP in the present FY2024.
- NHPC has been accorded investment approval of INR 9.73 billion by Government of India for preconstruction activities of Sawalkot HEP
- NHPC has signed an MoU for three projects in Nepal i.e. West Seti (750 MW), SR-6 (450 MW) and Phukot Karnali (480 MW) HE Projects
- NHPC has 6 projects in the pipeline at different stages of investigation or under appraisal of Government of India awaiting Techno Economic Clearances. This includes magnanimous Siang Upper HEP having more than 10,000 MW installed capacity.
- NHPC is also venturing into development of Pumped Storage Hydro Projects and Solar Power Projects in different parts of the Country as well as exploring new technologies such as Green Hydrogen generation and Floating Solar projects.

#### Oil and Gas Construction Segment Overview

## Capital outlay for Ministry of Petroleum and Natural Gas (MoPNG) in India (FY2018 - FY2028)



Source: Union Budget Documents, FSIAPL Analysis

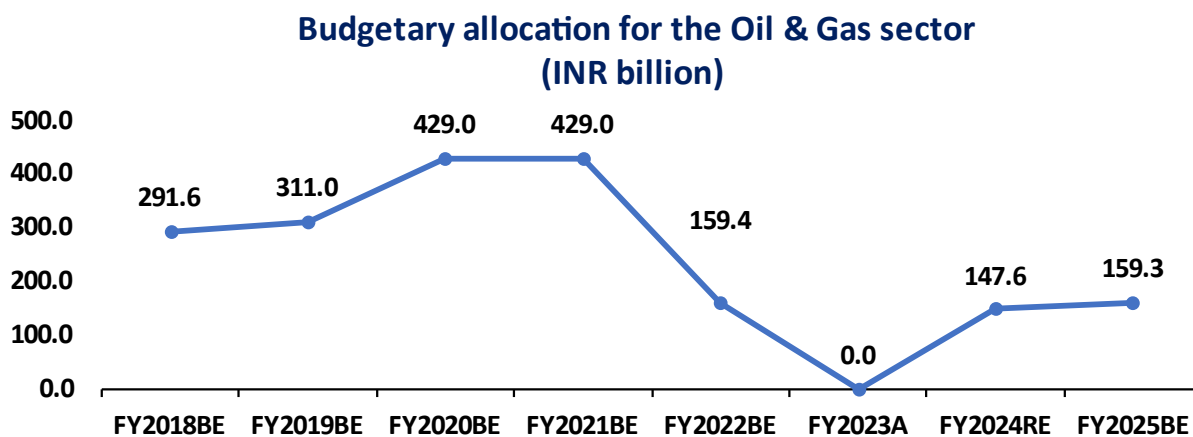
Note: MoPNG - Ministry of Petroleum and Natural Gas; A - Actuals; RE - Revised Estimates; BE - Budgeted Estimates; P - Projected

\*MoPNG has not allocated any capital outlay funds in FY2023A, hence projection is calculated for 3 years from FY2025BE - FY2028P

The capital outlay for the MoPNG has exhibited a fluctuating trend over the past five years. The actual capital expenditure rose from INR 11.3 billion in FY2018 to INR 19.1 billion in FY2019. It further increased to INR 23.1 billion in FY2021, up from INR 5.7 billion in FY2020. However, the capital outlay then dropped to INR 3.5 billion in FY2022 and reached INR 0.0 in FY2023. According to FSIAPL's analysis, the capital outlay for the MoPNG is projected to grow at an average CAGR of approximately 4.0%, reaching INR 12.7 billion by FY2028.

## Review of budgetary allocation for the oil & gas sector

The Union Budget 2024-25 has allocated INR 159.3 billion to the Ministry of Petroleum and Natural Gas for FY2025. This amount represents half (0.5 times) of the budgetary support of INR 291.58 billion that was allocated in FY2018.



Source: Union Budget Documents

Note: BE - Budgeted Estimate, A - Actuals, RE - Revised Estimate

The MoPNG is concerned with exploration and production of oil and natural gas, refining, distribution, and marketing, import and export, and conservation of petroleum products. In FY2025, the Ministry has been allocated INR 159.3 billion, a 5% increase over the revised estimates for FY2024.

#### Allocation to the Ministry of Petroleum and Natural Gas (INR billion)

Major Heads	FY2023A	FY2024RE	FY2025BE	% Change (BE over RE)
Capital Support to OMCs	0.0	0.0	0.0	0%
One Time Grant to OMCs	220.0	0.0	0.0	NM
IGGL (North East Natural Gas Pipeline Grid)	15.3	13.0	10.0	-23%
Strategic Oil Reserves	1.2	2.3	6.3	172%
LPG Subsidy	68.2	122.4	119.3	-3%
Others	4.4	9.9	23.8	141%
<b>Total</b>	<b>309.1</b>	<b>147.6</b>	<b>159.3</b>	<b>8%</b>

Source: Union Budget Documents 2024-25

Note: A - Actuals, BE- Budgeted Estimate, RE – Revised Estimate, SPR - Strategic Petroleum Reserves, OMC – Oil Marketing Company

### Key announcement under Union Budget 2024–25

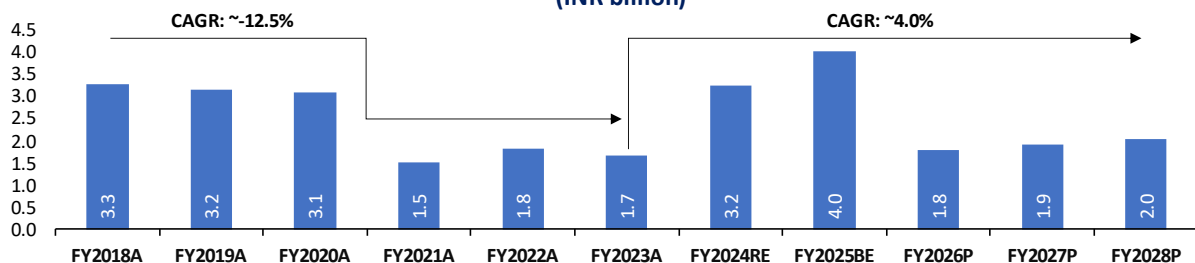
In the 2024-25 Union Budget, the Hon'ble Finance Minister (FM) unveiled a strategy aimed at sustaining high and resource-efficient economic growth while ensuring energy security in terms of availability, accessibility, and affordability. Key announcements included a coal gasification scheme, mandatory blending of compressed biogas, and financial support for biomass collection. Additionally, the Hon'ble FM announced the forthcoming release of a policy document on appropriate energy transition pathways, designed to balance the goals of employment, growth, and environmental sustainability.

Although there were no specific announcements for the Oil & Gas sector, the following allocations have been made in the expenditure budget:

- INR 5.0 billion for Scheme for Development of Pipeline infrastructure for injection of Compressed Biogas (CBG) in City Gas Distribution (CGD) Network
- INR 4.1 billion for Indian Strategic Petroleum Reserve Limited (ISPRL) Phase II (Construction of Caverns)
- INR 3.9 billion for appraisal of areas in India's Extended Continental Shelf (ECS) for oil and gas reserves
- INR 3.3 billion for 'Mission Anveshan' (i.e. Part II of National Seismic Programme)
- INR 1.5 billion for Scheme for providing financial support for collection of biomasses.

### Irrigation Construction Segment Overview

#### Capital Outlay and Future Outlook for the MoJS (DoWR, RD & GR) (INR billion)



Source: Union Budget Documents, FSIAPL Analysis

Note: MoJS - Ministry of Jal Shakti; DoWR, RD & GR – The Department of Water Resources, River Development and Ganga Rejuvenation  
– Actuals; RE - Revised Estimates; BE – Budgeted Estimates; P – Projected

The capital expenditure for the Department of Water Resources, River Development, and Ganga Rejuvenation (DoWR, RD & GR), Ministry of Jal Shakti (MoJS), has declined at a CAGR



of 12.5%, dropping from INR 3.3 billion in FY2018 to INR 1.7 billion in FY2023. According to FSIAPL's analysis and historical trends, the capital outlay in the irrigation sector is expected to grow at a CAGR of approximately 4.0%, reaching INR 2.0 billion by FY2028.

For irrigation and flood mitigation in Bihar, the government will provide financial support for projects estimated at INR 115.0 billion through the Accelerated Irrigation Benefit Programme and other sources. This includes the Kosi-Mechi intra-state link and 20 other ongoing and new schemes, such as barrages, river pollution abatement, and irrigation projects. Additionally, the government will extend assistance to Assam, Himachal Pradesh, Uttarakhand, and Sikkim for flood management, landslides, and related projects.

## **Irrigation Projects in India**

### **Opportunity for construction activities in Irrigation**

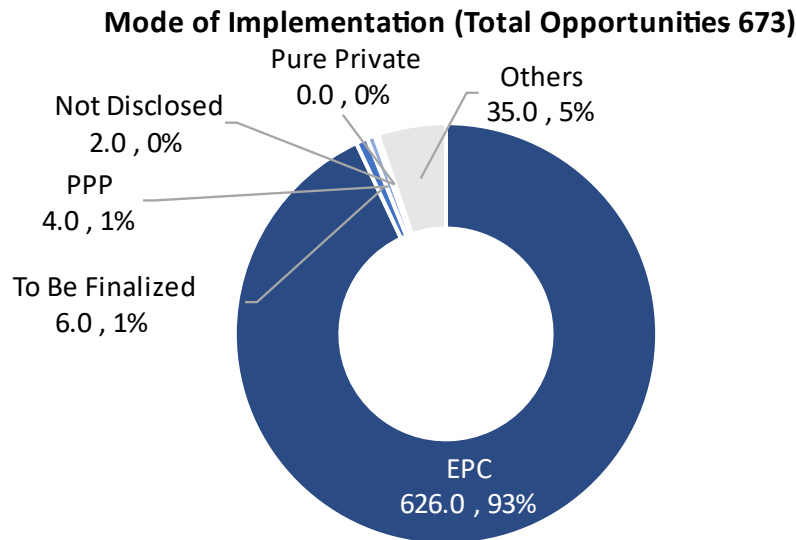
In 2023, the National Mission for Clean Ganga completed 38 projects, bringing the total number of completed projects to 270. Additionally, 45 new projects worth INR 54.7 billion were sanctioned, raising the cumulative total to 454 sanctioned projects valued at INR 383.9 billion. In terms of sewerage infrastructure, 21 projects aimed at creating or rehabilitating 938 MLD (Megalitres per Day) of sewage treatment capacity were approved between January and December 2023. During the same period, 10 projects were completed, resulting in the creation or rehabilitation of 821 MLD of sewage treatment capacity. To date, 197 sewerage infrastructure projects have been sanctioned in the Ganga Basin, aimed at creating 6,208 MLD of sewage treatment capacity and laying 5,272 km of sewer network.

The Pradhan Mantri Krishi Sinchayee Yojana - Accelerated Irrigation Benefit Programme (PMKSY-AIBP), including Command Area Development & Water Management (CAD&WM), has been approved for implementation with a budget of INR 239.2 billion (central assistance) for the period FY2021-26. This funding aims to complete 60 ongoing AIBP and 85 ongoing CAD&WM projects, as well as provide financial assistance for new major and medium irrigation projects. Additionally, the funding for National Projects, including the Renuka and Lakhwar Projects, has also been approved.

Technology in the irrigation sector has evolved significantly over the past 10 years regarding construction equipment, water transfer techniques and types of irrigation systems. Innovative technology-led irrigation systems such as solar-powered lift micro-irrigation are gaining prominence over conventional flooding methods of irrigation. Greater thrust is also being given to drip and sprinkler irrigation systems, and efficient water-use mechanisms. With all these developments, the sector certainly offers significant opportunities for EPC contractors, and technology and equipment suppliers.

According to the Department for Promotion of Industry and Internal Trade under the Ministry of Commerce and Industry, India's public irrigation sector ranks among the largest globally. As of September 4, 2024, the National Infrastructure Pipeline (NIP) has expanded to encompass over 673 projects within the irrigation sector, with a total project value of USD 158.2 billion.

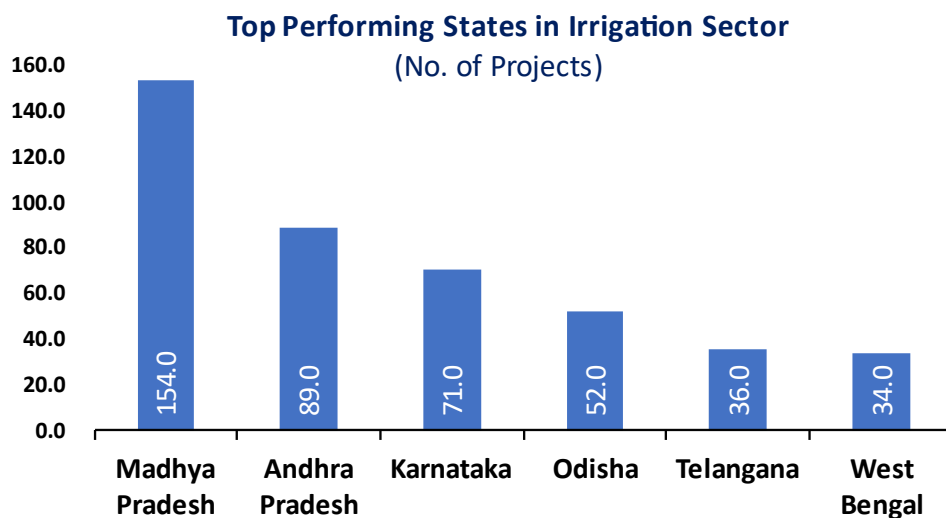




Source: India Investment Grid, accessed on 4<sup>th</sup> September, 2024; FSIAPL Analysis

Note: EPC – Engineering, Procurement and Construction; PPP – Public-private partnership

As per NIP data shared by govt., Madhya Pradesh has the highest no. of irrigation projects (154) in pipeline. The top performing states as per NIP is given below:



Source: India Investment Grid, accessed on 4 September, 2024; FSIAPL Analysis

## Conclusion

India is projected to remain the fastest-growing major economy, with a real GDP growth rate forecasted at 6.8% for FY2026–27. Global construction industry growth will largely be driven by expanding construction investment in emerging markets, which are expected to achieve an annual average real growth of 3.9% y-o-y between CY2024 and CY2033, contributing to the global construction industry's expansion from USD 5.7 trillion in CY2023 to an anticipated USD 7.8 trillion by CY2029, with India, Indonesia, Vietnam, the Philippines, and Bangladesh among the markets experiencing the highest growth rates in the region over the coming decade. With an average annual growth rate of 4.9% y-o-y from CY2024 to CY2033, Sub-Saharan Africa (SSA) is poised to achieve the fastest construction industry growth globally. This growth is propelled by favourable demographic trends, an expanding middle class, and substantial infrastructure investments in certain markets relative to their construction

industry value. As per Fitch Solutions, the Indian Construction industry value stood at INR 23,978.0 billion as of FY2023. It is projected to be the fastest growing construction market in the world growing at a CAGR of 9.5% to 10% between FY2023-FY2028 to reach INR 38,508.9 billion market size by FY2028. The key driver for growth being stable government's support for infrastructure development and expanded private capex in key sectors and public-private partnerships.

Below is summary of opportunities across infrastructure segments in India for next 4-5 years:

- India's transport infrastructure construction sector is expected to grow at a CAGR of 9.6% from INR 3,852.3 billion in FY2023 to INR 6,092.0 billion in FY2028.
- The capital outlay for road construction is expected to reach ~ INR 3.76 trillion by FY2028.
- Indian Railways to increase net expenditure at CAGR of 20% and expected to reach INR 4.80 trillion by FY2028.
- Over 8,000 multi-sectoral projects are being developed under the ambitious 100 Smart Cities initiative, with a total investment of approximately INR 1.6 trillion.
- As part of the Sagarmala Programme, 262 port infrastructure projects valued at INR 1.4 trillion are currently in various stages of development.
- In 2023, the National Mission for Clean Ganga completed 38 projects, bringing the total number of completed projects to 270, while also sanctioning 45 new projects worth INR 54.7 billion, raising the cumulative total to 454 sanctioned projects valued at INR 383.9 billion. Additionally, the PMKSY-AIBP, including CAD&WM, has been approved for implementation with a budget of INR 239.2 billion (central assistance) for FY2021-26, aimed at completing 60 ongoing AIBP and 85 ongoing CAD&WM projects, along with providing financial assistance for new major and medium irrigation projects.
- The capital expenditure in the Ministry of Petroleum and Natural Gas (MoPNG) is expected to grow at a CAGR of approximately 4.0%, reaching INR 12.7 billion by FY2028 from FY2023.
- The significant upcoming capital expenditure plans by private corporations are also providing substantial opportunities for construction companies in India, with a total of 1,505 projects planned during FY2024 and a record capital outlay of INR 5.7 trillion.

## Chapter 4: Brief Profile of Afcons Infrastructure Limited

Afcons Infrastructure Limited (AIL) is one of India's largest international infrastructure construction companies, as per the 2023 ENR (Engineering News-Record, US) Top International Contractors rankings, based on FY2023 International Revenue in USD millions. (International Revenue is defined as construction revenue generated outside an infrastructure company's home country). AIL was established in 1959 as Rodio Hazarat and Company, a partnership between Rodio Foundation Engineering Limited, Switzerland and Hazarat and Company Private Limited, India and later converted to private limited company on 22<sup>nd</sup> November 1976. Shapoorji Pallonji Company Private Limited was the parent company up to 12<sup>th</sup> January 2024. Upon conversion of convertible preference shares, Goswami Infratech Private Limited, a Shapoorji Pallonji Group Company, has become the parent company w.e.f. 13<sup>th</sup> January 2024.

Over the past six decades, AIL has emerged as one of the leading infrastructure construction companies by continuously delivering world-class projects in areas of marine, hydro and underground, water, highways, bridges, metro, tunnels, and onshore and offshore oil and gas. The company has a transnational presence in almost the entire spectrum of infrastructure activities. In fact, it is one of the leading infrastructure construction companies involved in execution of large and complex projects both in India and overseas. AIL has a strong track record of delivering projects on or ahead of schedule.

- Focus areas of AIL includes marine works, highways, bridges, railways, metro works, hydro and underground, water, tunnels, oil & gas, LNG (liquefied natural gas) tanks.
- AIL has presence / delivered projects in 30 countries across South Asia, Africa, Middle East, and CIS.

AIL is amongst the top 3 Indian companies as per 2023 ENR (Engineering News-Record, US) rankings. As per 2023 Top Global Sourcebook of ENR (Engineering News-Record, US) top international contractors rankings (companies ranked based on the construction revenue generated outside of each company's home country), AIL is:

- 10<sup>th</sup> largest international marine and port facilities contractor (only Indian company in top 25)
- Ranked 12<sup>th</sup> in bridges sector in the world (only Indian company in top 25)
- Ranked 42<sup>nd</sup> in transportation sector in the world (only Indian company in top 50)
- Ranked 18<sup>th</sup> in transmission Lines and aqueducts in the world.
- Ranked 43<sup>rd</sup> in Water Supply in the world.

(Source: 2023 ENR (Engineering News-Record, US) Rankings – ENR The Top 250 Report of 2023, [ENR12112023\\_GSB\\_compressedR.pdf](#))

AIL operate in a competitive environment. Its competition for each project varies based on the type of project, contract value and potential margins, the complexity and location of the project, the reputation of the client and risks relating to revenue generation. While service quality, technical ability, performance record, experience, health and safety records, the availability of skilled personnel and sufficiency of financial resources are key factors in client decisions among competitors, price is often the deciding factor in most tender awards. AIL in past have successfully outbid many large players and won many marquee projects as demonstrated in its orderbook.

AIL is executing and has delivered many complex, challenging, unique, first of its kind infrastructure projects in the world and India. AIL is an extreme engineering & construction company. Many of AIL's projects have been executed under challenging environmental conditions. Many of AIL's projects have been executed under challenging environmental conditions. Below are few such projects:

**1) Wharf & Approach Trestle Works Phase 1 of Fourth Container Terminal, JNPT, Mumbai:**

Jawaharlal Nehru Port Trust (JNPT) is India's largest container port. AIL constructed 1000 m x 61 m suspended deck wharf (5 modules each of 200 m length) and approach trestles (5 nos. each of 97 m long) for the container terminal at the Jawaharlal Nehru Port, Mumbai. PSA's Bharat Mumbai Container Terminals, JNPT's fourth container terminal, has a quay length of 1000 metres and is the deepest berths at Jawaharlal Nehru Port.

(Source: [https://jnport.gov.in/filedata/JNPT\\_Investment\\_brochure\\_23\\_2021\\_03\\_11\\_06\\_06\\_10.pdf](https://jnport.gov.in/filedata/JNPT_Investment_brochure_23_2021_03_11_06_06_10.pdf), <https://bmctpl.com/wp-content/themes/twentyten/PDF/new7.pdf>)

**2) Ghana Rail Project:** AIL constructed the single standard gauge railway line of 97.68 km from Port of Tema to Akosombo for the Ghana Railway Development Authority (GRDA). This is the largest railway project in Ghana and includes the longest railway bridge (300m) in the country over Lake Volta. It is also the first bridge in Africa to have raker pile foundations.

**3) New Owendo International Port, Gabon:** AIL was engaged in engineering, procurement, and construction of the new general cargo terminal at the New Owendo International Port, comprising a 420 m long main berth and 70 m long service berth, container yard, back-up yard and other land facilities. AIL completed the project in only 18 months. This is Gabon's only deep draft multi-cargo handling port.

(Source: <https://www.arisepl.com/location/gabon/#:~:text=Built%20in%20only%2018%20months%20and%20inaugurated,its%20sister%20facility%2C%20the%20Owendo%20Mineral%20Port.>)

**4) Bulk Jetty, Port of Sohar, Oman:** This was one of the world's deepest ports. AIL was engaged in engineering, procurement, and construction of approach trestle of length 780 m, bulk jetty of length 600 m and related works at the port of Sohar, Oman. Sohar Port is one of the few global ports equipped with deep-water jetties capable of handling the world's largest ships.

(Source: <https://soharportandfreezone.om/en>)

**5) Agra Lucknow Expressway Project, UP:** Upon inauguration on 21<sup>st</sup> November 2016, Agra Lucknow Expressway is the longest Access Controlled Expressway in the country with expected travel time of 3 and half hours between its two extremes. AIL has constructed Package 2 and Package 4 in Agra Lucknow Expressway Project. Under Package 2, AIL was engaged in development of Firozabad (Village Gurha) to Etawah (Village Moonf) (KM 53.500 TO KM 115.500) Access Controlled Expressway (Green Field) Project in the state of Uttar Pradesh on EPC Mode. Under Package 4, AIL was engaged in development of Kannauj (Village Narmau) to Unnao (Village Neval) (Km 172.500 to Km 236.500) Access Controlled Expressway (Green Field) Project in the state of Uttar Pradesh on EPC Mode. Both Package 2 and Package 4 were completed much ahead of the schedule.

(Source: <https://upeida.up.gov.in/en/article/agra-lucknow-expressway>)

- 6) **Four Laning of NH-1A – Jammu Udhampur Highway, J&K:** AIL was engaged in rehabilitation, strengthening and four lanning of Jammu- Udhampur section from km 15.000 (on Jammu Bypass) to km 67.000 of NH-1A, Jammu and Kashmir. The project road traverses through one of the tough and steepest terrains in the country. The project was completed much ahead of the schedule.  
(Source: [https://forestsclearance.nic.in/DownloadPdfFile.aspx?FileName=0\\_0\\_311712511214115ProjectSummary.pdf&FilePath=../writereaddata/Addinfo/](https://forestsclearance.nic.in/DownloadPdfFile.aspx?FileName=0_0_311712511214115ProjectSummary.pdf&FilePath=../writereaddata/Addinfo/))
- 7) **Ahmedabad Underground Metro Project:** AIL was engaged in the design and construction of two underground metro stations - Kankaria East and Kalupur and underground tunnel from east end of east ramp to east end of launching shaft near Kalupur metro station from chainage 14,328.88 m to chainage 11,882.88 m including finishes and excluding PHE, electrical and HVAC for Ahmedabad Metro Rail Project, Phase-1.
- 8) **Chenab Bridge Project:** This is the world's tallest single-arch railway bridge. It is 35 meters higher than the iconic Eiffel Tower in Paris. This is one of the toughest bridge works undertaken in India due to geological and engineering considerations and first bridge designed for blast load. Blast load means that the bridge will be able to withstand the impact of an explosion. AIL's commitment to quality is underscored by accreditations, such as the accreditation granted to their weld coupon testing laboratory by the National Accreditation Board for Testing and Calibration Laboratories (NABL). Originally established in Chenab, AIL has now relocated their NABL accredited facilities to Nagpur (This lab was the first of its kind to be set-up by any contractor for the Indian Railways).  
(Source: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1709652>)
- 9) **MG Setu Bridge Over River Ganga, Patna:** Upon completion in March 2020, this is Asia's longest roadway bridge. The new steel superstructure consisting of about 6,600 metric steel is being provided by replacing old existing distressed concrete superstructure. This is a new type of work being executed in India for the first time.  
(Source: <https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1642600>,  
<https://web.archive.org/web/20140918091228/http://bstdc.bih.nic.in/patna.htm>)
- 10) **Vallarpadam Rail Bridge, Kerala:** It is an 8.86 km rail corridor. The bridge on this section is 4.62 km long and is the longest railway bridge in India.  
(Source: <https://rvnl.org/project-details/30/Bridge%20Work>,  
<https://www.constructionweekonline.in/people/hard-act-to-follow>)
- 11) **Metro Tunnelling Below Hooghly River, East West Metro, Kolkata:** This is India's first underwater tunnel below Hooghly River. The Howrah metro station is the nation's deepest metro station.  
(Source: <https://pib.gov.in/PressReleaseSelfframePage.aspx?PRID=2011855>)
- 12) **Kanpur Elevated Metro:** AIL constructed Kanpur elevated metro project in a record time of less than 2 years despite Covid-19 pandemic. AIL was engaged in construction of elevated viaduct and 9 Nos. elevated station (viz. IIT Kanpur Station, Kalyanpur Railway Station, SPM Hospital Station, Kanpur University Station, Gurudev Chauraha Station,

Geeta Nagar Station, Rawatpur Railway Station, Lala Lajpat Rai Hospital Station & Motijheel Station) including special span on Priority Section of Corridor- 1, Phase-I of Kanpur Metro at Kanpur, Uttar Pradesh.

(Source: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1785815>)

- 13) C2 – Mumbai Ahmedabad High Speed Rail Project:** AIL is constructing 21 km long tunnel including India's first 7 Km long undersea rail tunnel. Largest tunnel boring machine (TBM) in India will be used for Mumbai-Ahmedabad bullet train project. To construct this tunnel, TBMs with a cutter head of 13.6-meter diameter will be used. Usually, 5–6-meter diameter cutter heads are used for urban tunnels used in Mass Rapid Transit System – Metro system. AIL completed 394 m long ADIT (Additionally Driven Intermediate Tunnel) at Ghansoli for Mumbai-Ahmedabad Buller Train Project in a short duration of six months. (Sources: <https://nhsrcl.in/en/media/press-release/nhsrcl-signs-contract-construction-21-km-long-tunnel-including-indias-first-7#:~:text=The%2021%20km%20long%20tunnel,come%20up%20in%20the%20country.>

<https://www.nhsrcl.in/sites/default/files/news/2024-08/NHSRCL%20News-%2008%20Aug.pdf>

<https://www.nhsrcl.in/en/media/press-release/394-meter-long-adit-additionally-driven-intermediate-tunnel-completes-bullet> )

- 14) Barakhamba Metro Station, New Delhi:** AIL was engaged in the construction of a part of underground portion including Barakhamba Road underground station for DMRC.

- 15) Nagpur Metro Projects:** This is India's first 4-layer transportation system at Gaddigodam Railway Crossing. AIL was engaged in the design and construction of elevated viaduct of length 2.607 km between Gaddigodam to Sitabuldi (excluding stations) and Railway span near Gaddigodam, Viaduct and Road cum Rail flyover (double decker) of length 4.065 km including approach ramps on bill of quantities basis (excluding stations) in Reach 2.

(Source: [https://www.metrorailnagpur.com/pdf/newsletter/feb\\_mar\\_2022.pdf](https://www.metrorailnagpur.com/pdf/newsletter/feb_mar_2022.pdf))

- 16) Chennai Central Metro Station:** Chennai Central Metro Station, constructed by AIL is one of the largest underground metro stations in India.

(Source: <https://chennaiemrortail.org/wp-content/uploads/2018/06/Times-of-India-2.10.17.pdf>)

- 17) Atal Tunnel, Rohtang:** This is the world's longest highway tunnel above 10,000 ft (~ 3,000+ meter) sea level. It has reduced distance between Kulu and Lahaul by 48 kms and travel time by four hours and provides all weather connectivity.

(Source: <https://pib.gov.in/PressReleaseFramePage.aspx?PRID=1796961>, AIL)

- 18) Nagpur Mumbai Samruddhi Expressway:** Upon completion in December 2024, Nagpur Mumbai Samruddhi expressway will be amongst India's top 2 longest expressway. AIL executed two packages namely Package 2 and 14. In Package 14 at Igatpuri, Afcons constructed India's widest (17.61m wide) and Maharashtra's longest (7.7 km-long, twin tunnels) road tunnels. Both Package 2 and Package 14 were completed much ahead of the schedule.

(Source: <https://mahasamruddhimahamarg.com/nagpur-mumbai-super-communication-expressway-transforming-economic-fortune-of-maharashtra/>, <https://mahasamruddhimahamarg.com/interesting-facts/#:~:text=Out%20of%20the%206%20tunnels,longest%20highway%20tunnel%20in%20Maharashtra>)



**19) Annaram Barrage:** Annaram Barrage is a part of Kaleshwaram Lift Irrigation Project, which is world's largest multi-stage lift irrigation project.

(Source: <https://bhoopalapally.telangana.gov.in/tourist-place/kaleshwaram-lift-irrigation-project/>, AIL)

**20) T49 Tunnel:** It is India's longest railway tunnel. AIL constructed 7.32 km of total 12.75 km tunnel for Udhampur Srinagar Baramulla Rail Link. AIL was engaged in the construction of Tunnel T49 (Part Tunnel) and Side Adits, Tunnel T50, Bridge 4, Bridge 5 and Earthworks at Arpinchala (between Km 116.600 & 125.000 approx.) on Dharam - Qazigund Section of Udhampur-Srinagar-Baramulla New BG Railway Line PROJECT

(Source: [https://pib.gov.in/PressReleasePage.aspx?PRID=1883802#:~:text=major%20cavity%20formation-Breakthrough%20of%20the%20Escape%20tunnel%20\(12.895%20km\)%20of%20the%20longest,successfully%20negotiating%20major%20cavity%20formation](https://pib.gov.in/PressReleasePage.aspx?PRID=1883802#:~:text=major%20cavity%20formation-Breakthrough%20of%20the%20Escape%20tunnel%20(12.895%20km)%20of%20the%20longest,successfully%20negotiating%20major%20cavity%20formation))

**21) Heera Redevelopment (HRD) Process Platform, India:** AIL was the first Indian EPC contractor to install an offshore process platform using float-over technology. AIL was engaged in the EPC of entire Heera Redevelopment (HRD) Process Platform facility including modification of three existing platforms, relocation of existing cable, bridge connecting HRC process complex and HRD.

(Source: [https://ongcindia.com/documents/77751/1767719/4774\\_306\\_AR\\_14\\_15.pdf/0e97d729-f934-0206-1e1f-04ce7e65402e](https://ongcindia.com/documents/77751/1767719/4774_306_AR_14_15.pdf/0e97d729-f934-0206-1e1f-04ce7e65402e))

AIL had put in significant investment in knowledge management processes at the company. AIL has been recognized in the field of knowledge management at the international level. According to Global Mike award website, the global and outstanding awards are given to a select group of organizations that have demonstrated excellence in knowledge management and innovation and that have surpassed the standard criteria, showcasing outstanding performance in their fields. AIL has received MAKE (Most Admired Knowledge Enterprise) awards for India, Asia, and Global levels in 2016 and 2017. AIL continued to receive recognition in knowledge management and won MIKE (Most Innovative Knowledge Enterprise) awards for India and Global levels from 2018 to 2023.

(Source: <https://www.globalmikeaward.com/mike-award/winner-list/2023>)

AIL is the only Infrastructure company to win this award at Global and India levels and is the only infrastructure company to have a Chief Knowledge Officer as per AIL's website. This highlights AIL's capabilities in the knowledge management. Whenever AIL works on a project, it's work doesn't just centre around it. It also devotes itself to developing local communities around its sites. The company strive for inclusive growth, and honour responsibilities towards employees, communities, and the environment. AIL tries to reflect this through meaningful contributions to local communities around its projects globally. It supports development of strong and sustainable local communities wherever it works.

Revenue from the domestic business was INR 99,652.95 million (75.11%) and the international business recorded revenue of INR 33,022.00 million (24.89%) in FY2024. Revenue from operations of AIL was INR 132,674.95 million in FY2024, meanwhile total revenue was INR 136,468.74 million in FY2024. ICRA has given AIL long-term rating of A+ (Stable, Reaffirmed) and short-term rating of A1 (Reaffirmed) as on 27<sup>th</sup> March 2024.



## Company Business

AIL has its presence in below mentioned sectors:

Sr. No.	Businesses
1	Marine and Industrial
2	Surface Transport
3	Urban Infrastructure
4	Oil and Gas
5	Hydro and Underground

Source: <https://www.afcons.com/en/bu/marine-industrial>

### 1. Marine and Industrial

Under marine and industrial segment AIL covers project related to ports and harbours jetties, dry docks, wet basins, breakwaters, outfall and intake structure, LNG tanks and material handling systems. AIL has done 190+ projects in this segment. Some of the completed projects are – LNG jetty project in Dahej (India), the project was executed in one of the toughest sea conditions with water current ranging from 8 to 10 knots and tide variations ranging up to 11m; Bulk jetty project in Port of Sohar (Oman) - port of Sohar is one of the world's deepest ports and the deep-water jetty, with draft of more than 20m, and is used to import iron ore. The port can berth the biggest iron ore ships in the world. The company has also done some other projects like phosphate rock terminal in Aqaba (Jordan), LNG tanks in Kochi (India), new sulphur jetty in Kuwait, bauxite material handling system in Guinea, new Owendo international port in Africa in the marine and industrial segment.

### 2. Surface Transport

AIL has a rich experience in surface and transport segment which covers project like highways and roads, interchanges, mining-related, infrastructure, railways. AIL has completed many projects in the segment. Some of those projects are – Bhairab railway bridge, during execution, AIL used 2.5m diameter bored cast in-situ piles in marine environment for the first time; Jammu Udhampur highway which is one of the fastest hill-road project in NHAI's (National Highways Authority of India) history and AIL completed the job ahead of time; Mina Salman interchange in Bahrain; Vallarpadam railway bridge which is India's longest railway bridge and AIL completed the project in record time of 27 months; cable stayed bridge across river Mapusa in Goa; Agra Lucknow expressway project which was 36 months project and AIL completed it in 22 months' time.

### 3. Urban Infrastructure

AIL's urban infrastructure business focusses on metro works, bridges, and flyovers. In this segment major ongoing and completed projects are elevated viaduct in New Delhi, model town station in New Delhi, underground metro in Chennai, Chennai central metro station, elevated Kanpur Metro project, Ahmedabad underground metro project, Kochi Metro, metro tunnelling below Hooghly River in Kolkata. The twin tunnels below Hooghly River are the first ever in India and were completed in 67 days against planned 127 days. Chenab railway bridge is one of the toughest bridge works undertaken in India, due to geological and engineering considerations and first bridge designed for blast load. It is world's tallest single-arch railway bridge.

#### 4. Oil and Gas

AIL's oil and gas business focusses on offshore oil and gas and onshore oil and gas segments. Some of the major ongoing and completed projects are – HRD (Heera Redevelopment) process platform - AIL is the first Indian EPC contractor to install an offshore process platform using float over technology on time; ICP-R process platform; Assam pipeline; Vopak terminal Kandla capex upgrade project phase-1 in which the scope was dismantling of existing structures (including 8 tanks), relocation of tanks and structures and upgradation (including automation of terminal and reconstruction of 20 tanks and construction of six new tanks); Crude Oil Terminal at Mundra for HPCL Rajasthan Refinery Limited in which the scope is EPC and commissioning for 12 crude oil tanks and related works.

#### 5. Hydro and Underground

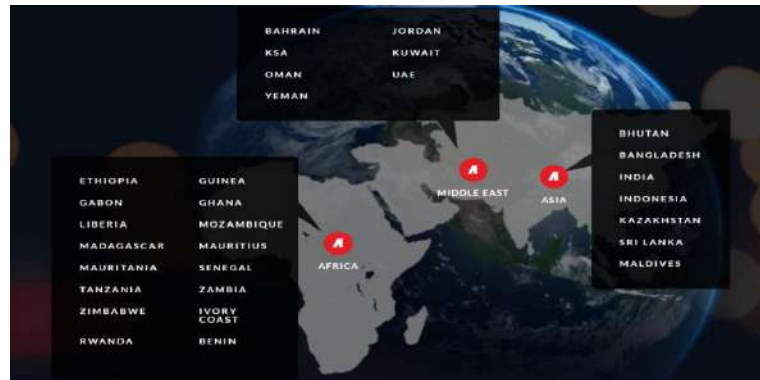
AIL's hydro and underground business focusses on the dams and barrages, tunnels and underground works and water and irrigation. Afcons completed Atal tunnel, Rohtang in Himachal Pradesh, which is world's longest highway tunnel above 10,000ft (~3,000+ meter) sea level. It has reduced distance between Kulu and Lahaul by 48 kms and travel time by four hours and provides all weather connectivity. AIL is building five Broad Gauge Single Line Tunnels as part of the ambitious Udhampur Srinagar Baramulla Rail Link Project in tough terrain. Other major ongoing and completed projects are Kol dam hydroelectric project in Himachal Pradesh, Annaram barrage project in Telangana, water supply pipeline projects in Tanzania, UP Water supply project, Nagpur Mumbai Samruddhi Expressway Package 14, Jamrani dam in Uttarakhand, Basania multipurpose dam project in MP.

#### Technological Capabilities

AIL has an indigenous strategic equipment fleet worth ~ USD 490 million as of 30<sup>th</sup> June 2024. The strategic equipment fleet caters to diversified infrastructure segments and business units and providing AIL with a technological edge in executing unique and challenging projects. As of 30<sup>th</sup> June 2024, AIL has 8 large capacity Jack-ups (200-750 tonne) including Samrat, Mahakaya which are one of the biggest jack up of its kind in India; 11 marine barges (200-1,200 tonne); 153 cranes including world's largest cable crane commissioned for Chenab rail bridge project; 24 jumbo drills; 21 piling rigs and fleet of total 20 customized TBMs (16 + 4 ordered). AIL's inventory of customized tunnel boring machines is one of the largest amongst its peers in India. AIL has two dedicated workshops in Delhi and Nagpur for maintenance of its strategic equipment and undertake equipment related innovation.

#### Geographic Presence

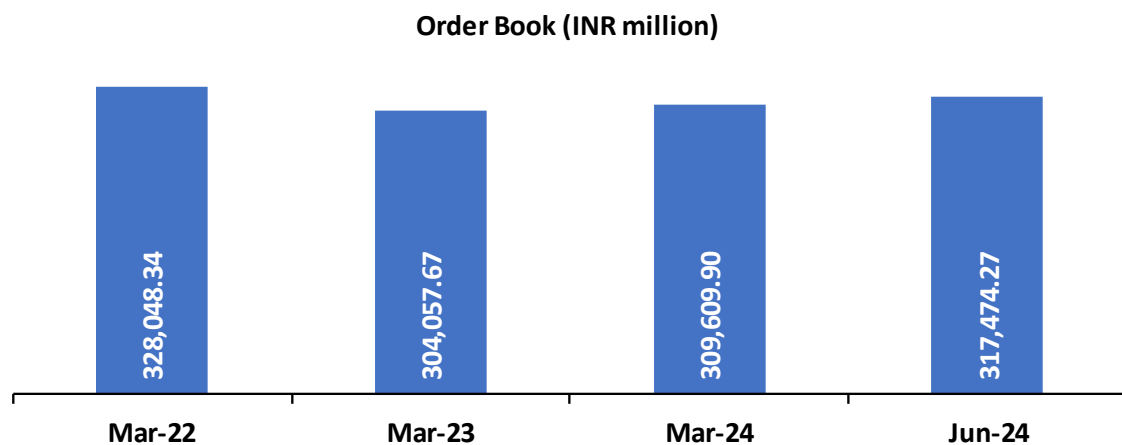
AIL's global presence has enabled a robust and agile supply chain that extends across 2 continents in over 30 countries.



Source: <https://www.afcons.com/en/afcons-presence>

### Order Book

Pending order book of AIL as of 31<sup>st</sup> March 2024 is INR 309,609.90 million and as of 30<sup>th</sup> June 2024 is INR 317,474.27 million. After June 30, 2024, the company won projects worth INR 59,367.37 million until September 30, 2024. Additionally, as of September 30, 2024, the company is 'L1 bidder' in projects worth INR 107,323.59 million. AIL's order book for past 3 years is depicted in the graph below:



Source: AIL Annual Reports

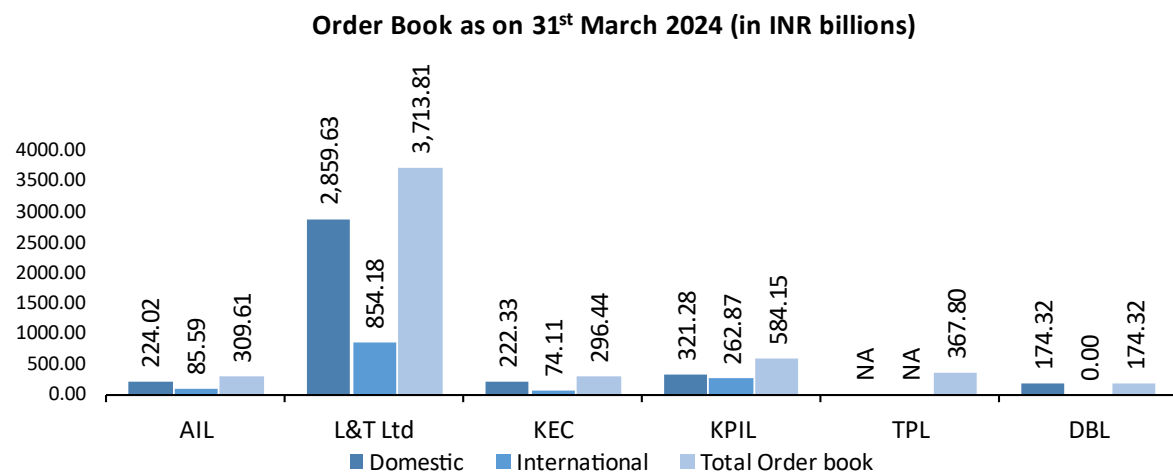
## Chapter 5: Competitive Mapping of Key Indian Infrastructure Players

Competitive mapping of following key infrastructure players is covered in this section:

Company Name	Area of operation	Geographical presence
Afcons Infrastructure Limited	Marine and Industrial, Surface Transport, Urban Infrastructure, Oil and Gas, Hydro and Underground	30 countries across South Asia, Africa, Middle East and CIS
Larsen and Toubro Limited (L&T Ltd.) (Standalone)	Infra Projects (Buildings and Factories, Transportation Infrastructure, Heavy Civil Infrastructure, Water and Effluent Treatment, Power Transmission and Distribution, Minerals and Metals), Energy Projects, Hi-Tech Manufacturing and Others. The Others segment comprises Realty, Construction & Mining Machinery, Rubber Processing Machinery, Smart World & Communication and E-commerce / Digital Platforms and Data Centers.	Over 30 countries around the world
KEC International Limited	Transmission and Distribution, Railways, Civil, Urban Infrastructure, Oil and Gas Pipelines, Cables, Solar	Across 6 continents in over 110 countries
Kalpataru Projects International Limited	Power Transmission and Distribution, Water, Buildings and Factories, Railways, Urban Infrastructure, Oil and Gas, Biomass	Across 5 continents in 73 countries
Tata Projects Limited	Transportation, Oil and Gas, Space and Nuclear, Metal and Minerals, Power, Water	Across 40 countries
Dilip Buildcon Limited	Roads and Highways, Rails and Metro, Airport, Mining, Irrigation, Special Bridges, Urban Development	Present in 19 states and 1 union territory of India

Source: Company website, Company annual reports, FSIAPL

### Order Book comparison of all players



Source: Company Annual Reports, FSIAPL

Notes:

- 1) Data of L&T Ltd. is on standalone basis in the above chart.
- 2) AIL- Afcons Infrastructure Limited, KEC - KEC International Limited, KPIL - Kalpataru Projects International Limited, TPL - Tata Projects Limited and DBL - Dilip Buildcon Limited.
- 3) Domestic and International order book split details of TPL is not available in its annual reports, hence, mentioned as 'NA'.
- 4) TPL orderbook is standalone order book.

## Key Performance Indicators:

### Afcons Infrastructure Limited

Metric	Operational/ Financial	Quarter ending June 30, 2024	Quarter ending June 30, 2023	As at and for the year ended 31st March, 2024	As at and for the year ended 31st March, 2023	As at and for the year ended 31st March, 2022
Order Book (INR Million)	Operational	317,474.27	352,402.15	309,609.90	304,057.67	328,048.34
Domestic Order Book (INR Million)	Operational	240,036.56	261,013.10	224,015.91	212,459.38	233,125.34
Domestic Order Book %	Operational	75.61%	74.07%	72.35%	69.87%	71.06%
Overseas Order Book (INR Million)	Operational	77,437.70	91,389.05	85,593.99	91,598.29	94,923.00
Overseas Order Book %	Operational	24.39%	25.93%	27.65%	30.13%	28.94%
Book to Bill Ratio (x)	Operational	2.52	2.78	2.33	2.41	2.98
Order Inflow (INR Million)	Operational	29,892.10	61,799.30	77,836.41	79,238.30	1,68,830.40
Revenue from operations (INR Million)	Financial	31,543.60	31,714.13	132,674.95	126,373.82	110,189.66
% Revenue from overseas projects	Financial	26.22%	29.15%	24.89%	31.92%	32.27%
Total Income (INR Million)	Financial	32,134.70	32,215.01	136,468.74	128,440.90	112,695.49
EBITDA (INR Million)	Financial	3,716.93	3,140.55	15,831.24	13,737.89	10,685.99
EBITDA Margin (%)	Financial	11.57%	9.75%	11.60%	10.70%	9.48%
Profit after tax (PAT) (INR Million)	Financial	915.86	909.62	4,497.38	4,108.60	3,576.05
PAT Margin (%)	Financial	2.85%	2.82%	3.30%	3.20%	3.17%
Cash Profit Margin (%)	Financial	6.90%	6.26%	6.92%	6.87%	6.33%
Total Equity (INR Million)	Financial	36,832.64	32,614.58	35,959.61	31,757.18	27,120.80
Total Debt (INR Million)	Financial	33,650.98	26,638.40	24,550.03	15,628.16	15,552.01
Net Debt (INR Million)	Financial	24,678.86	22,748.46	17,887.43	11,853.72	10,287.85
Net Debt to EBITDA (x)	Financial	1.66	1.81	1.13	0.86	0.96
Total Debt to Equity (x)	Financial	0.91	0.82	0.68	0.49	0.57
Return on Equity (ROE) (%)	Financial	10.55%	12.05%	13.28%	13.96%	14.02%
Return on Capital Employed (ROCE) (%)	Financial	14.89%	15.12%	20.18%	20.04%	17.30%
Cash Flow from Operations (CFO) (INR Million)	Financial	-5,022.05	-6,233.25	7,074.48	12,154.82	6,104.53
CFO/EBITDA (%)	Financial	-135.11%	-198.48%	44.69%	88.48%	57.13%
Net Working Capital (in days)	Financial	94	65	63	38	43
Gross Block (INR Million)	Financial	54,233.40	48,410.07	53,913.93	47,157.35	41,399.11
Gross Block/Revenue from Operations (%)	Financial	42.98%	38.16%	40.64%	37.32%	37.57%

Source: Final restated financial statements (FY24, FY23, FY22 and Quarter ending June 30, 2024 and June 30, 2023), Company's Presentation, FSIAPL

### L&T Ltd. (Standalone)

Metric	Operational/ Financial	Quarter ending June 30, 2024	Quarter ending June 30, 2023	As at and for the year ended 31st March, 2024	As at and for the year ended 31st March, 2023	As at and for the year ended 31st March, 2022
Order Book (INR Million)	Operational	NA	NA	3,713,810.00	3,305,550.00	3,155,670.00
Domestic Order Book (INR Million)	Operational	NA	NA	2,859,633.70	2,809,717.50	2,556,092.70
Domestic Order Book %	Operational	NA	NA	77.00%	85.00%	81.00%
Overseas Order Book (INR Million)	Operational	NA	NA	854,176.30	495,832.50	599,577.30
Overseas Order Book %	Operational	NA	NA	23.00%	15.00%	19.00%
Book to Bill Ratio (x)	Operational	NA	NA	2.94	2.99	3.12
Order Inflow (INR Million)	Operational	NA	NA	1,716,630.00	1,499,840.00	1,189,560.00
Revenue from operations (INR Million)	Financial	302,787.50	269,305.40	1,262,358.50	1,105,009.80	1,010,004.10
% Revenue from overseas projects	Financial	NA	NA	21.00%	17.00%	20.00%
Total Income (INR Million)	Financial	327,272.70	277,887.70	1,315,764.50	1,145,359.30	1,046,130.60
EBITDA (INR Million)	Financial	44,333.30	27,316.40	150,158.20	133,004.80	126,036.80
EBITDA Margin (%)	Financial	13.55%	9.83%	11.41%	11.61%	12.05%
Profit after tax (PAT) (INR Million)	Financial	29,613.40	17,923.60	93,043.30	78,489.70	78,794.50
PAT Margin (%)	Financial	9.05%	6.45%	7.07%	6.85%	7.53%
Cash Profit Margin (%)	Financial	10.52%	7.81%	8.40%	8.05%	8.65%
Total Equity (INR Million)	Financial	NA	NA	644,160.40	715,279.50	671,140.50
Total Debt (INR Million)	Financial	NA	NA	225,404.70	181,510.90	202,982.90
Net Debt (INR Million)	Financial	NA	NA	177,712.80	135,814.50	137,997.80
Net Debt to EBITDA (x)	Financial	NA	NA	1.18	1.02	1.09
Total Debt to Equity (x)	Financial	NA	NA	0.35	0.25	0.30
Return on Equity (ROE) (%)	Financial	NA	NA	13.69%	11.32%	12.36%
Return on Capital Employed (ROCE) (%)	Financial	NA	NA	15.02%	13.47%	13.32%
Cash Flow from Operations (CFO) (INR Million)	Financial	NA	NA	82,935.50	72,639.60	59,987.90
CFO/EBITDA (%)	Financial	NA	NA	55.23%	54.61%	47.60%
Net Working Capital (in days)	Financial	NA	NA	91	121	128
Gross Block (INR Million)	Financial	NA	NA	179,172.70	161,093.40	144,412.50
Gross Block/Revenue from Operations (%)	Financial	NA	NA	14.19%	14.58%	14.30%

Source: Company's Annual Reports, Company's Quarterly financial statements, Company's Investor Presentation, FSIAPL

## KEC International Limited

Metric	Operational/ Financial	Quarter ending June 30, 2024	Quarter ending June 30, 2023	As at and for the year ended 31st March, 2024	As at and for the year ended 31st March, 2023	As at and for the year ended 31st March, 2022
Order Book (INR Million)	Operational	327,150.00	301,250.00	296,440.00	305,530.00	237,160.00
Domestic Order Book (INR Million)	Operational	242,091.00	213,887.50	222,330.00	210,815.70	149,410.80
Domestic Order Book %	Operational	74.00%	71.00%	75.00%	69.00%	63.00%
Overseas Order Book (INR Million)	Operational	85,059.00	87,362.50	74,110.00	94,714.30	87,749.20
Overseas Order Book %	Operational	26.00%	29.00%	25.00%	31.00%	37.00%
Book to Bill Ratio (x)	Operational	1.81	1.77	1.49	1.77	1.73
Order Inflow (INR Million)	Operational	76,640.00	44,970.00	181,020.00	223,780.00	172,030.00
Revenue from operations (INR Million)	Financial	45,118.90	42,435.90	199,141.70	172,817.10	137,422.60
% Revenue from overseas projects	Financial	NA	NA	36.24%	37.17%	32.11%
Total Income (INR Million)	Financial	45,550.20	42,464.20	199,665.80	173,130.30	137,556.90
EBITDA (INR Million)	Financial	NA	NA	12,618.20	8,565.00	9,116.40
EBITDA Margin (%)	Financial	NA	NA	6.32%	4.95%	6.63%
Profit after tax (PAT) (INR Million)	Financial	875.80	423.30	3,467.80	1,760.30	3,320.80
PAT Margin (%)	Financial	1.92%	1.00%	1.74%	1.02%	2.41%
Cash Profit Margin (%)	Financial	2.94%	1.98%	2.67%	1.95%	3.56%
Total Equity (INR Million)	Financial	NA	NA	40,957.00	37,714.20	36,199.30
Total Debt (INR Million)	Financial	NA	NA	38,123.20	31,944.50	28,627.10
Net Debt (INR Million)	Financial	NA	NA	35,390.40	28,502.90	26,007.70
Net Debt to EBITDA (x)	Financial	NA	NA	2.80	3.33	2.85
Total Debt to Equity (x)	Financial	NA	NA	0.93	0.85	0.79
Return on Equity (ROE) (%)	Financial	NA	NA	8.82%	4.76%	9.52%
Return on Capital Employed (ROCE) (%)	Financial	NA	NA	14.47%	10.34%	12.81%
Cash Flow from Operations (CFO) (INR Million)	Financial	NA	NA	3,111.40	6,137.40	-2,837.10
CFO/EBITDA (%)	Financial	NA	NA	24.66%	71.66%	-31.12%
Net Working Capital (in days)	Financial	NA	NA	90	84	101
Gross Block (INR Million)	Financial	NA	NA	21,952.40	19,884.50	18,476.30
Gross Block/Revenue from Operations (%)	Financial	NA	NA	11.02%	11.51%	13.44%

Source: Company's Annual Reports, Company's Quarterly financial statements, Company's Investor Presentation, FSIAPL

## Kalpataru Projects International Limited

Metric	Operational/ Financial	Quarter ending June 30, 2024	Quarter ending June 30, 2023	As at and for the year ended 31st March, 2024	As at and for the year ended 31st March, 2023	As at and for the year ended 31st March, 2022
Order Book (INR Million)	Operational	571,950.00	473,320.00	584,150.00	459,180.00	327,610.00
Domestic Order Book (INR Million)	Operational	308,853.00	288,725.20	321,282.50	275,508.00	196,566.00
Domestic Order Book %	Operational	54.00%	61.00%	55.00%	60.00%	60.00%
Overseas Order Book (INR Million)	Operational	263,097.00	184,594.80	262,867.50	183,672.00	131,044.00
Overseas Order Book %	Operational	46.00%	39.00%	45.00%	40.00%	40.00%
Book to Bill Ratio (x)	Operational	3.12	2.79	2.98	2.81	2.22
Order Inflow (INR Million)	Operational	31,820.00	51,220.00	300,220.00	252,410.0	181,610.0
Revenue from operations (INR Million)	Financial	45,870.00	42,410.00	196,264.30	163,614.40	147,773.80
% Revenue from overseas projects	Financial	NA	NA	37.81%	33.28%	33.00%
Total Income (INR Million)	Financial	46,090.00	42,590.00	196,904.20	164,011.40	148,663.00
EBITDA (INR Million)	Financial	NA	NA	16,656.70	13,829.40	12,467.00
EBITDA Margin (%)	Financial	NA	NA	8.46%	8.43%	8.39%
Profit after tax (PAT) (INR Million)	Financial	840.00	1,130.00	5,159.00	4,350.20	5,350.60
PAT Margin (%)	Financial	1.82%	2.65%	2.62%	2.65%	3.60%
Cash Profit Margin (%)	Financial	4.40%	5.47%	5.02%	5.04%	5.96%
Total Equity (INR Million)	Financial	NA	NA	51,379.90	47,206.20	42,785.70
Total Debt (INR Million)	Financial	NA	NA	39,092.00	36,824.60	37,089.40
Net Debt (INR Million)	Financial	NA	NA	28,772.10	26,225.90	25,149.20
Net Debt to EBITDA (x)	Financial	NA	NA	1.73	1.90	2.02
Total Debt to Equity (x)	Financial	NA	NA	0.76	0.78	0.87
Return on Equity (ROE) (%)	Financial	NA	NA	10.47%	9.67%	13.35%
Return on Capital Employed (ROCE) (%)	Financial	NA	NA	13.67%	12.09%	12.01%
Cash Flow from Operations (CFO) (INR Million)	Financial	NA	NA	8,429.60	6,563.90	7,136.60
CFO/EBITDA (%)	Financial	NA	NA	50.61%	47.46%	57.24%
Net Working Capital (in days)	Financial	NA	NA	92	102	107
Gross Block (INR Million)	Financial	NA	NA	33,568.30	30,803.30	26,704.40
Gross Block/Revenue from Operations (%)	Financial	NA	NA	17.10%	18.83%	18.07%

Source: Company's Annual Reports, Company's Quarterly financial statements, Company's Investor Presentation, FSIAPL



## Tata Projects Limited

Metric	Operational/ Financial	Quarter ending June 30, 2024	Quarter ending June 30, 2023	As at and for the year ended 31st March, 2024	As at and for the year ended 31st March, 2023	As at and for the year ended 31st March, 2022
Order Book (INR Million)	Operational	NA	NA	367,800.00	480,000.00	525,360.00
Domestic Order Book (INR Million)	Operational	NA	NA	NA	NA	NA
Domestic Order Book %	Operational	NA	NA	NA	NA	NA
Overseas Order Book (INR Million)	Operational	NA	NA	NA	NA	NA
Overseas Order Book %	Operational	NA	NA	NA	NA	NA
Book to Bill Ratio (x)	Operational	NA	NA	2.07	2.83	3.84
Order Inflow (INR Million)	Operational	NA	NA	103,310.00	88,800.00	148,000.00
Revenue from operations (INR Million)	Financial	NA	NA	177,606.12	169,476.16	136,793.72
% Revenue from overseas projects	Financial	NA	NA	9.68%	7.81%	3.27%
Total Income (INR Million)	Financial	NA	NA	180,455.18	170,419.31	137,588.71
EBITDA (INR Million)	Financial	NA	NA	8,533.88	-3,372.30	-941.78
EBITDA Margin (%)	Financial	NA	NA	4.73%	-1.98%	-0.68%
Profit after tax (PAT) (INR Million)	Financial	NA	NA	819.67	-8,556.54	-6,204.61
PAT Margin (%)	Financial	NA	NA	0.45%	-5.02%	-4.51%
Cash Profit Margin (%)	Financial	NA	NA	1.80%	-3.81%	-2.93%
Total Equity (INR Million)	Financial	NA	NA	28,518.08	27,996.23	20,182.60
Total Debt (INR Million)	Financial	NA	NA	52,128.18	35,552.91	35,660.13
Net Debt (INR Million)	Financial	NA	NA	45,109.41	22,431.16	20,744.00
Net Debt to EBITDA (x)	Financial	NA	NA	5.29	-6.65	-22.03
Total Debt to Equity (x)	Financial	NA	NA	1.83	1.27	1.77
Return on Equity (ROE) (%)	Financial	NA	NA	2.90%	-35.52%	-36.29%
Return on Capital Employed (ROCE) (%)	Financial	NA	NA	8.48%	-9.11%	-6.28%
Cash Flow from Operations (CFO) (INR Million)	Financial	NA	NA	-12,565.75	-13,015.11	978.11
CFO/EBITDA (%)	Financial	NA	NA	-147.25%	-385.94%	-103.86%
Net Working Capital (in days)	Financial	NA	NA	112	71	70
Gross Block (INR Million)	Financial	NA	NA	16,451.05	15,484.51	13,680.97
Gross Block/Revenue from Operations (%)	Financial	NA	NA	9.26%	9.14%	10.00%

Source: Company's Annual Reports, Company's Quarterly financial statements, Company's Investor Presentation, FSIAPL

## Dilip Buildcon Limited

Metric	Operational/ Financial	Quarter ending June 30, 2024	Quarter ending June 30, 2023	As at and for the year ended 31st March, 2024	As at and for the year ended 31st March, 2023	As at and for the year ended 31st March, 2022
Order Book (INR Million)	Operational	186,065.00	240,509.00	174,316.00	253,950.00	255,945.00
Domestic Order Book (INR Million)	Operational	186,065.00	240,509.00	174,316.00	253,950.00	255,945.00
Domestic Order Book %	Operational	100.00%	100.00%	100.00%	100.00%	100.00%
Overseas Order Book (INR Million)	Operational	0.00	0.00	0.00	0.00	0.00
Overseas Order Book %	Operational	0.00%	0.00%	0.00%	0.00%	0.00%
Book to Bill Ratio (x)	Operational	1.48	2.06	1.45	2.39	2.68
Order Inflow (INR Million)	Operational	9,258.00	6,990.00	36,022.00	109,181.00	78,110.00
Revenue from operations (INR Million)	Financial	31,341.54	29,207.78	120,119.04	106,436.45	95,664.29
% Revenue from overseas projects	Financial	0.00%	0.00%	0.00%	0.00%	0.00%
Total Income (INR Million)	Financial	31,543.69	29,443.00	121,561.13	107,116.09	96,048.16
EBITDA (INR Million)	Financial	NA	NA	13,365.72	7,996.26	6,082.69
EBITDA Margin (%)	Financial	NA	NA	11.00%	7.47%	6.33%
Profit after tax (PAT) (INR Million)	Financial	1,397.69	123.09	2,010.42	-13.92	-5,496.76
PAT Margin (%)	Financial	4.43%	0.42%	1.65%	-0.01%	-5.72%
Cash Profit Margin (%)	Financial	7.21%	3.71%	4.77%	3.71%	-1.56%
Total Equity (INR Million)	Financial	NA	NA	43,696.46	40,016.06	35,506.69
Total Debt (INR Million)	Financial	NA	NA	72,403.51	66,579.69	87,955.28
Net Debt (INR Million)	Financial	NA	NA	65,038.70	62,319.65	82,127.39
Net Debt to EBITDA (x)	Financial	NA	NA	4.87	7.79	13.50
Total Debt to Equity (x)	Financial	NA	NA	1.66	1.66	2.48
Return on Equity (ROE) (%)	Financial	NA	NA	4.80%	-0.04%	-15.82%
Return on Capital Employed (ROCE) (%)	Financial	NA	NA	8.60%	3.49%	1.59%
Cash Flow from Operations (CFO) (INR Million)	Financial	NA	NA	10,704.08	28,451.72	16,237.02
CFO/EBITDA (%)	Financial	NA	NA	80.09%	355.81%	266.94%
Net Working Capital (in days)	Financial	NA	NA	110	129	189
Gross Block (INR Million)	Financial	NA	NA	41,678.70	40,123.16	41,999.46
Gross Block/Revenue from Operations (%)	Financial	NA	NA	34.70%	37.70%	43.90%

Source: Company's Annual Reports, Company's Quarterly financial statements, Company's Investor Presentation, FSIAPL

### Notes –

1. Ratios calculated as per FSIAPL standards and may not match company reported numbers.

2. Financials of Quarter ending June 30, 2024, and Quarter ending June 30, 2023, of competitors are unaudited in nature.
3. Book to Bill Ratio (x), Net Debt to EBITDA (x), ROE (%), ROCE (%), Gross Block/Revenue from Operations (%), and Net Working Capital (in days) are annualised for Quarter ending June 30, 2024 and June 30, 2023.
4. Consolidated financial data for Quarter ending June 30, 2024, and Quarter ending June 30, 2023, of Tata Projects Limited is not available, hence mentioned as 'NA'.
5. The financials of peers i.e. L&T Ltd., Kalpataru Projects International Limited and KEC International Limited are publicly available in crore. Hence while reporting number in million up to two decimal, values available in crore are multiplied by 10. Hence actual value in second decimal may not be in line with actual audited financial of these peers.
6. For L&T Ltd., since the interest cost for FY24 constitutes 99.6% of the total finance cost, the entire finance cost is considered as the finance cost for the June quarters.
7. The March 2024 order book for TPL is based on the standalone order book.
8. NA – Not Available; NM – Not Meaningful

#### **Definitions and Interpretations -**

1. Order Book represents the estimated contract value of the unexecuted portion of a company's existing assigned contracts and is an indicator of visibility of future revenue for the company.
2. Domestic Order Book represents the estimated contract value of the unexecuted portion of a company's existing assigned contracts in India and is an indicator of visibility of future revenue for the Company from projects in India.
3. Domestic Order Book % is an indicator of the contribution of projects in India to the overall order book. It is calculated as amount of outstanding order book from India as on a particular period as a % of total order book.
4. Overseas Order Book represents the estimated contract value of the unexecuted portion of a company's existing assigned contracts outside India and is an indicator of visibility of future revenue for the Company from projects outside India.
5. Overseas Order Book % is an indicator of the contribution of projects outside India to the overall order book. It is calculated as amount of outstanding order book outside India as on a particular period as a % of total order book.
6. Book to Bill Ratio is an indicator of the size of the order book as of a particular period to the revenue generated for that period. It is calculated as Order Book as at a particular period divided by the Revenue from operations for that period.
7. Order Inflow represents the amount of orders won for a particular period.
8. Revenue from operations represents the scale of a company's business as well as provides information regarding a company's overall financial performance.
9. Total income represents the scale of a company's business as well as provides information regarding operating and non-operating income.
10. % Revenue from overseas projects represents the scale of a company's operations outside India. It is calculated as Revenue from operations for the current period/year from projects/operations outside India as a % of revenue from operations.
11. EBITDA provides a comprehensive view of a company's financial health. EBITDA is calculated as Profit before exceptional items and tax (PBIT) + Depreciation + Interest on borrowing component of finance cost. Other component of finance cost like Bank charges and Commission, redemption premium on borrowing etc. is not added back while arriving at the EBITDA from the PBIT.
12. EBITDA Margin (%) is an indicator of the profitability of a company's business and assists in tracking the margin profile of a company's business. EBITDA Margin (%) is the percentage of EBITDA divided by Total Income.
13. PAT represents the profit / loss that a company makes for the financial year or during a given period. It provides information regarding the overall profitability of a company's business.
14. PAT Margin (%) is an indicator of the overall profitability of a company's business. PAT Margin (%) is calculated as restated profit (after tax) for the period / year as a % of Total Income.
15. Cash Profit is an indicator of the profitability of the business ex-depreciation and amortization expense. Cash Profit is calculated as PAT plus depreciation/amortization expense. Cash Profit margin is calculated as Cash Profit as a % of Total Income.

16. Total Equity is an indicator of a company's financial standing/ position as of a certain date. Total equity has been defined as the aggregate value of the paid-up equity share capital and all reserves. It excludes non-controlling interest.
17. Total Debt is a financial position metric, and it represents the absolute value of borrowings. Total Debt is computed as Non-Current Borrowings plus Current Borrowings.
18. Net Debt is a liquidity metric, and it represents the absolute value of borrowings net of cash and cash equivalents, bank balances and other cash and cash equivalents. It is calculated as Total Debt minus cash and cash equivalents, bank balances other than cash and cash equivalents.
19. Net Debt to EBITDA ratio enables a company to measure the ability and extent to which a company can cover their debt in comparison to the EBITDA being generated by them. Net Debt to EBITDA ratio is calculated as Net Debt divided by EBITDA.
20. Total Debt to Equity Ratio is a measure of the extent to which a Company can cover their debt and represents a company's debt position in comparison to their equity position. It helps evaluate a company's financial leverage. Total Debt to Equity Ratio (Gearing Ratio) is calculated as Total Debt divided by Total Equity.
21. Return on Equity represents how efficiently a company generates profits from their shareholders funds. ROE is calculated as PAT as a % of Average Total Equity.
22. Return on Capital Employed represents how efficiently a company generates earnings before interest & tax from the capital employed. ROCE is calculated as EBIT as a % of Average Capital Employed wherein Capital Employed refers to sum of Total Equity and Total Debt.
23. Cash Flow from Operations is a measure of the cash generated or used by a company's core operations, excluding any financing, or investing activities.
24. CFO as a % of EBITDA is a measure of how much of the cash generated from operations is getting translated into EBITDA. CFO/ EBITDA is calculated as Cash flow from Operations as a % of EBITDA.
25. Net Working Capital Days describes duration it takes for a company to convert its working capital into revenue. Net Working Capital (in days) is calculated as [(Current Assets minus cash and bank) minus (Current Liabilities-short term debt)]/ Revenue from Operations \* No. of Days in the year.
26. Gross block represents the total worth of all the assets currently employed in the business. It is the sum of all assets of the company valued at their cost of acquisition.
27. Gross block/ Revenue from Operations is a measure of a company's efficiency in utilizing assets to generate revenue. It is calculated as Gross Block as a % of Revenue from Operations.

### Financial Comparison of the peer companies:

FY2024 Financial Comparison						
Metric	AIL	L&T (standalone)	KEC	Kalpataru	Tata Projects	Dillip Buildcon
Order Book (INR Million)	309,609.90	3,713,810.00	296,440.00	584,150.00	367,800.00	174,316.00
Domestic Order Book (INR Million)	224,015.91	2,859,633.70	222,330.00	321,282.50	NA	174,316.00
Domestic Order Book %	72.35%	77.00%	75.00%	55.00%	NA	100.00%
Overseas Order Book (INR Million)	85,593.99	854,176.30	74,110.00	262,867.50	NA	0.00
Overseas Order Book %	27.65%	23.00%	25.00%	45.00%	NA	0.00%
Book to Bill Ratio (x)	2.33	2.94	1.49	2.98	2.07	1.45
Order Inflow (INR Million)	77,836.41	1,716,630.00	181,020.00	300,220.00	103,310.00	36,022.00
Revenue from operations (INR Million)	132,674.95	1,262,358.50	199,141.70	196,264.30	177,606.12	120,119.04
% Revenue from overseas projects	24.89%	21.00%	36.24%	37.81%	9.68%	0.00%
Total Income (INR Million)	136,468.74	1,315,764.50	199,665.80	196,904.20	180,455.18	121,561.13
EBITDA (INR Million)	15,831.24	150,158.20	12,618.20	16,656.70	8,533.88	13,365.72
EBITDA Margin (%)	11.60%	11.41%	6.32%	8.46%	4.73%	11.00%
Profit after tax (PAT) (INR Million)	4,497.38	93,043.30	3,467.80	5,159.00	819.67	2,010.42
PAT Margin (%)	3.30%	7.07%	1.74%	2.62%	0.45%	1.65%
Cash Profit Margin (%)	6.92%	8.40%	2.67%	5.02%	1.80%	4.77%
Total Equity (INR Million)	35,959.61	644,160.40	40,957.00	51,379.90	28,518.08	43,696.46
Total Debt (INR Million)	24,550.03	225,404.70	38,123.20	39,092.00	52,128.18	72,403.51
Net Debt (INR Million)	17,887.43	177,712.80	35,390.40	28,772.10	45,109.41	65,038.70
Net Debt to EBITDA (x)	1.13	1.18	2.80	1.73	5.29	4.87
Total Debt to Equity (x)	0.68	0.35	0.93	0.76	1.83	1.66
Return on Equity (ROE) (%)	13.28%	13.69%	8.82%	10.47%	2.90%	4.80%
Return on Capital Employed (ROCE) (%)	20.18%	15.02%	14.47%	13.67%	8.48%	8.60%
Cash Flow from Operations (CFO) (INR Million)	7,074.48	82,935.50	3,111.40	8,429.60	-12,565.75	10,704.08
CFO/EBITDA (%)	44.69%	55.23%	24.66%	50.61%	-147.25%	80.09%
Net Working Capital (in days)	63	91	90	92	112	110
Gross Block (INR Million)	53,913.93	179,172.70	21,952.40	33,568.30	16,451.05	41,678.70
Gross Block/Revenue from Operations (%)	40.64%	14.19%	11.02%	17.10%	9.26%	34.70%
CAGR % of EBITDA (INR Million) (FY22 to FY24)	21.72%	9.15%	17.65%	15.59%	NM	48.23%
CAGR% of PAT (INR Million) (FY22 to FY24)	12.14%	8.67%	2.19%	-1.81%	NM	NM

Source: Company's Annual Reports, Company's restated financials, Company's Investor Presentation, FSIAPL

Note: NA – Not Available; NM – Not Meaningful



FY2023 Financial Comparison						
Metric	AIL	L&T (standalone)	KEC	Kalpataru	Tata Projects	Dilip Buildcon
Order Book (INR Million)	304,057.67	3,305,550.00	305,530.00	459,180.00	480,000.00	253,950.00
Domestic Order Book (INR Million)	212,459.38	2,809,717.50	210,815.70	275,508.00	NA	253,950.00
Domestic Order Book %	69.87%	85.00%	69.00%	60.00%	NA	100.00%
Overseas Order Book (INR Million)	91,598.29	495,832.50	94,714.30	183,672.00	NA	0.00
Overseas Order Book %	30.13%	15.00%	31.00%	40.00%	NA	0.00%
Book to Bill Ratio (x)	2.41	2.99	1.77	2.81	2.83	2.39
Order Inflow (INR Million)	79,238.30	1,499,840.00	223,780.00	252,410.00	88,800.00	109,181.00
Revenue from operations (INR Million)	126,373.82	1,105,009.80	172,817.10	163,614.40	169,476.16	106,436.45
% Revenue from overseas projects	31.92%	17.00%	37.17%	33.28%	7.81%	0.00%
Total Income (INR Million)	128,440.90	1,145,359.30	173,130.30	164,011.40	170,419.31	107,116.09
EBITDA (INR Million)	13,737.89	133,004.80	8,565.00	13,829.40	-3,372.30	7,996.26
EBITDA Margin (%)	10.70%	11.61%	4.95%	8.43%	-1.98%	7.47%
Profit after tax (PAT) (INR Million)	4,108.60	78,489.70	1,760.30	4,350.20	-8,556.54	-13.92
PAT Margin (%)	3.20%	6.85%	1.02%	2.65%	-5.02%	-0.01%
Cash Profit Margin (%)	6.87%	8.05%	1.95%	5.04%	-3.81%	3.71%
Total Equity (INR Million)	31,757.18	715,279.50	37,714.20	47,206.20	27,996.23	40,016.06
Total Debt (INR Million)	15,628.16	181,510.90	31,944.50	36,824.60	35,552.91	66,579.69
Net Debt (INR Million)	11,853.72	135,814.50	28,502.90	26,225.90	22,431.16	62,319.65
Net Debt to EBITDA (x)	0.86	1.02	3.33	1.90	-6.65	7.79
Total Debt to Equity (x)	0.49	0.25	0.85	0.78	1.27	1.66
Return on Equity (ROE) (%)	13.96%	11.32%	4.76%	9.67%	-35.52%	-0.04%
Return on Capital Employed (ROCE) (%)	20.04%	13.47%	10.34%	12.09%	-9.11%	3.49%
Cash Flow from Operations (CFO) (INR Million)	12,154.82	72,639.60	6,137.40	6,563.90	-13,015.11	28,451.72
CFO/EBITDA (%)	88.48%	54.61%	71.66%	47.46%	-385.94%	355.81%
Net Working Capital (in days)	38	121	84	102	71	129
Gross Block (INR Million)	47,157.35	161,093.40	19,884.50	30,803.30	15,484.51	40,123.16
Gross Block/Revenue from Operations (%)	37.32%	14.58%	11.51%	18.83%	9.14%	37.70%

Source: Company's Annual Reports, Company's restated financials, Company's Investor Presentation, FSIAPL

Note: NA – Not Available; NM – Not Meaningful

2022 Financial Comparison						
Metric	AIL	L&T (standalone)	KEC	Kalpataru	Tata Projects	Dilip Buildcon
Order Book (INR Million)	328,048.34	3,155,670.00	237,160.00	327,610.00	525,360.00	255,945.00
Domestic Order Book (INR Million)	233,125.34	2,556,092.70	149,410.80	196,566.00	NA	255,945.00
Domestic Order Book %	71.06%	81.00%	63.00%	60.00%	NA	100.00%
Overseas Order Book (INR Million)	94,923.00	599,577.30	87,749.20	131,044.00	NA	0.00
Overseas Order Book %	28.94%	19.00%	37.00%	40.00%	NA	0.00%
Book to Bill Ratio (x)	2.98	3.12	1.73	2.22	3.84	2.68
Order Inflow (INR Million)	1,68,830.40	1,189,560.00	172,030.00	181,610.00	148,000.00	78,110.00
Revenue from operations (INR Million)	110,189.66	1,010,004.10	137,422.60	147,773.80	136,793.72	95,664.29
% Revenue from overseas projects	32.27%	20.00%	32.11%	33.00%	3.27%	0.00%
Total Income (INR Million)	112,695.49	1,046,130.60	137,556.90	148,663.00	137,588.71	96,048.16
EBITDA (INR Million)	10,685.99	126,036.80	9,116.40	12,467.00	-941.78	6,082.69
EBITDA Margin (%)	9.48%	12.05%	6.63%	8.39%	-0.68%	6.33%
Profit after tax (PAT) (INR Million)	3,576.05	78,794.50	3,320.80	5,350.60	-6,204.61	-5,496.76
PAT Margin (%)	3.17%	7.53%	2.41%	3.60%	-4.51%	-5.72%
Cash Profit Margin (%)	6.33%	8.65%	3.56%	5.96%	-2.93%	-1.56%
Total Equity (INR Million)	27,120.80	671,140.50	36,199.30	42,785.70	20,182.60	35,506.69
Total Debt (INR Million)	15,552.01	202,982.90	28,627.10	37,089.40	35,660.13	87,955.28
Net Debt (INR Million)	10,287.85	137,997.80	26,007.70	25,149.20	20,744.00	82,127.39
Net Debt to EBITDA (x)	0.96	1.09	2.85	2.02	-22.03	13.50
Total Debt to Equity (x)	0.57	0.30	0.79	0.87	1.77	2.48
Return on Equity (ROE) (%)	14.02%	12.36%	9.52%	13.35%	-36.29%	-15.82%
Return on Capital Employed (ROCE) (%)	17.30%	13.32%	12.81%	12.01%	-6.28%	1.59%
Cash Flow from Operations (CFO) (INR Million)	6,104.53	59,987.90	-2,837.10	7,136.60	978.11	16,237.02
CFO/EBITDA (%)	57.13%	47.60%	-31.12%	57.24%	-103.86%	266.94%
Net Working Capital (in days)	43	128	101	107	70	189
Gross Block (INR Million)	41,399.11	144,412.50	18,476.30	26,704.40	13,680.97	41,999.46
Gross Block/Revenue from Operations (%)	37.57%	14.30%	13.44%	18.07%	10.00%	43.90%

Source: Company's Annual Reports, Company's restated financials, Company's Investor Presentation, FSIAPL

Note: NA – Not Available; NM – Not Meaningful

As compared to the five peer companies analysed above, AIL has achieved the highest return on capital employed (ROCE) in FY2024. In terms of ROCE, AIL leads with 20.18% ROCE in FY2024, while its competitors have ROCE at or below 15.02% in FY2024. Additionally, AIL has second highest return on equity (ROE) compared to its peers, which is at 13.28% in FY2024

reflecting good ability to generate profits from shareholders' equity. In terms of ROE, AIL stands just after L&T (which has ROE of 13.69% in FY2024).

AIL's EBITDA margin is the highest at 11.60% in FY2024 among the five peer companies analysed. AIL's PAT margin at 3.30% in FY2024 is the second highest among the five peer companies analysed, it stands just after L&T (which has PAT margin of 7.07% in FY2024). All other competitors have PAT at or below 2.62% in FY2024. AIL's Cash profit margin at 6.92% in FY2024 is the second highest among the five peer companies analysed, it again stands just after L&T (which has Cash profit margin of 8.40% in FY2024). AIL has grown its PAT at the fastest rate as compared to its peers during the period FY2022 – FY2024. AIL's PAT grew at a CAGR of 12.14% from INR 3,576.05 million in FY2022 to INR 4,497.38 million in FY2024. AIL has grown its EBITDA at the second fastest rate as compared to its peers during the period FY2022-FY2024. AIL's EBITDA grew at a CAGR of 21.72% from INR 10,685.99 million in FY2022 to INR 15,831.24 million in FY2024.

When examining financial leverage, AIL presents a healthy picture with a debt-to-equity ratio of 0.68 in FY2024, indicating a balanced approach to financing. AIL's efficiency in operations is further highlighted by its cash flow generation, where it ranks third in terms of cash flow from operations relative to EBITDA, signalling strong operational effectiveness. AIL ranks fourth with CFO/EBITDA margin of 44.69% in FY2024, after DBL with CFO/EBITDA margin of 80.09% in FY2024, L&T with CFO/EBITDA margin of 55.23% in FY2024, and Kalpataru Projects International Limited with CFO/EBITDA margin of 50.61% in FY2024.

AIL's working capital management is also noteworthy, with net working capital days being on the lower end at 63 days in FY2024 (lowest among the peers), which typically signifies a more efficient turnover of inventory and receivables. AIL has 24.89% revenue from overseas projects in FY2024, which stands third highest (only after Kalpataru Projects International Limited at 37.81% and KEC International Limited at 36.24%) among the peer companies analysed.

### **Threats and challenges to AIL**

Some of the threats and challenges facing AIL are as follows:

- 1) **Reliance on Government spending:** Due to dependence on government-funded projects, any slowdown in public spending or changes in budget allocation could limit the availability of new infrastructure projects. Additionally, changes in lending norms and provisioning requirements by the RBI could affect financing costs and project viability.
- 2) **Delays in land acquisition:** Despite significant improvements, land acquisition continues to be one of the biggest challenges, often leading to project delays and cost overruns, while local community issues such as protests, and community relations can further impact project timelines.
- 3) **Skilled labour shortage:** A shortage of skilled and semi-skilled labour, particularly in specialized construction areas, can hinder project execution and compromise project quality.
- 4) **Cost inflation in raw materials:** Variations in the costs of essential raw materials, such as cement, steel, and other construction inputs, can increase financial uncertainty for projects and put pressure on project budgets.

- 
- 5) **Impact of low investment rates:** Low investment rates, characterized by a gap between planned investments and actual project execution, can pose challenges for domestic growth.
  - 6) **Supply chain disruptions:** Shortage of essential construction materials caused by supply chain disruptions or export restrictions.
  - 7) **Economic slowdown:** Ongoing uncertainty regarding global economic growth and financial stability can adversely affect domestic economic growth.
  - 8) **Funding shortages:** Ongoing reluctance by banks and financial institutions to lend to EPC companies.
  - 9) **Global Factors:**
    - The prolonged Russia-Ukraine war and rising geopolitical tensions in the Middle East are keeping commodity prices high and disrupting energy supplies, impacting global stability.
    - Disputes among major economies and frequent natural disasters due to climate change are straining supply chains and increasing costs.
    - Protectionist policies, declining globalization, and new international regulations are hindering trade, while stricter environmental rules raise compliance costs.
    - Soaring energy prices and central banks' efforts to curb inflation are slowing economic growth.
    - Prolonged economic downturns, debt restructuring, and sovereign defaults are creating financial instability, reducing infrastructure spending, and causing capital flight from developing countries, further destabilizing emerging markets as funds shift to social and health sectors.



## List of Abbreviations

AIIMS: All India Institute of Medical Sciences	L&T Ltd.: Larsen and Toubro Limited
AIL: Afcons Infrastructure Limited	LATAM: Latin America
AMRUT: Atal Mission for Rejuvenation and Urban Transformation	LB Nagar: Lal Bahadur Nagar
ANE: National Roads Administration	LNG: Liquefied Natural Gas
APAC: Asia Pacific	LOC: Lines of Credit
APGENCO: Andhra Pradesh Power Generation Corporation Limited	LOCs: Lines of Credit
APMC: Agricultural Produce Market Committee	LPG: Liquefied Petroleum Gas
APSEZ: Adani Ports and Special Economic Zone Ltd.	MAHA-METRO: Maharashtra Metro Rail Corporation Limited
BC-NEIA: Buyer's Credit under the National Export Insurance Account	MAKE: Most Admired Knowledge Enterprise
BE: Budget Estimates	MBIR: Manesar Bawal Investment Region
BHEL: Bharat Heavy Electricals Limited	MENA: Middle East and North Africa
BMRC: Bangalore Metro Rail Corporation Limited	MG Bus Station: Mahatma Gandhi Bus Station
BRT: Bus Rapid Transit	MG Road: Mahatma Gandhi Road
CAD&WM: Command Area Development & Water Management	MHOW: Military Headquarters Of Warfare
CAGR: Compound Annual Growth Rate	MIDC: Maharashtra Industrial Development Corporation
CAGR: Compounded Annual Growth	MIKE: Most Innovative Knowledge Enterprise
Cannt.: Cantonment	MLD: Millions of liter per day
CAPEX: Capital expenditure	MLGH: Ministry of Local Government and Housing
CBD Belapur: Central Business District of Belapur	MMMOCL: Maha Mumbai Metro Operation Corporation Limited
CBG: Compressed Biogas	MMRC: Mumbai Metro Rail Corporation Limited
CCS Airport: Chaudhary Charan Singh International Airport	MMRDA: Mumbai Metropolitan Region Development Authority
CFO: Cash Flow from Operations	MoA: Memorandum of Agreement
CG City South: Chhattisgarh City South	MoEFCC: Ministry of Environment, Forest, and Climate Change
CGD: City Gas Distribution	MoHUA: Ministry of Housing and Urban Affairs
CIS: Changes in Stocks	MoJ: Ministry of Jal Shakti
CMRL: Chennai Metro Rail Limited	MoPNG: Ministry of Petroleum and Natural Gas
COVID: COronaVirus Disease	MoPSW: Ministry of Ports, Shipping and Waterways
CSIA: Chhatrapati Shivaji Maharaj International Airport	MoSPI: Ministry of Statistics & Programme Implementation
CSL: Cochin Shipyard Limited	MoSPI: Ministry of Statistics and Programme Implementation
CSMT: Chhatrapati Shivaji Maharaj Terminus	MOU: Memorandum of Understanding
CY: Current Year	MSMEs: Micro, Small & Medium Enterprises
D.N. Nagar: Dadabhai Naoroji Nagar	MW: Megawatt
DBFOT: Design, Build, Finance, Operate, and Transfer	NA: Not Available
DBL: Dilip Buildcon Limited	NABL: National Accreditation Board for Testing and Calibration Laboratories
DMRC: Delhi Metro Rail Corporation	NCRTC: National Capital Region Transport Corporation
DoWR, RD & GR: Department of Water Resources, River Development, and Ganga Rejuvenation	NH12: National Highway 12
ECIL: Electronics Corporation of India Limited	NHAI: National Highways Authority of India
ECS: Environmental Control System	NHPC: National Hydroelectric Power Corporation
ECS: Extended Continental Shelf	NIP: National Infrastructure Pipeline
EEH: Eastern Express Highway	NIP: National Infrastructure Pipeline
EMDEs: Emerging Market and Developing Economies	NMIA: Navi Mumbai International Airport
ENR: Engineering News-Record	NMP: National Monetization Pipeline
EV: Electric Vehicle	NMRCL: Noida Metro Rail Corporation Ltd.
EXIM: Export-Import Bank of India	NSO: National Statistical Office
FDI: Foreign Direct Investment	OCMS: Online Computerised Monitoring System
FM: Finance Minister	OMC: Oil Marketing Company
FRE: First Revised Estimates	ONGC: Oil and Natural Gas Corporation
FRI: Forest Research Institute	ORR: Outer Ring Road
FSIAPL: Fitch Solutions India Advisory Private Limited	PAT: Profit after Tax
FY: Financial Year	PBIT: Profit before exceptional items and tax
GDP: Gross Domestic Product	PCMC: Pimpri Chinchwad Municipal Corporation
GEP: Global Economic Prospect	PE: Provisional Estimates
GFCE: Government Final Consumption Expenditure	PFCE: Private Final Consumption Expenditure
GFCF: Gross Fixed Capital Formation	PIB: Press Information Bureau
GIFT City: Gujarat International Finance Tec-City	PMCs: Project Management Consultants
GMRC: Gujarat Metro Rail Corporation	PMGSY: Pradhan Mantri Gram Sadak Yojana
GMRC: Guwahati Metro Rail Corporation Limited	PMKSY-AIBP: Pradhan Mantri Krishi Sinchayee Yojana - Accelerated Irrigation Benefit Programme
GNLU: Gujarat National Law University	PMRL: Patna Metro Rail
GRDA: Ghana Railway Development Authority	PPP: Public Private Partnership
GSECL: Gujarat State Electricity Corporation Limited	PSP: Pump Storage Projects
GST: Goods and Services Tax	QCBS: Quality cum Cost based Selection
GVA: Gross Value Added	R.K. Ashram: Ramakrishna Ashram
GW: Gigawatt	RBI: Reserve Bank of India
HCMT: High Capacity Mass Transit Route	RE: Revised Estimates
HEP: Hydro Electric Project	RGIA: Rajiv Gandhi International Airport
HRD: Heera Redevelopment	ROCE: Return on Capital Employed
IBC: Insolvency and Bankruptcy Code	ROE: Return on Equity
ICTP: International Container Transhipment Port	RRTS: Rapid Rail Transit System
IFFCO: Indian Farmers Fertilizer Cooperative Limited	SCAFs: Smart City Advisory Forums
IGGL: North East Natural Gas Pipeline Grid	SCM: Smart City Mission
IIM: Indian Institutes of Management	SEEPZ: Santaacruz Electronics Export Processing Zone
IIT: Indian Institutes of Technology	SGPGI: Sanjay Gandhi Postgraduate Institute of Medical Sciences
Ind-Ra: India Ratings and Research	SIPCOT: State Industries Promotion Corporation of Tamil Nadu Limited
INR: Indian Rupee	SJVN Ltd.: Satluj Jal Vidyut Nigam Ltd.
IPMD: Infrastructure and Project Monitoring Division	SPR: Strategic Petroleum Reserves
IPPs: Independent Power Producers	SPVs: Special Purpose Vehicles
ISBT: Inter-State Bus Terminus	SSA: Sub Saharan Africa
ISPR: Indian Strategic Petroleum Reserve Limited	TEUs: Twenty-foot equivalent unit
ISRF: International Ship-Repair Facility	TPL: Tata Projects Limited
ITO: Income Tax Officer	TVS: Tunnel Ventilation System
J P Nagar: Jayaprakash Nagar	UAE: United Arab Emirates
JBS: Jubilee Bus Station	UG: Underground
JLN Stadium: Jawaharlal Nehru Stadium	UKMRC: Uttarakhand Metro Rail Corporation
JMRC: Jaipur Metro Rail Corporation Ltd.	ULBs: Urban Local Bodies
JNPT: Jawaharlal Nehru Port Trust	UN: United Nations
KEC: KEC International Limited	UPMRC: Uttar Pradesh Metro Rail Corporation Limited
KIA: Kempegowda International Airport	USA: United States of America
KIAL: Kempegowda International Airport Limited	USD: United States Dollar
KM: Kilometre	VGF: Viability Gap Funding
KMRCL: Kolkata Metro Rail Corporation Ltd.	WSS: Water Supply and Sanitation
KPIL: Kalpataru Projects International Limited	YMCA: Young Men's Christian Association
KR Puram: Krishnarajapuram	y-o-y: year-over-year

*This report is prepared by Fitch Solutions India Advisory Pvt. Ltd. (FSIAPL) (erstwhile IRR Advisory Services Pvt. Ltd.) FSIAPL has taken utmost care to ensure accuracy and objectivity while developing this report. This report is for the information of the intended recipients only and no part of this report may be published or reproduced in any form or manner without prior written permission of FSIAPL.*

*For any information on this document, please contact:*

**Fitch Solutions India Advisory Pvt. Ltd.**

*(erstwhile IRR Advisory Services Pvt. Ltd.)*

Wockhardt Towers, West Wing, Level 4, Bandra Kurla Complex, Bandra E, Mumbai – 400051. India

T +91 22 4000 1700 F +91 22 4000 1701 [www.fitchsolutions.com/products/custom-research](http://www.fitchsolutions.com/products/custom-research)

KETAN  
HANSRAJ  
VED

Digitally signed by  
KETAN HANSRAJ  
VED  
Date: 2024.10.07  
19:03:25 +05'30'



Proposal No: IRR/2024-25/49

Dated: August 7, 2024

To,

**Mr. Hitesh Kumar Singh****Afcons Infrastructure Limited**

Afcons House,

16, Shah Industrial Estate,

Veera Desai Road, Andheri(west),

Mumbai-400063

Phone: 9619266474

Email: hitesh.singh@afcons.com

Dear Sir,

**Sub: Agreement for updating of Industry Research Report on the Infrastructure Sector In India**

We refer to our agreement no: IRR/2023-24/33B dated 28<sup>th</sup> July 2023 which was for the period between from November 2023 to July 2024 for the updating of the industry research report on the infrastructure sector in India. The timelines as envisaged by you for the finalization of industry research report on the infrastructure sector in India as per the agreement no IRR/2023-24/33A dated 28<sup>th</sup> July 2023 (August 2023 to October 2023) did not happen on account of the delay in filing the DRHP. As a result, we had submitted the final signed industry research report on 26<sup>th</sup> March 2024. This has resulted in too many industry research report versions and our effort estimates have gone way beyond what we have envisaged.

The updating of the industry research report will lead to increase in commercials due to above mentioned reasons which will be in addition to what is mentioned in our agreement no: IRR/2023-24/33B dated 28<sup>th</sup> July 2023.

The signed industry research report dated 26<sup>th</sup> March 2024 will be only one to be updated based on both primary and secondary sources of information. Fitch Solutions India Advisory Private Limited (FSIAPL) will also use industry and company data from sources that it considers reliable. As per our standard turnaround time FSIAPL will submit the draft report within 4-6 weeks of the receipt of a firm mandate letter from the company. We will submit the final reports within one week of obtaining feedback on the draft reports.

**1. COMMERCIALS**

Our commercial terms for the proposed assignment are as follows:

**Fitch Solutions India Advisory Private Limited**

(erstwhile IRR Advisory Services Private Limited)

Wockhardt Towers, Level 4, West Wing, Bandra Kurla Complex, Bandra (E), Mumbai – 400051, India

Tel: +91 22 4000 1700 | Fax: +91 22 4000 1701 | CIN/LLPIN: U67190MH2013FTC247286 | [www.fitchsolutions.com](http://www.fitchsolutions.com)



- a. Professional fees: Rs. 800,000/- (Rupees Eight Lakh only) as additional sum to charge for the updating of the industry research report which will be over and above the commercials mentioned in our agreement no: IRR/2023-24/33B dated 28<sup>th</sup> July 2023.
- b. The above fee is inclusive of all outstation travel, boarding, lodging, and other incidental expenses that we incur while this assignment.
- c. GST shall be payable at the rate of 18 % in addition to the above professional fees.
- d. The report will be revised maximum three times in a 5-month (August 2024 to December 2024) period during assignment at no additional cost.
- e. The schedule of payment of our professional fees is as follows:
  - i. 100% of professional fees and GST on the submission of the final report before the filing of the updated DRHP
- f. Mode of Payment: All payments shall be in the name of "Fitch Solutions India Advisory Private Limited" by way of Cheque/Demand Draft/NEFT/RTGS.

We trust this proposal addresses your requirements in full. Please do not hesitate to contact us (Mr. Murali Balakrishnan + 91 9820362048 [murali.balakrishnan@fitchsolutions.com](mailto:murali.balakrishnan@fitchsolutions.com)) for any clarifications. The services to be provided by FSIAPL under this Proposal shall be governed by the FSIAPL Standard Conditions of Contract attached to this proposal.

We look forward to collaborating with you.

Thanking you  
Yours sincerely

Bhaskar Som  
Country Head  
Fitch Solutions India Advisory Private Limited



*Namish*  
20/08/24

**Fitch Solutions India Advisory Private Limited**  
(erstwhile IRR Advisory Services Private Limited)

Wockhardt Towers, Level 4, West Wing, Bandra Kurla Complex, Bandra (E), Mumbai – 400051, India

Tel: +91 22 4000 1700 | Fax: +91 22 4000 1701 | CIN/LLPIN: U67190MH2013FTC247286 | [www.fitchsolutions.com](http://www.fitchsolutions.com)

## FSIAPL: Standard Conditions of Contract

Set forth below are the terms & conditions ("Conditions") governing the provision of services by Fitch Solutions India Advisory Private Limited ("FSIAPL") to the client ("you") identified in the project proposal provided by FSIAPL to you ("Proposal").

**1. Provision of the Service.** FSIAPL agrees to perform the services described in the Proposal ("Service").

**2. Terms of Engagement.** The term of provision of the Service ("Engagement") shall commence upon the date of the Proposal issued by FSIAPL and will continue until completion of the Service. If the Service is required to be provided on an ongoing basis with no defined expiry, the initial term of the Engagement shall be for twelve (12) months, automatically renewable for successive twelve (12) month periods thereafter unless either party provides written notice of termination to the other party no less than thirty (30) days prior to the expiry of the then current twelve (12) month period.

Either party shall have the right to terminate the Engagement (i) upon thirty (30) days prior written notice to the other party in the event of a material breach of the Engagement by the other party, its officers or employees, unless the breach is corrected within such thirty (30) day notice period or (ii) upon seven (7) days prior written notice if the other party (a) terminates or suspends its business, (b) becomes subject to any bankruptcy or insolvency proceeding under Federal or state statute or (c) becomes insolvent or subject to direct control by a trustee, receiver or similar authority.

**3. Fee for Service.** FSIAPL's fee for the provision of the Service will be as set out in the Proposal ("Fee"). You agree to pay in full each instalment of the Fee within thirty (30) days of the receipt of each FSIAPL invoice.

If the Service is required to be provided on an ongoing basis with no defined expiry, FSIAPL reserves the right to modify the Fee for the provision of the Service once in every twelve (12) month period throughout the term of the Engagement, provided that you shall be provided with written notice of any fee increase at least sixty (60) days prior to the end of the then current twelve (12) month period. Such increase will take effect upon the commencement of the next twelve (12) month period.

**4. Disclaimer.** FSIAPL in the provision of the Service has received information and documents from both you and/or your dealers and advisors and third parties. FSIAPL has relied on both you and/or your dealers and advisors and these third parties for the accuracy of such information and documents. FSIAPL has not independently verified such information. FSIAPL does not represent, warrant or guarantee: (i) that it is providing any financial advice, auditing, accounting, appraisal or actuarial services; (ii) the accuracy, correctness, integrity, completeness or timeliness of any part of the Service described herein, due to the fact that all of the results of FSIAPL's analysis are based on information provided to FSIAPL by you and/or your dealers and advisors and third parties; and (iii) that the information, analyses and agreed upon procedures contained in, and constituting a part of, the Service, as described in the Proposal, will fulfill any of your particular purposes or needs. FSIAPL is not responsible for any underwriting, credit, or investment decision, or damages or other losses resulting from use of the Service. The Service is provided "as is" and all faults and the entire risk as to satisfactory quality, performance, accuracy and effort is with you. In providing the Service, FSIAPL is not making any recommendation to you to buy, sell, make or hold any investment, loan or security.

**5. Liability of FSIAPL.** Regardless of the basis on which you or any third party may be entitled to recover damages from FSIAPL (including: breach of warranty, contract or fiduciary duty; negligence, misrepresentation or other tort; or indemnity), the total liability of FSIAPL (including its officers, directors, employees, dealers or suppliers) in connection with the Service is limited to the value of actual direct losses that can be proven up to an amount not to exceed the total fee for the Service during the prior twelve (12) month period, pro-rated for a partial year of service. Furthermore, the party suffering such damages or losses must first exhaust any available legal and equitable remedies against parties other than FSIAPL. FSIAPL shall in no event be liable to you or any third party (including your employees, licensors and dealers) for any special, incidental, indirect or consequential damages (including, without limitation, lost profits, savings, revenues, business opportunities or business advantages) in any way related to the Service, even if FSIAPL has been advised of the possibility of such damages. Notwithstanding the above and any other provision of these Conditions, FSIAPL shall not exclude or limit its liability for negligence causing death or personal injury or for fraud.

**6. Indemnification.** You shall, defend, indemnify and hold harmless FSIAPL from and against any and all claims, losses, damages, causes of action and liability of any kind, including court costs, the fees of attorneys and expert witness fees ("Claims") sustained by FSIAPL from third parties, which Claims arise out of or result from or in connection with the use of the Service. You shall defend such action at your own expense, and shall pay all costs and damages finally awarded against FSIAPL; provided that FSIAPL gives you (i) prompt notice of any such claim (ii) reasonable assistance (other than monetary

**Fitch Solutions India Advisory Private Limited**

(erstwhile IRR Advisory Services Private Limited)

Wockhardt Towers, Level 4, West Wing, Bandra Kurla Complex, Bandra (E), Mumbai – 400051, India

Tel: +91 22 4000 1700 | Fax: +91 22 4000 1701 | CIN/LLPIN: U67190MH2013FTC247286 | [www.fitchsolutions.com](http://www.fitchsolutions.com)



assistance) in defending against the claim and (iii) sole authority to defend or settle such claim at your sole expense; however, you shall have no liability for any costs or expenses incurred by FSIAPL without your prior authorization.

**7. No Solicitation.** For the term of the Engagement, and for a period of eighteen months (18) following the termination of the Engagement, neither party will, without the prior written consent of the other party (which consent such potentially affected party may withhold, in its sole discretion), solicit for employment or employ (including as an independent contractor) (i) any person who then is, or within the then preceding 12 months was, employed (including as an independent contractor) by that party or any of its affiliates.

**8. Assignment.** You shall not assign your obligations under the Engagement, except with FSIAPL's prior written approval.

**9. Force Majeure.** Neither party shall be responsible for the failure or delay in the performance of any obligation under the Engagement caused by acts of God, flood or fire, power failure, or other reasons beyond such party's control.

**10. Ownership of Rights.** FSIAPL acknowledges that you shall own the physical media upon which any reports are prepared by FSIAPL and delivered to you as part of the Service; provided, however, that because such reports shall also contain intellectual property and confidential information of FSIAPL, you acknowledge that you shall have the right to use such reports solely for your own internal purposes. You hereby acknowledge FSIAPL's exclusive ownership rights, including without limitation, all patent, copyright, trade mark rights, database rights, know-how and trade secret rights, with respect to the contents of any reports and any other work produced by FSIAPL including, but not limited to, any ideas, applications, software, principles, algorithms, methods and other work product produced, or created by FSIAPL in connection with the Service, all of which shall be considered confidential information.

**11. Confidentiality.** Each party to the Engagement shall maintain in full confidence and shall not use or disclose to any third-party, except pursuant to the terms of the Engagement, any of the information furnished by the other party pursuant to these Conditions ("Confidential Information"), whether furnished before or after the date of the Proposal, together with analyses, compilations, studies, or other documents or records prepared by either party which contain or otherwise reflect or are generated from such information.

No information shall be Confidential Information that:

- (a) is or becomes available in the public domain other than as a result of an unauthorized disclosure by the receiving party.
- (b) is not acquired from the disclosing party or any of its affiliates or from any person in breach of an obligation of secrecy to the disclosing party;
- (c) is disclosed with the permission of the disclosing party; or
- (d) is required to be disclosed pursuant to law or regulation or order of a court of competent jurisdiction or applicable regulatory or governmental authority.

**12. Independent Contractor.** Nothing in the Engagement shall be construed as establishing the relationship of employer and employee or the relationship of partners, principal and agent, or joint ventures between FSIAPL and you. FSIAPL shall be considered for all purposes an independent contractor.

**13. Entire Engagement; Amendment.** The Engagement, which includes the Proposal and these Conditions, constitutes the entire agreement between the parties as to the Service and may not be modified or altered without a written instrument executed by both parties. The waiver or failure of FSIAPL to exercise any right in any respect provided for herein shall not be deemed a waiver of any further right hereunder.

**14. Third-Party Beneficiaries.** No person or entity shall have, or is intended to have, any interest, right, remedy or other benefit in connection with any agreement or provision contained herein or contemplated hereby.

**15. Governing Law; Disputes.** The Engagement shall be governed by the laws of India. Both FSIAPL and you hereby agree that for the purpose of the Engagement, if any dispute arises with respect to and/or in connection with the Service, the Proposal or these Conditions, the courts of Mumbai shall have exclusive jurisdiction in the matter.