INFRASTRUCTURE

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January 2019
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EXECUTIVE SUMMARY

High budgetary allocation for infrastructure

- In the Union Budget 2018-19, the Government of India has given a massive push to the infrastructure sector by allocating Rs 5.97 lakh crore (US$ 92.22 billion) for the sector.

Increasing private sector involvement

- Private sector is emerging as a key player across various infrastructure segments, ranging from roads and communications to power and airports.

Improvement in logistics

- The logistics sector in India is growing 10.5 per cent annually and is expected to reach US$ 215 billion in 2020.
- In 2018, India was ranked 44th out of 167 countries in World Bank’s Logistics Performance Index (LPI) 2018. India was also ranked second* in the 2018 Agility Emerging Markets Logistics Index.

Rising foreign direct investment (FDI) in the sector

- FDI received in Construction Development sector (townships, housing, built up infrastructure and construction development projects) from April 2000 to June 2018 stood at US$ 24.87 billion and in Construction (Infrastructure) activities stood at US$ 13.11 billion.

Note: * prepared by Agility for ranking emerging countries in terms of their logistics performance
Source: Media sources, DIPP, Aranca Research, Equirius Capital, EY
ADVANTAGE INDIA
India is expected to become the third largest construction market globally by 2022.

India has a requirement of investment worth Rs 50 trillion (US$ 777.73 billion) in infrastructure by 2022 to have sustainable development in the country.

As on December 2018, infrastructure and capital good companies have seen a 30 per cent growth in order inflows from Rs 2.05 trillion in 2017 (US$ 28.41 billion) to Rs 2.67 trillion in 2018 (US$ 37 billion).

Development of world class infrastructure will lead to 9-10 per cent growth of Indian economy.

Favourable valuation and earnings outlook makes this sector an attractive opportunity.

Only 24 per cent of the National Highway network in India is four-lane, therefore there is immense scope for improvement.

- The Regional Connectivity Scheme (RCS) gives opportunity for development of airports.

Increasing impetus to develop infrastructure in the country is attracting the major global players like China Harbour Engineering and Mizuho Financial Group.

Construction Development sector and Infrastructure activities sector received FDI inflows amounting to US$ 24.87 billion and US$ 13.11 billion, respectively from April 2000 to June 2018.

Infrastructure sector is one of the largest receivers of FDI inflows to India.

With initiatives like ‘Housing for All’ and ‘Smart Cities Mission’ the Government of India is working on reducing bottlenecks and impeding growth in the infrastructure sector. Rs 2.05 lakh crore (US$ 31.81 billion) will be invested in the smart cities mission. All 100 cities have been selected as of June 2018.

100 per cent FDI is permitted under the automatic across various infrastructure sectors.

Note: UDAY – Ujwal Discom Assurance Yojana

Source: Media Sources, DIPP, Aranca Research, PricewaterhouseCoopers
MARKET OVERVIEW AND TRENDS
The eight core infrastructure industries include coal, crude oil, natural gas, refinery products, fertilisers, steel, cement and electricity.

The cumulative growth of the index was 4.3 per cent in 2017-18 and 5.1 per cent year-on-year in April-November 2018.

During 2017-18, growth in the index was led by cement (6.3 per cent), Steel (5.6 per cent), and electricity (5.2 per cent).

In April-November 2018, the growth was driven by 14.2 per cent y-o-y increase in cement production and 9.0 per cent y-o-y increase in coal production.

Source: Ministry of Commerce and Industry
GROWTH IN INFRASTRUCTURE RELATED ACTIVITIES

- Infrastructure related activities witnessed strong growth during 2017-18.
- National highway construction recorded the highest increase of 20 per cent, in line with government’s increased focus on improving logistics.
- Freight traffic handled by Indian Railways increased by 5.58 per cent year-on-year during April-December 2018(P) to 894.54 million tonnes while its gross earnings increased by 4.65 per cent year-on-year during the same time.
- Cargo handled by major Indian ports increased by 4.83 per cent during April-November 2018. Electricity generation in the country increased by 4.74 per cent during April-December 2018.
- Major ports reported a growth of 3.77 per cent and handled 518.6 million tonnes of cargo during the period April to December 2018.

**Note:** Data is as per latest available information, P – Provisional

**Source:** Economic Survey 2017 Ministry of Railways, Union Budget 2018-19, Indian Ports Association, Central Electricity Authority
Highway construction in India increased at 23 per cent CAGR between FY14-18. In FY18, 9,829 km of highways were constructed with an expenditure of Rs 1.16 trillion (US$ 18.05 billion).

In Union Budget 2018-19, Rs 71,000 crore (US$ 10.97 billion) was allocated for national highways while Rs 19,000 crore (US$ 2.94 billion) was allocated to Pradhan Mantri Gram Sadak Yojana (PMGSY) for development of roads in rural and backward areas of the country.

All villages in India will be connected through a road network by 2019 under Pradhan Mantri Gram Sadak Yojana (PMGSY).

Highway network in the country is expected to cover 50,000 km by 2019. National highway construction in India increased by 20 per cent year-on-year in 2017-18.

A target of constructing 10,000 km long National Highways during 2018-19 was set up out of which 5,759 km have been constructed, as of November 2018.
STRONG REVENUE GROWTH FOR INDIAN RAILWAYS

- Revenue growth has been strong over the years; during FY07–18, gross revenues increased at a CAGR of 6.20 per cent to Rs 1.85 trillion (US$ 27.71 billion) in FY18. Revenues from the sector are estimated to reach to US$ 44.5 billion by the end of FY20. Revenue during April-December 2018 (P) stood at Rs 129,903.85 crore (US$ 18.00 billion).

- The Indian Railways received the highest ever budgetary allocation under Union Budget 2018-19 at Rs 1.48 trillion (US$ 22.86 billion). Out of this allocation, Rs 1.46 trillion (US$ 22.55 billion) is capital expenditure that will be used for capacity creation and redevelopment of 600 railway stations.

- The Ministry of Railways is working on a plan to earn Rs 15,000 crore (US$ 1.56 billion) over the next 10-20 years through a rail display network (RDN), enabling real-time information to passengers.

- Indian Railways will require investment of Rs 35.3 trillion (US$ 545.26 billion) by 2032 for capacity addition and modernisation. The capital expenditure in the sector is expected to be increased 92 per cent annually.

- All Indian Railways trains will become electric by 2022.

**Note:** CAGR – Compound Annual Growth Rate, FY – Indian Financial Year (April–March), P – Provisional, ^ - CAGR upto FY18, * - Upto October 2018

**Source:** Vision 2020, Ministry of Railways, Aranca Research
POWER GENERATION CAPACITY HAS INCREASED AT A HEALTHY PACE

- Installed capacity increased steadily over the years, posting a CAGR of 9.1 per cent in FY07–18 and stood at 344 GW by the end of FY18.
- As of December 2018, installed capacity has reached 349.28 GW.
- During FY18 electricity generation in India reached 1,201.54 billion units (BU). During April-December 2018, electricity generation in the country has reached to 949,633.00 GWH.
- Indian energy sector is expected to offer investment opportunities worth US$ 300 billion over the next 10 years.
- As of November 2018, 15 states have achieved 100 per cent electrification under the Saubhagya Scheme. By the eve of 2019, the scheme achieved 95 per cent of its target.

**Note:** GW - Gigawatt, GWH – Gigawatt Hour CAGR - Compound Annual Growth Rate, * - As of November 2018, ^ - CAGR upto FY18

**Source:** CEA (Central Electricity Authority), Aranca Research
KEY PRIVATE PLAYERS

IRB Infrastructure Developers Ltd

- Major projects: Mumbai–Pune BOT Project, Pune–Nashik BOT Project, Bharuch–Surat BOT Project, Thane–Bhiwandi by-pass 4 Lane Project, Thane Ghodbunder BOT Project, Ahmedabad–Baroda NH-8, 6 laning of Agra - Etawah bypass

Ashoka Buildcon Limited

- Major projects: NH6 Dhankuni to Kharagpur, Sambalpur Baragarh, NH4 Belgaum Dharwad, NH-3 Pimpalgaon – Nashik – Gonde Road (JV with L&T), Jaora – Nayagaon Road, Chennai Outer Ring Road, Modhul – Nippani Road, Indore Edalabad Road, Wainganga Bridge, Ahmednagar Aurangabad Road

HCC

- Major projects: Bandra–Worli Sea Link, Badarpur Elevated Highway Project, Delhi Faridabad Elevated Expressway, Breakwater construction for new port at Ennore, Chennai, New Railway Line Project from Jiribam - Tupul

Punj Lloyd

- Major Projects: Hyderabad-Vijayawada Road Project, Sikkim’s Greenfield Airport, The Medanta (Medicity), Bangalore Metro Rail Project, Upgradation of Belgaum-Maharashtra Border Section of NH-4, Elevated Viaduct, Delhi Metro

Larsen & Toubro

- Major Projects: Hyderabad Metro Rail, Construction of a 6-lane bridge over the Ganges river, Mechanise Track Laying for India's first 626 km Dedicated Freight Corridor, Monorail in Mumbai, Railway electrification works and Rigid Overhead Contact System for the Delhi Metro, Kakrapar nuclear power project and Srinagar Hydel Power Project, Uttaranchal

Source: Company websites, Aranca Research
STRATEGIES
ADOPTED
STRATEGIES ADOPTED

The company selected countries and regions with the maximum congruence to its strengths and the most favourable logistics. The Middle East and China have been identified as prime centres for expansion for manufacturing and projects businesses. L&T seeks to ramp up its presence in these markets through a slew of new projects and business initiatives that will add breadth and depth to the existing association with the industry and infrastructure of the GCC countries and other states in the region. L&T is setting up a Modular Fabrication Yard in Oman that will build equipment for offshore applications and for the hydrocarbon sector.

Global sourcing policy is another key area that has given a thrust to its international strategy. With a steady rise in material costs, the company has placed sourcing teams in China, Europe and Russia.

To expand nuclear energy portfolio, efforts to increase scope by offering products beyond conventional island in Nuclear business are under way.

Considering the National Action Plan on Climate Change targeting 15 per cent of electricity generation from renewables by 2020, BHEL is looking towards expanding its capacity to manufacture photo voltaic modules and cells.

BHEL’s collaborative initiatives to address the growing demand potential in Railway Transportation including Metro and Suburban Railways include initiative with Indian Railways for setting up a greenfield Mainline Electrical Multiple Unit (MEMU) Coach Factory in Rajasthan

GMR Energy Limited (GEL), a subsidiary of GMR Infrastructure Ltd (GIL) and TNB Repair and Maintenance Sdn Bhd (TNB Remaco) have signed an MoU to collaborate and set up an O&M joint venture. As per the three-year MOU, GEL and TNB Remaco will identify business opportunities in the high-potential Indian market and provide operation and maintenance services to the power plants. Through this JV, GEL and TNB REMACO will extend their technical expertise to the several power plants in India. The company is planning to expand its airport vertical and consolidate the energy business along with divesting its highway projects.

Adani Ports and Special Economic Zone (APSEZ) Ltd aims to complete expansion of Adani International Container Terminal Pvt. Ltd (AICTPL) at Mundra port by 2017 to create a transhipment hub for the Middle East, South Asia and India. Adani Ports has also secured a contract from Tamil Nadu State Electricity Board for shipment of coal, adding muscle to its coastal shipping plan.

Source: Company websites, Media sources, Aranca research
GROWTH DRIVERS AND OPPORTUNITIES
GROWTH DRIVERS FOR INFRASTRUCTURE IN INDIA

Growth Drivers

- Government Initiatives
- Public Private Partnerships
- International Investment
- Infrastructure Needs
- Housing Development

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GOVERNMENT INITIATIVES DRIVING GROWTH IN THE SECTOR

- For 2018-19, the total capital expenditure of Railways is expected to be Rs 1.46 trillion (US$ 22.55 billion).
- As per Union Budget 2018-19, capacity constraints in the railways network will be eliminated through doubling of 18,000 km of tracks, third and fourth lines and conversion of 5,000 km of tracks into broad gauge.
- A new Metro Rail Policy was approved in August 2017.
- 2,000 kms of coastal connectivity roads have been identified for construction and development.
  - Select airports in Tier 2 cities will be taken up for operation and maintenance in the PPP mode in the coming years.
- Roads and Airports
- Rs 10,000 crore (US$ 1.54 billion) allocated in Union Budget 2018-19 for creation and augmentation of telecom infrastructure in the country.
- In the second phase of Solar Park Development an additional capacity of 20,000 MW will be generated.
- In 2017, government announced plans to facilitate higher investment in affordable housing.
  - The National Housing Bank will refinance individual housing loans of about US$ 3.1 billion in 2017-18.
  - The National Steel Policy 2017 aims at higher spending on infrastructure and construction through government initiatives.
  - As on January 2019, first phase of development with basic infrastructural facilities of the first greenfield industrial city at Dholera in Gujarat is estimated to be completed by September 2019.
- Construction
- Telecom and Energy

Source: Union Budget 2017-18, Media sources, Aranca research
In Budget 2017-18, affordable housing was given infrastructure status. “Housing for All” programme, launched in June 2015 aims to build 20 million urban homes and 30 million rural houses by 2022.

Homes in India are currently most affordable in nearly two decades with mortgage payment on a Rs 3 million (US$ 46,547) house at 22 per cent of average post-tax income.

During 2018, housing sales have grown about 16 per cent to 245,000 units in seven major cities*.

As per Union Budget 2018-19, a dedicated Affordable Housing Fund (AHF) will be established under the National Housing Bank which will be funded by shortfall in priority sector lending and government bonds. In May 2018, construction of additional 150,000 affordable houses was sanctioned under Pradhan Mantri Awas Yojana (PMAY), Urban.

In November 2017, the Government of India increased the carpet area for houses falling under the affordable housing scheme, giving a boost to developers having large inventories.

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**Note:** * - seven major cities include Delhi-NCR, Mumbai, Chennai, Kolkata, Bengaluru, Hyderabad and Pune

**Source:** Bloomberg, Economic Times
INFRASTRUCTURE DEVELOPMENT IN NORTHEAST INDIA

- As of September 2018, Rs 1.90 trillion (US$ 27.07 billion) has been sanctioned for construction of about 12,000 km of road in the northeast region in India.
- In December 2017, the North East Special Infrastructure Development Scheme (NESIDS) was approved by Government of India with 100 per cent funding from the central government for infrastructure projects in the region.
- In October 2017, the Government of India announced that highway projects worth Rs 1.45 trillion (US$ 22.6 billion) would be undertaken in the north-east region of the country in the coming two to three years.
- In August 2017, India-Japan Coordination Forum for Development of North East was formed to focus on major projects such as road and network development, disaster management, connectivity, and electricity provision.
- With an eye on China, India is working on a slew of road and bridge projects to improve connectivity with Bangladesh, Nepal and Myanmar.
- India is also pulling out all stops to expedite the South Asian Sub-Regional Economic Cooperation (SASEC) road connectivity programme in the backdrop of China’s ambitious One Belt One Road (Obor).
- Government announced plans to invest US$ 6.98 billion in Northeast States.
- Arunachal Pradesh was brought on the railway map of India with India’s longest rail-cum-road bridge — the 4.94-km long Bogibeel bridge over Brahmaputra.
- Government, has also, announced plans to convert all meter gauge tracks in the northeastern states to broad gauge tracks.

Source: Budget, Economic Times, Media sources, Aranca research
Logistics and warehousing play an important role in the industrial advancement of the country. They are a fundamental part of business infrastructure and one of the key enablers in the global supply chain.

In 2017, the logistics sector was given infrastructure status in India. Logistics market in India stood at US$ 160 billion in 2017. The sector is expected to grow at a CAGR of 10.5 per cent to reach US$ 215 billion by 2020.

In 2018, India was ranked 44th out of 167 countries in World Bank's Logistics Performance Index (LPI) 2018. India was also ranked second* in the 2018 Agility Emerging Markets Logistics Index.

In 2017, about 22 million people were employed in the logistics sector. It is expected to employ about 40 million people by 2020.

In 2017-18, logistics cost in India was 14 per cent of the GDP. However, it is expected to go down to 10 per cent by 2022.

Investment in the logistics sector is expected to reach US$ 500 billion annually by 2025. Warehousing in India is expected to get investment of Rs 50,000 crore (US$ 7.12 billion) between 2018-20. As of October 2018, Hiranandani Group is planning to enter the logistics and warehousing sector with an investment of Rs 25 billion (US$ 356.23 million) in two projects in the first quarter of 2019.

Source: Economic Survey 2017-18, KPMG Report, News Articles, Aranca Research
The Airports Authority of India aims to bring around 250 airports under operation across the country by 2020.

The AAI has developed and upgraded over 23 metro airports in the last 5 years.

AAI plans to develop city-side infrastructure at 13 regional airports across India, with help from private players for building of hotels, car parks and other facilities, and thereby boost its non-aeronautical revenues.

Airport housing will also have height restrictions to avoid interference with flight paths. They will also have to be far from the runway and 45m above a defined level of the airport, which will allow 4-5 floors to be built.

The development of Navi Mumbai airport has been approved. The project will be developed on 74:26 per cent partnership between MIAL and Cidco and airport’s phase 1 with annual handling capacity of 10 million passengers each year rephrasing it from the origin.

The AAI plans to spend over Rs 21,000 crore (US$ 3.2 billion) between 2018-22 to build new terminal and expand capacity of existing ones.

The Government of Andhra Pradesh is to develop greenfield airports in six cities-Nizamabad, Nellore, Kurnool, Ramagundam, Tadepalligudem and Kothagudem under the PPP model.

Upfront subsidy has been proposed through which non-metro airports would be funded by imposing 2 per cent levy on both domestic and international airfares.

About 22 airports to get connected under regional connectivity scheme of AAI.

Over 30 airport development projects are under progress across various regions in Northeast India.

AAI plans to develop over 20 airports in tier II and III cities in next 5 years.

56 new airports are expected to become functional in the country over the next few years*.

Metro airports

Non-metro airports

**Note:** *As of April 2018

**Source:** Media sources, Aranca research
At least ten Indian cities are working on metro railway projects and the government initiated a plan in 2012 to study the feasibility of such networks in all cities with a population of more than 2 million.

Metro rail projects worth over Rs 500 billion ($7.7 billion) are underway in India and this pile will probably grow.

Around 200 trains cover 70,000 km everyday on 190-km-long Metro corridors in Delhi. The numbers have increase after another 140 km addition of lines in 2016.

A new Metro Rail Policy was announced in August 2017, which will give boost to private investments by mandating public private partnership (PPP) component in new projects. A new committee to lay down standards for metro rail systems was approved in June 2018.

As of August 2018, 22 metro rail projects are ongoing or are under construction.

As on January 2019, The Department of Economic Affairs and the French Development Agency signed a credit facility framework agreement for bilateral funding of about Euro 245 million towards the Pune Metro Project.

Monorail has made its beginning in India with Mumbai being the first city in the country to have this transport system in place.

It took more than six years from the date of inviting Request for Qualification for MMRDA (Mumbai Metropolitan Region Development Authority) to complete a part of the project involving a stretch of 8.26 km.

Monorail Projects are being developed in Chennai, Pune, Thiruvananthpuram, Bengaluru, Thane, Delhi, Port Blair, Dehradun, Chandigarh etc.

Source: Media sources, Aranca research
INCREASING INVESTMENTS IN INDIAN INFRASTRUCTURE

- Cumulative FDI inflows in the Construction Activities sector, which includes infrastructure, reached US$ 13.49 billion between April 2000 – September 2018 and in the Construction Development sector reached US$ 24.89 billion.

- Private equity and venture capital (PE/VC) investments in the infrastructure reached US$ 1,827 million during January-November 2018.


*Note: FDI – Foreign Direct Investment, * - Upto June 2018

*Source: DIPP, Media sources, Venture Intelligence & mint Research, EY
The Government of India has given a massive push to the infrastructure sector by allocating Rs 5.97 lakh crore (US$ 92.22 billion) for the sector.

Planned outlay for the road sector is Rs 1.21 lakh crore (US$ 18.69 billion) while allocation of Rs 71,000 crore (US$ 10.97 billion) has been made for development of national highways across the country.

The Indian Railways received the highest ever budgetary allocation under Union Budget 2018-19 at Rs 1.48 trillion (US$ 22.86 billion). Out of this allocation, Rs 1.46 trillion (US$ 22.55 billion) is capital expenditure that will be used for capacity creation and redevelopment of 600 railway stations.

Rs 16,000 crore (US$2.47 billion) towards the Saubhagya scheme. The scheme aims to achieve universal household electrification in the country.

Rs 4,200 crore (US$ 648.75 billion) to increase capacity of Green Energy Corridor Project along with other wind and solar power projects.

Allocation of Rs 10,000 crore (US$ 1.55 billion) to boost telecom infrastructure.

Water supply to be provided to all households in 500 cities.

Allocation of Rs 452.25 crore (US$ 69.86 million) for the upgradation of state government medical colleges (PG seats) at the district hospitals and Rs 794.07 crore (US$ 122.66 million) for government medical colleges (UG seats) and government health institutions.

Source: Union Budget 2018-19
### Government Initiatives

- The Government is making an attempt to revive and give boost to Public Private Partnerships.
- For creating an eco-system to make India a global hub for electronics manufacturing a provision of US$115.62 million in 2017-18 in incentive schemes like M-SIPS and EDF.
- Introduction of National Steel Policy in 2017 to aim at higher spending on infrastructure and construction through government initiatives.
- Total allocation for infrastructure in Budget of 2018-19 stands at Rs 5.97 lakh crore (US$ 92.22 billion).
- In November 2017, logistics sector was given the status of infrastructure, to boost investments in the sector.

### International Associations

- In June 2018, the Asian Infrastructure Investment Bank (AIIB) has announced US$ 200 million investment into the National Investment & Infrastructure Fund (NIIF).
- Japanese investment has played significant role in India’s growth story. Japan has pledged investments of around US$35 billion for the period of 2014-19 to boost India’s manufacturing and infrastructure sectors.
- As of October 2018, the US government’s Overseas Private Investment Corporation (OPIC) is planning to invest in India’s infrastructure, port and solar energy sectors.
- As on January 2019, The Department of Economic Affairs and the French Development Agency signed a credit facility framework agreement for bilateral funding of about Euro 245 million towards the Pune Metro Project.

### Urban Indian Real Estate

- With every sixth urban person globally being an Indian, the real estate and construction sector holds significant opportunity for both global and domestic companies engaged across the value chain.
- India will need to construct 43,000 houses every day until 2022 to achieve the vision of Housing for All by 2022. Hundreds of new cities need to be developed over the next decade.
- This has the potential for catapulting India to 3rd largest construction market globally. The sector is expected to contribute 15 per cent to the Indian economy by 2030.
- The recent policy reforms such as the Real Estate Act, GST, REITs, steps to reduce approval delays etc. are only going to strengthen the real estate and construction sector.

*Source: Media sources, Ministry of Finance, M-SIPS - Modified Special Incentive Package Scheme, EDF – Electronics Development Funds*
KEY INDUSTRY ORGANISATIONS
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<th>National Highways Authority of India (NHAI)</th>
<th>Airports Authority of India (AAI)</th>
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GLOSSARY

- FY: Indian Financial Year (April to March) – So FY11 implies April 2010 to March 2011
- FDI: Foreign Direct Investment
- CAGR: Compounded Annual Growth Rate
- GOI: Government of India
- R&D: Research and Development
- JV: Joint Venture
- SEZ: Special Economic Zone
- BOT: Build-Operate-Transfer
- IBEF: Indian Brand Equity Foundation
- NHAI: National Highways Authority of India
- PPP: Public-Private-Partnership
- Wherever applicable, numbers have been rounded off to the nearest whole number
**EXCHANGE RATES**

### Exchange Rates (Fiscal Year)

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### Exchange Rates (Calendar Year)

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**Source:** Reserve Bank of India, Average for the year
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