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Infrastructure & Real Estate

A Fulcrum for Change & Economic Growth

How is India Shaping Up?

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Accelerate. Elevate.



Foreword

Association of Infrastructure Industry (India)

Rajaneesh Dasgupta

Director General
Association of Infrastructure Industry (India)



Akhand Bharat, a dream that we all wish to see fulfilled has its roots lay deep in the infrastructure development. A strong infrastructure serves as a backbone for nation building. And it is not just the roads and railways but it also includes a healthy development of India's real estate sector that is interlinked to infrastructure development. To quote American critic, Paul Goldberger, Infrastructure creates the form of a city and enables life to go on in a city, in a certain way.

To support the change being witnessed in the economic activities in the country coupled with the increasing consumerism in India, upgrading infrastructure is imperative. The report in your hand accentuates how multi-modal infrastructure development – that includes development of not just roads and railways, but also unprecedented development of ports, airports and real estate will play a pivotal role in the fueling of allied industries from where the raw materials and other services are sourced. Additionally, this model of infrastructure development is poised to open up endless avenues for trade and

transportation of passengers and goods across the length and breadth of our country.

It is interesting to note that the contribution of infrastructure and real estate to the overall economy has grown from 31.4% in 2011-12 to 32.1% in 2016-17, with real estate services being a key contributor. Indian Infrastructure attracted massive FDI worth INR 207 billion in last 5 years backed by a growing economy and strong fundamentals. A direct beneficiary of infrastructure development is a rise in job creation. With various government initiatives like the Pradhan Mantri Gram Sadak Yojana (PMGSY), we have witnessed a rapid growth in all-weather road connectivity to 85% of the 178,184 eligible rural habitations. By 2019, all villages are expected to be connected through a road network which eventually would lead to a rise in employment opportunities as well.

Moving over to check on the dynamics of rail development, in FY18, railways handled 8.3 billion passengers and with increasing demand, the passenger traffic is expected to touch 15.2 billion

by FY20. We may soon see India moving ahead of its 4th largest rail network position keeping in mind the constant efforts of the Government of India. Upgrading the rail networks has a direct influence on freight transportation as well. Dedicated freight corridors lead to industrial development. To promote intra-city commute, consistent efforts are being undertaken which includes a rapid expansion of metro rail. As of date, we have metro rail being developed in 6 cities and 18 other tier-II cities are under the planning stage. Similarly, monorail too is expected to begin operation in 10 cities besides being fully operational in Mumbai. All of these developments together ease connectivity thus eventually leading to better employment and education opportunities.

The report highlights the various initiatives being undertaken by the Government of India to enhance the existing and new infrastructure expansion projects – all of which have a single aim – to uplift the quality of life of India's common man besides taking India ahead to be at par with any other developed nation in the world.

ANAROCK

India, which is currently viewed as one of the hottest investment destinations is treading gradually towards becoming one of the biggest economies in the world.



Anuj Puri

Chairman
ANAROCK Property Consultants



India, the 2nd most populous country in the world, is going through rapid transformation both in terms of policies and infrastructure development. The policymakers have continued to uplift the quality of life in the country by consistently supporting both physical and social infrastructure development. India, which is currently viewed as one of the hottest investment destinations is treading gradually towards becoming one of the biggest economies in the world. To support this economic growth, the development of infrastructure is of utmost importance.

Infrastructure development which was restricted only to roads and railways in the past has witnessed a holistic approach during the past few years. The government's approach of multi-modal development has brought various aspects of infrastructure development under the radar, resulting in overall balanced development.

Infrastructure not only plays a vital role in economic development but also acts as a driver for real estate development in India. The decision to invest in real estate in India is closely linked to the existing, planned and proposed infrastructure development. With nearly 0.67 million unsold residential units (as of Dec 2018) across the top 7 cities in India, the dire need to expedite infrastructure development is of high importance.

The government's aim to enter the US \$5 trillion club economy by 2025 is highly dependent on real estate and infrastructure. Both the sectors walk together and are the major contributors to the overall economy. However, projects in these sectors are risky, capital intensive and are long gestation in nature, and so their implementation and execution need to be managed with high caution.

In an endeavor to capture how infrastructure development in the country is fueling the growth of the nation and its impact on the real estate industry, ANAROCK Property Consultants and Association of Infrastructure Industry (India) presents a white paper on **“Infrastructure and Real Estate - A Fulcrum for Change and Economic Growth: How India is shaping up”** which deep dives into the current scenario of these sectors in the overall economy and how the government's approach of multi-modal development is helping the overall balanced growth in infrastructure and real estate. The report will act as a guide to the industry stakeholders to understand the importance that these sectors hold in achieving the dream of a 'New and Better India.'

Experts Speak



Infrastructure sector has built on to become a key driver for the Indian economy. The challenges to providing time-bound projects are to adapt new technologies, methodologies and new outlook. It is very important that at this stage of growth we should keep the well-being of human capital at the core of every infrastructure development.

Dr. P.R. Swarup

Director General, Construction Industry Development Council



For Shaping New India by 2022, it is of paramount importance to set aside business-as-usual approach & cuddle cutting-edge technologies, nurture novelties & build capacities with enabling policy framework & Public-Private-Peoples' Partnerships.

Dr. Shailesh Kr. Agrawal

ED, BMTPC



The real estate industry is a very important part of the overall economy of India. It has backward and forward linkages with over 260 industries. While it engages a large number of skilled, semi-skilled and unskilled workers both from urban as well as rural areas and is a huge employment provider, the recent past has seen some slowing down. Unfortunately, this industry in India has been a harbor of unaccounted money, operates with a high degree of informality and has often left the consumer high and dry. The present national government has embarked upon the task of streamlining the real estate industry. The initiatives of bringing about legislation called RERA, the imposition of GST and carrying out demonetization have all resulted in a clean-up of the system. Fly by night operators have vanished. Only serious and long-term players are now in. Further, by initiating 'ease of doing business' in the area of construction permits has been another area where the government has taken positive steps. With all these in the pipeline, the real estate industry will only have to look up in the days to come. Affordable housing is going to be the area where we will see new India and new real estate playing.

Prof. Dr. P.S.N. Rao

**Chairman, DUAC, MoHUA, Government of India, New Delhi
Director, SPA New Delhi**

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Introduction

Infrastructure is the lifeline of India's economy. It is highly accountable for driving the country's overall development and enjoys intense focus from the government for initiating policies that would ensure time-bound creation of world-class infrastructure in the country. Transportation (be it road, railways, waterways,

air network), power sector, telecommunications, real estate among several others are the backbone on which the nation marches ahead. These segments bear a huge impact on other sectors and have a direct influence on the gross domestic product (GDP) of our nation.

However, developing the

country's infrastructure is itself a key challenge for the Indian government. It is not only critical for the movement of labor and capital across the length and breadth of the country but also instrumental in basic development as well as in increasing the speed of doing business.

Thus, infrastructure activity must be carried out in two different ways -

1 Enhancements will have to be commenced in prevailing infrastructure facilities, be it railway corridors, roads, electricity generation, and distribution, ports, airports etc.

2 Construction of new infrastructure in places and areas, particularly India's hinterlands, where connectivity continues to be a major challenge.

While the Indian government has been proactively introducing various policies favouring the all-round development of physical infrastructure facilities - what remains to be seen is whether these can be implemented?



The Significance of Infrastructure to Indian Economy

The Government of India is laser-focussed on multi-modal infrastructure development, which will help to accelerate the economic growth.

With the rising economic activities and growing needs of the population, creation and upgrading of infrastructure holds the key to the economic development of a nation. Development of roads, railways, ports, airports, industries, etc. not only aid in improving the quality of life but also help in the growth of allied industries from where the raw materials and other services are procured.

Over the past few decades, the primary focus was to upgrade the rail infrastructure, considered the backbone of the country- followed by a secondary focus on the development of roads. Considering that there was heavy dependence on these modes, these sectors were regarded as the core for aiding India's economic growth. However, with the rising population and increasing affordability, the

government has set its focus on multi-modal infrastructure development with the need to build all-round infrastructure facilities including roads, rail, airports, ports, etc. This multi-pronged development is likely to open up numerous avenues for trade and transportation of passengers and goods across the length and breadth of India.

Contribution of Infrastructure and Real Estate to the Indian economy

Infrastructure and real estate go hand-in-hand and have a direct bearing on India's GDP growth. Alternately, agriculture (which employs nearly 50% of the workforce and is the largest contributor to the GDP) is also highly dependent on real estate

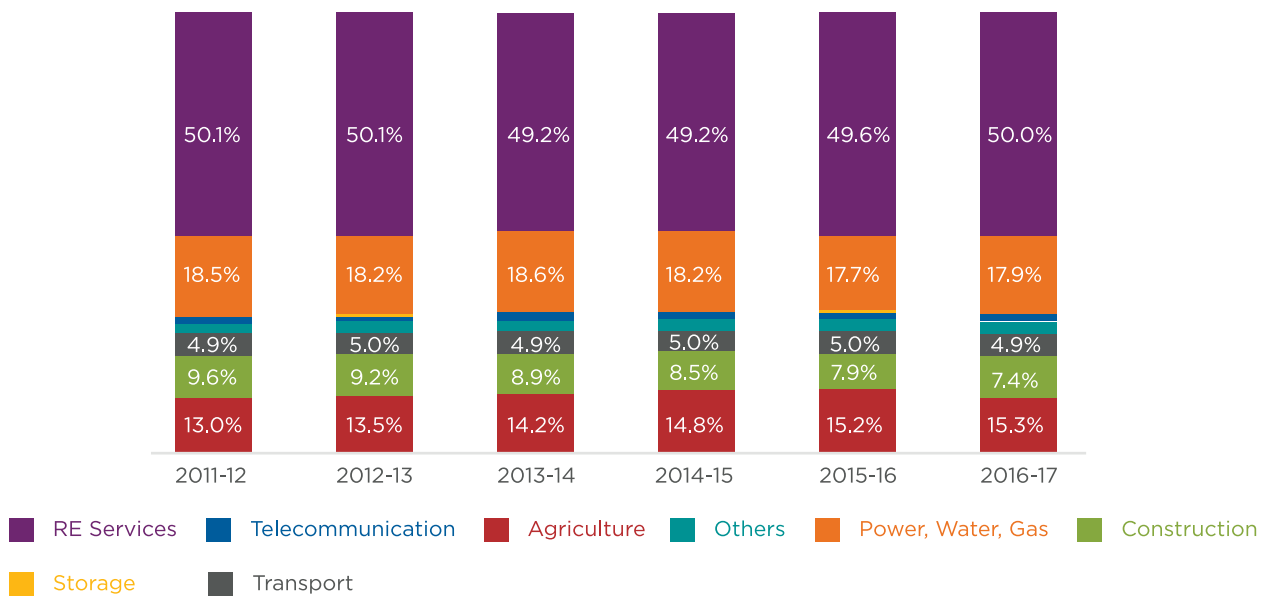
and infrastructure development and services for its economic growth. To give in numbers, the contribution of infrastructure and real estate to the overall economy has grown from 31.4% in 2011-12 to 32.1% in 2016-17, with real estate (RE) services being a

key contributor. With the government targeting US \$5 trillion economy by 2025, these sectors hold the key to achieve the set benchmark considering that they have a ripple effect on the overall economy.

Moreover, delay in implementation and execution of mega infrastructure projects not only adds to the cost and time overruns but also hampers the economic growth of the country.



Sector wise contribution



Note: Transport includes roads, railways, airways, waterways, and other services incidental to transport. Others include all non-infra sectors contributing to the GDP. Any difference in calculation is due to round off.

Source: National Account Statistics 2018

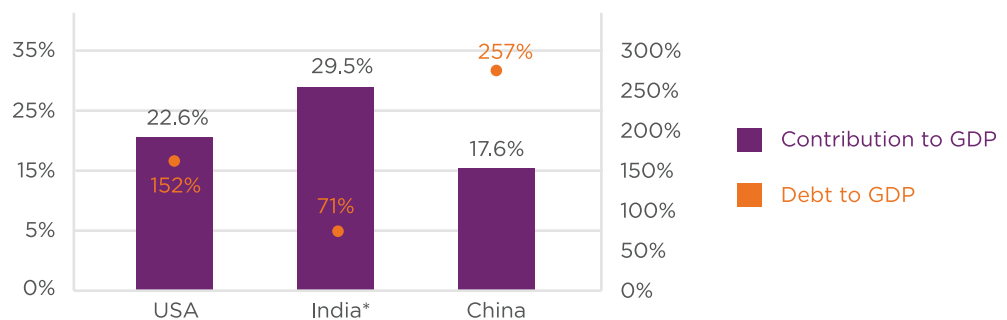
Infrastructure contribution to GDP of Developed vs. Developing nations

Infrastructure and real estate sector’s contribution to India GDP is the highest at 29.5% (including construction, real estate, transport, telecom and storage) compared to 22.6% of US and 17.6% of China. Higher contribution from infrastructure and real estate is fueling India’s economic growth and helping the nation to evolve as a dominant

country. Higher debt to GDP ratio indicates instability and a greater risk of the economy collapsing. Compared to the U.S. and China, India’s Debt to GDP ratio is the lowest, and the majority work done towards developing the nation is done via income from various sources within the country. This is a healthy sign.

India’s debt to GDP ratio is lower than the U.S. and China, which is a good indicator of the nation’s health.

Contribution comparison of developed vs. developing nations

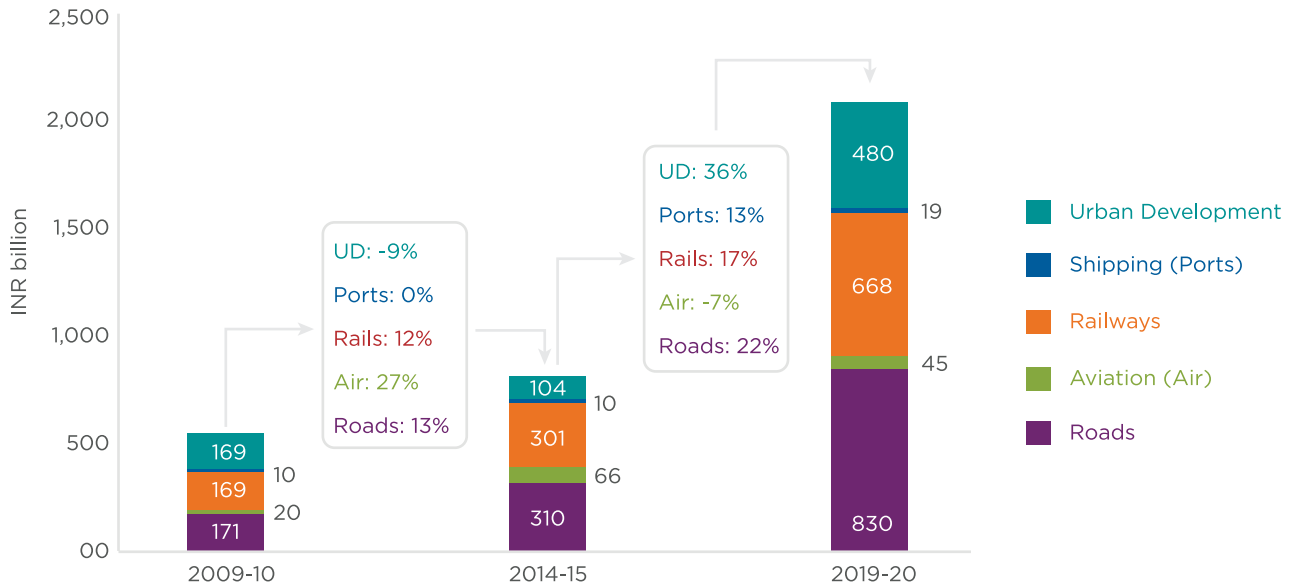


Note: India’s infrastructure and real estate contribution to GDP is as of 2016-17; the U.S. and China are as of 2017. Infrastructure comprises only of transportation, construction, real estate, and telecommunication sectors; excluding power.

Source: MOSPI, US BEU, NBS China

Rising budget outlay – A clear indicator of the nation’s focus on infrastructure development

Budget allocations to Infrastructure



Note: All growth numbers are in CAGR; UD: Urban Development

Source: Union Budget

There has been a significant push from the government on India’s infrastructure development ever since it came to power in 2014. Understanding that infrastructure is the lifeline of growth, the government has been proactively

providing financial support and implementing policy initiatives to boost the sector. Roads and highway and railways are the key sectors receiving maximum support and capital outlay from the Indian government. Also, the

government has been providing support to other sectors such as aviation, shipping, housing, urban development to ensure holistic infrastructure development.



Government Framework

Foreign Direct Investments (FDI)

FDI goes beyond simple financing and comes with added benefits such as market access and technology transfer.

There has been a significant FDI inflow in the infrastructure sector during the past few years, largely attributed to ease in FDI norms. India is today a part of top 100 clubs on Ease of Doing

Business (EoDB) rankings (ranked 77th) and as per the U.S., India tops as a destination for greenfield FDI investments.

According to the Department of Industrial Policy and Promotion (DIPP), FDI in infrastructure development sector (construction, power, real estate) between 2015-16 to 2018-19 (April - September 2018) stood at US \$15.4 billion. Concurrently, there has been a surge in FDI inflows in other sectors as well.

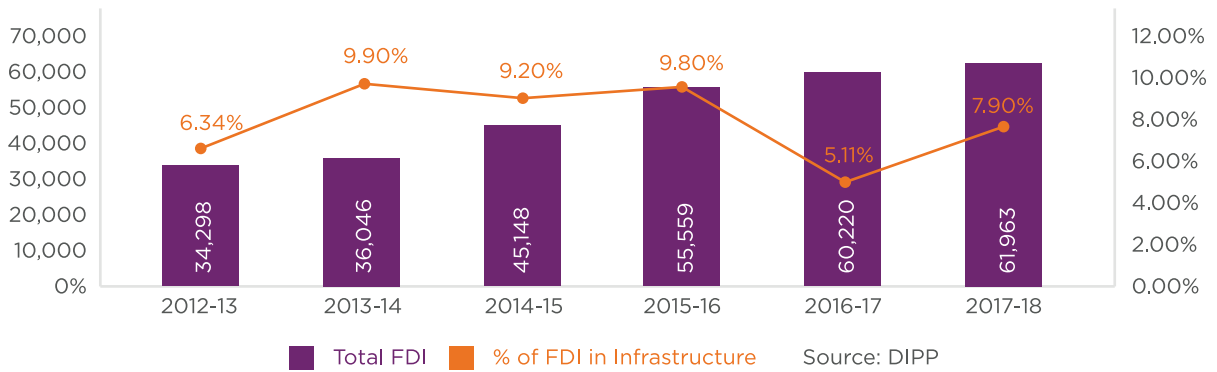
Infrastructure attracting FDI equity inflow

Indian Infrastructure attracted massive FDI worth INR 207 Billion in last 5 years backed by a growing economy and strong fundamentals. Rapid

liberalization in the FDI policies over the five years attracted maximum FDI to come via the automatic route.



FDI amount in US \$ Million



Sector-wise norms and incentives



Ports and Shipping

India’s major ports are under the central government’s purview and the non-major ports are managed by the state governments. FDI up to 100% through automatic route is allowed for construction and maintenance of ports.

FDI grew 5 times in Sea Transport - from US \$0.5 billion (2011-14) to US \$2.5 billion (2014-17).

Consecutive 10 years tax holiday of total 15 years period for EPC players.

including power trading. This attracted significant investments.

During the period from 1990-91 to 2011-12, power generation grew at a rate of 5.8% per annum. Power generation grew at 7% CAGR from 2010 till January 2018 with an installed capacity at 334.4 gigawatts. By March 2018, -99 gigawatts of capacity were added over 2013.

Consecutive 10 years tax holiday of a total 15 years period for EPC players for projects completed by March 2010.

High-Speed Rail Project: The total cost of the project is estimated around INR 1.08 trillion, funded by (Japan International Cooperation Agency) JICA, committing about 85% of the total cost of the project whereas the remaining cost will be borne by the state governments of Maharashtra and Gujarat.

Consecutive 10 years tax holiday of total 20 years period for EPC players.



Railways

Railways are considered the foremost mode of transport for freight and passengers. However, the railways sector is cladding severe financial crunch to the tune of INR 300 billion every year. Thus, the Indian government decided to liberalize 100% FDI to attract foreign investors and improve overall efficiency.



Roads

With government opening the FDI doors (100%) in the roads sector, the majority of the foreign investors in the Indian roads sector have constituted consortium with Indian companies to participate in the development of road projects in the country.

The ambitious Bharatmala Pariyojana aims to deliver seamless connectivity within the interior and backward areas and India’s borders, and develop



Power

The Indian government has opened the power sector and allowed 100% FDI in all segments

around 35,000 km of roads in Phase-I at an estimated cost of INR 5.35 trillion.

In addition, the government has successfully rolled out over 60 projects worth more than USD 10 billion based on the Hybrid Annuity Model (HAM). HAM has balanced risk appropriately between private and public partners and boosted PPP activity in the sector.

Consecutive 10 years tax holiday of total 20 years period for EPC players.



Real Estate

The Indian real estate industry has transformed in accordance with the changing market dynamics. Landmark reforms and policy changes such as GST, RERA, Demonetization, etc. have been implemented during the last two years. Improved

transparency and greater confidence in the sellers added to the promise of higher returns and has attracted interest to invest in various sectors of real estate including – retail, commercial and logistics.

Tax holiday to developers for projects approved before 31st March 2020 under affordable housing.

Additionally, for EPC players along with the tax holiday, minimum alternate tax (MAT) of 11.33% may be payable on book profits during the period.

Public-Private Partnership

Public-Private Partnership (PPP) is a mode of providing public infrastructure and services by the government in partnership with the private players. The associations in the PPP mode have been under various models based on the kind of project which is undergoing.

PPP mechanism is a major element of India's infrastructure

creation efforts as there is a massive investment requirement in the sector. The conventional form of finance – the budgetary allocation by the government is not enough to meet this big investment size. So, the government at present is making concerted efforts to modify and energize the PPP mode of infrastructure generation.

India's experience with PPP in a serious manner started from 2006 onwards. This model requires private sector participation in public asset creation through money, technology, and management. For this, several models inviting their participation were launched for different projects.



Some of the commonly adopted models operate on different conditions on the private sector regarding the level of investment, ownership control, risk sharing, technical collaboration, project duration, financing mode, tax treatment, management of cash flows, etc.

However, with the evolving nature of projects, this government is consistently working on various other models to introduce PPP models for multiple sectors and make these models lucrative for private players.

Some of the commonly adopted forms of PPPs include:

Model	Features
EPC (Engineering Procurement and Construction)	The private promoter is only responsible to construct the facility without the risk of operating, maintaining and financing it.
BOT (Build-operate-transfer)	<p>The conventional method of PPP where the private promoter is responsible to design, build, operate (during the concession period) and transfer back the facility to public enterprise.</p> <p>The private promoter has to pay annually to the public enterprise and will collect revenues from the project during the operations.</p> <p>Majorly used in the development of 'Roads'</p>
BOO (Build-own-operate)	It is a variant of BOT with a difference that the ownership of the new facility will rest with the private promoter.
BOOT (Build-own-operate-transfer)	<p>This is also in lines of BOT with the ownership of the asset to be transferred to the government after the agreed timeframe is complete.</p> <p>Majorly used in the development of 'Roads & Ports'</p>
BOLT (Build-operate-lease-transfer)	The government gives a concession to the private promoter to build a facility (and possibly design as well), own the facility, lease the facility and then at the end of the agreed period, transfer the ownership back to the government.
DBFO (Design-build-finance-operate)	The private promoter is responsible for the designing, construction, financing, and operations of the project for the agreed concession period
DBFOT (Design-build-finance-operate-transfer)	In addition to DBFO, the maintenance of the project is also with the private operator for the agreed concession period
LDO (Lease-develop-operate)	<p>The government retains the ownership of the newly created facility and receives payments in terms of a lease agreement with the private promoter.</p> <p>This model is generally used in 'Airports'</p>
ROT (Rehabilitate-operate-transfer)	The government/local bodies allow the private promoter to rehabilitate the facility, operate and transfer it back at the end of the concession period.
MC (Management Contract)	The private promoter has the responsibility of a full range of investment, operation and maintenance functions
SC (Service Contract)	The Private promoter performs an operation or maintenance for a fee for a specific period

Infrastructure Projects Shaping India

There are several mega infrastructure projects shaping India which are not only fueling economic growth but also indirectly driving the real estate demand in the country. These infrastructure initiatives are

also creating massive direct and indirect job opportunities. Increased job opportunities lead to a rise in housing demand, primarily in the affordable segment considering that such mega projects employ junior-

level unskilled and skilled workers in large quantities.

Several segments of infrastructure contribute to the growth of the nation. A few major ones along with a key project being executed is detailed below:

Roads

6%

GDP contributed by road transport in 2018

133km

highest ever construction of rural roads per day in 2016-17

40km

construction of National Highways targetted per day in 2018-19

\$82 Bn

to be invested by 2022 under Bharatmala Paryojna

Overview

The economic growth and pace of infrastructure development significantly depend on the presence of good road network since it provides seamless connectivity to remote areas,

accessibility to markets, schools, hospitals; and opens backward regions to trade/investment and establishing links with airports, railway stations, and ports. The total road network in India is

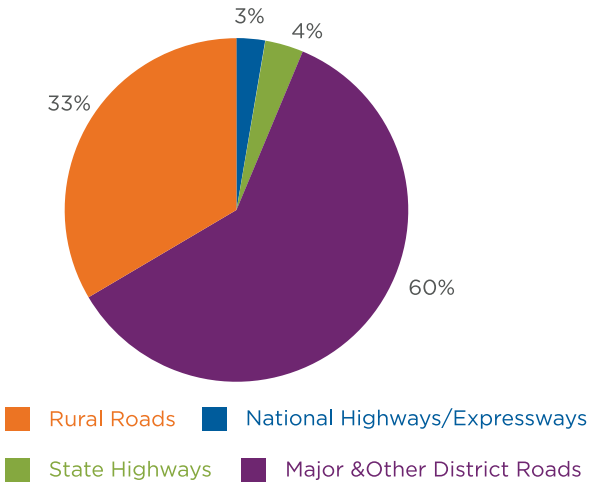
around 5.5 million km, which is the 2nd largest road network in the world after the U.S. (6.58 million km).



Road Construction in India

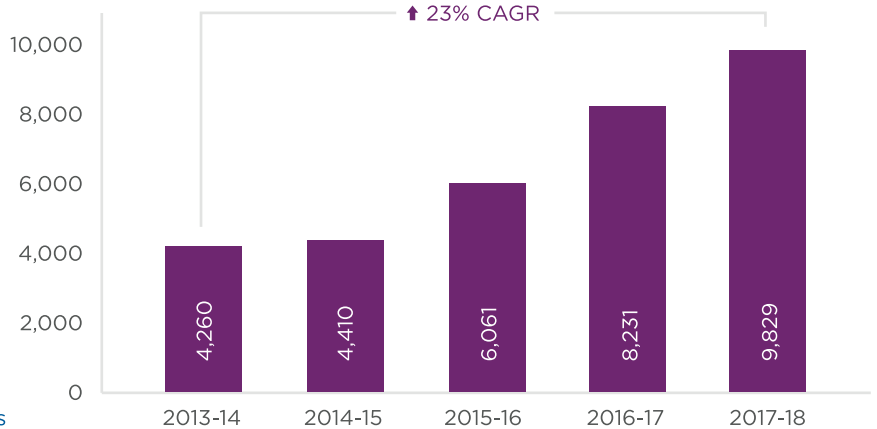
India is the fastest road developer in the whole world with the current pace of construction of 27 km a day (as of 2017-18), rising from 12 km a day during 2014-15. While a total of 4,410 km highway stretches was constructed in 2014-15, it increased to 9,829 km in 2017-18.

Road Distribution in India



Source: NHAI

Highway construction in India (km)



Source: Ministry of Road Transport & Highways

Policy Initiatives

The Government has made incessant efforts to identify issues that impact the road sector and addressed the bottlenecks through appropriate policy interventions. A few of them are listed below:

Rural development

The Government of India launched the **Pradhan Mantri Gram Sadak Yojana (PMGSY)** on 25th December 2000 with its primary objective being to provide connectivity, by way of an all-weather road to the eligible unconnected habitations in the rural areas. Till date, Government of India has succeeded in providing road connectivity to 85% of the 178,184 eligible rural habitations and all villages are expected to be connected through a road network by 2019. Construction of rural roads has improved three times during the last five years.



Issuance of tax-free infrastructure bonds

Infrastructure finance companies, such as India Infrastructure Finance Corporation (IIFCL), National Highways Authority of India (NHAI), Housing and Urban Development Corp (HUDCO), Power Finance Corporation (PFC) and India Railway Finance Corporation (IRFC), have been permitted to issue tax-free bonds. Considering that massive investments are required for road development projects, the government has allowed companies to raise funds through various sources.



Value Engineering Programme

The Ministry of Road, Transport, and Highways have decided to device a Value Engineering Programme that endorses new technologies and materials in highway development projects. This programme is performed under PPP mode or public funding mode with the following objective:

- To use innovative technology, materials, and equipment to reduce the cost of projects and make them more environmentally friendly.
- To ensure that the roads or bridges and other assets get constructed much faster, are structurally stronger and more durable.



Rising Development of National Highways in India

While national highways account for a mere 3% of the total road transport, it carries 40% of total road traffic of India. The economic development of the country directly depends on the quality and accessibility of national highways.

National highways in India has become an essence of the road network as they connect the northern,

southern, eastern, and western parts of India.

The core reason for the development of national highways was to Improve transport efficiency - enhance safety, provide a better linkage to major ports, special economic zones and pilgrimage tourist centers and connect capitals of different states.

The total cost of roads and highways infrastructure in India has increased from INR 325 billion in 2013-14 to INR 1.2 trillion in 2017-18 mainly because of strong trade flows between states and rising industrial activity.

National Highways Development Project (NHDP)

The national highways in India which stretch to 115,400 km (as on July 2018) serve as the major network of the country. To upgrade and strengthen the national highways, the Indian government has introduced various initiatives and programs under the NHDP. A few of them are briefly mentioned here.



Planned Development	Description	Total cost (INR billion)	Total length (km)	Total length completed (km) (2017-18)
Phase-I	Corridors, Port connectivity	303	7,522*	7,521
Phase-II	4/6-laning North-South	~343	6,647	6,058
Phase-III	(Phase III A + III B) Upgradation, 4/6-laning	~806	24,000**	7,507
Phase-IV	2-laning with paved shoulders	278	33,303***	3,773
Phase-V	6-laning of GQ and High-density corridor	278	6,500	2,544
Phase-IV	Expressways	~167	1,000	NIL
Phase-VII	Ring Roads, Bypasses and flyovers and other structures	~167	700 KM / Flyovers/ bypass	22

Note: *Chennai – Ennore port connectivity two projects (24 km) has been re-awarded, these two projects were merged to another project (6 km) under Phase – I. Total length increased by 24 km. **11,809 km was assigned to NHAI remaining 300 km with MoRT&H
*** 13,203 km was assigned to NHAI remaining 6,797 km with MoRT&H
Source: NHAI

To improve the efficiency of the National Corridor (Golden-Quadrilateral and NS-EW corridor), it was essential to decongest the choke points of national highways through lane expansion, construction of ring roads, bypasses / elevated corridors and logistics parks at identified points.

With this agenda, the Indian government introduced ‘Bharatmala Pariyojana’ in 2017 - the most ambitious highway development plan for road infrastructure in India.

Project in Focus: Bharatmala Pariyojana

To boost the Indian economy and increase freight road transport, the Indian government announced the Bharatmala project in 2015. This project aims to change the face of the road and highway sector of India and bring in abundant economic opportunities. Bharatmala Pariyojana aims of 50 National corridors which will connect 550 districts with build highways from Gujarat, Rajasthan, Punjab, Haryana, the

entire string of Himalayan states – (Jammu and Kashmir, Himachal Pradesh, Uttarakhand) –moving to portions of borders of Uttar Pradesh and Bihar, stirring to West Bengal, Sikkim, Assam, Arunachal Pradesh, and Indo-Myanmar. This project focuses on improving the efficiency of existing corridors through the development of multi-modal Logistics Parks and the elimination of bottlenecks. From

these 50 corridors, 24 logistics parks have been identified which will cater to key production and consumption centers accounting for 45% of India’s road freight. After completion of the project, 70-80% of freight will move along national highways as against the 40% at present, which will further improve the efficiency of freight movement on existing corridors and reduce logistics cost by 25%.

Overview

Cost	INR 5.35 trillion (Phase-1)
Length	34,800 kms
Deadline	2022
Challenges	The Bharatmala programme may result in traffic diversion from the existing road network to new roads, thereby affecting the toll collection and, consequently, the debt servicing ability of some of the BOT (built own transfer) projects.

Project Snapshot



Allocation of funds for Bharatmala Project

The total investment in Bharatmala Pariyojana is estimated at INR 5.35 trillion, making it the single largest outlay for a government road construction scheme as of 2018. There are six components under this approved program apart from balance works under the ongoing NHDP who will be borrowing from the market through the Internal

Extra Budgetary Resources (IEBR) route.

Out of the total investment of INR 5.35 trillion, INR 2.09 trillion will be generated through the market borrowings, INR 1.06 trillion through private investments and INR 2.19 trillion will be raised through the Central Road Fund. (CRF).

Current Status

As of 2018, 4,850 km have been awarded and are in various stages of implementation for which of INR 745 billion expenses have been incurred. With the current pace, the target to complete the Phase-I within the speculated timelines is difficult

to achieve. As of 2018, the projects awarded are just 14% of the desired target. With the remaining 3 years, the government needs to focus on timely delivery of the project so that it doesn't cost the government more than the planned investment.

Current Issues and Challenges

The first phase under the project has an estimated investment outlay of INR 5.35 trillion according to the investment plan approved by the Cabinet Committee on Economic Affairs (CCEA), spanning a period of five

years (2017-22). The first phase of the project is facing delay due to land acquisition, detailed project report (DPR) preparation, the bidding process, the appointment of concessionaires and physical construction. Of the 4,850 km

highway awarded, bid documents have not been submitted for 58 projects having a length of more than 3,200 km. This will likely lead to more stringent award targets for the remaining part of the year.



India has the 2nd largest road network in the world.

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India has the highest road density in the world with more than 4 kms/1,000, population

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National highways consist of only 3% of the road network but handles nearly 40% of the overall road traffic.

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Low quality and inefficiency of road infrastructure.

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High dependence on BOT-TOLL model for development and operations of roads.

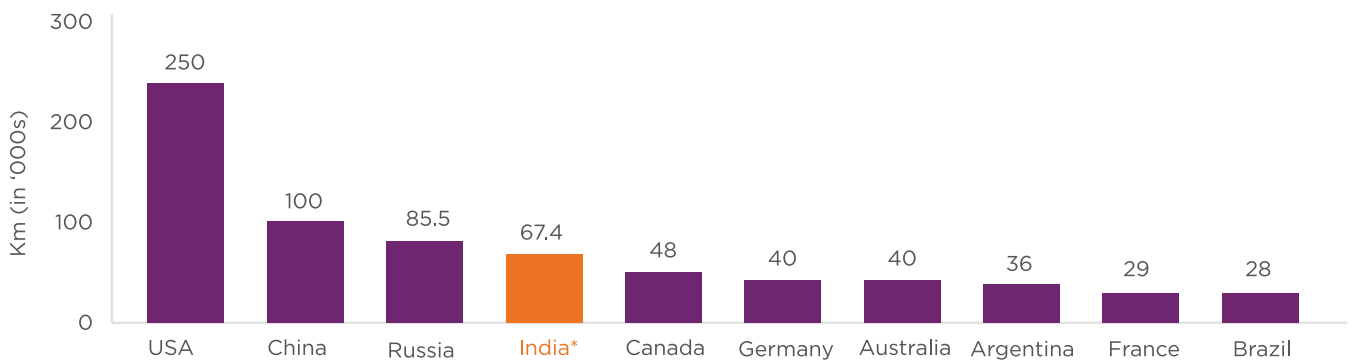
Railways

Indian railways are the 4th largest rail networks in the world.

Indian Railway carries 23 million passengers and 3 million tonnes of freight daily. The railway was first introduced by the British in India to create a mode of transportation within the country for passengers as well as goods.



World's Largest Rail Networks

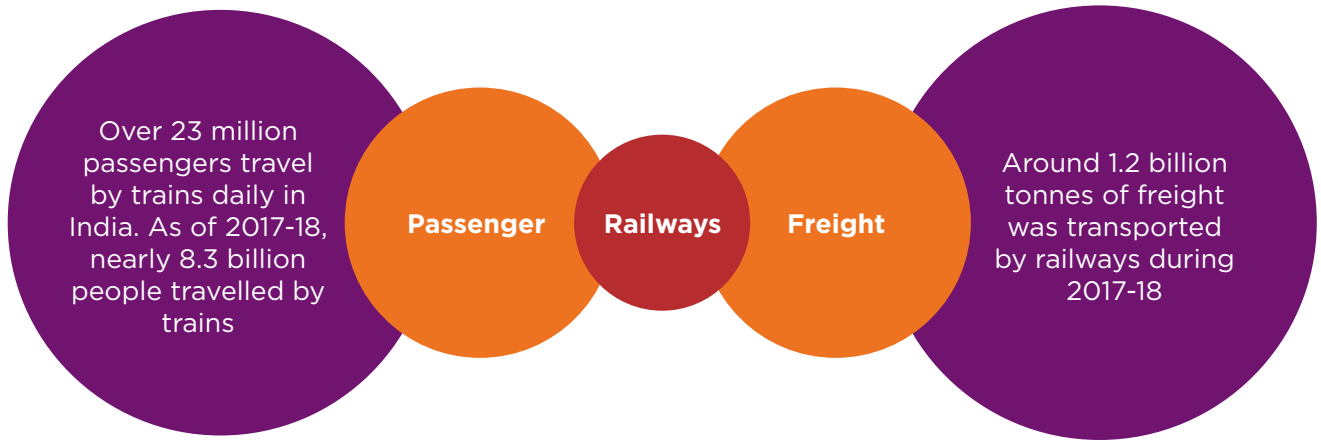


Note: *India railway km are as of 2017, rest countries data is as of 2014

Source: www.railwaytechnology.com

Indian railways is a department undertaking of the Government of India (GoI), which owns and operates most of India’s rail transport and is overseen by Ministry of Railways. As of 2016-17, Indian Railways has a total route network of around 67,400 km and it operates nearly 22,300 trains daily on them. Railways revenue is dependent on two segments, i.e. passengers and freight.

Segments of Indian Railways



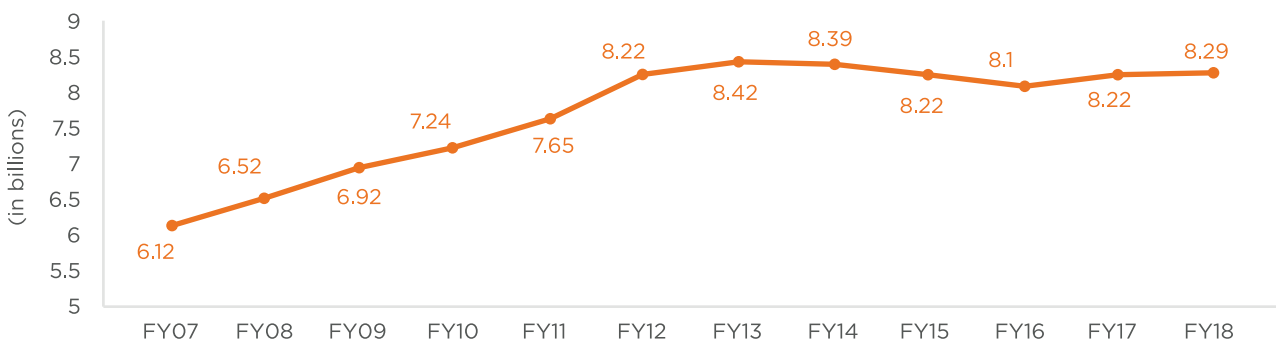
Passenger & Freight Traffic for Indian Railways

Railways have been the most preferred option for long distance travels due to lower fares than air. The passenger traffic for railways has been growing rapidly over the years.

Increasing urbanization and improving income standards are fueling growth for travel. In FY18, railways handled 8.3 billion passengers up from 6.12 billion during FY07. Over a decade, the

traffic has grown at a rate of 2.8% CAGR. With increasing demand, passenger traffic is expected to touch 15.2 billion by FY20, and so there’s a dire need to improve the rail infrastructure.

Passenger Traffic for Indian Railways



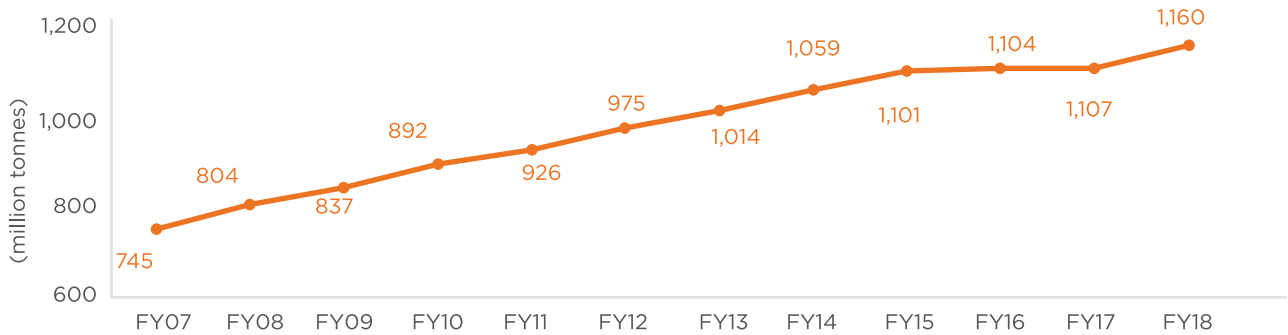
Source: Ministry of Railways

With continuous support from the government, inclination towards improving the freight volumes in the railways, Indian railways clocked ~1,160 million tonnes of freight transportation

during FY18 up from ~1,107 million tonnes during FY17. Freight traffic has witnessed a growth of ~4% CAGR till FY18 from ~745 million tonnes during FY07. With the increased focus to

develop dedicated corridors, the government is targeting freight volumes to increase to 2,165 million tonnes by FY20.

Freight Volume for Indian Railways



Source: Ministry of Railways

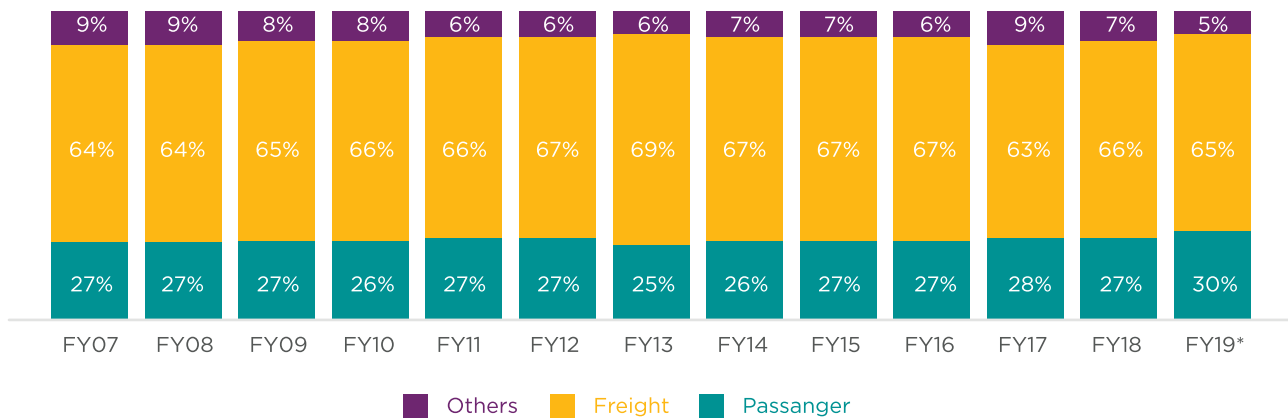
Revenue of Indian Railways

A major proportion of revenue for Indian Railways comes from freight traffic. With the rising competition from the road, air, and water transport,

railways have shifted their focus to increase connectivity by developing dedicated freight corridors running across the length and breadth of

the country and connecting Tier-II and Tier-III cities with manufacturing facilities to mega Metro or Tier-I cities.

Share of Revenue



Note: P-Provisional; * indicated till October 2018. Any difference in calculation is due to round off.

Source: Ministry of Railway

To further strengthen the rail infrastructure, the government is continuously adding new projects so as to be future ready and compete with the developed nations. Projects such as bullet train, high-speed rail corridors, dedicated freight corridors,

electrification, doubling of the railway line and connecting the unconnected ends of the country are on the radar of the current government. One of the biggest initiatives taken by the government for the railways industry is the development

of dedicated freight corridors. Eastern Dedicated Freight Corridor is one such project which will connect North India with East India to strengthen the overall structure of the sector in the country.

Project in Focus: Eastern Dedicated Freight Corridor (EDFC)

The Eastern Dedicated Freight Corridor with a route length of 1,856 km consists of two distinct segments: an electrified double-track segment of 1,409 km between Dankuni in West Bengal and Khurja in Uttar Pradesh and an electrified single-track

segment of 447 km between Ludhiana (Dhandarikalalan) - Khurja - Dadri in the state of Punjab, Haryana and Uttar Pradesh. Eastern Corridor is projected to cater to a number of traffic streams - coal for the power plants in the northern

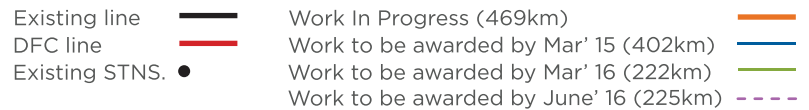
region of U.P., Delhi, Haryana, Punjab and parts of Rajasthan from the Eastern coal fields, finished steel, food grains, cement, fertilizers, limestone from Rajasthan to steel plants in the east and general goods.

The following table depicts the distance traversed through each state:

State	Distance (Km)
Punjab	88
Haryana	72
Uttar Pradesh	1,058
Bihar	239
Jharkhand	196
West Bengal	203
Total	1,856

Source: DFCCIL

Eastern Dedicated Freight Corridor



Traffic Projections

As per the RITES project report, the traffic that would move on the Eastern DFC, excluding the base year traffic (2005-06), is projected as below:

Traffic Projections on Eastern DFC (in million tonnes/year)

Commodity - Up	2016-17	2021-22	Commodity - Down	2016-17	2021-22
Power House Coal	54.46	61.96	Fertilizer	0.23	0.42
Public Coal	0.61	0.95	Cement	0.78	1.52
Steel	8.24	9.74	Limestone for the steel plants	4.99	5.0
Others	1.61	2.96	Salt	0.68	1.03
Logistic Park	1.20	2.40	Others	1.61	2.96
Sub-total	66.12	78.01	Sub-total	9.48	13.32

Grand Total

(2016-17) 75.60

(2021-22) 91.33

Source: DFCCIL, RITES Report: Table 14.3 of Eastern Corridor PETS Report

A logistics park is also proposed to be set up at Kanpur (U.P.) and Ludhiana (Punjab). These parks are proposed to be developed

on Public Private Partnership mode by creating a sub-SPV for the same. DFCCIL proposes to provide rail connectivity to such

parks and private players would be asked to develop and provide state-of-art infrastructure as a common user facility.

Developing a DFC not only helps to improve the transport infrastructure but also establishes dedicated industrial pockets or corridors along the route. This bears a spiralling effect on the economy of the entire influence region and also indirectly drives the housing demand.

Financing of the project

The overall cost of Eastern DFC is estimated at INR 250 billion which excludes the cost of Sonnagar-Dankuni stretch which will be executed under the PPP model. The corridor is being executed in a phased manner

with funding from the following sources:

1. Funding from the World Bank for Ludhiana-Mughal Sarai section (1,192 Kms) as a Loan Agreement totaling to INR 210 billion

2. Equity funding of INR 36.8 billion from the Ministry of Railways for Mughalsarai-Sonnagar section (126 Kms).

3. PPP for Sonnagar-Dankuni section (538 Kms).

Current Status

As of November 2018, Indian railways has completed nearly 200 km of the total 1,000-km

planned in Uttar Pradesh in the Eastern Dedicated Freight Corridor (EDFC). The project

which was set to be completed by fiscal 2017 missed the deadline which was further

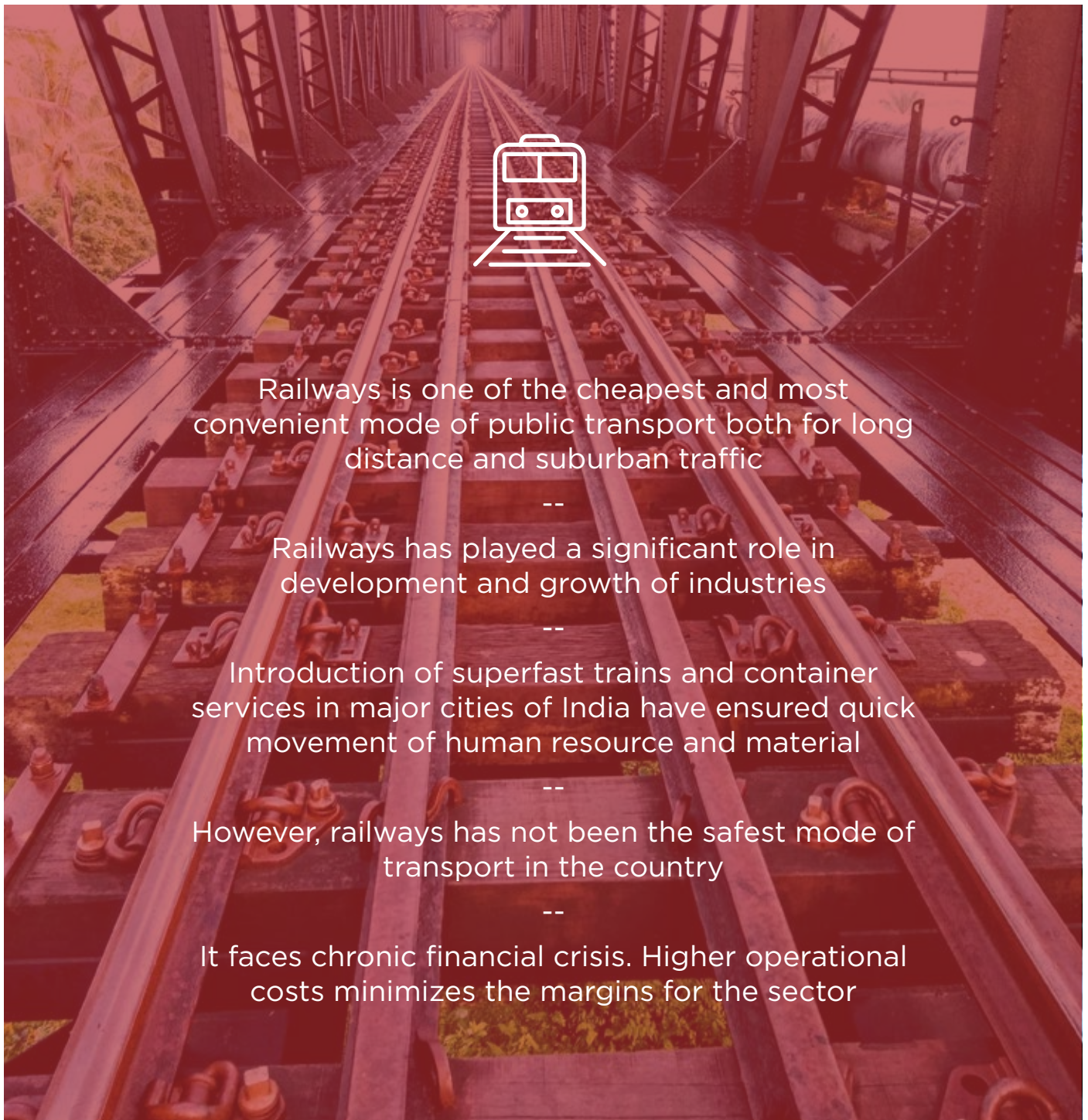
pushed to fiscal 2018 and now is set to March 2020. **With the 800 km remaining to be completed within the next 12 months, it seems like the deadline will be further pushed and is expected to be completed by fiscal 2022.**

The delays in project completion

were initially due to the land acquisition problems which the government was facing. Of the total 1,000-km planned corridor, land acquisition for 800+ km was done long back but a small stretch was stuck due to protests which caused the delay. With the

completion of the corridor, the government is aiming to capture the lost freight transport demand by railways back as it will be equipped for heavy haul train operations of 25-tonne axle loads and at a higher speed of 100 km/hr.

Challenges pertaining to land acquisition continues to haunt mega infrastructure projects of India. This results not only in time escalation but also leads in cost overruns which severely impacts the economic growth.



Airports

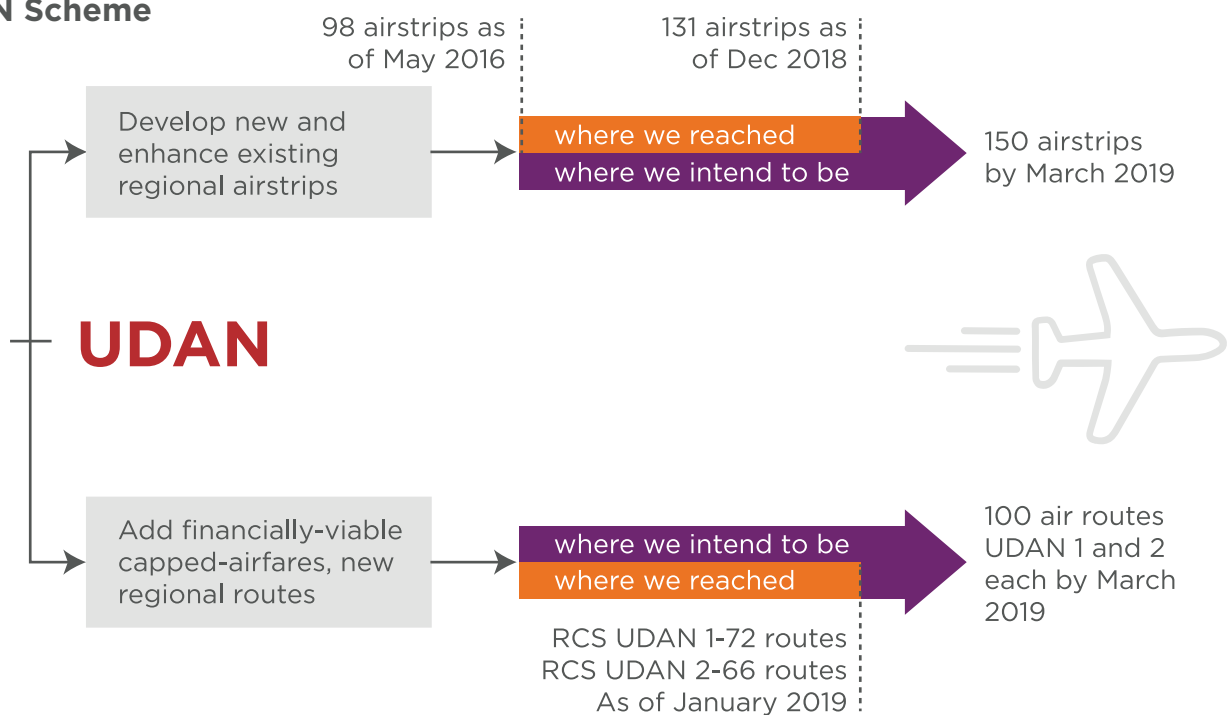
Air transportation is a key mode of travel in the country and government is focused to enhance the connectivity by adding brownfield and greenfield airstrips to the existing network of airports. The government is adding airports to Tier-II

and Tier-III cities to improve connectivity with metro and Tier-I cities. UDAN-RCS with the agenda of 'Ude Desh ka Aam Nagrik' is a regional airport development scheme launched by the Government of India. The scheme aims to make air travel

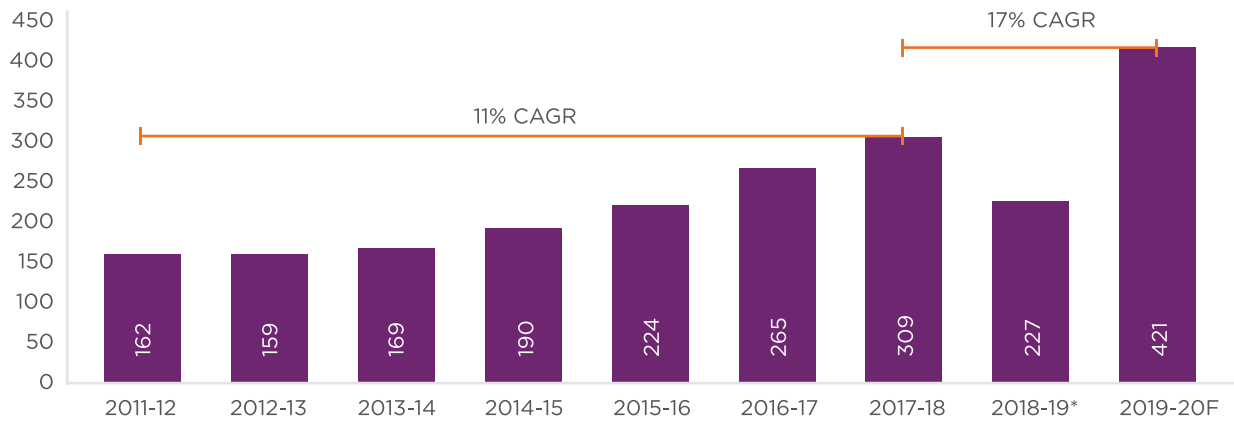
affordable and widespread, to boost inclusive national economic development, spur job growth and ensure air transport infrastructure development of all regions and states of India.



UDAN Scheme



Air passenger traffic in India (in millions)



Note: * indicates April 2018-November 2018 period only; F: Forecast

Source: IATA, AAI, World Travel & Tourism Council

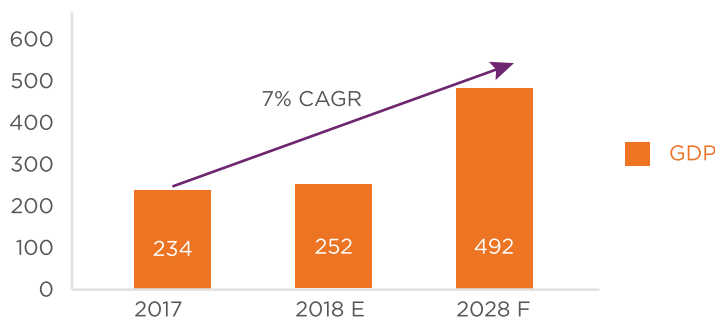
India is set to surpass the UK and become the third largest aviation market in the world by 2024. With rising per capita income and air travel becoming affordable and accessible, the demand to fly for business as well as leisure is rising. The

UDAN scheme coupled with the addition of new airstrips is also fueling the growth of air passengers in the country.

Travel and tourism continue to support the GDP growth of India and is set to become one

of the biggest contributors to the overall economy in the near term. Travel and tourism’s total contribution (direct and indirect) to the overall GDP stood at US \$234 billion in 2017 (more than 9.4% of GDP) which is expected to increase to US \$252 billion by 2018.

Travel & Tourism Contribution to Overall GDP (US \$ billion)



Note: E: Estimated; F: Forecasted

Source: WTTC

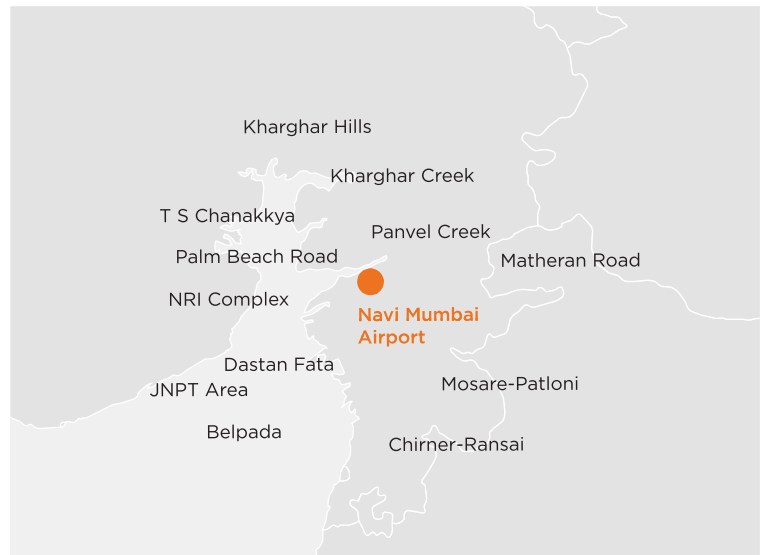
With the continuous rise in spending towards travel, the total contribution of travel and tourism to the GDP is expected to touch US \$292 billion by 2028 (nearly 9.9% of GDP) as per industry estimates. To ease and improve air traffic conditions at Mumbai, the busiest financial center of India, a greenfield development of Navi Mumbai International Airport has been planned.

Project in Focus: Navi Mumbai International Airport (NMIA)

Navi Mumbai International Airport (NMIA) is an under construction greenfield airport being developed at the satellite township of Mumbai to share the rising burden of air traffic at the existing CSIA airport. It will be a second airport for Mumbai Metropolitan Region as India’s first urban multi-airport system.

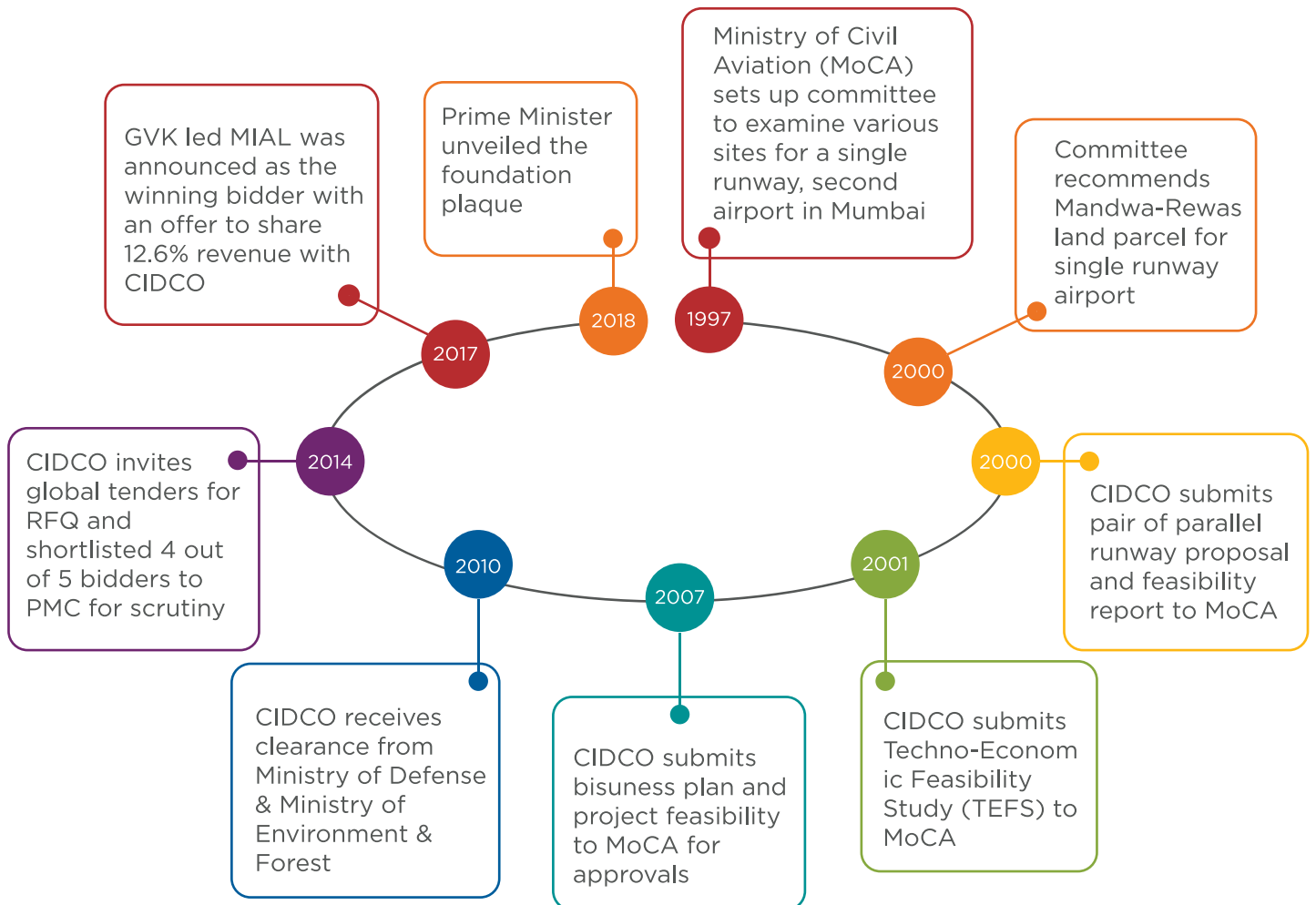
Project Overview

Parameters	Project Statistics
Phase-1 capacity	10 million passengers per annum
Full capacity	More than 60 million passengers per annum
Development cost (Overall)	INR 160 billion
Total area	2,900 hectares
PPP Model	Design-Build-Finance-Operate-Maintain-Transfer



The project is awarded to GVK group which has formed a special purpose vehicle (SPV) with the CIDCO. CIDCO and GVK group will hold 74% of the share and 26% equity shares of Navi Mumbai International Airport Ltd (NMIAL).

Project Lifecycle Snapshot



Current Status

The proposed airport which first came into consideration by the nodal agencies in 1997 came across many hurdles from various ministries as well as faced huge land acquisition challenges in the last 2 decades. The project's

foundation stone was laid down by the PM in 2018 finally. The pre-work for the airport site including flattening the Ulwe Hill, reclaiming marshland, diverting the Ulwe river, and shifting power transmission lines which started

in mid-2017 is expected to take 2 years to complete. As per the Civil Aviation Secretary, the first flight from Navi Mumbai airport is expected to begin in late 2021.

Navi Mumbai airport has been in discussions for many years and a significant delay has resulted in a massive cost overrun. In addition, the real estate market in Navi Mumbai also witnessed massive speculation during the past few years and it seems like the prices have already factored the airport's impact. Nonetheless, once the airport sees the light of the day, Navi Mumbai's location profile will be elevated significantly.



Consistent rise in air traffic both domestic and international is helping the industry grow

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Increasing presence of low-cost carriers coupled with rising disposable incomes is leading to its growth

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Higher focus on regional connectivity to enhance the industry

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High dependence on crude prices acts as a major threat to the industry

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Higher currency fluctuation rates also impact the profitability of the sector

Ports

Trading between different nations has always been a significant contributor in terms of increasing wealth and growing economy. Ports are the gateways for EXIM trade and play a crucial role in the trade of the country.

According to the Ministry of Shipping, approximately 95% of India's trade by volume and 70% by value moves through maritime transport which clearly highlights the importance of ports and their contribution

in supporting the growth and development of the Indian economy. Higher the quantity of goods and passengers, the more infrastructure provisions and associated services are required.



Major Ports of India

12

Major Port

Today, our country has a total 12 major and 187 minor ports spread over 7,517 km long coastline which handles extensive cargo volumes, governed by different legislation and structures. As trade keeps growing, it directly boosts the economic development of the cities

187

Minor Ports

which handle cargo traffic. Manufacturing industries need a safe and cheap means of exporting finished goods, importing raw materials and hence a lot of western countries now moving towards the low-cost countries for their manufacturing functions. This

7,517km

long coastline

clearly indicates that India is a prospective manufacturing hub after China. These industries, in turn, create tremendous employment opportunities and elevate the lives of direct and indirect stakeholders associated with the businesses.



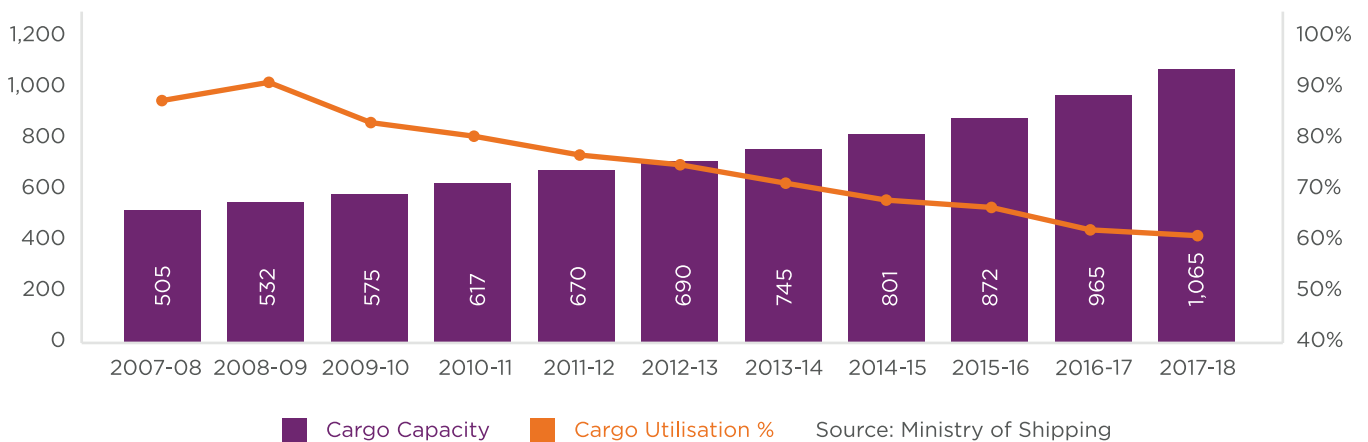
Capacity and Utilisation of Major Ports

India’s 12 major ports recorded a 35% growth in cargo capacity during 2018-19 at 1,451 million tonnes (MT) as compared to 1,065 MT in its preceding year. This growth was witnessed majorly due to the increase in handling of cargo such as coal, containers and finished fertilizers. Notably, nine major ports -

Kamrajjar Port, Kolkata (including Haldia), Paradip, Visakhapatnam, Chennai, Cochin, New Mangalore, JNPT and Kandla registered growth in traffic. Cochin (16.52%), Paradip (14.68%) and Kolkata (13.61%) are the 3 major ports which received maximum growth during 2018-19. However, due to additional capacity creation in

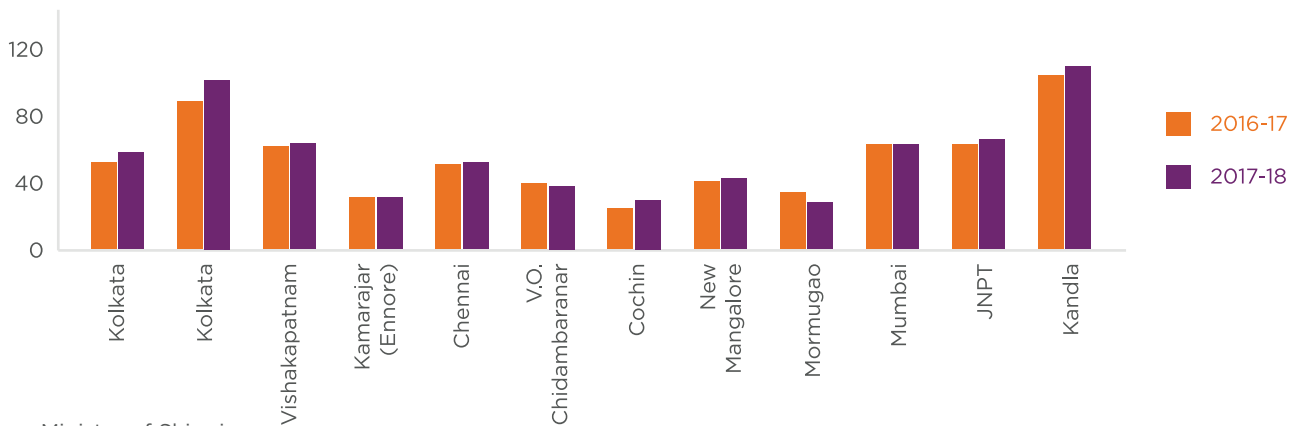
recent years, capacity utilization in India’s major ports have fallen steadily from 85% in 2010-11 to 60% in 2018-19. The long term aim of increasing trade in India is accounting for aggressive expansions in ports which is accounting for the decline in ports utilization in the short term.

Cargo capacity and utilization of major ports in India (Million Tonnes)



With the aim to push the overall port development, the government introduced the Sagarmala Programme where 142 port projects involving an investment of around INR 91 billion for capacity enhancement have been identified for implementation during the next 10-15 years.

Cargo capacity and utilization of major ports in India (Million Tonnes)



Source: Ministry of Shipping

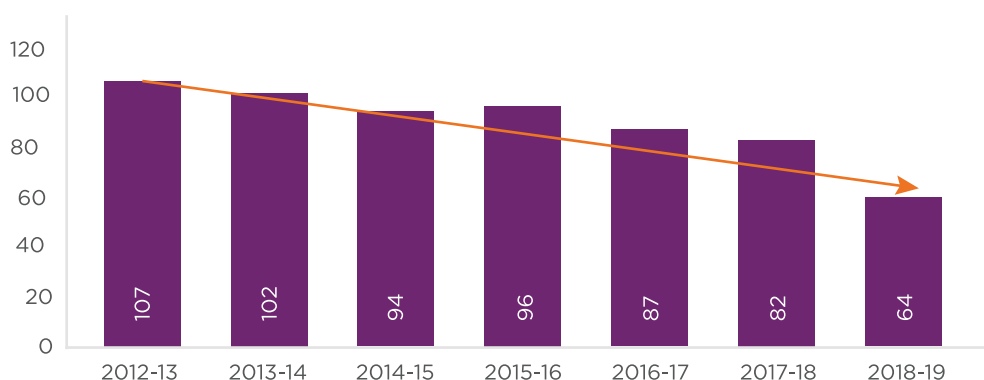
Improvement and Efficiency

While increasing the capacity of major ports, the Ministry of Shipping has been focused to improve their operational competencies through policy and procedural changes and mechanization. As a result, key

efficiency parameters have improved considerably. The Average Turnaround Time has reduced by 25% to 64 hours in 2017-18 from 87 hours in 2016-17. The higher efficiency and productivity had translated into

the net profit of major ports increasing by nearly 75% to INR 34 billion. Also, two major ports — Kandla and Paradip — achieved the milestone of handling more than 100 million tonnes of cargo in 2017-18.

Average turnaround time for major ports in India (in hours)



Source: Ministry of Shipping, Indian Port Association

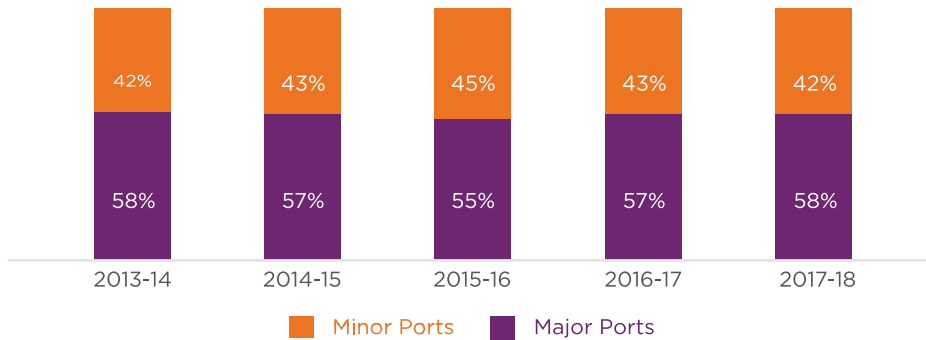
Market share of Ports in India

Higher productivity due to technological advancements, infrastructure investments, and ease-of-doing-business measures are slowly but steadily enabling

India's publicly-owned major ports to regain market share lost to private, or minor, rivals. Market share of India's top 12 major ports rose by 1% and continued

to remain strong at 58%, as the market share of minor ports shrank to 42%.

Market Share of Major vs. Minor Ports in India

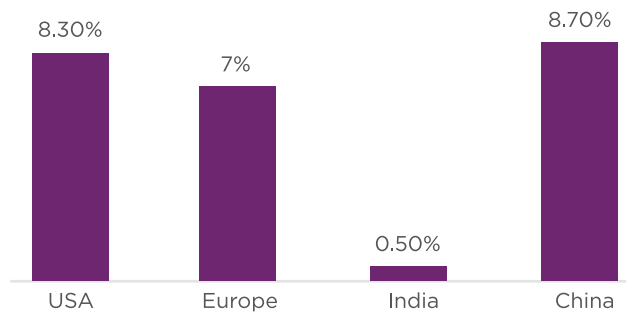


Source: Ministry of Shipping

Ports of India: Major Challenges

Freight movement in India is underperforming as compared to other developed and developing economies.

Freight way contribution by different economies



Source: IBEF

This is largely because of the infrastructure and connectivity issues. In addition to this, there are direct port-related issues such as **outdated navigational**

aids and IT systems, lack of proper logistics companies, lack of proper equipment handling training and technical expertise, unskilled labours, the time taken

to load/unload and incapability of handling large volumes which are hindering the growth of India’s Ports sector.

Major Initiatives taken by the Government

To meet the ever-increasing trade requirements of the country, the Indian government has taken multiple initiatives to improve infrastructure development linked to ports.

a) Multi-modal terminal under Jal Marg Vikas project

The Jal Marg Vikas Project (JMVP) is being executed on the Haldia-Varanasi stretch of National Waterway-1 (NW-1) with the technical assistance and investment support of the World Bank, at an estimated cost of INR 53 billion on a 50:50 sharing basis between Government of India and the World Bank. The project involves construction of 3 multi-modal terminals (Varanasi, Sahibganj, and Haldia); 2 inter-modal terminals; 5 Roll On - Roll Off (Ro-Ro) terminal pairs, integrated vessel repair and maintenance facility, Differential Global Positioning System (DGPS), River Information System (RIS), river training and river conservancy works.



b) Port-based multi-product SEZ: JNPT

India's no. 1 port plans to develop the SEZ in 277 hectares and expand under the EPC model (engineering, procurement, and construction). The SEZ is being planned as a Self-Sustainable Integrated Development Project having a potential of generating over 1.5 lakh direct and indirect jobs. At present JNPT has leased a 44-acre plot to Hindustan Infra Pvt. Ltd - the Indian arm of Dubai-based DP World. A dedicated team, comprising infrastructure experts and consultants, is deployed at the site where work is progressing at a fast pace with 35% financial progress notched so far in the mega-project, due to be completed by July 2019. The cost of the project will be INR 40 billion.



While these two schemes will enhance the overall performance of existing ports, transforming these ports into world-class ports as well as developing new world-class ports will be possible from the government's flagship initiative - **Sagarmala Pariyojana**.

Project in Focus: Sagarmala Pariyojana

Sagarmala Pariyojana, launched in 2015, focuses to enhance the performance of logistics sector in India **by setting up new mega ports, modernization of existing ports, development of 14 Coastal Employment Zones (CEZs) and**

Coastal Employment Units. Under this project, more than 604 projects worth INR 8.8 trillion have been identified for implementation, during 2015-2035. It is expected to impart massive socio-economic benefits

through better infrastructure to transport goods to and from ports quickly, efficiently and cost-effectively as well as generate tremendous direct and indirect employment.

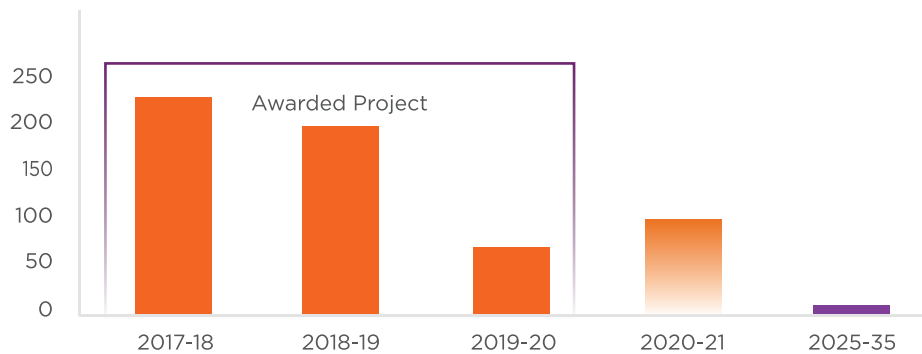


This program will lead to logistics cost savings of INR 350 - 420 billion per annum, boost merchandise exports by US \$110 billion and enable creation of 10 million new jobs, including 4 million direct jobs, in next 10 years

Summary

Projects under Sagarmala Pariyojana are categorized into 4 major themes which include - **Port Modernization, Port Connectivity, Port led Industrialization and Coastal Community Development.** The number of projects anticipated under this programme is as follow: -

No. of projects under Sagarmala Pariyojana



Source: Sagarmala.gov.in

Out of the total 604 projects, 522 projects are currently under various stages of implementation, development, and completion.

Increasing the share of coastal shipping and inland navigation in the transport modal mix is one of the key objectives of the Sagarmala Programme. To equip ports for movement of coastal cargo, **6 new major ports** are planned which will bring in significant capacity expansion.

Greenfield projects planned under Sagarmala

S.No.	New Port Location	State
1.	Sagar Island	West Bengal
2.	Paradip Outer Harbour	Odisha
3.	Sirkhazi	Tamil Nadu
4.	Enayam	Tamil Nadu
5.	Belikeri	Karnataka
6.	Vadhavan	Maharashtra

Source: Ministry of Shipping

Sagarmala Pariyojana - Current Status

Prime Minister of India Narendra Modi had given the in-principle nod to the project which was launched in 2016. Projects worth INR 1.85 trillion have been awarded under the ambitious port-led development

programme by March 2018, of which 98 projects worth INR 150 billion are completed. Another 161 projects are still under implementation. To support the development of these projects, Sagarmala Development

Company Limited (SDCL) was incorporated in 2017 for providing funding support to project SPVs (special purpose vehicles) and residual projects under Sagarmala.

Project status	Total project	Cost (INR billion)
Completed	93	-150
Under Implementation	161	2,379
Under Development	268	1,795

Challenges

The overall cost of the program is roughly INR 8.8 trillion which is huge and cannot be done without the PPP model, thus several issues have been witnessed in

terms of deployment of the investments in a timely manner, allocation and availability of adequate budgetary support. In addition, some experts have

raised environmental issues given that the project will involve huge construction activity which may disturb the marine ecology.

It is important to ensure that ecological balance is maintained while planning and executing mega infrastructure projects. With global warming impacting nations across the world, it is high time that we realize the importance of caring for the environment.



India has a long coastline of 7,517 kms with more than 200 ports

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SEZs are being developed within close proximity to ports
95% of India's trade by volume and 70% by value is done through maritime transport

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Increased efficiency of major ports has led to improvement in profits

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Turnaround time at major ports reduced to 64 hours in FY18 from 96 hours in FY14

Power

Power is one of the core sectors of the economy as it facilitates development across various businesses including manufacturing, agriculture, services, transportation, communication amongst others. In India, the power sector is mainly overseen by the government - Ministry of power

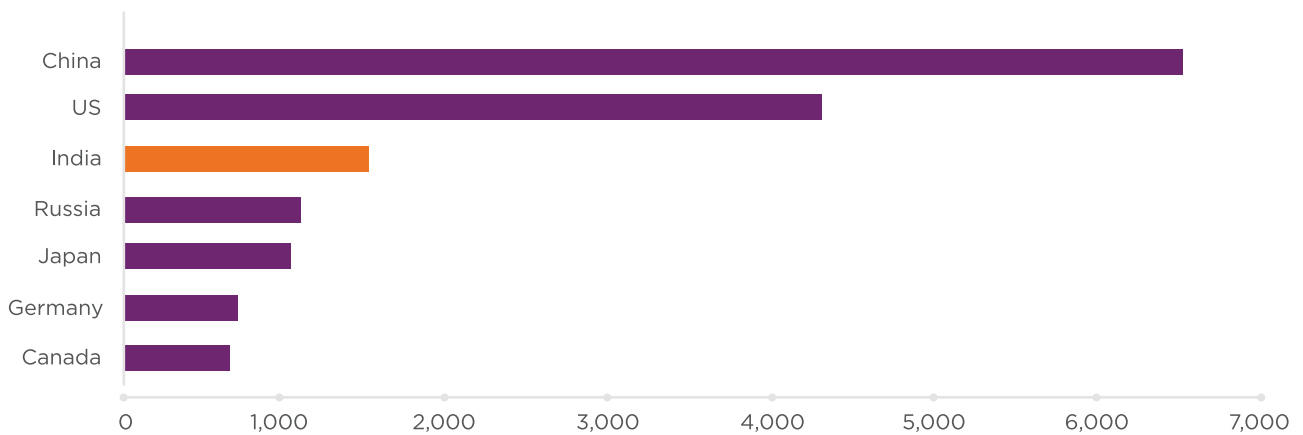
- and holds three major pillars viz; Generation, Transmission and Distribution. As far as generation is concerned it is divided into three parts; Central, state and the private sector. In addition to this, there are several state-level corporations such as Maharashtra State electricity board (MSEB), Kerala state electricity board

(KSEB), Jharkhand state electricity board (JSEB Gujarat (MGVCL, PGVCL, DGVCL, UGVCL four distribution companies, controlling body GUVNL, and one generation company GSEC), involved in the generation and intra-state distribution of electricity.



India’s energy sector is one of the most critical components of infrastructure and has a huge impact on the country’s economic growth. India has the 5th largest electricity generating capacity and ranks **3rd globally in terms of electricity production.**

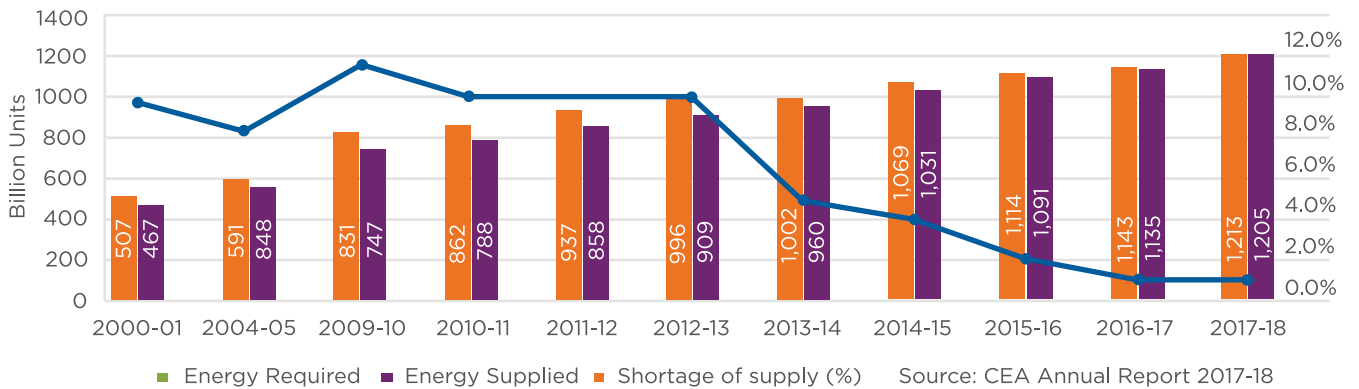
Power generation Global Statistics (terawatt-hour) (2017)



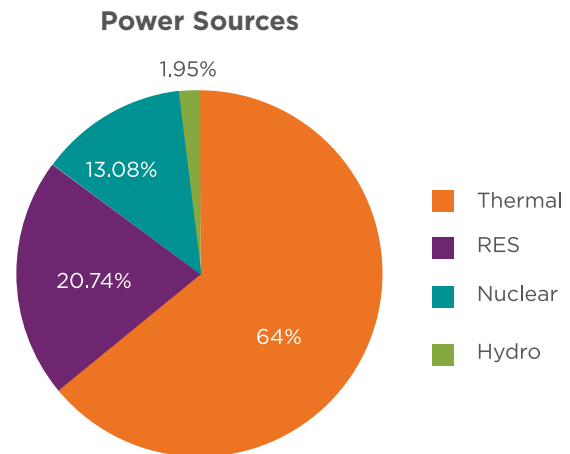
Source: BP Statistical Review World Energy 2018

The Indian power sector is experiencing substantial changes which are shaping the overall outlook of the industry. The Government’s initiative of “Power to all” has further accelerated the growth of the power sector in India. Similarly, competitive intensity is increasing in both the market side and the supply side (fuel, logistic, finances, manpower).

Power Scenario in India



Total electricity production stood at 1,206 billion units (BU) in 2017-18 as compared to 967 BU in 2013-14. Increased capacity is one of the core reasons for higher generations in the power sector of India. Capacity is being added consistently to meet the rising demand from commercial, agriculture and households. In addition to this, the total installed capacity for electricity generation in the country has increased from 143 GW as on 2007-08 to 344 GW in 2017-18, registering a 9.2% growth annually between the same period.



Source: Ministry of Power

Government Initiatives

Despite the achievements in power generation capacity enhancement, the bottleneck continues in the distribution of power supply. Programmes have been taken up to improve the performance of distribution companies so that the ambitious plan to provide electricity for all by 2019 can be achieved. The power sector is recognized as a key sector of focus to help sustained industrial growth. Listed below are the few initiatives that were taken by the government to boost the Indian power sector.

a) Deen Dayal Upadhyaya Gram Jyoti Yojana:

To enhance power supply in rural areas, Deen Dayal Upadhyaya Gram Jyoti Yojana was launched in December 2014 to extend financial assistance for capital expenditure by distribution companies (DISCOMs) for strengthening and augmenting distribution infrastructure, including metering, in rural areas. The estimated outlay for the scheme is INR 430 billion as per 2015. In addition, the approved outlay of INR ~393 billion of erstwhile Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) has been carried forward to this scheme. The scheme is being implemented by the States and their DISCOMs with support from Central Government to the tune of 60% in ‘General Category’ States and 85% in ‘Special Category’ States.



b) 100% FDI:

Automatic approval for 100% foreign equity is allowed in generation, transmission and distribution, and trading in the power sector without any upper ceiling on the quantum of investment. This has attracted a lot of investors to invest in the power and energy sector, further enhancing the sector's productivity and efficiency.



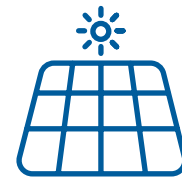
c) Power Trade agreement:

India and Nepal inked a historic Power Trade Agreement (PTA) in 2014. This agreement has opened new vistas of cooperation in the hydropower sector between the two energy-starved nations.



d) Ultra-Mega Solar Power:

The scheme rolled out by Ministry of New and Renewable Energy (MNRE) plans to set up 25 solar parks, each with a capacity of 500 MW and above; thereby targeting around 20 GW of solar power installed capacity. These solar parks will be set up within a span of 5 years commencing from 2014-15. Out of the total planned 17,853 MW, 4,380 MW was completed (as on 2017) and the remaining 13,473 are in various stages of development. Additionally, the Union Cabinet increased the total number of planned solar parks to 50 with a total capacity of 40 GW.



Project in Focus: Solar parks with a capacity of 7.5 GW to come up in Ladakh

Jammu and Kashmir (J&K) government have signed an MoU with the Centre for the development of two mega solar parks in the rocky mountainous region of Ladakh with a total capacity of 7.5 GW. On its completion, this will become the world's largest single-location solar photo-voltaic plant. The solar power projects in Ladakh and Kargil are slated to be completed by 2023 at an estimated investment of INR 450 billion. This project will be located at Hanle-Khaldo in Nyoma at a 254 km distance from Leh. The power generated by the project will go to Kaithal in Haryana for which a 900 km line will be laid mostly along the Leh-Manali road. The projects are expected to spur development in the remote border region and empower the local population through skilling for jobs.

Transmission Corridors



The total capacity of 7.5 GW has been divided into three packages of 2.5 GW each...

Package-A will be set up in the areas tentatively identified in Zaskar sub-division and Tai Suru block of Kargil district.

Packages B and C will be developed at Hanley Khaldo area of Nyoma sub-division in the Leh district.

For these projects, SECI will enter into power purchase agreements (PPA) with the successful bidders for a period of 35 years. The bidders can avail the fiscal incentives like accelerated depreciation, concessional customs and excise duties, tax holidays as available for such projects. **Currently, the project is on land acquisition and planning stage.**

What to expect?

- The new power plant will improve the quality of life with a 24X7 power supply in the strategically important region which sees harsh winters with the temperature dipping to 50 degrees below freezing.
- Assured supply will further enhance the economic activity and employment through winter tourism.
- In the long term, it will help Ladakh-Kargil region to emerge as India's powerhouse by allowing evacuation of power from proposed solar projects with an aggregate capacity of 7.5 GW.
- The Srinagar line will allow the stations to run at full capital feeding surplus power into the northern grid during summer.



As of January 2019, 25 states in India have 100% power connections installed.

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Industry has attracted nearly US \$14.18 billion between April 2000 to June 2018 ~3.64% of the total FDI in the country.

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Energy deficit reduced to 0.7% in FY18 from 4.2% in FY14.

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The Government of India plans to install 175GW of renewable energy of which 100 GW will be from solar and 60 GW of wind power.

Industrial Corridors

An industrial corridor, also known as an 'economic corridor' majorly aims to create an area with a cluster of manufacturing industries. Such corridors are mainly created in areas that have support infrastructure facilities including ports, highways, and railroads. In India, economic zones have existed under the name of SEZs (Special Economic Zones) catering to one/multiple

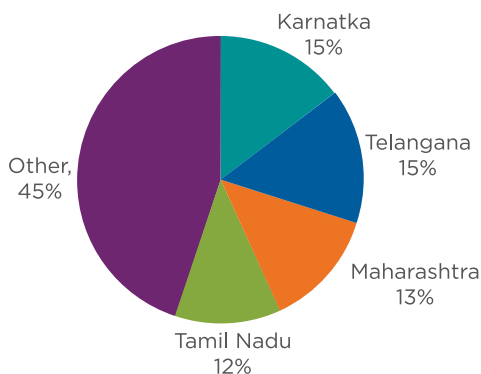
industries. The government is set to increase its focus on setting up such SEZs to improve the economic activities in a balanced manner across various cities. Before the notification of SEZ Act 2005, there existed nearly 18 such zones held by Central and State governments and private players spanning Gujarat, Tamil Nadu, West Bengal, and Maharashtra.

To further strengthen the SEZs in the country, the government notified the SEZ Act 2005. As of December 2017, there were 221 operational SEZs in the country with an additional 194 SEZs approved for 2018. All these SEZs are set up in place to increase trade balance, employment, investments, job creation, and effective administration.

Karnataka, Maharashtra, Tamil Nadu, and Telangana are the states with the highest number of operational SEZs in the country post the implementation of the act.



Share of SEZs across the top 4 states

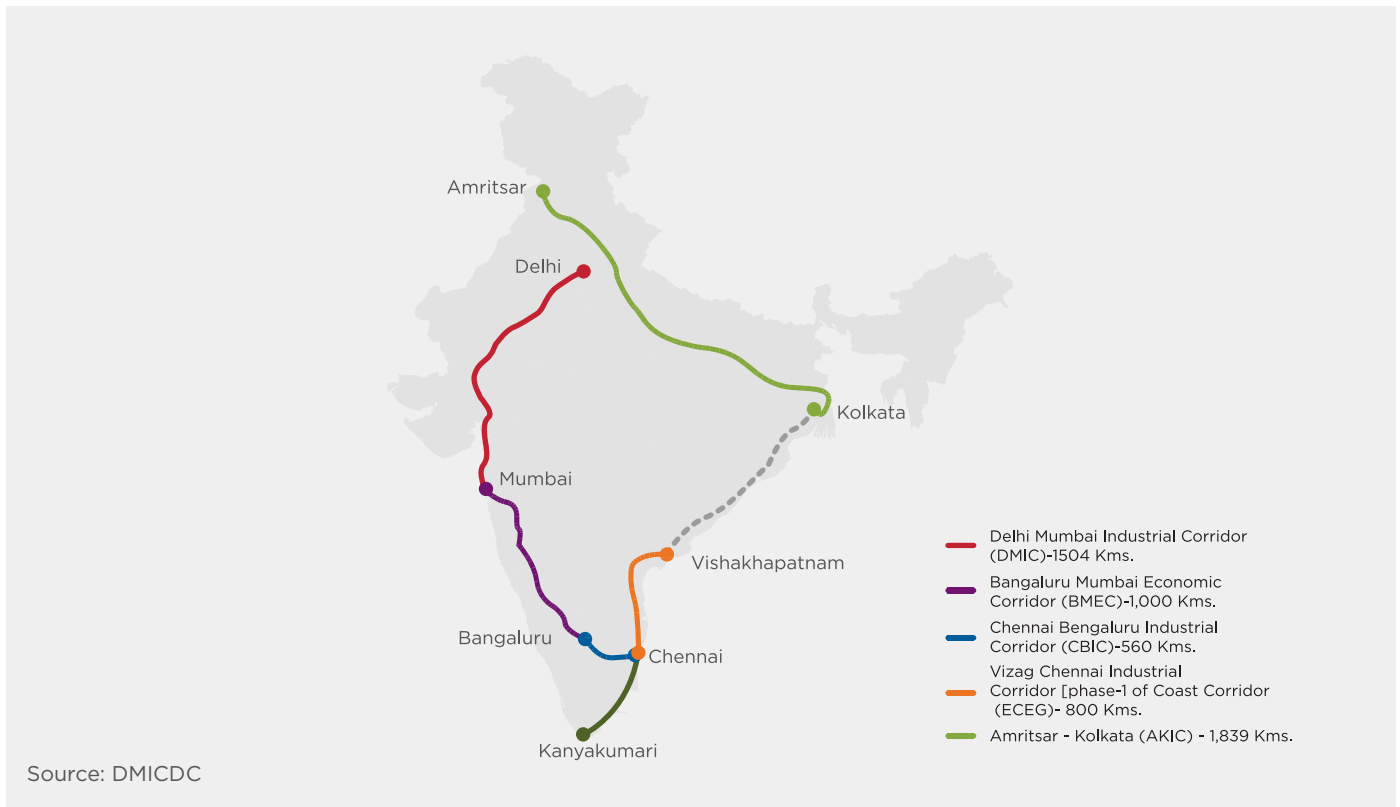


To further strengthen the SEZ infrastructure in the country, the government is developing the industrial corridors which once fully completed will connect the majority of these SEZs with ports, railroads etc. This will majorly boost trade in the country.

Source: www.sezindia.nic.in

5 Industrial Corridors of India

The five industrial corridors in India are expected to not only give a boost to trade and employment opportunities but will also lead to the development of many new SEZ clusters as well as greenfield cities in the hinterlands of the country.



Project under Focus: Delhi-Mumbai Industrial Corridor (DMIC)

Delhi - Mumbai Industrial Corridor (DMIC) is India's most ambitious infrastructure program aiming to develop new industrial cities as "Smart Cities" and converging next-

generation technologies across infrastructure sectors coupled with a dedicated freight corridor (Western Freight Corridor) to be developed. With an estimated investment of US \$100 billion

spread across 4 phases up to 2040, the project is expected to benefit 6 states in Northern India, Central India, and Western India.



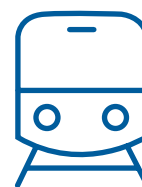
Airports



Economic Zones



Investment regions



MRTS Projects



Integrated townships

The project focuses on the development of 8 industrial cities, more than 1,500 km of freight corridor to create an industrial hub and 24 investment regions in phase-1 of the project.

DMIC Project Map



Financing of the project

DMIC is a mega project requiring substantial investment. Depending on the location and size, the development of each city in DMIC was estimated to require an investment of INR 500-750 billion, which would include the cost of land procurement and development. The financial assistance for the

DMIC project was in the form of grant-in-aid of INR 175 billion over five years beginning from 2011-12 for the development of industrial cities, at INR 25 billion per city on an average, subject to a ceiling of INR 30 billion per city, and an additional corpus of INR 10 billion as grant-in-aid over five years. As of June 2017, the central

government approved INR 11.5 trillion for developing various DMIC projects, after which states concerned would have to match the same contribution in the form of land. Further, JICA has committed US \$4.5 billion towards the development of the 2 planned MRTS system.

Issues with land procurement

In India, land acquisition is a state subject, and there have been major issues with land acquisition in the corridor, which has delayed project implementations. For example;

The Reliance Haryana SEZ project (Reliance Haryana SEZ Limited) was approved in 2006 over two districts in Haryana (Gurugram and Jhajjar). There were large-scale protests by farmers over land acquisition for the SEZ, and moreover, Reliance Ventures Limited (RVL) was unable to acquire contiguous land to meet the minimum holding requirements. This led to delays, after which RVL walked out of the joint venture with the Haryana state government, something that has been widely discussed in media.

In the case of Dighi port industrial zone in Maharashtra, while the DMIC development corporation had estimated 253 sq. km of land available for development in the region, only 22.55 sq. km has been acquired in its financial statements presented before the parliament. DMIC mentioned that the land parcels which have been acquired are not even contiguous.

India enacted the right to fair compensation and transparency in land acquisition, rehabilitation and resettlement (LARR) act, 2013, which covers fair compensation for land acquisition for SEZs. However, private players have raised concern about the high compensation for land acquisition as per the act, which makes projects non-viable.

Current status

The corridor which was first mooted in 2007, took around 4 years to get cabinet approval. With additional 3-4 years in the planning, until 2014-15, DMIC had nothing substantial to show on the ground as far as its development was concerned. Japan International Corporation Agency (JICA), which showed interest in funding

and developing the corridor and committing US \$4.5 billion for the project, hasn't yet invested in the project. JICA plans to develop two metros in Haryana and Gujarat under its investment plan. With slow progress in the planning and implementation, DMICDC could only lease the first chunk of the 8 planned industrial nodes at Shendra-

Bidkin, Maharashtra by 2017. The land acquisition process for 2 industrial nodes in Rajasthan is still under process. The ambition to target completion of the project by 2040 is still achievable, but the impact of cost-overruns due to slow implementation is expected to haunt the ruling government in the later years.



Urban Infrastructure

Urban population in India is growing rapidly (3.2% CAGR between 1961 to 2011) than the overall population growth (1.2% CAGR) in the country. In search of employment and education,

people started to relocate to Metro and Tier-I cities since a very long time. With only 11.4% population residing in urban areas in 1901, the count increased to nearly 28.5%

according to 2001 census and 31.2% during 2011. As per world bank, currently, nearly 34% of the Indian population is residing in urban areas.



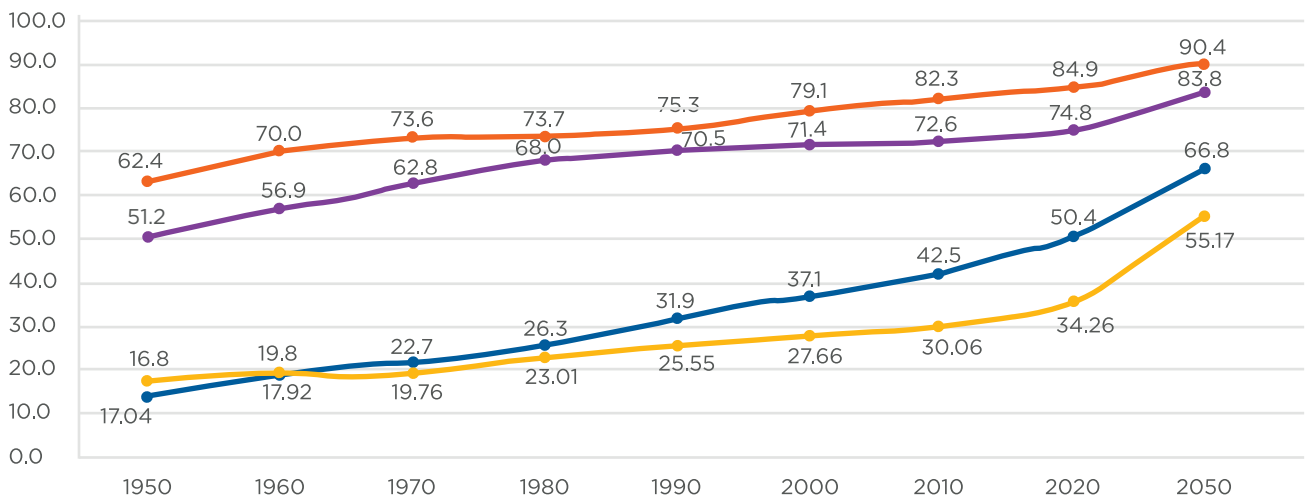
Global Urbanisation trends

The higher urban population in the U.S. is due to the early industrialization, and Europe is following the same path. While Asia is in the transition

stage from agriculture to industrialization, therefore there is an increasing growth of urban population over the decades and will reach 66.8%

urban population in 2050. India is expected to reach 55.17% in 2050, which is a nearly 80% rise from 2010.

% of Urban Population to Total Population at Global Level



Source: United Nations. (2007) - WUP, Population Division, NY

Urbanization in India

India still has a dominant rural population as more than 68% of the people still reside in rural areas. While the transition from agriculture to service and industrial sectors is increasing over the decades, urbanization levels have reached 31.2% as of 2011. Better employment opportunities in urban areas and many government initiatives of centralized investments has triggered the growth prospects in urban areas, and this trend is likely to continue in the future periods as well. **During the last century, the urban population has increased 2.57 times while**

the rural population increased by just 0.80 times.

Rising urban population created a necessity to upgrade the infrastructure of the city on a continuous basis. To uplift and improve the quality of living for the population, GoI in collaboration with state governments and ULBs work on upgrading and creating a new infrastructure within the cities/ states to ease out the living conditions of its population. The Government has taken many such initiatives in the past to provide necessities like clean water, food,

and shelter to the people and is continuing to do so.

With the help of policy support, the Government has managed to lay down the path for proper transportation systems in urban areas coupled with adequate water and electricity supply. Policy Missions like JNNURM, Swacch Bharat etc. coupled with the development of Mass Rapid Transit System (MRTS) and Bus Rapid Transit System (BRTS) across major cities in India have helped in shaping the future of Urban cities in India.

Urban Infrastructure policies in India

FUND FLOW

2005



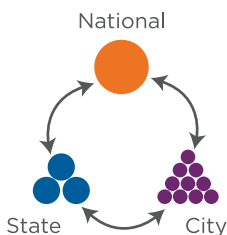
First Major National Urban Infrastructure Policy

JNNURM

- Urban Infrastructure & Governance
- Urban Infrastructure Development of Small & Medium Towns
- Basic Services to Urban Poor
- Integrated Housing & Slum Development Programme

FUND FLOW

2015



New Urban Agenda (Infrastructure development)

AMRUT

- Swachh Bharat (Solid waste management, sanitation)
- Smart Cities Mission (ICT for governance and infrastructure & resource management)
- HRIDAY (Heritage city development & augmentation)
- Pradhan Mantri Awas Yojana (Affordable housing for all)

Projects undertaken by the government to uplift Urban Infrastructure



Metro Rail (MRTS)

8 cities have a metro rail with at least a single phase already operational. NCR has one of the vast metro networks. Metro rail is being developed in 6 cities in which it will start operations in different phases. 18 other Tier-II cities are under the planning stage.



Monorail

One of its kind is currently operational in Mumbai. A monorail is expected to commence operations in 10 cities in India in future periods.



Affordable Housing

One of the key projects which have surfaced in the last five years. The government with various schemes and benefits is pushing affordable housing at a pan-India level to make housing available for all.



Smart Cities Mission

100 cities are planned under this mission to become citizen-friendly and sustainable. In the current plan, the existing cities are expected to witness a massive makeover in terms of IT infrastructure in order to improve the living quality of its citizens. Further, greenfield cities will be developed with projects like DMIC in future times.



Swachh Bharat

A pan-India mission to improve the living quality of residents, this is the second biggest project undertaken by the government in recent times.

Of the various projects implemented and under implementation by the central/state government, a massive push has been given to 2 key projects; i.e. Affordable Housing under PMAY-U mission and Smart Cities Mission to upgrade Metros, Tier-I, Tier-II, and Tier-III cities in India. These projects are expected to change the shape of the cities in India and will bring them at par with global cities known for their infrastructure developments and quality of life they offer.



Project under Focus: Affordable Housing-PMAY (U)

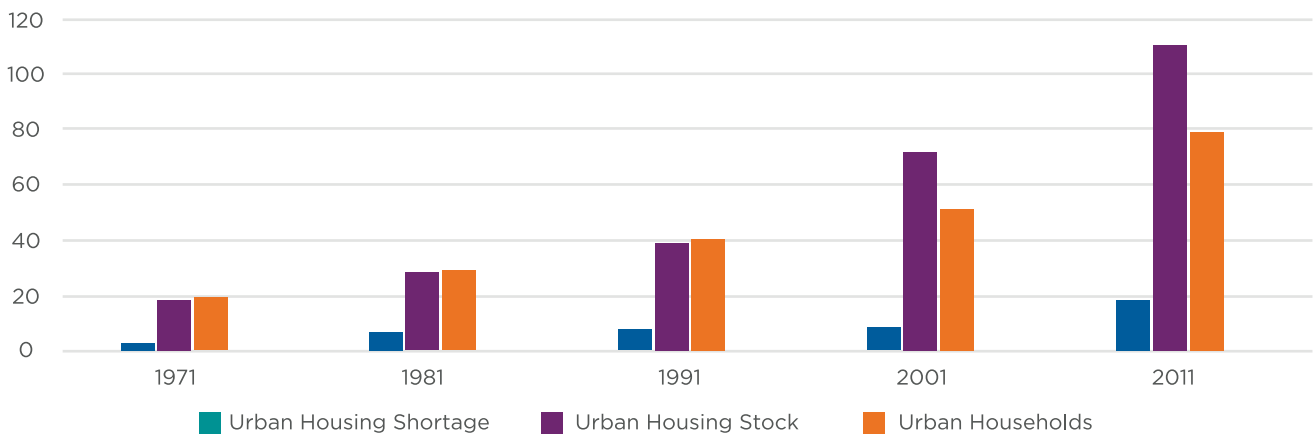
Urban Housing Dynamics

The housing shortage in India is increasing year-on-year with the ever-increasing population coupled with the rising number of migrants to urban areas. This resulted in slums and sputtered settlements in cities as land prices in cities are significantly high for many. As per 2011 census, total 1.77 million people are homeless, which is 0.15 % of total population, and 0.94 million population are homeless

in urban areas, which is 0.1 % of total population of India. The decadal growth rate of the urban homeless population is 20.5 % from 2001 to 2011. Urban households and urban housing stock were in harmony until 1991, and in 2001 the difference started increasing and raised to 31.2 million houses in 2011. The difference in urban housing stock and urban households clearly shows many houses having

homeless conditions and multiple houses being held by a single family, and for some extent, there is a supply-demand mismatch in the urban housing stock. The urban housing shortage stood at 18.8 million in 2011 which has come down to 10 million as of 2017 showing the impact of government’s support to provide housing for all.

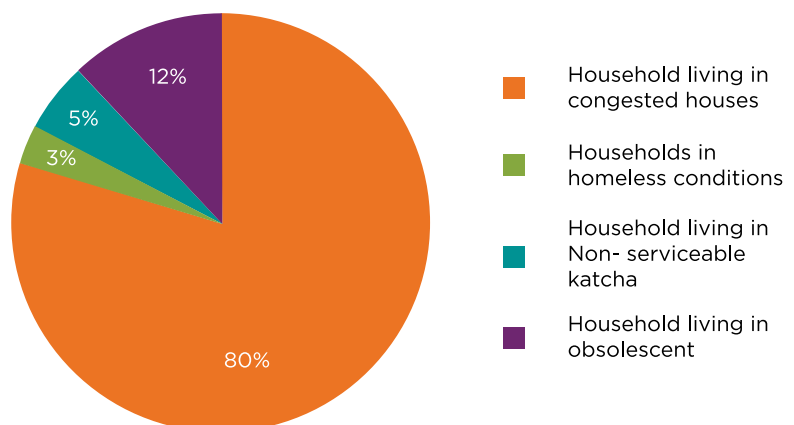
Urban Housing Dynamics



Source: ADBI Working Paper Series: Housing Markets and Housing Policies in India, Census 2011, Centre for Good Governance (2003), National Buildings Organization (2012), and Planning Commission of India (2012-2017)

Urban Housing Shortage 2018

As per the estimate of the Technical Group on Urban Housing Shortage constituted by Housing and Urban Poverty Alleviation, the housing shortage in urban India in 2011 was around 18.76 million units. Maximum families are seen to be living in congested conditions considering the socio-cultural viewpoints like married couple sharing the same room with other adults etc. Such houses have maximum share with 80% (14.00 million). Followed by 2.27 million households in obsolescence conditions and remaining in homeless and non-serviceable kutchha houses.

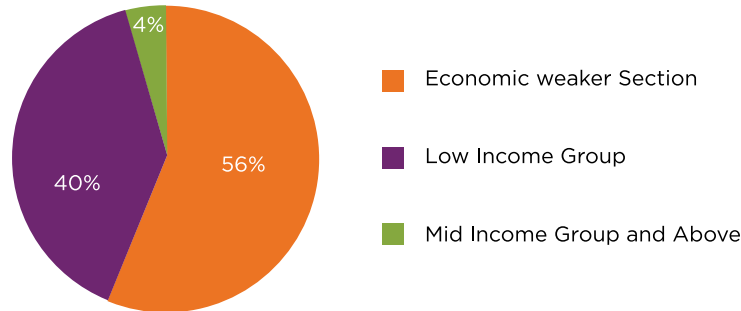


Source: Estimates of the Technical Group on Urban Housing Shortage (TG-12) (2012-17) constituted by NBO, M/o Housing & Urban Poverty Alleviation

Urban Housing Shortage by Socio-Economic Groups

The economically weaker section is defined as one where the collective household income is within Rs. 5,000 per month and Low-Income Group is income between INR 5,001 to 10,000 per month. Around 56% of the housing shortage is in EWS with 10.55 million houses, followed by Low-income group with 7.41 million houses.

Urban Housing Shortage among different Socio-Economic Groups in India - 2012



Source: Estimate of the Technical Group on Urban Housing Shortage (TG-12) (2012-17) constituted by NBO, M/o Housing & Urban Poverty Alleviation

Pradhan Mantri Awas Yojana

Launched in 2015 to provide central assistance to Urban Local Bodies (ULBs) and other implementing agencies through States/UTs to provide affordable housing through different mechanisms.

Coverage: All 4,041 statutory towns as per Census 2011 with focus on 500 Class I cities.

Construction: Support the construction of houses up to 30 square meter carpet area with basic civic infrastructure like water, sanitation, sewerage, road, electricity, etc.

Unit Size: The minimum size of houses constructed should follow the National Building Code (NBC), and provision of a toilet is mandatory.

Residential Welfare Association (RWA): will be created between the beneficiaries to handle maintenance of the house built under the mission.

Registration: House should be registered on the female head of the family or on the joint name of the male and female head of the family.

The mission addresses the housing requirement of urban poor including slum dwelling through the following programmes.

01

In-situ Rehabilitation of existing slum dwellers using land as a resource through private participation

03

Affordable Housing in Partnership

02

Credit Linked Subsidy

04

Subsidy for Beneficiary-led individual house construction/enhancement.

Affordable Housing Impetus in Budget 2018-19

- Budget 2018-19 has further given impetus to affordable housing by creating a dedicated fund under the National Housing Fund (NHF) with the mandate to build 3.7 million houses in urban areas
- by the end of FY 2018-19.
- INR 50,000 tax benefits added to first-time home buyers on the home loan sectioned during FY 2016-17 under section 80EE.
- Households earning income between INR 0.6 million to INR 1.2 million a year can claim 4% subsidy on the home loan and INR 1.2 million to INR 1.8 million earning households can get 3% subsidy on home loans.

Current Status

Under Pradhan Mantri Awas Yojana (PMAY) – a total of 1,41,848 units are approved, in which only 58% are completed, 26% are in progress and 16% yet to start construction. Of the total completed units, nearly 74% units are already occupied by the beneficiaries and the remaining are yet to be occupied by the classified beneficiaries.

Project under Focus: Smart Cities Mission

100	~100M	INR 2.03Tn	INR 1.64Tn	INR 389Bn
Winning Proposals	Urban Population Impacted	Total cost of project	Area based development cost	Pan-city solution cost

Smart Cities mission is urban renewal and retrofitting program by the GoI with the mission to develop 100 cities across the country, making them citizen-friendly and sustainable. The Union Ministry of Urban Development (MoUD) is responsible for implementing the mission in collaboration with the state governments of the respective cities.

Smart Cities Mission envisions developing an area within 100 cities in the country as model areas based on an area development plan, which is expected to have a rub-off effect on other parts of the city, and nearby cities and towns. Cities were selected based on the Smart Cities challenge, where cities will participate in a country-wide competition to obtain the benefits from this mission. As of June 2018, 100 cities have been selected to be upgraded as part of the Smart

Cities Mission after they defeated other cities in the challenge.

It is a five-year program in which, except for West Bengal, all of the Indian states and Union territories are participating by nominating at least one city for the Smart Cities challenge. Financial aid will be given by the central and state governments between 2017-2022 to the cities, and the mission will start showing results from 2022 onwards.

Each city will create a Special Purpose Vehicle (SPV), headed by a full-time CEO, to implement the Smart Cities Mission. Centre and state government will provide INR 10 billion funding to the company, as an equal contribution of INR 5 billion each. The company has to raise additional funds from the financial market as debt or equity.

This was the first time a MoUD program has used a competition-

based method as a means of selecting cities for funding and used an area-based development strategy. Cities compete at the state level with other cities within the state. Then the state-level winner competes at the national level Smart city challenge. Only cities obtaining the highest marks in a particular round are part of the mission. Even during implementation, if a municipality or the mayor of any city do not show progress as committed in their city area development plan, they may be replaced by another city, or the next cache of financial support is not provided.

All the cities from West Bengal (New Town, Kolkata, Bidhannagar, Durgapur, Haldia) have withdrawn from the Smart Cities Mission. Mumbai and Navi Mumbai from Maharashtra have also withdrawn from the Smart Cities Mission.

Features of Smart Cities which the government aims at achieving are as follows:

Promoting mixed land-use in area-based developments - planning for 'unplanned areas' containing a range of compatible activities and land-uses close to one another.

Giving an identity to the city based on its main economic activity such as local cuisine, health, education, arts and craft, culture, sports goods, furniture, hosiery, textile, dairy, etc.

Applying Smart Solutions to infrastructure and services in area-based development in order to make them better. For example, making areas less vulnerable to disasters, using fewer resources, and providing cheaper services.



Promoting a variety of transport options - Transit Oriented Development (TOD), public transport and last-mile para-transport connectivity.



Housing and inclusiveness - expand housing opportunities for all



Making governance citizen-friendly and cost effective - increasingly rely on online services to bring about accountability and transparency, especially using mobiles to reduce cost of services and providing services without having to go to municipal offices. Forming e-groups to listen to people and obtain feedback and use online monitoring of programs and activities with the aid of cyber tour of worksites



Creating walkable localities - reduce congestion, air pollution and resource depletion, boost local economy, promote interactions and ensure security. The road network is created or refurbished not only for vehicles and public transport, but also for pedestrians and cyclists, and necessary administrative services are offered within walking or cycling distance.



Preserving and developing open spaces - parks, playgrounds, and recreational spaces in order to enhance the quality of life of citizens, reduce the urban heat effects in areas and generally promote eco-balance

Smart City Mission: A Glance

	Round 1	Round 2	Round 3	Round 4
No. of cities	20	40	30	10*
Period of Selection	Jan 2016	May-Sept 2016	June 2017	Jan 2018
Total No. of Projects	829	1,959	1,891	472
Investments (INR billion)	481	837	574	159
Avg. SCP Size (INR billion)	24	21	19	16

Note: * Shillong selected as 100th Smart City in June 2018
 Source: www.smartcities.gov.in

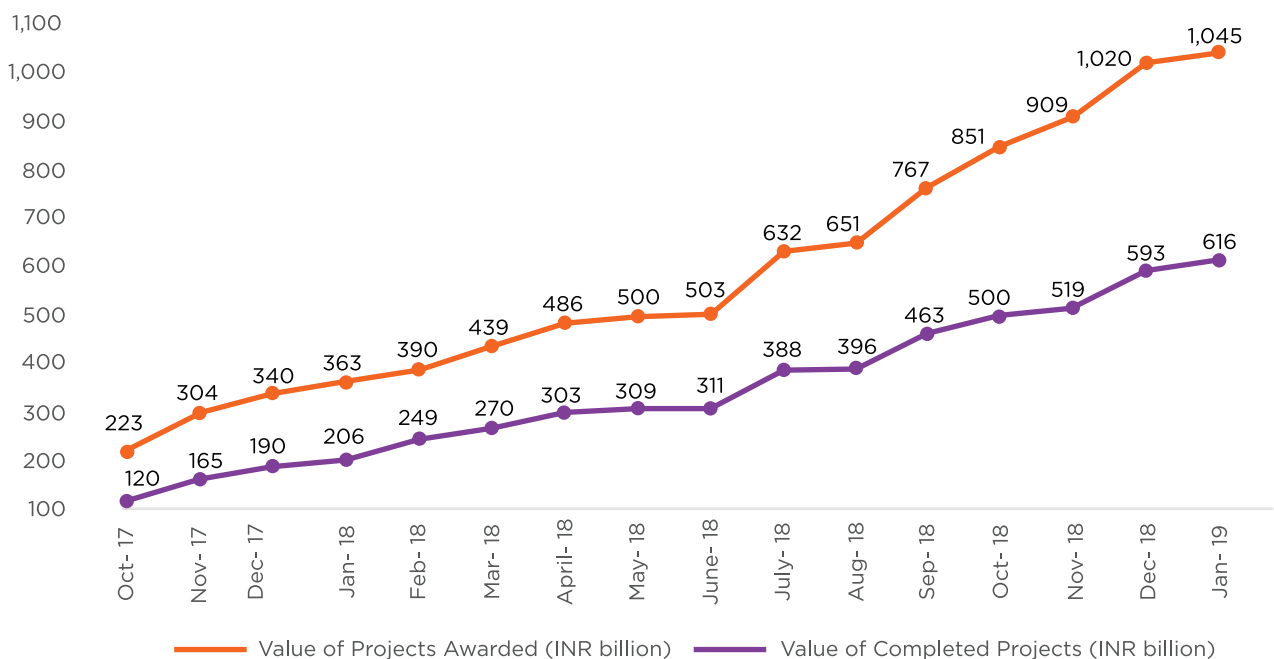
Current Status

As of Jan 2019, the value of tenders awarded is INR 1.04 trillion of which by the same period, projects worth INR 616

billion were completed. Of the overall project cost of INR 2.03 trillion, half of the project's tenders have been floated by the

government, but the work has been completed for only 50% of the floated tenders.

Project Progress



Source: www.smartcities.gov.in

Considering the current work progress, the government is likely to reach the set target within the speculated timeframe provided the project doesn't face any political challenges in the future.



To improve the quality of life of people its development is essential

--

Initiatives like 'Housing for All' and 'Smart Cities Mission' are the top key initiatives being implemented at pan-India level

--

Development of toilets under Swachh Bharat scheme to uplift the urban infrastructure

--

Both physical and social infrastructure to be developed

--

Rising millennial population leads to the need of infrastructure development to improve the quality of life

Issues & challenges

Infrastructure and Real Estate sectors are very critical in nature. With their high contribution to the overall economic growth

of the country, these sectors continue to be plagued with many issues and challenges. These issues are not just limited

to approval delays but are also social and political in nature. Following are the key issues these sectors face commonly:

Issue	Context
Political Challenge	<ul style="list-style-type: none"> Political instability Lack of development goals Institutional incapacity Lack of private participation Absence of proper assessment of projects for technical and financial viability Absence of finance Social apathy for infrastructure demand No clearances Long tendering process Huge dependence on imports and FDI Lack of proper business models for private participation Lack of land
Environmental Issue	Focus to preserve the environment lost in the race to develop world-class infrastructure
Private sector	<ul style="list-style-type: none"> No rational competition Cartelization by players

The sheer impact of challenges faced by the infrastructure projects is visible from these statistics - of the total 1,420 projects under implementation, 369 projects are facing cost overruns and 366 projects are facing time overruns to the tune of INR 3.58 trillion of cost overrun and an average time of -46 months for 366 delayed projects.

To expedite infrastructure development along with maintaining the ecological and political balance, the government must give high importance to the above-mentioned factors

and focus on addressing the challenges. If negligence towards such factors is continued, the sector which is expected to fuel the overall economic growth of the country and generate employment opportunities will

lose its shine which will thereby hamper the economic growth of the country.



Impact of Infrastructure upgrades on Indian real-estate

Unlike other areas of public and private investment, the economic benefits to infrastructure are clear. Infrastructure development not only leads to job creation and GDP growth but also as a catalyst having a significant knock-on impact on the surrounding real estate.



Impact of Urban transportation development

01 City transportation projects, in particular, tend to signal where the next property hotspot will be. Historically, this has been road or rail projects but there is increasing evidence to show that investment in mass public transport represents a higher value investment. There's growing consensus worldwide that high-quality, high-capacity, safe and affordable public transport is the only way for increasingly congested cities to accommodate sustained and sustainable economic growth.

02 Transportation systems, strong telecommunications systems (including high-speed

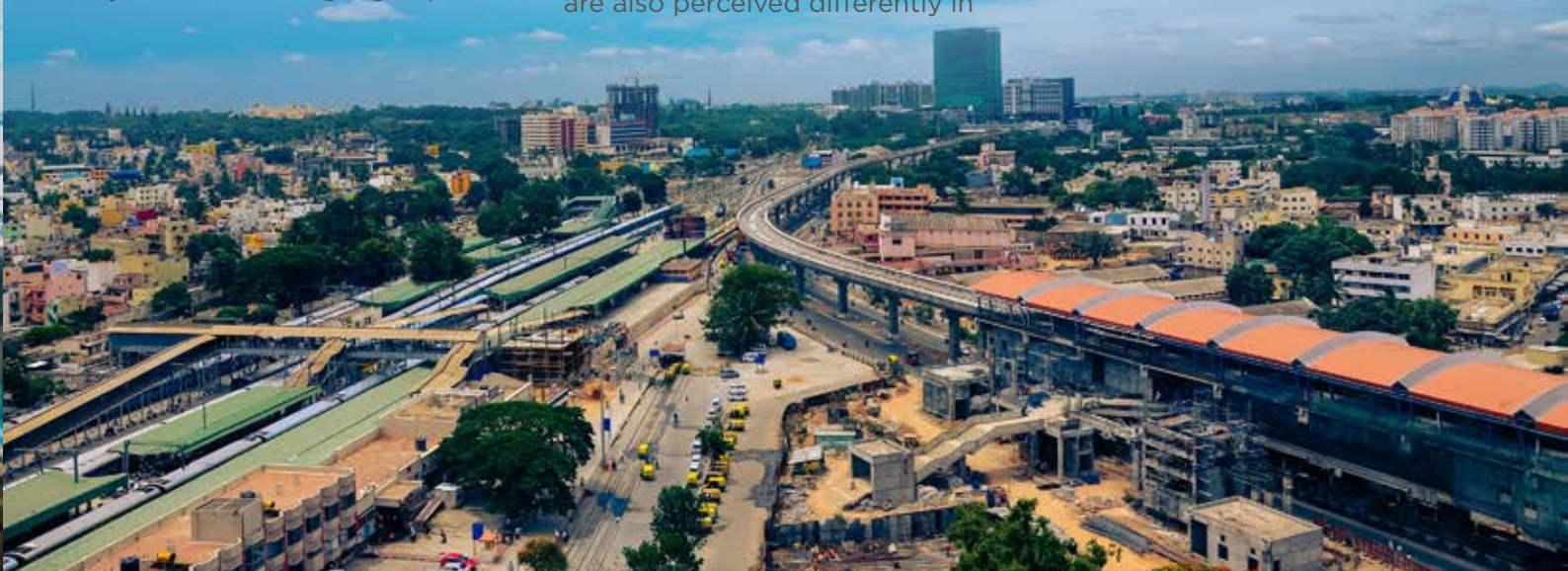
internet capability) along with reliable and affordable energy are considered fundamental to most real estate developments, whether be commercial, residential or industrial. But the impact is not always obvious or entirely positive. In fact, the influence that infrastructure has on real estate is a complex one.

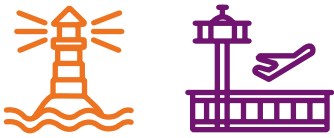
03 It's not just a simple, direct correlation between infrastructure investment and adjacent real estate investment. Different types of infrastructure investment have very different impacts in different geographies and on different real estate sectors. Their impact and value are also perceived differently in

different countries and different sections of society.

04 For some, the value uplift from a transportation project in terms of improving access to business districts, opening up new markets, reducing commute times etc. can be negated by the diminished quality of open spaces, the adverse aesthetic or reduced safety conditions.

For example, in Hong Kong, the proximity to public transport, shopping centers, and parks have the most significant impact on residential property prices whereas the nature of a neighborhood has the greatest impact in Australia.





Impact of Ports/Airports

01 Upgrading ports or airports are considered a significant gain by business communities, particularly the logistics industry, but may adversely impact neighbouring residential areas with additional noise and air pollution, as well as construction traffic, noise, temporary road networks etc. while the works are executed. This is why you have industrial parks, not residential districts next to airports.

02 The biggest challenge for a real estate investor wanting to benefit from infrastructure is timing. Any announcement relating to new infrastructure development leads to a hot spot. Sometimes this is a highly speculative, short-term market distortion.

03 All too often there is a substantial period from announcement to completion or even the start of construction. Some major infrastructure projects get delayed due to the unavailability of finance, planning approval, public consultations, environmental concerns or changes in governments. This can have a significant effect on the real estate around it. A recent, high-profile example would be the high-speed rail plans for Malaysia.

04 Even when the investment goes ahead, there is a need for governments to support this with supporting mechanisms such as rezoning, to enable investors to really capitalize on the impact of the new infrastructure.

For example, increasing the height limit on property development when an old airport is decommissioning or allowing industrial, logistics or data centers to take up space that has been adversely impacted by transportation investment and allowing industrial buildings to be repositioned as data centers or commercial properties when port facilities are moved outside of central city areas.



Although the impact of infrastructure development on real estate investment is mostly positive, it is also unquestionable that the impact is complex. Since there is no one-size-fits-all solution it is key to evaluate each real estate investment opportunity individually with a unique business case and tailored delivery and execution plans alongside bespoke operations strategy, all focused on maximizing value.

As urbanization rapidly advances, the chance of investing in a real estate development that will be impacted by infrastructure investments increases. Investors need agile and innovative strategies to help them respond to changes in their surroundings or urban regeneration through asset repositioning. A significant example of this is Hong Kong where industrial building stock is increasingly being converted into commercial properties, car showrooms, data centers, and even boutique hotels.

In India, the impact of infrastructure development - be it urban development or ports

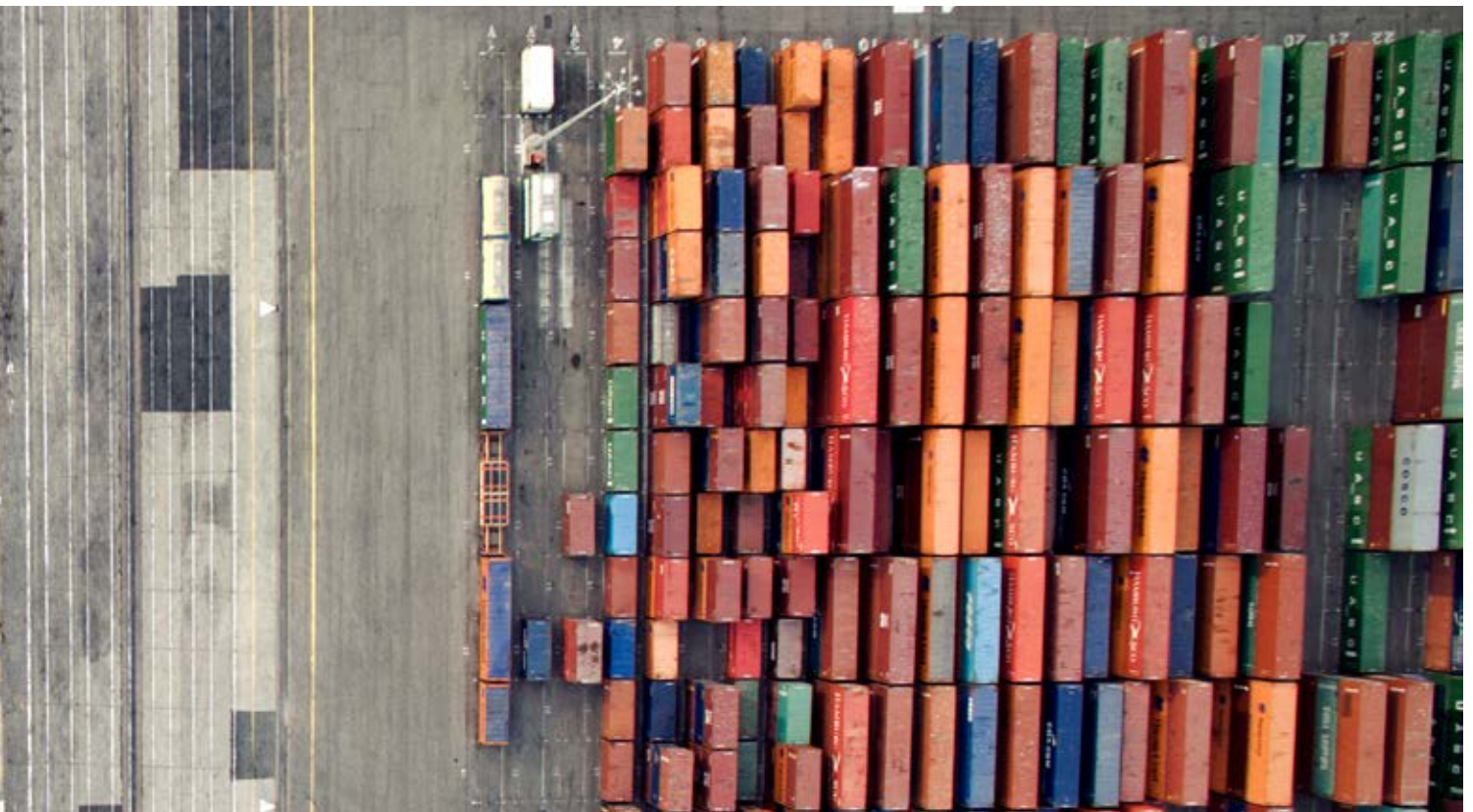
or airports - on residential real estate is largely positive. With the current status of availability of infrastructure across mega metros and Tier-I cities in India, the decision to buy real estate is largely dependent on the infrastructure developments planned or under development stage. Across the top 7 cities in India, nearly 2 million units have been launched since 2013 of which nearly 40% of the supply came in the western region, followed by 27% in the southern region and 25% in the northern region of India. With prominent infrastructure developments in and around the top 7 cities, the residential market in these regions has been under the radar of developers since a very long time.

However, of the units launched since 2013, 1.5 million units are still under various stages of construction. The western region accounts for nearly 47% of the overall ongoing projects followed by the northern region with 27% projects under construction and 20% in southern India. Infrastructure developments

boosted the realty sector across these 7 cities but due to delayed implementation, the realty sector also took a hit in terms of delivery. However, with a new regulatory authority introduced by the government for real estate, the dire need to expedite infrastructure development is of utmost importance.

The demand for residential real estate across these 7 cities in India has been very astonishing with nearly 1.7 million units being absorbed since 2013. Even with delayed completions and slowdown in developments, the demand for real estate has been very high in the Indian market. Planned and up-coming infrastructure developments have lured both investors and end-users to continue investing in real estate.

To retain the buyer's interest in the market, the need of the hour is to expedite infrastructure projects so that the overall economic growth in which real estate plays a vital role is not impacted and its contribution remains as expected in the future targets of US \$5 trillion by 2025.



Conclusion

Infrastructure which is treated as the backbone of development both physically and economically is one of the most important sectors for the Indian government.

From developing new projects to upgrading the existing projects, the government has consistently put efforts to uplift the status of infrastructure to ensure a better quality of life for its citizens. With a sound policy and financial support, the focus of the government was to expand its reach from only railways and roads to multiple avenues of transportation and thus explore development across all regions.

The impact of infrastructure development not only restricted to a better quality of life, but it also impacts real estate and its allied industries. Compared to other countries, the Indian real estate market's buying decisions are highly affected by infrastructure developments happening around them. As buyers are looking to ease out their lives especially in metro and tier-I cities, infrastructure development plays a vital role in their investment decisions.

However, no matter how good and necessary infrastructure development appears, it carries high risks along with it. From financial closures to time overruns, these projects when planned remain focused towards uplifting the standards but over the time they can also burn big holes in the pockets, making them unviable without private player participation.

Besides ensuring project viability coupled with the fringed benefits these projects add to the society, it is very important for the government to consistently intervene and support the development in a timely manner.

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