

Indian railways: The fourth-largest railway network worldwide



The Indian railway system is regarded as the foundation and lifeblood of the economy. Indian railways span over thousands of kilometres practically covering the entire nation, making it the fourth largest in the world after the US, China and Russia. The Railways Board, which has a monopoly over the provision of rail services in India, is in charge of overseeing the whole infrastructure. Due to its low cost and effective operations, railways continues to be the most popular means of transportation for the majority of Indians when travelling long distances.

India's railway network is recognised as one of the largest railway systems in the world under single management. The railway network is also ideal for long-distance travel and movement of bulk commodities, apart from being an energy efficient and economic mode of conveyance and transport. Indian Railways is the preferred carrier of automobiles in the country.

Government of India has focused on investing in railway infrastructure by making investor-friendly policies. It has moved quickly to enable Foreign Direct Investment (FDI) in railways to improve infrastructure for freight and high-speed trains. At present, several domestic and foreign companies are also looking to invest in Indian rail projects. Indian Railways is developing and creating technology in areas such as signaling and telecommunication with 15,000 kms being converted into automatic signaling and 37,000 kms to be fitted with 'KAVACH', the domestically developed Train Collision Avoidance System.

INVESTMENTS/ DEVELOPMENTS

Following are some of the major investments and developments in India's railways sector:

- Revenue growth has been strong over the years. Indian Indian Railways' revenue reached US\$ 16.56 billion in FY 2023 (until October 2022)
- The total passenger revenue stood at US\$ 4.39 billion in FY 2023 (until October 2022)
- In FY 2023 (until October 2022) passenger traffic stood at 3.61 billion.
- Railway freight traffic growth stood at 115.8 MT MT in September 2022, an increase of 9.15% YoY led by incremental loading of coal, iron ore, cement and clinkers.
- FDI inflows in railway-related components stood at US\$ 1.23 billion from April 2000-June 2022.
- In case of freight earnings it experienced a year on year growth of 20.84%. It stood at US\$ 18.55 billion in FY22 as compared to FY21

- which was at US\$ 15.35 billion.
- Freight remains the key revenue earning segment for the Indian Railways, accounting for 75.2% of the total revenue in FY22, followed by the passenger segment.
- Indian Railways aims to achieve 100% electrification of all broad-gauge routes by 2023.
- In November 2021, Indian Railways announced that -102 semi-high-speed Vande Bharat Expresses are expected to commence operations by 2024, with at least 10 new trains scheduled to launch by August 2022 that will connect 40 cities.
- In July 2021, the South Central Railway zone announced infrastructure development by doubling the maximum permissible speed to 100 km per hour on the Godavari Bridge. The initiative gave a major boost to the Indian Railways on infrastructure modernisation.
- Since the launch of first 'Kisan Rail' service on August 7, 2020, the Indian Railways have operated a total of 1,040 Kisan Rail services by transporting -3.38 lakh tonnes of consignment across 72 routes in the country until July 30, 2021.
- The Indian Railways is likely to deliver 58 super critical as well as 68 critical projects worth more than Rs.1,15,000 crore (US\$ 15.44 billion) in the next few years. 27 super critical projects will be completed by December 2021, while two projects will be handed over by March 2022. 29 super critical projects—spanning 1,044 kms and costing Rs. 11,588 crore (US\$ 1.5 billion)—have been commissioned. Four projects worth Rs. 1,408 crore (US\$ 189.05 million) have been completed and the remaining projects are targeted for completion by March 2024.
- On July 25, 2021, the Indian Railways Station Development Corporation (IRSDC), a nodal agency of the Ministry of Railways spearheading the redevelopment of railway stations across the country, claimed that the two railway stations will be redeveloped at an indicative cost of Rs. 1,285 crore (US\$ 172.54 million) in four years.
- The Indian Railways has decided to undertake electrification of Broad Gauge (BG) rail lines in a mission mode and is likely to complete

the process by 2023-24. Of the 64,689 kms of broad gauge route, 45,881 kms has been electrified and the remaining 18,808 kms route is yet to be electrified. About Rs. 21,000 crore (US\$ 2.8 billion) is estimated to be spent on electrification of the remaining BG routes.

- In January 2021, Hyundai Motor India Ltd. (HMIIL) has announced that it has exported 125 cars to Nepal via the Indian Railways. The export is claimed to be eco-friendly and the first-ever by the company. With this step, the company is aiming to reduce carbon footprint by 20,260 tonnes.
- The Indian Railways completed eight major capacity enhancement projects by taking advantage of the coronavirus lockdown. These projects included three super critical projects with a combined length of 68km, three critical projects with a combined length of 45km, upgradation of the entire 389km railway line from Jhajha in Bihar to Pandit Deen Dayal Upadhyaya Junction in Uttar Pradesh and a new 82km port connectivity line to Paradip.
- As a part of the Railways' plans to upgrade its network, the Ministry announced that all non-AC sleeper coaches will be replaced by AC coaches for trains running >130 kmph. This move has been

taken as a technical necessity for high-speed trains with the bonus of improving passenger experience.

GOVERNMENT INITIATIVES

The Government of India has adopted few initiatives for the Railways sector in the recent past, some of these are as follows:

- In the Union Budget 2022-23:
 - The government allocated Rs. 140,367.13 crore (US\$ 18.40 billion) to the Ministry of Railways.
 - Indian Railways will develop new products and efficient logistics services for small farmers, and small and medium enterprises. It will also take steps towards integration of postal and railway networks to provide seamless solutions for movement of parcels.
 - 100 PM-GatiShakti Cargo Terminals for multimodal logistics facilities will be developed over next three years.
 - Multimodal connectivity between mass urban transport and railway stations will be facilitated on priority.
 - 2,000 km of network will be brought under Kavach, the indigenous technology for safety and capacity augmentation.
 - 'One Station-One Product' concept will be popularized to help local businesses and supply chains.
 - The new & upgraded version of Vande Bharat Express between Gandhinagar Capital & Mumbai

Central was inaugurated by Prime Minister Mr. Narendra Modi on September 30, 2022.

In August 2022, the government launched Mission Raftaar for speed enhancement and to achieve a target of doubling average speed of freight trains and increasing the average speed of superfast /mail/express trains by 25 kmph

In October 2021, India and Nepal signed a MoU (Memorandum of Understanding), for a proposed US\$ 3.15 billion railway line project, to connect Kathmandu and the Indian border town, Raxaul.

Indian Railways has logged the highest ever electrification of sections covering 6,015 Route Kilometer (RKM) in a single year during 2020-21. More than 5 times electrification was achieved during (2014-21) last seven years as compared to during 2007-14.

In April 2021, Indian Railways completed the arch closure of the under-construction Chenab Bridge which is the world's highest railway bridge. Chenab Bridge is 1315 m long and will be 35 meters higher than

Eiffel Tower in Paris. The total cost of the bridge is estimated to be Rs. 1,486 crore (US\$ 200.46 million) and the design life of the bridge is said to be 120 years.

To boost rail infrastructure and make the Indian Railways network future ready, Indian Railways has identified 56 projects across the country in various zones to be completed by Feb-Mar 2021 and FY22.

In July 2020, the Ministry of Railways has invited Request for Qualifications (RFQ) for private participation in operating passenger train services across 109 Origin Destination (OD) routes. As part of the plan, the railways will introduce 12 trains in FY23, 45 in FY24, 50 in FY26 and 44 more in the next fiscal, taking the total number of trains to 151 by the FY27. The project would entail private sector investments of about Rs. 30,000 crore (US\$ 4.09 billion).

The Government is going to come up with a 'National Rail Plan' to enable the country to integrate its rail network with other modes of transport and develop a multi-

modal transportation network.

A 'New Online Vendor Registration System' has been launched by Research Designs & Standards Organisation (RDSO), the research arm of Indian Railways, to have digital and transparent systems and procedures.

The Ministry of Railways plans to monetise assets including Eastern and Western Dedicated Freight Corridors after commissioning, induction of 150 modern rakes through PPP, station redevelopment through PPP, railway land parcels, multifunctional complexes (MFC), railway colonies, hill railways and stadiums.

ROAD AHEAD

Indian Railway network is growing at a healthy rate. In the next five years, Indian railway market is expected to be the third largest, accounting for 10% of the global market. The government has announced two key initiatives for seeking private investments—running passenger trains by private operators across the railways network and redevelopment of railway stations across the country. According to Indian Railways, these projects have

the potential of bringing an investment of over US\$ 7.5 billion in the next five years.

'Adarsh' Station Scheme has been started since 2009-10 and presently, railway stations are upgraded/modernised based on identified need of providing better enhanced passenger amenities at stations. Under the scheme, 1253 stations have been identified for development, out of which 1201 stations so far have been developed. The remaining 52 stations are planned to be developed by 2021- 22. Indian Railways is also looking at other areas of revenue generation such as the following: a) Change in composition of coaches so that it can push the more profitable AC coach travel; b) Additional revenue streams by monetising IRCTC; and c) Disinvesting IRCTC.

The Indian Railway launched the National Rail Plan, Vision 2024, to accelerate implementation of critical projects, such as multitrack congested routes, achieve 100% electrification, upgrade the speed to 160 kmph on Delhi-Howrah and Delhi-Mumbai routes, upgrade the speed to 130 kmph on all other golden quadrilateral-golden diagonal (GQ/GD) routes and eliminate all level crossings on the GQ/GD route, by 2024.



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