



# TWO YEARS OF PM GATI SHAKTI: PERFORMANCE APPRAISAL AND WAY AHEAD

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**Abstract:** The first initiative was invention of the wheel which set in motion the necessity of travelable paths. Since then, the role of infrastructure has expanded from canals to modern capital structures such as railways, roads etc. Depending on the necessities of the region in India since independence, infrastructure development has moved on a consistent growth curve building the assets required by the nation across sectors such as transportation, housing, commercial development, telecom and most recently, sanitation.

The multiplier effects of infrastructure in the economy cannot be realized if it operates in silos. Thus, in 2019, Government of India adopted a forward-looking programmatic approach towards infrastructure coordination. The National Infrastructure Pipeline was born with a projected investment of around Rs 111 lakh Crore for FY 2020-25 for developing a comprehensive view of infrastructure development in the country, monitoring its progress at the highest levels in the government for timely completion, and enabling a pipeline view for investors for them to plan infrastructure investments.

## INTRODUCTION

This story of infrastructure has seen many successes. While roads, railways, and waterways have seen unprecedented expansion in the last eight years, ports and airports have been substantially upgraded. With the help of infrastructure, the country move from unimodal to multimodal transportation, providing a window of opportunity to the private sector to invest and reinvest in these assets, which has already been facilitated by the policy of asset monetization. Extending infrastructural facilities is only part of the story; modernization is the other important principle that has been attempted with verve and achieved with commendable speed. My presentation will cover answers of following questions:

- What is PM Gati Shakti Approach?
- The main objectives of PM Gati Shakti.
- What are the presumed outcomes of PM Gati Shakti
- How PM Gati Shakti will help in various issues faced by Indian infrastructure?
- How PM Gati Shakti will be beneficial for the common man?
- How PM Gati Shakti is facilitating ease of doing business?
- How PM Gati Shakti is improving logistic efficiency?
- What digitization efforts are being undertaken under PM Gati Shakti?

## RESEARCH METHODOLOGY

- Secondary sources for data collection has been used.
- Government publications referred.
- Earlier research on the subject referred.
- PM Gati Shakti was launched by our hon'ble PM on 13th Oct 2021 for providing multimodal connectivity infrastructure to various economic zones.
- Launch of PM Gati Shakti National Master Plan for the multi-model connectivity has helped to improve global competitiveness, promote manufacturing and modernize infrastructure in the country.
- PM Gati Shakti targets to cut logistic costs, increase cargo handling capacity and reduce the turnaround time.
- The master plan is focusing more on ending inter-ministerial silos.
- In simple words, the PM Gati Shakti master plan will bring maximum coordination and minimise delays between the government stakeholders and project will be designed and executed with a common vision
- This plan provides comprehensive database of the ongoing and future projects of various ministries

- Under the programme PM Gati Shakti, a digital platform has been created for integrated planning and coordinated implementation of infrastructure connectivity projects. The platform facilitates each of the ministerial department to have data access for the work done by other ministerial department on infrastructure development.
- BISAG-N (Bhaskaracharya National Institute for space applications and geo-informatics) is developing dynamic map for PM Gati Shakti.
- Aim is to integrate and synchronize data on their existing projects in a single platform

## **ROLE OF CENTRAL MINISTRIES, STATES AND DISTRICT ADMINISTRATION**

- The primary role of the central ministries is to break the silos and start working in co-ordination with each other under the umbrella of PM Gati Shakti National Master Plan for multimodal connectivity. All the existing/planned initiatives/schemes of the various ministries/ departments like Bharatmala, Sagarmala, Inland waterways, Dry/land ports, UDAN have been integrated as part of PM Gati Shakti - National Master Plan.
- The State Governments have large infrastructure responsibilities spread across departments and agencies.
- The district administration will help in ground-level implementation of the planned initiatives/projects under PM Gati Shakti including expediting the district level approval processes. It is essential that required layers of data are mapped on GIS platform. Its visualization and utility by district administration will help in attaining the objective. It will also help in identifying district level projects which will complement the initiatives/projects of the central ministries/departments and state governments.
- To achieve its mandate to develop and integrated cost-effective, reliable, sustainable and digitally enabled logistics ecosystem in the country in coordination with the respective line ministries/departments, the role of logistics division will be as under.
- Further develop and monitor the national master plan (NMP) in coordination with the respective line ministries.
- Operationalize the network planning group (NPG) & the technical support unit (TSU).
- Handhold all stakeholders and provide capacity building on the use of the monitoring tools for updating and sharing data.
- Identify projects which are vital or critical from multimodal connectivity point of view through network planning group (NPG);
- Coordinate for upgradation of the NMP portal from time to time and use the monitoring tools for review by the EGOs, NPG and other stakeholders.
- This plan is achieving enhanced efficiency day by day through comprehensiveness.
- One centralized portal has provided visibility to all stakeholders. Now each and every department can see each other's activities by providing critical data while planning.
- Eg. Railway is one of the important infrastructures for agriculture sector. Kisan rail is a step to enable farmers to utilize the vast railway network to gain access to distant, bigger and more lucrative markets. Access to such markets will enable farmers to sell their produce at a better price which will go a long way in fulfilling government's vision of doubling farmers' income.
- Now, the agency of railways has the visibility of the upcoming projects of other departments like irrigation, economic zones, industrial clusters, so the implementation agency of railway can use the data of other departments while planning their own projects.
- PM GATI SHAKTI is enabling different departments to prioritize their projects through cross sectoral interactions. Example is Shendra and Bidkin economic zones of the Maharashtra Industrial Development Corporation (MIDC) near Aurangabad getting developed as a smart city project. The distance between the two nodes is approximately 40 kms.
- For providing better connectivity between these two zones better coordination was important between NHAI and MIDC (Maharashtra Industrial Development Corporation). Under PM GATISHAKTI the work on connecting these two nodes has been taken on priority after extensive coordination between NHAI and MIDC.
- Industrial corridors are arteries and lynchpin of economic growth.
- Second example is long delayed gas pipeline project which will benefit three southern states
- One was the Kochi-Koottanad-Bengaluru-Mangaluru pipeline Phase-2 project which will move the liquified natural gas from the Kochi LNG terminal and transport and distribute the degasified LNG to consumers in the states of Kerala, Tamil Nadu and Karnataka. The vital project will be connecting these three southern states with the national gas grid of GAIL.
- However, this project, which was sanctioned in 2007 and was scheduled to be completed in 2012, has been now delayed till 2025.
- The main problem in the project remains in the state of Tamil Nadu which has to submit a revised pipeline route and land acquisition plus forest clearances are pending. This raised the concern of the prime minister as the project is not only expected to meet the energy needs of domestic but also industrial and transport sectors. The prime minister is said to have asked the cabinet secretary to help resolve the issues between the Tamil Nadu government and the ministry of petroleum and natural gas."
- Ministries are advised to use the PM GATISHAKTI portal for the planning of infrastructure projects and expeditious resolution of issues, stressing on the timely completion of projects in India."
- "India has been making efforts zealously to ramp up industry and manufacturing across the length and breadth of the country. Recently, finance minister Nirmala Sitharaman emphasized the need to map all industrial zones for understanding what can be brought under the transformative and holistic infrastructure development endeavor – the PM GATI SHAKTI initiative. In the range of industrial zones that were highlighted, industrial corridors come across as a crucial component in India's development trajectory. Industrial corridors have witnessed a flurry of activity in recent years.

- Industrial corridors projects are set for development with 30 projects to be developed by 2024-25. In 2021, the Asian development bank approved a \$250 million loan to support India's national industrial corridor development program. Against this backdrop constituting the resolution to strengthening and spreading industrial corridors in the country, it is pertinent to first understand what industrial corridors are and what they bring to the table.
- This prioritization will help industries of these zones to get better connectivity for sourcing the raw material and transportation of their final products.
- PM Gatishakti is helping in optimization of different projects by minimizing the logistic cost by identifying critical gaps.
- For example, if coal has to be transported from Jabalpur to Mundra port, government can minimize the logistic cost by identifying the best route through this plan. This plan will also help the rail and road ministries to identify the critical routes for modification and expansion.
- It provides synchronization between various departments in a holistic manner for timely completion of all the projects. Large-scale absence of coordination and collaboration among agencies has been a major challenge to time bound infrastructure project implementation in India."
- "NHAI constructs the roads till district headquarters, thereafter; it is constructed by state PWD or by rural development department to the habitations and to the border areas by BRO. This plan will help in synchronizing the activities of each department in a holistic manner by ensuring coordination of work between them.
- "Factors responsible for time lags are underestimation of original project cost, spiraling land acquisition cost, delays in environment, forest and wildlife clearances and industrial licensing permission, road crossing of pipelines/transmission lines, shifting of utilities, delays in the tie-up of project financing, delays in finalisation of detailed engineering, etc.
- We can take the example of north eastern region. "the northeast region of India, comprising eight states, namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, share almost 12,000 kilometers of international border with Bangladesh, Bhutan, Myanmar, Nepal and Tibet, and is connected with the rest of India by a narrow chicken-neck, having a width of approximately 20 kilometers, which is popularly known as the Siliguri corridor in West Bengal.
- This has primarily kept the northeast India's trade potentiality under-utilized.
- Estimates show that the northeast region produces significant marketable surplus in a large number of perishable commodities, including banana, pineapple, orange and tomato."
- "Contrary to this, as per a NITI (National Institute for Transforming India) Aayog report titled "India – three-year action agenda 2017-18 to 2019-20", 95 percent of India's exports to neighbouring states of Bangladesh, Bhutan and Myanmar are from regions other than northeast India."
- Data shows that timely development of road infrastructure is of prime importance in north eastern region.
- Different types of roads are being implemented by multiple agencies like PWD, BRO, NHIDCL, PMGSY in north eastern region. Therefore synchronized effort was necessary for these types of projects in India.
- "As a result of the Gati Shakti, the delayed approach to project implementation in northeast India is undergoing a tectonic shift. This is because most of these projects under implementation, including those under Bharatmala Pariyojana, will now be part of an institutional framework under the PM Gati Shakti master plan.
- "The 49th network planning group (NPG) meeting of PM GATISHAKTI National Master Plan (NMP) has recommended a roadways project in Tripura.
- "The road section of Khowai-Teliamura-Harina with a total length of 134.9 km was considered for its improvement and widening to two lanes with a paved shoulder of NH-208 in Tripura. It is a brownfield project with a total cost of Rs 2,486 crore.
- The project is planned with a multimodal connectivity approach of PM GATISHAKTI; connectivity to industrial clusters and a new special economic zone namely Paschim Jalefa; efficient freight movement; optimized alignment and logistical efficiency."
- The project road that passes through Khowai, Gomati, and South Tripura districts connecting places like Khowai, Teliamura, Twidu, Amarapur, Karbook, and Harina in Tripura. It will also not only enhance interstate connectivity between Assam and Tripura but also give a boost to the economic and industrial activities in Tripura."
- The planning of the project on NMP yielded the following key benefits under pm GATISHAKTI - enhanced logistics efficiency: by using NMP, the road length got reduced by 28 km (from 162 km to 134 km), saved travel time by 2.5 hours.
- "Enhanced multi-modal connectivity: this project corridor facilitates intermodal transport from Telimaura Railway Station and Manu bazar railway station near Harina. The proposed road improved connectivity to the airport at Agartala and the proposed multi-modal logistics park (MMLP) at Udaipur.
- Regional connectivity improved: this corridor is very close to the Bangladesh border and it connects Bangladesh through Kailashahar, Kamalpur, and Khowai border check post."
- Connectivity to economic and social nodes: the road will boost connectivity to 4 economic nodes such as industrial cluster around Agartala, FCI depot, etc and 13 social nodes such as Matabari temple, Neer Mahal, Pilak civilization museum, Jampui hills, Ambassa eco park, etc. facilitates freight movement from Kolkata to north eastern states (majorly, Tripura, Mizoram, and Manipur) to Bangladesh."
- "Boost to industry and exports promotion under PM GATISHAKTI
- Project facilitated the movement of raw materials for industry clusters in Tripura, movement of manufactured goods like rubber, textile, bamboo, food processing, etc. From economic nodes like special economic zone located at Paschim Jalefa, Sabroom in South Tripura district and industrial clusters/parks around Agartala and Udaipur. The proposed road will connect north east India to Chittagong port in Bangladesh. This would ensure Exim connectivity."

- "Development in tribal area: project enhanced connectivity to three tribal districts- Khowai district, Gomati district, and south Tripura district. The project is on engineering procurement & construction (EPC) basis under japan international cooperation agency (JICA) official development assistance (ODA) loan.
- The principles of PM GATISHAKTI national master plan have been adopted during the planning of the road alignment. Alignment of the road is superimposed with data layers available on national master plan portal like railway lines, forests, power lines, water bodies, etc.
- The intersections will be seen with forests and other sensitive zones to minimize environmental disruptions because these are the factors responsible for time lags.
- Institutional mechanism of PM Gati Shakti will end inter-ministerial silos. It facilitated inter-ministerial consultations through npg meetings for integrated planning and decision-making. the 49th NPG meeting saw representation from infrastructure ministries/departments including ministry of road transport and highways, ministry of railways, ministry of ports, shipping and waterways, ministry of civil aviation, ministry of power, ministry of petroleum and natural gas, department of telecommunication (DoT), ministry of new and renewable energy and NITI AAYOG and from Tripura state government, to discuss on the various aspects of the project.
- Provides the entire data at one place and provides each department to have access to those datas. Datas are available with GIS based spatial planning and analytical tools having 200+ layers like land use, existing structures (e.g. bridge, railway crossing, culvert), soil quality, infrastructure (road, rail, waterway etc.), elevation data/3d (contour and gradient), habitation sprawl etc. Enabling better visibility to the executing agency. For example, many infrastructure contracts go into litigation as the detailed project report (DPR) of the project do not have complete information about the structures and the likely hindrances etc. In and around the project area. Contractors meet with uncertainties while executing, which delays execution and leads to litigation.
- The plan will provide the public and business community information regarding the upcoming connectivity projects, other business hubs, industrial areas and surrounding environment. This will enable the investors to plan their businesses at suitable locations leading to enhanced synergies.

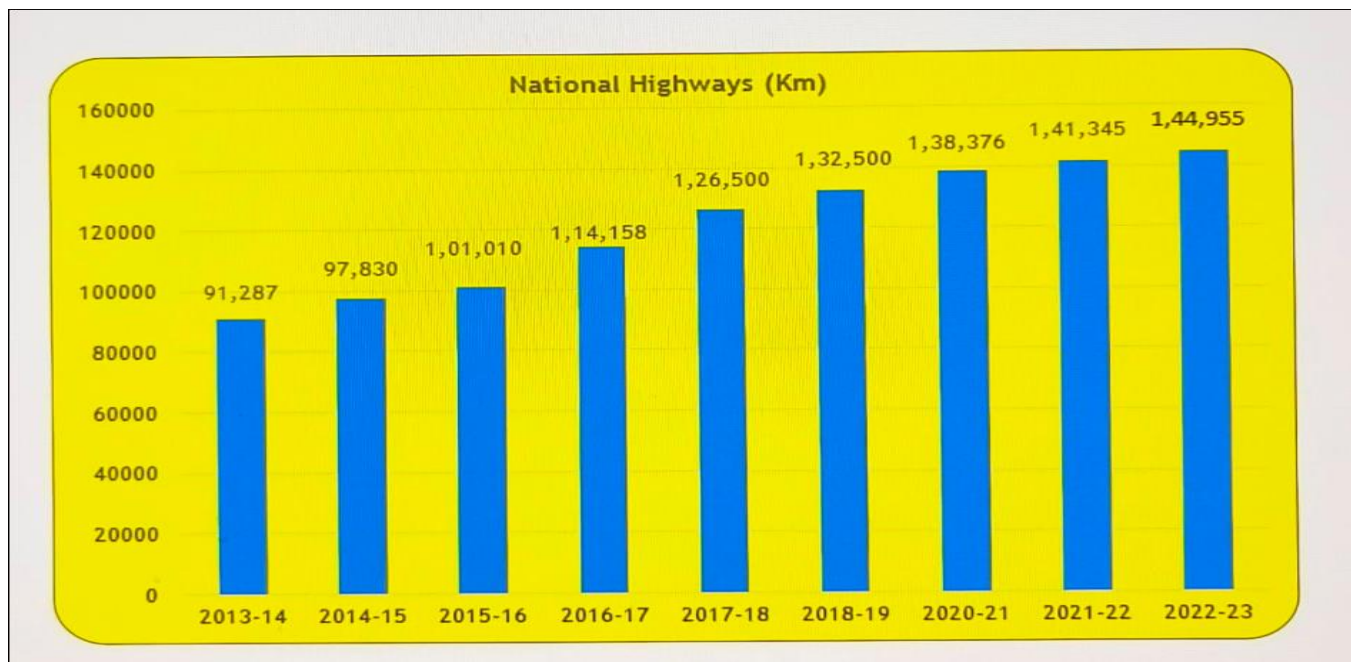
### PM GATI SHAKTI AND EASE OF DOING BUSINESS

- The multi-modal connectivity will provide seamless movement of people, goods and services from one mode of transport to another. National master plan will facilitate the last mile connectivity of the infrastructure so that road, rail, power, optic fiber cable, gas pipeline etc are available to the people.
- The approach is driven by seven engines, namely,
  - Roads
  - Railways
  - Airports
  - Ports
  - Mass Transport
  - Waterways
  - ✓ Logistics infrastructure
  - ✓ The scope of PM GATISHAKTI National Master Plan will encompass the seven engines for an Economic transformation, Seamless multimodal connectivity and Logistics Efficiency

### LOGISTICS EFFICIENCY

- We can see the effect of PM Gati Shakti on seven engines of economic growth through their performance in two years
- India has the second largest road network in the world of about 63.32 lakh km. this comprises national highways, expressways, state highways, major district roads, other district roads and village roads as under:
- "The ministry of road transport and highways (MORTH) has made significant progress under the "PM Gati Shakti National Master Plan (NMP)", aimed at improving multi-modal connectivity and last mile connectivity across the country."
- "As part of the PM Gati Shakti National Master Plan, the ministry plans to develop 22 greenfield expressways, 23 other key infrastructure projects & other highway projects and 35 multi-modal logistics parks (MMLPS), as part of the Bharatmala Pariyojana and other schemes of the ministry. some of the major expressways and corridors, which are under construction stage are Delhi – Mumbai expressway, Ahmedabad-Dholera expressway, Delhi-Amritsar-Katra expressway, Bengaluru-Chennai expressway, Ambala-Kotputli expressway, Amritsar-Bhatinda-Jamnagar Expressway, Raipur-Vzg expressway, Hyderabad-Vzg expressway, Chennai-Salem expressway and Chittor-Thatchur expressway."
- "Some of the major key infrastructure projects, which are under construction stage include construction of Zojila tunnel (Ladakh), roads to connect Krishnapatnam port (Andhra Pradesh), a major bridge over middle strait creek (Andaman & Nicobar islands), 2-laning of Lalpul-Manmao changing road (Arunachal Pradesh), 6-lane bridge over Ganga Bridge at Phaphamau (UP) and 4-lane bridge over Brahmaputra between Dhubri-Phulbari (Meghalaya)."
- "The ministry, through its implementing agencies NHA/NHLML and NHIDCL, has kept pace with the work of implementing the 35 MMLP projects identified for development under the Bharatmala Pariyojana phase i. the MMLP at Jogighopa, Assam, which is being developed in partnership with the Assam government as equity stakeholder in the project SPV, is already under construction.





## RAILWAY.

- "When Gati Shakti fostered synergy and collaboration across ministries and departments; it became evident that the Indian railways stood to gain significantly,
- "Consider railway lines as an example. Between 2009 and 2014, railway lines were being laid at an average pace of 4 km per day. This pace has now accelerated to 14 km per day. Consequently, the fiscal year 2022-23 witnessed the completion of 5,423 km, marking an all-time high."
- The ripple effect extends beyond accelerated construction rates to cover all facets of the Indian railways – from initiation and approval of projects to their completion.
- "Lack of coordination has been a significant hurdle, leading to delays in railway projects," said Vijay Dutt, former additional member of the railways. This issue needed to be resolved if railways is to amplify its freight contribution from 28 per cent to 45 per cent by 2030, he added.
- Exclusive data accessed by business standard shows that there has been an increase in yard remodeling and non-interlocking works (61 per cent in 1,061 stations), automatic signaling (143 per cent covering 530 route km) and railway electrification (3 per cent, clocking record numbers of 6,565 route km) in the last financial year.
- Improved coordination has led to an uptick in project sanctioning, besides reducing the associated timelines. The final location survey exhibits a 688 per cent increase, project sanctioning reflects an 871 per cent surge, and traffic facility works observe a 61 per cent rise. the cumulative result is reflected in the highest-ever numbers of approved projects in 2022-23, with 449 for final location surveys, 68 for project sanctioning, and 132 for traffic facility works.
- This effort has also translated into heightened project commissioning. new lines, doubling and gauge conversion led to an increase of over 80 per cent, from 2,910 km in 2021-22 to 5,243 km in 2022-23. This contributed to enhancing passenger amenities and related infrastructure. The construction of ramps reflects a 57 per cent increase, while the development of platforms and foot over bridges also saw growth.
- The aim of this is to increase the cargo handled by railways from 1,210 million tons in 2020 to 1,600 mt in 2024-25. This is vital since in most developed economies, railways handle more than 45 per cent freight traffic. In our case, this has slipped from over 80 per cent at the time of independence to around 25-30 per cent now." a majority of investments over the years were going to roads, he said, underscoring the need to turn the focus back to rail."
- "The 2022-23 budget announcements mentioned that "100 GATI SHAKTI cargo terminals (GCT)" would be developed in the next three years. Reports suggest that 48 of these are complete. "It has been expected that setting up of 100 gct will bring investment worth Rs 6,000 crore approximately. These terminals are likely to bring cargo traffic in excess of 1 million tonnes each for Indian railways," states a report that the railways ministry recently placed before parliament.
- Whether or not the railways achieve its freight target, any increase in its freight share will help India shift to a cleaner mode of transportation, which is critical to meet its green energy target."

### TRACK RECORD

\* New tracks being laid: 14 km per day – up from 4 km per day between 2009 and 2014

PROJECT SANCTIONING			
Item	2021-22	2022-23	%change
Final location survey	57	449	688
Project sanctioning	7	68	871
Traffic facility works	82	132	61
Station development	1	50	4,900

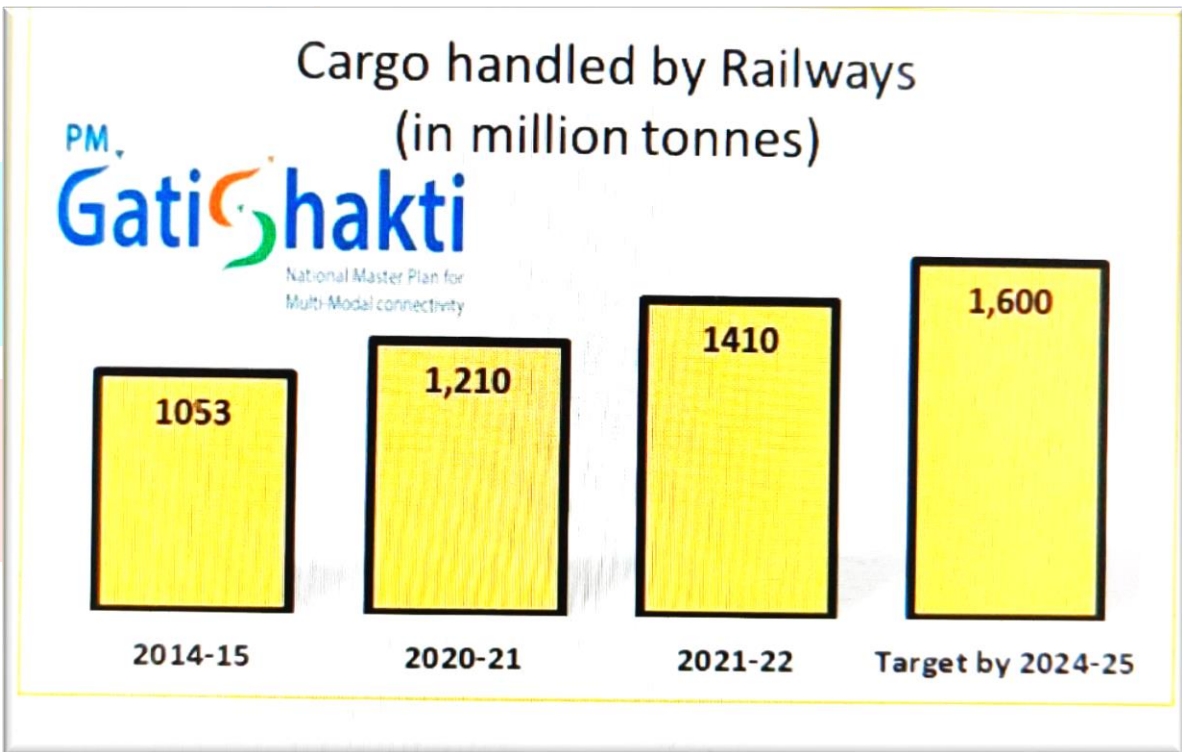
PROJECT COMMISSIONING			
Item	2021-22	2022-23	%change
New lines, doubling, gauge conversion (km)	2,910	5,243	80
Rail electrification (km)	6,366	6,565	3
Automatic signalling (rkm)	218	530	143
Electronic interlocking (No. of stations)	421	538	28

NO. OF STATIONS			
Item	2021-22	2022-23	%change
Foot over bridge	369	375	2
Platforms	460	523	14
Ramps	234	367	57

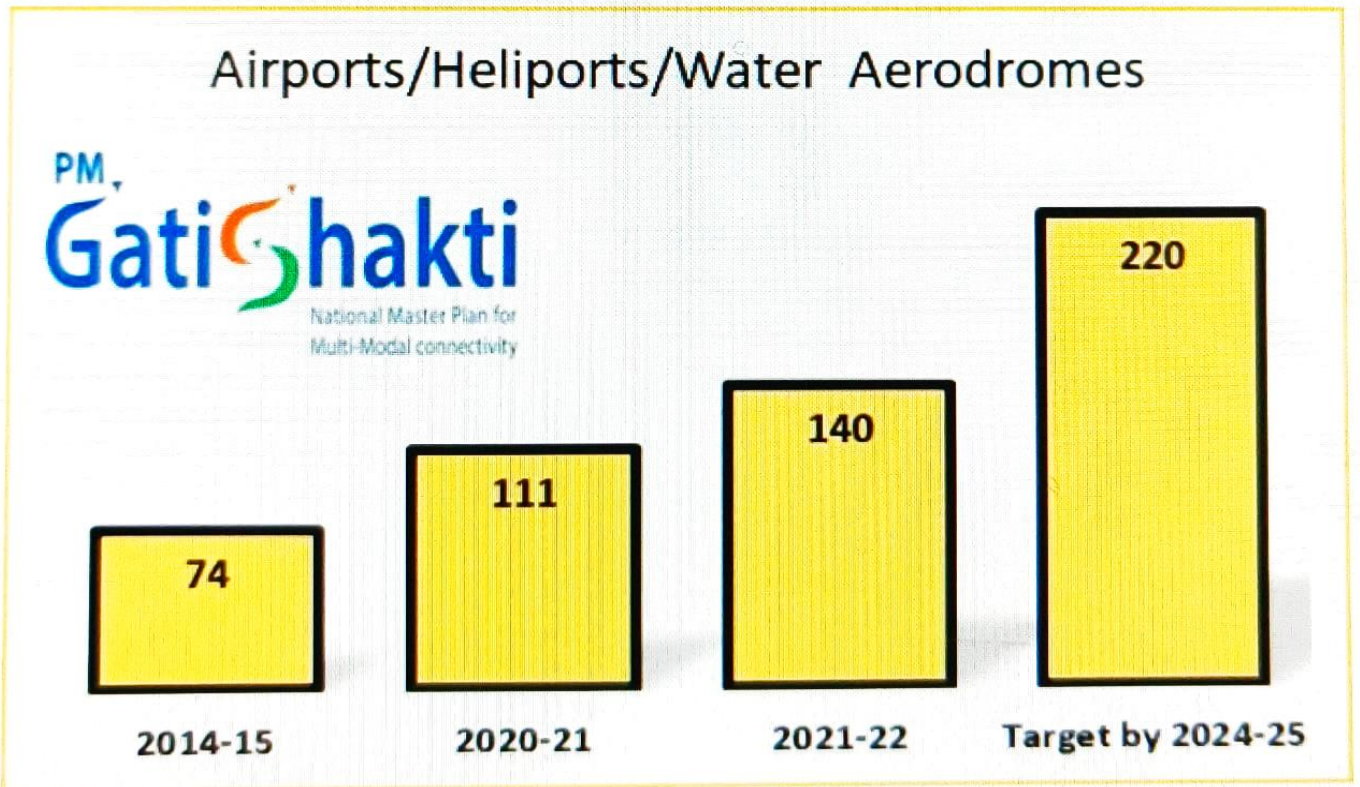
Source: Indian Railways

Cargo.

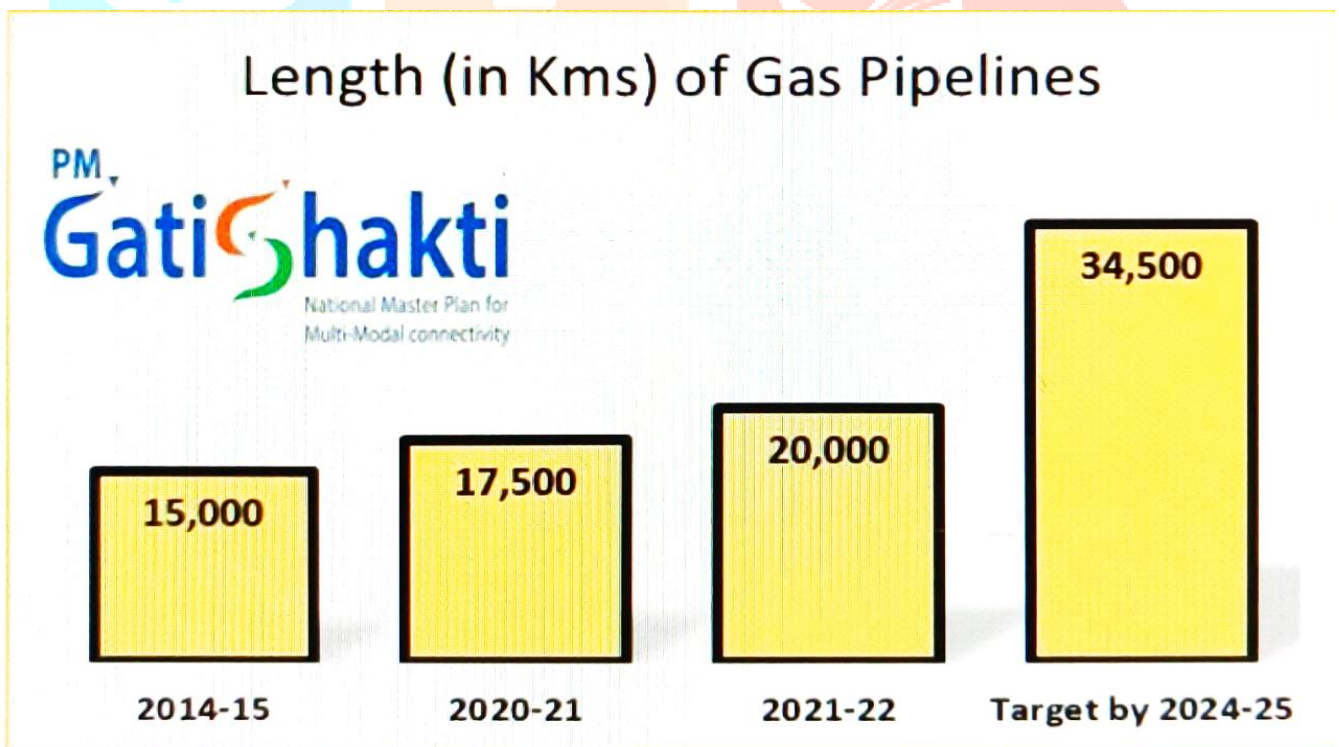




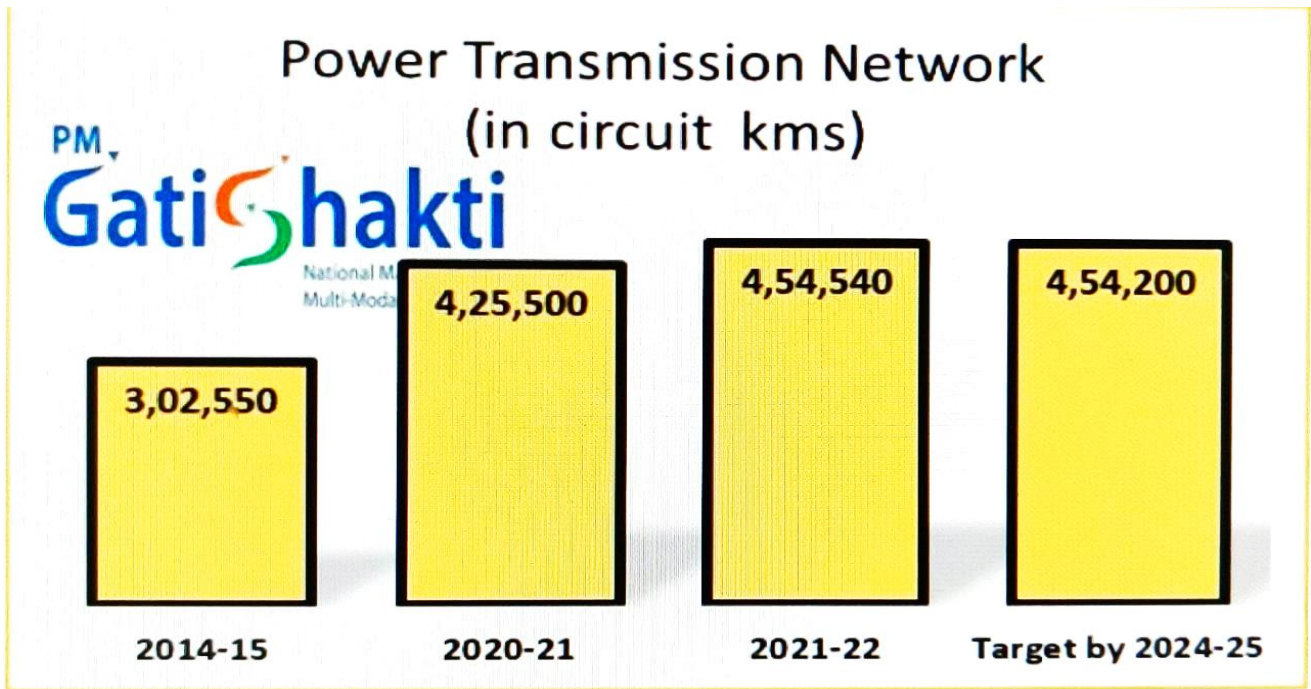
Airport.



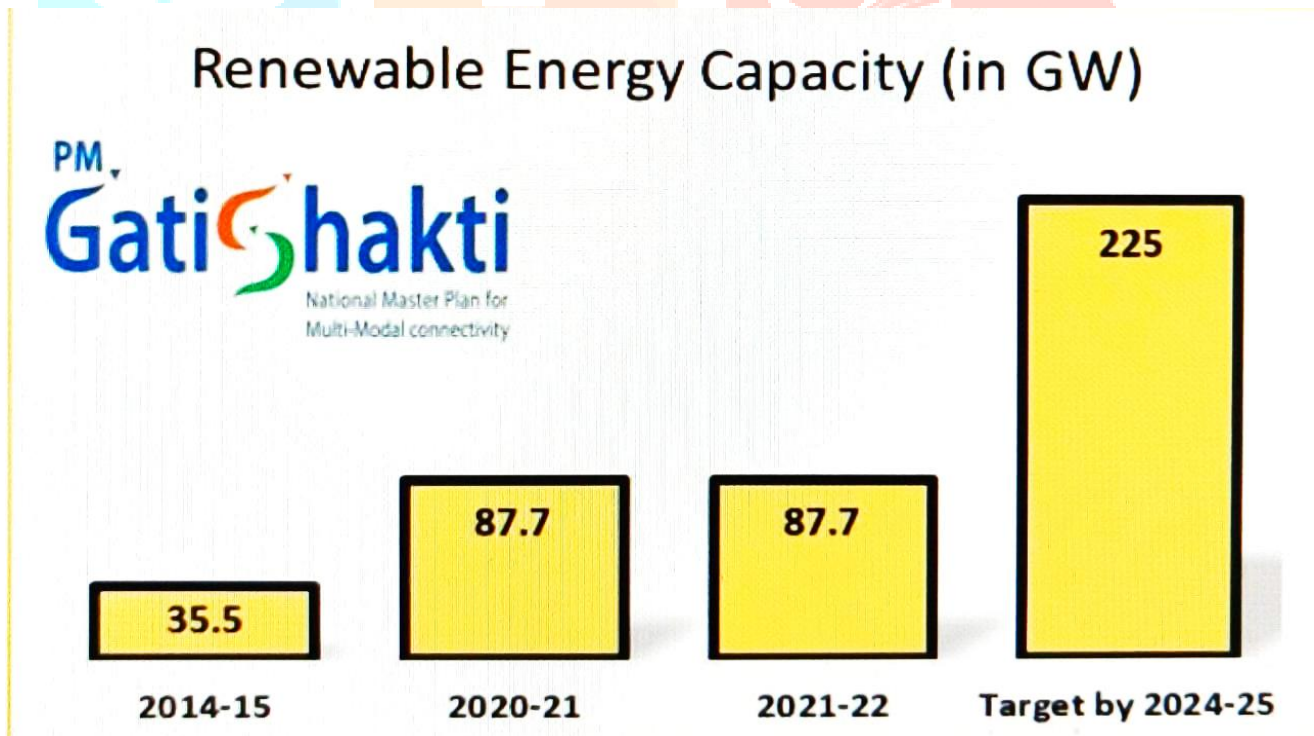
Gas pipeline.



Power transmission network.

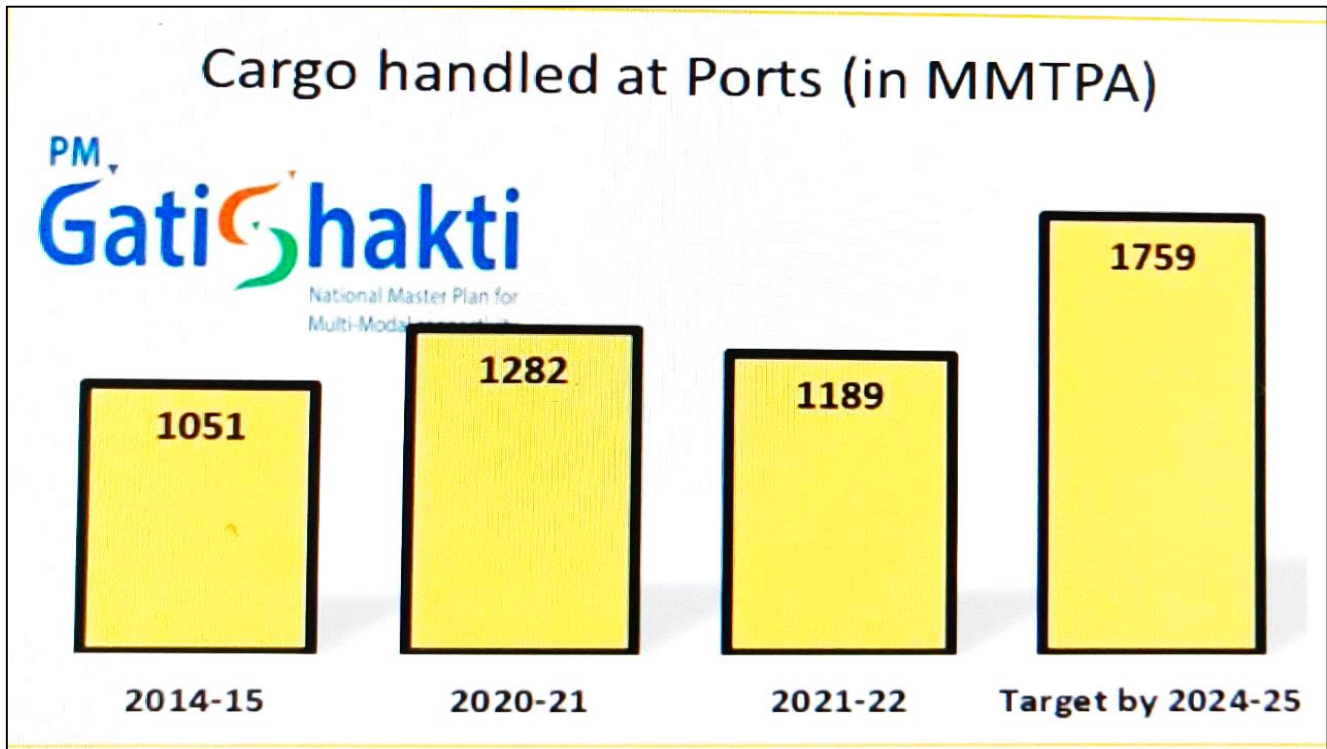


Renewable energy.

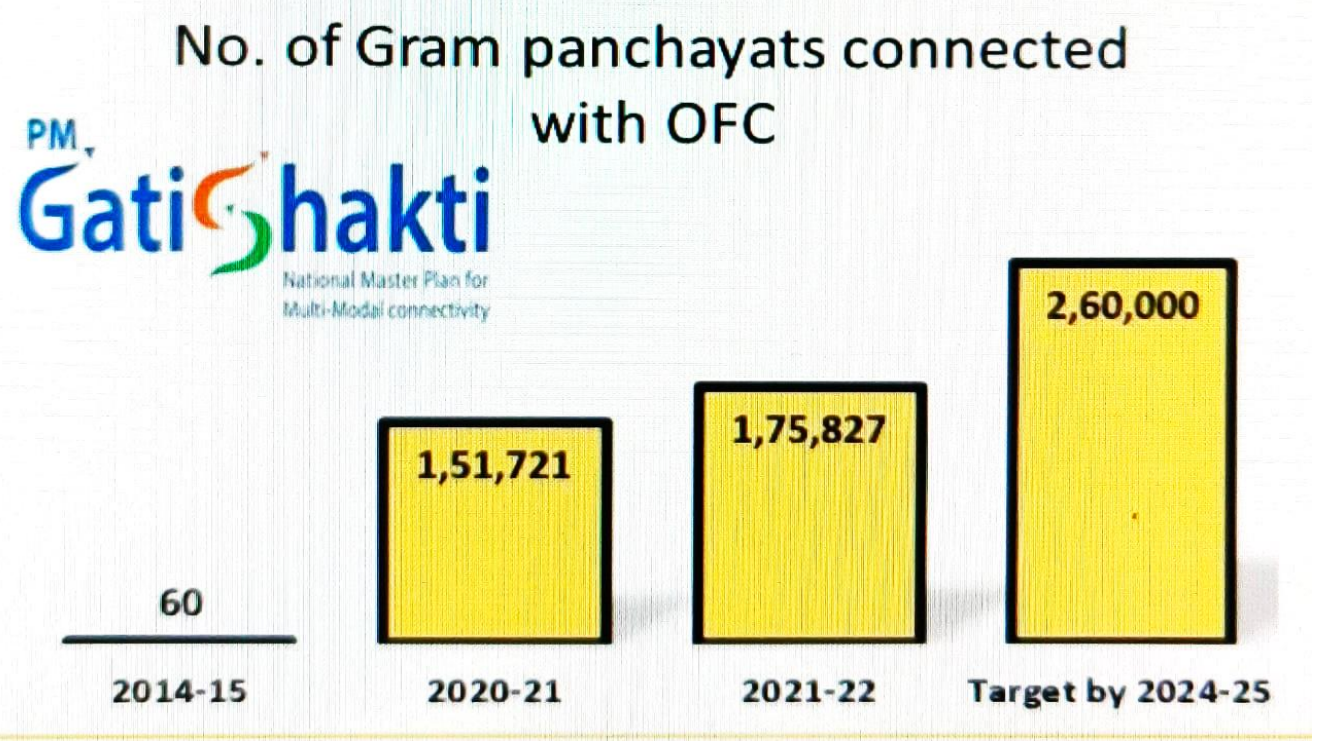




Cargo Handling at Ports



Gram panchayat connectivity.



PROBLEMS IN THE WAY OF PM GATISHAKTI.

- Wasteful expenditure being incurred by different departments
- It has been observed many a times that once a road is constructed, some of the other agencies dig up the constructed road again for various activities like shifting/laying of underground cables, gas/water pipelines etc. this results in these stretches of roads being continuously under some or the other construction, not only causing great inconvenience to the people in those areas but also results in wasteful expenditures being incurred by different departments.
- PM GatiShakti tends to resolve these issues by establishing synergies among different departments during the planning stage itself.

**INSUFFICIENT UTILIZATION OF INSTALLED CAPACITY.**

- It has been often observed many a times that due to inefficient planning, several projects despite their timely completion are not running up to their optimum capacity and are being under-utilized resulting in loss of revenue and resources.
- "Gatishakti not only aims at aligning the timelines of various projects through efficient planning, but also aims at taking initiatives even after completion of the project to overcome the past inefficiencies thereby minimizing the losses.
- "One such example is lng terminal which was commissioned in 2013-14 but because of lack of integrated planning, pipeline connectivity to various demand centers in Kerala, Tamil Nadu and Karnataka with LNG terminal could not be completed due to ROU acquisition issues in the states. The pipelines were to be laid at about the same time. Initially only 41 km pipeline was supplying gas to region around Kochi city only and terminal capacity was underutilized. Kochi Mangalore pipeline section was commissioned in November, 2020. With the laying of pipeline connectivity to demand centers, the utilization has improved
- "As has been demonstrated by the ministry of shipping through several interventions, involving upgradation of infrastructure for movement of goods from the port by improving the last mile connectivity in addition to various policy interventions like direct port delivery (DPD) which facilitates the delivery of the container directly from the terminal without being taken to container freight stations (CFS). This has ensured that the customer can avail the direct delivery thus, saving the overall logistics cost of Rs 8,000-20,000, as well as saving time by 4-5 days"
- Delay of standardization: previous practice has always been to design each and every part of infrastructure as if it is a unique construction. such as each railway over bridge (ROB) is designed as a separate project by the MORTH which later requires approval by the ministry of railways (MOR). Most of the time these designs are similar but approval process is stretched to several years causing huge inconvenience to general public and loss to the exchequer.
- Gatishakti aims at resolving this issue by promoting standardization of the designs so that the approval could be completed in a very short span of time.
- As has been successfully demonstrated by ministry of railways (MOR) by implementing the rail road crossing general alignment drawing approval system, an online all-in-one approval portal wherein the list of drawings for rail road crossings are available along with guidelines for planning of road over bridges. This has reduced the time from 6 months to 2-3 months in getting relevant approvals from the MOR."

**CONCLUSION.**

PM Gati Shakti master plan is a big step of government of India and it is a long impending reform in the direction of infrastructure development in India after the national infrastructure pipeline, and the national monetization pipeline. It will go a long way in making our local manufacturers globally competitive

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