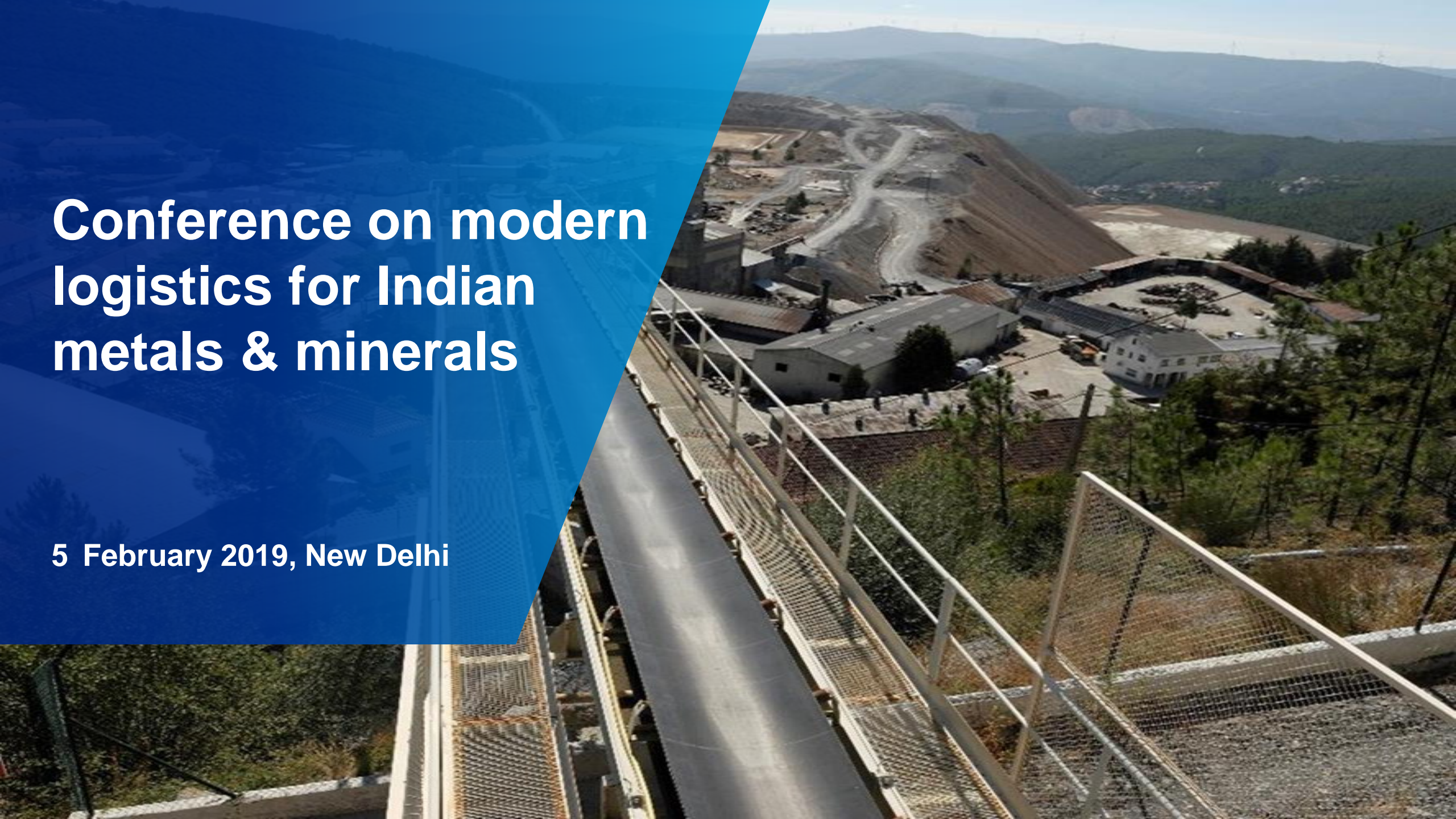


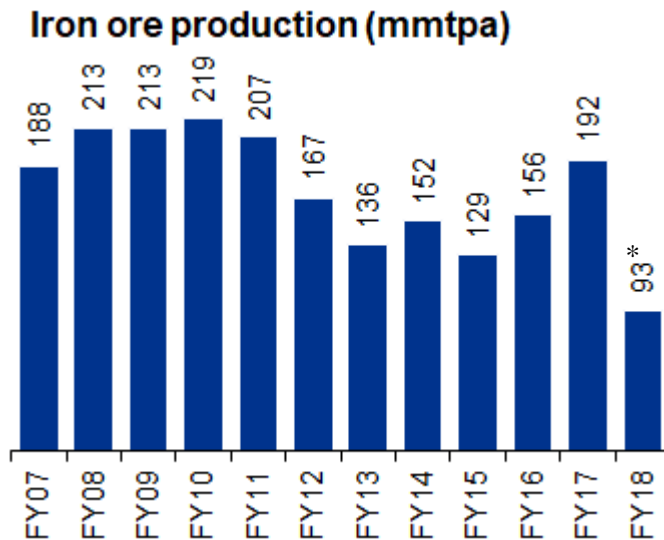
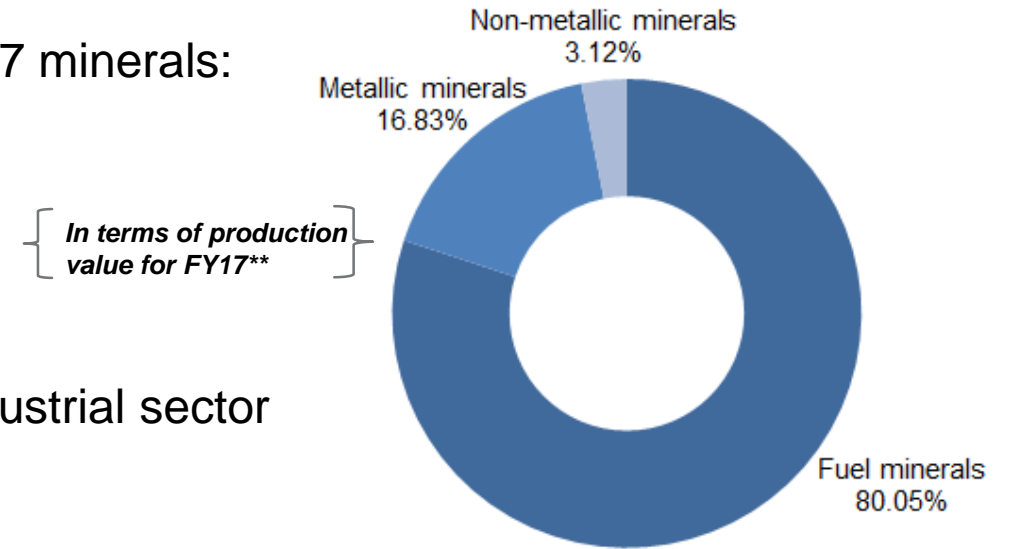
Conference on modern logistics for Indian metals & minerals

5 February 2019, New Delhi



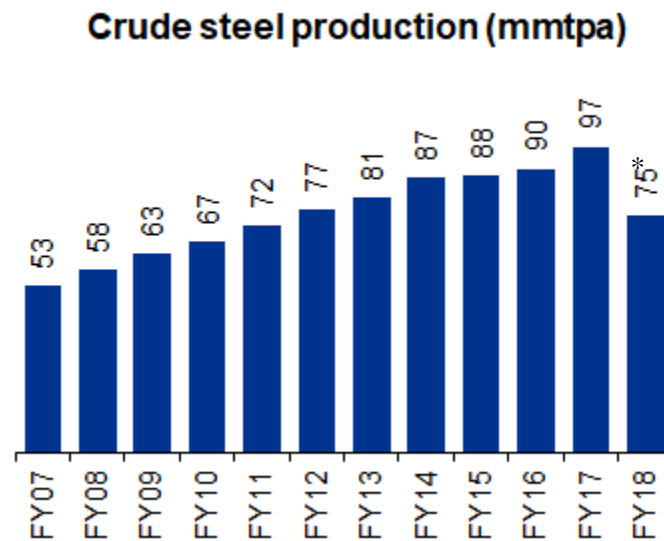
Historical trend in domestic M&M industry

- India is endowed with rich mineral deposits and produces 87 minerals:
 - 4 fuel minerals
 - 10 metallic minerals
 - 47 non-metallic minerals
- Domestic mining sector contributes about 10% - 11% to industrial sector and 2.2% - 2.5% to economy's GDP

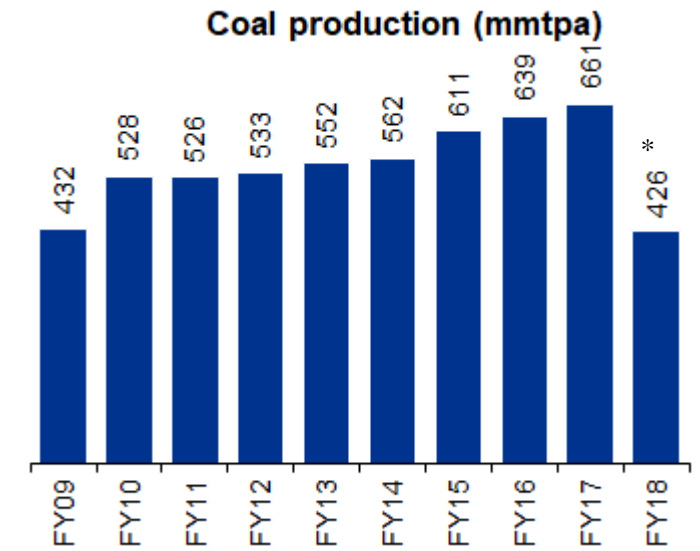


*FY 18 - April to September, Ministry of mines

** IBEF, Metals and mining, July 2018



*FY 18 - April to December, World Steel Association



*Up to December 2017, Ministry of mines

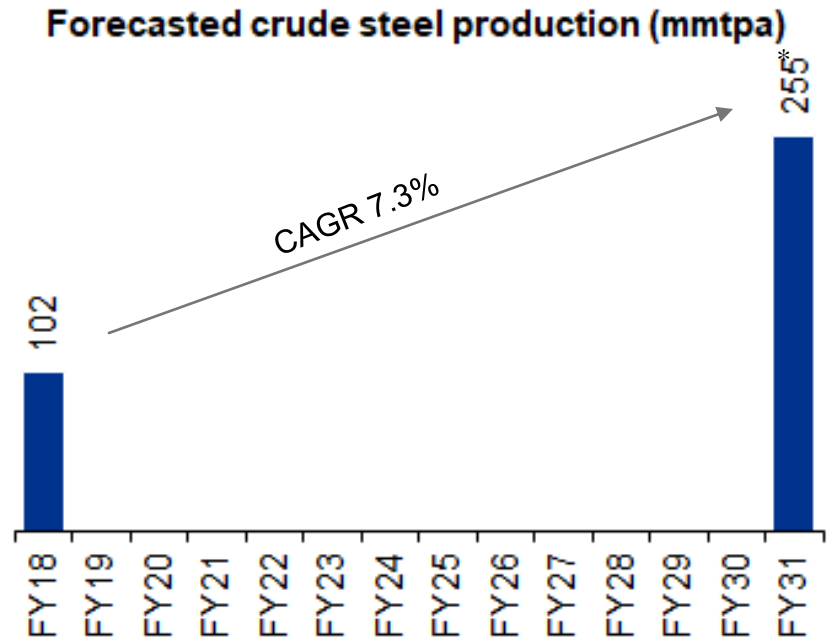
Future trends in Indian steel industry

- National Steel Policy 2017 has projected steel production to reach 255 million tons by 2030-31, implying a CAGR of 7.3%
- Projections of raw material requirement for steel sector (in million tons):

| S No. | Raw material | FY 17 | FY 31 (P) |
|-------|-----------------|-------|-----------|
| 1 | Iron ore | 156 | 447 |
| 2 | Coking coal | 57 | 161 |
| 3 | Non-coking coal | 41 | 136 |

Source: NSP 2017

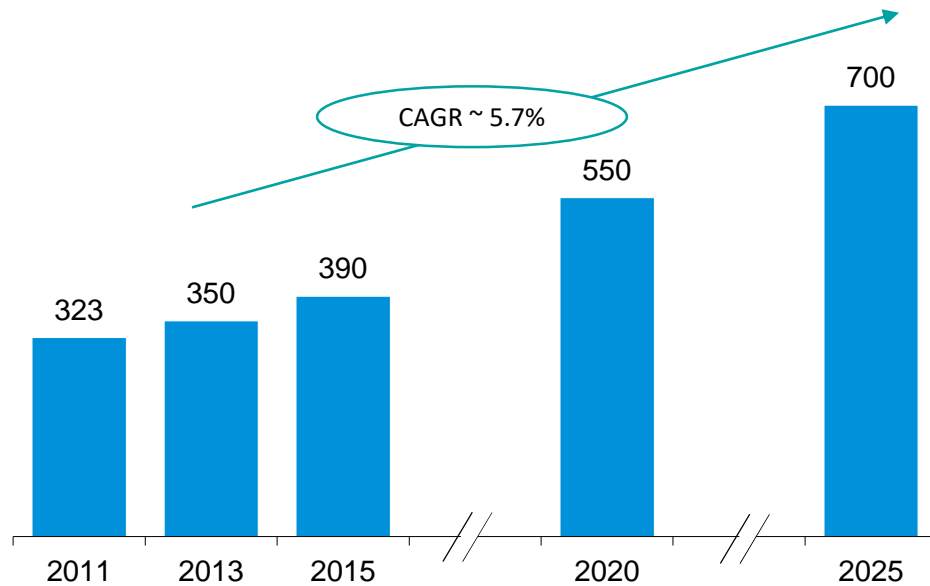
- Opportunities for steel consumption from downstream industries:
 - Growth in automobile industry
 - India emerging as global manufacturing hub
 - Increased capacity expansions and investments in oil and gas and power industries
 - Investment of US\$ 4.5 trillion required over 25 years in **infrastructure sector**



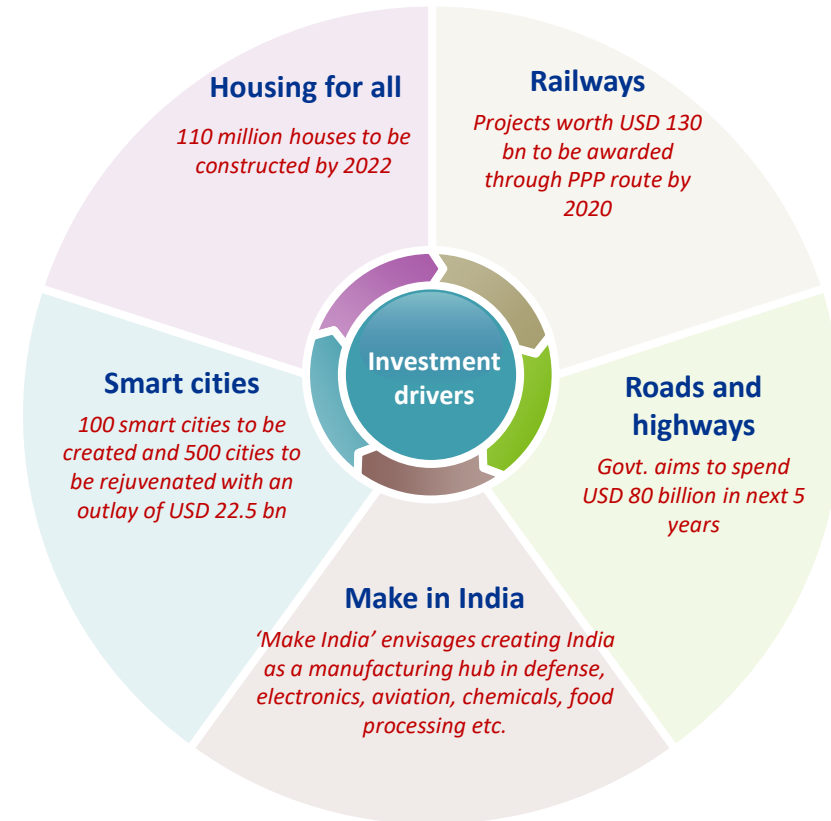
*Estimated assuming 80% capacity utilisation, and capacity additions as per the National Steel Policy 2017

Future trends in Indian cement industry

Overall cement capacity in India (in MMTPA)



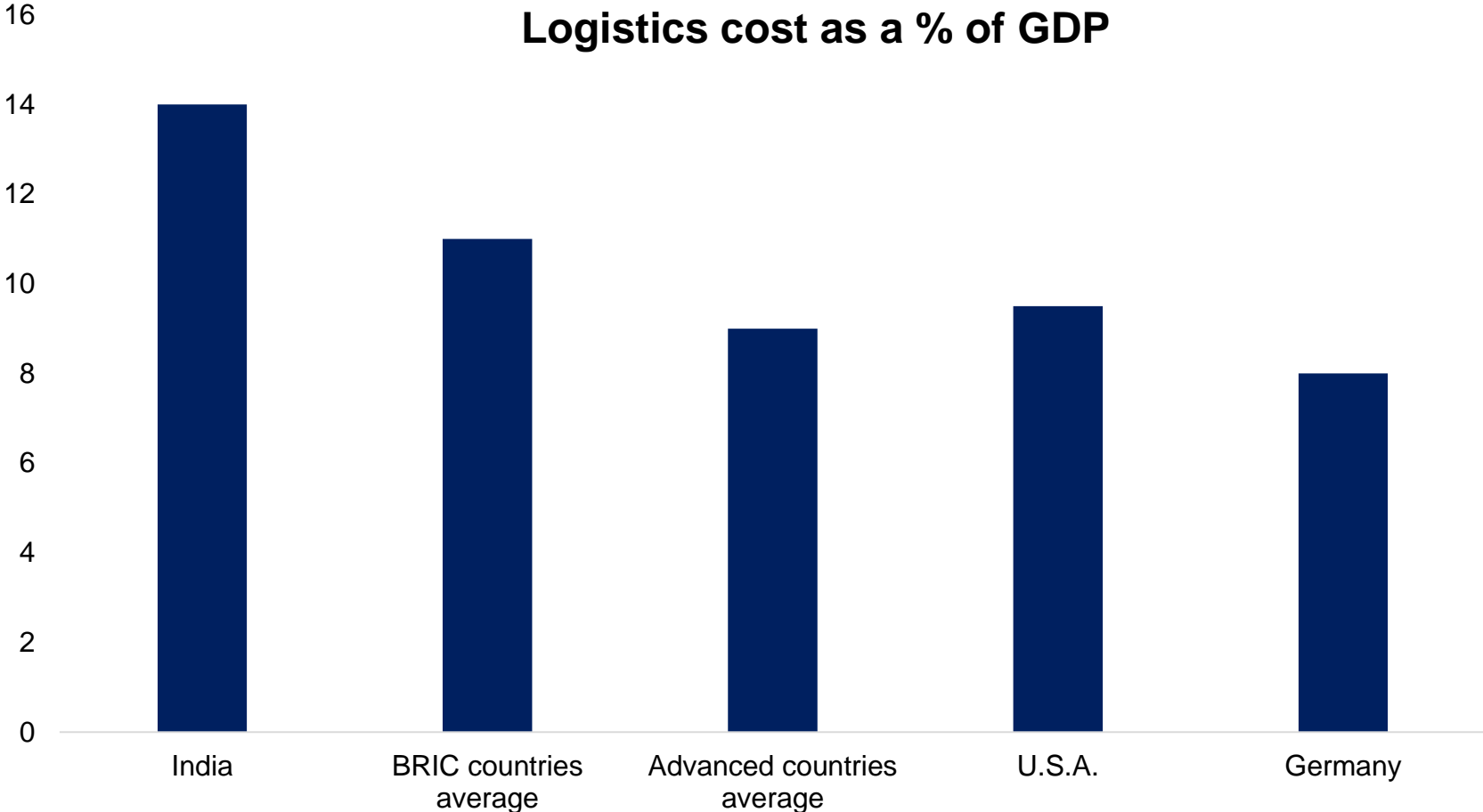
Drivers of investment



Source: Office of Economic Advisor, Department of Industrial Policy and Promotion, IBEF, CII, KPMG Analysis

However, India has one of the highest costs of logistics...

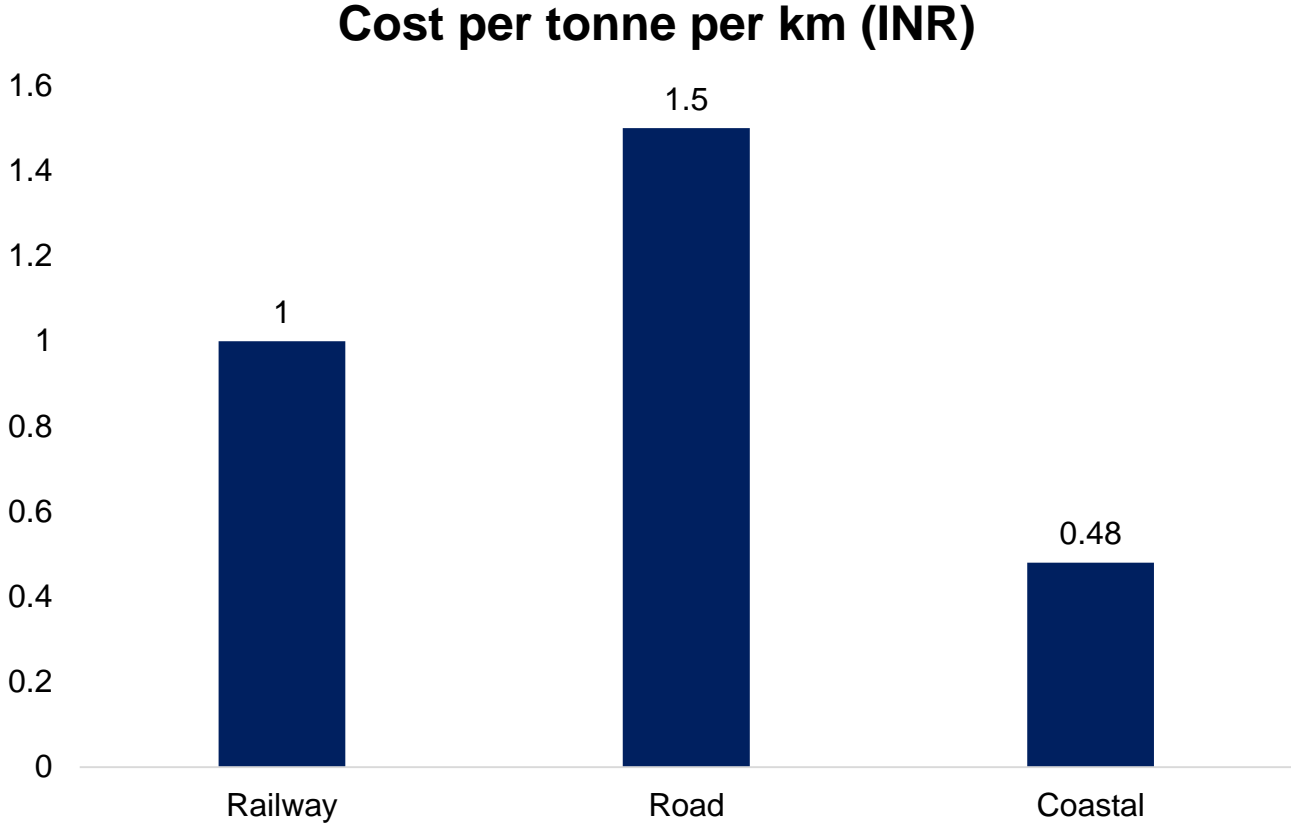
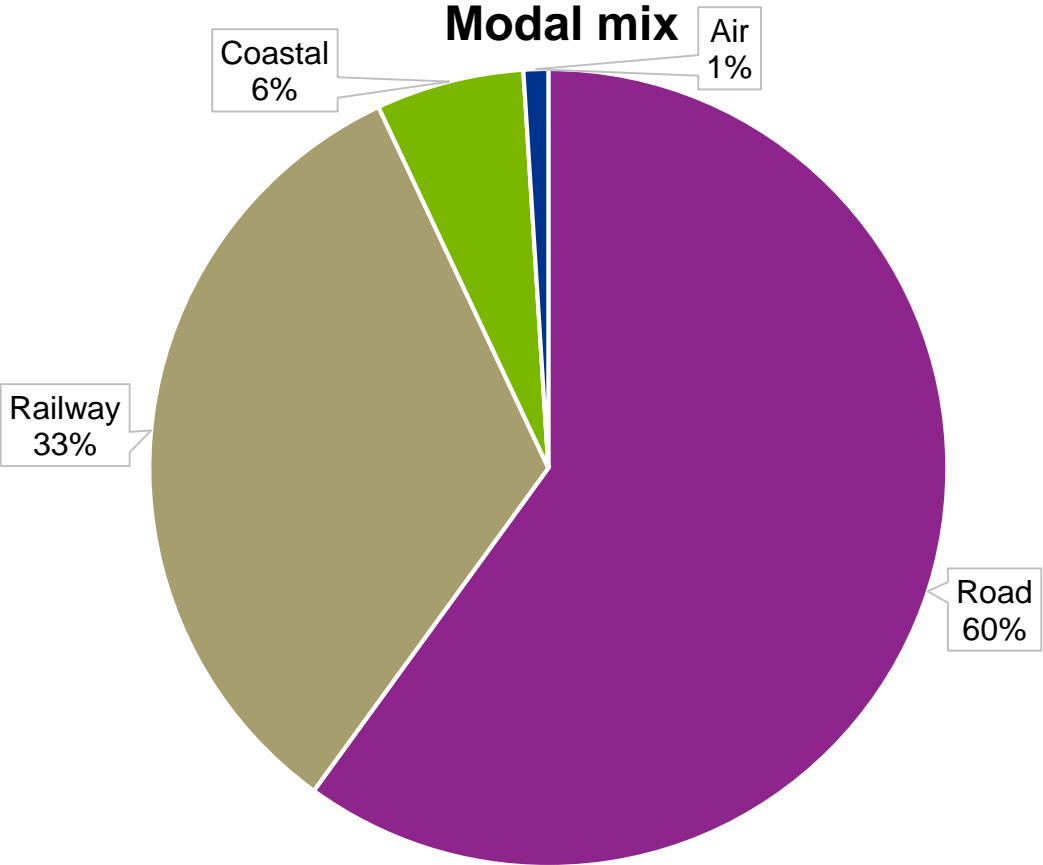
Cost of logistics as a percentage of GDP is one of the highest which is driven by inefficiencies and time and material wastage



Source: MoRTH

One of the drivers being the modal mix...

Modal mix is skewed towards road transport which is also one of the more expensive modes of transport



Source: Phillip Capital

Multiple initiatives are being taken to increase efficiency...



Infrastructure

- Logistics parks, SEZ, FTWZs
- Dedicated freight corridors for efficient rail movement
- Improved Road network
- Development of water ways with coastal and inland waterways
- Development of regional transportation links in South Asia



GST

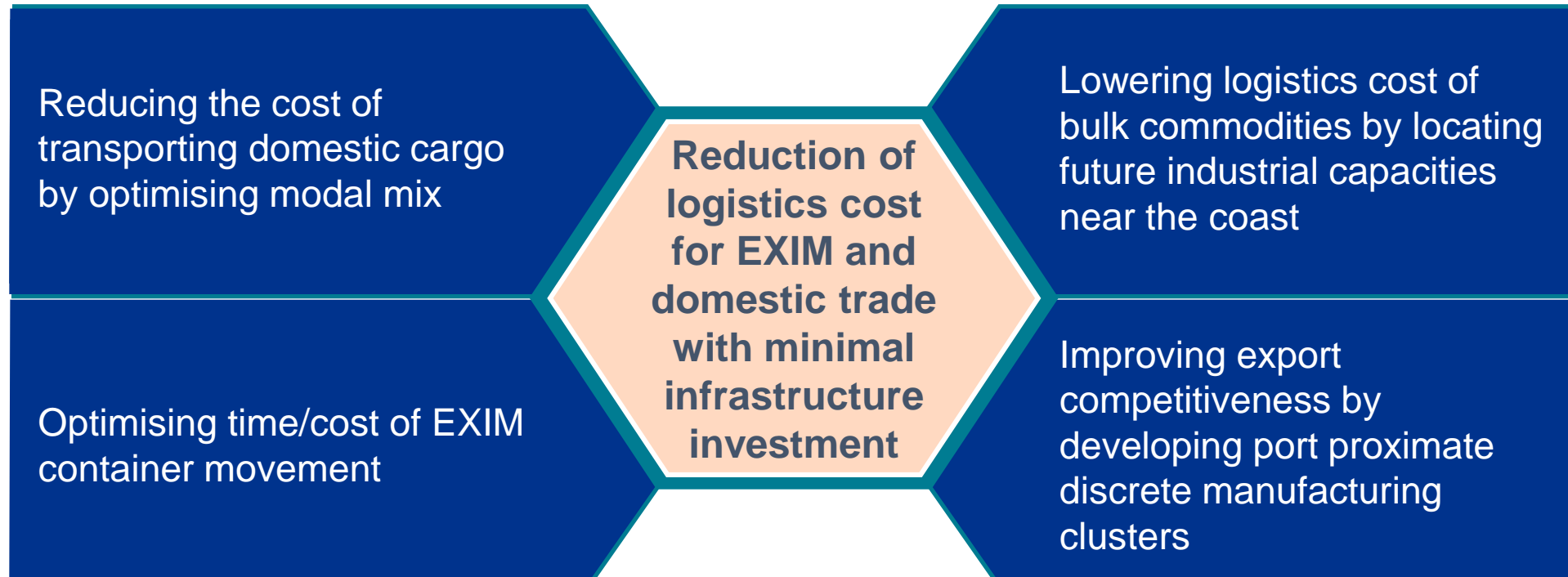
- Implementation of Goods and Service tax
- Support from state and central government



Organised structure

- Increased FDI, entry of foreign players
- Increasing focus on 3PL activities and cost competitiveness
- E-commerce
- Development of a Logistics policy
- Development of National Logistics Portal

The Sagarmala Vision



Sagarmala is a USD 125 Bn coordinated effort across 60+ agencies for 600+ identified projects

Port Modernization & New Port Development



Major Ports, Maritime Boards, MoS (Coastal Berth Scheme)

Rs. 1.5 Lac Cr



Port-Led Industrialization



Major Ports, State Govts., Line Ministries

Rs. 4.7 Lac Cr



Sagarmala Programme

Port Connectivity Enhancement



Rs. 2.5 Lac Cr

MoRTH, NHA, MoR, IWAI, IPRCL, Major Ports, CONCOR, State Govts.



Coastal Community Development



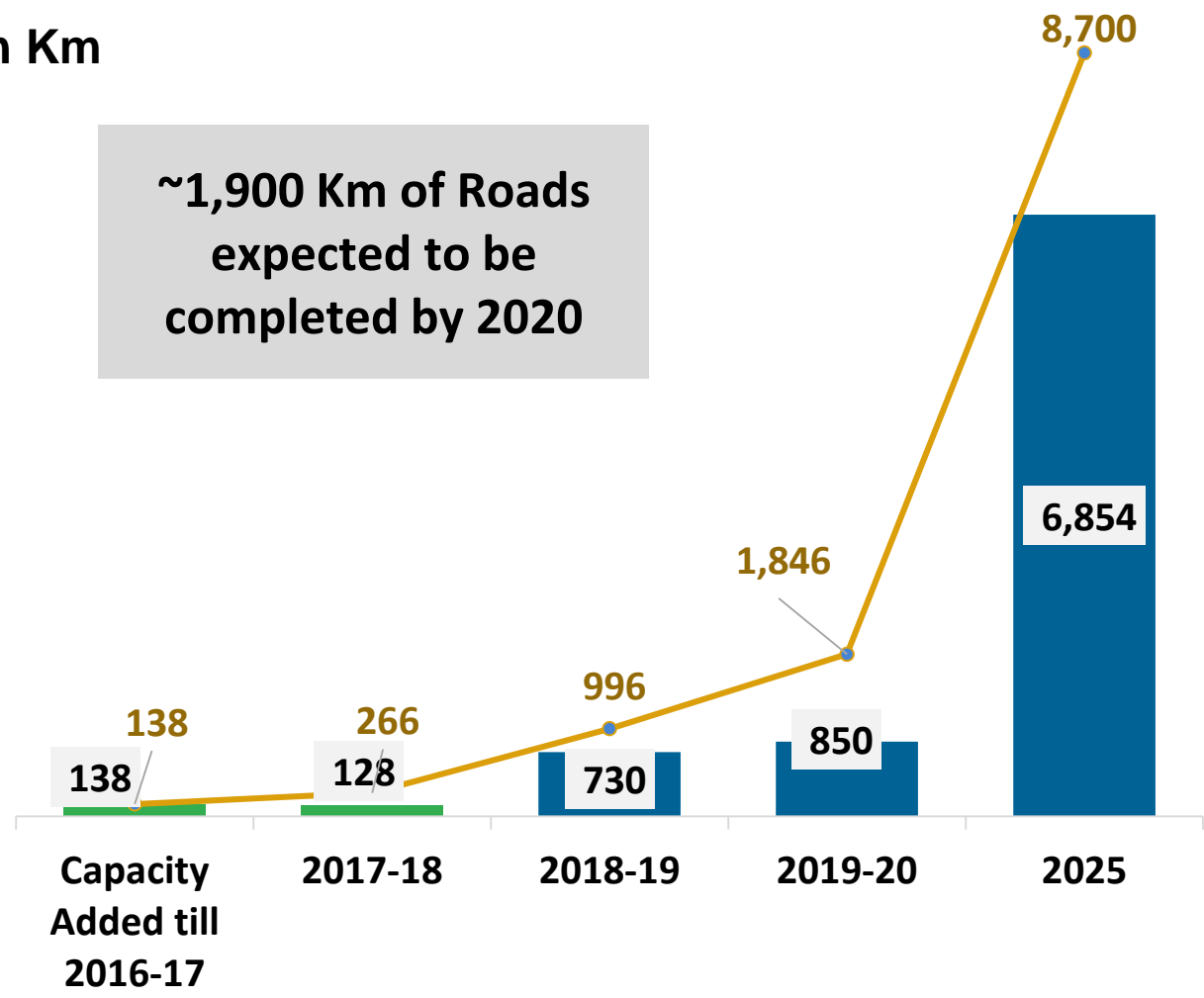
Rs. 7,000 Cr

MoS, MoRD, DDU-GKY, State Fisheries, State Tourism, Ministry of Tourism

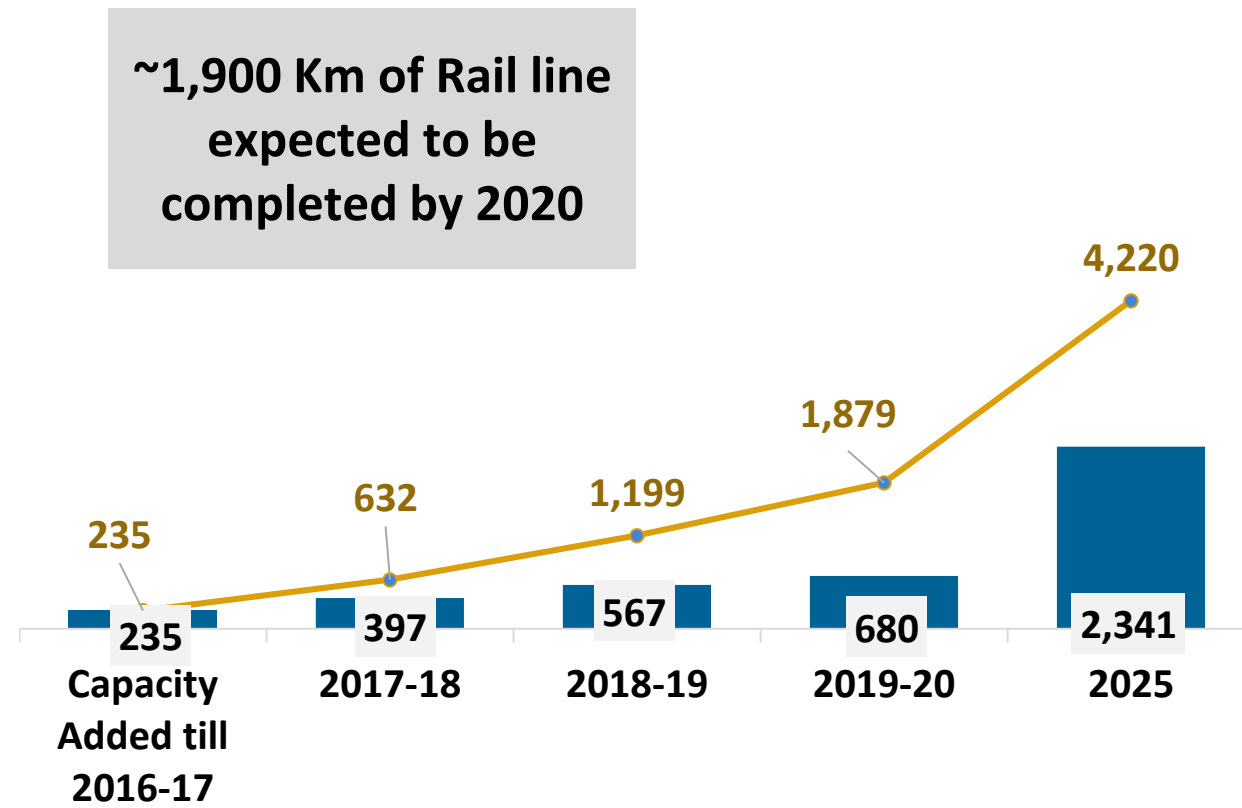


By 2020, about 3,800 Kms of roads and rails are expected to be commissioned and overall ~13,000 kms by 2025

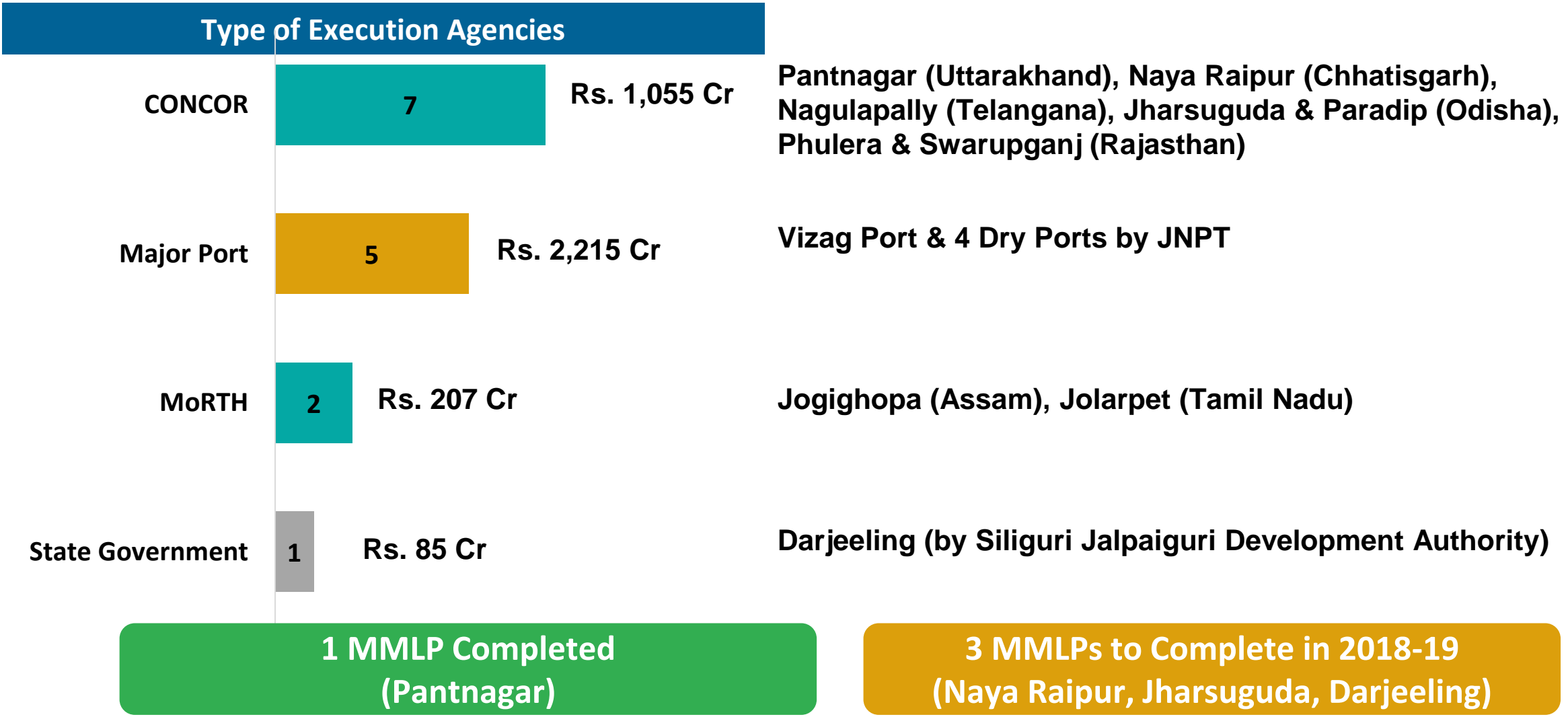
In Km



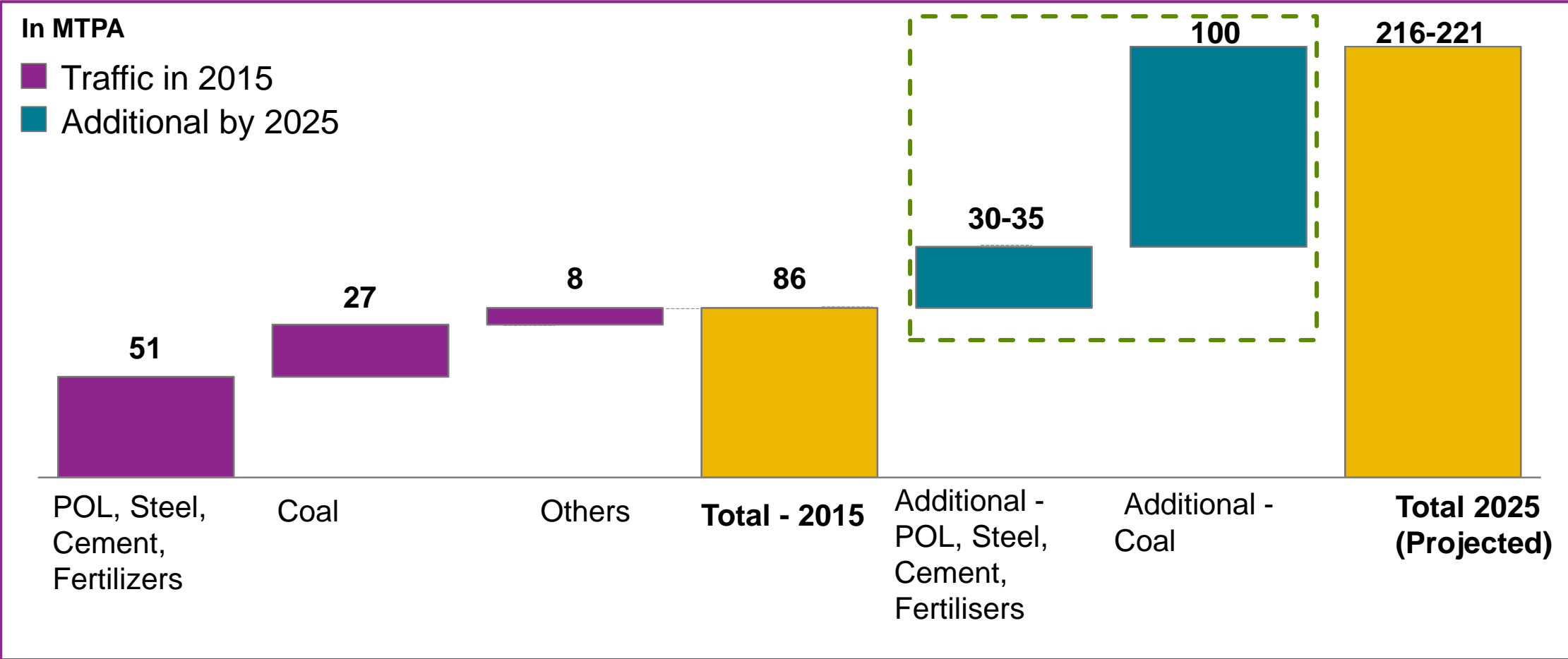
In Km



Multi-Modal Logistics Parks also play an important role in improving the evacuation from the ports



Sagarmala aims to double modal share of coastal shipping by 2025 with significant focus on M&M



Source: IWAI

Initiatives by Ministry of Shipping to develop coastal shipping

Coastal Berth Scheme

- Grant-in-aid assistance to develop berths and associated infrastructure
- Exclusive use of coastal shipping
- Promotion of shipping route for domestic movement of goods

Coastal Skill Development

- Skill Gap Study of 21 Coastal Districts
- Assisting the setting-up of Skill Development Centers
- Plan to skill 10,000 persons in maritime trades by March 2020

Policy Initiatives

- Relaxation in the licensing requirements for movement of fertilizers, agricultural products and containers
- Priority berthing for coastal vessels at ports
- Discounts of minimum 40% to vessels carrying coastal cargo at Major Ports

Enhancing Ease of Doing Business

- Improve Major Port's efficiency
- Promotion of automation and new berthing policy
- Reduction in vessel Turn Around Time (TAT)
- Faster documentation for trade

Inland Waterways: Alternative to road & rail for hinterland

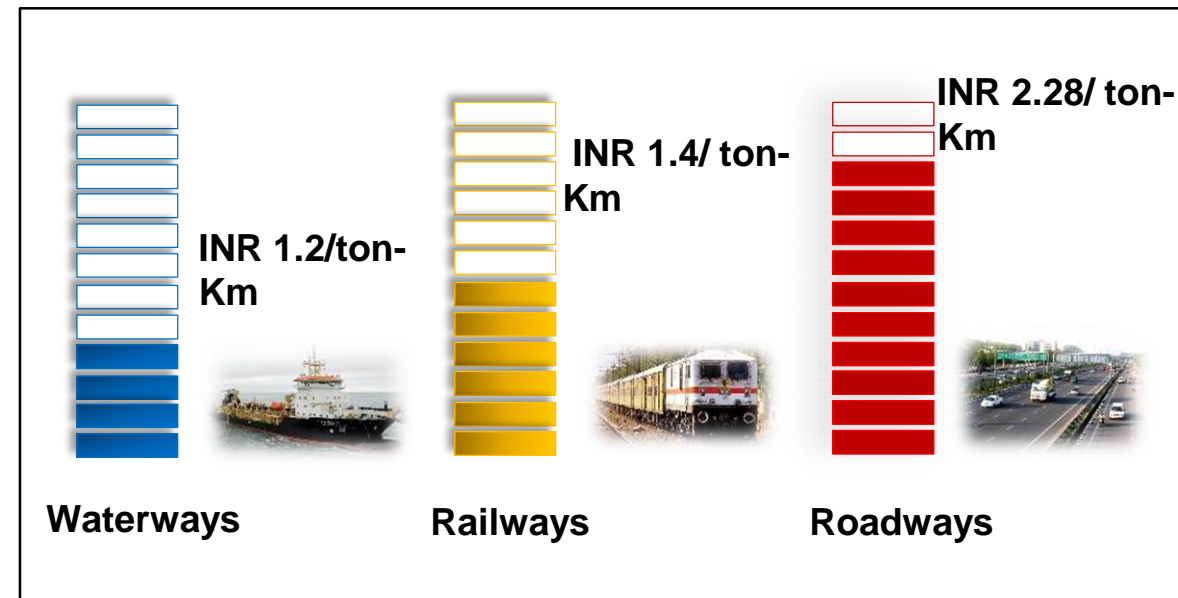
- ✓ Total length of 20,000+ km
- ✓ Account for only 3% of India's total transport
- ✓ 111 total number of declared waterways
- ✓ National Waterway-1 better known as Jal Marg Vikas Project (JMVP) taken up as first focused waterway development
- ✓ Total envisaged investment of INR 5,369 crores with assistance of World Bank
- ✓ 1 standard **2000 DWT vessel** compares to **125 Truck** Loads and almost **1 complete train rake (40 rail wagons)** load on existing Road & Railway infrastructure, respectively

Source: IWAI

Carrying capacity

| Mode | Carrier Type | Capacity (MT) |
|------|---------------------------|---------------|
| Road | Truck (Normal 10 wheeled) | 16 |
| Rail | Rail Rakes of (40 Wagons) | 2200 |
| IWT | IWT Vessels | 2000 |

Operating Cost



Inland Waterways: NW-1 (Jal Marg Vikas Project)

National Waterway-1 Snapshot



Source of Base Map: Crisil Research

| Proposed LAD | | |
|--------------------|------------|--------|
| Section | Length(km) | LAD(m) |
| Haldia – Barh | 960 | 3 |
| Barh – Ghazipur | 290 | 2.5 |
| Ghazipur -Varanasi | 133 | 2.2 |

| Multi Modal Terminals | Multi Modal Logistics Parks | Ferry Terminals | Ro-Ro Terminals |
|---------------------------------|--|--|---|
| Varanasi Sahibganj Haldia | Varanasi Sahibganj | Varanasi Patna Munger Bhagalpur Kolkata Sagar | Buxar -Saraikota Bakhtiyarpur - Mahnar Kahalgaon – Tintanga Samdaghat – Manihari Rajmahal – Manikchak |
| Proposed Inter Modal Terminals | Key Existing Inland Waterway Terminals | Navigational Lock | |
| Ghazipur Kalughat | Kolkata Pakur Bhagalpur Gaighat | New navigational lock at Farakka | |

- An integrated approach to channel, MMLPs, IW terminals, Ferry terminals, RORO terminals and locks to ensure an end to end logistics system that is cost effective and efficient

Jal Marg Vikas Project – Varanasi MMT

Project Cost – INR. 170 Cr

Terminal capacity – 1.26 MTPA

Major commodity – Construction material, food grain

MMT Varanasi inaugurated on 12th November 2018 by Hon'ble Prime Minister

Overall view



Finished Jetty



**MMT Varanasi
inaugurated on 12th
November 2018 by
Hon'ble Prime Minister**

Recent Movements on NW-1

~12000 tons of cargo moved through 11 pilot runs on NW1



Diamond Harbour to KoPT : Logs



Bandel to Falta : Broken Rice



Patna to Bhagalpur : Cement

Recent Movements on NW-1

Haldia to Patna : Cement



Kahalgaon to Kolaghat: Fly ash



Kolkata to Mongla: Fly Ash



Diamond Harbour to Kolkata : Peas



Kolaghat to Bhagalpur : Cement

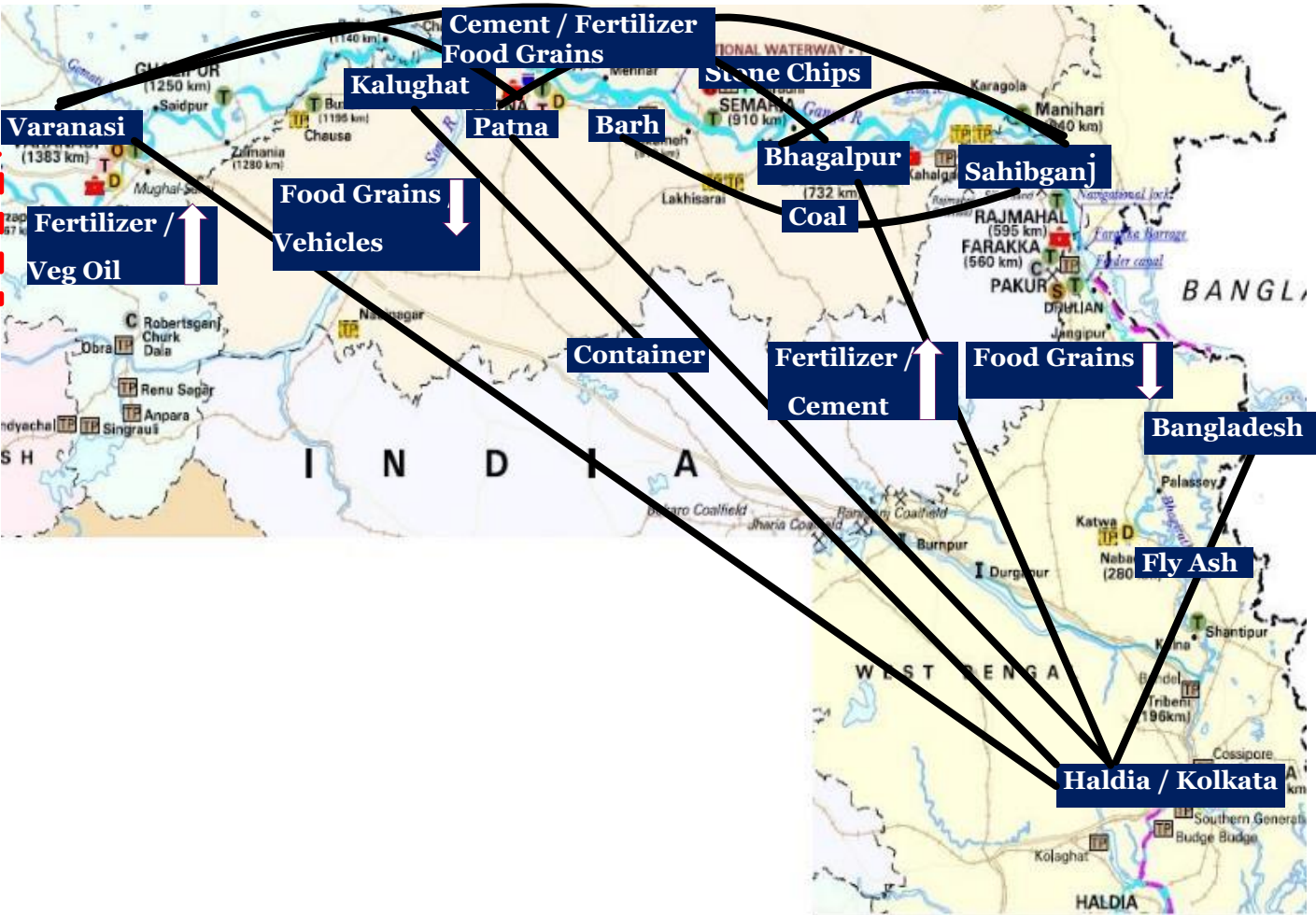


Fatuha to Bhagalpur: Cement

















Jal Marg Vikas Project – Major Cargo Forecast with O-D Pairs

| Traffic Projection : In Million Tons | | | | |
|--------------------------------------|--------------|--------------|--------------|--------------|
| Commodity | 2020 | 2025 | 2035 | 2045 |
| Coal | 1.92 | 8.12 | 13.39 | 20.98 |
| Construction Material | 9.97 | 17.97 | 29.71 | 31.43 |
| Minerals & Chemicals | 1.61 | 2.26 | 2.35 | 2.4 |
| Food & Food Stuff | 2.26 | 2.38 | 2.46 | 2.48 |
| Others | 6.12 | 6.59 | 7.72 | 8.16 |
| Total | 21.88 | 37.32 | 55.63 | 65.45 |



Source: IWAI

Background of SDCL

-  The Sagarmala Development Company Limited (SDCL) was **incorporated on 31-Aug-2016** 
-  SDCL will assist the Central / State / Port-level / Private sector Special Purpose Vehicles (SPVs) with equity support for projects to be undertaken by them 
-  **Cabinet has approved an initial budgetary allocation** of Rs. 1,000 Crore to SDCL 
-  Endeavour to increase the **scope of participation of private sector players** for project development 
-  Provide framework for ensuring **integrated development of Indian maritime sector** and Port infrastructure enhancement, efficient evacuation & New Port development related projects 
-  Full time MD & Director (Projects) from September 2018 onwards 
-  M/s KPMG is the Programme Management Consultant to SDCL/Sagarmala. 

SDCL acts as the integrator for port led development



- SDCL set up to promote port led development
- Being a common equity investor and project development agency can lead to better communications and coordination among the different implementing agencies
- Can synchronize the projects along entire Supply Chain
- Such Coordination can accelerate the pace of development and lead to a holistic project execution and hence success for all stakeholders

How is SDCL reducing logistics costs?



Rapid equity investment

Eg: Krishnapatnam – Obulavaripalle Railway Line (KRCL)



Integrative Investments

Eg: Coastal Employment Units at Kamarajar Port and VoCPT

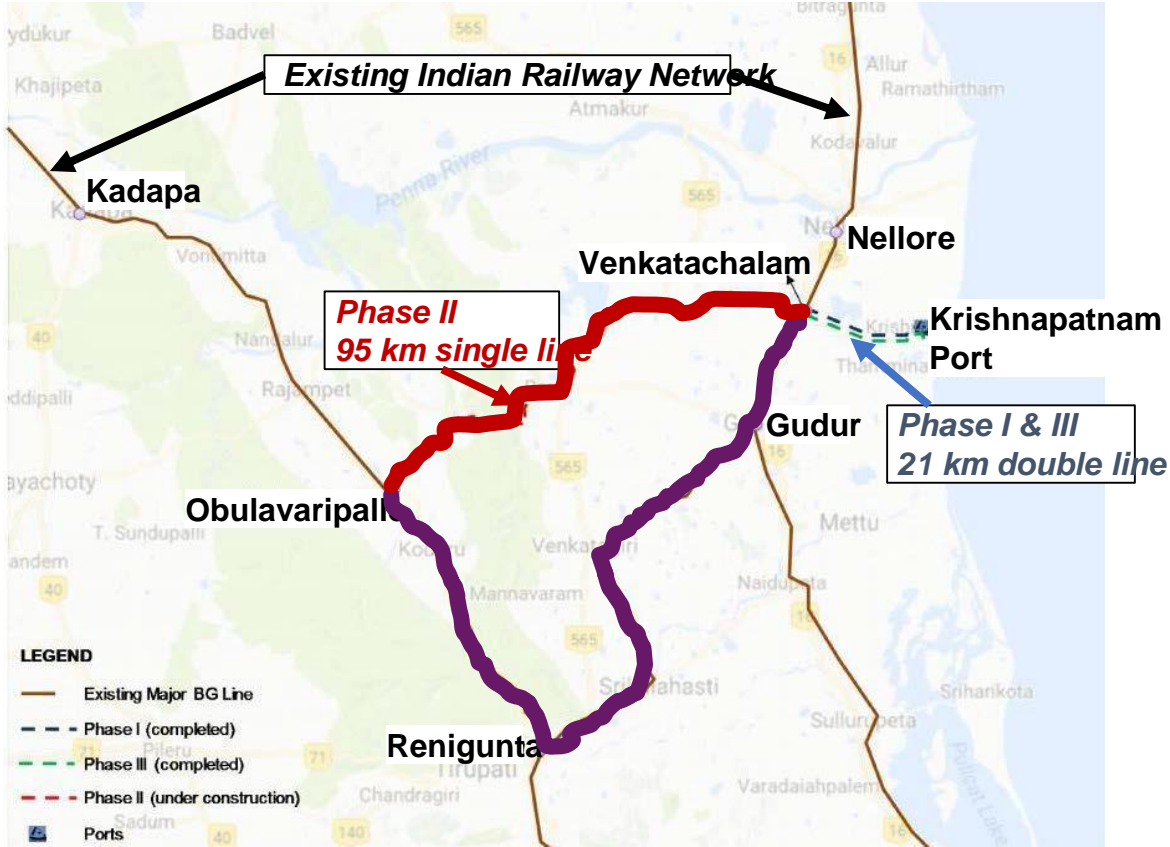


Innovative Investments

Eg: Coal /Iron ore Slurry/Log Pipeline

Krishnapatnam – Obulavaripalle Railway Line (KRCL)

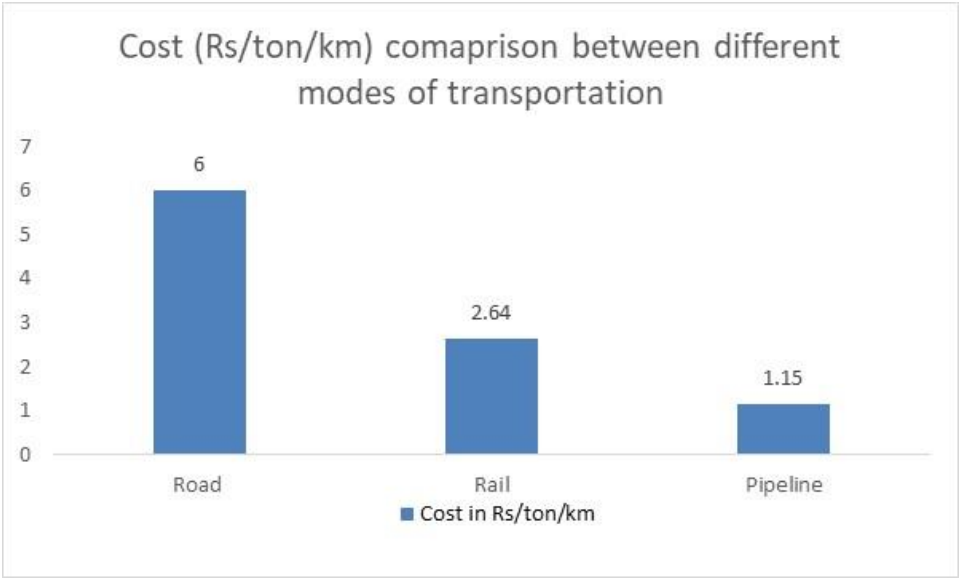
| | |
|--|---|
| <p>Project Description/ Features</p> | <p>Railway Line (Double) between Krishnapatnam Port and Venkatachalam Railway Line (Single) between Venkatachalam and Obulavaripalle</p> |
| <p>Project Benefit</p> | <p>Saving of more than 50km of rail distance over the existing route. Bypasses congestion on the Chennai Howrah trunk line.</p> |
| <p>Total Project Cost</p> | <p>Rs. 2,200 crore</p> |
| <p>SDCL Equity</p> | <p>Rs. 125 crore</p> |
| <p>How SDCL plugged the gap by residual funding</p> | <p>RVNL to increase equity from Rs. 84 crore to around Rs. 320 crore. SDCL equity is around ~19% of total equity</p> |



- Likely to be commissioned by March 2019

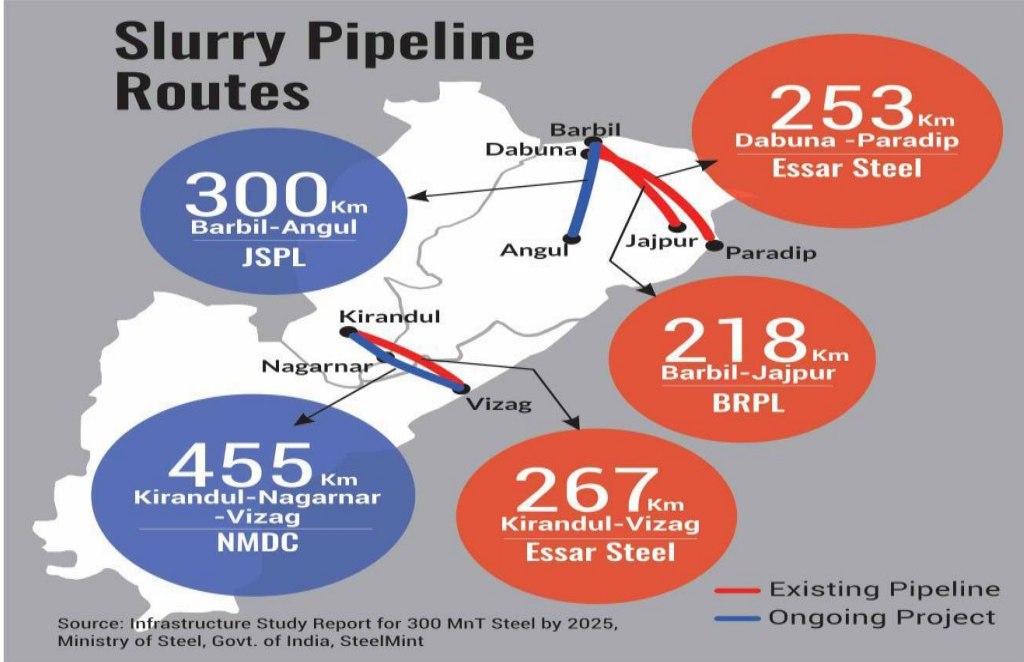
Slurry Pipelines: Reducing logistics cost for bulk cargo

- ✓ Slurry transportation through pipeline is considered an efficient mode of transportation
- ✓ Advantages include lower capital and operational cost, fewer personnel, eliminates hazards



Source: 25th World Mining Congress 2018: Transportation and Logistics

Potential Slurry pipeline routes in India



Target/Plan modal mix for hinterland freight:

| Mode | Rail | Road | Slurry Pipe |
|----------------------------------|------|------|-------------|
| Freight distribution (%) by 2025 | 66 | 25 | 9 |

Source: Infrastructure study report for 300 MTPA steel production in India

A wide range of projects are under development and implementation for port led industrialization



57 Projects - Rs. 4.7 Lac Crore

Industrial Clusters (Rs 4,00,000 Cr)



36 Industrial clusters for both bulk and discrete manufacturing planned in proximity to the ports

Coastal Employment Zones (Rs 40,000 Cr)



14 CEZs are proposed in the coastal states

Smart Industrial Port City (Rs 14,000 Cr)



2 SIPC's planned at Deendayal and Paradip Ports

JNPT SEZ (Rs 12,000 Cr)



430 acres of industrialization center under development at JNPT

Coastal Employment Units (Rs 200 cr)



2 CEUs are planned at Kamarajar and VO Chidambaranar Ports

Maritime Clusters (Rs 1,000 Cr)



2 maritime clusters planned in Gujarat and Tamil Nadu (Mappedu)

Thank you

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SDCL**

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