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## 1. Background

1.1. Coal is the mainstay of the Indian energy sector. The volume of coal handled by Rail, Road, MGR & Conveyor belt for the year 2022-23 is 480MT, 247MT, 122MT, and 28MT, respectively. The domestic coal production capacity is estimated at 1,500 MTPA by FY30, which may continue up to 2040 or beyond. Creating transport infrastructure and managing logistics to transport targeted coal produced from point of origin to consumption centers are major challenges for the sustainable development of coal sector in the country. To achieve the target of 'Atmanirbhar Bharat', robust coal evacuation infrastructure is needed in the country. Given the dynamic situation in the world coal market and rapid developments in the 'Indian Coal Sector', coal logistics is set to play a pivotal role in the economic development of the country. As per 'Coal Vision 2030' commissioned by Coal India Limited (CIL) in 2017, domestic coal demand was estimated to be 1,300-1,900 MTPA by 2030. Transportation of such high coal volume and creating necessary evacuation capacity are challenging. Bulk of the coal is required to be transported to power utilities and other user industries. Challenges in coal evacuation are:

- a. Lack of investments & delay in construction of logistics infrastructure
- b. Higher coal logistics costs owing to inherent characteristics
- c. Non-availability of wagons and congestion in the rail network
- d. Low average speed of freight trains over Indian Railway (IR) network
- e. Limited coal transportation by alternate transportation models
- f. Limited logistics planning in multi-modal transport

1.2. The logistics sector is considered the backbone of economic growth. The growth of coal & mineral mining sector depends heavily on the efficiency of the logistics network. Keeping in view the above, the need for coal logistics policy was felt.

1.3. Coal logistics efficiency is a function of infrastructure, services (digital systems / processes / regulatory framework), and human resources. Coal logistics chain involves the movement of coal from the mine to a nearby coal handling plant or washery for value addition. Subsequent to that coal is moved to a dispatch point

which can be a railway siding, port, or inland waterways terminal using the road, conveyor, merry-go-round (MGR) train, or rail.

- 1.4. Similarly, trunk line movement and last mile connectivity happens using a different mode of transportation for various origin and destination (O-D) of Coal. The expected coal movement in Net tonne kilometers (NTKM) is analyzed by consulting various stakeholders involved in the coal logistics chain.
- 1.5. A transformative approach for improving logistics efficiency and reducing logistics cost, PM GatiShakti National Master Plan (NMP) for multimodal connectivity infrastructure to various economic zones has been adopted. PM GatiShakti NMP is used for integration of existing and proposed infrastructure development initiatives of different agencies, to ensure first and last mile connectivity, for seamless movement of coal. PM GatiShakti will complement and further facilitate implementation of coal logistics plan.

## 2. Definition

- 2.1 **'Coal Logistics'** means the transport or carriage of Coal from origin to destination through a single mode or multimodal mode of transportation in a cheaper, faster and cleaner way and includes storage, loading, or unloading of coal for the purpose of delivery to the power plants, steel manufacturing, cement sector, washeries & various other non-regulated sectors.
- 2.2 The Coal logistics infrastructure comprises nodes and connections, more recognizable as ports, railways sidings stations, warehouses, coal stockyards, loading, unloading, intermediate storage, and other coalfield areas connected by roads, railways, shipping, inland waterways, air routes, pipelines, conveyors, MGR, etc, that are used by a wide range of mine operators. This system is operated under a framework through a workforce with a wide range of knowledge of skills and technologies.

## 3. Vision, Aim and Objectives

- 3.1 The existing and upcoming coal logistics infrastructure of each region needs to be evaluated to identify the challenges and gaps for efficient and environment-

friendly transportation of coal from the mine to the end-use plant. Keeping this in view, the policy framework has been prepared.

- 3.2 The '**Vision**' of the Coal Logistics Policy is "to develop a technologically enabled, integrated, faster, cost-efficient, resilient, sustainable and trusted logistics ecosystem in the country for accelerated and inclusive growth".
- 3.3 The '**Aim**' of the Coal Logistics Policy is to "identify, evaluate & eliminate gaps in existing coal evacuation infrastructure & network to enable faster, cheaper and environment-friendly transportation of coal from the mine to the end-use plant" and to "ensure logistics issues in coal evacuation are minimized".
- 3.4 The key '**Objectives**' of the Coal Logistics Policy are:
- a. **Availability:** To ensure the availability of adequate coal loading and evacuation infrastructure at a nearby location through Conveyors, Rail, Road, Port or Waterways connectivity.
  - b. **Optimization:** To optimize the total logistics cost, loading and transportation, through rationalization of the transport network with existing and any other proposed mode of transportation.
  - c. **Integration:** To promote an interconnected multimodal network of transport infrastructure & greener transportation initiatives for efficient movement of coal covering the entire country.
  - d. **Modernization:** To promote greater adoption of information communication technology, upgraded infrastructure, use of artificial intelligence, drones, sensors and innovation to improve efficiency and address the evolving needs of the sector.
  - e. **Efficient:** To strive for faster and efficient loading and transportation system in order to reduce the turn-around time leading to increase the time and cost efficiency of system.
  - f. **Inclusivity:** To promote inclusivity by addressing the needs of all stakeholders from logistics supply and user side.

### 4. Targets

4.1 Targets for achieving the vision of the Coal Logistics Policy are to:

- (i) Mechanized loading/handling and evacuation of 90% of coal produced through 'First Mile Connectivity' (FMC) by FY30.
- (ii) Completion of 'Coal PSUs' funded rail connectivity projects by FY27.
- (iii) Implementation of 'Integrated Coal Logistics Plan' and coordination with other Ministries for taking up identified coal evacuation infrastructure projects including proposed Energy Corridor of Ministry of Railways.
- (iv) Establish data driven 'Decision Support System' for monitoring of components of coal logistics eco-system and development of dashboard for tracking and analytics for decision making to the users or concerned agencies.

### 5. Strategies

To achieve the stated objectives, the strategies will involve:

5.1. **Rationalization in coal logistics cost** for reduction by promoting the following:

- a. Coal evacuation through network optimization
- b. Coal (linkage) swapping mechanism
- c. Coal linkage rationalization
- d. Common use facilities
- e. Multi-modal transport involving conveyor, MGR, railways, inland waterways and coastal, including Rail-Sea-Rail (R-S-R) route, in the optimal manner.

5.2. **Promote investment in coal logistics infrastructure** and facilitate participation of State Government(s) and private sector through Stakeholders' consultation and agreed business models.

- 5.3. **Facilitate common use infrastructure** for coal evacuation infrastructure & investments by State Government(s) and the user agencies to increase transportation efficiency of the network wherever mines exist in vicinity.
- 5.4. **Removal of bottle-necks in coal evacuation network** by identifying additional critical connectivity gaps & network congestion in coal evacuation in major coal producing areas, coal evacuation network and trunk lines and taking up suitable measures or projects for mitigation.
- 5.5. **Improved utilisation of existing logistics assets by promoting**
  - a) Enhanced utilisation of underutilized existing assets
  - b) Capacity augmentation of existing assets to meet enhanced capacity requirement (if any).
  - c) Utilisation of discontinued/abandoned assets of railways, coal companies or other agencies may be considered for re-development and utilisation thereof.
- 5.6. **Promote Right of Way (ROW)** for rail/roads and first mile evacuation planned as part of the mine allocation process.
- 5.7. **Identification of experts for assisting mine owners** in developing first mile connectivity and coal evacuation infrastructure projects like CMPDI, IIT-ISM or other expert agencies.
- 5.8. **Ensure timely completion of coal evacuation projects** through regular monitoring undertaken for coal logistics augmentation through close coordination with States, Implementing Agencies and other stakeholders.
- 5.9. **Facilitate Smart Coal Logistics** involving integration with Freight Operations Information Systems (FOIS), tracking, Artificial Intelligence (AI), digitization and analysis for market actions to achieve expected outcomes such as visibility across logistics chains, monitoring asset utilisation, identification of KPIs and providing advanced analytics.

## **6. Proposed interventions and implementation methodology:**

- 6.1 Integrated Coal Logistics Plan has been formulated (attached at Annexure 1) and is being taken up for implementation. The plan will be reviewed after three-years.
- 6.2 It is proposed to constitute a Technical Support Unit to assist Ministry of Coal in technical matter related to coal logistics and implementation of integrated National Coal Evacuation Plan.
- 6.3 It is also proposed to constitute Inter-Ministerial Committee (IMC) for taking up policy issues and identification/formulation of coal evacuation projects with concerned organizations, including the Ministry of Railways, Ministry of Ports, Shipping & Waterways, Ministry of Commerce, State Governments, etc. for its approval, execution.

## **7. Monitoring and Coordination:**

- 7.1. The institutional framework for implementation, monitoring, and support mechanism, including State Governments considering their role in clearances, land acquisition, R&R and Socio-political environment, are designed to have a three-tier system:
  - a. Technical support unit (TSU)
  - b. Inter-Ministerial Committee (IMC)
  - c. Coal Network Planning Group (CNPG)
- 7.2. CNPG will be constituted under Ministry of Coal including representatives of coal companies to evaluate the proposals of the coal logistics infrastructure.

## **8. Coal Logistics Action Plan:**

### **8.1 Approval by the NPG/EGOS**

Coal Logistics Policy, along with the Integrated National Coal Evacuation Plan, will be placed before the NPG/EGOS for their approval.



**8.2 Implementation of Integrated National Coal Evacuation Plan**

Committees/Groups will be constituted as mentioned in para-7.1 for the implementation of Integrated National Coal Evacuation Plan. Issues will be taken up with concerned Organizations for their implementation which will be monitored.

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