



# Project Information Document (PID)

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Concept Stage | Date Prepared/Updated: 08-Dec-2021 | Report No: PIDC32991

**BASIC INFORMATION****A. Basic Project Data**

|                                                      |                                                                     |                                                                                |                                                  |
|------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------|
| Country<br>India                                     | Project ID<br>P177856                                               | Parent Project ID (if any)                                                     | Project Name<br>Rail Logistics Project (P177856) |
| Region<br>SOUTH ASIA                                 | Estimated Appraisal Date<br>Mar 30, 2022                            | Estimated Board Date<br>Jun 24, 2022                                           | Practice Area (Lead)<br>Transport                |
| Financing Instrument<br>Investment Project Financing | Borrower(s)<br>Dedicated Freight Corridor Corporation India Limited | Implementing Agency<br>Dedicated Freight Corridor Corporation of India Limited |                                                  |

**Proposed Development Objective(s)**

The project development objective is (i) to increase freight modal shift to safe and low carbon transport along the Eastern Dedicated Freight Corridor and (ii) to develop Dedicated Freight Corridor Corporation of India Limited as a sustainable institution to provide rail freight connectivity and multimodal logistics services.

**PROJECT FINANCING DATA (US\$, Millions)****SUMMARY**

|                           |        |
|---------------------------|--------|
| <b>Total Project Cost</b> | 500.00 |
| <b>Total Financing</b>    | 500.00 |
| <b>of which IBRD/IDA</b>  | 250.00 |
| <b>Financing Gap</b>      | 0.00   |

**DETAILS****World Bank Group Financing**

|                                                              |        |
|--------------------------------------------------------------|--------|
| International Bank for Reconstruction and Development (IBRD) | 250.00 |
|--------------------------------------------------------------|--------|

**Non-World Bank Group Financing**

|                     |        |
|---------------------|--------|
| Counterpart Funding | 250.00 |
| Borrower/Recipient  | 250.00 |



Environmental and Social Risk Classification

High

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

## B. Introduction and Context

### Country Context

- India's Gross Domestic Product (GDP) growth was already slowing when the COVID-19 outbreak unfolded.** Real GDP growth moderated from an average of 7.4 percent during FY15/16-FY18/19 to an estimated 4.0 percent in FY19/20<sup>1</sup>. The growth deceleration was mostly due to (i) shocks to the financial sector, and (ii) decline in private consumption growth<sup>2</sup>. Against this backdrop of pre-existing weaknesses, the outbreak of COVID-19 had a significant impact, with real GDP contracting by 7.3 percent in FY20/21<sup>3</sup>. On the fiscal side, the general government deficit widened significantly in FY20/21, owing to higher spending and low revenues<sup>4</sup>. With the easing of Covid-19 restrictions, Goods and Services Tax (GST) collections for July, August and September 2021 have crossed INR 1 trillion mark. The robust GST revenues are expected to continue as the economic recovery gathers momentum. Given the significant uncertainty pertaining to epidemiological developments, real GDP growth for FY21/22 is likely to be in the range of 7.5 to 12.5 percent<sup>5</sup>. The expected recovery will put India among the world's fastest-growing economies. India's GDP grew at 20.1 percent y-o-y during the April to June quarter of 2021.
- Although India has made remarkable progress in reducing absolute poverty in recent years, the COVID-19 outbreak has delayed the course of poverty reduction<sup>6</sup>.** Between 2011-12 and 2017, India's poverty rate is estimated to have declined from 22.5 percent<sup>7</sup> to values ranging from 8.1 to 11.3 percent<sup>8</sup>. However, recent projections of GDP per capita growth, considering the impact of the pandemic, suggest that poverty rates in 2020 have likely reverted to estimated levels in 2016<sup>9</sup>. Labor market indicators from high frequency surveys -including from the Centre for Monitoring Indian Economy (CMIE)- suggest that vulnerability has increased, particularly for urban households. Overall, the pandemic and its economic impacts are estimated to have raised urban poverty, creating a set of "new poor" that are relatively more likely to be engaged in the non-farm sector and to have received at least secondary education.

<sup>1</sup> National Accounts Data, National Statistical Office, Ministry of Statistics and Program Implementation (MOSPI).

<sup>2</sup> National Accounts Data, National Statistical Office, MOSPI.

<sup>3</sup> National Accounts Data, National Statistical Office, MOSPI.

<sup>4</sup> Union budget 2021, 2022, Ministry of Finance.

<sup>5</sup> World Bank Global Economic Prospects, July 2021.

<sup>6</sup> World Bank projections. The Government of India has deployed significant resources for social assistance, including towards urban poor households and migrants.

<sup>7</sup> Consumption Expenditure Survey 2011-12, National Sample Survey Office (NSSO), Government of India.

<sup>8</sup> World Bank estimates. Source: Poverty and Shared Prosperity Report, 2020.

<sup>9</sup> World Bank estimates. Source: Macro Poverty Outlook, 2020.



3. **Efficient freight transport is critical to India's economic growth.** India's economy depends on its logistics sector, which has a current market size of INR 11 trillion (\$150.1 billion)<sup>10</sup> and is expected to grow to INR 15 trillion (\$204.7 billion) by 2022. Logistics in India generate about 4.6 billion tonnes of freight annually, resulting in a transportation demand of over 3 trillion tkm at the cost of INR 9.5 trillion (\$129.6 trillion).<sup>11</sup>
4. **Indian Railway is an essential part of India's freight transport system.** Indian Railways (IR) is the 4th largest railway network in the world, with around 68,000 km of lines. It is the second largest passenger railway and the fourth largest freight railway in the world, transporting 8 billion passengers and 1.2 billion tons of freight in the fiscal year ending March 2020. Between 2008-09 and 2017-18, freight traffic has grown at a compounded annual rate (CAGR) of 3.7 percent.<sup>12</sup> This growth was limited by capacity constraints and congestion, limit volumes and reduce speed and reliability of shipments. In FY19/20, IR had revenue of about INR 1.7 trillion (\$23.7 billion), of which about INR 1.1 trillion (\$15.4 billion) was from freight transport. IR has an operating ratio of 98.4 percent.<sup>13</sup>

#### Sectoral and Institutional Context

5. **Railways are key to reducing India's high logistics cost.** Logistics cost in India represents 14 percent of GDP, much higher than developed nations (8-10 percent). A majority of freight in India is bulk commodities with long average leads—traffic that is suited to lower cost rail transport. Nonetheless, around 73 percent of India's freight is transported by road, compared to 27 percent by rail. Shifting more of those goods to rail would reduce logistics costs.
6. **High truck share comes at an environmental cost.** Carbon Dioxide (CO<sub>2</sub>) emissions from freight transport in India are projected to increase by 451% - from 220 million tons in 2020 to 1214 million tons in 2050. The freight sector is responsible for 132 kilo tons of particulate matter (PM) emissions and 2.4 million tons of Nitric Oxide (NO<sub>x</sub>) emissions in 2020. Road freight is the largest contributor, accounting for about 95% of emissions. Additionally, freight transport is one of the leading causes of road accidents. Trucks account for 12.3% of road accidents and 15.8% of total road transport-related deaths, most of which are due to overloaded trucks.<sup>14</sup>
7. **Increasing the share of rail transport is key to reducing GHG emissions from transport.** India's Intended Nationally Determined Contribution (INDC) for the period 2021 to 2030 targets a reduction in the emissions intensity of the country's Gross Domestic Product by 33 to 35 percent by 2030 from 2005 levels. The 'reduction of emissions from the transportation sector' is a priority area.<sup>15</sup> Rail emits about one-fifth the Green House Gas (GHG) emissions as trucks<sup>16</sup> and improves air quality by emitting lesser Sulphur Oxide (Sox), PM, NO<sub>x</sub> emissions,<sup>17</sup> so shifting traffic from road to rail would reduce GHG emissions. Moreover, In July 2020, the Indian Railways (IR) also announced that the national

<sup>10</sup> 1 USD=73.3 INR

<sup>11</sup> India, NITI Aayog, RMI, and RMI India. 2021. Fast Tracking Freight in India: A Roadmap for Clean and Cost-Effective Goods Transport. <https://www.niti.gov.in/sites/default/files/2021-06/FreightReportNationalLevel.pdf>.

<sup>12</sup> India, Ministry of Railways. National Rail Plan 2020. <http://indianrailways.gov.in/ExeSummary-28122020.pdf>.

<sup>13</sup> India, Ministry of Railways. Indian Railways Annual Report & Accounts 2018-19.

[https://indianrailways.gov.in/railwayboard/uploads/directorate/stat\\_econ/Year\\_Book/Indian\\_Railways\\_Annual\\_Report\\_%26\\_Accounts\\_English\\_2018-19.pdf](https://indianrailways.gov.in/railwayboard/uploads/directorate/stat_econ/Year_Book/Indian_Railways_Annual_Report_%26_Accounts_English_2018-19.pdf).

<sup>14</sup> India, NITI Aayog, RMI, and RMI India. 2021. Fast Tracking Freight in India: A Roadmap for Clean and Cost-Effective Goods Transport. <https://www.niti.gov.in/sites/default/files/2021-06/FreightReportNationalLevel.pdf>.

<sup>15</sup> UNFCCC. India's Intended Nationally Determined Contribution: Working Towards Climate Justice.

<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf>.

<sup>16</sup> International Energy Association, *The Future of Rail*, 2019.

<sup>17</sup> India, NITI Aayog, RMI, and RMI India. 2021. Fast Tracking Freight in India: A Roadmap for Clean and Cost-Effective Goods Transport. <https://www.niti.gov.in/sites/default/files/2021-06/FreightReportNationalLevel.pdf>.



transportation system will target becoming a net zero carbon emitter by 2030. This would mean eliminating emissions of 7.5 million tonnes of CO<sub>2</sub> equivalent each year.<sup>18</sup>

8. **Indian Railway network suffer from capacity constraints and is losing market share.** Despite strong growth in freight traffic, IR has been losing market share to trucks. IR's network capacity is insufficient and passenger trains are prioritized over freight. Freight service quality is impeded by having to fit freight trains into a busy passenger service schedule (passenger trains constitute almost two-thirds of all train km). The main railway corridors in the "Golden Quadrilateral" connecting New Delhi, Mumbai, Chennai, and Kolkata account for less than a fifth of IR's lines, but carry more than 60 percent of its freight. Over the last decade, IR has successfully adopted many measures to increase capacity including: (a) creating more capacity through the DFCs; (b) squeezing more capacity from existing assets, (c) increasing average train load, (d) utilizing equipment more efficiently, and (e) improving railway labour productivity. Today, physical capacity is the most pressing constraint.
9. **Indian Railway has developed a long-term strategic plan, the National Rail Plan (NRP), that aims to build capacity in time to serve anticipated demand.** The National Rail Plan estimates that rail share can be increased to 45% by if sufficient capacity allows for lower transit times and costs of rail transportation. The NRP has analysed freight flows across India and has identified major choke points along the High-Density Networks (HDNs) and Highly Utilised Network (HUNs) for capacity expansion. The NRP has identified future projects with clear implementation timelines, including: (i) creation of three new Dedicated Freight Corridors (DFCs), namely East Coast, East-West & North-South (6,600kms by 2030, 8,500kms by 2050); (ii) creation of 3,000 kms of High-Speed Corridors by 2030 and 8,000 km by 2050; (iii) upgrades along the HDNs and HUNs; (iv) enhancing inter-modal linkages, especially with ports and industrial corridors; and (v) developing terminal infrastructure, with 50 cluster stations to be developed as multimodal terminals.
10. **Rail infrastructure development is being prioritised under the National Infrastructure Pipeline 2020 - 2025.** The National Infrastructure Pipeline (NIP) for FY 2020-25 has identified 682 investment opportunities across 3 railway subsectors (track, rolling stock, and terminals), which a cost of \$224.8 billion over the next five years, including: (i) rail track: 609 projects, \$174.9 billion; (ii) rolling stock, 40 projects, \$47.3 billion; (iii) terminals, 33 projects, \$2.5 billion.<sup>19</sup>
11. **The Bank's program of support in the Indian rail sector focuses on developing commercial financing, private sector participation and entrepreneurial drive.**
  - **Commercial Financing.** Considerable commercial financing will be needed to finance the NRP; only about one-third of the funds for implementing the Plan are likely to come from GoI budgetary resources and concessional financing (bilateral and multilateral). At its best, commercial financing can impose an important discipline. Since such financing must be paid back over time, ensuring that the funds are spent on investments that increase the revenues coming into the rail sector will be critical both to successfully access such financing; and to maintain a financially sustainable system.
  - **Private Sector Participation.** Private sector investment and skills—in fields ranging from real estate development to freight logistics—are needed to deliver services that attract more traffic to railways and build up the profitable traffic.
  - **Customer focused culture.** Attracting commercial financing, private sector participation and new traffic to railways calls for doing things differently. While reforms to the structure of IR have helped to break down

<sup>18</sup> UNEP (United Nations Environment Programme). 2020. "It's full steam ahead to green India's railway network." Story, September, 2020, <https://www.unep.org/news-and-stories/story/its-full-steam-ahead-green-indias-railway-network>.

<sup>19</sup> For more information on the investment opportunities, see the India Investment Grid website at <https://indiainvestmentgrid.gov.in/opportunities/nip-projects/transport>.



organizational silos, they are not sufficient to turn a highly bureaucratic, production- focused, organization, into the dynamic, risk taking customer-focused body needed to successfully regain market share from road freight. Culture change is needed. Experience both in India and globally suggests this culture is more easily nurtured in commercially managed, corporate enterprises (e.g., CONCOR, IRCTC).

12. **The Dedicated Freight Corridors is shifting the rail sector to a more commercial structure for delivering infrastructure, increase India’s freight rail network capacity, and create space for improving passenger services.** The Government of India has adopted a new institutional framework for construction of the Dedicated Freight Corridors. The Dedicated Freight Corridor Corporation of India Limited (DFCCIL), an infrastructure company set up under the Companies Act (1956), whose shares are currently owned by MOR, will deliver, and manage the DFCs. DFCCIL is currently constructing two corridors: Western Dedicated Freight corridor (WDFC) and Eastern Dedicated Freight Corridor (EDFC). EDFC is financed by the World Bank and will link Ludhiana through Delhi towards Kolkata. WDFC, financed by the Japan International Cooperation Agency (JICA) will link Mumbai and Delhi. Once completed, the Western and Eastern DFCs will lead to sharp expansion in rail track capacity. In addition, as track infrastructure created under EDFC project enables (i) movement of high-quality wagons with higher axle loads (32 ton instead of current 25 ton), (ii) higher speeds (100 kmph vs. current 75 kmph) and (iii) longer trains (1.5 kms vs. current 700 m), it virtually unlocks even higher capacity for the freight rail segment. This capacity enhancement will improve efficiencies for the movement of freight trains. When freight is shifted to the DFCs, capacity on the mixed-use lines will be released enabling the development of semi high-speed passenger train services.
13. **Infrastructure is necessary, but not sufficient to achieve the modal shift objective laid out in NRP.** A recent World Bank survey of India's freight transporters (Rail Freight Increase study, 2018) identified three binding constraints that limit railway market share in the freight market: (i) high transit times due to congestion and capacity constraints, (ii) poor service quality, and (iii) inadequate “last mile” infrastructure and services. Building the dedicated freight corridors will address the first constraint. It will also enable DFCCIL to provide reliable service with guaranteed train slots and service times to shippers and service providers, addressing the second constraint. DFCCIL and IR need to create a robust program of intermodal freight terminal development along the DFCs to address the third constraint.
14. **Develop a commercial, customer-oriented culture.** Currently DFCCIL’s only customer is IR. New customers will come when (i) DFCCIL develops freight terminals along its lines; and (ii) MoR implements open access in DFCCIL lines. These changes will create an environment that encourage DFCCIL to address the needs of customers, offering guaranteed train slots and service times to shippers and service providers. A customer oriented DFCCIL will help the rail sector address the second (poor service) and third constraint (last mile infrastructure and services) and achieve freight modal shift.
15. **Tap private sector expertise.** DFCCIL could harness private sector efficiency in (i) creation of infrastructure to augment capacity; (ii) creation and management of last mile connectivity through intermodal terminals and (iii) improving service quality through private train operators. To realise the potential, DFCCIL would need to recalibrate itself as a sustainable institution capable of creating an enabling environment and develop schemes, marketing strategies, and operating plans to facilitate private sector participation. The project aims to support DFCCIL in addressing the above key barriers to intermodal transportation. As the largest global development institution focused on the private sector, International Finance Corporation (IFC) will work alongside IBRD to potentially advise, structure and/or mobilize resources to bring in private sector participation to support DFCCIL.
16. **Tap commercial financing.** The NRP points out that budgetary support from MOR is unlikely to be sufficient to financing the capital investments of future DFCs. While the Indian Railway Finance Corporation and India's proposed development financing institution (announced in the Union Budget 2021-22) would be an important source of



financing for DFCCIL, these sources may not be adequate and DFCCIL would need to access commercial markets. DFCCIL's has not previously borrowed from commercial markets—International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA) could support IBRD. IFC support may be leveraged for private sector financing and MIGA could facilitate DFCCIL's exposure to markets, reducing the cost of commercial finance to DFCCIL.

#### Relationship to CPF

17. **The Project is consistent with the WBG Country Partnership Framework (CPF) FY2018-2022 (Report No. 126667-IN), particularly the focus on promoting resource-efficient growth and enhancing competitiveness by facilitating modal shift towards railways and reduction of logistics costs.** Specifically, the project is aligned with the implementation strategies of “Leveraging Private Financing”, “Strengthening public-sector institutions” and “Supporting a Lighthouse India” as outlined in the CPF. The CPF specifically focus the World Bank's efforts on improving connectivity and logistics to ensure increased reliance on multimodal transport, including shifts from highways to railways, and creation of improved logistics facilities. This project, through its focus on modernization of rail freight and logistics infrastructure and supporting the institutional development of the MOR and DFCCIL, will facilitate modal shift of traffic from road to rail in the freight segment as well as enable private sector investment in the rail sector.
18. **The Project is aligned well with India's growing focus on multimodal transport, particularly with railways as central to efficient logistics in the freight transport segment.** In recent years, the Government of India has prioritized investments in the rail segment through various initiatives such as the DFCs, rail electrification, station modernization and creation of MMLPs. The National Rail Plan 2050 squarely targets increasing the rail share to 45% in the freight segment by 2050. The ‘Gati Shakti’ National master plan (US\$1.3 trillion) was approved by the Union Cabinet of India in October 2021 to support infrastructure and logistics services to enhance multimodal connectivity across the country. In addition, the National Industrial Corridor Development Program, the Maritime Vision 2030, the Sagarmala program, the Bharatmala Pariyojana, and the Draft National Logistics Policy, uniformly emphasize the need for enhancing multimodal transport and terminals, improving rail links with ports and inland gateways, and strengthening first/last mile connectivity to rail. This project, given its focus on supporting MOR/IR/DFCCIL to (i) create infrastructure to deliver multimodal services; and (ii) develop institutional capacity to deliver multimodal logistics services on a sustainable basis, will contribute to the Gol's priorities to place rail freight services at the center of an efficient logistics system.
19. **This Project will help set an example for future rail sector investments in the country.** This Project will contribute a new and different set of solutions for rail sector financing, with particular focus on leveraging private capital in partnership with IFC and MIGA. Attracting commercial financing, private sector participation and new traffic to railways calls for doing things differently. While reforms to the structure of IR have helped to break down organizational silos, they are not sufficient to turn a highly bureaucratic organization, with promotion based on seniority rather than performance, into a dynamic, risk-taking body. Culture change is needed and is more likely in a corporate environment than a ministry. This Project will therefore contribute to the Bank's broader national dialogue on rail sector reforms. This engagement complements the Bank's work on the Eastern Dedicated Freight Corridor over the last few years and will potentially enrich the Bank's future programs in the logistics sector – both at the national and state level.



### C. Proposed Development Objective(s)

The project development objective is (i) to increase freight modal shift to safe and low carbon transport along the Eastern Dedicated Freight Corridor and (ii) to develop Dedicated Freight Corridor Corporation of India Limited as a sustainable institution to provide rail freight connectivity and multimodal logistics services.

Key Results (From PCN)

20. The key results targeted under this project would include:

| Outcome                                                                                                                             | Key Result Areas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PDO (i): Increase modal shift to safe and low carbon transport in the Eastern Dedicated Freight Corridor</b>                     | <ul style="list-style-type: none"> <li>Increased Rail freight tonnage moved on Eastern Corridor</li> <li>Increased line capacity of Eastern Corridor</li> <li>Increased Rail Freight tons moved through DFCCIL-connected logistics terminals</li> </ul>                                                                                                                                                                                                                                                                               |
| <b>PDO (ii): Develop DFCCIL as a sustainable institution to provide rail freight connectivity and multimodal logistics services</b> | <ul style="list-style-type: none"> <li>Policy formulation and implementation for private sector participation in infrastructure investments</li> <li>Policy formulation and implementation for private sector involvement in multimodal terminal management</li> <li>Policy formulation and implementation for private sector to run freight trains on Open access basis in consultation with MOR</li> <li>Heavy Haul Research &amp; Training Institute created as a Knowledge management center under light house concept</li> </ul> |

### D. Concept Description

21. **This project builds on a series of earlier project engagements with DFCCIL.** The EDFC program was financed through a series of three investment loans namely EDFC1, EDFC2, EDFC3.<sup>20</sup> The overall Program Objective was to “meet the growing freight and passenger demand on the eastern corridor (Ludhiana-Delhi-Kolkata) with an improved level of service; and develop institutional capacities of DFCCIL and IR to build and operate the DFC network”. At loan signing, the sections included in each project were:

- EDFC 1 (P114338; approved in 2011) finances the Khurja –Bhaupur<sup>21</sup> section (343 km); restructured in October 2015 to include the Khurja – Dadri section (47 kms); Originally US\$ 975 million restructured to US\$ 550 million
- EDFC2 (P131765; approved in 2014) finances the Kanpur – Mughal Sarai section (393 km); originally approved for US\$ 1100 million restructured to US\$ 660 million and
- EDFC3 (P150158; approved in 2015) finances the Khurja – Ludhiana section (401 km); originally approved for US\$ 650 million restructured to US \$ 560 million.

22. **The construction is complete and operational in Khurja-Bhaupur section and is progressing in Kanpur Mughalsarai section (75% physical progress) and Khurja – Ludhiana (54% physical progress) section.** The sections Mughalsarai to

<sup>20</sup> The EDFC Program was originally conceived as an Adaptable Program Loan (APL) but the Bank was no longer using APLs by the time the second project was ready for approval.

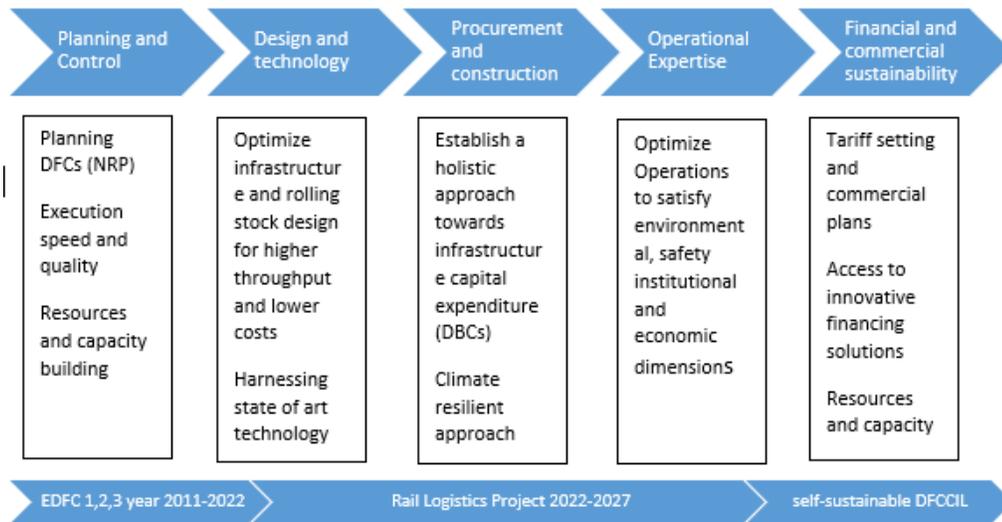
<sup>21</sup> Bhaupur and Kanpur are the same location, and EDFC1, EDFC2 and EDFC3 lines are connected.



Sonnagar is built by Railways through its own equity and the civil work is complete. The section from Sonnagar to Dankuni is to be built by DFCCIL through a PPP (RFP has been floated). The EDFC projects were approved for loans totaling US\$ 2.725 billion. The loans were reduced to US\$ 1.770 billion. The loan cancellations were done partly due to project savings and partly due to Covid repurposing. The project now needs US\$500 million in financing to complete its intended activities. The current request is for an IBRD loan support of US\$ 250 million (50% of eligible expenses).

23. **The three projects have created a platform for launching the efforts to bring commercial financing, private sector participation and customer-oriented culture to the railway sector in India.** They have helped build a strong institution which has established itself as infrastructure creator in freight corridors. As shown in Figure 1, the decade long project engagement has helped DFCCIL in technical areas spanning planning, design, procurement, technology, and construction. The new areas of support required would be on service delivery, commercial financing, and private sector engagement with the goal to create a financially sustainable, customer oriented and commercial company.

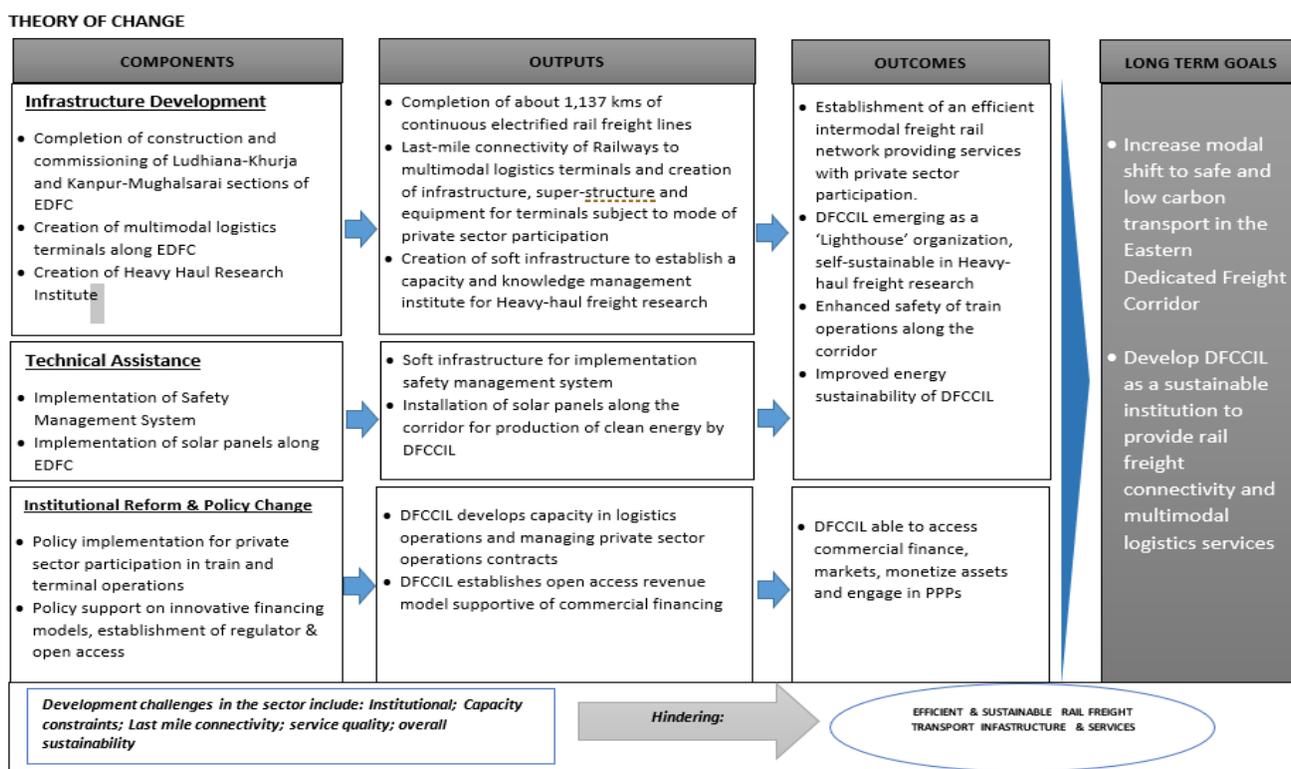
Figure 1: Evolution of DFCCIL Capacity



24. **The project’s theory of change highlights the steps need to reduce India’s logistics cost and GHG emissions through increasing rail modal share.** In summary the project will invest in creation of dedicated freight corridor infrastructure to ease the congestion and capacity constraints over the Eastern corridor. It will also help DFCCIL and IR to design, formulate and implement policies that would enable DFCCIL to offer cost and energy efficient and safe rail freight connectivity by tapping private sector financing in creation of track and terminal infrastructure and provision of multi-modal logistics services. (See Figure 2.)



**Figure 2: Theory of Change**



25. **The project proposes to support DFCCIL in three areas:** (i) creating infrastructure to deliver multimodal services; (ii) creating an Institution capable of delivering customer-oriented infrastructure and multimodal logistics services with commercial financing; and (iii) engaging private sector to support activities of DFCCIL. The components of the project would be designed according to these key pillars

26. **Pillar 1: Infrastructure to deliver multimodal logistics services includes both rail track and rail-linked terminals.** It would include:

- *Completing the Eastern Dedicated Freight Corridor:* This would include the remaining activities of design, construction, and commissioning of the Khurja – Ludhiana section and Kanpur Mughalsarai section of the EDFC. The financing of these activities was supported by EDFC3, which closes in March 2022 and will be finished in this project.
- *Creating last mile connectivity of DFCs:* This would include terminal facilities and connecting tracks. Design, construction, and commissioning of last mile connectivity of freight corridor to multimodal logistics terminals on the DFC.

27. **Pillar 2: Institution Capable of delivering customer-oriented infrastructure and services.** It would continue development of DFCCIL/IR's institutional capacity to provide rail freight connectivity and multimodal logistics service. Identified critical areas of support include having operational, commercial, and financial plans and having staff trained to deal with the emerging nature of business. It could include:



- *Commercial Management: Policy development and implementation for commercial activities:* These include establishing an open access regime, private sector terminal management and train running, innovative rolling stock utilization, locomotives to run heavy haul systems and pricing of services.
- *Operational Management: Safety management system and implementation of asset maintenance system:* The activity would build upon the safety manual established in the earlier EDFC projects to help DFCCIL implement a digitally enabled safety management system over the corridor. State of art asset maintenance regime would need to be put in place based on manuals already created.
- *Environment Management: Implementation of energy optimization driver advisory system and climate resilience in project design.* Pilot driver advisory system to reduce fuel consumption and GHG, with the potential of scaling up across DFCs. Based on the World Bank Study of “Strengthening climate resilience of DFCs” (2019), support the adoption of Climate resilient design and construction methodologies in Indian Railway codes to aid future construction of DFC particularly for drainage systems.
- *Training and Capacity Building:* As DFCCIL expands its work on creating more freight corridors and running train services the human resources of DFCCIL/IR would continue to need training in social and environment safeguards management practices, procurement, financial management, operations, safety and commercial management.
- *Heavy Haul Research & Training Institute.* Soft infrastructure to start a knowledge and capacity enhancement institute/training center. With DFCCIL expected to create more heavy haul railway corridors, this institute would enable DFCCIL to be self-sustaining center of excellence in heavy haul freight training, research, and knowledge dissemination.

**28. Pillar 3: Mobilization of Private Capital to deliver creation of tracks, terminals and run multimodal rail services.**

The proposed project aims to support MOR/IR/DFCCIL move towards more market-oriented policies that strengthen commercial business practices and improve the financial health of rail sector by expanding the traffic and revenue of the sector. To create an initial access to commercial financing, the project aims to leverage a WBG guarantee in support of a first DFCCIL commercial financing and start DFCCIL along a path toward independently raising long-term debt in financial markets. In this first step, the project team will explore the potential for using a MIGA NHFO (Non-Honouring of Financial Obligation) guarantee to raise financing for part of the counterpart funds for the project. As part of the support on new DFCs, the team will continue to work with MoR and DFCCIL to explore all WBG credit enhancement products that could help the SOEs under MOR to access domestic and international financial markets and rail commercial financing for future projects. It could include:

- *Enable DFCCIL to mobilize private investment* in creation of track infrastructure, freight terminals and logistics centers along both Eastern and Western Corridors and running of private trains.
- *Enhance DFCCIL/IR capacity to mobilizing private capital* through innovative mechanisms of asset monetization, PPP, and Landlord models.
- *Enable DFCCIL/IR to adopt Heavy Haul technological innovations* in rolling stock, train operations, signaling systems and asset management through private sector engagement.
- *Pilot project for Installation of Solar Panels* on fixed assets and rolling stock through SME engagement.



29. **IFC and MIGA collaboration is needed** to achieve the private capital mobilization efforts. The discussions with DFCCIL on probable support are around the following areas:

- *Providing MIGA support to DFCCIL on taking a small step towards commercial borrowing exposure.* This borrowing would supplement Ministry of Railway’s equity capital towards the project.
- *World Bank group support in financing and implementing Dedicated Freight Corridors* with private sector participation. The immediate need is for IFC to help structure proposed PPP transactions to be Bankable, including for: (i) Sonnagar – Dankuni Section of EDFC (~USD 2.1 billion); (ii) creation of DFCCIL linked terminals and (iii) East Coast DFC: 1,115 kilometers from Kharagpur to Vijayawada (~INR 748 Billion/USD 10 billion). IFC could potentially financing bidders for the infrastructure PPPs. The last mile logistics infrastructure could be supported by IFC by scoping out monetization and aggregation opportunities that enables large scale developers to come in; addressing policy/risks/ licensing constraints that have prevented larger developers from participating in bidding these assets.

30. IFC will work alongside IBRD to potentially structure and/or finance investment in these corridors, with World Bank supporting on the government side and IFC financing the private sector participants in the resulting PPPs. The proposed engagement of MIGA and IFC would need support from Ministry of Railways and Ministry of Finance, Government of India.

31. **The project would likely also include a US\$0 million CERC component.**

| Legal Operational Policies                  | Triggered? |
|---------------------------------------------|------------|
| Projects on International Waterways OP 7.50 | No         |
| Projects in Disputed Areas OP 7.60          | No         |

Summary of Screening of Environmental and Social Risks and Impacts

32. The project is likely to have adverse impact on the biophysical environment due to the sensitive locations close to which project activities need to be undertaken. These include potential pollution of air and water during implementation, noise and vibration issues near sensitive receptors, disturbance to drainage in the project area due to removal of trees, embankment construction as well as borrowing of earth, and safety of workers; other users of the locations/areas. The project would require land take resulting in relocation and / or loss of livelihood in last mile connectivity and new candidate corridors. Other potential risks include disturbance / damage to biodiversity/wildlife as well as cultural and other common properties, depending on the location/alignment of the project activities.

33. These environmental and social impacts would need to be assessed and then managed in line with ESF requirements through the augmented Environmental and Social Management Framework (ESMF) to be developed to guide ESA and ESMP preparation for proposed new activities under the project and some specific instruments like RAP and TDP. Project will also prepare stakeholder Engagement Plan (SEP) to engage with various stakeholders throughout the life of the project. Some of these measures will require DFCCIL to take the lead, while some others will require coordination with other stakeholders. For some other measures, the contractors hired for implementation would be



required to implement the management measures.

34. All mechanisms to engage with PAPs and communities with respect to Land Acquisition activities, GBV risk mitigation, and other trainings would be planned and implemented as part of the proposed project. The proposed project will carry out gender analysis to identify gender gaps.

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## APPROVAL

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**Approved By**

|                   |             |             |
|-------------------|-------------|-------------|
| Country Director: | Hideki Mori | 10-Dec-2021 |
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