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Report No: PAD4930

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US\$245 MILLION

TO

DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED

WITH

THE GUARANTEE OF INDIA

FOR

RAIL LOGISTICS PROJECT

May 19, 2022

Transport Global Practice  
South Asia Region

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective April 30, 2022)

Currency Unit = Indian Rupee (INR)

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INR 76.44 = US\$1

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## FISCAL YEAR

April 1 – March 31

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## ABBREVIATIONS AND ACRONYMS

C&AG	Comptroller and Auditor General of India
COVID-19	Coronavirus Disease 2019
CO <sub>2</sub>	Carbon Dioxide
CPF	Country Partnership Framework
CPM	Chief Project Manager
CST	Civil Works, Structure and Track
DFC	Dedicated Freight Corridor
DFCCIL	Dedicated Freight Corridor Corporation of India Limited
e-procurement	Electronic Procurement
EDFC	Eastern Dedicated Freight Corridor
EEPBC	Eligible Expenditure for Performance based conditions
ESS	Environment and Social Standards
ESCP	Environment and Social Commitment Plan
ESMF	Environmental and Social Management Framework
FM	Financial Management
GBV	Gender Based Violence
GeM	Government electronic Marketplace
GDP	Gross Domestic Product
GHG	Greenhouse gases
GoI	Government of India
GST	Goods and Services Tax
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
INR	Indian Rupee
IFR	Interim Financial Reports
IPF	Investment Project Financing
IR	Indian Railways
JICA	Japan International Cooperation Agency
km	Kilometer(s)
MSME	Micro, Small and Medium Enterprise
MTR	Mid Term Review
MIGA	Multilateral Investment Guarantee Agency
MOR	Ministry of Railways
NAMP	National Asset Monetization Plan
NIP	National Infrastructure Pipeline
NO <sub>x</sub>	Nitrogen Oxide
NRP	National Rail Plan
PAP(s)	Project Affected Person(s)
PBC(s)	Performance Based Condition(s)

PDO	Project Development Objective
PM	Particulate Matter
PMC	Project Management Consultant
PIU	Project Implementation Units
PPP	Public Private Partnership
PPSD	Project Procurement Strategy for Development
SEMU	Social and Environment Management Unit
SEP	Stakeholder Engagement Plan
STEP	Systematic Tracking of Exchanges in Procurement
US\$	United States Dollar
WB	World Bank
WBG	World Bank Group
WDFC	Western Dedicated Freight corridor

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## DATASHEET

### BASIC INFORMATION

Country(ies)	Project Name	
India	Rail Logistics Project	
Project ID	Financing Instrument	Environmental and Social Risk Classification
P177856	Investment Project Financing	High

### Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input checked="" type="checkbox"/> Performance-Based Conditions (PBCs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
16-Jun-2022	30-Jun-2027

Bank/IFC Collaboration

No

### Proposed Development Objective(s)

The project development objective is (i) to promote freight modal shift to safe and low carbon transport along the Eastern Dedicated Freight Corridor and (ii) to strengthen Dedicated Freight Corridor Corporation of India Limited as a commercial organization to provide multimodal logistics services.

## Components

Component Name	Cost (US\$, millions)
Creation of infrastructure to deliver multimodal logistics services	480.00
Institutional capacity strengthening	10.00

## Organizations

Borrower:	Dedicated Freight Corridor Corporation of India Limited
Implementing Agency:	Dedicated Freight Corridor Corporation of India Limited

## PROJECT FINANCING DATA (US\$, Millions)

### SUMMARY

<b>Total Project Cost</b>	590.00
<b>Total Financing</b>	590.00
<b>of which IBRD/IDA</b>	245.00
<b>Financing Gap</b>	0.00

### DETAILS

#### Private Sector Investors/Shareholders

Equity	Amount	Debt	Amount
Government Contribution	145.00	IFI Debt	245.00
Government Resources	145.00	IBRD	245.00
Non-Government Contributions	25.00	Commercial Debt	175.00
Private Sector Equity	25.00	Guaranteed	100.00
		Unguaranteed	75.00
<b>Total</b>	<b>170.00</b>		<b>420.00</b>

## Expected Disbursements (in US\$, Millions)

WB Fiscal Year	2022	2023	2024	2025	2026	2027
Annual	0.00	73.00	73.00	33.00	33.00	33.00
Cumulative	0.00	73.00	146.00	179.00	212.00	245.00

## INSTITUTIONAL DATA

### Practice Area (Lead)

Transport

### Contributing Practice Areas

### Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

## SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	● Low
2. Macroeconomic	● Moderate
3. Sector Strategies and Policies	● Substantial
4. Technical Design of Project or Program	● Low
5. Institutional Capacity for Implementation and Sustainability	● Moderate
6. Fiduciary	● Moderate
7. Environment and Social	● High
8. Stakeholders	● Low
9. Other	● Low
10. Overall	● Substantial





## COMPLIANCE

### Policy

Does the project depart from the CPF in content or in other significant respects?

☐ Yes ☒ No

Does the project require any waivers of Bank policies?

☐ Yes ☒ No

### Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

**NOTE:** For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

### Legal Covenants

Sections and Description

The Borrower shall implement the project in accordance with the Project Implementation Manual, the Concession Agreement and the Track Access Agreement

#### Sections and Description

The Borrower shall maintain, throughout the period of implementation of the project, suitably qualified personnel in adequate numbers, to carry out the functions required for the project

#### Sections and Description

The Borrower shall maintain throughout the period of implementation of the project, project management consultants with qualifications and experience, and under terms of reference acceptable to the Bank, to assist the Borrower with contract management functions and general implementation of the project

#### Sections and Description

Prior to commencement of train operations on the project sections, the Borrower, shall ensure that a track access regime is in place and operational

#### Sections and Description

EDFC-3 Project Balance Activities for which the procurement process was initiated prior to April 1, 2022, and to be financed out of the proceeds of the Loan shall be: (a) subject to the requirements under the Procurement and Consultants Guidelines; and (b) carried out in accordance with the provisions of the anti-Corruption Guidelines for EDFC-3 Project Balance Activities prior to April 1, 2022.

#### Sections and Description

EDFC-3 Project Balance Activities for which the procurement process was initiated after April 1, 2022 as well as all other activities under the Project, and to be financed out of the proceeds of the Loan shall be: (a) subject to the requirements under the Procurement and Consultants Guidelines; and (b) carried out in accordance with the provisions of the Anti-Corruption Guidelines.

#### Sections and Description

The borrower would update the Project Implementation Manual within one month of loan effectiveness date

#### Conditions

Type Effectiveness	Financing source IBRD/IDA	Description The Borrower has approved the Corrective Action Plan, satisfactory to the Bank
Type Disbursement	Financing source IBRD/IDA	Description Withdrawals up to an aggregate amount not to exceed UD\$49 million may be made for payments made prior to this date but on or after April 1, 2022, for Eligible Expenditure under Category (1)

## I. STRATEGIC CONTEXT

### A. Country Context

1. **Growth rebound in FY22 has been quick, pulled up by investment, recovering consumer demand and, more importantly, a low base.** Real Gross Domestic Product (GDP) growth moderated from an average of 7.4 percent during FY14/15-FY18/19 to an estimated 3.7 percent in FY19/20<sup>1</sup>, mostly due to (i) shocks to the financial sector, and (ii) decline in private consumption growth<sup>2</sup>. Against this backdrop, the outbreak of Coronavirus Disease (COVID-19) had a significant impact, with real GDP contracting by 6.6 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>. However, with the easing of COVID-19 restrictions, Goods and Services Tax (GST) collections have crossed INR 1.1 trillion mark every month since July 2021 reaching as high as INR 1.67 trillion mark as of April 2022. The robust GST revenues are expected to continue as the economic recovery gathers momentum. World Bank forecasts that real GDP growth<sup>5</sup> for FY21/22 is likely to be 8.3 percent<sup>6</sup>, on the back of increased capital expenditure by the government and recovering consumer demand. The real GDP in FY21/22 is expected to reach the FY19/20 level. Given the global concerns on significant uncertainty around the pandemic, elevated inflation, geo-political tensions and extended supply disruptions, growth in FY22/23 is expected to be 8 percent<sup>7</sup>. Nonetheless, the expected recovery will put India among the world's fastest-growing economies over the next two years.

2. **Although India has made remarkable progress in reducing absolute poverty in recent years, including due to the allocation of significant resources for social assistance programs, the COVID-19 outbreak has delayed the course of poverty reduction<sup>7</sup>.** Between 2011-12 and 2020-21, India's poverty rate has declined from 22.5 percent<sup>8</sup> to values estimated to range between 9 to 12.3 percent.<sup>9</sup> However, projections of GDP per capita growth suggest that this estimated decline also includes a reversal of poverty reduction due to the pandemic.<sup>10</sup> Labor market indicators from high frequency surveys -including from the Centre for Monitoring Indian Economy - suggest that vulnerability has increased after the pandemic, particularly for urban households, with a moderate recovery in 2021. 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. To respond to the pandemic, the Government of India (GoI) has deployed significant resources as part of the Prime Minister Garib Kalyan Yojana for social assistance, including for urban poor households and migrants.

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<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 real GDP forecast published in April 2022.

<sup>6</sup> World Bank estimate compared to the GoI's second advance estimate of 8.9 percent.

<sup>7</sup> World Bank real GDP forecasts for FY22/23 published in April 2022.

<sup>8</sup> World Bank projections. The Government of India has deployed significant resources for social assistance, including towards urban poor households and migrants.

<sup>9</sup> Consumption Expenditure Survey 2011-12, National Sample Survey Office (NSSO), Government of India.

<sup>10</sup> World Bank estimates. Macro Poverty Outlook, October 2021.

<sup>10</sup> World Bank estimates. Source: Macro Poverty Outlook, 2020.



3. **Freight Transport is critical to India's growing economy.** India's growing economy depends on its logistics sector, which has a current market size of INR 11 trillion (US\$150.1 billion). A study by National Institution for Transforming India Aayog indicates that India generates about 4.6 billion tons of freight annually, resulting in a transportation demand of over 3 trillion ton-kilometers at the cost of INR 9.5 trillion (US\$124 billion).<sup>8</sup>

4. **Indian Railways (IR) is an essential part of India's freight transport system.** IR is the 4th largest railway network in the world, with a route length of 67,956 km. It is the second largest passenger railway and the fourth largest freight railway in the world measured by traffic volume. IR transported 8 billion passengers and 1.2 billion tons of freight in the fiscal year ending March 2020<sup>9</sup>. Between 2008-09 and 2017-18, freight traffic has grown at a compounded annual growth rate of 3.7 percent.<sup>10</sup> The growth potential is estimated to be higher, however, it is limited by capacity constraints that limit volumes, and reduce the speed and reliability of shipments. In FY19/20, IR had revenue of INR 1.7 trillion (US\$22.2 billion), of which INR 1.1 trillion (US\$14.4 billion) was from freight transport.<sup>11</sup>

## B. Sectoral and Institutional Context

5. **IR network suffers from congestion and is losing market share, thereby necessitating capacity enhancements.** Despite robust growth in freight traffic, IR has been losing market share to trucks. Even in leads beyond 300 km, the rail share has declined from 52 percent in 2007-08 to 32 percent in 2017-18.<sup>12</sup> Freight service quality is impeded by having to fit freight trains into a busy passenger service schedule (passenger trains are prioritized over goods trains and 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 with more than 100 percent capacity utilization. Over the last decade, IR has successfully adopted many measures to increase capacity including: (a) squeezing more capacity from existing assets, (b) increasing average train load, (c) utilizing equipment more efficiently, and (d) improving railway labor productivity. Today, physical capacity is the most pressing constraint, with estimates suggesting that over half of the IR network will be operating at a utilization of 1.5X of line capacity by 2051 without additional investments.

6. **Integrating railways with the wider logistics ecosystem is key to reducing India's high logistics cost.** Logistics cost in India represents about 13.5 percent of GDP, much higher than developed nations (8-10 percent). Most of the freight in India is bulk commodities with long average leads; traffic that is suited to lower cost rail transport. Nonetheless, around 71 percent of India's freight is transported by road compared to only 17 percent by rail<sup>13</sup>. Shifting more traffic to rail will reduce logistics costs.

<sup>8</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>9</sup> Indian Railways Yearbook 2019-20

<sup>10</sup> India, Ministry of Railways. National Rail Plan 2020. <http://indianrailways.gov.in/ExeSummary-28122020.pdf>.

<sup>11</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>12</sup> India, Ministry of Railways. National Rail Plan 2020. <http://indianrailways.gov.in/ExeSummary-28122020.pdf>.

<sup>13</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>.



7. **High truck share comes at a high socio-environmental cost.** Carbon dioxide (CO<sub>2</sub>) emissions from freight transport in India are projected to increase by 451 percent - from 220 million tons in 2020 to 1214 million tons in 2050. The freight sector is also responsible for 132 kilo tons of particulate matter (PM) emissions and 2.4 million tons of nitrogen oxide (NO<sub>x</sub>) emissions in 2020. Road freight is the largest contributor, accounting for about 95 percent of emissions of the freight sector.<sup>14</sup> Additionally, freight transport is one of the leading causes of road accidents. In 2018, trucks accounted for about 12.3 percent of road accidents and 15.8 percent of total road transport-related deaths, most of which were due to overloaded trucks<sup>15</sup>.

8. **Increasing the share of rail transport is key to reducing Greenhouse Gas (GHG) emissions from transport.** India's Nationally Determined Contribution for the period 2021 to 2030 target a reduction in the emissions intensity of the country's GDP by 33 to 35 percent from 2005 levels. The 'reduction of emissions from the transportation sector' is a priority area.<sup>16</sup> Rail emits about one-fifth of trucks' GHG emissions,<sup>17</sup> and improves air quality by emitting lesser PM, Sulphur Oxide (SO<sub>x</sub>), NO<sub>x</sub> emissions, so shifting traffic from road to rail would drastically reduce GHG emissions.<sup>18</sup> IR plans to become a net zero carbon emitter by 2030. As part of this plan, IR has the potential to eliminate 7.5 million tons of CO<sub>2</sub> equivalent each year<sup>19</sup>.

9. **IR has developed a long-term strategic plan, the National Rail Plan (NRP), that aims to build capacity ahead of demand to enable increase in rail modal share.** The NRP estimates that rail share can be increased to 45 percent by 2050, by adding capacity and reducing transit times and costs. 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 (6,600 km by 2030, 8,500 km by 2050); (ii) creation of 3,000 km of High-Speed Corridors by 2030 and 8,000 km by 2050; (iii) upgrades along the highly dense/utilized networks; (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 (NIP) 2020 - 2025.** The NIP has identified 682 investment opportunities for private sector and including in the form of Public Private Partnerships (PPP) across three railway subsectors (track, rolling stock, and terminals), with investment needs of US\$224.7 billion over the next five years, including: (i) rail track: 609 projects, US\$174.9 billion; (ii) rolling stock, 40 projects, US\$47.3 billion; and (iii) terminals, 33 projects, US\$2.5 billion.<sup>20</sup>

<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> Road Accidents in India 2018, Ministry of Road Transport & Highways; [https://morth.nic.in/sites/default/files/Road\\_Accidednts.pdf](https://morth.nic.in/sites/default/files/Road_Accidednts.pdf)

<sup>16</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>17</sup> International Energy Association, *The Future of Rail*, 2019.

<sup>18</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>19</sup> UNEP (United Nations Environment Program). 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>20</sup> For more information on the investment opportunities, see the India Investment Grid website at <https://indiainvestmentgrid.gov.in/opportunities/nip-projects/transport>.



11. **As per NRP, only about one-third of the funds are likely to come from GoI budgetary resources and concessional financing.** IR needs to identify multiple sources of financing for the required investments including: (i) long term debt from domestic and/or foreign private lenders and institutional financing; (ii) private investments, particularly in the form of PPPs; and (iii) asset monetization. As IR looks to attract private sector investors, it needs to identify and undertake the required reforms to create an enabling environment which allows the private sector to create and deliver infrastructure services on a level playing field.
12. **The GoI plans to partially finance future DFCs through asset monetization of Eastern Dedicated Freight corridor (EDFC) and Western Dedicated Freight Corridor (WDFC).** The National Asset Monetisation Plan (NAMP) envisages monetization of DFCs once they are operational, anticipating that operational segments of EDFC and WDFC with well-established traffic and a steady revenue stream would be suitable candidates for asset monetization. Proceeds from such asset monetization would contribute to development of future DFCs. NAMP estimates that the railways sector could contribute about 25 percent of the national asset monetization potential amounting to INR 1.5 trillion (about US\$13 billion). DFCs are expected to contribute about 13 percent of railway sector's asset monetization potential. Asset monetization models proposed in the NAMP include direct contractual approaches (concessions) as well as structured financing instruments (infrastructure investment trusts and asset-backed securities).
13. **The construction of DFC has created an institutional structure for delivering infrastructure, increasing India's freight rail capacity, and resultantly improving passenger services.** GoI has adopted a new institutional framework for construction of the DFCs. The Dedicated Freight Corridor Corporation of India Limited (DFCCIL), an infrastructure company set up under the Indian Companies Act, 2013, whose shares are currently owned by Ministry of Railways (MOR), will deliver, and manage the DFCs. The relationship of DFCCIL with MOR is governed by a Concession agreement signed by both parties in 2014. Once completed, the WDFC and EDFC will lead to sharp expansion in rail track capacity. They will enable (i) movement of high-quality wagons with higher axle loads (25 ton upgradable to 32.5 ton); (ii) higher average speeds (50 kmph vs. current 25 kmph); and (iii) longer trains (1.5 km vs. current 700 m). With the improved efficiency of freight trains in the DFCs, freight will be transferred from existing IR mixed use lines, which will then have sufficient capacity to accommodate semi high-speed passenger train services.
14. **Infrastructure is necessary, but not sufficient to achieve the modal shift objectives - developing reliable service delivery mechanisms is essential.** A recent World Bank (WB) survey of India's freight transporters (Rail Freight Increase study, 2018) identified three binding constraint 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. While the DFCs will ease constraints of physical capacity, "poor service quality" will need to be addressed through a customer-oriented approach, which includes logistics services, policies, schemes, marketing strategies and operating plans to deliver on reliable service to clients. The last-mile connectivity to logistics terminals would enable cargo aggregation/disaggregation required for rail transportation. Leveraging private sector efficiency for integrating rail transportation in cargo supply chains would be essential.
15. **The Project focuses on harnessing commercial financing, tapping private sector participation, and developing customer-oriented approach.** The Project utilises all parts of World Bank Group (WBG)



to support DFCCIL and MOR to work across the following three major areas to enhance infrastructure capacity, and devise effective service delivery mechanisms to optimally utilize capacity:

- a. **Harness Commercial Financing.** DFCCIL has no experience in borrowing from commercial markets. International Bank for Reconstruction and Development (IBRD), and the Multilateral Investment Guarantee Agency (MIGA) together will support DFCCIL access commercial sources of finance. MOR has requested MIGA to support US\$100 million commercial financing by DFCCIL as part of its counterpart funding for the project to jumpstart the effort. Accordingly, MIGA has initiated its internal approval process to provide credit enhancement guarantees to commercial lenders yet-to-be identified by DFCCIL<sup>21</sup> In case DFCCIL is unable to raise the financing, MOR can provide the full amount of counterpart funds. International Finance Corporation (IFC) support can also be leveraged as an alternative source of commercial financing.
- b. **Mobilize private sector participation.** DFCCIL intends to harness private sector efficiency in (i) creation of infrastructure to augment capacity; (ii) creation and management of intermodal terminals; and (iii) improving service quality and value-added services through private train and terminal operators. The project aims to support DFCCIL in creating an enabling environment by developing DFCCIL capacity along with strategies for commercial and operations management. With the full implementation, the project will mobilize private capital investment in privately operated terminal facilities alongside the DFCs adding up to a total of US\$100 million. This is over and above the US\$100 million mentioned in (a) above.
- c. **Develop a customer-oriented service culture.** The project will support DFCCIL to move beyond serving only IR and develop commercial service offerings which addresses customer needs. New customers will come when DFCCIL develops connectivity to existing and new freight terminals and MOR implements non-discriminatory access on DFCCIL lines. These changes will create an environment which encourages DFCCIL to address the needs of customers, offering guaranteed train slots and service times to shippers and service providers.

16. **The Project will support reduction in carbon emissions and in developing climate resilient infrastructure.** EDFC can potentially reduce GHG emissions on freight by nearly half by 2052 by facilitating modal shift of cargo from road to rail, moving away from diesel rail to electric rail lines for cargo transport, as well as by reducing fuel consumption and enhancing the operating efficiency of freight rail.<sup>22</sup> Furthermore, India is highly vulnerable to the impacts of the climate change especially the project area which lies in the Indo Gangetic plains and passes through states of Haryana, Punjab, Uttar Pradesh, Bihar, Jharkhand and West Bengal. This region is exposed to high climate change risks including extreme heat, precipitation and flooding, and incidents of dense fog. This project will address these vulnerabilities by adopting i) climate resilient design and construction methodology which are essential for sustainability of infrastructure; and ii) adoption of climate mitigation measures in operations and maintenance practice, as per established practices at MOR/DFCCIL.

17. **The Project offers potential to create innovative opportunities for women's formal employment, occupational mobility to higher paying job roles and logistics support for women owned**

<sup>21</sup> MIGA obtained host country approval from Ministry of Finance on May 5, 2022, and preliminary approval to proceed to due diligence by MIGA management on March 3, 2022. MIGA will separately seek for Board approval following appointment of lenders and confirmation on the loan's competitiveness

<sup>22</sup> [http://dfccil.com/upload/Final\\_Report\\_DFCC\\_30\\_06\\_2011.pdf](http://dfccil.com/upload/Final_Report_DFCC_30_06_2011.pdf)





**business.** The Project poses the opportunity to address three priority gender gaps in railways and transportation sector. *One*, India's overall female labour force participation remains lower than the global average of 50 percent. Furthermore, women's participation in the urban workforce declined to about 20 percent<sup>23</sup>, which is mirrored in the transport and railways sector. *Second*, pan-India studies show that women in the urban workforce are disproportionally concentrated as informal workers, daily-wage laborers with limited access to on-the-job training and occupational mobility, specially so in transport sector. *Third*, in terms of ownership of equity, business stakes held by women are highest in India's manufacturing sector (mainly related to paper and tobacco products) even exceeding 50 percent with limited presence in the transport and railways sector<sup>24</sup>. A WB assessment on 360-degree logistics needs of Micro, Small and Medium Enterprises (MSMEs) in States along eastern corridor, indicated that the impact of logistics costs is higher on women owned MSMEs, mainly due to absence of organised aggregation/disaggregation facilities. Finally, women's safety and harassment at the workplace remains a structural barrier across the three gaps listed above. The project supports gender interventions in creating jobs, creating access to occupation mobility, and providing access to cost efficient transport services to women owned MSME.

### C. Relevance to Higher Level Objectives

18. **The Project is consistent with the WBG Country Partnership Framework (CPF) FY18-22 discussed at the Board on September 20, 2018 (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 focuses on the WB's efforts on improving connectivity and logistics to ensure increased reliance on multimodal transport, including shifts from road to rail, 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 enabling private sector investment in the rail sector.

19. **The Project is aligned well with India's growing focus on multimodal transport, particularly with railways as central to pillar of efficient logistics in the freight transport segment.** GoI has launched several plans which target capacity creation in railways and its integration with the logistics ecosystem through various initiatives such as the DFCs, rail electrification, and the creation of multimodal Logistics Parks. Other GoI initiatives target the integration of railways in the logistics network. 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 with its focus on supporting IR and DFCCIL to (i) create safe and climate-resilient infrastructure and (ii) develop institutional capacity to deliver multimodal logistics services, will contribute to the GoI's priorities to place rail freight services at the centre of an efficient logistics system.

<sup>23</sup> Periodic labor force survey 207-2018, MoSPI, GoI

<sup>24</sup> In the railways sector, women employees account for about 8percent of the workforce (2018).





20. **This Project will be part of a “Light-house” approach, setting an example for future rail sector investments in the country.** It will contribute a new set of solutions for rail sector financing and have a particular focus on attracting greater traffic on rail to increase railway freight income. IBRD in partnership with MIGA and IFC would help leverage private capital in the rail sector. Attracting commercial financing, private sector participation and new traffic to railways would need systematic ways of designing and managing projects and operations. This Project will, therefore, contribute to the Bank’s broader national dialogue on rail sector reforms.

## II. PROJECT DESCRIPTION

### A. Project Development Objective

#### Project Development Objective (PDO) Statement

21. The PDO is (i) to promote freight modal shift to safe and low carbon transport along the Eastern Dedicated Freight Corridor and (ii) to strengthen Dedicated Freight Corridor Corporation of India Limited as a commercial organization to provide multimodal logistics services.

#### PDO Level Indicators

22. Progress towards the PDO will be tracked based on the following eight outcome indicators. (details in Section VII - Results Framework and Monitoring)

- a. Additional freight train paths
- b. Additional freight trains in project sections
- c. Freight handled at newly created goods terminal along EDFC
- d. Reduced carbon emission in freight transportation
- e. Reduction of train accidents on project rail sections
- f. Effective implementation of Concession Agreement between IR and DFCCIL
- g. Private sector investment mobilised for creation of freight terminals
- h. Enhanced private sector participation in infrastructure creation

23. The first five indicators would measure the progress towards promoting freight modal shift to safe and low carbon transport along the EDFC and the rest measure DFCCIL’s institutional capacity as a commercial organisation to provide multimodal logistics services.

### B. Project Components

24. The project has two components with key outcomes secured by Performance Based Conditions (PBCs):

25. **Component 1: Creation of infrastructure to deliver multimodal logistics services (Total cost US\$590 million, of which IBRD US\$240 million):** This component will finance the construction of EDFC corridor which is essential to shift freight from road and IR to EDFC. It includes remaining infrastructure creation activities from EDFC-3 project, which closes on March 31, 2022, and last mile connectivity to



freight terminals. It includes private sector investment of US\$100 million in construction of private terminals along the EDFC corridor.

- 1.1 **Construction of the EDFC Corridor:** (a) design, construction, commissioning and testing of Khurja – Ludhiana section (401 km) and Kanpur – Mughal Sarai section (393 km) of EDFC; and (b) provision of consultancy services relating to overall project management, social and environment management, and quality and safety audit. These activities will allow trains from IR to be shifted to the corridor (PBC1) which will trigger IR access charge payments (PBC2).
- 1.2 **Last mile connectivity:** Design, construction, commissioning and testing of civil, structure track, electrical and signaling systems work and related supervision consulting to provide last mile connectivity to terminals, based on terminal feasibility studies and engineering designs undertaken by DFCCIL. These activities will allow for privately financed terminals to start moving freight on EDFC (PBC5).

26. **Component 2: Institutional capacity strengthening (Total cost US\$10 million, of which IBRD US\$5 million):** Providing the foundation for: (i) attracting private players to utilize DFCCIL's rail infrastructure, (ii) enabling PPP to unlock investments in multimodal terminals directly connected to DFCCIL's network; and (iii) supporting institutional development and capacity building of DFCCIL and MOR to increase operational efficiency, enhance safety management, and promote inclusion., as follows:

- 2.1 **Commercial Management:** Analytical studies and implementation support for: (a) developing a private sector-oriented institutional policy, comprising private sector participation (PBC3 and PBC4); (b) developing and implementing a non-discriminatory access regime (PBC6); (c) establishing a tariff regulatory authority, including pricing of services and access charges (PBC7); and (d) adapting DFCCIL's financial management (FM) to facilitate accessing commercial financing (PBC8).
- 2.2 **Operation Management:** Analytical studies and implementation support for: (a) operation and asset maintenance practices; (b) a pilot energy optimization driver advisory system to reduce fuel consumption and greenhouse gas, with scalability across DFCs; (c) the adoption of climate resilient design and construction methodologies in IR codes to aid future construction of DFC; (d) a framework for environment and social management for future DFC sections to international standards.
- 2.3 **Environment and Social Safeguards management:** Programmatic support to DFCCIL on management of environment and social safeguards which includes: (a) adoption of climate resilient design and construction methodologies in IR codes to aid future construction of DFC; and (b) [preparation of] framework for environment and social management for future DFC sections to international standards.
- 2.4 **Safety Management System:** Implementation of safety management system over the EDFC corridor, including a preventive mechanism for disaster risk mitigation measures for train running, and supporting the integration of women's safety metrics to the proposed safety management system, in collaboration with women employees including contractual workers and informal women workers.
- 2.5 **Capacity Building:** Training of DFCCIL staff on human resources, social and environment safeguards management practices, procurement, financial management, operations, and commercial management amongst other aspects, and including for informal women workers: (a) the provision of pilot daycare facilities, provision of on-the-job training over a period of 3-



5 months to enable a transition to non-traditional, higher paying job roles (i.e. from a mason helper to a certified mason) for informal women workers and (b) to incentivize internship programs for qualified young women graduates to provide an early exposure to jobs in Railways for formal women workers.

27. **Lending instrument and performance-based conditions.** The lending instrument is Investment Project Financing (IPF) with PBCs. Disbursements will be triggered by the documented execution of eligible expenditures and verification of achievement of PBCs which will provide incentives for achieving results. The project will have eight PBCs covering disbursements totalling US\$100 million. They are strategically allocated along the project's disbursement curve to avoid resource shortfalls during the execution of contracts, but also to enforce the importance of its achievement.

**Table 1: List of performance-based conditions (PBCs)**

PBC No.	PBCs	Total loan amount allocated	Percent of total Financing
1	Shift of IR traffic to completed section of DFCs	US\$46 million	18.78
2	Payment of track access charges by IR	US\$15 million	6.12
3	DFCCIL Public Private Partnership policy established	US\$15 million	6.12
4	Enhanced capacity of DFCCIL to create DFCs with private sector investment in rail	US\$5 million	2.04
5	Privately financed terminals on DFCCIL lines start moving traffic	US\$5 million	2.04
6	Non – discriminatory access regime established	US\$2 million	0.82
7	Tariff rail regulatory authority established	US\$2 million	0.82
8	Commercial bank financing raised	US\$10 million	4.08

28. **Eligible Expenditure Program for PBCs (EEPBC):** The EEPBC consists of project related expenditure on goods, works, non-consulting services, consulting services and training. These expenditures will include (i) cost of construction of project sections detailed in Component 1; and (ii) technical assistance for Institutional capacity strengthening of DFCCIL detailed in Component 2.

29. **Verification Protocol:** As the PBC targets are readily examinable (being government orders and public notifications) verification statement will be submitted by DFCCIL and will be subject to the usual validation by the Bank of all verified results presented by the Borrower. The details of the verification protocols and PBCs are given in Section VII -Results Framework and Monitoring.

### **C. Project Beneficiaries**

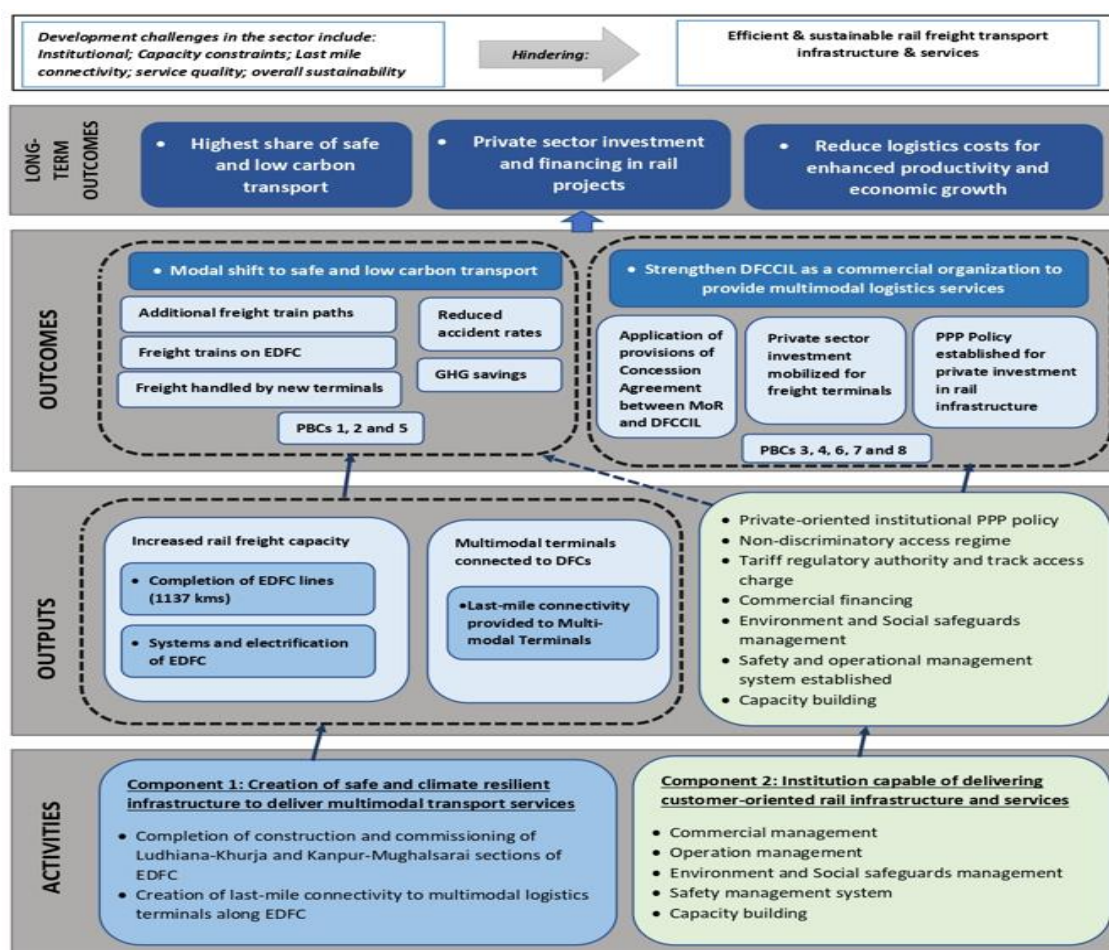
30. **The direct project beneficiaries will be the power and heavy manufacturing industries of northern and eastern India and their customers.** Other beneficiaries will include community groups, residents, farmers, and vulnerable groups along the corridor. Rail passengers will also benefit from construction of a dedicated freight railway since congestion will be relieved on existing passenger lines by

the transfer of freight to dedicated freight lines. GoI under its “Gatishakti” program is planning to set up seven integrated manufacturing clusters using EDFC as the backbone. These clusters will be set up with an investment of about US\$1 billion on either side of these corridors. This initiative is expected to generate substantial employment and development opportunities in the lagging areas of the poorer states like Bihar and Uttar Pradesh. The operationalization of DFCCIL will also give a boost to backward linkages, thereby leading to increased production in ancillary industries essential for railways operations, including locomotives, rolling stock, iron and steel, construction, and heavy machinery, amongst others.

#### D. Results Chain

31. The Project’s result chain links the discrete infrastructure construction and consulting service activities with intermediate outputs and, ultimately with a set of intended short term and long-term outcomes. The basic premise of the results chain is that attaining the Project’s intended outcomes would require a combination of infrastructure provision and a strengthened institution capable of service delivery.

**Figure 1: Theory of Change**





## E. Rationale for Bank Involvement and Role of Partners

32. **This Project builds on a series of project engagements with DFCCIL.** The EDFC program was financed through a series of three investment loans EDFC-1, EDFC-2, EDFC-3 cumulatively providing up to US\$1.770 billion in IBRD financing.<sup>25</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:

- a. EDFC-1 (P114338; approved in 2011) finances the Khurja –Bhaupur<sup>26</sup> section (343 km); and Khurja – Dadri section (47 km)
- b. EDFC-2 (P131765; approved in 2014) finances the Kanpur – Mughalsarai<sup>27</sup> section (393 km)
- c. EDFC-3 (P150158; approved in 2015) finances the Khurja – Ludhiana section (401 km)

33. **The three Projects have created a platform for bringing commercial financing, private sector participation and customer-oriented service culture to the railway sector in India.** The earlier Project engagements have helped build DFCCIL as a strong institution which has established itself as infrastructure creator in freight corridors. DFCCIL has developed institutional capacity in technical areas spanning across planning, design, procurement, technology, and construction. Through technical assistance in earlier projects, DFCCIL and MOR have developed preliminary analyses of the factors required to develop an enabling environment for private sector participation in the provision of infrastructure and transport/logistics services.

34. **The WB is eminently positioned to disseminate global and domestic best practices and knowledge application of construction of multimodal corridors and Institutional development.** The WB will leverage its global knowledge in supporting railway corridors (for example in Egypt, China, Turkey) and help in transferring good practice and cutting-edge knowledge. The Project will support the GoI’s commitment to combat global warming and specifically help MOR achieve its net zero carbon emissions target.

35. **Role of partners.** The Project is consistent with and builds on past work that has been supported by other development partners in IR, most notably Japan International Cooperation Agency (JICA). JICA finances the WDFC and has a close partnership with the Bank in supporting DFCCIL through regular exchange of ideas and implementation challenges.

## F. Lessons Learned and Reflected in Project Design

36. **The proposed Project builds upon the experience gained during implementation of completed and ongoing dedicated corridor works in India as well as analytical work done in the sector and experience in other projects.** These include:

- *The timeframe for reform is longer than the project cycle, so reform is best supported by a series of projects.* Meaningful railway reform often takes 10+ years to accomplish, which is longer than the typical project cycle. In China, support for reform was put on a separate track

<sup>25</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. The data sheet mentions this as series of projects.

<sup>26</sup> Bhaupur and Kanpur are the same location, and EDFC-1, EDFC-2 and EDFC-3 lines are connected.

<sup>27</sup> Mughalsarai has since been renamed as Deen Dayal Upadhyay, the name is retained for the sake of continuity with earlier documents.



from the series of six projects in railways, with the projects creating a platform for dialogue and the Bank annually delivering a concise note on international experience on topics selected by the client. These include notes on sector structure (leading to the corporatization of China Railway), pricing, and attraction of private capital. This lesson is also illustrated in Turkey, where the reform studies on open access, financed in the Railways Restructuring Project, were later implemented during the Rail Logistics Improvement Project.

- *Embedding railways into commercial, multimodal logistics chains is essential for building rail traffic.* As explained in the WB's report "*The Rail Freight Challenge for Emerging Economies: How to Regain Modal Share*", this requires creating traffic consolidation points and providing top-notch reliable rail service between these points to take advantage of rail's lower cost for dense shipments and remain competitive with truck. This is very different from serving rail's traditional point-to-point markets and requires a more commercial mindset and ability to work with the private sector.
- *It is important to schedule and monitor the progress of work to complete the entire corridor:* The Eastern Corridor is envisaged from Ludhiana to Dankuni. The section from Sonnagar to Dankuni is to be built on PPP basis. It would be important to complete the entire corridor for accruing the expected rail transport benefits. The project supports developing an enabling environment for development of Sonnagar Dankuni section on PPP basis.

### III. IMPLEMENTATION ARRANGEMENTS

#### A. Institutional and Implementation Arrangements

37. **The Project will be implemented by DFCCIL.** DFCCIL will coordinate closely with MOR and other State/National government agencies to oversee all aspects of project implementation across all three components. It will provide project overview support, including activity monitoring and procurement tasks, while the field-based Chief Project Manager (CPM) offices and associated staff will oversee construction and operations. The Executive Director (Infrastructure) will oversee project activities as Project Director. All civil works structures, tracks and systems work (tracks & terminals) will be administered by DFCCIL's Construction Unit headed by the Director (Project Planning). Director (Project Planning), Director (Operations & Business Development) and Director (Finance) will be the responsible authorities overseeing institutional development activities relating to operational, commercial, and financial aspects of the DFCs. MOR/ IR will continue to provide overarching advisory support to DFCCIL on policy and operations, as well as on potential PPPs and commercial borrowing. The Project Implementation Manual (PIM) prepared for implementing EDFC-1, 2 and 3 projects would be updated for the Project and will be finalized within one month from effectiveness. For further details refer Annex 1.

#### B. Results Monitoring and Evaluation Arrangements

38. DFCCIL will be the main agency responsible for monitoring of project implementation, results, and accomplishment of PBCs. The office of Principle Executive Director, Infrastructure in MOR would be the key monitoring department from MOR. The Projects outcome and intermediate performance indicators, including their definition, baseline, and target values are presented in Section VII – Results Framework and Monitoring.



### C. Sustainability

39. There has been sustained institutional commitment to the DFC program by all stakeholders since its inception. GoI has confirmed it as one of the country's highest public infrastructure priorities, as it addresses the concern that inadequate railway infrastructure capacity impedes growth in both energy and industrial sectors. MOR considers this Project an essential step to increase the volume and profitability of its freight business. This is evidenced by several official plans (NRP, Gatishakti, National Infrastructure Investment plan) at the national level that lay out goals for the DFCs and provide a strong policy underpinning to this Project.

40. The technical and environment sustainability of the Project will be achieved using resource efficient and climate resilient designs of railway infrastructure. The operational sustainability of the DFC program is extremely high, as both MOR and DFCCIL are committed to collaborating to ensure a timely and effective delivery of the DFCs. The knowledge sharing and capacity building impact of these activities will contribute to a better utilization of railway infrastructure across the network. MOR is planning to improve the passenger experience over the residual corridor by providing semi-high speed passenger railway services.

41. MOR has already completed construction in a part of the corridor running from Mughalsarai to Sonnagar and Khurja to Kanpur, and has planned connections to industries, mining areas, ports and urban centres. These pre-identified projects and the last mile connectivity to upcoming terminals (being envisaged in the Project under Component 1) have been recognized as an essential step towards providing the much-needed transport services to the growing economy.

## IV. PROJECT APPRAISAL SUMMARY

### A. Technical, Economic and Financial Analysis

#### Technical Analysis

42. **The Project aims to complete remaining construction activities on Khurja – Ludhiana and Kanpur - Mughalsarai sections of the EDFC.** EDFC is a continuous railway corridor from Ludhiana to Dankuni (1,812 km). This corridor is divided in five sections. The details of sections with current status are given in Table 2.

**Table 2: EDFC Section Details**

Sections	Ludhiana-Khurja	Khurja - Kanpur	Kanpur-Mughalsarai	Mughalsarai-Sonnagar	Sonnagar – Dankuni
Length (km)	401	343	393	137	538
Physical progress	75 percent	complete	78 percent	complete	PPP under approval
Current Operational status	Not operational	Operational	Not operational	Not operational	Not yet started



43. **EDFC's infrastructure is designed to operate as heavy-haul railroad.** For that purpose, it is provided with robust track infrastructure that supports longer and heavier trains of 1,500 meters and 25 metric tons per axle as against the current IR freight trains of 22-ton axle load and length of 686 meters. Bridges, viaducts and supporting infrastructures are even sturdier, with maximum axle-load of 32.5 tons, allowing for future upgrades on main tracks. Feeder sections have been upgraded accordingly. The DFC lines are being built to be able to haul bulk freight trains of 6,000 to 12,000 gross tons of trail load.

44. **The current Project supports construction completion of Kanpur-Mughalsarai section and Khurja- Ludhiana section rail sections.** Ludhiana-Khurja section is a single-track ballasted line with the provision of crossing sidings at approximately 10 kilometers intervals, while Kanpur – Mughal Sarai follows a fully double-track set up, laid on ballast and concrete sleepers. Both sections use 60 kg long welded rail panels. It will be electrified with 2 x 25 kV AC – as oppose of single 25 kV line of IR's network – equipped with 50 Hz auto transformer, and traction sub-stations. Power will be delivered by an overhead (wiring cables) catenary system. A combination of systems, telecommunication and computer-based controls are being installed to monitoring the operation. Traffic management and supervision will be centralized in one of the world's largest Operations Control Center, located in Prayagraj (Allahabad), including real-time state of trains, power systems and signaling. The adoption of ETCS (Electronic Track Circuit systems) Level 1 comprises trackside equipment, train signal receivers and in-cab display, all working together with fixed block systems enabling trains to run at line speed limits during times of poor visibility and fog. The safety is complemented by End of Train telemetry devices.

45. **The EDFC is being developed on a design and build lump sum arrangement, packaged into separate civil / structure / track (CST) contracts, and separate signaling / telecommunications (Systems) contracts.** The CST works contracts on EDFC cover the design and construction of civil, structures and track works for a double line railway involving formation in embankment/cuttings, ballast on formation, track works, bridges, structures, building including testing and commissioning on a design-build lump sum basis. The Systems works contracts cover the design, supply, construction, installation, testing and commissioning of 2x25kV AC electrification, signaling & telecommunication, Electrical and Mechanical and associated works on a design-build lump sum basis. Procurement for the main civil works and systems are all concluded, and contracts are running, as described below:

46. **Last mile connectivity and Development of Terminals along the corridor:** DFCCIL has adopted several strategies for providing terminal connectivity from/to its own network with the aim of accelerating shift of road traffic to rail and thereby contributing to revenue growth. In some of these strategies DFCCIL may partially support the required investments in the form of land acquisition and infrastructure provision, as described below:

- (i) **Existing terminals along EDFC corridors previously connected to IR:** The purpose of this scheme is to reinstate existing connectivity rather than attracting new investments. A few existing public use goods shed/sidings, which were transferred from IR are being connected through the existing construction contracts. For existing rail terminals previously connected to IR, that were cut off by construction of the DFCs, DFCCIL shall bear the capital cost and carry out all necessary interventions for reconnecting, at no additional cost to the private





- sector owner. In this way all existing terminals along the corridor will be either connected via IR network or DFC.
- (ii) **Gati Shakti Multi-Modal Cargo Terminal Policy:** This policy was issued for IR, but DFCCIL has approached Railway Board for permission to apply it on DFCCIL. It allows IR (and potentially DFCCIL) to acquire parcels of land necessary to connect terminals with rail main lines.
  - (iii) **Development of 14 Private Freight Terminals:** In November 2020, DFCCIL launched a Request for Proposal for Development of Private Freight Terminals on available land to be licensed to selected private operators. Three private parties have been shortlisted for 14 locations (10 on WDFC and 4 on EDFC), out of which 11 feasibility studies have been so far submitted and discussions are underway. In this model, the private operator is the primarily responsible for land acquisition, while DFCCIL may provide support during the acquisition process on deposit terms.
  - (iv) **Preliminary interventions for land clearance:** DFCCIL have identified around 20 areas capable of accommodating private terminals, sidings or good sheds, provided that preliminary interventions are carried out, such as earthwork, embankments and retaining walls. To unleash their potential, DFCCIL is considering such interventions aiming to encourage private sector participation in infrastructure and services alongside DFC, while creating origin and destinations pairs on its own network.
  - (v) **New terminals development by DFCCIL:** At a few large locations like Pirthala, Kanpur and Rewari, where DFCCIL owns the land, it is keen to explore models for bringing in private sector operators to develop and operate Private Freight Terminals on long term concessions (25-30 years). DFCCIL is evaluating the feasibility of such terminals.

## Economic Analysis

47. **The economic analysis is focused on Component 1, which consists of two parts: i) completion of EDFC main line and ii) last mile connectivity.** This Economic Analysis contrasts benefits and costs of the with-project scenario against the without-project scenario over a period of 30 years. It considers all the costs incurred in the previous EDFC Projects, namely the **EDFC Program** and, accordingly, the benefits that will be obtained with the entire Program including this Project.
48. **Most traffic on EDFC will divert from the existing IR network, but some will be shifted from roads, encouraged by the improvement in rail service quality and the connection of multimodal terminals to EDFC.** Traffic forecasts have been updated for this EA, based on IR's pre-COVID-19 traffic data for 2018-19 and adjusted by current macroeconomic projections after COVID-19. The shift of traffic from road to EDFC is projected to gradually escalate from 0 to about 7 percent of rail traffic shifted from IR by FY30, based on a market survey by PWC consultants.
49. **The Economic Internal Rate of Return of the EDFC Program is 12.6 percent,** reflecting the substantial improvement in freight operating cost on EDFC, as well as the less congested operating conditions on the existing IR line as traffic shifts to EDFC. The EA includes WB recommendations on the shadow price of carbon and uses an average between low and high recommended values. The Net Present



Value discounted at 10 percent per annum to 2022, is substantial – INR 54 billion (US\$ 700 million). The detailed economic analysis is in the Project Files.

### **Financial Analysis**

50. **The Project will be financially sustainable over its lifetime as DFCCIL's debt service and operational costs are covered under the concession agreement with MOR.** DFCCIL's revenue will largely come from Track Access Charges paid by IR and other private operators once an open access regime is established. At appraisal, neither the final TAC nor open access rules have been defined. The concession agreement between MOR and DFCCIL specified that if IR is the sole user, it will pay DFCCIL's debt service and operational costs. Once infrastructure access is opened to private sector operators, the TAC for all operators—including IR—will be set so that DFCCIL covers these same costs. Moreover, MOR shall provide state subsidy to cover unused capacity until it reaches 100 percent. The detailed financial analysis is in the Project Files.

### **B. Fiduciary**

#### **Financial Management**

51. The FM arrangements of DFCCIL are assessed as adequate to account for, report, and provide fiduciary assurance on use of project resources. As the bulk of the project's capital expenditure would pertain to incomplete activities from EDFC-2 and 3 projects, the FM arrangements under the Rail Logistics project will be the same as in the prior EDFC projects and will be predicated on the existing FM arrangements of DFCCIL. The FM assessment of DFCCIL has been updated and is available in the Bank system and files.

52. The FM function is led by a full-time Director Finance in DFCCIL supported by a qualified and experienced team at the head office and field offices. Accounting will be done centrally on an accounting application already implemented by DFCCIL, and DFCCIL is planning to decentralize accounting to the CPM offices, going forward. Reporting of project expenditure to the Bank will be through Interim Unaudited Financial Reports (IFR) in a format agreed with the Bank. Internal audit will be conducted by a firm of Chartered Accountants based on terms of reference agreed with the Bank, and the reports will be shared with the Bank. The external audit of project financial statements will be conducted by independent auditors (which may include the auditors appointed by Comptroller and Auditor General of India) acceptable to the Bank under terms of reference agreed with the Bank.

53. Disbursement will be based on reimbursement method and in case of PBCs, will be made on verification of the achievement and availability of eligible expenditure. Loan proceeds will be provided directly to DFCCIL (as in EDFC-2 and 3 projects) and counterpart funding would be met from the budget of MOR and/or arranged by DFCCIL. Further details of the project FM arrangements are proved in Annex1.

### **Procurement**

54. The Procurement for the proposed project will be carried out in accordance with the WB Procurement Regulations for Borrowers for Goods, Works, Non-Consulting and Consulting Services, dated

July 1, 2016, revised November 2017, July 2018, and November 2020 and applicable to IPF, hereinafter referred to as “Regulations.” The project will also be subject to WB Anticorruption Guidelines, dated October 15, 2006, and revised in January 2011 and as of July 1, 2016.

55. **Procurement risk assessment.** The procurement assessment identified the following risks: (i) lack of consistency in applying agreed procurement arrangement.; (ii) need to build capacity in procurement and contract management due to staff turnover. The proposed mitigation measures include: (i) training of procurement staff; (ii) streamlining contract management to ensure satisfactory contract performance; (iv) adopting a clear and fair complaint handling mechanism and disseminating the results to the bidding community. “These risks, mitigation measures, and the procurement performance will be monitored and updated by the Bank biannually through P-RAMS (Procurement Risk Assessment and management System).

56. **DFCCIL has extensive working experience to manage large value and complex projects and are conversant with procurement under Bank-financed operations following procurement guidelines.** Delays in procurement and contract management are areas of concern. DFCCIL is constantly building its capacity to supervise large and complex contracts. However, it will need to strengthen its team with contract management specialists to suitably advise the executing agencies on complex issues during implementation. The internal decision-making structure also requires streamlining.

57. **Project Procurement Strategy for Development (PPSD).** DFCCIL has prepared a PPSP. Number of ongoing contracts (from EDFC-3) shall be transferred to this new project, with few consultancy services contracts to be newly procured. Based on the PPSP, the Procurement Plan has been prepared. The Procurement Plan sets out the selection methods for the procurement of goods, works, and non-consulting and consulting services financed under the project for the first 18 months (including contracts to be procured under advance contracting and retroactive financing). Delays in procurement and contract management are areas of concern. DFCCIL is constantly building its capacity to supervise large and complex contracts. However, it will need to strengthen its team with contract management specialists to suitably advise the executing agencies on complex issues during implementation. The internal decision-making structure also requires streamlining. The Procurement Plan will be updated annually or as required and will be reviewed and approved by the WB. Annex 1 provides more details on procurement under the project.

### C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No



#### D. Environmental and Social

58. **The key Environmental and Social (E&S) risks and impacts from the project activities are expected to emanate from Component 1 that supports largescale railway construction in the predominantly agricultural states of Punjab, Haryana, and Uttar Pradesh in the riverine plains of Northern India.** These include: (i) impacts on the land and livelihoods, environment, including removal of vegetation/trees and use of large quantities of stone and soil/earth for laying the rail track; (ii) increased noise and vibration levels during operation phase along the railway track; (iii) health and safety risk related to large construction; (iv) loss of land, shelter/business, farming livelihoods, incomes, and community properties; and (v) temporary construction related impacts. The indirect impacts of the project include: (i) alteration/hindrance to the natural drainage of the project area due to the project alignment in embankment; and (ii) likely land use changes in the project area, during the operation phase of the project. While activities under Component 1 do not impact any areas with presence of significant Biodiversity values or presence of Indigenous Peoples, alignments of corridors that may be identified subsequently for support under Component 2, could impact such areas. Nine out of the ten Environmental and Social Standards (ESSs), except ESS9 Financial Intermediaries, are relevant to the project. The Sexual Exploitation and Abuse/ Sexual Harassment (SEA/SH) risk level is low.

59. **The Project component 1 finances infrastructure construction activities that were started under the EDFC 2 and EDFC 3 projects.** DFCCIL prepared and disclosed an Environmental Impact Assessment, Environmental Management Plan, Social Impact assessments, and Resettlement Action Plan (RAP) for all segments under the Project, when the sections were originally financed. During preparation of the Project, an Environmental and Social Audit and Gap Analysis was conducted to assess compliance with the Safeguards Policies, which governed the previous projects, and identify any gaps that need to be filled to ensure the ESS requirements are met.

**Table 3: Disclosure of Instruments Already Prepared for EDFC**

Sr No	Section of EDFC	Disclosure of Environmental Impact Assessment / Environmental Management Plan	Disclosure of Social Impact Assessment / Resettlement Action Plan
1	Mughalsarai-Kanpur	January 2013	January 2013
2	Khurja-Pilkhani	April 2016	March 2016
3	Pilkhani-Sahnewal	May 2015	January 2015

60. **Some environmental safeguards actions remain to be addressed in the Project.** Four of 32 required noise barriers have been completed, one is under construction and 27 have yet to be started. Of the 2,317 borrow areas, the project has successfully rehabilitated 1,571 borrow areas (69 percent) and approximately 330 are pending for closure. Of the total of 120,095 compensatory plantations needed, 9,216 have been planted / survived as of Jan 2022. Of 383.65 km of planned length of drain along the DFC corridor 199.53 km (52 percent) has been completed. Of 522.97 km of drains between IR and DFC track,



approximately 263.8 km (50 percent) have been completed. Forest clearances for 270.721 ha have been obtained and are pending for 3.27 ha.

61. **The project affected 2,446 hectares of land and 54,843 landowners across the three states of Punjab, Haryana, and Uttar Pradesh.** As of end-Dec 2021, more than 99 percent of land acquisition was completed and more than 90 percent of landowners had received compensation payments. In addition, 93 percent of 26,946 Project affected persons (PAPs) have received livelihood support under the old land acquisition act. Along Ludhiana- Khurja and Kanpur -Mughalsarai, a total of 2,977 PAPs were affected by loss of structures, of which 2,935 have been compensated and 42 PAPs are yet to be compensated. However, DFCCIL has taken physical possession of these assets. As per new land acquisition act, a total of 11,840 PAPs are eligible for livelihood support of INR 0.5 million. Of them 8,406 (71 percent) have been compensated and the remaining compensations are in progress. Frequent changes in Land acquisition laws and COVID-19 induced disruptions and lockdown have contributed to the delays. DFCCIL has received 4,927 grievances, of which 99 percent have been resolved.

62. **The project currently employs over 5,800 laborers who reside in labor camps/rented accommodation in villages/areas across the corridor.** No female labor is engaged in these sites including for cooking or camp maintenance work. Labor Management particularly COVID-19 management by DFCCIL and Contractors was recognized as a good practice.

63. **The safeguards instruments prepared and implemented by DFCCIL, conform to many provisions of ESS under ESF.** However, the Gap Analysis identified additional provisions that need to be complied with both for ongoing works and for the new activities under this project. These provisions have been identified and elaborated in the Environment and Social Commitment Plan (ESCP). During the implementation of the EDFC 3 project, a Social Rectification Action Plan was prepared to systematically monitor implementation of outstanding issues. Now, following the audit/gap analysis, further monitoring and implementation would be done through a Corrective Action Plan, which will subsume the actions in the Social Rectification Action Plan for the Project, and has been reflected in the ESCP. Remaining resettlement actions related to the Khurja-Dadri segment, which was dropped after, EDFC 1, are being monitored separately.

64. E&S Audit and Gap Analysis, Stakeholder Engagement Plan (SEP) and Labor Management Procedure (LMP) were disclosed in country on April 24, 2022, and in Bank's website on April 27, 2022. The website address is

<https://projects.worldbank.org/en/projects-operations/document-detail/P177856?type=projects>.

## **E. Gender**

65. **Gender Based Violence (GBV):** The GBV risk assessment tool, rated the ongoing project as 'Low' risk. This rating reflect implementation of the GBV action plan prepared under earlier EDFC projects and robust institutional capacity to manage GBV-related risks. An action plan to address issues related to GBV was prepared under the Third Eastern Dedicated Freight Corridor Project and is being implemented. The project supports regular sensitization and awareness drives for the community on safety, harassment, GBV-related issues, legal recourse procedures and mitigation channels in collaboration with the



contractors. All contract documents under the project include a Code of Conduct in line with GBV requirements.

66. **Gender interventions:** DFCCIL/IR will relook at existing Human resources structures and undertake the following activities to systematically improve women's entry and transition in the railways sector: a) develop a corporate roadmap to improve women's presence in technical job roles in the medium-term; a) create safe workplace environments for contracted women employees and informal women workers including setting up of safety cells<sup>28</sup>; b) prioritize childcare, by providing mobile creches for informal women workers at construction sites; c) offer on-the-job/upskilling opportunities linked to technical job-roles; d) encourage incentivized internship programs for qualified young women graduates and young women professional to provide an early exposure to jobs in the railways and transport sector; and (d) provide women professionals with equal opportunities for exposure visits, technical trainings and other on-the-job training/skilling aspects clearly linked to career progress.

#### F. Citizen Engagement

67. Citizen engagement shall be ensured through the following measures: (i) Project shall engage with affected persons and communities in living and operating in proximity to the corridor through surveys, community consultation/focus group discussions to accurately identify issues, impacts and devise commensurate response and support measures. Information leaflets and booklets will be specially printed for this purpose and implementation support agencies will be contracted if required; (ii) on-going efforts to engage communities, shall continue and will also be expanded in new locations, and will involve awareness raising events jointly organized and in coordination with local authorities; (iii) efforts will be made by project authorities and their civil work contractors to better plan and streamline their various Corporate Social Responsibility activities so that communities, women and other vulnerable groups living in and in proximity to the sub-project location are significantly benefitted; and (iv) the aforementioned Stakeholder Engagement Plan would enable project to engage with all affected persons, other interested groups and disadvantaged and vulnerable groups.

#### G. Climate Co – Benefits

68. Under climate mitigation action, Component 1 of the Project will improve the safety and efficiency of railway operations and increase the capacity of the railway service along the EDFC corridor. The increased capacity will lower the generalized cost of railway trips for freight, thus encouraging a modal shift from trucks which contributes to reduction of pollution and of GHG emissions, as railways feature low GHG emissions per unit transported. The Component 2 on institutional development of DFCCIL to introduce adequate reforms/capacity building activities, will improve financial sustainability and service quality of railways to encourage modal shift. The project will also incorporate measures to adapt to climate and disaster risks. Under adaptation action the project will therefore incorporate climate and disaster resilient engineering and design considerations to build resilience and ensure sustainability of the investments. All activities under Component 1 will be implemented to ensure safety and better

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<sup>28</sup> Safety cells are based on the Internal Complaints Committee requirement for safe workplaces under Gol's Prevention of Sexual Harassment at the Workplace Act, 2013. Safety cells under the project will go beyond the legal mandate and adopt a more holistic approach towards women's safety and prevention of violence.



preparedness for climate related hazards/risks. Designs of electrical/signaling equipment and tracks will feature measures to increase resilience against climate and disaster risks. For instance, excessive heat is damaging for electric wiring and circuits. New efficient and reliable insulating and fire-retardant materials will be considered for better climate adaptation. Additionally, drainage, slope erosion control and railway bridge scouring prevention measures are supported under the project. Component 2 will also aim at strengthening the climate resilience and sustainability of the proposed investments, with the development of a safety management system for increased emergency preparedness before and during an extreme weather event. Further details are in “Climate change technical note P177856” appended in the project files.

### **GHG Analysis**

69. **The expected savings of the Program amount to 6.3 million tons.** GHG savings have been calculated using the IBRD Rail Emissions Model, and they stem from the improved efficiency in the EDFC that will receive traffic from IR, the improved efficiency of rail versus road from the traffic shifted from road-based modes, and from the decongestion in passenger services. Construction emissions were included in the calculation and deducted from total benefits, both for with and without project. While the benefits of the Rail Logistics Project will be fully realized when the EDFC Program is completed, to avoid double counting, the GHG benefits of the Program were apportioned to the investment amount of this Project. This results on GHG Savings estimated at 1.02 million-ton for the Project, which results in a yearly emission reduction of 34,088 tons.

## **V. GRIEVANCE REDRESS SERVICES**

70. Communities and individuals who believe that they are adversely affected by a WB supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the WB's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the WB's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>.

71. For information on how to submit complaints to the WB Inspection Panel, please visit [www.inspectionpanel.org](http://www.inspectionpanel.org)

## **VI. KEY RISKS**

72. The overall risk to achieving the development objective is rated substantial.





73. **Sector Strategies and policies risk is rated Substantial:** Both Eastern and Western Corridors are close to completion. One of the sections of EDFC, namely, Khurja- Bhaupur section, is already commissioned with commercial train running. The project sections are nearing completion. The challenge which remains is enabling DFCCIL to become a commercial company that encourages private sector to participate in provision of logistics infrastructure and services. DFCCIL remains dependent on MOR for policy approvals and support. Despite the concession agreement between MOR and DFCCIL, the envisioned “arms-length” relationship has yet to develop fully. Moreover, the main provider of transport services on DFCCIL’s line will be Zonal Railways, which are deeply conservative. Readiness of IR/DFCCIL to fully implement market-oriented policies and measures to improve revenue on a sustainable basis remains a challenge. The project PBCs are designed to mitigate these risks by incentivizing key steps in DFCCIL’s development as a fully commercial entity, including full implementation of the concession agreement between MOR and DFCCIL, open access to bring non-Indian railways train operators as customer of DFCCIL, and commercial borrowing bring commercial discipline to DFCCIL management.

74. **Environmental and Social Risks are rated High.** The Project builds on a series of social and environment safeguards that have been put in place by DFCCIL to mitigate social and environment risks associated with such a large project. Although DFCCIL has gained experience and capacity in preparing/implementing the environment and social safeguards policies, this Project triggers the Environment and Social Management Framework (ESMF). DFCCIL has limited understanding and experience with the new framework, which may impact the timelines of implementation. The impacts are unknown for the last mile connectivity and new corridors and monitoring compliance with the new framework is difficult due to dispersed and linear nature of the Project activities. Land acquisition processes have delayed the project implementation schedule in earlier engagements. To mitigate these risks the project includes programmatic technical assistance support to DFCCIL on management of environment and social safeguards which includes developing a framework for environment and social management for future DFC sections to international standards.





## VII. RESULTS FRAMEWORK AND MONITORING

### Results Framework COUNTRY: India Rail Logistics Project

#### Project Development Objectives(s)

The project development objective is (i) to promote freight modal shift to safe and low carbon transport along the Eastern Dedicated Freight Corridor and (ii) to strengthen Dedicated Freight Corridor Corporation of India Limited as a commercial organization to provide multimodal logistics services.

#### Project Development Objective Indicators

Indicator Name	PBC	Baseline	End Target
<b>Additional Freight train paths</b>			
Additional freight train paths created on Khurja-Ludhiana and Kanpur-Mughalsarai section of EDFC (Number)		0.00	45.00
<b>Additional freight trains in project sections</b>			
Additional freight trains moved on Khurja-Ludhiana and Kanpur Mughalsarai Section of EDFC and IR (annually) (Text)		4549 in Khurja ludhiana and 12535 trains in kanpur mughalsarai section	15% more than baseline value
<b>Freight handled at newly created goods terminal along EDFC</b>			
Freight Handled at newly created goods terminals connected to Eastern Dedicated Freight Corridor (in millions) (Metric tons/year)		0.00	3.50
<b>Reduced carbon emission in freight transportation</b>			
GHG Savings due to freight carried over Railways (tonnes)		0.00	290,000.00



Indicator Name	PBC	Baseline	End Target
(Number)			
<b>Reduction of train accidents on project rail sections</b>			
Number of Train Accidents on DFC reduced (per million train km) (Number)		0.05	0.04
<b>Effective Implementation of Concession Agreement between IR and DFCCIL</b>			
Effective implementation of concession agreement between MOR and DFCCIL (Text)	PBC 1, 2, 6, 7	Concession agreement has been signed in 2014	Tariff regulatory authority and non-discriminatory access regime established. Indian railways will move 70 percent of freight and pay access charges.
<b>Private sector investment mobilized for creation of freight terminals</b>			
Private sector investment mobilized for creation of freight terminals (millions) (Amount(USD))	PBC 5	0.00	100.00
<b>Enhanced private sector participation in infrastructure creation</b>			
Enhanced private sector participation in infrastructure creation (Text)		PPP Policy not established	PPP Policy adopted by DFCCIL for track infrastructure
<b>Intermediate Results Indicators by Components</b>			
Indicator Name	PBC	Baseline	End Target
<b>Creation of infrastructure to deliver multimodal logistics services</b>			
Physical construction: Civil Works Ludhiana-Khurja section (Percentage)		50.00	100.00
Physical Construction: System works of Ludhiana Khurja section (Percentage)		20.00	100.00



Indicator Name	PBC	Baseline	End Target
Physical construction: Civil Works of Kanpur - Mughalsarai section (Percentage)		75.00	100.00
Physical construction: Electrical works of Kanpur-Mughalsarai section (Percentage)		67.00	100.00
Civil structure and systems work for rail connectivity to identified terminals (Number)		0.00	4.00
<b>Institutional Capacity Strengthening</b>			
Identification of potential private investors in freight terminals and logistics centres (Text)		Study to be initiated	Study completed
Prepare Environment and Social management framework for future DFCs consistent with international standards (Text)		No	yes
Implementation of pilot energy optimization driver advisory system (Text)		no	yes
Percentage of grievance resolved within three months of receipt (Percentage)		75.00	90.00
Percentage of women professionals and workers in technical roles in DFCCIL, PIUs and PMCs (Percentage)		7.00	15.00
Implementation of Safety management System (Text)		no such system is available	safety management system implemented
Number of incentivised internship programs held for women graduates (Number)		0.00	25.00
Building capacity and knowledge base of DFCCIL staff using Human Resource professional development strategy (Number)		0.00	700.00



**Monitoring & Evaluation Plan: PDO Indicators**

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Additional freight train paths created on Khurja-Ludhiana and Kanpur-Mughalsarai section of EDFC	This indicator measures the number of train paths that would be created on EDFC as a result of infrastructure creation from Khurja to Ludhiana and from Kanpur to Mughalsarai. In Khurja Ludhiana section it would measure capacity creation on single line (both way movement) and in Kanpur-Mughalsarai it would measure each way	End of the project	Rail operating Control reports of Railways and DFCCIL	DFCCIL will collect the data from Zonal/Division control rooms of Ministry of Railways on an annual basis, compile it and share with WB	DFCCIL
Additional freight trains moved on Khurja-Ludhiana and Kanpur Mughalsarai Section of EDFC and IR (annually)	This indicator will measure the additional freight carried over the residual IR line as well as the EDFC project sections every year. Since IRs capacity constraint currently limits additional freight, the increment in trains would measure the additional traffic on rail that otherwise would have to move by road. The baseline is taken from 20-21 number of freight trains moved in the section bothways	Annually	Railway operation control room data from Ministry of Railways/DFC CIL	DFCCIL will collect the data from operating control rooms of zonal/divisional railways and compile the average on an annual basis	DFCCIL



	(empty and loaded).				
Freight Handled at newly created goods terminals connected to Eastern Dedicated Freight Corridor (in millions)	This indicator will measure the modal shift of freight from road to rail through newly created intermodal terminals over DFCCIL corridor.	End of project	Railways operating Control freight loading data from DFC connected terminals (new terminals)	DFCCIL will collect the data from Operating department of Ministry of Railways at division or zonal level.	DFCCIL
GHG Savings due to freight carried over Railways (tonnes)	The indicator measures the net GHG savings using the IBRD rail emissions model to generate specific energy consumption rates (kwh/gtkm). The GHG savings would be calculated over the project duration.	End of the project	DFCCIL will provide data of number of freight trains moved over the project sections (over the project duration) and IBRD model will be used to calculate the net GHG savings. As specific net tonne km of freight move	DFCCIL to provide train movement detail over the project section at the end of the project	DFCCIL



			d over project section may not be available estimation methods will be used.		
Number of Train Accidents on DFC reduced (per million train km)	The implementation of Safety management system, removal of Level crossings and Centralized control working would reduce the number of consequential accidents over the DFCs. This indicator will measure safe working of trains on project sections.	Once a year	DFCCIL accident management database, cases reported by Ministry of Railway	DFCCIL will create a database of accidents on the section based on Indian railway accident classification manual.	DFCCIL
Effective implementation of concession agreement between MOR and DFCCIL	This indicator will measure DFCCIL's commitment towards effective implementation of concession agreement between MOR and DFCCIL, with respect to payment of access charges, shifting of freight traffic, establishment of rail tariff regulatory authority and establishing non-discriminatory access	Annually	Notifications /Government orders issued by MOR/DFCCIL	DFCCIL will inform WB of such notifications issued.	DFCCIL



	regime.				
Private sector investment mobilized for creation of freight terminals (millions)	This indicator will measure the private capital mobilised for investment in private freight terminals along the EDFC.	Annual	Commercial notification for connectivity established issued by DFCCIL/MOR	DFCCIL will provide the Commercial notification of Private Freight terminals	DFCCIL
Enhanced private sector participation in infrastructure creation	This indicator will measure DFCCIL's commitment towards enhancing private sector participation in Rail logistics services.	Annually	Government notification issued by MOR/DFCCIL	DFCCIL to inform WB of relevant notification issued.	DFCCIL

#### Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Physical construction: Civil Works Ludhiana-Khurja section	This indicator measures the progress of civil structure and track works in Ludhiana Khurja DFC section. The percentages depicted are financial progress indicators.	Every quarter	Monthly progress reports and Quarterly progress reports prepared by supervision consultants of the section	The supervision consultant would prepare the progress reports based on the intermediate progress reports submitted by the contractors and physical verification	DFCCIL



Physical Construction: System works of Ludhiana Khurja section	This indicator measures the progress of Systems works of Ludhiana- Khurja section (includes signaling and electrical works). The percentages indicated measure the financial progress.	Quarterly	Quarterly and monthly progress reports prepared by Supervision consultants (PMC)	The supervision consultant would prepare the progress reports based on the intermediate progress reports submitted by the contractors and physical verification	DFCCIL
Physical construction: Civil Works of Kanpur - Mughalsarai section	The indicator measures the progress of the civil structure and track construction works of Kanpur-Mughalsarai section. The measurement of the indicator is done in terms of financial progress.	Quarterly	Monthly progress reports and Quarterly progress reports prepared by the supervision consultants (PMC)	The supervision consultant would prepare the progress reports based on the intermediate progress reports submitted by the contractors and physical verification	DFCCIL
Physical construction: Electrical works of Kanpur-Mughalsarai section	This indicator will measure the progress of the Electrical works along the track of Kanpur - Mughalsarai section. The measurement indicator will be in terms of financial progress percentages.	Quarterly	Monthly and quarterly progress reports prepared by supervision consultants (PMC)	The supervision consultant would prepare the progress reports based on the intermediate progress reports submitted by the contractors and physical verification	DFCCIL





Civil structure and systems work for rail connectivity to identified terminals	This indicator will measure design construction commissioning and testing of civil, structure, track electrical and signaling system work to connect goods terminals to main corridor	Annually	DFCCIL	Based on Construction progress given by PMC	DFCCIL
Identification of potential private investors in freight terminals and logistics centres	This indicator will measure DFCCIL's progress towards Private capital mobilisation in the corridor	Six months	DFCCIL procurement update	DFCCIL will send the proposal status	DFCCIL
Prepare Environment and Social management framework for future DFCs consistent with international standards	This indicator will measure enhanced capacity of DFCCIL in preparation of Environment and Social corporate policies that would guide future investments.	Annually	DFCCIL	Annual progress reports	DFCCIL
Implementation of pilot energy optimization driver advisory system	DFCCIL to pilot the energy optimisation of driver advisory system	End of the project	Project progress report	DFCCIL	DFCCIL
Percentage of grievance resolved within three months of receipt	This indicator will measure DFCCIL's corporate commitment towards redressal of citizen grievances	Quarterly	DFCCIL's grievance redressal system data collection	Based on actual grievance received and addressed	DFCCIL
Percentage of women professionals and workers in technical roles in DFCCIL, PIUs	This indicator will measure DFCCIL's corporate	Quarterly	Based on actual	Contractors submission of number of women	DFCCIL



and PMCs	commitment towards creating employment for women, including informal workers incentivising recruitment and career advancement of women professionals and informal workers		contractors statement of employment role given to women	employed in DFCCIL contracts	
Implementation of Safety management System	This indicator will measure the implementation of safety management system over the corridor including preventive mechanism for disaster risk mitigation measures during train running	Annual	DFCCIL	DFCCIL will provide the system implementation progress	DFCCIL
Number of incentivised internship programs held for women graduates	Number of female for whom paid internship has been provided under DFCCIL human resource strategy	End of the project	Quarterly progress reports	DFCCIL reports	DFCCIL
Building capacity and knowledge base of DFCCIL staff using Human Resource professional development strategy	Staff weeks of training delivered as per the Human Resource development strategy of DFCCIL to build capacity and knowledge base in terms of technology adoption and business development	Annually	Project progress reports	DFCCIL will keep a database of staff training weeks	DFCCIL



**Performance-Based Conditions Matrix**

<b>PBC 1</b>	Shift of Indian Railway traffic to completed section of DFCs			
<b>Type of PBC</b>	<b>Scalability</b>	<b>Unit of Measure</b>	<b>Total Allocated Amount (USD)</b>	<b>As % of Total Financing Amount</b>
Outcome	Yes	Yes/No	46,000,000.00	18.78
<b>Period</b>	<b>Value</b>		<b>Allocated Amount (USD)</b>	<b>Formula</b>
Baseline	No			
2022-23	Yes		46,000,000.00	US\$11 million for the first 100 km and additional US\$50,000 per km up to 700 km
2023-24	Yes		0.00	0.00
2024-25	Yes		0.00	0.00
2025-26	Yes		0.00	0.00
2026-27	Yes		0.00	0.00
<b>PBC 2</b>	Payment of track access charges by Indian Railways			
<b>Type of PBC</b>	<b>Scalability</b>	<b>Unit of Measure</b>	<b>Total Allocated Amount (USD)</b>	<b>As % of Total Financing Amount</b>
Outcome	No	Yes/No	15,000,000.00	6.12
<b>Period</b>	<b>Value</b>		<b>Allocated Amount (USD)</b>	<b>Formula</b>
Baseline	No			



2022-23	Yes		15,000,000.00	100%
2023-24	Yes		0.00	0.00
2024-25	Yes		0.00	0.00
2025-26	Yes		0.00	0.00
2026-27	Yes		0.00	0.00
<b>PBC 3</b>	DFCCIL Private public partnership policy established			
<b>Type of PBC</b>	<b>Scalability</b>	<b>Unit of Measure</b>	<b>Total Allocated Amount (USD)</b>	<b>As % of Total Financing Amount</b>
Outcome	No	Yes/No	15,000,000.00	6.12
<b>Period</b>	<b>Value</b>		<b>Allocated Amount (USD)</b>	<b>Formula</b>
Baseline	No			
2022-23	Yes		15,000,000.00	100%
2023-24	Yes		0.00	0.00
2024-25	Yes		0.00	0.00
2025-26	Yes		0.00	0.00
2026-27	Yes		0.00	0.00



<b>PBC 4</b>	Enhanced Capacity of DFCCIL to create DFCs with Private sector investment in rail			
<b>Type of PBC</b>	<b>Scalability</b>	<b>Unit of Measure</b>	<b>Total Allocated Amount (USD)</b>	<b>As % of Total Financing Amount</b>
Outcome	No	Yes/No	5,000,000.00	2.04
<b>Period</b>	<b>Value</b>		<b>Allocated Amount (USD)</b>	<b>Formula</b>
Baseline	No			
2022-23	Yes		5,000,000.00	100%
2023-24	Yes		0.00	0.00
2024-25	Yes		0.00	0.00
2025-26	Yes		0.00	0.00
2026-27	Yes		0.00	0.00
<b>PBC 5</b>	Privately financed terminals on DFCCIL lines start moving traffic			
<b>Type of PBC</b>	<b>Scalability</b>	<b>Unit of Measure</b>	<b>Total Allocated Amount (USD)</b>	<b>As % of Total Financing Amount</b>
Outcome	No	Yes/No	5,000,000.00	2.04
<b>Period</b>	<b>Value</b>		<b>Allocated Amount (USD)</b>	<b>Formula</b>
Baseline	No			
2022-23	No		0.00	0.00
2023-24	No		0.00	0.00



2024-25	Yes		5,000,000.00	100%
2025-26	Yes		0.00	0.00
2026-27	Yes		0.00	0.00
<b>PBC 6</b>	Non-discriminatory access regime established			
<b>Type of PBC</b>	<b>Scalability</b>	<b>Unit of Measure</b>	<b>Total Allocated Amount (USD)</b>	<b>As % of Total Financing Amount</b>
Outcome	No	Yes/No	2,000,000.00	0.82
<b>Period</b>	<b>Value</b>		<b>Allocated Amount (USD)</b>	<b>Formula</b>
Baseline	No			
2022-23	No		0.00	0.00
2023-24	No		0.00	0.00
2024-25	No		0.00	0.00
2025-26	No		0.00	0.00
2026-27	Yes		2,000,000.00	100%
<b>PBC 7</b>	Tariff rail regulatory authority established			
<b>Type of PBC</b>	<b>Scalability</b>	<b>Unit of Measure</b>	<b>Total Allocated Amount (USD)</b>	<b>As % of Total Financing Amount</b>
Outcome	No	Yes/No	2,000,000.00	0.82
<b>Period</b>	<b>Value</b>		<b>Allocated Amount (USD)</b>	<b>Formula</b>



Baseline	No		
2022-23	No	0.00	0.00
2023-24	No	0.00	0.00
2024-25	No	0.00	0.00
2025-26	No	0.00	0.00
2026-27	Yes	2,000,000.00	100%
<b>PBC 8</b>	Commercial bank financing raised		
<b>Type of PBC</b>	<b>Scalability</b>	<b>Unit of Measure</b>	<b>Total Allocated Amount (USD)</b>
Outcome	No	Yes/No	10,000,000.00
<b>Period</b>	<b>Value</b>	<b>Allocated Amount (USD)</b>	<b>As % of Total Financing Amount</b>
Baseline	No		
2022-23	No	0.00	0%
2023-24	Yes	10,000,000.00	100%
2024-25	Yes	0.00	0%
2025-26	Yes	0.00	0%
2026-27	Yes	0.00	0.00



**Verification Protocol Table: Performance-Based Conditions**

<b>PBC 1</b>	Shift of Indian Railway traffic to completed section of DFCs
<b>Description</b>	This PBC measures utilisation of completed sections of DFC by MOR to shift its trains as per the concession agreement subject to capacity constraints. The PBC will be met when IR runs its trains over completed sections of EDFC
<b>Data source/ Agency</b>	DFCCIL
<b>Verification Entity</b>	DFCCIL
<b>Procedure</b>	DFCCIL will verify and submit relevant data from operations control and would confirm the applicability. World Bank team would review and confirm its applicability. In the event this PBC is met earlier or later than the target date, the disbursement linked to this condition will be made when the PBC is met.
<b>PBC 2</b>	Payment of track access charges by Indian Railways
<b>Description</b>	This indicator will measure the implementation of concession agreement between MOR and DFCCIL with respect to payment of track access charges. It will be met when MOR starts paying access charges to DFCCIL as per the track access agreement in between MOR and DFCCIL.
<b>Data source/ Agency</b>	Financial statements of DFCCIL
<b>Verification Entity</b>	DFCCIL
<b>Procedure</b>	DFCCIL will verify and submit the audited financial statements indicating the payment of access charges by Indian Railways. World Bank task team would review the documents for its applicability. In the event this PBC is met earlier or later than the target date, the disbursement linked to this condition will be made when the PBC is met.





<b>PBC 3</b>	DFCCIL Private public partnership policy established
<b>Description</b>	This PBC measures enhanced private sector participation in rail logistics services through issuing a PPP policy for infrastructure investments. It will be met when cabinet approval is obtained for PPP investment in creation of track infrastructure over EDFC
<b>Data source/ Agency</b>	DFCCIL through public notifications
<b>Verification Entity</b>	DFCCIL
<b>Procedure</b>	DFCCIL would verify and provide relevant documents like the Cabinet approval for PPP investment in Sonnagar - Gomoh section. World Bank team would review the notification for its applicability and implementation. In the event this PBC is met earlier or later than the target date, the disbursement linked to this condition will be made when the PBC is met.
<b>PBC 4</b>	Enhanced Capacity of DFCCIL to create DFCs with Private sector investment in rail
<b>Description</b>	This PBC will be met when investment in Sonnagar-Gomoh section of EDFC is mobilised by selection of a qualified bidder
<b>Data source/ Agency</b>	DFCCIL PPP documents
<b>Verification Entity</b>	DFCCIL
<b>Procedure</b>	DFCCIL would verify and submit the relevant documents like the agreement/concession to start construction on the section after following the due procedure. The bidding could be done in packages and for meeting this PBC agreement signed for one package would be sufficient. The World Bank team would review and confirm its applicability. In the event this PBC is met earlier or later than the target date, the disbursement linked to this conditions will be made when the PBC is met
<b>PBC 5</b>	Privately financed terminals on DFCCIL lines start moving traffic
<b>Description</b>	This PBC will be met when privately financed terminals along DFC start moving traffic.



<b>Data source/ Agency</b>	DFCCIL based on loading data from private terminal operator
<b>Verification Entity</b>	DFCCIL
<b>Procedure</b>	<p>DFCCIL will verify and submit information regarding the commercial notification of the terminal, applicable private freight terminal policy, connectivity notification of the terminal and loading commencement certificate, railway receipts issued by MOR.</p> <p>The world bank team would review the documents submitted for its applicability and implementation.</p> <p>In the event this PBC is met earlier or later than the target date, the disbursement linked to this condition will be made when the PBC is met</p>
<b>PBC 6</b>	Non-discriminatory access regime established
<b>Description</b>	This PBC will be met when MoR/DFCCIL establish a non-discriminatory access charge regime which enables private sector to run trains over project sections.
<b>Data source/ Agency</b>	DFCCIL
<b>Verification Entity</b>	DFCCIL
<b>Procedure</b>	<p>MOR/DFCCIL will publishes a network statement and tariffs defining access that is open to all users. DFCCIL will verify and submit the relevant documents. The world bank team would review the notification for its applicability and implementation.</p> <p>In the event this PBC is met earlier or later than the target date, the disbursement linked to this condition will be made when the PBC is met.</p>
<b>PBC 7</b>	Tariff rail regulatory authority established
<b>Description</b>	This PBC will be met when a tariff rail regulatory authority is established by MOR as per the concession agreement signed between MOR and DFCCIL. The establishment of the authority will require a cabinet approval note.
<b>Data source/ Agency</b>	Cabinet approval note through MOR/DFCCIL
<b>Verification Entity</b>	DFCCIL



<b>Procedure</b>	DFCCIL will verify and submit the relevant cabinet approval notification. The WB task team would review and confirm its applicability. In the event this PBC is met earlier or later than the target date, the disbursement linked to this condition will be made when the PBC is met.
<b>PBC 8</b>	Commercial bank financing raised
<b>Description</b>	This PBC will be met when DFCCIL raises US\$100 million of finance from Commercial banks.
<b>Data source/ Agency</b>	Loan sanction letter from the commercial bank.
<b>Verification Entity</b>	DFCCIL
<b>Procedure</b>	DFCCIL will verify and submit the loan sanction letter for commercial finance raised. WB will review and confirm the documents for its applicability. In the event this PBC is met earlier or later than the target date, the disbursement linked to this condition will be made when the PBC is met



## ANNEX 1: Implementation Arrangements and Support Plan

### COUNTRY: India Rail Logistics Project

1. **The primary responsibility for project implementation lies with DFCCIL HQ & field units:** DFCCIL is headed by a Managing Director who reports to the DFCCIL Board composed of Chairman, five full time Directors (including the Managing Director), three independent directors, and two government nominees. The Chief Executive Officer, Railway Board is also the Chairman of the DFCCIL Board. DFCCIL headquarter is located at Delhi with field office units at project site locations.
2. **Field office support:** The field offices of DFCCIL are headed by CPM. There are seven field units for the Eastern Corridor. Each CPM office is staffed with officials overseeing construction, operations, safeguards & FM arrangements. They are supported by consultants appointed under the project.
3. **Consultant Support:** The Project Management Consultants (PMC) will support DFCCIL in overall contract execution and management. For the completion activities of Khurja – Ludhiana and Kanpur – Mughalsarai sections envisaged in the project the PMC has already been appointed and working. Safeguard quality monitoring will continue to be carried out by third party consultants (Social and Environmental Safeguards Monitoring Review Consultants – SESMRC and the Quality and Safety Audit Consultants (QSAC) already working on the project. DFCCIL will hire specialist consultancy firms to support the planned institutional development activities.
4. **Environment and Social management:** The Social and Environment Management Unit (SEMU) established within DFCCIL is responsible for the implementation of all social and environmental safeguards and is headed by a Group General Manager. SEMU will oversee the implementation of ESMF, ESCP, SEP and RAP. These activities will be undertaken by operational staff at headquarters and at field units, supported as necessary by consultants. DFCCIL has established a two-stage public grievance redress mechanism at the field units and headquarters. Independent quality & safety audits are carried out by consultants who carry out quarterly reviews and submit reports to DFCCIL management.
5. **Financial Management:** Overall responsibility for implementing and maintaining adequate FM arrangements will vest with DFCCIL's Finance Department under a full-time Director (Finance) supported by a Group General Manager (Finance) and General Manager (Risk Management) looking after entity-wide risk management and audit. The FM function at the field units is headed by a Deputy Chief Project Manager/Project Manager (Finance) reporting to the CPM and supported by an Assistant Project Manager (Finance) and Assistant Manager (Finance). The project will be implemented from the same offices as in EDFC-2 and 3 working as Project Implementation Units (PIU) supported by Project Management Consultants (PMC). DFCCIL will ensure proper staffing in the FM function to ensure efficient operations.
6. DFCCIL is governed by the corporate governance and FM framework under the Companies Act, 2013 and the guidelines of the Department of Public Enterprises of the Ministry of Finance. DFCCIL will



continue to follow these provisions, and the arrangements implemented as part of the Corporate Governance and Financial Accountability Action Plan agreed under the EDFC projects. These include a) an active Board of Directors with mix of functional, nominee and independent directors; b) an operational Audit Committee which will review all audit reports and whose directions will be implemented; c) continuing to pursue implementing an Enterprise Risk Management framework; and d) leadership of the FM function be provided by a Director Finance.

7. DFCCIL's plan to transition to a more integrated enterprise resource planning tool (SAP/ERP) is in progress but significantly delayed, and contract management processes are presently done manually. Contractor payments will be verified and approved in accordance with the enterprise delegation of financial powers, including at the field offices, with the support of PMCs and paid electronically. Timely conduct of internal audit has faced some challenges recently due to COVID-19 related disruptions, however, these are expected to be rectified soon.

8. **FM Arrangements:** The major elements of the FM accountability framework for the project, briefed below, are predicated on DFCCIL's own systems that have been implemented and enhanced over the years.

- a. **FM Risk Assessment:** The residual risk rating for FM is assessed as Moderate and will continue to be evaluated during the project period. DFCCIL's systems are well-established, and it is assessed that these will provide fiduciary assurance over project funds. DFCCIL will focus on timely completion of internal audit and resolution of audit findings and roll-out of SAP/ERP.
- b. **Funds Flow, Budgeting and Counterpart Funding.** The IBRD loan will flow directly to DFCCIL, while counterpart funds will be provided for and drawn from the budget of MOR and provided to DFCCIL, and/or arranged by DFCCIL.
- c. **Accounting.** Accounting will be carried out at DFCCIL's head office, as presently done, in accordance with the provisions of the Companies Act and prescribed accounting standards, using an off-the-shelf accounting package with support from a firm of accountants. Going forward, DFCCIL is planning to decentralize accounting to respective field offices and departments and fully take-over accounting function by own staff. The accounting system will capture expenditure in a manner to facilitate identification of transactions under the project and adequate and timely preparation of IFRs. Updated FM manuals are planned to be implemented from the coming FY2023.
- d. **Financial Reporting.** DFCCIL will report details of project expenditure through quarterly Interim Un-audited Financial Reports (IFR) or at more frequent intervals, based on format agreed with the Bank and submitted within 45 days from close of each quarter. DFCCIL will prepare annual project financial statements, which will be subject to audit.
- e. **Internal Controls including Internal Audit.** DFCCIL will follow the Board approved delegation of financial powers. The bills raised by the contractor will be reviewed and certified by the PMC and verified by Engineering and Finance Sections at the office of the CPM and final approval by the CPM. Payments will be made from the CPM office for which funds are provided by the central office based on a documented system of monthly requisition by field offices and funds transfer by head office. Payments to contractors are through electronic mode.



- f. **Internal Audit.** DFCCIL has outsourced its internal audit function to a firm of Chartered Accountants, under terms of reference approved by the Audit Committee of the Board and coordinated by the General Manager (Risk Management). Internal audit will cover contract management and transactions under the project. Internal audit reports will be placed before the Audit Committee and its directions will be implemented. Internal audit reports, minutes of Audit Committee and compliance to audit findings will be shared with the Bank.
  - g. **External Audit.** The statutory auditor of DFCCIL is a private audit firm appointed by the Comptroller and Auditor General of India (C&AG), the supreme audit institution for India, following an empanelment process and evaluation of the firm's credentials against pre-defined criteria. The audit report including an opinion on the true and fair view is provided by the private audit firm and the C&AG has the right to conduct a supplementary audit. Statutory audits of DFCCIL are on schedule and have been completed up to FY2021. Audit opinion in the last three years have been unmodified and the C&AG has also not made any additional comments. The entity audited financial statements and annual report are publicly disclosed. DFCCIL will submit to the Bank a separate project audit report, along with the audited Project Financial Statements by December 31 each year during the currency of the project. The project audit will be conducted by an independent firm of Chartered Accountants (which may include the statutory auditors appointed on the advice of C&AG), acceptable to the Bank, under terms of reference agreed with the Bank. The audit project financial statements will be publicly disclosed.
9. **Disbursement:** Disbursements will be made directly to DFCCIL in a specified bank account, similar to the arrangement under EDFC-2 and 3 (the Loan Agreement will be signed directly with DFCCIL). DFCCIL would pre-finance the project expenditures. Disbursement for the regular IPF portion will be sought from the Bank under reimbursement method, based on eligible expenditure reported in the quarterly (or more frequent) IFRs.
10. Disbursements against PBCs will be made based on satisfactory achievement of the PBCs as per agreed verification protocol and supported by agreed EEPBC as reported in the IFRs. Where the available reported EEPBC is less than the aggregate PBC target value achieved by the project, disbursement by the WB will be limited to the value of the available reported EEPBC. The balance PBC target value will be reimbursed when adequate EEPBC is reported subsequently. PBC targets that are not achieved by the date mentioned in the PBC Matrix, can be rolled over till achieved by the project closing date. Scalable PBCs can be disbursed proportionately in case of partial achievement. In case the EEPBC reported in audit is less than the EEPBC reported through IFR, the excess will be adjusted against subsequent disbursement (or refund will be sought if there are no further disbursements to be made).
11. The disbursement will be as shown in Table 1-1.



**Table 1-1: Disbursement**

Category	Amount of Loan Allocated (US\$)	Percentage of Eligible Expenditure to Be Financed (inclusive of taxes)
Category 1: Goods, works, non-consulting services, Training, and consulting services, except for those financed under Category (2) of the project	144,387,500	50 percent
Category 2: Goods, works, non-consulting services, Training, and consulting services for Eligible Expenditures for PBCs	100,000,000	50 percent
Front-end fee	612,500	
<b>Total Amount</b>	<b>245,000,000</b>	

12. **Ineligible Expenditure:** The following expenditure will not be eligible for financing from the Bank.
  - a. Expenditure that is not within the project's description or is not in accordance with Bank's procurement procedures or that is incurred after the project Closing Date
  - b. Cost of any land acquisition required for the purposes of the project
  - c. Compensation or any cost of resettlement and rehabilitation to persons affected by the project
  - d. Compensatory afforestation payments if any
  - e. Interest during Construction Period
  - f. Expenditure considered as ineligible by the project auditors or identified during Bank missions
  - g. Retention money deducted from contract payments to the extent not released
  - h. Fees, penalties, and similar levies made under the awards made by the Dispute Arbitration Board
  
13. **Retroactive Financing:** Eligible project expenditures meeting the agreed procurement procedures and for which payment is made on or after April 1, 2022, and up to a day prior to the date of loan signing, in respect of works completed after this date, can be claimed from the WB under retroactive financing up to 20 percent of the Loan, that is, US\$49 million. The project will submit a stand-alone IFR detailing the expenditures incurred during retroactive financing period, which will be subject to audit by the project's external auditors.
  
14. **PPSD has been developed for the project.** Number of ongoing contracts from EDFC-3 shall be considered under the new project, with few new consultancy services contracts. Consultancy contracts have been framed based on market research and packaging in terms of the scope of services and duration. The project will utilize the Government e-Marketplace (GeM) for goods and non-consulting services procurement below the NCP threshold. Based on the risks and market analysis, the Procurement Plan has been prepared to set out the selection methods to be used during project implementation for the procurement of goods, works, and non-consulting and consulting services financed by the loan.
  
15. **The project will implement Systematic Tracking of Exchanges in Procurement (STEP), a planning and tracking system, for procurement activities.** Details of the procurement activities that have been



prepared, including the Procurement Plan, have been entered in the STEP system. Initial training on operation of the STEP system has been provided to procurement staff of the Implementing Agency.

16. **DFCCIL will use the NIC (National Informatics Centre) e-procurement (electronic procurement) system for all procurements under International Competitive Bidding and National Competitive Bidding.** The e-procurement system has been assessed and accepted by the Bank for use for procurement under WB-funded projects with specific requirement such as bid submission deadline and bid opening time should be within half hour; for International competitive Bid procurement, Special procurement Notice should be additionally advertised in UNDB (United Nations Business Development) and WB websites, etc. Based on the packages already identified, most of the procurement is likely to use the NCB method. Requirements for e-procurement will be indicated in Procurement Plan.

17. **Contract management.** DFCCIL will follow contract management practices in accordance with the provisions of the contract agreement and Annex-XI (Contract Management) of the Regulations. DFCCIL staff responsible for contract management may additionally undertake the certificate program in contract management available online at [www.procurementlearning.org](http://www.procurementlearning.org).

18. **Procurement training may be provided to key staff by the Indian Institute of Management, Lucknow, or the Administrative Staff College of India, Hyderabad.** The project may also take advantage of the free Massive Open Online Course on public procurement ([www.procurementlearning.org](http://www.procurementlearning.org)) offered by the WB, as well as the paid Professional Diploma in Public Procurement delivered through the Charter of Public Procurement Studies.

19. **The procurement risk assessment for the proposed project identified significant procurement-related risks and the corresponding mitigation measures** (Table 1-2). The overall residual procurement risk rating for the project is Moderate. The residual risk rating for procurement will be reviewed and updated periodically by the WB.

**Table 1-2: Procurement Risks and Mitigation Measures**

Risk factor	Initial risk	Mitigation measure	Completion date	Residual risk
lack of familiarity of DFCCIL staff with the latest procurement procedures in accordance with the WB's procurement policies and inefficiencies resulting in delays in procurement and	Moderate	Use of skilled procurement staff for handling procurement activities including hiring of consultant (firm) with experience of procurement in Bank financed projects Monitoring through the Procurement Plan and quarterly reports Use of e-Procurement and contract management tools Participation in training and workshops	Year 1	Moderate





Risk factor	Initial risk	Mitigation measure	Completion date	Residual risk
contract management processes		Improving document filing system		
Non-compliance with agreed procurement arrangements	Moderate	Training and handholding provided by the WB Prior and post reviews by the WB Internal and external audits	Year 1	Moderate
External interference in the procurement process	Moderate	Disclosure of procurement-related information Appropriate handling of complaints by adopting clear and fair complaint mechanism	Year 1	Moderate
<b>Overall risk</b>	<b>Moderate</b>			<b>Moderate</b>

### Implementation Support Plan:

20. The WB will support project implementation based on the risks identified and the mitigation measures proposed in the risk section. The Bank will undertake regular semi-annual implementation support missions to confirm project performance and areas of concern. These missions will, inter alia, be based on the reports of implementation agencies. The WB team will include specialists in key functional areas, viz., technical, fiduciary management, safeguards, and project management (see Table 1-3).

21. A mid-term review (MTR) will be conducted 30 months from credit effectiveness. The MTR would assess the overall implementation performance and progress towards the achievement of PDO, and if necessary, recommendations for amendments to the project would be discussed and proposed.

22. DFCCIL will be primarily responsible for implementing the project's environmental and social commitments.

**Table 1-3: Resource Matrix**

Time	Focus	Skills needed	Resource Estimate per year
Project duration (60 months)	Creation of Rail Infrastructure	Transport Sector Specialist	8 SW
		Rail Civil Engineer	6 SW
		Rail signal and telecommunication specialist	6 SW
			6 SW
	Private sector Investments	Transport Sector Specialist	4 SW
		Private sector specialist	4 SW
		Investment Analyst	4 SW
	Technical Assistance Component	Transport and private sector specialist	4 SW



Time	Focus	Skills needed	Resource Estimate per year
	Fiduciary and safeguards	Logistics Specialist	4 SW
		Procurement Specialist	10 SW
		Environment Specialist	8 SW
		Social Development Specialist	8 SW
		FM Specialist	6 SW
	Team Leadership	Task Team Leaders	SW

(SW = Staff weeks)