ASIAN INFRASTRUCTURE INVESTMENT BANK

November 25, 2021

Project Document

of the Asian Infrastructure Investment Bank

Sovereign-backed Financing

Republic of Turkey

Ispartakule-Cerkezkoy Railway Project

Currency Equivalents

(As of August 27, 2021)

Currency Unit – Euro (EUR)

EUR1.00 = USD1.1752

USD1.00 = EUR0.8509

Turkish Lira (TRY)

TRY1.00 = USD0.1192

USD1.00 = TRY8.3916

Borrower's Fiscal year

January 1 to December 31

Abbreviations

AIIB	Asian Infrastructure Investment Bank
AIIB ESP	AIIB's Environmental and Social Policy (2019)
AYGM	General Directorate of Infrastructure Investment (Altyapı Yatırımları Genel Müdürlüğü)
CMP	Contractor Management Plan
DA	Designated Account
EBRD	European Bank for Reconstruction and Development
EBRD ESP	EBRD's Environmental and Social Policy (2014)
EBRD PPR	EBRD's Procurement Policies and Rules (2017)
EBRD PR	EBRD Performance Requirements (2014)
ES	Environmental and Social
ERTMS	European Railway Traffic Management System
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EU	European Union
FM	Financial Management
GBV/SE	Gender-Based Violence and Sexual Exploitation
GHG	Greenhouse Gas
GRM	Grievance Redress Mechanism
GoT	Government of Turkey
GSM-R	Global System for Mobile Communications – Railway
HKRL	Halkali – Kapikule Railway Line
IUFR	Interim Unaudited Financial Report
MoTI	Ministry of Transport and Infrastructure
OHS	Occupational Health and Safety
O&M	Operation and Maintenance
PAP	Project-affected People
PIU	Project Implementation Unit
PPM	Project-affected People's Mechanism
RAP	Resettlement Action Plan
SEP	Stakeholder Engagement Plan
TCDD	Turkish State Railways (Türkiye Cumhuriyeti Devlet Demiryolları)
TEN-T	Trans-European Transport Network
TSI	Technical Specifications for Interoperability

Contents

1. Summary Sheet
Turkey: Ispartakule-Cerkezkoy Railway Project

Project No.	P000345
Project Name	Ispartakule-Cerkezkoy Railway Project
AIIB Member	Republic of Turkey
Borrower	Republic of Turkey
Project Implementation Entity	General Directorate of Infrastructure Investment (AYGM)
Sector	Transport
Sub-sector	Rail
Project Objective	To increase passenger and freight capacity, safety and speed of rail transport between Turkey and the European Union via the construction of a high-speed rail between Ispartakule and Cerkezkoy.
Project Description	The planned activities under the proposed Project are: - **Component A**: Construction of 67 kilometers of new double-track, electrified, high-speed railway between Ispartakule and Cerkezkoy, and construction supervision. - **Component B:** Project management support. - **Component C:** Livelihood restoration activities as per EBRD PR5 (RAP Fund).
Implementation Period	Start Date: November 2021 End Date: November 2026
Expected Loan Closing Date	May 2027
Cost and Financing Plan	Project cost: USD840.3 million (EUR715.05 million) Financing Plan: AIIB loan: USD352.6 million (EUR300 million)[1] EBRD loan: USD176.3 million (EUR150 million) Government of Turkey: USD311.5 million (EUR265.05 million)
Size and Terms of AIIB Loan	EUR 300 million (approximately USD352.6 million equivalent). Final maturity of 18 years, and average maturity of 11.37 years, including a grace period of 5 years. AIIB's standard interest rate for sovereign-backed loans.
Environmental and Social Category	Category A, (equivalent to Category A if AIIB's ESP were applicable)
Risk (Low/Medium/High)	Medium
Conditions of Effectiveness	(i) Project Implementation Unit (PIU) fully established and functional. (ii) Financial agreement between the Co-financier and the Borrower signed.
Key Covenants	(i) By no later than sixty (60) days after the Effective Date,

[1] The Loan is denominated in EUR, however, the costs and funding in this report will be presented in USD with an exchange rate of USD1.00 = EUR0.8509 as of Aug 27, 2021.

	the Borrower, through the MoTI, shall finalize the Financial Management Manual in terms acceptable to the Co-financiers. (ii) The Halkali-Ispartakule and Cerkezkoy-Kapikule sections of the Halkali-Kapikule Railway Line shall be constructed and integrated to the Ispartakule-Cerkezkoy section within stipulated timelines to ensure the corridor is fully operational. (iii) A mid-term review shall be conducted, and a report shall be submitted by the PIU to AIIB upon completion of 50% physical advance of civil works construction, or within 24 months from commencement of construction, whichever is earlier, including technical, financial, environmental, and social considerations of the Ispartakule-Cerkezkoy section, as well as an update on the Halkali-Ispartakule and Cerkezkoy-Kapikule sections advance.
Retroactive Financing (Loan % and dates)	Retroactive financing of up to 10% of the loan amount for eligible expenditures incurred not more than 12 months prior to the date of the loan agreement.

President	Jin Liqun
Vice President	Konstantin Limitovskiy
Director General	Supee Teravaninthorn
Manager	Gregory Liu
Team Leader	Natalia Sanz, Senior Operations Specialist - Transport
Team Members	Aditi Khosla, Counsel Arnau Morell Castella, Investment Analyst - Secondee Gabriel Giacobone, Infrastructure Sector Economist Georgi Georgiev Dzhartov, Social Development Specialist Giacomo Ottolini, Senior Procurement Consultant Mengmeng He, Finance Associate Yogesh Malla, Financial Management Specialist Zhixi Zhu, Environment Specialist (Operations) Yige Zhang, Project Assistant

2. Project Description

A. Project Overview

1. **Project Objective.** The objective of this Project is to increase passenger and freight capacity, safety, and speed of rail transport between Turkey and the European Union via the construction of a high-speed rail between Ispartakule and Cerkezkoy.

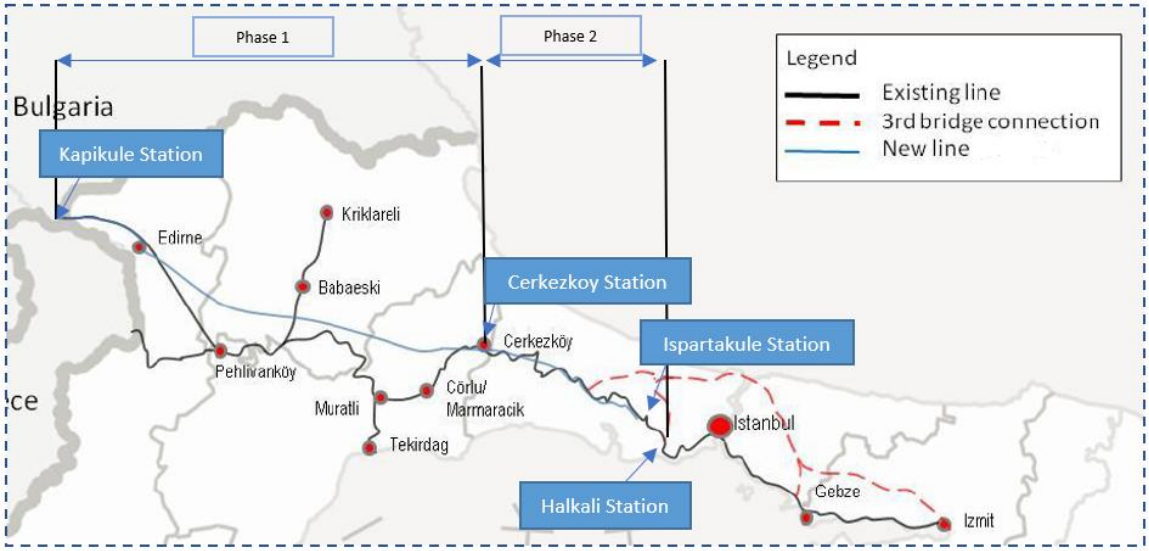
2. **Project Description.** The Ispartakule – Cerkezkoy Railway Project is part of the Halkali – Kapikule Railway Line (HKRL) (see Figure 1), a strategic project in line with the Turkish national transport strategies and the European Union (EU)'s Country Strategy for Turkey (2014 – 2020) to establish a safe, accessible, sustainable, and inter-operable national rail transport corridor in line with EU standards with appropriate Trans-European Transport Network (TEN-T) connections.

3. The HKRL is a subcomponent of the Transport Corridor Europe-Caucasus-Asia (TRACECA), which aims to strengthen economic relations, trade, and transport in the regions of the Black Sea basin, South Caucasus, and Central Asia. The HKRL is one of EU's strategic projects as it will allow to carry freight to and from the Anatolian region of Turkey taking advantage of the Yavuz Sultan Selim Bridge (Third Bridge) over the Bosphorus Strait, connecting Sofia, Edirne and Kars (east of Turkey) to Azerbaijan, Iran and Georgia, and to Syria and Iraq in the south. The HKRL is comprised of two phases:

(i) Phase 1: Kapikule (at the Bulgarian border) to Cerkezkoy (153km), under construction;

(ii) Phase 2: Cerkezkoy to Halkali (near Istanbul) (76km).

Figure 1. Halkali-Kapikule Railway Line corridor map



4. **Scope**. The Ispartakule - Cerkezkoy Railway Project is a section of Phase 2 and consists of the construction of 67km of new high-speed railway line.

5. The Project is designed as a 200km/h maximum design speed, double-track, electrified railway, and the required systems, including European Railway Traffic

Management System (ERTMS) Level 1, power supply and auxiliaries. The Project will mostly run in parallel to the existing single-track rail line. The AIIB loan will also finance construction supervision consultant, implementation support consultant, and livelihood restoration activities, which include additional payments above national compensation for land acquisition [2] to meet the requirements of the European Bank for Reconstruction and Development (EBRD)'s Environmental and Social Policy (2014), which will apply to the Project (see paragraph 16 for co-financing arrangements). A detailed description of the components can be found in Annex 2.

6. **Expected Results.** The Project Objective Indicators include (i) increased number of passengers carried; (ii) increased number of freight tons carried; (iii) reduced average travel time. The detail of the project objective and intermediate indicators can be found in the Results Monitoring Framework in Annex 1.

7. **Expected Beneficiaries.** The primary beneficiaries of the Project will be the rail users, including passengers and freight transport operators, who will benefit from shorter travel times and a safer and more reliable rail system. Indirect benefits include improved access to goods and services, and better connectivity between Europe and Asia. Furthermore, the communities along the corridor, which extends through the provinces of Edirne, Istanbul, Kırklareli and Tekirdağ in Turkey with a combined population over 17.5 million, will benefit from access to jobs during construction phase.

B. Rationale

8. **Rail Infrastructure[3].** The Ispartakule-Cerkezkoy Railway Project is part of the HKRL connecting Istanbul to the Turkish border with Bulgaria. The existing single-track conventional rail line from Halkali to Kapikule is currently experiencing severe capacity constraints. Poor railway infrastructure condition and low-quality access to other modes of transportation, including maritime transport, have led to the cancellation of several railway services on the existing line, further limiting its ability to capture the growth in passenger and freight volumes between Europe and Turkey.

9. Despite major works of rehabilitation, electrification, and signalization of the existing line to improve its level of service and safety, the track low load capacity, alignment and turns radii are not adequate for high-speed rail. The proposed Project aims to increase capacity, safety, and speed in the corridor, enhancing the interconnection between the European and the Turkish transport system and following European design standards.

10. **Institutional Context.** The railway sector in Turkey is comprised of multiple actors, with the Ministry of Transport and Infrastructure (MoTI) leading the sector development. MoTI's General Directorate of Infrastructure Investment (AYGM) is the lead agency responsible for infrastructure development, including the mandate of designing and constructing public railways. TCDD is a government-owned national holding company under MoTI, responsible for ownership and maintenance of railway infrastructure in Turkey. TCDD Transport, a TCDD affiliated company, is responsible

[2] Land acquisition and compensation according to local regulations (Turkey's Law N° 2942 on Expropriation) will be financed by the Government of Turkey with national budget.
[3] A general context of the rail infrastructure in Turkey, including the status of high-speed railway, can be found in Annex 5.

for operation and ownership of rolling stock and acts as the incumbent government owned railway undertaking. See Annex 5 for a detailed description of the railway sector institutional context and the reform the sector has gone through since 2013.

11. The Project will be implemented by AYGM, commissioning and testing will be done jointly by AYGM and TCDD, and the railway will be fully transferred to TCDD and TCDD Transport for operation and maintenance.

12. **Strategic fit for AIIB.** The proposed Project entails constructing a new 67km long, double-track, electrified railway designed to reach a speed of 200 km/hour serving passenger and freight. The Project will improve the railway network through increased capacity and quality, reduced journey time, and reduced carbon emissions by shifting passenger and freight traffic from road to rail. As such, the proposed Project is strongly aligned with AIIB's thematic priorities of connectivity and regional cooperation, and green infrastructure, as well as with the transport sector strategy.

13. **Value addition by AIIB.** AIIB's participation will strengthen the Project by: (i) enhancing the Project quality and implementation by leveraging AIIB's technical, environmental, social, financial management and procurement experience in other urban railway projects; (ii) strengthening the implementing entity's project management capacity; and (iii) providing access to ultra-high-definition satellite imagery during supervision, monitoring and evaluation.

14. **Value addition to AIIB**: AIIB's participation in the Project will: (i) enhance the Bank's know how on high-speed, high-demand passenger and freight transport in TEN-T corridors, in Turkey and in the region; (ii) enable the team to design, implement and monitor the first instance of livelihood restoration arrangements funded through a loan; and (iii) as the first AIIB sovereign-backed financing in the transport sector in the country, the Project will allow to develop a relationship with the MoTI that could open new financing opportunities for the sector in the future.

15. **Lessons learned.** Phase 1 of the HKRL, from Cerkezkoy to Kapikule, is currently under construction and is being implemented by the MoTI, with TCDD support. Salient lessons from Phase 1 and other railway projects in Turkey incorporated into the proposed Project include: (i) early planning on land acquisition and appropriate action plan to avoid delays due to court injunctions, including early communication with the land owners and strong coordination with the Expropriations Department of AYGM to promptly address landowners' requests and concerns; (ii) strong PIU capacity to deal with multiple stakeholders and respond to International Financial Institutions' requests, during Project preparation and implementation stages; and (iii) robust tender content and evaluation criteria.

16. **Co-financing.** The Project will be jointly co-financed by EBRD and AIIB (the Co-financiers) and will follow the arrangements set by the agreement signed between the Co-financiers. Therefore, EBRD Environmental and Social Policy (2014) (EBRD ESP), EBRD Procurement Policies and Rules (2017) (EBRD PPR), and EBRD Independent Project Accountability Mechanism will apply in lieu of AIIB Environmental and Social Policy (AIIB ESP), AIIB Procurement Policy, and AIIB Project-affected People's Mechanism (PPM), respectively.

C. Components

17. **Component A**: **Civil Works and Supervision Consultant (USD832.7 million).** This component will finance the construction of 67 kilometers of new double-track, electrified, high-speed railway from Ispartakule station, to just before Cerkezkoy station, as well as the construction supervision contract. The local counterpart contribution includes an estimated budget of USD88.1 million (EUR75 million) for land acquisition.

18. Tendering processes for Construction of Civil Works and Construction Supervision Consultant (Engineer, according to FIDIC Red Book) are ongoing following EBRD PPR and contracts are expected to be awarded by the first quarter of 2022. Information letters have been delivered to landowners.

19. **Component B: Project management support (USD2.9 million).** AIIB financing will support the hiring of consultants for capacity strengthening and technical assistance to the Project Implementation Unit (PIU) for project management, procurement, monitoring, contract implementation, financial management and environmental and social activities. The consultants' scope of work has been agreed between AYGM and the Co-financiers, and the hiring process is ongoing.

20. **Component C. Livelihood restoration activities as per EBRD PR5 (RAP Fund) (USD4.7 million).** This component will be financed only by AIIB, comprising livelihood restoration activities, defined as the additional payments above the compensation paid by AYGM for land acquisition calculated according to Turkey's Law No. 2942 on Expropriation, to achieve full replacement values in accordance with EBRD Performance Requirement 5 (PR 5). These payments, as per the RAP of the Project, include legal and transitional allowances, dedicated compensation for vulnerability, payments for formal tenants and informal users. The eligibility matrix and cost estimate have been included in the Project Resettlement Action Plan (RAP). The RAP further details the cash compensations and dedicated support available to each group of affected households to enable them to achieve or surpass their pre-project livelihood levels, as per PR 5. See Annex 2 for a detailed component description.

D. Cost and Financing Plan

21. **Project Cost.** The total project cost is estimated to be USD840.3 million, of which USD352.6 million is covered by the AIIB sovereign-backed loan, and USD88.1 million of land acquisition costs are covered entirely by the Government of Turkey (GoT). The project costs and financing sources are as provided in Table 1 below. Components A and B will be co-financed by EBRD and AIIB, while Component C, livelihood restoration activities (RAP Fund), will be only financed by AIIB.

22. The cost estimate for Civil Works contract is based on the detailed designs, including a 10% price contingency during the construction period.

Table 1. Project Cost and Financing Plan (in million)

Item	**Cost estimate**		**Financing Plan**					
	Total		AIIB		EBRD		GoT	
	USD	EUR	USD	EUR	USD	EUR	USD	EUR
Component A	833.3	709.05	346.7	295	175.1	149	311.5	265.05
Civil works	*718.1*	*611.05*	*329.1*	*280*	*165.7*	*141*	*223.3*	*190.05*

Supervision Consultant	*27*	*23*	*17.6*	*15*	*9.4*	*8*	-	-
Land Acquisition	*88.1*	*75*	-	-	-	-	*88.1*	*75*
Component B – Project management support	2.9	2.5	1.2	1	1.2	1	-	-
Sub-total to be co-financed with EBRD	**835.6**	**711.1**	**347.9**	**296**	**176.3**	**150**	**311.5**	**265.05**
Component C - Livelihood restoration activities (RAP Fund)	4.7	4	4.7	4	-	-	-	-
Total	**840.3**	**715.05**	**352.6**	**300**	**176.3**	**150**	**311.5**	**265.05**

E. Implementation Arrangements

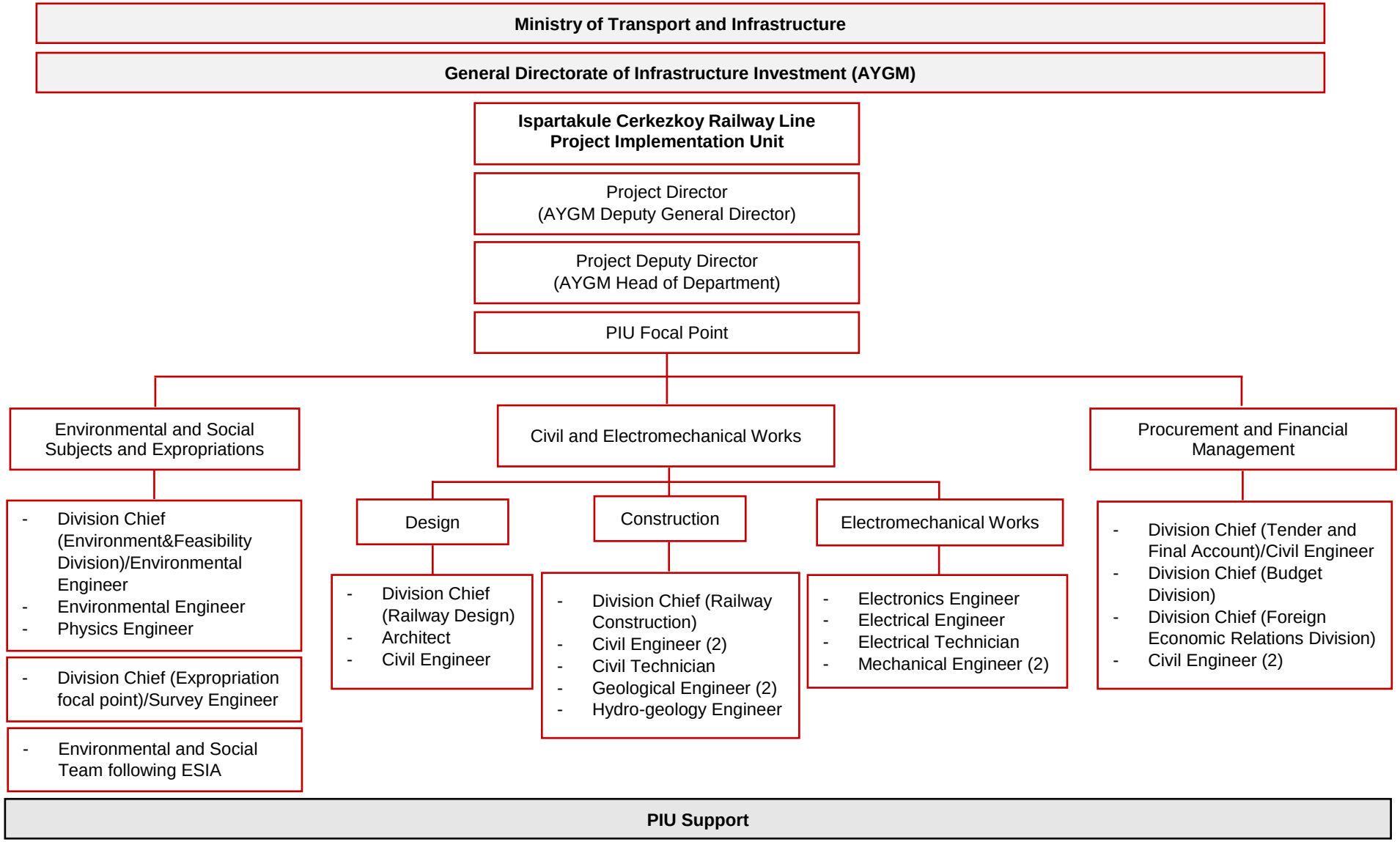
23. **Implementation period.** The Co-financiers and AYGM agreed on an implementation period of 5 years, from November 2021 to November 2026.

24. **Implementation Management.** AYGM, within the MoTI, is the project implementation agency. The Co-financiers are working closely with AYGM on the conformation and requirements of the PIU (see the PIU organization structure in Figure 2). For Component C, a RAP Fund Management and Disbursement Guideline has been prepared by AYGM and will be updated from time to time (see Annex 2, Component C). Specific staffing requirements for the Environmental and Social unit are detailed in the disclosed Environmental and Social Impact Assessment (ESIA).

25. **Consultants**. AYGM has hired individual consultants with previous experience in Multilateral Development Bank (MDB)-financed projects to provide support to the PIU during the Project preparation stage. The selection of a consulting firm for PIU support is well underway and the selected firm will provide project management, monitoring and implementation assistance to the PIU for technical, environmental, social, procurement and financial management activities during Project implementation, to be co-financed by EBRD and AIIB (Component B). The terms of reference (ToR) have been agreed with the Co-financiers. The PIU and the consultants will ensure quality of project deliverables, ongoing compliance with contract provisions, as well as regular reporting with respect to the Co-financiers' requirements.

26. **Procurement.** Procurement is being conducted in accordance with the EBRD's Procurement Policies and Rules, which are materially consistent with both AIIB's Articles of Agreement and AIIB's Procurement Policy and its associated Procurement Instructions for Recipients. To familiarize AYGM with the procurement processes and requirements, EBRD has provided various training sessions to the PIU procurement team on their Procurement Policies and Rules. The Bank relies on EBRD's determination of compliance with their Procurement Policy for all procurement and contract management conducted under the Project.

Figure 2. AYGM Project Implementation Unit Chart



27. **Financial Management.** AYGM will assume overall project financial management responsibility. A PIU has been established within AYGM and shall be staffed with qualified finance and accounts personnel, including consultants, to maintain acceptable project financial management.

28. The PIU will maintain a separate accounting system to follow up the funds flows on a cash basis in foreign currency and to generate regular project reports. The existing internal control processes and procedures of AYGM shall be used for the Project. The PIU shall prepare and submit Interim Unaudited Financial Reports (IUFR) to the Co-financiers within 45 days of end of each fiscal quarter. The PIU shall submit annual audited project financial statement including the Management Letter to the Co-financiers within six months after the end of each fiscal year.

29. The loan will be disbursed through AIIB's standard disbursement methods, which include: (i) advances to Designated Account (DA) using Statement of Expenditure (SOE); (ii) reimbursement of eligible expenditures; and (iii) direct payments. The Co-financiers will follow a common disbursement method, direct payments, for Components A and B. A Disbursement and Financial Information Letter (DFIL) shall detail out the authorized signatories, ceiling of the DA, process of submitting claims and other terms and conditions of disbursements related to the Project.

30. **Monitoring and Evaluation.** AYGM PIU will have the overall responsibility for monitoring the Project progress and performance based on the result indicators defined in the Results Monitoring Framework through quarterly and annual reports. A mid-term review report shall be submitted by the PIU to AIIB upon completion of 50% physical advance of civil works construction or within 24 months from the commencement of construction, whichever is earlier. The PIU support costs for Monitoring and Evaluation will be co-financed by the EBRD and AIIB loans under Component B.

31. **AIIB's Implementation Support.** Under normal circumstances, EBRD and AIIB are expected to conduct supervision missions twice a year, as well as technical review visits for specific implementation support as needed at different implementation stages. Given the uncertainty of the COVID-19 pandemic situation, EBRD and AIIB's implementation support will consist of remote assessment using available technologies, like virtual meeting platforms and latest satellite imagery, and periodic visits to the project sites to monitor implementation progress, supported by staff from EBRD local office in the country.

3. Project Assessment

A. Technical

32. **Project Design**. Design, tendering and implementation of Phase 2 were transferred from TCDD to AYGM in 2020, considering the Halkali-Ispartakule section

design would be affected by the projected Istanbul Canal[4], also under AYGM scope. The AYGM Railway Department/Tender and Final Account Unit updated the Detailed Designs for Phase 2, originally prepared by TCDD's technical department. A technical due diligence was carried out by an external consultant and the Co-financiers for the Ispartakule-Cerkezkoy section, recommending improvements to the designs on TSI compliance and safety management, functional integration, project program, and non-core land acquisition process. AYGM incorporated these changes and reflected them in the tendering documents' technical requirements. The Co-financiers consider the level of detail and technical requirements of the designs adequate and robust. A summary of the technical characteristics can be found in Table 2 and further details in Annex 2.

Table 2. Project technical characteristics[5]

Route length	67km
Bridge/viaduct/overpass structures	13 (1.4km in total)
Tunnels	3 (3.6km in total)
Structure gauge	1435 mm (standard)
Max design speed	200km/h
Number of tracks	Double track
Power supply	27.5kV Overhead Line System (catenary)
Traffic management system	ERTMS (European Rail Traffic Management System)
Interoperability	TSI Compliant

33. **Project cost**. According to the detailed designs, the estimated cost for civil works of the Ispartakule-Cerkezkoy Railway is EUR610.55 million, based on unit prices published by the General Directorate of TCDD and updated by AYGM, built up from tasks grouped under: route superstructure, track infrastructure, telecommunication and signaling, and electrification. The cost includes a 10% price provisional sum (contingency), following FIDIC Red Book. As part of the Project due diligence, three comparisons were done: (i) Phase 1 bid prices to TCDD's Phase 1 estimates, showing Phase 1 contract was awarded within the budgeted value; (ii) Phase 2 line by line cost estimate to available data from other Turkish projects; and (iii) Ispartakule-Cerkezkoy Railway cost estimate to similar rail projects' costs, confirming the Project cost estimate and price contingency are reasonable and in line with other Turkish and international high speed rail projects.

34. **Traffic demand projections.** Freight and passenger demand were forecasted by TCDD and AYGM considering international and local origins and destinations with a horizon of 2055. For freight, the corridor will serve primarily international traffic, while passenger demand is mostly concentrated in the Project segment (i.e. Ispartakule to

[4] The Istanbul Canal project seeks to build a 45km artificial sea-level waterway on the European side of Istanbul, connecting the Black Sea and the Marmara Sea. The canal is expected to follow the east of Terkos Lake, and Sazlidere Dam, located on Küçükçekmece Lake.
[5] Technical Review of Detailed Designs for Ispartakule-Cerkezkoy Railway Project Report, June 2021

Cerkezkoy), serving commuter traffic in the vicinity of Istanbul and secondarily regional and international passenger traffic.

Table 3. Forecasted traffic demand

	2021	2026	2055
Million passengers (inter-urban) per year	1.0	4.4	10.2
Million tons per year	0.5	2.0	8.5

35. **Bosphorus Rail Crossing.** These demand forecasts, especially for freight, are in part dependent on the future rail crossing of the Bosphorus strait, specifically the Yavuz Sultan Selim Bridge or Third Bosphorus Bridge. Currently the only available crossing option for freight trains between the European and Anatolian regions of Turkey is the Marmaray Tunnel, which opened for freight in October 2019 and does not allow transport of dangerous or oversized products. The Third Bosphorus Bridge crosses the Bosphorus between Garipce village on the European side and Poyraz on the Asian side, and it consists of two-way four-lane motorway and two high speed rail tracks. The bridge motorway has been operational since 2016, and the rail crossing is expected to become operational by 2030. The Project team has reviewed the traffic forecast, considering any possible risk arising from this and other infrastructure projects, like the connection to the New Istanbul Airport, and sensitivities have been included in the Economic Evaluation (see Annex 3).

36. **HKLR corridor inter-operability.** Phases 1 and 2 shall be fully operational and integrated by the time the Project section is concluded. Phase 1, from Kapikule to Cerkezkoy, was awarded in 2019 and is under construction, financed by the EU's Investment for Pre-accession Assistance (IPA) program and the GoT, with planned completion date in December 2023. The Halkali-Ispartakule section of Phase 2 was awarded in August 2021, financed entirely by GoT National Budget, with expected completion date in December 2024. Considering the ongoing COVID-19 pandemic, land acquisition processes, and the technical complexity of the Project, delays in the construction schedule could be expected. The Co-financiers and the Borrower have agreed on a Project implementation period of 5 years.

37. A mid-term review shall be carried out, and a mid-term review report shall be submitted by the PIU to AIIB upon completion of 50% physical advance of civil works construction or within 24 months from the commencement of construction, whichever is earlier, relating to the status of the Ispartakule-Cerkezkoy section, including a technical, financial, environmental, and social review, as well as an update on the status of completion and integration of the Halkali-Ispartakule and Cerkezkoy-Kapikule sections of the HKRL. Additionally, the legal documents will consider a covenant on the finalization and integration of Phase 1 and the Halkali-Ispartakule sections to the Project section within stipulated timelines.

38. **COVID-19 considerations during implementation**. The Ministry of Health of Turkey through its Science Board publishes regularly updated strategies to be followed

in the different sectors. The measures related to the construction sector will be included in the Land Acquisition, Occupational Health and Safety, and Stakeholder Engagement plans during Project implementation, which comprise, among others: (i) cleaning and disinfecting measures at work; (ii) to prevent non-employees from access into working areas on construction sites; (iii) brochures and posters informing about COVID-19 protection measures prepared by the Ministry of Health to be distributed to employees and displayed in appropriate locations on work sites; and (iv) to notify the workplace and provincial/county health units when suspected COVID-19 cases occur.

B. Economic and Financial Analysis

39. **Economic Analysis.** A cost-benefit analysis (CBA) was carried out to assess the economic viability of the Project comparing "with-" and "without-project" scenarios, based on data provided by the Feasibility Study of the Ispartakule-Cerkezkoy Railway Line done by TCDD (updated to November 2020), the economic analysis carried out by the EBRD consultant, and the technical due diligence report.

40. The main economic benefits are expected to be: i) reduction in the travel time for the existing rail users; ii) reduction in the operating costs for freight service providers; and iii) diversion of traffic from road to rail with benefits for travelers as well as for society through a reduction of external costs and attracting new traffic to rail. Passenger demand has been assumed to be 4.4 million passengers and freight demand has been assumed to be 2.0 million tons for the initial year of operation (2026). The analysis has quantified the project impact on three levels: i) changes in consumers' surplus; ii) changes in producers' surplus (rail and bus operators); and iii) externalities. The Project exhibits an Economic Internal Rate of Return (EIRR) of 10.4 percent and an Economic Net Present Value (ENPV) of EUR135.6 million. The Project is deemed to be economically justified, although the demand risk is high.

41. A sensitivity analysis was carried out by assessing the outcome of adverse scenarios over the base case. The analysis shows that the Project has robust results, with an EIRR particularly sensitive to changes in ridership. Under a more pessimistic demand forecast, the EIRR would drop to the 9.0-9.8 percent range. Annex 3 provides detailed information about the analysis.

42. **Operational sustainability.** Considering Operation and Maintenance (O&M) expected costs and forecasted passenger and freight demand[6] for the Ispartakule-Cerkezkoy section and comparing fare revenue with the O&M for the corridor, a positive year to year operating margin for this section would be possible. Given the sector structure, this margin could be used by TCDD to cross-subsidize other railway corridors and alleviate its current deficit.[7] [8]

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[6] An average of 3%year growth for passengers, and 5% for freight transportation for the 30 years following initial year of operation were considered for the analysis. On the revenue side, current fares for the operating line in the Ispartakule-Cerkezkoy section (TRY24 per passenger and TRY15 per ton) were considered for the first year of operation. The O&M costs were based on the current operating high speed lines costs in Turkey, in line with the technical due diligence report. The analysis assumes fares and O&M costs are adjusted by inflation.

[7] The Turkish railway sector is currently transitioning to vertical separation (see Annex 5), with a demand highly impacted by the pandemic. TCDD's financial results depend strongly on the fare policy, privately owned railway undertaking companies entering the Turkish market and realized demand. TCDD's deficit rose to around TRY3.9 billion (approximately USD460 million) in 2020.

43. **Fiscal Analysis.** AYGM is a non-revenue-generating government agency, and the national government will be the ultimate borrower. The project will be funded by a sovereign backed AIIB loan and a sovereign backed EBRD loan. Land acquisition (estimated at EUR75 million) will be financed by the GoT and the budget will be allocated for this purpose following National Budget approval. Railway operations are subsidized and TCDD has a high deficit (see footnotes 8 and 9), both met by national resources. As mentioned in the previous paragraph, under the assumptions considered, this corridor could generate enough revenues to meet the corridor's O&M costs and alleviate TCDD's financial situation, but it is not expected to revert its deficit.

44. Although Turkey's outlook remains fragile, the country moderate levels public debt (40 percent of GDP), a track record of conservative fiscal policies, and a large, diversified economy, added to government's relatively strong balance sheet and continued access to financial markets, successfully tested during the pandemic, counterbalance the debt sustainability concerns (see Annex 6). Hence, all things considered, it is not foreseen that project related costs including repayment of the project loan would bring about a particular fiscal burden to the country.

C. Fiduciary and Governance

45. **Procurement.** EBRD PPR for the public sector apply to the procurement of contracts to be jointly co-financed. AYGM has agreed to use EBRD's e-procurement platform ECEPP and access is granted to AIIB's procurement specialist and project team leader. AIIB's team has conducted joint capacity assessment and has contributed to defining a procurement and contract strategy that is deemed fit-for-purpose. The capacity assessment revealed some gaps in the capacity of AYGM to carry out all activities foreseen under the project in accordance with the agreed provisions and requirements, including limited experience in implementing procurement and contract administration following MDB policies, as well as in the use of standard procurement documents. To fill these gaps consultancy support will be provided through the loan to ensure AYGM has adequate support during implementation of procurement process and contract administration. The procurement of the civil works contract will follow international open tendering with prequalification method, and the selection of a competent qualified consultancy firm to carry out the role of Supervision Consultant (Engineer under FIDIC Red Book) will follow international open tendering, as defined under EBRD PPR and using EBRD's standard procurement documents. The procurement process of these major and key contracts is well underway, and the AIIB's team is kept duly informed on all steps. These proposed arrangements are deemed adequate for the scope of the project and are acceptable to the AIIB's team.

46. **Financial Management.** A Financial Management (FM) assessment was carried out focused on AYGM institutional capacity, staffing, planning/budgeting, funds flow, accounting, internal controls, reporting and audit arrangements. The FM assessment was carried out based on desk review of reports shared by the Borrower

[8] TCDD Transport operation revenues subsidies in 2020 were around TRY523.5 million (around USD64 million). Source: TCDD Transport 2020 Annual Report (https://www.tcddtasimacilik.gov.tr/uploads/images/Strateji/TCDD-Tasimacilik-2020-Faaliyet-Raporu.pdf

and discussions with the stakeholders. AYGM has limited prior experiences in implementing projects financed by MDBs. They have adequate finance/accounts staff, and the financial management system is adequate to account and report on the Project related activities. Based on the financial management assessment, FM capacity is considered adequate and FM risk as “Medium”.

47. The proposed project financial management arrangement shall be considered adequate provided proposed mitigation measures are addressed. They are (i) recruitment of a FM Specialist as part of the PIU support consultant, under terms and conditions satisfactory to the Co-financiers; (ii) preparation of external audit ToR in consultation with the Co-financiers detailing the scope of audit, (iii) preparation and finalization of an FM Manual, in consultation with AIIB, including a separate detail of the RAP Fund (Component C).

48. **Budgeting**. MoTI is a general budget institution subject to the Public Financial Management and Control (PFMC) Law No. 5018. Accordingly, the project will follow the national planning and budgeting procedures, and thus can only make expenditures up to the ceiling indicated in the GoT Investment Program for this project.

49. **Accounting System and Procedures**. MoTI is listed among Chart I institutions in the PFMC Law and thus its accounting is maintained in the Integrated Public Information Management System of the Ministry of Treasury and Finance (MoTF) in Turkish lira, following the chart of accounts predetermined by MoTF. As it is not possible to maintain the accounting in foreign currency in sufficient detail to enable detailed project reporting, the PIU will maintain a separate accounting system to follow up the funds flows on a cash basis in foreign currency and to generate regular Project reports. The PIU has acquired an off-the shelf accounting and reporting software for project purposes and shall customize the existing accounting software for the reporting tool.

50. **Staffing**. AYGM shall appoint one staff responsible for FM to the PIU. Considering the additional workload that will be brought by the Project, AYGM will recruit one FM Specialist within the PIU Support consultant. The ToRs have been agreed with the Co-financiers and the selection process of the PIU Support consultant is well underway.

51. **Internal Controls and Internal Audit**. MoTI applies the internal control mechanisms set forth in the PFMC Law. Accordingly, AYGM will be the accountable spending unit and will utilize the Project funds in line with the agreed Project documents. AYGM will be responsible for all stages of procurement, as well the verification of the receipt of goods and services and preparation of supporting documentation for payments. AYGM will also be responsible for submitting payment orders with supporting documents and signed by the authorized personnel to the MoTF Accounting Officer (Sayman) at MoTI, and to the FM Specialist appointed to the PIU. The FM Specialist will undertake the verification for completeness of documentation and the accuracy of the payment orders and will prepare the payment orders/bank transfer orders for execution of payments and will also be responsible for the disbursement arrangements from the Loan Account to the DA in line with the Disbursement and Financing Letter.

52. MoTI has an Internal Audit Department which is responsible for auditing selected processes of the entire Ministry based on their risk analyses and annual audit

plans. It follows the country system and therefore the work is carried out at the Ministry level. Hence, the internal audit shall be used on a selective basis and the Co-financiers will engage with them during implementation. The detailed arrangement will be spelled out in the FM manual.

53. **Reporting and Monitoring.** The PIU will maintain records and will ensure appropriate accounting for the funds provided on a cash basis. The IUFRs will be prepared quarterly and will be submitted to the Co-financiers no later than 45 days after the end of the fiscal quarter. The format and the contents of the IUFRs will be agreed with AYGM and included in the FM Manual.

54. **External Audit**. Annual project financial statements will be audited by the Treasury Controllers based on International Standards on Auditing and in line with ToR acceptable to the Co-financiers. The audit reports, including a Management Letter (ML) providing recommendations for improving financial management of resources, will be provided to the Co-financiers within six months of the end of each fiscal year. The audit reports excluding the ML will be publicly disclosed by the PIU.

55. **Funds Flow and Disbursement Arrangements.** In case of payments for goods and services under Components A and B, the PIU shall submit withdrawal payment requests for direct payments (contractors/vendors) to each of the Co-financiers based on their pro-rata share. The Co-financiers shall review each of such direct payment requests and make payments within its processing service standard and notify the PIU. The PIU shall also make payments to the contractors/vendors for GoT counterpart amounts through its own bank account. MoTI, through MoTF, will open one DA in the currency of the loan at the Central Bank of Turkey for the RAP Fund, Component C (AIIB). The PIU shall request DA advance quarterly to AIIB based on project needs and planned project expenditures against Component C. Disbursements from the Loan Account will follow the transaction-based method, i.e., traditional AIIB procedures: Advances, Direct Payments, and Reimbursement, with full documentation and against Statements of Expenditures (SOEs).

56. **Financial Crime and Integrity (FCI) and Counterparty Due Diligence/Know Your Counterparty (CDD/KYC).** Following AIIB's applicable policies and guidelines, KYC/FCIDD has been carried out to assess Financial Crime (FC) risks, including Money Laundering and Financing of Terrorism (ML/FT) risks, Sanction risk, and risk deriving from Integrity Unsoundness when dealing with its Counterparties and Connected Parties in the financing. Integrity screenings have been performed on the state representatives of the Republic of Turkey, as well as senior management of Ministry of Treasury and Finance (including the authorized person signing financing agreements with AIIB) and the Ministry of Transport and Infrastructure. Due to their public status, they are identified by Word-Check One as politically exposed persons (PEPs). No critical findings about the identified PEPs came out of the screenings.

57. **Governance and Anti-corruption.** Following EBRD and AIIB agreement, each Co-financier will apply to this Project their own anti-corruption framework, namely EBRD's Enforcement Policy and Procedures (2017) and EBRD's Whistleblowing Policy (2020), and AIIB's Policy on Prohibited Practices (2016) (PPP). AIIB is committed to preventing fraud and corruption in the projects it finances. It places the highest priority on ensuring that projects it finances are implemented in compliance with its PPP. The Co-financiers will monitor the work related to tender document

preparation and tender/proposal evaluation and award under the financing. Implementation will be monitored regularly by the Co-financiers. Each Co-financier will promptly notify the other about any credible allegation or indication of prohibited practice, as defined in the respective anti-corruption frameworks, in connection with the Project, and any resulting investigation will be led by EBRD following its own anti-corruption framework and decision-making process, with AIIB assistance, if agreed upon by the co-financiers. Notwithstanding the above, AIIB reserves the right to investigate, directly or indirectly through its agents, any alleged Prohibited Practices relating to the project and to take and/or require the borrower to take necessary measures to mitigate the risk of such practices and address any issues in a timely manner, as appropriate.

D. Environmental and Social

58. **Environmental and Social Policy and Categorization.** The Project will be jointly co-financed with the EBRD, and the Project's environmental and social (ES) risks and impacts have been assessed in accordance with EBRD's Environmental and Social Policy (EBRD ESP) and related Performance Requirements (2014) (EBRD PRs). To ensure a harmonized approach to addressing the ES risks and impacts of the Project, following the EBRD and AIIB agreement, and as permitted under AIIB's Environmental and Social Policy (AIIB ESP 2019), the EBRD ESP and relevant EBRD PRs[9] will apply to the Project in lieu of the AIIB ESP. AIIB has reviewed the EBRD ESP and EBRD PRs and is satisfied that: (a) they are consistent with AIIB's Articles of Agreement and materially consistent with the AIIB ESP (2019), including AIIB's Environmental and Social Exclusion List and the relevant Environmental and Social Standards; and (b) the monitoring procedures that are in place are appropriate for the Project.

59. The Project is rated Category "A" in accordance with the EBRD ESP (equivalent to Category A if AIIB ESP were applicable), as it includes the construction of long-distance railway tracks that could result in adverse environmental and social impacts which are significant, irreversible, diverse as well as cumulative. Comprehensive ES studies were carried out and the approved national Environmental Impact Assessment (EIA) was reviewed by the Co-financiers. It was determined that a comprehensive Environmental and Social Impact Assessment (ESIA) was required, accompanied by an Environmental and Social Management Plan (ESMP), a Contractor Management Plan and an Emergency Response Framework (ERF). In addition to the ESIA, a RAP, a Guide to Land Acquisition and Compensation (GLAC) for Project-affected people (PAPs), a Stakeholder Engagement Plan (SEP), and a Non-Technical Summary (NTS) were prepared. Based on the ES studies, an Environmental and Social Action Plan (ESAP) was prepared including time-bound actions that AYGM has committed to carry out during the implementation of this Project in consultation with potential key stakeholders and PAPs.

[9] The applicable PRs include PR1: Assessment and Management of Environmental and Social Impacts and Issues; PR2: Labor and working conditions; PR3: Pollution prevention and abatement; PR4: Health and Safety; PR5: Land acquisition, involuntary resettlement and economic displacement; PR6: Biodiversity conservation and sustainable management of living natural resources; PR8: Cultural heritage; and PR10: Information disclosure and stakeholder engagement.

60. The scope of the ESIA includes the Project and the railway section between Halkali and Ispartakule (not financed by the Co-financiers) which is considered an associated facility and will be implemented in accordance with national regulations and EBRD ESP as described in the ESIA.

61. The Project is expected to have significant positive ES effects. The construction works will create opportunities for local businesses and workers, as well as for local vulnerable PAPs, while the operation phase is expected to bring about reduced greenhouse gas (GHG) emissions, improved occupational health and safety, improved community wellbeing and rail safety.

62. **Environmental Aspects.** The route of the Project is generally aligned with that of the existing Ispartakule-Cerkezkoy railway with some deviations (for technical reasons or to avoid resettlement), particularly in the west. Several biodiversity surveys were carried out in 2020 and 2021. The route of the Project primarily crosses habitats which are common and widespread, and no national or internationally protected areas are affected. The biodiversity and critical habitat assessment identified Priority Biodiversity Features (PBFs) including oak/hornbeam woodland (74.3ha) and critical habitats supporting the white-headed duck and six threatened, endemic plant species respectively. A Biodiversity Management Plan (BMP) has been developed, which includes specific conservation actions aimed at achieving No Net Loss / Net Gain for PBFs and critical habitat. See Annex 4 for the detailed assessment of the biodiversity and critical habitat impact.

63. Most of the adverse environmental impacts during the construction phase are common impacts of construction. These will include noise and vibration, dust and air emissions, water contamination, earthwork spoil, debris and other solid wastes, soil erosion, material source consumption due to civil works, excavation, blasting and tunneling, material transportation, backfilling and use of equipment and vehicles as well as activities associated with the construction camps. The construction activities may also have potential impacts on community health and safety and occupational health and safety (OHS). The OHS risks associated with the tunnels to be constructed with the New Austrian Tunnelling Method (NATM) will be significant. Appropriate mitigation measures including the implementation of good construction practices, monitoring and remedial actions for addressing these impacts and risks are included in the ESMP. The impacts on surface water due to the construction of bridges over stream/creek/lake are estimated to be minor with mitigations in place. The railway will be fenced along its entire alignment and all crossings will pass either under or over the railway, which will provide significant mitigation of community health and safety impacts.

64. During the operation phase, the main impacts of the Project will include noise, vibration and risk of landslides associated with tunnels. The risk of landslides will be significantly reduced with the implementation of the mitigation measures for increasing the soil stability as specified in the ESMP. A Tunnel Operational Management Plan will be prepared to address and mitigate potential impacts on groundwater during operation.

65. Noise and vibration impacts have the potential to be significant in certain locations during the construction and operation phases. During construction, the noise impacts will be managed in line with national and international standards and with

good practice mitigation measures such as noise barriers and restriction on working times. During the operation phase, noise and vibration will be mitigated through the installation of noise barriers and through specific track design measures. The noise modeling showed that, even with the application of mitigation measures, some isolated properties (19 of a total of over 67 potential receptors) may experience noise above the standards, applying the World Bank Group Environmental, Health and Safety Guidelines and Turkish standards. All the mitigations are given in the updated ESMP, considering the inputs received during 120-daye disclosure phase and the noise modelling activities carried out and finalized.

66. In addition to the mitigation measures, the ESMP also includes the allocation of roles and responsibilities for AYGM, Supervision Engineer, Construction Contractor and TCDD. The ESMP establishes a defined process for managing any Project changes, e.g., modifications to the detailed designs. A Contractor Management Plan has been prepared for the management of the Construction Contractor who will develop a set of environmental and social management plans to implement the mitigation measures identified as part of ESIA/ESMP in line with EBRD ESP.

67. A cumulative impact assessment was conducted as part of the ESIA for the Project and developments in the vicinity of the Project, such as the Istanbul Canal and Third Bosporus Bridge rail connection. The assessment confirms that the combined impacts of these developments will not be significant during the construction and operation phases. Should construction programs of nearby projects overlap with that of the Project, the Project contractor will liaise with the other developers and aim to identify additional mitigation measures as necessary to reduce potential construction effects further.

68. **Climate Change Risks and Opportunities.** A climate resilience assessment was carried out as part of the ESIA study based on the World Bank Climate Change Knowledge Portal to consider the vulnerability of the Project to climate change. The major climate risks that the Project region may encounter include increased average and extreme temperatures and decrease in annual precipitation. Inherent measures are included in the engineering designs and the ESMP for climate adaptation. More details on the climate adaptation measures can be found in Annex 4.

69. The operation of the Project will have a significant beneficial effect in reducing GHG emissions, due to the transfer of passengers from the existing railway to the Project railway, and the switch from road travel to rail travel. The total reduction of GHG emissions over the first 30 years of operation will be 850,471 tCO_2e. The gross GHG emissions due to the electricity used to power the railway and facilities are approximately 21,470 tCO2e per year. The ESMP includes measures to minimize energy use and reduce fuel usage during both construction and operation phases.

70. **Social Aspects.** The principal adverse social impacts are related to resettlement activities associated with the permanent acquisition of the required 503 hectares for the construction and operation of the railway and associated infrastructure. The social impact assessment included two site drive-throughs and is based on a comprehensive survey of affected households, asset inventory update, interviews with community leaders, focus groups with women, informal users, and community members. A Rail Safety Assessment was undertaken to evaluate the probability of train accidents and operational risks impacting employees and people living near or

trespassing it. Typical community health and safety risks for project employees during the construction process, including Gender-based Violence and Sexual Exploitation (GBV/SE) risks were identified. Following the 120 days of disclosure and subsequent finalization of the RAP, for which a full census of PAPs has been completed and project information letters have been sent, land acquisition will be initiated by inviting PAPs to negotiate.

71. Construction and operation activities will result in temporary and permanent loss, damage, and significant access restrictions to private and public land, including those used as pastureland, forest and land that becomes unviable for economic and agricultural use. The assessment inventory identified the need to acquire 59 houses, 509 non-residential buildings, 60 formal industrial and manufacturing businesses that will be physically displaced and 1256 land parcels (904 privately-owned. 9174 trees will be impacted, some of which provide for PAPs' livelihoods. 285 formally and 62 informally rented land parcels will be affected by the Project. Out of the 59 households to be resettled, five have been subject to previous expropriation. 63 informal users of communal and public land were also identified. Different categories of vulnerable people, including illiterate, previously resettled, women headed households, significantly affected and PAPs with disabilities were consulted in the process of ESIA and RAP preparation. The potential cumulative social impact of the link to the Cerkezkoy to Kapikule Railway is negligible, as it will directly impact two landowners, while those indirectly impacted will be eligible for compensations under the Project.

72. The RAP includes a valuation methodology, an entitlement matrix, a resettlement assistance and livelihood restoration program, based on individual household needs. AYGM will appoint a dedicated PIU staff responsible for the resettlement and livelihood restoration activities, following the roles and responsibilities described in the RAP. Potential land acquisition risks, such as absentee landowners, inheritance issues, missing/wrong deeds, inflation escalation, etc. have been evaluated and associated mitigation measures designed. The RAP also includes a review of applicable housing standards in Turkey and availability of suitable non/agriculture land for in-kind compensation to those being physically displaced by the Project. Measures and potential linkages with relevant programs to support livelihood restoration are also detailed in the RAP.

73. AYGM has the responsibility for the effective implementation of the RAP and associated livelihood restoration plan in line with the prescribed timelines and budget. Funds allocated from the MoTF for implementation of the Expropriation Law will provide compensation to PAPs in line with Turkish legislation. A separate RAP Fund, financed by Component C, will be established to ensure cash and in-kind compensation meets full replacement values in accordance with EBRD PR5 requirements. Both national budget and the RAP Fund will be disbursed by AYGM. The compensation (including livelihood restoration measures) to be provided to each PAP from both funding sources will be clearly presented in the contracts signed by AYGM and each PAP. The full amounts of both allocated compensation amounts will

be provided to PAPs before the land is transferred to and accessible by the Contractor[10]. A detailed description of the RAP Fund can be found in Annex 2.

74. **Gender Aspects.** A gender assessment was undertaken as part of the ESIA to assess and manage impacts, risks and opportunities, such as women's access to economic opportunities, resettlement compensation, services (including safety), employment, mitigation of GBV/SE risks, accessibility of the stakeholder engagement and the Grievance Redress Mechanism (GRM). Stakeholder engagement activities were designed and executed to allow representative participation of women and vulnerable households. The main gender aspect is the risk of mismanagement of the compensation packages by men, who are traditionally owners of land and properties and thus recipients of compensations. To provide for the sharing of eligible compensation, the RAP stipulates that PAPs will have the opportunity to grant permission to the designated bank account for their partner for the specific land/asset. AYGM will also inform partners of PAPs of the expropriation process through the planned engagement activities, including women-only meetings. The detailed RAP monitoring plan will collect gender disaggregated data for each indicator, where possible, to evaluate the specific impact on women. Both the ESIA and RAP include measures to mitigate against gender-specific impacts and identify opportunities for women to retain and/or improve their pre-project livelihood levels.

75. Gender issues identified by the Co-financiers' teams during the due diligence, as well as those that could arise during the stakeholder engagement for the preparation of the ESIA and RAP will be addressed by the Project. Measures to reduce gender-specific risks during construction (such as mainstreaming GBV/SE risks and trainings in Construction Workers' Code of Conduct) and operation (installation of CCTV cameras on trains and at stations) will be included in the Gender Equality and Gender-based Violence and Harassment (GEBVH) Action Plan and Discrimination and Harassment Policy by AYGM.

76. **Occupational Health and Safety, Labor and Employment Conditions.** AYGM and TCDD, their contractor and sub-contractors will also be required to manage potential impacts to workers including their working conditions, health and safety, forced and child labor risks and will establish and implement an internal grievance mechanism in line with EBRD ESP. Specific mitigations will be included in the Labor Management and Monitoring Plan, Health, Safety and Security Plan (including OHS), Workers' Codes of Conduct to be prepared by the Contractor. Similar plans will be prepared for the operation phase. These plans will also address the potential impacts of labor influx (see Annex 4 for further details). All Plans will consider COVID-19 related measures following the Ministry of Health Science Board recommendations for the construction and transport sectors at the time of their implementation.

77. **Stakeholder Engagement, Consultation and Information Disclosure.** Several rounds of stakeholder meetings were arranged from 2015 to 2020**.** Additional consultations were carried out during the ESIA and RAP preparation and are ongoing as per the SEP. COVID-19 protocols are being followed in all public consultations and

[10] Some compensation may continue to be provided after the PAP vacates the expropriated land (e.g. through implementation of the specific livelihood restoration packages)

disclosure activities. A dedicated hotline enables interested PAPs to reach out, seek information or share their concerns. Further detail on consultation meetings and surveys can be found in Annex 4.

78. The draft versions of ES documentation in both the English and Turkish languages have been disclosed on the websites of EBRD[11] and AYGM[12] since June 2021. The link to the disclosed documents is provided on AIIB's website.[13] Hard copies of the ES documentation have also been disseminated to all PAPs and placed in the Project area. The stakeholder engagement was undertaken during the 120-day disclosure period, which ended on September 29, 2021. The ES instruments are being updated based on the resulting comments and suggestions and the finalized versions will be disclosed on the same websites and made available locally.

79. **Project Grievance Redress Mechanism**. A Project-level GRM has been established and detailed in the SEP. AYGM will implement the formal project-specific grievance procedure to receive the PAPs' concerns and views. This GRM procedure is based on the existing GRM using the national Communication Center (CIMER) system and is also in line with EBRD PR10 and international best practice. The Contractor and their sub-contractors will have roles and responsibilities in the implementation of the project-level grievance mechanism, as required in the CMP. The information of the GRM has been disseminated in the SEP and the NTS.

80. **Independent Accountability Mechanism.** As noted above, EBRD ESP applies to the Project in lieu of AIIB ESP. Pursuant to AIIB's agreement with EBRD, EBRD's independent accountability mechanism, the Independent Project Accountability Mechanism (IPAM) will review, in accordance with the EBRD Project Accountability Policy, all requests regarding environmental and social issues that may arise under the Project. Consequently, in accordance with AIIB's Policy on the Project-affected People's Mechanism (PPM), submissions to the PPM under the Project will not be eligible for consideration by the PPM. If the PPM receives any such requests, it will inform the IPAM of the request and provide requesters with information on how to file a request with IPAM. Information on EBRD's IPAM is available at https://www.ebrd.com/project-finance/ipam.html.

81. **Monitoring and Supervision Arrangements**. An independent consultant to be financed by an EBRD grant will be engaged for ES regular monitoring and reporting to ensure compliance with the ESAP and EBRD's PRs. The Bank's ES Specialists will carry out field-based ES monitoring missions when conditions allow. The Bank will agree with EBRD on arrangements regarding the sharing of ES information between the Co-financiers and the monitoring of ESAP implementation. AIIB will maintain its responsibility to monitor the Project, but EBRD is expected to lead the supervision and monitoring of the ESAP.

82. AIIB has an ongoing access to the latest ultra-high-definition satellite imagery covering the Project footprint which could be used for monitoring construction progress and resettlement activities. This includes data supplied by Sentinel-2 and

[11] https://www.ebrd.com/work-with-us/projects/esia/ispartakule-erkezky-railway-project.html
[12] https://aygm.uab.gov.tr/ispartakule-cerkezkoy-demiryolu-hatti-projesi
[13] https://www.aiib.org/en/projects/details/2020/proposed/Turkey-Ispartakule-Cerkezkoy-Rail-Project-Previously-Halkali-Cerkezkoy-Rail-Project.html

SecureWatch systems, the current most accurate and timely picture of physical progress on the ground.

E. Risks and Mitigation Measures

83. The overall project risk is rated as “Medium” based on the project team’s risk assessment. Major risks are listed in the table below.

Table 4. Summary of Risks and Mitigating Measures

Risk Description	**Assessment Ratings (High, Medium, Low)**	**Mitigation Measures**
Macroeconomic. The macroeconomic and fiscal situation could be affected due to COVID-19.	High	Although the Turkish economy has performed better than expected during the pandemic, and the country managed to avoid a recession in 2020, it is considered still vulnerable (see Annexes 5 and 6). The evolving situation will continue to be monitored.
Technical. Overestimation of forecasted freight and passenger demand	Medium	Traffic demand forecasts are highly dependent on the opening of the rail crossing in the Third Bosphorus Bridge, as well as other infrastructure projects. The Co-financiers and expert consultants have assessed the demand forecasts with AYGM and TCDD, adjusting consequently the projections. Sensitivities in the economic analysis show the Project results are robust.
Technical. Delay in project execution due to technical challenges.	Medium	A Construction Supervision Consultant (the Engineer, following FIDIC Red Book) will be hired to enhance AYGM’s implementation capacity, particularly for tunneling (NATM) and TEN-T specifications. Additional technical requirements have been included in pre-qualification documents and Supervision Consultant.
Environmental and Social. AYGM’s limited capacity of managing ES risks of such a	Medium	AYGM’s ES resources within the PIU have been and will continue to be strengthened through ES staff and external consultants. ES

project of large scale in compliance with EBRD PRs. Delays in land acquisition. ES risks of Halkali-Ispartakule railway section as associated facility.		considerations have been included in the Supervision Consultant's ToRs. AIIB will cover with Component C, RAP Fund, livelihood-related costs above land acquisition costs to be covered by AYGM to mitigate delays due to lack of funding required to comply with EBRD ESP. Lessons learned from Phase 1 are being incorporated in the process of land acquisition, closely monitored by the Co-financiers, and assisted by the PIU Support Consultant, like extensive engagement with community leaders and sending dedicated GLAC to each PAP, to mitigate the delays due to normal land acquisition process. The management of ES risks of the Halkali-Ispartakule railway section shall be in compliance with the ESIA/ESMP as it is in the scope of the ESIA/ESMP. The scope of the Co-financiers' monitoring will include the associated facility.
Procurement. Delays in procurement process due to lack of experience on tendering processes following EBRD PPR.	Medium	AYGM has prior experience in carrying out procurement under local regulations and a World Bank-financed project, procured under IFI's rules. The PIU is receiving consultant support to mitigate capacity gaps regarding the EBRD PPR. Procurement methods have been discussed and chosen to mitigate the risks of poor technical and financial capacity.
Financial Management Delays in FM procedures and coordination challenges in joint cofinancing mechanism due to limited experience in managing externally financed projects.	Medium	An FM manual detailing the processes and coordination among the PIU and the Co-financiers, as well as the processes related to the RAP Fund will be required. An FM specialist has been included as part of the PIU Support Consultant.

Annex 1: Results Monitoring Framework

Project Objective:	To increase passenger and freight capacity, safety and speed of rail transport between Turkey and the European Union via the construction of a high-speed rail between Ispartakule and Cerkezkoy.								
Indicator Name	**Unit of measure**	**Baseline** (2021)	**Cumulative Target Values**				**End Target**	**Frequency**	**Responsibility**
			2022	2023	2024	2025	2026		
Project Objective Indicators:									
1. Passengers carried	pax (million)	1.0	-	-	-	-	4.4	Baseline and project close survey	AYGM
2. Freight tons carried	ton (million)	0.5	-	-	-	-	2	Baseline and project close survey	AYGM
3. Average travel time	Minute	70	-	-	-	-	29	Baseline and project close survey	AYGM
Intermediate Results Indicators:									
1. Rail construction progress	km	0	15	31	48	67	67	annual	AYGM
2. Local labor employment as a percentage of total labor employment in civil works contract	%	0	20	23	25	28	28	annual	AYGM
3. Percentage of RAP fund compensation paid in full (cumulative)	%	0	50	75	100	100	100	annual	AYGM
4. Percentage of female full-time staff/consultants in the Project PIU	%	30	35	40	45	48	50	annual	AYGM

Annex 2: Detailed Project Description

A. The Ispartakule - Cerkezkoy Railway

1. The proposed Project is a 67km section of a new high-speed railway line from Ispartakule station to Cerkezkoy station[1]. This section is part of Phase 2 of the HKRL, included in the TEN-T network, and a subcomponent of the TRACECA.

B. Detailed Description of Project Components

2. **Component A: Civil Works.** The new railway line will be a double track, electrified, and with a design speed of 200 km/hour. The line will comply with the Technical Specifications for Interoperability (TSI) and be fitted with the European Rail Traffic Management System (ERTMS) Level 1, capable of upgrade to Level 2 in the future, and the Global System for Mobile Communications – Railway (GSM-R). The Project starts from Ispartakule and ends at a location adjacent to the east of Cerkezkoy Station (approximately 1km from the centre of Cerkezkoy). All road / rail crossings will be grade-separated.

3. **Designs.** A Feasibility Study for the HKRL was carried out by the MoTI through a consultant in June 2018 and updated in November 2020. After assessing feasible alternatives, the HKRL was divided into Phase 1, from Kapikule to Cerkezkoy, currently under construction, financed by the EU's Investment for Pre-accession Assistance (IPA) program and the GoT, and Phase 2, from Halkali to Cerkezkoy. The designs for Phase 2 were originally carried out by TCDD's technical department, considering TEN-T requirements and local technical regulations, and assuring the total interoperability of the two phases of the HKRL, and with the Orient/East Mediterranean TEN-T corridor in Bulgaria. In 2020, design, tendering and implementation of Phase 2 were transferred to AYGM, considering the Halkali-Ispartakule section design would be affected by the projected Istanbul Canal[2], also under AYGM scope. The AYGM Railway Department/Tender and Final Account Unit updated the Detailed Designs for Phase 2.

4. Principal civil works components (e.g., earthworks, bridges, underpasses, overpasses, box culverts, tunnels and track works) have been designed and typical drawings, general and special Technical Specifications and Bills of Quantities have been prepared and are incorporated in the Works Contract. Design and installation of signalling system with ERTMS/ETCS (European Train Control System) Level 1, telecommunication and electrification systems will be provided by the Works Contractor (under the provisions of Sub-Clause 4.1 of FIDIC Red Book, first edition 1999) in accordance with specific technical requirements.

5. **TSI Compliance and Safety Management.** TSI define the technical and operational standards which must be met by each subsystem or part of the subsystem to meet the essential requirements and ensure the interoperability of the railway system of the EU. TSI compliance was mandated for Phase 1, as this phase is part-funded by the EU. Since Turkey is not a

[1] The Cerkezkoy station is part of Phase 1 – Kapikule-Cerkezkoy.
[2] The Istanbul Canal project seeks to build a 45km artificial sea-level waterway on the European side of Istanbul, connecting the Black Sea and the Marmara Sea. The canal is expected to follow the east of Terkos Lake, and Sazlidere
Dam, located on Küçükçekmece Lake.

member of the EU, the proposed Project does not need to comply with TSI requirements; however, the compliance is essential to mitigate any interface risks between the two phases and has been included in the Project designs. The TSI regime requires a core technical compliance element underpinned by a rigorous safety management process, the approach known as the Common Safety Method (CSM). The application of CSM is expected to bring comfort to the freight operators carrying international freight on the minimum safety standards and the decision on which type of rolling stock to deploy.

6. **Structures and earthworks.** The 67km line comprises of 62.07km of 'open-route', 13 bridge structures, viaduct, & railway overpass, and three tunnel structures. As the terrain of the route has considerable variances, significant earthworks are expected. The earthworks will require cuttings with depths of up to 20m and fill up to a depth of 10m. The most significant structure is a 2.45km long tunnel, which is planned to be constructed using the New Austrian Tunneling Method (NATM). The application of the NATM method is heavily dependent on high quality geotechnical data and strong quality control while works are being executed. The delivery of this tunnel is in the project critical path and specific expertise and experience in tunnel construction with NATM was included in the requirements for prequalification in the civil works tendering process.

7. **Track.** The track system in the open route is ballast, while the track system in the tunnels will be slab track. The track system is specified for 22.5-ton axle loading, with a 50-year design life for the slab track. The use of ballast track on the open route and slab track in the tunnels is a standard approach and will limit the maintenance requirements in tunnels.

8. **Overhead line system.** The overhead line system will enable the use of electric traction on the line between Ispartakule and Cerkezkoy. The system will distribute power at 27.5kV and connect to the traction power supplies at Halkali and Kabakca. The contact wire height will be a nominal 5.30m above the rail head with a minimum height of 5m in restricted areas, appropriate for train operating speeds of up to 200km/h.

9. **Signaling system and telecommunications.** The signaling system is an ERTMS or European Train Control System (ETCS) Level 1 system, bi-directional with a Safety Integrity Level (SIL) of 4[3]. Telecommunication systems will enable communication between the plant rooms, substations, general equipment rooms, and the control center at Cerkezkoy through telephone voice and data communication. The transmission system will provide data connectivity for the telephone system, the GSM-R system, the Supervisory Control and Data Acquisition (SCADA) control, and the overhead line system. The GSM-R system will provide capability to support ETCS Level 2 train control functionality and provide voice communications between the control center and train drivers.

10. **Modification of existing infrastructure.** Other relevant infrastructure includes stations and connections to the existing conventional railway line. Proposed improvements to the existing stations include the construction of additional footbridges and new passenger platforms.

[3] SIL levels are determined using charts within the IEC 61508 standard. SIL 4 has the highest level of safety.

11. **Construction Supervision Consultancy.** The Supervision Consultant will carry out the following duties, among others: (i) acting as the Engineer under FIDIC Red Book conditions of contract; (ii) to supervise the construction of the Civil Works and installation of signalling and telecommunication systems on the Ispartakule–Cerkezkoy section of HKRL; (iii) to contribute to timely implementation of works according to Contractor's Work Program; and (iv) to provide consultancy services to AYGM regarding contract/claims management. The tendering process for the selection of the Supervision Consultant is ongoing following EBRD's Procurement Policies and Rules and is expected to be awarded in the first quarter of 2022.

12. **Component B: Project management support.** This component includes the hiring of a consulting firm for capacity development and technical assistance to the PIU on project management, procurement, monitoring, contract implementation, financial management and environmental and social activities, facilitating the timely and effective implementation of the Project by providing assistance to AYGM. It is expected that the PIU support consultant will give AYGM access to international best practices in the field of project management, including procurement of works, goods, and services. The selection process of the PIU support consultant is ongoing and is expected to be awarded by November 2021.

13. **Component C: Livelihood Restoration Activities as per EBRD PR5 (RAP Fund).** A designated RAP Fund will be created to cover the costs of the compensation that is not covered by the national expropriation budget. Turkish legislation does not provide compensation to informal land users, tenants, and vulnerable people, nor for income losses for businesses and transactional costs. All these are covered, along with a contingency, in the RAP Fund to achieve the livelihood restoration requirements of EBRD PR5.

14. A RAP Fund Management and Disbursement Guideline has been prepared by AYGM and will be updated as required. The disbursement arrangements and funds flow will be included in the FM Manual. A summary of the main sections covered by the RAP Fund Guideline can be found below:

a. *RAP Fund Management*. AYGM PIU will carry out a proactive approach in informing the PAPs and impacted settlements through active engagement tools such as the SEP and specific project related GLAC (Guide to Land Acquisition and Compensation) and ensure that all impacted people are aware and informed timely of their rights to compensation, which are not covered by local legislation.

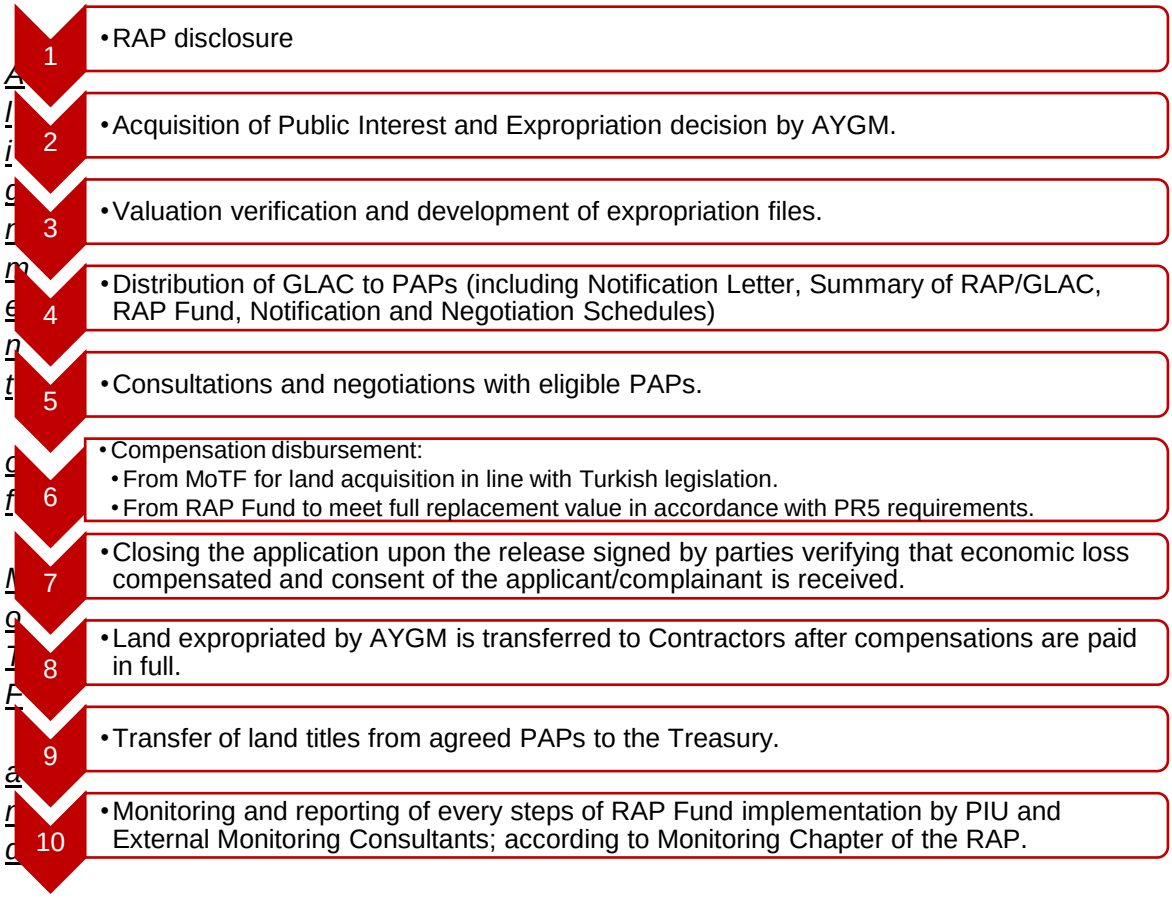
b. *Implementation steps*. See Figure 2.1 for a summary of the steps to be followed by the PIU for the implementation of the RAP Fund.

c. *Disbursement Arrangements*. MoTI, through MoTF, will open one DA in the currency of the loan at the Central Bank of Turkey for the RAP Fund, Component C (AIIB). The PIU shall request DA advance quarterly to AIIB based on project needs and planned project expenditures against Component C. Disbursements from the Loan Account will follow the transaction-based method.

d. *Roles and responsibilities*. Due to the variety and complexity of issues to be handled under RAP implementation, several parties will be responsible for the implementation and monitoring. Expropriation Department of AYGM is responsible for keeping records for all

land acquisition activities and compensation payments, and will regularly provide data requested by the PIU on the land acquisition process to support RAP monitoring process. The PIU has the overall responsibility to implement the RAP, by timely overseeing the activities with internal progress reports and ensuring the non-compliances are closed. The Social and Resettlement Specialist role is configured under the social team in PIU and responsible for implementing RAP and following the progress of the RAP Fund.

Figure 2.1. Summary of RAP Fund Implementation Steps[4]



e. *RAP Fund payments to landowners*. Due to the timing of the funds' approvals, the additional compensation provided through the RAP Fund may be disbursed to PAPs after the funds from the MoTF. However, both allocated compensation amounts will be provided before the PAP must leave the expropriated land and the land is transferred to the Contractor.

f. *Monitoring*. The Project land acquisition, resettlement and compensation, including the RAP Fund, will be monitored as described and defined in the RAP. The PIU will monitor the management of the RAP Fund as defined in the RAP's activity schedule, as well as the compensation with local resources following Turkish regulation.

[4] A detail of the steps for both MoTF resources and RAP Fund can be found in the disclosed RAP.

C. Implementation Schedule

15. The Project implementation is expected to begin in November 2021 and to complete by November 2026.

Annex 3: Economic Analysis

1. **Methodology and Approach.** A cost-benefit analysis (CBA) was carried out to assess the economic viability of the Project comparing "with-" and "without-project" scenarios. The Economic Internal Rate of Return (EIRR) and Economic Net Present Value (ENPV) of the Project were estimated based on a discounted cashflow analysis considering economic costs and benefits. A Sensitivity Analysis was performed taking into consideration variations in the project expected benefits and costs.

2. **Key assumptions.**
   (i) All costs are expressed in 2021 constant prices;
   (ii) The projections cover 34 years of project economic life from 2022 to 2055, including 4 years of construction (2022-2025) and 30 years of operation (2026-2055);
   (iii) Social Discount Rate (SDR) is assumed at 9 percent; and
   (iv) Economic analysis is done net of taxes and subsidies, as in this case they represent economic transfers between agents.

3. **Sources of information.** The Economic and Financial Analysis has been conducted based on the Feasibility Study of the Ispartakule-Cerkezkoy Railway Line done by TCDD (dated November 2020). Additional sources used are the economic analysis carried out by the EBRD consultant, and the technical due diligence report prepared by Atkins.

4. **Project benefits.** As described in Annex 2, the project consists of the construction of a 67km double-track railway section to be used for both passenger and freight traffic. The main expected benefits are: i) reducing the travel time for the existing rail users; ii) reducing operating costs for freight service providers; and iii) diverting traffic from road to rail with benefits for travelers as well as for society through a reduction of negative externalities and attracting new traffic to rail.

5. **Without-Project scenario.** The existing line is an 87km single-track electrified line with a commercial speed of 50-60km/h. The conventional line currently has 15-16 trains per day in both directions, the majority of which are freight trains. Since the line reopened in 2015, domestic passenger demand in the corridor has been increasing, reaching 420,000 passengers in 2019. As for freight traffic, currently about 560,000 tons of freight is transported along the conventional line.

6. **With-Project scenario.** The Project is of strategic importance as it will allow to expand the high-speed rail passenger services and attract freight traffic due to the need to carry freight to and from the Anatolian part of Turkey. The new high-speed line will have a design speed of 200km/h for passengers and of 120km/h for freight services and will co-exist with the conventional line, which is assumed to continue operating. The new line will probably have a higher fare and not all passengers will transfer to the new service, even if time savings would be substantial (around 40 minutes). Initially, the Project will have the capacity to serve 10 million people and support the transportation of 3.6 million tons of cargo. The project is consistent with both the existing strategic national and EU (TEN-T) plans.

7. **Demand forecast.** Different studies have been carried out to estimate the impact of the Project on passenger and freight traffic. A pre-feasibility study funded by the EU was finalized in 2018 which forecast traffic volumes for the 225km-long HKRL. The analysis was developed using a four-step methodology. The EBRD consultant carried out independent forecasts, based on current passenger and freight flows and on a series of interviews with shippers and major forwarders. The approach for forecasting passenger demand was to apply the concept of Generalized Journey Time (GJT) to the corridor. Lastly, TCDD Feasibility Study provides an estimate of passenger and freight demand by considering the different sections of the Project. There are large discrepancies among the sources, especially for passenger traffic (with values ranging from 2 million to 6 million passengers for 2026, the initial year of operation). For freight traffic, estimations are between 1.2 and 2.3 million tons per year for the initial year of operation.

8. One of the main reasons behind these discrepancies is the consideration of the many related infrastructure projects and sector reform, that would have a major impact on demand as well as the difficulty of quantifying such impacts. Among those, the most relevant are i) the so-called “Phase 1” of the HKRL (153km section) between Kapikule and Cerkezkoy; ii) the Yavuz Sultan Selim Third Bridge Connection (expected to open around 2030); iii) the connection to the new Airport in Istanbul; iv) the Istanbul Canal; and v) the liberalization process of the Turkish Railway Sector.

9. In addition, the Project is expected to substantially induce a modal shift, especially for passenger traffic. The start of high-speed services in Turkey has significantly altered the traveling patterns of road-based users. As a reference, after the launch of the Ankara-Konya line, the share of bus passengers and car drivers dropped sharply. Meanwhile, the share of the high-speed services reached 66 percent of trips.[5]

10. Given the high degree of uncertainty regarding the demand, the Project team has taken a conservative approach by considering the different sources of information. Passenger demand has been assumed to be 4.4 million passengers and freight demand 2.0 million tons for the initial year of operation (2026). Passenger ridership is expected to grow by 3 percent per year, while the growth rate for freight has been estimated at 5 percent. The opening of the Third Bridge over the Bosphorus in 2030 is expected to increase demand by an additional 5 percent.

11. **Scope of the analysis.** The analysis intends to quantify the project impact on three levels: i) changes in consumers’ surplus, ii) changes in producers’ surplus (rail and bus operators); iii) externalities.

12. **Consumers’ Surplus.** For the existing rail users, the consumers’ surplus is given by the change in the GJT, namely in the time, frequency, and fare cost. The Project will also attract new rail users diverting from roads (buses, minibuses and cars). For the users remaining on the road the benefit from reduced traffic congestion is considered not significant enough to be included in the analysis. The assumption is that 20 percent of the passengers will be existing rail users, while the rest would be from road-based modes (50 percent buses, 20 percent minibuses, 10 percent cars). The value of time was set at EUR3.60.

[5] COMCEC. Improving transnational transport corridors in OIC member countries. Country Report. Link.

13. **Producers' Surplus.** For the rail operators, the additional benefit is given from the rail fare revenues (estimated at 24 TL/ton)[6]. The cost impact is quantified under the Project costs. For the road operators, the benefit is the reduction on vehicle operating costs (VOC).

14. **Externalities.** As traffic will be shifted from road to rail, the Project is expected to reduce accidents and environmental costs, including air pollution, noise and GHG emissions. Unit costs per veh-km were taken from the EU Handbook on the external costs of transport (2019 edition).

15. **Economic Analysis results.** The Project exhibits a EIRR of 10.4 percent and a ENPV of EUR135.6 million[7]. The Project is deemed to be socially justified, although the demand risk is high. Project benefits are distributed among consumers (25 percent of total benefits) and producers (61 percent), while externalities contribute to 14 percent of benefits.

Table 1. Project Economic Analysis Results

	NPV **(EUR Mn, 9%)**	%
Benefits		
Consumers' Surplus	**156.9**	**25.0%**
Travel Time Savings (Existing Rail Passengers)	31.4	5.0%
Travel Time Savings (Diverted)	125.5	20.0%
Producers' Surplus	**383.1**	**61.0%**
Savings in Road Operating Costs	321.3	51.2%
Rail fares Revenue Increase	61.7	9.8%
Externalities	**88.0**	**14.0%**
Accident Cost Savings	26.4	4.2%
Noise Costs Savings	5.7	0.9%
Air pollution Costs Savings	34.5	5.5%
GHG Cost Savings	21.3	3.4%
Residual Value	*143.3*	
Costs		
Investment costs	538.6	
Operating and maintenance costs	97.0	
ENPV (EURm, 9%)	*135.6*	
EIRR (%)	*10.4%*	

[6] The rationale for including fare revenues as an economic benefit is that for generated/induced traffic the additional revenues of the operator are a measure of the additional benefits and must therefore be included in the evaluation (HEATCO, D.5 p. 49).

[7] EBRD and AIIB considered different methodologies for the economic assessment, and both co-financiers concluded the project is economically viable.

15. Sensitivity analysis. Sensitivity analysis was carried out by assessing the outcome of adverse scenarios over the base case. The analysis shows that the Project has robust results, with the EIRR particularly sensitive to changes in ridership.

Table 2. Sensitivity Analysis Results

Scenario	EIRR %
Base Case	10.40%
Investment Costs +10%	9.80%
OPEX +10%	10.30%
Reduction in Demand -10%	9.75%
Reduction in Demand -20%	9.00%
Combined CAPEX + 5%, OPEX + 5%, Demand - 10%	9.73%

Annex 4: Environmental and Social

A. Environmental Aspects

1. **Biodiversity and critical habitat.** Four biodiversity surveys were conducted for bird habitats, aquatic habitats and flora and fauna, from June 2020 to February 2021, covering bird breeding and autumn migration seasons. The route of the Project primarily crosses habitats which are common and widespread, and no national or internationally protected areas are affected. The Project crosses two Important Bird Areas (IBAs), i.e. Büyükçekmece Lake and Terkos Basin. The latter is also a Key Biodiversity Area (KBA). The impacts on the Terkos Basin IBA/KBA are expected to be limited since the Project crosses modified habitat, a significant distance from the wetland habitats supporting the IBA trigger species; the Project crosses the boundary of the Büyükçekmece Lake IBA, in habitats which are not considered to be of high value for most trigger species except the white-headed duck for which it is critical habitat. Acoustic and visual disturbance to bird species is not predicted to be significant and risk of collision of birds with the railway infrastructure and trains during operation will be mitigated by the installation of adapted fencing in areas of high risk. A Biodiversity Management Plan (BMP) has been developed, which includes specific conservation actions aimed at achieving No Net Loss / Net Gain for PBFs and critical habitat. As required in the ESIA, three additional biodiversity surveys were carried out in April-August 2021 which covered bird breeding and spring migration seasons as well as growing seasons of plants. Based on the surveys, the BMP will be updated and implemented.

2. **Climate Change Risks and Adaptation Measures.** A climate resilience assessment was carried out as part of the ESIA study based on World Bank Climate Change Knowledge Portal to consider the vulnerability of the Project to climate change. The Project is located in the Marmara region, which experiences both a Mediterranean and humid subtropical climate. The major climate risks that the Project region may encounter include increased average and extreme temperatures and decrease in annual precipitation. Other climate change events considered in the assessment include wind speed increases and sea level rise. Inherent measures are included in the ESMP for climate adaptation during construction phases. The engineering designs also consider climate change. For example, the rail tracks and construction materials are designed to withstand temperature increase up to 6°C; the overhead line system, track circuits, power supply facility, water trap tapes and pipe materials are designed to operate in a larger temperature range; the sub-ballast will be permeable and thick enough to discharge water to ditches and to resist freezing and thawing; and the open ditches of drainage system are designed based on 50-year, and culverts based on 100-year rainfall events. With the inherent design elements and mitigations, climate change impacts are not expected to be significant, except the shorter drying times of materials and risks to users in buildings vulnerable to overheating. Additional adaptation measures are included in the ESMP, including replacement of rapid-drying materials and installation of cooling and ventilation systems in buildings.

3. **Cultural resources**. Thirteen (13) cultural heritage assets of significance are located within, or in close proximity to, the expropriation corridor. During construction, there is potential impact on previously unrecorded underground cultural heritage assets within the vicinity of the

Project. The ESMP includes a Cultural Heritage Management Plan (CHMP) for addressing such impacts on known cultural heritage assets and a Chance Find Procedure for unrecorded archaeological remains that might be present in the Project area. Contractors are required to inform the Ministry of Culture and Tourism of planned construction activities before commencement.

B. Social Aspects

4. **RAP Fund.** A detailed description of the RAP Fund can be found in Annex 2 - Component C.

5. **Labor influx.** Labor influx induced by this Project is associated with the migration of about 100 overseas workers and 670 construction workers that are Turkish national, but not from the local community. The potential risks due to labor influx will include the various tensions, increased risk of communicable diseases, safety concerns and community disturbance it may cause. As required by the ESMP, a Construction Workers' Accommodation Management Plan, Construction Workers' Code of Conduct and a Health, Safety and Security Plan will be developed, implemented and monitored.

6. **Stakeholder Engagement and Consultation.** Two rounds of stakeholder meetings were arranged according to the requirements of the national EIA regulations in 2015 and 2016. In addition to that, 16 further public information meetings were held by TCDD between July 2019 and May 2020. During the preparation of the ESIA and RAP, stakeholder mapping was conducted, followed by a series of face-to-face consultation meetings in July and August 2020 and additional consultations in February 2021, including household surveys, 14 focus group meetings with communities and vulnerable groups (nine of which were women only), 13 meetings with governorships and municipalities and 22 surveys of Mukhtars. The stakeholders' concerns, comments and suggestions of this Project have been documented in the SEP and addressed in ESIA/ RAP/ ESAP.

7. The comprehensive survey and stakeholder engagement revealed high levels of awareness (72%) and support (60%) of the Project. PAPs' main concerns are related to land expropriation, construction noise, train noise and community safety. Measures proposed during the public consultations were analyzed and included in the RAP and ESIA.

8. The stakeholder engagement was undertaken during 120-day disclosure period (June 1 to September 29, 2021) using the approach and methods which are introduced in the SEP to ensure effective consultation during the ongoing COVID-19 pandemic. The comments and suggestions received during the disclosure period will be incorporated in the final versions of the ES documentation. The final ES documents will be disclosed on the same websites and places. The SEP also sets out the method and frequency of stakeholder engagement required prior to construction, during the construction and operation phases.

9. **Satellite Imagery for Monitoring.** AIIB has ongoing access to the latest ultra-high-definition satellite imagery which could be used for monitoring construction progress and resettlement activities. This includes data supplied by Sentinel-2 and SecureWatch systems. An image of the current progress of Phase 1 – Kapikule-Cerkezkoy in the surrounding area of Edirne is shown below.

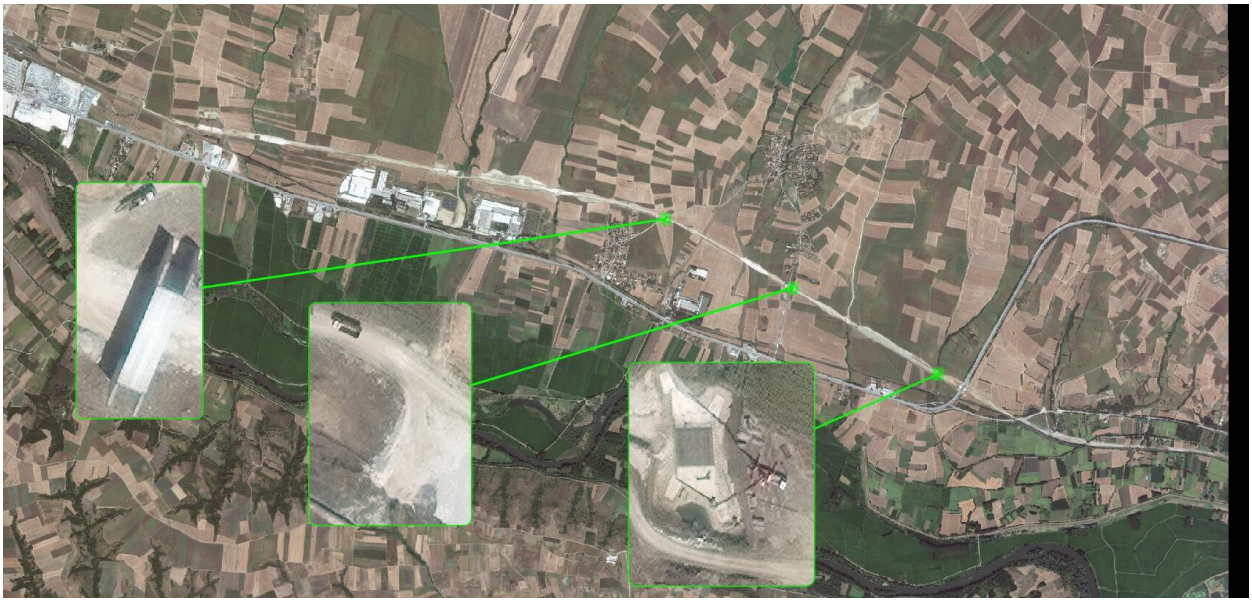


Image 4.1. Overview of construction activities on Phase 1 outside of Edirne as of 3rd August 2021, 30 cm resolution, Image Copyright 2021 DigitalGlobe Inc

Annex 5: Member and Sector Context[1]

A. Member Context

1. Turkey has achieved significant economic and social development since the early 2000s, leading to increased employment and making Turkey an upper-middle-income country. Since 2000, Turkey has maintained a long-term focus on implementing reforms in many areas, and government programs have targeted vulnerable groups and disadvantaged regions. GDP per capita increased from around USD3,100 in 2001 to around USD12,500 in 2013. The incidence of poverty fell from 37 percent in 2003 to 8.5 percent in 2018.[2] During this time, Turkey rapidly urbanized, maintained strong macroeconomic and fiscal policy frameworks, opened to foreign trade and finance, harmonized many laws and regulations with the European Union (EU) standards, and greatly expanded access to public services.

2. However, in the past few years, growing economic vulnerabilities and a more challenging external environment have threatened to undermine the progress. There has been a perceived slowdown in reforms recently and, together with economic vulnerabilities, this slowdown risks reversing some of the gains achieved earlier. Despite the challenges the COVID-19 pandemic presented to the Turkish economy, Turkey has performed better than expected, and managed to avoid a recession in 2020 and its GDP growth projected to strongly rebound to 9.0 percent for 2021.[3] See Annex 6 for further detail on the economic environment and perspectives in the country.

3. Due to the impact of COVID-19, some 1.6 million people, or around two percent of the population, are expected to fall below the poverty line, increasing the poverty rate to 12.2 percent. In the aftermath of the pandemic outbreak, Turkey had lost 2.45 million jobs (8.7 percent of total employment) in first two quarters of 2020, with job losses concentrated among informal workers, lower-skilled, women and youth. High inflation also contributed to increasing poverty. With the quick recovery, the economy recouped 1.4 million jobs (or two-third of the job losses) in the third quarter of 2020[4] but most of these jobs were in the formal sector and for the skilled workers.[5] The government social emergency package which encompassed transfers to households, unemployment insurance benefits, and unpaid leave subsidies – was important in averting even worse outcomes.

4. Over the last two decades, Turkey has achieved remarkable growth and reduction in poverty by pursuing structural reforms in the economy. It developed expertise in medium-technology production, shifting much of the labor force from farms to factories and increase the share of manufacturing and services in GDP as well as employment. Turkey's economy is relatively diverse in nature and does not rely on a single major exporting product. Major exports

[1] Provided by AIIB Strategy, Policy and Budget Unit, and Economics Department.
[2] Poverty statistics and projections come from World Bank's *Turkey Economic Monitor 5: Navigating the Waves*, April 2021. Poverty is measured as the proportion of people with daily per capita consumption of below USD5.5 equivalent in purchasing power parity terms.
[3] IMF, *World Economic Outlook*, update Oct 2021.
[4] OECD employment statistics
[5] World Bank, *The urgency of promoting a more equal recovery: Insights from the COVID-19 crisis in Turkey*, February 2021 (blog)

include textile and clothing (15.2 percent), electrical and electronics machinery (12.8 percent), iron and other metals (12.4 percent) and vehicles and their parts (12.1 percent). The top five exporting destinations are Germany (9 percent), the U.S. (6.5 percent), U.K. (6 percent), Italy (5 percent) and Iraq (4.7 percent).[6]

5. Despite significant growth in productivity and income, Turkey still employs a fifth of the workforce in agriculture-related activities, well above the average for high-income countries. Female labor force participation is well below the average for industrialized countries. Turkey is one of the few major economies whose population is still expected to grow, and the dependency ratio to fall in the next two decades. It would require creating new and better jobs to accommodate the growing labor force. As Turkey has already exploited the medium technology production, new sources of productivity growth will have to come from technology absorption, innovation, and 'moving up the value chain' in the manufacturing and services sector. Turkey's growth prospects, therefore, rely on the extent to which it can establish the conditions for such within-sector productivity growth.

6. The government encourages PPPs in all kinds of infrastructure projects to fill the infrastructure investment gap. There have been more than 200 different types of active PPP infrastructure projects in Turkey, currently in operation or under-construction, with an aggregate investment of USD145 billion.[7]

7. Turkey is increasingly exposed to the risks of climate change. The country faces the risk of more frequent extreme weather events— including flooding, droughts, forest fires, and coastal erosion—due to climate change. Without adequate mitigation measures, these risks could lead to reductions in food production and disruptions in industrial supply chains. A survey of large Turkey-based publicly traded firms in 2018 found that 31 percent of them had suffered detrimental financial impacts from water-related events during the most recent 12-month period.[8]

B. Sector Context

8. **Transport and Logistics**. Turkey's open economy and advantageous geographical location between Asia and Europe, with direct access to the Black Sea as well as Mediterranean trade corridors makes it a significant trading partner for many international partners, and in particular the European Union. Turkey's logistics performance improved in the last two decades, primarily because of trucking operations along with the country's well-developed highway system, connecting most regions with major industrial hubs. However, the transport system is constrained by a lack of intermodal services, particularly along the rail and maritime interfaces.

9. Turkey's ranking in the world for railroad efficiency (54th) is lowest among its efficiency indicators for all kind of transportation. Turkey is ranked 31st for both quality of road and air

[6] Observatory of Economic Complexity, Turkey page
[7] World Bank, *PPP Knowledge Lab*, Turkey page
[8] CDP Worldwide, *CDP Climate Change and Water Report 2018, Turkey Edition*

transport efficiency and 44th for seaport efficiency.[9] The development of intermodal services and infrastructure in Turkey, but also with neighboring countries, could reduce transportation costs and thereby increase Turkey's competitiveness. Turkey's ranking according to the international Logistics Performance Index (LPI) has steadily declined from 27th place in the world in 2012 to 47th in 2020 due to under-performance in infrastructure provisions as well as quality of service**.**

10. Rail accounts for only 4% of freight ton-km transported in Turkey – a very low usage rate compared to those of its major trading partners in the EU (25%), U.S. (47%) and China (14%). Considering the diversity and volume of Turkey's main export commodities - automotive parts, construction materials and dry goods – much of these are in fact especially suitable for transport by rail. By contrast, 74% of Turkey's freight capacity is transported by trucks, suggesting significant room for improvement in the utilization of rail freight as well as the country's overall transport efficiency and sustainability. According to a study by CE Delft, transport from heavy duty trucks in Western Europe is four times more carbon intensive and 50% more mono-nitrogen oxide intensive per ton-km transported and per unit emissions, respectively, compared with freight rail.[10] In Turkey, nearly 50% of GHG emissions from the transport sector stem from heavy duty vehicles, above the global average of 33% and greatly above the 19% in the neighboring EU.[11]

11. Rail freight's utilization rate is constrained by inadequate last-mile linkages, low service quality and relative high cost compared with truck-only routes. Insufficient investments to improve multimodal connectivity to-and-from logistics clusters contribute to the slow uptake in rail freight demand in Turkey. At present, intermodal connection points in Turkey are limited, although the government has indicated in its 2019 Logistics Master Plan various objectives to improve coordination among logistics firms, develop a network of 25 state-owned and operated logistics centers that are linked to rail freight terminals, establish new rail lines to industrial zones and ports, and update the relevant legislation and regulation to improve the performance of Turkey's logistics sector.

12. **Rail Infrastructure**. The total track length of Turkey's railway system is 12,608km, comprising 9,023km of conventional lines, 2,372km of auxiliary tracks and 1,213km of high-speed lines, with 43% of the total length electrified and around 50% signalized. Turkey aims to expand its railway network to 16,675km by 2023.[12] Under its 11th Development Plan (2019-23), the government has adopted the goal of more than doubling rail freight's ton-km market share—to 10 percent, and more than quadruple the length of rapid and high-speed train lines by 2023. The government plans to construct several railway corridors between 2023 and 2035 including: North-South corridor from Samsun to Mersin; South-East line from Gaziantep to the border with Iraq; North-East line from Trabzon to Erzincan; South-Central Anatolia line from Antalya to Kayseri. According to Global Infrastructure Outlook, Turkey will need an additional USD 19 billion between 2016 and 2040 to fill the investment gap for railroad infrastructure, over and

[9] World Economic Forum, *Global Competitiveness Report*, 2019
[10] CE Delft (2017), *STREAM Freight Transport 2016: Emissions of Freight Transport Modes – Version 2.*
[11] Rail Logistics Improvement Project in Turkey-*The World Bank* Document-June 2020.
[12] Turkey looks to expand its railway network by a third by 2023- (*Daily Sabah* article- dated Oct 21, 2020)

above its current investment trend. Investments into freight are especially needed, as Turkey has directed the bulk of its public railway investment budget (62% in the past ten years) into high-speed rail.[13] Only around 5% of the public railway investment budget went into improving rail freight.

13. The 100% state-owned Turkish State Railways (TCDD) serves as the infrastructure manager, and its affiliated company TCDD Transport operates the national train service. Since its establishment in 2016, TCDD Transport has been operating at a deficit and receives state subsidies. COVID-19 has further exacerbated TCDD and TCDD Transport's financial woes, as it had to suspend most passenger services and limit the number of seats on those still operating during the pandemic. As of March 2021, the Turkish Parliament has passed legislation to extend state subsidies for TCDD and national train operator TCDD Transport until 2023, with a clause to allow potential further extension for another ten years by the President without approval from Parliament.[14] Uncertainties about the railway market has also decreased the likelihood of private companies' entry into passenger service provision; even though Turkey's railway liberalization plan should allow private players to provide services alongside TCDD Transport starting from 2021, none have announced plans to do so to date.

High-speed rail

14. Turkey's first high-speed service was launched by TCDD in 2009 between Ankara and Eskişehir. Currently there are a number of high-speed services - branded "YHT" - in operation, with the majority of them passing through Ankara. Prior to the pandemic, some 23,000 passengers were served on the four high speed railway lines between Ankara-Istanbul, Ankara-Eskisehir, Ankara-Konya, and Konya-Eskisehir-Istanbul with 48 trips per day during the summer and 44 per day during the winter. Since the pandemic, the number of trips per day has been reduced to 20 on weekdays and 12 on weekends to maintain social distancing.[15] As of 2021, TCDD boasts a fleet of 31 high-speed electric multiple unit (EMU) trains operating at speeds up to 250km/h or 300km/h.

C. Institutional Context.

15. The General Directorate of Infrastructure Investments (AYGM) of the Ministry of Transport and Infrastructure (MoTI) is the lead agency responsible for designing and constructing public railways, logistics centers, ports, airports, road and rail connections, industrial zones and mining areas, and other last-mile connectivity related infrastructure. The Directorate-General of Transport Services Regulation (DGTSR) is responsible for ensuring free and fair competition in the rail sector. Established after the 2013 Law on Liberalization of Turkey Railway Transportation (Law 6462/2013) which aimed to enable competition and private sector participation in railway service provision, DGTSR's role and responsibilities include licensing public and private railway undertakings, overseeing public service obligations, establishing and observing the rights, obligations and responsibilities of railway service providers.

[13] Rail Logistics Improvement Project in Turkey-*The World Bank* Document-June 2020
[14] Turkey extends rail subsidies to the end of 2023-(*Railway Gazette International* article-dated March 22, 2021)
[15] Turkey receives the last of Siemens' high-speed trains (*Railway Technology* article-dated Feb 19 ,2021)

16. Historically, the Turkish railway sector was a vertically integrated public monopoly with Turkish State Railways (TCDD), a state-owned holding company under the MoTI, responsible for the planning, construction, ownership, and maintenance of all railway infrastructure in the country. Following EU recommendations, Turkey issued a formal decree to liberalize railway transportation in the country with Law 6461/2013. Unbundling was achieved in 2016 when TCDD published its first Network Statement to initiate the vertical separation of operation from infrastructure management, and to open the possibility for privatization in sections of the Turkish railway network.[16] TCDD comprises four affiliated companies including TCDD Transport, notably established as the owner of the rolling stock and state operator of passenger and freight services. The other three TCDD-affiliated companies are rolling stock manufacturers, Tülomsaş, Tüdemsaş, and Tüvasaş which have merged into the Turkey Rail System Vehicles Industry as of March 2020. TCDD also has five subsidiaries including a switching and railway systems provider, two concrete sleeper manufacturers, and two railway maintenance companies. Turkey's railway liberalization is ongoing.

[16] Railway reform in the ECE region-Turkey page

Annex 6: Turkey - Sovereign Credit Fact Sheet[1]

A. Background.

1. Turkey is an upper-middle-income country with income per capita of about USD9,150 (USD29,700 in purchasing power parity) and a population of 82 million as of 2019. Turkey is a large, well-diversified, dynamic and business-oriented economy. Between early 2000s and mid-2010s, it enjoyed robust growth, around 6 percent per year on average, underpinned by a strong focus on development and reforms. The government targeted programs to disadvantaged groups and regions, and expanded access to public services. GDP per capita (in USD terms) quadrupled between 2001 and 2013, while poverty fell from around 40 percent in 2003 to 8.5 percent 2018. During this time, Turkey has urbanized, maintained macroeconomic stability, established a strong fiscal framework, opened further to foreign trade, finance, harmonized many regulations with European Union standards, and earned an investment grade credit rating (from Fitch and Moody's).

2. In the past few years, economic environment became more challenging, growth lost some of the momentum and Turkey's sovereign credit ratings slid below investment grade. According to rating agencies, both internal and external factors contributed to this deterioration. This includes increased reliance on short-term stimulus and expansionary policies to boost growth and domestic demand, through large fiscal stimuli and policy-driven credit programs, occasional employment of unorthodox policies, declining fiscal buffers, high dependence on external finance, perceived erosion of fiscal discipline and institutional checks, as well as rising geopolitical risks. A monetary tightening by the U.S. Fed in 2018 led to capital outflows, lira depreciation and a sharp slowdown. The economy was on a recovery path when Covid-19 emerged in early 2020.

Selected economic indicators 1/	2017	2018	2019	2020	2021	2022
GDP growth 2/	7.5	3.0	0.9	1.8	9.0	3.3
Inflation 2/	11.1	16.3	15.2	12.3	17.0	15.4
Fiscal balance 3/	-2.2	-3.8	-5.6	-5. 3	-4.9	-5.9
Gross public debt	28.0	30.2	32.7	39.8	37.8	37.9

[1] Provided by AIIB Economics Department.

Gross public financing needs	5.0	6.5	8.4	10.5	12.1	12.9
Current account balance	-4.8	-2.8	0.9	-5.2	-2.4	-1.6
Gross external debt	52.9	56.9	57.2	62.9	58.4	56.7
Gross external financing needs	24.0	25.9	22.3	29.4	27.6	25.9
Gross FX reserves (USD billion)	107.7	93.0	105.7	93.3	117.8	..
Exchange rate (TRY/USD) 4/	3.78	5.29	5.95	7.43	9.5	..

Source: IMF Country Report No. 21/110; Notes: 1/ In percent of GDP, except where noted; figures for 2021-22 are projections. 2/ Percent change, year-on-year; average; 3/ Nonfinancial public sector, IMF definition (excluding one-off items); 4/ TRY=Turkish lira, data from the central bank, end-of-period, for 2021: as of Oct 27.

B. Recent Developments.

3. Turkey is going through the fourth wave of Covid-19 so far, with the third one in April 2021 particularly severe. Lockdowns and restrictions were imposed and relaxed, depending on the virus situation. As of October 2021, seven-day average for daily infections and deaths is approx. 25 thousand cases and 200 deaths. Total number of infections and deaths are approaching 8 million and 70 thousand, respectively. Vaccination started in early 2021, gaining speed since June, with 137 doses per 100 people delivered, as of end-October 2021.

4. The pandemic was a major hit to the economy as all over the world, with a decline in tourist arrivals, falling domestic activity due to social distancing and lower external demand. GDP fell by 10 percent in the second quarter of 2020, and expectations were for a 5 percent contraction for the whole year.

5. The authorities implemented a rapid and sizeable response centered around credit expansion, worth almost 10 percent of GDP, one of the highest among emerging markets. Measures included extensive liquidity support, a decisive reduction in interest rates, strong administrative incentives for banks, particularly state-owned, to push credit to the real economy, quantitative easing, guarantees to firms and loan payment holidays. Discretionary fiscal support to firms and households was relatively moderate, around 2.7 percent of GDP, as of July 2021.

6. The result was a remarkable and swift turnaround. Already in the third quarter of 2020 output was some 3 percent higher than pre-pandemic. Growth for the whole 2020 was positive, at 1.8 percent. Strong growth momentum continued into 2021, with first quarter expansion of 7.2 percent and second quarter expansion of 21.7 percent year-on-year. Due to fiscal restraints, the fiscal deficit did not deteriorate.

7. However, large credit expansion in the face of pre-existing vulnerabilities led to a period of volatility and stress. Inflation remained in double-digits, well above the target, and the current account widened sharply to 5 percent of GDP putting a pressure on the currency. FX reserves declined to a multi-year low of around $80 billion and the Turkish Lira has lost 30 percent of its value.

8. In November 2020, the authorities decided to normalize policies. A new economic team tightened the monetary policy with an 825-bps interest rate hike (cumulatively), implemented measures to slow credit expansion and reaffirmed the goal to contain inflation. Despite yet another reshuffle in March 2021, these actions have brought some tentative results—foreign portfolio investors returned cautiously while foreign currency reserves recovered.

C. Outlook and Risks.

9. With a strong growth momentum from post-pandemic recovery, rapid rollout of vaccines and recovery in trade partners, the IMF expects the Turkish economy to rebound by 9.0 percent in 2021, and then converge to a potential of around 3.3 percent from 2022 onwards. The outlook remains fragile, with uncertainties related to the future course of the pandemic, volatile market sentiment and to whether the new, more orthodox policy setup stands.

10. As of August 2021, Turkey is rated BB- stable by Fitch, B+ stable by S&P, and B2 negative by Moody's. This is one of the widest disparities of ratings between the three main rating agencies among rated economies. Key near-term risks are due to high external gross financing needs. Every year Turkey needs to roll over external debt equivalent to a quarter of GDP. At the same time, foreign exchange reserves are low in relation to the needs, which reduces confidence and exposes Turkey to volatile market sentiment and destabilizing capital outflows. Additional vulnerabilities relate to private sector balance sheets. The corporate sector is considerably leveraged, while the banking sector is dependent on wholesale FX funding and short-term FX deposit. Banks may see some deterioration in their portfolio due to pandemic's impact on the economy and depreciation's impact on balance sheets—this may be currently masked by forbearance measures. IMF recommends preparing for a potential increase in corporate insolvencies and conducting a third-party asset review to strengthen confidence in the quality of banking sector assets.

11. On the positive side, there are no major signs of risks materializing. Capitalization remains adequate in the banking sector and profitability is reportedly high. Despite concerns, domestic banks have generally been able to continue to tap their robust banking relationships to rollover maturing obligations. Banks and corporations remain liquid. The private sector has demonstrated resilience and appears to have considerable experience in managing through a volatile external environment. Residents continue holding sizeable dollars deposits in domestic banks.

12. Overall, government's relatively strong balance sheet and continued access to financial markets, successfully tested during the pandemic, are allaying debt sustainability concerns. Key strengths anchoring Turkey's longer-term debt sustainability include moderate levels public debt (40 percent of GDP), a track record of conservative fiscal policies, and a large, diversified economy with young population and entrepreneurial spirit, which translate into substantial growth potential. The IMF notes that Turkey's public debt remains below vulnerability benchmarks under the baseline and shock scenarios, but is expected to increase gradually, to 46.5 percent of GDP by 2026, and not stabilize in the medium term without some resolute fiscal consolidation once the pandemic abates. On the other hand, rating agencies are more optimistic and expect debt to peak in 2021 and then start declining gradually. Regarding Turkey's external debt, it remains sustainable under the baseline scenario, and should decline along some expected real exchange appreciation.