# AFRICAN DEVELOPMENT BANK

# PROJECT: EGYPT NATIONAL RAILWAY MODERNIZATION PROJECT (ENRMP)

# COUNTRY: ARAB REPUBLIC OF EGYPT

# PROJECT APPRAISAL REPORT

*February 2021*

| | | | | |
|---|---|---|---|---|
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**RDGN/PICU/COEG DEPARTMENTS**

**March 2021**

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## Currency Equivalents

*As in March 2020*

1 EUR = 0.79933 UA
1 EUR = 1.09770 USD
1 EUR = 17.14226 EGP

## Fiscal Year

1 July – 30 June

## Weights and Measures

| | | |
|---|---|---|
| 1 kilometer (km) | = | 0.62 mile |
| 1 meter (m) | = | 3.28 feet (ft) |
| 1metric ton | = | 2204 pounds (lbs) |
| 1 kilogram (kg) | = | 2.200 lbs |

## Acronyms and Abbreviations

| | |
|---|---|
| AfDB | African Development Bank Group |
| ATP | Automatic Train Protection |
| COEG | Egypt Country Office |
| COMW | Malawi Country Office |
| CSP | Country Strategy Paper |
| DPG | Development Partners Group |
| EA | Executing Agency |
| EBRD | European Bank of Reconstruction and Development |
| ENR | Egypt National Railways |
| ESIA | Environmental and Social Impact Assessment |
| ETCS | European Train Control System |
| EUR | European Euro |
| GHG | Green House Gases |
| GoE | Government of Egypt |
| IPCC | Intergovernmental Panel on Climate Change |
| JICA | Japan International Cooperation Agency |
| M&E | Monitoring and Evaluation |
| NSO | Non-Sovereign Operation |
| PCR | Project Completion Report |
| PD | Presidential Directive |
| PICU | Infrastructure and Urban Development |
| PMU | Project Management Unit |
| PRCA | Procurement Risks and Capacity Assessment |
| RDGN | Regional Director General - North |
| SME | Small and Medium Enterprise |
| TA | Technical Assistant |
| UA | Unit of Account |
| USD | United States Dollar |
| WB | World Bank |

# Loan Information

Client's information

**BORROWER:** Arab Republic of Egypt

**EXECUTING AGENCY:** Egypt National Railways (ENR)

Financing plan

| Source | Amount (million) | Amount (EUR million) | Instrument |
|---|---|---|---|
| ADB | EUR 145.00 | 145.00 | Loan |
| World Bank | USD 440.00 | 400.84 | Loan |
| Government | USD 240.82 | 219.39 | Counterpart |
| **TOTAL** | | **765.23** | |

ADB's key financing information

| | |
|---|---|
| Loan currency | European Euros (EUR) |
| Interest type* | Fully Flexible Loan |
| Base Rate | Floating Base Rate (6 Month EURIBOR or any successor rate)<br>A free option to fix the Base Rate is available |
| Lending Margin | 80 basis points (0.8%) |
| Funding Cost Margin | The Bank funding cost margin as determined each 1st January (for the semester ending on 31 December) and 1st July (for the semester ending 30 June) and applied to the Base Rate each 1st February and 1st August |
| Interest rate | Base Rate +Funding Cost Margin+ Lending Margin + Maturity Premium |
| Commitment fee* | 0.25% of the undisbursed amount. Commitment fee start accruing 60 days after signature of the loan agreement and is payable on payment dates including during the Grace Period. The Commitment fee ceases to accrue upon full disbursement or cancellation of the loan. |
| Front-end Fees | 0.25% of the loan amount. Borrower shall have option to pay from its own resources or request that same be deducted from the loan proceeds at first disbursement. |
| Tenor | 20 years inclusive of Grace Period |
| Grace period | 5 years |
| Option to convert the Base Rate | In addition to the free option to fix the floating Base Rate, the borrower may reconvert the fix rate to floating or re-fix it on part or full-disbursed amount.<br>Transaction fees are payable |
| Option to cap or collar the Base Rate** | The borrower may cap or set both cap and floor on the Base Rate to be applied on part or full disbursed amount<br>Transaction fees are payable |
| Option to convert loan currency** | The borrower may convert the loan currency for both undisbursed or disbursed amounts in full or part to another approved lending currency of the Bank<br>Transaction fees are payable |
| EIRR, NPV (base case) | 23.8%, EUR 243 million |
| FIRR, NPV (base case) | 15.7%, EUR 71 million |

*A calculator is available on the Bank web site **here** to allow borrower simulate different amortization profile and determine Average Loan Maturity.

**Conversion options and transaction fees are subject to the Bank Conversion Guidelines available **online here**

## Timeframe - Main Milestones (expected)

| | |
|---|---|
| Concept Note approval | March 2020 |
| Project approval | March 2021 |
| Effectiveness | September 2021 |
| Last Disbursement | April 2029 |
| Completion | December 2028 |
| Last repayment | December 2040 |

# Project Summary

*Project Overview*: The Egypt National Railways Modernization Project (ENRMP) involves upgrading of railway signaling systems from mechanical and electrical systems to electronic interlocking system; rail renewals and installation of Automatic Train Protection (ATP) system in selected sections of Egypt's main railways network. The total cost estimate for the proposed project is EUR 765.23 million, with the Bank contributing EUR 145.00 million (18.95%%); the World Bank contributing the equivalent of EUR 400.84 million (52.38%); and Government of Egypt (GoE) contributing the equivalent of EUR 219.39 million (28.67%). The total contribution by the GoE inclusive of the loan from the World Bank is 81.05%. The project will be implemented by the Egypt National Railways Authority (ENR).

*Development objectives:* The development objective of the proposed project is to contribute to Egypt's socio-economic development through improved railway transport services. The Project will specifically contribute to: (i) improving safety of train operations; (ii) increasing network capacity; and (iii) improving the efficiency and reliability of train services. The impact of the above outcomes is expected to improve customer confidence in ENR and increase in revenues and less dependency on the treasury.

*Needs Assessment*: Railway transportation in Egypt is considered to be the backbone of passenger transportation, carrying 313.7 million passengers per year or 0.86 million passengers per day, mainly serving the middle-class and low-income communities. However, the rail sector has over the years been experiencing a number of operational problems and still lags-behind road transport in terms of both freight and passenger volumes.

*Strategic alignment:* The proposed project will maximize rail transport contribution to Egypt's socio-economic development and effectively support Vision-2030, whose goal is to achieve a sustainable and all-inclusive economy by 2030. Further, the GoE is embarking on rail reforms, which among others commit to enhancing the safety of rail transport services; improving customer services; commercialization of rail business units; and enhancing the sector's financial sustainability, which the proposed project is supporting.

*Bank's added value*: The experiences and lessons gained by the Bank in implementing similar projects will be important in the successful implementation of the ENRMP, which includes procurement, financial management, project and contract management. A dedicated technical Bank task team will be available to guide the ENR on the above-mentioned project aspects to ensure smooth and efficient progression of the project.

*Knowledge transfer:* The project will contribute to transferring knowledge and skills to ENR technical staff in the design, installation, operation and maintenance of ETCS-ATP system. Second, the Bank has conducted, through independent consultants, a procurement assessment at the national level (legal and institutional), sector level (market analysis), and at the project level. This information will be useful to the rail sector decisions on procurement.

# Results-based Logical Framework

**Country and project name:** Egypt National Railways Modernization Project (ENRMP)
**Purpose of the project:** To contribute to Egypt's socio-economic development through provision of safe and efficient railway transport

| RESULTS CHAIN | | PERFORMANCE INDICATORS | | | MEANS OF VERIFICATION | RISKS/MITIGATION MEASURES |
|---|---|---|---|---|---|---|
| | | Indicator (including CSI) | Baseline 2020 | Target 2029 | | |
| IMPACT | **Outcome 1.** Improvement in railway transport performance and reliability | Passenger market share for rail transport (%) | 8% | 15% | ENR passenger statistics | |
| | | Freight market share for rail transport (%) | 6% | 10% | ENR freight statistics | |
| OUTCOMES | **Outcome 1.** Increase in railway network capacity | Capacity to volume ratio | 1.45 | < 1 | ENR operations reports | 1) **Risk:** Expected improvement in rail network capacity not achieved due to low availability of locomotives. **Mitigation:** ENR is in the process of procuring about 106 new locos with the support of EBRD. |
| | **Outcome 2.** Improvement in railway safety | No. of accidents per year | 1000 | < 100 | ENR accident Reports | 2) **Risk.** The system not working as expected. **Mitigation:** Selection of contractor will be restricted to firms with proven experience in ETCS-ATP installations. |
| | **Outcome 3.** Reduction in transport sector emissions | CO2 emissions (million tons) | [1]47.5 | [2]46.9 | ENR Traffic Reports & [3]EEAA Reports | 3) **Risk:** Impact of covid-19 on the progress of the project. **Mitigation**. A stipulation will be included in the bidding documents to request contractors to provide a clear plan on how they will mitigate against the impact of COVID-19 on the supply and installation of the ATP system. |
| OUTPUTS | **Output 1.** Length of rail-network fitted with ETCS-ATP | Length of rail line - Km | 0 | 953 | ENR Project Reports | 4) **Risk. Possible d**elays in project effectiveness. **Mitigation.** This potential risk has been factored in the planned project implementation period. |
| | **Output 2.** Number of Locomotives fitted with ETCS-ATP | No. of locomotives | 0 | 100 | | |
| | **Output 3.** Length of rail-network with rail renewals & EIS signals | Length of rail line - km | 300 | 953 | | |
| | **Output 4.** ENR & Ministry of Transport Staff trained | No. of staff trained | 0 | 150 (30% women) | | |
| | **Output 5.** Number of jobs created | No of jobs created | 0 | 1200 (30% women) | | |

| COMPONENTS | INPUTS (EUR MILLION) |
|---|---|
| **Component 1.** Design, supply and maintenance of ETCS Level 1 Automatic Train Control System (AfDB) | 145.00 |
| **Component 2.** ESMP implementation – AfDB component only (GoE) | 0.19 |
| **Component 3.** Rail Renewal and upgrading of signal and telecommunications system (GoE and WB) | 620.04 |
| **TOTAL PROJECT COST** | **765.23** |

[1] Total emissions estimate in 2018 was 250 MtCO2eq with 19% attributed to transport
[2] Reduction (0.6 million tons CO2) is based on projected shift of traffic from road to rail by 2030. Actual data on traffic shift will be collected in the target year.
[3] EEAA - Egyptian Environmental Affairs Agency

## Project Timeframe

| Activity | 2020 | | | | 2021 | | | | 2022-2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Procurement of engineering supervision & project management services | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [4]Procurement of contractor - Design, supply & installation (ETCS Level 1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implementation - Design, supply & installation (ETCS Level 1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Defects liability period | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maintenance & training of staff | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

[4] The Bank has approved advance contracting of this activity.

**REPORT AND RECOMMENDATIONS OF THE MANAGEMENT OF THE AfDB TO THE BOARD OF DIRECTORS ON A PROPOSED LOAN TO THE ARAB REPUBLIC OF EGYPT FOR THE EGYPT NATIONAL RAILWAY MODERNIZATION PROJECT (ENRMP)**

Management submits the following Report and Recommendation on a proposed ADB sovereign loan of **EUR One Hundred and Forty Five million (EUR 145 million)** to the Arab Republic of Egypt to finance the Egypt National Railway Modernization Project (ENRMP).

# I - STRATEGIC THRUST & RATIONALE

## *1.1 Project linkages with country strategy and sector overview*

1.1.1 Egypt's long-term transport sector strategic goals are based on its Vision 2030 and the National Transport Master Plan (2012 - 2027) and commits to build a world class integrated multimodal transport infrastructure which is affordable, and which meets the country's business needs to support economic growth and sustainable development. To achieve these goals, the government current reforms in the sector are broadly aimed at providing an enabling environment (regulatory and institutional) to attract private sector finance, management expertise, and innovation in the development and operation of transport infrastructure in the country (rail, road, water, and air transport).

1.1.2 Egypt has a multimodal transport network consisting of road, rail, water and air transport systems. The road transport is the most dominant with more than 80% of the total market share for both freight and passenger. Details on the various transport subsectors are described in the **Technical Annexes** of this Project Appraisal Report. In terms of the rail subsector, the total length of the network is about 5,100 km with a broad gauge (1435 mm) track structure. Sixty percent of the network is concentrated in the Nile Delta region and along the Nile river valley, connecting the major cities of Alexandria and Cairo with the main cities in the north and south of the country to Aswan and Safaga on the Red Sea. A few branch lines connect the eastern and western desert regions for transportation of mineral ores.

1.1.3 Rail transport is a major player in the economy of Egypt and is the common mode of transport to low income Egyptians, carrying about 313.7 million passengers annually or about 0.86 million passengers per day. In terms of freight traffic, the government sees development of the railway infrastructure as key to accessing the country's abundance of natural resources and boosting the overall economy. To deliver this objective, the government is embarking on reforms that will allow ENR to patterner with private sector operators to develop the freight business. With the on-going reforms and improvements in infrastructure, the government through the Egypt National Railways (ENR) plans to grow freight traffic from the current 5 million tons per year to 25 million tons per year by 2025.

1.1.4 The rail sector is vertically integrated and is owned and operated by the Egypt National Railways Authority (ENR), a public entity established in 1980 under the Ministry of Transport. As part of government's effort to improve rail sector performance, ENR was restructured in 2007 into business units as follows: (i) maintenance and railway services; (ii) railway and transport projects; (iii) metro operation and management; (iv) renewal and maintenance of tracks; (v) development of transport technology and IT; (vi) management and services of sleeping coaches; (vii) security and cleaning; and (viii) medical center of ENR.

1.1.5 ENR has over the years been experiencing operating deficits and has continually depended on public resources in form of grants and loans to keep afloat. Some of the reasons attributed to this situations include: high maintenance costs due to depreciation of its core infrastructure assets (rail track, signals, bridges, and rollingstock); low tariffs which are not cost reflective, especially for passenger transport; and decreasing revenue due to low market penetration compared to road transport because of poor infrastructure. However, during the last ten years, the government, in addition to restructuring the sector, and with the support of the development partners has embarked on improving infrastructure to make rail transport safer, responsive to market demands and competitive through capital investments in rail renewals; signal modernization; and rollingstock. As is the case in many countries around the world, passenger transportation in Egypt for both urban and intercity railway experiences yearly deficits. The ENR, [5]CTA and the Cairo Metro have annual average deficits amounting to US$500 million, US$400 million and US$500 million respectively (2016/17). These deficits are a result of low fares to make public transport affordable to the majority of low-income users. In order to ensure guided subsidies to the rail sector, the GoE is in the process of embarking on reforms to introduce Public Service Obligation (PSO) contracts.

1.1.6 The proposed project will involve installation of an Automatic Train Protection System (ATP) on the ENR network based on the European Train Control System (ETCS) level 1. The proposed project will build on the ongoing rail renewals and signal upgrading which ENR is currently implementing with support from the World Bank. So far about 300 km of the rail network has been rehabilitated (received rail renewals) and upgraded with modern signaling systems, so that part of the network is ready to be fitted with the ETCS-ATP system to be financed by the AfDB. The renewal of rails, upgrading of the signal system, and the installation of the proposed ETCS system to be financed by the AfDB will contribute to safe operation of trains, and improved network capacity and train reliability. These interventions are in turn expected to strengthen the operating capacity and financial performance of ENR.

1.1.7 The Project has benefited from the projects supported by the World Bank and other development partners and has incorporated the lessons learnt in the design of the Project as follows: (i) length procurement gestation period for railway projects. In this respect, a decision was made to proceed with advance contracting. (ii) The PMU at ENR is overwhelmed with coordinating all donor funded projects, in this respect, the project will support technical services to assist ENR PMU to manage the Project. ENR engineers and technicians will work closely with the ETCS-ATP contractors to ensue knowledge transfer and will take-over maintenance and operations after project completion.

1.1.8 **Project contribution to Egypt's Vision 2030:** The national development strategy for Egypt is embodied in the Sustainable Development Strategy (SDS), "Egypt Vision 2030", encompassing social, environmental and economic development. The goal is to achieve a sustainable and all-inclusive economy by 2030. The Government recognizes transportation as a key sector to achieving this goal and has accordingly developed a National Transport Master Plan (2012-2032) which among others, aims to maximize economic returns of growth sectors through an efficient transport system; promote domestic and foreign investments; and adopt enabling policies for Public Service Obligations. Modernization of railway transport, which is the purpose of the proposed project, will significantly improve transportation of goods, people and services and will contribute to Egypt's sustained and inclusive socio-economic growth.

[5] Cairo Transport Authority (buses)

1.1.9 **Project alignment to the Bank's development strategy:** The Bank's extended Country Strategy Paper for Egypt (CSP 2015-2021) focuses under Pillar 1 on infrastructure development as a way of supporting private sector development and ensuring a sustained and inclusive socio-economic growth. Improving railway transport, which is the purpose of the proposed project, will significantly contribute to the CSP development goals. The proposed project also falls within the framework of the Bank's Ten-Year Strategy (2013-2022) which commits to improving infrastructure to support economic growth sectors in regional member countries (RMCs). The project will contribute to the overall efficiency of the multimodal transportation environment in Egypt, and therefore to the efficient movement of goods, people and services, which is in line with the Bank's "High Fives" in particular, "Industrialize Africa" and "Improve the quality of life of the people of Africa".

### *1.2 Rationale for Bank's involvement*

1.2.1 The demand for railway transport in Egypt has been increasing due to population growth and its competitive cost compared to other modes of transport. This has led to demand exceeding capacity by 45% (or to volume-capacity ratio of 1.45), and with this level of services, sometimes accidents occur. However, as explained above, to improve rail transport capacity and efficiency, the GoE has restructured the Egypt National Railways into business units, and with the support of development partners has embarked on investing in rail renewals and upgrading of the signal and telecommunications systems. The Bank's support to the modernization of ENR will therefore contribute to maximizing the financial and socio-economic benefits of the ongoing Egypt Railway Restructuring Project. Also as demonstrated above, the project is well aligned to GoE national development strategy and the Bank's development strategy for RMCs.

### *1.3 Development partners coordination*

1.3.1 There is a strong presence of development partners (DPs) that are supporting the transport sector in Egypt, notable among them, include the World Bank (WB), European Bank for Reconstruction and Development (EBRD); Japan International Corporation Agency (JICA); Korean Exim Bank; Kuwait/Arab Funds; and the French Development Agency (AFD). The DPs coordinate through a thematic transport sector Development Partners Group (DPG). The DPG is currently co-chaired by JICA and AFD, and meet quarterly to discuss, among others, progress on going programs, planned programs and projects and potential co-financing; share study findings and harmonize their positions on pressing sector issues and from time to time engage government on sector policy and institutional reforms required to streamline sector efficiency. The Egypt Country Office (COEG) represents the Bank in the DPG. The current annual contribution attributed to the DPs is shown in Table 1.1 below, whereas the projects supported by the DPs in the railways sector are listed in **Table 1.2**.

1.3.2 Installation of the ATP system to be financed by the AfDB will be implemented in the sections were the World Bank is supporting rail renewals and upgrading of signals. The Bank intervention will therefore complement the activities being financed by the World Bank through a parallel financing arrangement.

**Table 1.1: Development Partners Coordination in the Transport Sector in Egypt**

| Sector or subsector | Size | | |
|---|---|---|---|
| | GDP | Exports | Labor Force |
| Transport and Storage* | 4% | N/A | N/A |
| **Players - Public Annual Expenditure (average)** | | | |
| **GoE** | | **Development Partners** | |
| USD 60 million | | USD 200 million | |
| **Level of Development Partners Coordination** | | | |
| Existence of Thematic Working Groups: | | | Yes |
| Existence of SWAPs or Integrated Sector Approaches: | | | Yes |
| AfDB's Involvement in development partners coordination***: | | | M |
| * Average of the last 4 years (2016 – 2019)<br>*** L: leader, M: member but not leader, none: no involvement | | | |

**Table 1.2: DPs Support to the Railway Sector in Egypt**

| No | DP | Amount | Currency | Project Description |
|---|---|---|---|---|
| 1 | WB | 270 | USD | Signal modernization on Cairo / Alexandria corridor |
| | | | | Track renewal of 300 km on Cairo / Aswan corridor |
| 2 | WB | 330 | USD | Signal modernization on Beni Suef / Asyut corridor |
| | | | | Signal modernization on Asyut / Nagh Hammadi corridor |
| 3 | EBRD | 126 | Euro | Supply of 6 complete trains |
| 4 | EBRD | 290 | Euro | Supply of 100 new locomotives |
| 5 | Arab fund | 44 | KWD | Co-finance: signaling modernization on Benha / Port Said corridor |
| 6 | Kuwait fund | 30 | KWD | |
| 7 | WB | 440 | USD | Signal modernization and track rehabilitation on Cairo - Beni Suef corridor |
| 8 | Korean governmental loan | 115 | USD | Signal modernization on Nagh Hammadi / Luxor corridor |
| 9 | Uni-Credit Bank - Austria | 8.5 | Euro | Supply of 4 track machines |
| 10 | EXIM Bank - Hungary | 1016 | Euro | Supply of 1300 passenger coaches |
| 11 | EDC Bank - Canada | 226 | Euro | Supply of 100 new GE locomotives + Rehabilitation of 81 old locomotives |

# II – PROJECT DESCRIPTION

## *2.1 Project background*

2.1.1 The Egypt National Railways (ENR) is currently carrying out rail renewals and upgrade of the signaling and telecommunications system on 953 km of mainline of the railway network comprising the following sections: Alexandria-Cairo (208 km); Cairo-Beni Suef (125 km); Beni Suef - Asyut (250 km); Asyut-Negh Hammadi (180 km); and Benha-Port Said (190 km). To maximize the benefits of the on-going railway improvements, there is a need for an additional layer for an automated or Automatic Train Protection (ATP) system.

2.1.2 The proposed project will support installation of the ATP system based on the European Train Control System (ETCS Level 1), a signaling and train control system component of the European Rail Traffic Management System (ERTMS). The ATP system electronically

supervises the train as it passes through a block of a rail section and continuously gives the profile of the track (required speeds, stopping distances, etc.) to the train crew through a system of trackside and locomotive on-board electronic equipment. In a situation where the train crew does not comply with the ATP operation parameters, the system automatically takes over, and, where necessary under critical conditions, brings the train to a stop, to prevent potential accidents.

2.1.3 The system has been developed in Europe and is intended to replace many incompatible train protection systems currently used by different European railway administrations. The objective is to standardize signaling and train control systems which currently constitutes one of the major obstacles to the development of international rail traffic. Unifying the multiple signaling systems in use will bring increased competitiveness, better inter-working of freight and passenger rail services, stimulate the European rail equipment market, reduce costs and improve the overall quality of rail transport. Most of the European countries have already installed ETCS level 1 and it is expected that, in the next decade, a substantial proportion of main lines and most high-speed railway lines in Europe will be upgraded to ETCS level II. The standard has also been adopted outside Western Europe and is an option for worldwide train protection application.

### *2.2 Development objectives and project components*

2.2.1 The project development objective is to contribute to Egypt's socio-economic development through a safe and reliable railway transport service and to strengthen ENR's financial sustainability. The Project will specifically contribute to: (i) improving safety of train operations; (ii) increasing network capacity, through modernized signals and ETCS system as trains will be able to move with shorter head-ways; and (iii) improving the efficiency and reliability of train services as there will be less delays. The impacts of the above outcomes are expected to lead to improved customer confidence in rail transport which will benefit ENR through increased revenues and less dependency on the treasury. The project components and cost estimates are indicated in **Table 2.1**.

**Table 2.1: Project components and cost estimates (EUR million)**

| No. | Component | Cost Estimate | Component Activities |
|---|---|---|---|
| 1 | Design, supply, installation and maintenance - ETCS Level 1 (AfDB) | 145.00 | • ETCS level 1 trackside and locomotive onboard equipment (EUR140.0 million)<br>• Engineering supervision and project management (EUR4.92 million)<br>• Independent financial audit (EUR0.08 million) |
| 2 | ESMP implementation – AfDB component only (GoE) | 0.19 | • ESMP implementation + E&S audit |
| 3 | [6]Rail renewal and upgrading of signal and telecommunication systems (GoE and WB) | 620.04 | • Rail renewals and upgrading of signals in selected rail sections from mechanical and electrical systems to electronic interlocking system (EIS) |
| | **TOTAL** | **765.23** | |

[6] World Bank contribution EUR400.84 million & GoE contribution EUR219.20 million)

### *2.3 Technical solution retained and other alternatives explored*

2.3.1 There are several ATP systems, however, ENR has selected the ETCS Level – ATP system, to which the Bank has no objection for the following reasons: The ETCS system is compatible with the signal upgrading based on European standards that ENR is currently undertaking on the network with the support of the World Bank; the ETCS system is not a brand name and there are numerous suppliers of the system and components in the European Union and worldwide, thus by procuring the ETCS system maximum possible competition will be attained; Equipment complying with ETCS standards are available from different manufacturers, therefore, there is no market monopoly; the ETCS system is the common standard for ATP systems in the European Union (EU) and it is a legal requirement in the EU that all new railway upgrades and rollingstock should , adopt the ETCS system for the purposes of inter-operability and to ensure safety of trains.

**Table 2.2: Project alternatives considered and reasons for rejection**

| Alternative | Brief description | Reasons for rejection |
|---|---|---|
| ETCS Level I - ATP | • Compatible with ENR ongoing signal upgrading program<br>• Competitive price expected as there is no monopoly in the global market<br>• Availability and continued supply of spare in long term | Adopted |
| Other ATP systems | • Manufactured for individual railways in different countries | • Equipment may not be compatible with current signals system.<br>• Uncompetitive pricing -only one or few firms might be manufacturing the ATP equipment.<br>• Availability and supply of spare parts not assured; and<br>• Risk of obsolescence of the system, as it is manufactured for an individual railway. |

### *2.4 Project type*

2.4.1 The proposed project is an investment project in line with the request from the GoE. From the Bank's experience a project of this nature will require close supervision and fiduciary oversight, therefore it is well suited to be implemented as a stand-alone investment project.

### *2.5 Project cost and financing arrangements*

2.5.1 The total cost estimate for the proposed project is EUR 765.23 million, with the Bank contributing EUR 145.0 million (18.95%); the World Bank contributing the equivalent of EUR 400.84 million (52.38%); and Government of Egypt contributing the equivalent of EUR 219.39 million (28.67%).

2.5.2 There is already an existing 300 km of rehabilitated section of track fitted with upgraded signal system. This is important as there will be no delay in starting installation of the ETCS-ATP system to be financed by the AfDB. A comprehensive works program for the ETCS system will be developed to ensure synchronization of the ETCS installations with the rail renewals and the signaling upgrades for the rest of the network.

**Table 2.3: Project cost estimate by component (EUR million)**

| No. | Component | Foreign Currency | Local Currency | Total Cost | % Foreign Currency |
|---|---|---|---|---|---|
| 1 | Design, supply, installation and maintenance - ETCS Level 1 (AfDB) | 115.19 | 20.33 | 135.51 | 85 |
| 2 | ESMP implementation - AfDB component only (GoE) | 0.00 | 0.18 | 0.18 | 0 |
| 3 | Rail renewal and upgrading of signal and telecommunication systems (GoE and WB) | 492.56 | 86.92 | 579.48 | 85 |
| _ | **SUBTOTAL** | 607.74 | 107.43 | 715.17 | 85 |
| _ | Contingency (7 %) | 42.54 | 7.52 | 50.06 | 85 |
| | **TOTAL** | **650.284** | **114.946** | **765.23** | **85** |

**Table 2.4 (a) : Project cost estimate by category (EUR million)**

| No. | Category | Foreign Currency | Local Currency | Total Cost | %Foreign Currency |
|---|---|---|---|---|---|
| 1 | Goods | 603.92 | 106.57 | 710.50 | 85% |
| 2 | Services | 3.97 | 0.70 | 4.67 | 85% |
| | Subtotal | 607.89 | 107.28 | 715.17 | 85% |
| | Price contingency (7%) | 42.55 | 7.51 | 50.06 | 85% |
| | **Total** | **650.45** | **114.78** | **765.23** | **85%** |

**Table 2.4 (b): Project cost estimate by category – AfDB (EUR million)**

| No. | Category | Foreign Currency | Local Currency | Total Cost | % Foreign Currency |
|---|---|---|---|---|---|
| 1 | Goods | 111.21 | 19.63 | 130.84 | 85% |
| 2 | Services | 3.97 | 0.7 | 4.67 | 85% |
| 3 | Subtotal | 115.19 | 20.33 | 135.51 | 85% |
| 4 | Contingency - 7% | 8.06 | 1.42 | 9.49 | 85% |
| | **TOTAL** | **123.25** | **21.75** | **145** | **85%** |

**Table 2.5 : Source of financing (EUR million)**

| Source of Financing | Foreign Currency | Local Currency | Total | % Total |
|---|---|---|---|---|
| AfDB Loan | 123.25 | 21.75 | 145.00 | 18.95 |
| World Bank Loan | 340.71 | 60.13 | 400.84 | 52.38 |
| GoE - Counterpart financing | 186.48 | 32.91 | 219.39 | 28.67 |
| **TOTAL** | **650.44** | **114.78** | **765.22** | **100** |

**Table 2.6: Expenditure schedule financed by ADB (EUR million)**

| No. | Component | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ETCS Level 1 - APT | 35.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 140.00 |
| 2 | Project Management | | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.66 | 4.92 |
| 3 | Independent Audit | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.014 | 0.08 |
| | **TOTAL** | **35.00** | **15.72** | **15.72** | **15.72** | **15.72** | **15.72** | **15.72** | **15.67** | **145.00** |

## *2.6 Project's target area and population*

2.6.1 Egypt National Railways (ENR) has a total network length of about 5100 km with 60% of the network concentrated in the Nile Delta region and along the Nile River valley, connecting Alexandria and Cairo with the main cities in the north of the country and with all the cities in the Nile River basin down to Aswan and Safaga on the Red Sea. A few branch lines connect the eastern and western desert regions for transportation of mineral ores. The total population served by the rail transport is about 40 million people concentrated along the rail network as described above. In terms of daily and annual passenger traffic, railway transport carries about 0.86 million passengers per day (about 313.7 million passengers per year), mainly serving the middle-class and low-income communities.

## *2.7 Participatory process for project identification, design & implementation*

2.7.1 The Bank Team had extensive discussions during the preparation mission with the ENR officials from various departments, including technical, operations, project management, finance, procurement, as well as the consultants who are working with ENR on the functional specifications of the Automatic Train Protection System. Public consultations and disclosure of activities on the other components prior to the start of the on-going signaling modernization and rail renewals Project, of which the proposed project is a part, were conducted, and consisted of stakeholder interviews and public workshops at selected locations along the rail line. The target audience included train users, users of level-crossings, and communities. The findings of the ESIAs in the different railway sections were posted on the Environmental Quality Index ([7]EQI) website for public review prior to the consultation meetings of the other components except the two covered under this study. During public consultation meetings, the project, components, and activities were introduced, and participants were provided with findings on the potential impact of the project.

2.7.2 The draft ESIA of the two lines has been disclosed to the public via public consultation sessions and a number of focus group discussions and interviews. Comments and feedback have been reflected in the ESIA by updating the study and addressing comments made by stakeholders. Due to the circumstances surrounding the Covid-19 pandemic in the past few weeks, the key informant interviews and focus group discussions were conducted via phone and/or remote communication tools. Direct invitation letters, Facebook event on Masader's Facebook Page and Newspaper advertisement (*El Gomhuriya Weekly Newspaper*, which reaches all Egypt's governorates). The approved version was disclosed in ENR home page on August 8, 2020 and in the Bank's web site on October 21, 2020.

[7] *E*QI was founded in Egypt in 1981 as a private partnership engaged in the delivery of environmental consulting services.

### *2.8 Bank Group experience, lessons reflected in project design*

2.8.1 The Bank commenced operations in Egypt in 1974 and has since financed over 100 projects worth UA 4.4 billion in several sectors including agriculture, governance, power, social, transport, water supply and sanitation. By end February 2021, the Bank's portfolio in Egypt comprised 20 operations (including recent approvals), with a total commitment of UA 906 million, with sovereign operations making up nearly 80% by volume. The sectoral distribution of the ongoing portfolio constitutes sovereign and non-sovereign energy/power (70.6%); water and sanitation (21.7%); irrigation and agriculture (4.8%); finance (1.7%); social (0.2%); and multisector (capacity-building grants) (1.0%). The performance of the Bank's portfolio in Egypt is assessed as satisfactory with a cumulative disbursement of 69%.

2.8.2 The proposed Egypt National Railway Modernization Project (ENRMP) will be the Bank's first investment operation in the transport sector in Egypt, however, the Bank has been involved in a number of railway projects across Africa, including: feasibility of the Isaka-Kigali Railway Project between Rwanda and Tanzania intended to be structured as a PPP; the feasibility study of a rail line between Ethiopia and South Sudan, currently ongoing; construction of the Dakar express suburban railway; rehabilitation of the Trans-Namib Rail in Namibia; and equity financing of the Kenya-Uganda Rail concession. While most of the railway projects are design and build, the Bank has always recruited independent engineering and project management consultants to supervise the project activities to ensure quality of output and value for money. This has enabled the Bank Task Teams to concentrate more on the fiduciary oversight side of the project. This approach has worked well and will be extended to the ENRMP.

### *2.9 Key performance indicators*

2.9.1 The project development objective is to contribute to Egypt's socio-economic development through enhancing the safety and reliability of rail transport services and to strengthening of ENR's financial sustainability. The project results indicators, as depicted in the Results-Based-Logical-Framework (RBLF), include: *Output indicators:* length of rail network in km fitted with the ETCS -APT; length rail network in km with rail renewals and upgraded to EIS signaling system; ENR and Ministry of Transport number of staff trained; and number of jobs created. *Outcome indicators*: increase in rail network capacity; improvement in rail safety; and reduction in transport emissions. *Impact indicator:* Improvement in railway transport performance and reliability. *Data collection:* The data for the indicators will be collected from various ENR reports, including passenger statistics, train frequency, and accident reports from the Operations Department, and project progress reports.

## III – PROJECT FEASIBILITY

### *3.1 Economic and financial performance*

3.1.1 The economic and financial analysis is based on the comparison between the Do-Minimum scenario: Continue with routine maintenance and minimal periodic renewals to allow train operations; and the Do-Something scenario: Investment in railway renewals, upgrading signals, and installation of the ETCS level 1-ATP.

3.1.2 The general assumptions considered include: a project evaluation period of 20 years starting in 2025; project implementation period of 4 years, starting in 2021; cost of capital or discount rate of 12%; and a conversion factor for converting financial costs to economic costs

of 0.85. The assumptions on cost and benefit streams are explained below under the economic and financial analyses respectively.

**Economic Analysis**

3.1.3 The economic analysis takes into consideration the following costs and benefits: Costs: investment cost for upgrading of signals system, railway renewals, and installation of the ETCS -ATP system. Benefits: Time savings to existing and projected rail freight and passenger traffic. The projected traffic includes growth of normal traffic, generated and diverted traffic; Savings in accident costs; savings in railway maintenance costs; and savings in highway maintenance due to traffic diverting from road to rail. A summary of the results of the economic analysis are presented in **Table 3.1** below. The results indicate that, the project is economically viable with NPV of EUR 243 million, ERR of 23.8% and a benefit-cost ratio of 2.4.

**Table 3.1: Economic analysis results**

| Indicator | Value |
|---|---|
| NPV (m10 %) | EUR 243 million |
| EIRR | 23.8% |
| B/C Ratio | 2.4 |

3.1.4 Sensitivity analysis on the effect of possible changes in investment costs, and traffic on ERR and NPV, including switching values is presented in **Table 3.2** below. The results indicates that, the proposed investment is relatively robust to the defined variations with the NPV still remaining positive and ERR still greater than 12 percent The analysis also shows switching values, with investment costs needing to increase by 45 percent, passenger traffic growth falling short of the forecast by 43 percent, and freight traffic growth falling short of the forecast by 98 percent before the project becomes unviable.

**Table 3.2 : Sensitivity analysis**

| **Capital Costs** | **-20%** | **Base Case** | **+20%** |
|---|---|---|---|
| NPV | € 266 million | € 243 million | € 221 million |
| EIRR | 26.6% | 23.8% | 21.6% |
| **Freight Traffic Growth** | **-20%** | **Base Case** | **20%** |
| NPV | € 227 million | € 243 million | € 260 million |
| EIRR | 23.3% | 23.8% | 24.3% |
| **Passenger Traffic Growth** | **-20%** | **Base Case** | **20%** |
| NPV | € 186 million | € 243 million | € 300 million |
| EIRR | 21.7% | 23.8% | 25.6% |

**Financial Analysis**

3.1.5 The financial analysis is based on marginal analysis and takes into consideration the costs and benefits: Costs: investment cost for upgrading of signals system and increase in train operating costs due to increased traffic. Benefits: savings in track and signal maintenance costs and increase in revenue. A summary of the results of the economic analysis are presented in **Table 3.3** below. The results indicate that, the project is economically viable with NPV of EUR 71 million, ERR of 15.7%, and a benefit-cost ratio of 1.4.

**Table 3.3: Financial analysis results**

| Indicator | Value |
|---|---|
| NPV (m12 %) | EUR 71 million |
| FIRR | 15.7 % |
| B/C Ratio | 1.4 |

3.1.6 The results of the sensitivity analysis are presented in Table 3.4 below. The results reviews that the proposed investment is relatively robust and yield a positive NPV even when project investment costs are increased by 20% and the forecasted freight and passenger traffic growth rates are reduced by 20%. The investments appear more sensitive to variations in forecasted passenger traffic growth.

**Table 3.4 : Sensitivity analysis**

| **Capital Costs** | **-20%** | **Base Case** | **+20%** |
|---|---|---|---|
| NPV | € 97 million | € 71 million | € 45 million |
| FIRR | 17.6% | 15.7% | 14.1% |
| **Freight Traffic Growth** | **-20%** | **Base Case** | **20%** |
| NPV | € 62 million | € 71 million | € 81 million |
| FIRR | 15.2% | 15.7% | 16.1% |
| **Passenger Traffic Growth** | **-20%** | **Base Case** | **20%** |
| NPV | € 41 million | € 71 million | € 102 million |
| FIRR | 14.2% | 15.7% | 16.9% |

3.1.7 It should be noted that, the above economic analysis results are based on projected increase in freight and passenger traffic and does not take into account several other potential indirect exogenous benefits in the economy that can be attributed to improvements in rail transport. In addition to direct traffic considerations, improvement in rail transport capacity and reliability will go a long in supporting productive sectors like tourism, agriculture, and mining and will directly and indirectly contribute to the recovery of the economy from effects of covid-19. Tourism especially is an important sector in the economy, and with improvements in railway transport, the sector can be expected to grow to pre-covid-19 pandemic levels.

## *3.2 Environmental and Social impacts*

### 3.2.1 *Project E&S categorization and detailed studies*

3.2.1.1 In accordance with the Egyptian Law No. 4 of 1994 and following consultation between ENR's Environmental Department with representatives of the Egyptian Environmental Affairs Agency (EEAA), the project is classified as a **Category Scope B** which requires a scoped ESIA (*equivalent of Category 2 as per the Bank's Integrated Safeguards System (ISS*). The **category 2** classification was cleared by SNSC on November 6$^{th}$, 2019. Indeed, the Project is mainly confined to existing footprints of the railway track. The physical works on the track during the preparation and the installation of the ATP system will be minor as it will involve trenching and installation of ATP equipment on tracksides and on locomotives. The project will not cause any physical nor economic displacement as it is limited to linking each semaphore to the railway track via a 2 m long cable within the right of way of the railway. The digging will be intermittent (every 1 km approximately) and not continuous and would not affect more than 0.7 m and there are no archaeological structures in near proximity to the railway corridor. No activities are planned in areas of known physical cultural importance.

3.2.1.2 A new Environmental and Social Impact Assessment (ESIA) study has been developed for two sections of the railway network, for which no previous ESIAs have been developed, namely Cairo-Beni Suef (125 km) and Benha-Port Said (190 km). In addition to that, the ESMP already developed for the rest of the line sections has been updated to accommodate any additional mitigation measures for risks and impacts arising from component (i) of the ENRMP. The full ESIA report including its Annexes, the ESMP and the executive summary have been: (i) cleared by the Bank on 15 May 2020; (ii) published by ENR on its web site[8] on 8 August 2020; (iii) approved by the EEAA under receipt number 0111764 as of 20 September 2020; and (iv) disclosed in the Bank's web site[9] on 21 October 2020 after receiving the Environmental permit and formal authorization (19 October 2020) form the ENR to disclose it.

### 3.2.2 *Major risks and significant environmental and social impacts*

3.2.2.1 The ESIA prepared for the project identified several potentially positive and negative impacts associated with the projects. *The major positive E&S impacts* of the project during the construction phase are linked to: (i) income generation through the creation of temporary jobs; (ii) development of small businesses (food, clothing etc.); and (iii) increased income through the procurement of local and imported materials sold on the domestic market.

3.2.2.2 *During the Operation phase*, the main positive impacts are: (i) increased safety and reliability of the national railway service and, (ii) decrease (or nearly elimination) of train-related accidents which either involve derailments of the trains, and train to vehicle accidents at road crossings; (iii) improvement of safety for rail transport will therefore benefit both women and men in terms of reduced injuries and fatalities; (iv) increase mobility of people who use trains to travel to work, business, health and education centers, and for leisure purposes.

3.2.2.3 *During the construction phase* and those that occur during the operational phase of the railway project**,** *negative environmental risks and impacts include*: (i) *Soils and water* contamination during construction works due to leaks from temporary office septic tank**;** *accidental spills of hydrocarbons* from construction machinery and diesel generators, (ii) *construction site waste* consisting of soil and debris, used wiring cables, organic waste and food residuals, paper, plastic, scrap cables and spent oil; (iii) Poor management of occupational health and safety may lead to accidents, injuries and illnesses among workers. In the absence of an effective management system and OHS plans, the following risks/challenges may occur (Physical hazards from equipment and vehicles; Fire, Slippage, lifting, excavation, trains accidents, electrical hazards, and poor working conditions including the presence of nearby and accessible sanitation services, breaks at appropriate timing, discrimination, forced and child labor; (iv) *trespassers* on rail lines and facilities may incur risks from electrical lines and equipment, and hazardous substances; (v) *sanitation* concerns for the construction crew could occur as workers at the construction site will require sanitation facilities during construction period, which if not well maintained and cleaned, may lead to outbreaks of illnesses mainly at the time the Covid-19 pandemic; (vi) *unexpected train delays* due to reduction of train speed at the project's construction sites will result in longer train trip time are the key E&S risks and potentials impacts related to the installation of the ATP systems.

[8] http://enr.gov.eg/ticketing/public/offers.jsf

[9] Full report: https://www.afdb.org/en/documents/egypt-egypt-national-railways-modernization-project-enrmp-installation-automatic-train-protection-atp-system-p-eg-d00-009-esia
Summary: https://www.afdb.org/fr/documents/egypte-projet-de-modernisation-des-chemins-de-fer-nationaux-enrmp-mise-en-place-du-systeme-de-protection-automatique-des-trains-pat-p-eg-d00-009-resume-esia

### 3.2.3 *Environmental and Social Management Plan*

3.2.3.1 The ESMP specifies measures to address the aforementioned risks and impacts driven by the installation of ETCS Level 1 on the five sections of the lines. For each of these impacts, improvement and mitigation measures were respectively developed for the positive and negative impact and documented in specialized plans including: (i) Preparation and implementation of a Solid and Hazardous Waste and Materials Management Plan which include arrangements for managing solid and liquid hazardous and non-hazardous waste; (ii) Construction Activity Pollution Prevention Plan; (iii) Noise management procedure as a standalone document or as a part of an Occupational health and safety (OHS) plan; (iv) Construction Activity Pollution Prevention Plan; (v) Stakeholder Engagement Plan; OHS and (vi) an Emergency preparedness and response plan (EPRP) to include fire and medical emergencies, complying with the Egyptian Labor law No. 12 for 2003 during the construction phase; (vii) Grievance Redress Mechanism Develop work procedures, defining a Code of Appropriate Conduct for all workers, including acceptable behavior with respect to community interactions and train workers and Community Health, Safety and Security (including traffic and accessibility). The project should also comply with the EEAA permit delivery conditions.

3.2.3.2 As the execution of project activities involves no physical and economical displacement or loss of assets, resources or property, the preparation of a RAP is not necessary. No activities are planned in areas of known physical cultural importance. However, the possibility of finding sites of archeological importance during excavations and other project activities cannot be excluded.

3.2.3.3 A total amount of EUR 0.19 million has been budgeted for the implementation of the ESMP. The budget includes the costs of monitoring / operating the E&S component at the PIU level, awareness campaigns, environmental and social monitoring during the construction phase and the training program for both contractors and ENR's PIU staff.

3.2.3.4 Following the completion of the ATP, maintenance may be necessary at regular or irregular intervals, or due to system failure. As a result, any of the construction impacts may re-occur. The same impact mitigation measures should be adopted by the contractor/owner during any maintenance works.

### 3.2.4 *Institutional arrangement for ESMP implementation and Monitoring*

3.2.4.1 The overall institutional arrangement for safeguards, including the grievance redress mechanism lies with ENR, which should take general responsibility for correct application of the ESMP and provision of necessary resources for its implementation via its Environmental Department, the Project Management Unit (PMU), and contractors.

3.2.4.2 The supervision of the implementation of the ESMP will be done in accordance with the Bank ISS requirements and national regulations and conditions that are laid on the environmental permit provided by EEAA including its 16 requirements, and will include reviewing Contractor's ESMP reports, conducting site visits where required and preparing reports to the Bank on a quarterly basis and local regulatory authorities as required.

3.2.4.3 Though PMU went through training under the World Bank safeguards requirements, are not familiar with Bank safeguards policy and its ISS requirements. Training shall take place for both the Environmental Department and hired contractor on the implementation and monitoring of the ESMP. SNSC Department is willing to support ENR. The contractor shall

train his workers on the ESMP implementation including EHS requirements during the induction session or by conducting additional sessions, this shall be performed before the commencement of any work to prevent exposure to construction activities associated risks.

3.2.4.4 As per the Bank ISS, annual project E&S compliance and performance Audits shall be conducted by the PMU through a contracted independent Consultant to ensure that the projects are being implemented in compliance with the loan conditions/agreements; applicable national regulations and AfDB's Integrated Safeguard System operational safeguard policies and their requirements. Based on the above requirement, the E&S Compliance and Performance Audits will have to be undertaken before the end of the 2nd year and thereafter every year during project implementation.

### 3.2.5 *Climate Change and Green Growth*

3.2.5.1 The project has been screened using the Climate Change Safeguard System (CSS) and has been categorized as Category 2, which indicates that the project is not very vulnerable to climate risk. A voluntary consideration of low-cost risk management and adaptation measures are recommended. It is recommended that the project should consider the use of electrified railway in the long-term to reduce emissions and contribute to climate change mitigation. It is also important - when redesigning the railway - to take into consideration the risk of increase in maximum temperatures due to climate change which may cause heat stress to railway. In order to address this climate risks, it is important to factor climate change into strategic decision regarding project design, train staff to build understanding of climate change/improve operational performance in dealing with climate risks. ENR may not have capacity to implement the IPCC methodology to measure baseline emissions as well as the reduced emissions resulting from improved traffic flow and reduced congestion. The Bank's climate change team can support the accounting process of GHG. Transport is a priority area for Egypt as reflected in its National Development Plan. Moreover, railway - as a means of mass public of transport - is considered among the viable mitigation options. The implementation of the project which involves modernization of the railway will allow for a better flow of traffic and reduce the GHG emissions. It will also improve the level of services offered by the railway network, improve community's livelihood and contribute to building resilience and climate change adaptation. Through this project, the Bank will dialog with ENR on the need to support studies to identify climate change mitigation/adaptation measures in the rail sector.

### 3.2.6 **Gender**

3.2.6.1 Gender assessment of ENR conducted by EBRD in 2015, reviews that, 40% of men use the train from and to work, 25% of women use the train to visit family, and 30% of both women and men use the train to go to education centers. Women are less satisfied with the noise, cleanliness, lighting, and inappropriate behavior by male passengers. To mitigate against the challenges that women experience, ENR has been working on adopting the needs of female passengers and making its transport services safer for everyone. ENR conducts regular gender awareness campaigns, the latest of which was launched in November 2020, to help combat sexual harassment on the trains and stations, disseminates such information through posters, conducts regular patrols of stations and trains, and allocates enough female station staff. Accordingly, ENR was awarded the Gold Award in 2018 and the Bronze Award in 2020 by EBRD in the Gender and Inclusion category for its contribution to safe transportation in Egypt.

3.2.6.2 The project is expected to benefit women's social and economic mobility as a safe and reliable transport and essential for various activities contributing to women's economic empowerment. During the project's implementation, it will train ENR's staff, 30% of whom

are expected to be women, in key areas including operation and maintenance and the new signaling and train control systems, and will increase the number of female engineers in ENR by 10% under the World Bank components of the project. The project is categorized under the Gender Marker System as Category III. The action plan for implementing this measure is presented in the Technical Annexes.

3.2.6.3 The rail sector employs less than 3% women with most of the women in non-technical fields. Part of the reforms being supported under the World Bank components of the Project is to promote participation of women in the railway sector through deliberate policies to recruitment women in technical and management positions. In addition to the above, a reliable railway transport will increase mobility of low-income groups, both women and men and the youth to access jobs and business opportunities in the mainstream economy, and will particularly increase the rate of women participation in the labor market. The Project will also create direct short-term employment to benefit both women and men. Women will be encouraged to seek employment through adaptation of gender sensitive programs.

# IV - IMPLEMENTATION

## *4.1 Implementation arrangements*

**Executing Agency**

4.1.1 The Executing Agency for the proposed Project shall be the Egypt National Railways Authority (ENR), with oversight by the Ministry of Transport. The ENR has an Engineering Projects and Development Sector headed by a Vice-Chairman, and under this sector, there is a Project Management Unit (PMU) which coordinates and manages both government and DPs' funded capital projects, and works closely with other ENR departments, namely the Infrastructure Business Unit, the Procurement Department, the Financial Department, and the Environment and Social Department. Based on the assessment conducted by the Bank, the PMU capacity is adequate to implement the proposed project. The project will also support recruitment of an international consulting firm to assist the PMU with the following: technical supervision of the project to ensure quality of works; contract and project management; supervise implementation of the Environmental Mitigation Plan (EMMP); supervise occupational safety and health at work sites; measurement of completed works and verification of payments to the contractor. The details on the skills mix for the consulting firm and tasks shall be specified in the Terms of Reference of the bidding documents. In addition to the above, the PMU will be assisted by a dedicated team of ENR engineers from user departments who will continuously and closely work with the consultant and the contractor on the project.

**Procurement Arrangements**

4.1.2 All procurements of goods (including non-consultancy services), works and the acquisition of consulting services, financed by the Bank for the project, will be carried out in accordance with the *"Procurement Policy and Methodology for Bank Group Funded Operations" (BPM)*, dated October 2015 and following the provisions stated in the Financing Agreement. Pursuant to this BPM, and following the various evaluations conducted, all contracts under the Project financed by the Bank will be carried out under the **Bank's Procurement Methods and Procedures (Bank PMP)** in line with the Bank's Procurement Policy and Methodology for Bank Group Funded Operations dated October 2015, utilizing Bank's Standard Solicitation Documents (SSDs) as outlined below.

4.1.3 The Bank PMP has been chosen for these procurements on account of the complexity of the Project and the fact that the Egyptian public procurement system is in a state of transition pending the completion of the development of essential implementation instruments like the Standard Bidding/Proposal Documents, the Procurement Manual and its prescribed standard procurement processing forms. The implementation details of these procurements as well as the associated control mechanisms are detailed in Annex B.5.

4.1.4 **Procurement Risks and Capacity Assessment (PRCA):** The assessment of procurement risks at the Country, Sector, and Project levels and of procurement capacity at the Executing Agency (EA), were undertaken[10] for the project and the output have informed the decisions on the procurement regime being used for the specific transactions under the project. The appropriate risks mitigation measures have been included in the procurement PRCA action plan proposed in Annex B.5, Para. 5.9.

4.1.5 **Advance Contracting and Retroactive Financing:** On 19 February 2020, the Bank approved the GoE's request for the use of advance contracting procedures for the Design, Supply and Installation Contract of ETCS Level 1 Systems in order to reduce the time for procurement processing of the project activities after loan approval. Lessons from other Bank projects show that procurement delay is a major setback on implementation progress and disbursement, and advance contracting is one way of avoiding delays after project approval.

4.1.6 The Government was fully informed that: i) it undertakes such Advance Contracting at its own risk and does not commit the Bank in any way to approve the Financing of the Project; ii) Procurement under Advance Contracting must have been carried out according to the Bank's Procurement Framework, if it is to be eligible for Bank Financing; iii) Announcements must indicate that the Borrower has applied for Financing from the Bank, and that iv) if the contract is signed prior to the signature of the Financing Agreement, reimbursement by the Bank of any payments made by the Borrower under the contract is referred to as Retroactive Financing and only permitted within the limits specified in the Financing Agreement.

**Financial Management and Audit**

4.1.7 ENR will be responsible for all overall project fiduciary functions, including the budgeting, internal control, disbursements, accounting and reporting functions. As an economic authority, the ENR has its own financial regulations approved by its Board and by the Minister of Transport. The PMU has acquired relevant experience throughout other DPs' financed projects including the ongoing project component financed by the World Bank. The assessment of the ENR capacity and the financial management arrangements proposed to support project implementation concluded a Substantial fiduciary risk. The recruitment of an engineering consultancy firm for the management and supervision of the installation of the train control system financed by the Bank will mitigate the implementation risks of the project. The ENR will provide the Bank the formalized tasks and responsibilities of the PMU and the job description of its staff, considering the tasks pertaining to the project. The PMU will formalize the internal control procedures of project transactions including the controls the engineering consultant will ensure. The ENR shall provide the Bank the mitigating action plan of deficiencies reported by the Accountability State Authority relevant to implementation of projects, and formalized procedures of management of the spare parts to be procured under the contract financed by the Bank. The PMU will prepare

[10] See Technical Annex B.5 for details

quarterly financial progress reports and annual financial statements for the project and ensure that the audit reports are submitted to the Bank within the required deadlines.

4.1.8 The project's financial statements will be audited by an independent auditor acceptable to the Bank on an annual basis, in accordance with the Terms of Reference for the audit of Bank-funded operations. The audit reports, including the report on the internal control, will be submitted to the Bank no later than six months following the closing of the fiscal year subject to audit.

**Disbursement Arrangements**

4.1.9 Given the limited number of contracts to be financed by the Bank in this project, disbursement under the Bank loan will be made through the direct payment method in accordance with the Bank rules and procedures into force. The reimbursement method may also be used to reimburse for eligible expenditures incurred under the project as a result of the use of Advance Contracting.

### *4.2 Monitoring*

4.2.1 The Project monitoring and evaluation (M&E) is incorporated within the ENR organization structure. Various departments are responsible for monitoring activities and gathering statistics in their function areas of operation. For example, the Finance Department captures records on revenues, from which impact of the ATP intervention will be measured. Similarly, outcomes in terms of traffic and capacity increases will be obtained from the Train Operations Department which collects statistics on trains operated and traffic carried in a given period of time, usually daily statistics are collected.

4.2.2 ENR's present organizational structure also includes an institutional entity with adequate staff capacity to implement and monitor its corporate environmental and social policies but also to implement the environmental and social management plans of ENR's projects. A General Manager leads ENR's Environmental Department and is supported by three E&S qualified specialist. According to ENR, the Unit as well as the PIU personnel are under continuous training through the implementation of the ESMPs of the ongoing other components of the project funded by 8 other MDBs and the WB. The Ministry of Transport is currently in the process of creating a Health and Safety Directorate which will, in addition to its mandate in the areas of health and safety, be responsible for environmental management aspects of all departments and organizations within the Ministry including the ENR.

4.2.3 At the project level, the contractors will be required to submit monthly reports indicating the progress of work, from which output statistics will be obtained by the PMU. In addition, the PMU will be expected to prepare quarterly progress reports for submission to the Bank consolidating input from the different concerned ENR departments as mentioned above, in addition to the reports from the consultant. The Bank will conduct at least two full project supervisions each year, in addition to routine follow-up by COEG.

### *4.3 Governance*

4.3.1 The railway sector in Egypt is vertically integrated and is owned by ENR, a public entity established in 1980 under the Ministry of Transport. As part of commercialization to improve performance, ENR was restructured in 2007 whereby the following business units were created: maintenance and railway services; railway transport projects; metro operation and management;

rail renewal and maintenance of tracks; development of transport technology and IT; management and services of coaches; security and cleaning; and medical center. Ultimate management of ENR is for the Board that comprises 14 members appointed by the Minister of Transport. Day-to-day management of ENR is under the leadership of the Chair of the Board, who is appointed by the President of the Country based on recommendations by the Minister of Transport. The Chairperson is assisted by 10 deputies responsible for Projects and Modernization, Infrastructure, Maintenance, Financial Affairs, Human Resources, among others.

4.3.2 For the proposed project, the Project Management Department and the PMU are accountable to ENR's Deputy Chairman for Projects and Modernization. As a public authority, ENR is under the purview of the Accountability State Authority (ASA) that reviews and audits its financial and procurement affairs. While ASA's reports are not made public, they are presented to the Parliament in a consolidated manner.

### *4.4 Sustainability*

4.4.1 To ensure sustainability of the ATP system, the proposed project design includes a two-year period of maintenance by the ATP contractor after commissioning of the system, in addition to supply of spare parts for five years. During this period, ENR technicians and engineers will be trained by working with the contractor to ensure knowledge transfer. It is expected that, after this maintenance period, the technicians and engineers will be able to maintain the system sustainably without outside assistance. Financing of the maintenance activities after the contractor's maintenance period will be done through ENR annual maintenance budget. It is expected that, with increased revenues through the ongoing and planned interventions for railway modernization, including the ENRMP, ENR shall be able to adequately allocate resources for rail infrastructure maintenance including the installed ATP system.

4.4.2 In terms of Environmental Management, ENR has a full-fledged environmental department with trained environmental and social experts who continually monitor railway activities to ensure that all environmental and social negative impacts are mitigated. The Ministry of Transport is currently considering the creation of a Health and Safety Directorate. One person has already been recruited, and others are expected to follow. In addition to its mandate in the areas of health and safety, the new directorate will be responsible for environmental management aspects of all departments and organizations of the ministry of transport including the ENR. In addition to the above, the Egyptian Environmental Affairs Agency (EEAA) monitors railway sector activities and once in while inspects railway projects to ensure compliance to national environmental laws.

4.4.3 In terms of infrastructure maintenance and sustainability, in the short-term, the Project has provided for acquisition of spare parts, training of staff, and maintenance of the system by the contractor for a period of 5 years after commissioning of the system. In the medium to long-term, one of the activities under the World Bank components will focus on ENR financial reforms, with two key outputs to include introduction of Public Sector Obligations (PSO) and Multi-Annual Infrastructure Contracts (MAIC). Under these reforms, the GoE will compensate the actual cost to ENR for operating passenger trains whose fares are not cost reflective but are meant to make public transport affordable to about 40% of the citizens in the low-income category. The MAIC contracts will also assure that infrastructure is adequately budgeted for and maintained. These interventions will in-part ensure sustainability in the maintenance of infrastructure.

### *4.5 Risk management*

4.5.1 The project may face a number of risks, among which four main risks have been identified, namely: not achieving the expected rail network capacity due to low availability of locomotives, as a good proportion of the ENR fleet is old, the ETCS-ATP system not working as expected, delays in project effectiveness as is the experience in most Bank member states, and project cost-overrun due to underestimate and/or price fluctuation of materials, and impact of covid-19 pandemic on the progress of the project. The mitigations measures to the identified risks are summarized in **Table 4.1** below.

**Table 4.1 : Project risks and mitigation measures**

| Risks Identified | Mitigating Measures |
|---|---|
| 1. Expected improvement in rail network capacity not achieved due to low availability of locomotives. | ENR is in the process of procuring about 100 new locomotives with the support of EBRD, in addition to another 110 new locomotives already delivered to ENR from GE. |
| 2. The ATP system not working to expectations. | Selection of contractor will be restricted to firms with proven experience in ETCS-ATP installations. |
| 3. Delays in project effectiveness | This potential risk has been factored in the planned project implementation period. |
| 4. Impact of Covid-19 on the progress of the project. | A stipulation will be included in the bidding documents to request contractors to provide a clear plan on how they will mitigate against the impact of COVID-19 on the supply and installation of the ATP system. |

### *4.6 Knowledge building*

4.6.1 The project will support on-job training of ENR staff by the contractor on the operation and maintenance of the ETCS system for two years. This will contribute to knowledge and skills transfer to ENR staff in the design, installation, operation and maintenance of the ETCS system. This arrangement will contribute to sustainability in terms of required skillsets to maintain the ETCS system in the long term. Second, the Bank has conducted, through independent consultants, a procurement assessment at the national level (legal and institutional), sector level (market analysis), and at the project level (ENR organization procurement management set-up). The assessment report includes a set of recommendations to be incorporated in ENR's current procurement procedures to align it to the new national procurement legislation framework and to improve the efficiency of procurement at ENR.

## V – LEGAL INSTRUMENTS AND AUTHORITY

### *5.1 Legal instrument*

The Project will be financed by an ADB loan.

### *5.2 Conditions associated with Bank's intervention*

5.2.1 **Conditions Precedent to Entry into Force of the Loan Agreement**: The entry into force of the Loan Agreement shall be subject to the fulfilment by the Borrower of the provisions of Section 12.01 of the General Conditions Applicable to Loans and Guarantee Agreements of the ADB.

5.2.2 **Conditions Precedent to First Disbursement of the Loan**: The obligation of the Bank to make the first disbursement of the loan shall be subject to the entry into force of the Loan

Agreement in accordance with 5.2.1 above and the fulfillment of the following condition by the Borrower in form and substance satisfactory to the Bank:

(a) the execution and delivery of a Subsidiary Agreement between the Executing Agency and the Borrower, under terms and conditions approved by the Bank, which shall include inter alia: (i) the roles and responsibilities of the Executing Agency with regard to the implementation of the Project; and (ii) the obligation of the Executing Agency to comply with the reporting, financial management, technical, fiduciary, safeguards, monitoring and other relevant requirements applicable to the Project in accordance with the provisions of the Loan Agreement. The GoE will take the decision to either on-lend or on-grant the Bank loan to ENR after loan signature. The decision will be communicated to the Bank through the Subsidiary Agreement.

5.2.3 **Other Condition**: The Borrower shall:

a. and shall cause the Executing Agency, to provide not later than 31 March 2022, the mitigating action plan of deficiencies reported by the Accountability State Authority relevant to implementation of projects, and formalized procedures of management of the spare parts to be procured under the contract financed by the Bank, in form and substance satisfactory to the Bank;
b. within twelve (12) months of the first disbursement of the Loan, or such later date as may be agreed with the parties recruit an international consulting firm to assist the PMU with the following activities: technical supervision of the project to ensure quality of works; contract and project management; supervise implementation of the Environmental and Social Management Plan (ESMP); supervise occupational safety and health at work sites; measurement of completed works and verification of payments to the contractor
c. carry out, over the project implementation period, the implementation of the Environmental and Social Management Plan (ESMP) through its staff and resources and the annual project environmental and social compliance and performance audits through an independent Consultant in accordance with agreed specifications acceptable to the Bank, as its counterpart contribution (the "Counterpart Contribution") towards the costs of the Project.

5.2.4 **Undertakings**: The Borrower shall, and shall cause the Executing Agency, all its contractors, sub-contractors and agents to:

(a) carry out the Project in accordance with the Environmental and Social Management Plan ("ESMP"), the Bank's Safeguards Policies and the applicable national legislation in a manner and in substance satisfactory to the Bank;
(b) conduct, through a contracted independent Consultant, before the end of the second year and thereafter every year during Project implementation, annual environmental and social compliance and performance audits to ensure that the Project is being implemented in compliance with the Loan agreement, the Bank's Safeguards Policies and the applicable national legislation in a manner and in substance satisfactory to the Bank and submit the related audit reports to the Bank not later than December 15$^{th}$ of the relevant year;
(c) submit to the Bank, not later than six months after the completion of the Project, environmental and social compliance and performance Project completion report;
(d) prepare and submit not later than 30 days after the end of each quarter, using the template provided by the Bank, quarterly reports on the implementation of the ESMP including any implementation failures and related remedies thereof;

(e) refrain from taking any action which would prevent or interfere with the implementation of the ESMP including any amendment, suspension, waiver, and/or voidance of any provision thereof, whether in whole or in part, without the prior written concurrence of the Bank; and

(f) cooperate fully with the Bank in the event that the implementation of the Project or change in Project scope results in hitherto unforeseen displacement and/or resettlement of persons, and shall not commence any works in the affected area under the Project, unless all Project affected persons (PAPs) in such areas have been compensated and/or resettled in accordance with a Resettlement Action Plan (RAP), to be prepared by the Borrower.

### *5.3 Compliance with Bank Policies*

5.3.1 This Project complies with all applicable Bank policies.

## VI – RECOMMENDATION

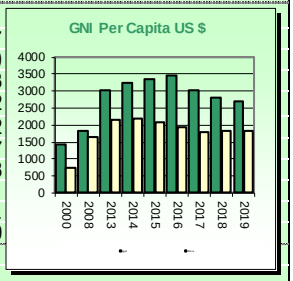
6.1 Management recommends that the ADB Board of Directors approves the proposed ADB loan of EUR One Hundred and Forty-Five million (EUR 145 million) to the Arab Republic of Egypt to support the Egypt National Railway Modernization Project (ENRMP), subject to the conditions stipulated in this Project Appraisal Report.

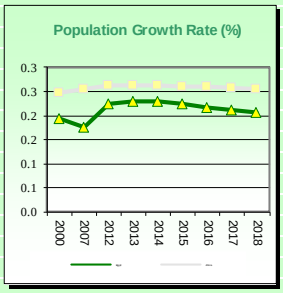
# Appendix I: Country's Comparative Socio-Economic Indicators

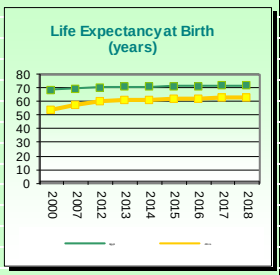
## Egypt

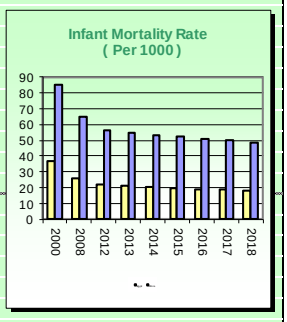
### COMPARATIVE SOCIO-ECONOMIC INDICATORS

| | Year | Egypt | North Africa | Africa | Develo-ping Countries |
|---|---|---|---|---|---|
| **Basic Indicators** | | | | | |
| Area ( '000 Km²) | 2019 | 995 | 6,784 | 30,067 | 94,797 |
| Total Population (millions) | 2019 | 100.4 | 202.9 | 1,306.3 | 6,384.0 |
| Urban Population (% of Total) | 2019 | 43.1 | 55.9 | 43.3 | 50.3 |
| Population Density (per Km²) | 2019 | 100.8 | 30.0 | 44.5 | 69.2 |
| GNI per Capita (US $) | 2019 | 2 690 | 3 232 | 1 843 | 5 102 |
| Labor Force Participation *- Total (%) | 2019 | 46.4 | 45.2 | 63.2 | 60.7 |
| Labor Force Participation **- Female (%) | 2019 | 21.9 | 21.0 | 54.6 | 45.8 |
| Sex Ratio (per 100 female) | 2019 | 102.1 | 101.2 | 99.8 | 107.1 |
| Human Develop. Index (Rank among 189 countries) | 2018 | 116 | ... | ... | ... |
| Popul. Living Below $ 1.90 a Day (% of Population) | 2007-18 | 3.2 | 2.0 | 35.6 | 11.9 |
| **Demographic Indicators** | | | | | |
| Population Growth Rate - Total (%) | 2019 | 2.0 | 1.8 | 2.7 | 1.2 |
| Population Growth Rate - Urban (%) | 2019 | 1.9 | 2.1 | 3.6 | 2.3 |
| Population < 15 years (%) | 2019 | 33.8 | 31.3 | 40.6 | 27.6 |
| Population 15-24 years (%) | 2019 | 16.9 | 16.0 | 19.3 | 16.4 |
| Population >= 65 years (%) | 2019 | 5.3 | 6.0 | 3.5 | 7.2 |
| Dependency Ratio (%) | 2019 | 64.2 | 59.5 | 78.7 | 54.6 |
| Female Population 15-49 years (% of total population) | 2019 | 24.8 | 25.3 | 24.2 | 25.2 |
| Life Expectancy at Birth - Total (years) | 2019 | 72.0 | 74.0 | 63.5 | 70.8 |
| Life Expectancy at Birth - Female (years) | 2019 | 74.4 | 75.9 | 65.3 | 73.0 |
| Crude Birth Rate (per 1,000) | 2019 | 25.7 | 23.4 | 33.0 | 20.2 |
| Crude Death Rate (per 1,000) | 2019 | 5.8 | 5.5 | 8.0 | 7.3 |
| Infant Mortality Rate (per 1,000) | 2018 | 18.1 | 19.3 | 48.7 | 31.3 |
| Child Mortality Rate (per 1,000) | 2018 | 21.2 | 23.0 | 70.2 | 42.0 |
| Total Fertility Rate (per woman) | 2019 | 3.3 | 3.0 | 4.4 | 2.6 |
| Maternal Mortality Rate (per 100,000) | 2017 | 37.0 | 76.1 | 432.3 | 230.0 |
| Women Using Contraception (%) | 2019 | 61.4 | 62.2 | 39.1 | 61.7 |
| **Health & Nutrition Indicators** | | | | | |
| Physicians (per 100,000 people) | 2010-18 | 45.2 | 87.2 | 33.4 | 121.8 |
| Nurses and midwives (per 100,000 people) | 2010-18 | 192.6 | 192.0 | 107.8 | 240.8 |
| Births attended by Trained Health Personnel (%) | 2010-18 | 91.5 | 88.7 | 62.9 | 79.4 |
| Peop. Using at least basic drinking water services (% of Pop.) | 2017 | 99.1 | 94.9 | 66.3 | 87.7 |
| Peop. Using at least basic sanitation services (% of Population) | 2017 | 94.2 | 90.8 | 40.3 | 68.5 |
| Percent. of Adults (aged 15-49) Living with HIV/AIDS | 2018 | 0.1 | 0.1 | 3.4 | ... |
| Incidence of Tuberculosis (per 100,000) | 2018 | 12.0 | 43.9 | 202.3 | 154.0 |
| Child Immunization Against Tuberculosis (%) | 2018 | 95.0 | 96.3 | 81.4 | 84.9 |
| Child Immunization Against Measles (%) | 2018 | 94.0 | 91.4 | 76.1 | 85.2 |
| Underweight Children (% of children under 5 years) | 2010-17 | 7.0 | 5.8 | 17.5 | 14.5 |
| Prevalence of stunding | 2010-17 | 22.3 | 18.4 | 34.0 | 23.6 |
| Prevalence of undernourishment (% of pop.) | 2017 | 4.5 | 4.3 | 18.5 | 12.3 |
| Current health expenditure (% of GDP) | 2017 | 5.3 | 5.7 | 5.6 | 5.4 |
| **Education Indicators** | | | | | |
| Gross Enrolment Ratio (%) | | | | | |
| Primary School - Total | 2010-19 | 106.3 | 108.6 | 100.1 | 103.6 |
| Primary School - Female | 2010-19 | 106.5 | 107.9 | 98.1 | 102.4 |
| Secondary School - Total | 2010-19 | 87.9 | 87.9 | 52.4 | 71.9 |
| Secondary School - Female | 2010-19 | 87.3 | 87.7 | 50.3 | 71.4 |
| Primary School Female Teaching Staff (% of Total) | 2010-18 | 61.4 | 63.8 | 48.6 | 62.9 |
| Adult literacy Rate - Total (%) | 2010-18 | 71.2 | 74.2 | 66.9 | 84.0 |
| Adult literacy Rate - Male (%) | 2010-18 | 76.5 | 81.6 | 70.8 | 88.2 |
| Adult literacy Rate - Female (%) | 2010-18 | 65.5 | 67.5 | 60.0 | 79.8 |
| Gouvernment expenditure on Education (% of GDP) | 2010-18 | | 6.2 | 4.7 | 4.0 |
| **Environmental Indicators** | | | | | |
| Land Use (Arable Land as % of Total Land Area) | 2016 | 2.8 | 3.5 | 8.0 | 11.4 |
| Agricultural Land (as % of land area) | 2016 | 3.8 | 20.8 | 38.2 | 38.3 |
| Forest (As % of Land Area) | 2016 | 0.1 | 1.4 | 13.2 | 31.9 |
| Per Capita CO2 Emissions (metric tons) | 2014 | 2.2 | 2.7 | 1.2 | 3.5 |




*Sources : AfDB Statistics Department Databases; World Bank: World Development Indicators; UNAIDS; UNSD; WHO, UNICEF, UNDP; Country Reports.* *last update : October 2020*

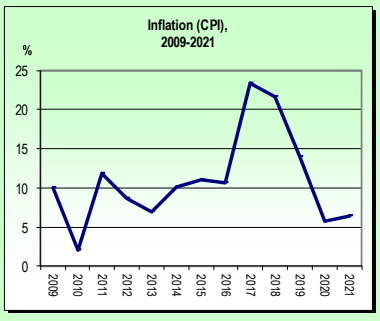
*Note : n.a. : Not Applicable ; ... : Data Not Available. * Labor force participation rate, total (% of total population ages 15+)*

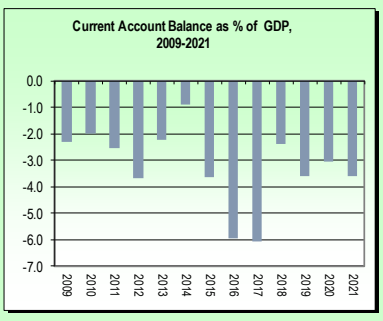
*** Labor force participation rate, female (% of female population ages 15+)*

# Egypt

## Selected Macroeconomic Indicators

| Indicators | Unit | 2010 | 2016 | 2017 | 2018 | 2019 | 2020 (e) | 2021 (p) |
|---|---|---|---|---|---|---|---|---|
| **National Accounts** | | | | | | | | |
| GNI at Current Prices | Million US $ | 196,144 | 326,787 | 293,185 | 275,586 | 270,044 | ... | ... |
| GNI per Capita | US$ | 2,370 | 3,460 | 3,040 | 2,800 | 2,690 | ... | ... |
| GDP at Current Prices | Million US $ | 214,623 | 332,488 | 236,531 | 250,253 | 302,346 | 340,902 | 353,056 |
| GDP at 2010 Constant prices | Million US $ | 214,623 | 258,488 | 269,603 | 283,930 | 299,830 | 310,605 | 319,935 |
| Real GDP Growth Rate | % | 5.1 | 4.3 | 4.3 | 5.3 | 5.6 | 3.6 | 3.0 |
| Real per Capita GDP Growth Rate | % | 3.1 | 2.1 | 2.1 | 3.2 | 3.5 | 1.6 | 1.1 |
| Gross Domestic Investment | % GDP | 19.5 | 15.0 | 15.3 | 16.7 | 17.7 | 15.0 | 14.9 |
| Public Investment | % GDP | 13.8 | 2.7 | 3.2 | 2.4 | 2.5 | 2.2 | 2.2 |
| Private Investment | % GDP | 5.7 | 12.4 | 12.0 | 14.3 | 15.1 | 12.8 | 12.7 |
| Gross National Savings | % GDP | 19.4 | 9.1 | 8.8 | 11.4 | 11.1 | 11.0 | ... |
| **Prices and Money** | | | | | | | | |
| Inflation (CPI) | % | 2.0 | 10.6 | 23.3 | 21.6 | 13.9 | 5.7 | 6.4 |
| Exchange Rate (Annual Average) | local currency/US$ | 5.5 | 8.1 | 14.7 | 17.7 | 17.6 | 16.1 | 16.9 |
| Monetary Growth (M2) | % | 11.0 | 29.5 | 31.5 | 16.3 | 12.7 | 14.2 | ... |
| Money and Quasi Money as % of GDP | % | 138.0 | 147.3 | 151.2 | 137.6 | 129.2 | 143.2 | ... |
| **Government Finance** | | | | | | | | |
| Total Revenue and Grants | % GDP | 25.3 | 20.3 | 21.8 | 20.6 | 20.3 | 19.9 | 19.7 |
| Total Expenditure and Net Lending | % GDP | 33.6 | 33.2 | 32.3 | 30.2 | 28.2 | 28.0 | 27.1 |
| Overall Deficit (-) / Surplus (+) | % GDP | -8.3 | -13.0 | -10.6 | -9.6 | -7.9 | -8.0 | -7.4 |
| **External Sector** | | | | | | | | |
| Exports Volume Growth (Goods) | % | -9.5 | 4.1 | 11.6 | 10.4 | 7.0 | 7.7 | -5.6 |
| Imports Volume Growth (Goods) | % | -6.9 | 7.6 | -0.8 | -0.1 | 2.3 | -8.9 | -14.3 |
| Terms of Trade Growth | % | 0.3 | -7.1 | 0.5 | 0.6 | 0.1 | -7.4 | -3.9 |
| Current Account Balance | Million US $ | -4,318 | -19,831 | -14,394 | -5,962 | -10,894 | -10,474 | -12,667 |
| Current Account Balance | % GDP | -2.0 | -6.0 | -6.1 | -2.4 | -3.6 | -3.1 | -3.6 |
| External Reserves | months of imports | 7.4 | 4.2 | 6.3 | 6.7 | 6.8 | 6.3 | ... |
| **Debt and Financial Flows** | | | | | | | | |
| Debt Service | % exports | 9.7 | 14.4 | 19.8 | 26.8 | 24.2 | 29.2 | 49.9 |
| External Debt | % GDP | 14.6 | 16.8 | 33.4 | 37.0 | 36.0 | 34.4 | 35.5 |
| Net Total Financial Flows | Million US $ | 6,698 | 9,678 | 5,076 | 8,678 | 5,159 | ... | ... |
| Net Official Development Assistance | Million US $ | 599 | 2,437 | 33 | 2,081 | 1,741 | ... | ... |
| Net Foreign Direct Investment | Million US $ | 6,386 | 8,107 | 7,409 | 8,141 | 9,010 | ... | ... |


Source : AfDB Statistics Department: African; IMF: World Economic Outlook,October 2020 and International Financial Statistics, December 2020;
AfDB Statistics Department: Development Data Portal Database, December 2020. United Nations: OECD, Reporting System Division.

Notes: ... Data Not Available (e) Estimations (p) Projections Last Update: February 2021

# Appendix II: Table of ADB Portfolio in the Country

(Data as of 28 February 2021)

| Sector Name | Long name | Company Name | Type | Approval Date | Completion Date | Loan/Grant Amount (UA Mln.) | Disb. Ratio |
|---|---|---|---|---|---|---|---|
| **a. Public Sector Operations** | | | | | | | |
| **Agriculture** | National Drainage Preprogramme | ADB | Loan | 06/17/2015 | 06/30/2024 | 42.08 | 52.1% |
| | National Drainage Technical Assistance | MIC TAF | Grant | 02/01/2016 | 12/31/2023 | 0.40 | 39.0% |
| | Use of Renewable Energy for Pumping Irrigation | MIC TAF | Grant | 02/26/2015 | 12/31/2021 | 0.80 | 81.5% |
| | Relief Assistance Amidst Covid-19 Outbreak | SRF | Grant | 05/06/2020 | 07/15/2023 | 0.35 | 0.0% |
| **Agriculture Total** | | | | | | **43.63** | **52.1%** |
| **Multi-Sector** | Building Capacity and Institutional Strengthening of MOIC | MENA | Grant | 12/30/2015 | 12/11/2021 | 3.04 | 47.7% |
| | Strengthening the Rule of Law: Enhancing effective and Transparent Delivery of Justice and Rule Making | MENA | Grant | 06/11/2014 | 09/30/2021 | 1.67 | 19.3% |
| | Strengthening the Capacity of the Administrative Control Authority to Combat Corruption in Egypt – Phase I | MENA | Grant | 05/23/2017 | 09/30/2021 | 2.34 | 35.5% |
| | Support to Parliament Building Capacity | MENA | Grant | 06/11/2014 | 03/30/2021 | 1.90 | 82.9% |
| **Multi-Sector Total** | | | | | | **8.96** | **46.7%** |
| **Social** | Informal Settlements Development Project | MIC TAF | Grant | 11/08/2016 | 03/28/2022 | 0.40 | 62.9% |
| | Enhancement of Entrepreneurship Ecosystem | MIC TAF | Grant | 12/07/2018 | 10/31/2021 | 0.40 | 0.0% |
| | Entrepreneurship Development "Tanmia wa Tatweer" | TFT | Grant | 07/20/2018 | 12/31/2021 | 1.39 | 2.8% |
| **Social Total** | | | | | | **2.19** | **13.3%** |
| **Power** | Suez Thermal Power Project | ADB | Loan | 12/15/2010 | 12/31/2020 | 281.26 | 100.0% |
| | Electricity and Green Growth Support Program (EGGSP) Phase I | ADB | PBO | 06/17/2020 | 06/30/2022 | 188.61 | 0.0% |
| **Power Total** | | | | | | **469.87** | **59.9%** |
| **Water Supply/ Sanitation** | Sustainable Abu-Rawash Wastewater Treatment Project – Phase | AGTF | Loan | 12/15/2017 | 12/31/2022 | 34.79 | 68.4% |
| | | ADB | Loan | 12/15/2017 | 12/31/2022 | 69.58 | 68.4% |
| | Feasibility Study and Project Preparation for the Green Abu-Rawash Sludge Facility Project | KOAFEC | Grant | 05/31/2018 | 12/31/2021 | 0.42 | 3.7% |
| | Integrated Rural Sanitation in Upper Egypt | ADB | Loan | 12/16/2019 | 12/31/2025 | 90.53 | 0% |
| | | RWSSI | Loan | 12/16/2019 | 12/31/2025 | 0.84 | 0% |
| **Water Supply/Sanitation Total** | | | | | | **196.15** | **68.1%** |
| **Public Sector Total** | | | | | | **720.80** | **60.3%** |
| **b. Private Sector Operations** | | | | | | | |
| **Finance** | Corporate Leasing Company (CORPLEASE) | AGTF | Loan | 01/29/2020 | 12/31/2021 | 4.87 | 0% |
| | | ADB | Loan | 01/29/2020 | 12/31/2021 | 10.44 | 0% |
| **Finance Total** | | | | | | **15.31** | **0%** |
| **Power** | Egyptian Refining Company | ADB | Loan | 03/17/2010 | 12/31/2025 | 139.16 | 100.0% |
| | Egyptian Refining Company Sub Conv Loan | ADB | Loan | 03/17/2010 | 12/31/2025 | 17.39 | 100.0% |
| | Shapoorji Pallonji 50 Mw Solar PV Project - Egypt FiT Round | ADB | Loan | 09/04/2017 | 12/18/2035 | 8.35 | 100.0% |
| | | GEF | Loan | 09/04/2017 | 12/18/2035 | 4.87 | 100.0% |
| **Power Total** | | | | | | **169.77** | **100.0%** |
| **Private Sector Total** | | | | | | **185.08** | **100.0%** |
| **Grand Total** | | | | | | **905.87** | **68.8%** |

# Appendix III: Project Location Map

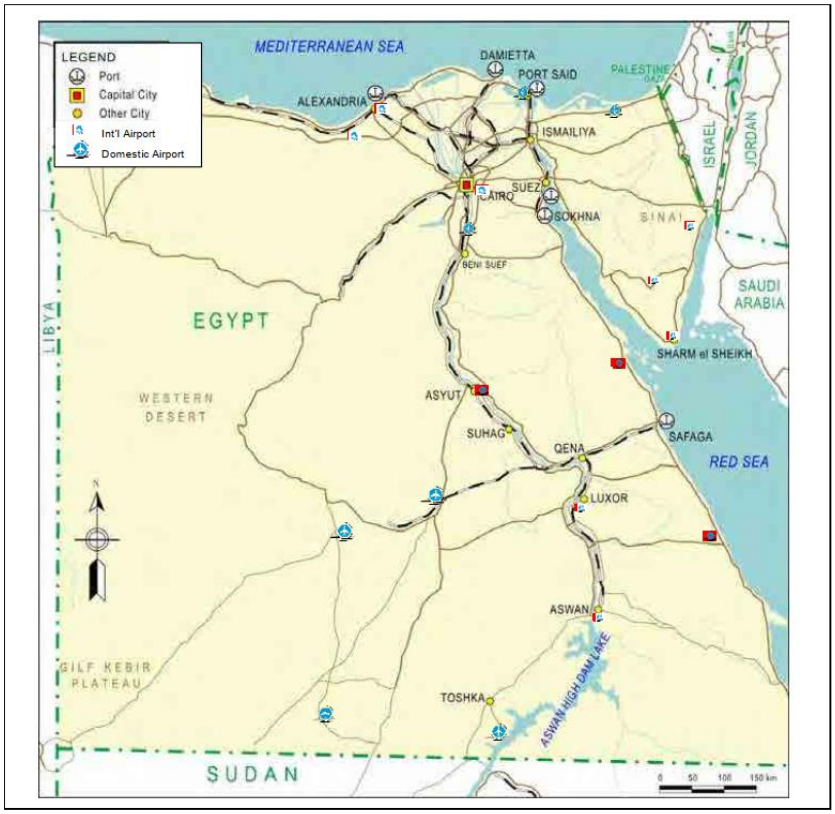



**Figure 1: Map of Egypt**

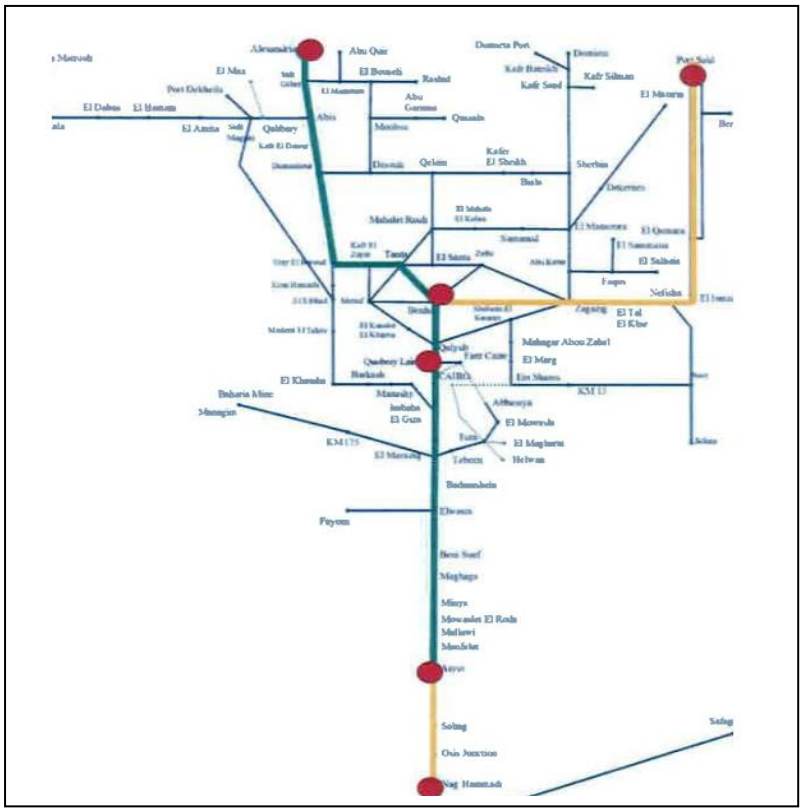


**Figure 2: Egypt National Rail Network**

# ENVIRONMENTAL AND SOCIAL COMPLIANCE NOTE (ESCON)

AFRICAN DEVELOPPEMENT BANK GROUP

## A. Basic Information[11]

| | |
|---|---|
| **Project Title**: Egypt National Railway Modernization Project (ENRMP) | **Project ''SAP code'':** P-EG-D00-009 |
| **Country**: Egypt | **Lending Instrument**[12]: DI ☒ FI ☐ CL ☐ BS ☐ GU ☐ RPA ☐ EF ☐ RBF ☐ |
| **Project Sector**: Transport | **Task Team Leader**: Davies MAKASA |
| **Appraisal date**: April 2020 | **Estimated Approval Date**: 31/03/2021 |
| **Environmental Safeguards Officer**: Ousmane FALL | |
| **Social Safeguards Officer**: | |
| **Environmental and Social Category**: 2 | **Operation type**: SO ☒ NSO ☐ PBO ☐ |
| **Is this project processed under rapid responses to crises and emergencies?** | Yes ☐ No ☒ |
| **Is this project processed under a waiver to the Integrated Safeguards System?** | Yes ☐ No ☒ |

## B. Disclosure and Compliance Monitoring

### B.1 Mandatory disclosure

| | |
|---|---|
| **Environmental Assessment/Audit/System/Others (specify: ……)** | |
| Was/Were the document (s) disclosed ***prior to appraisal?*** | Yes ☐ No ☒ NA ☐ |
| Date of "in-country" disclosure by the borrower/client | [08/08/2020] |
| Date of receipt, by the Bank, of the authorization to disclose | [19/10/2020] |
| Date of disclosure by the Bank | [21/10/2020] |
| **Resettlement Action Plan/Framework/Others (specify: ……)** | |
| Was/Were the document (s) disclosed ***prior to appraisal?*** | Yes ☐ No ☐ NA ☒ |
| Date of "in-country" disclosure by the borrower/client | [Date] |
| Date of receipt, by the Bank, of the authorization to disclose | [Date] |
| Date of disclosure by the Bank | [Date] |
| **Vulnerable Peoples Plan/Framework/Others (specify: ……...)** | |
| Was the document disclosed ***prior to appraisal?*** | Yes ☐ No ☐ NA ☒ |
| Date of "in-country" disclosure by the borrower/client | [Date] |
| Date of receipt, by the Bank, of the authorization to disclose | [Date] |
| Date of disclosure by the Bank | [Date] |
| **If in-country disclosure of any of the above documents is not expected, please explain why: NA** | |

### B.2. Compliance monitoring indicators

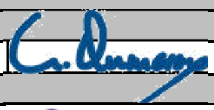
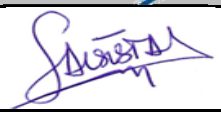
| | |
|---|---|
| Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies? | Yes ☒ No ☐ NA ☐ |
| Have costs related to environmental and social measures, including for the running of the grievance redress mechanism, been included in the project cost? | Yes ☒ No ☐ NA ☐ |
| Is the total amount for the full implementation for the Resettlement of affected people, as integrated in the project costs, effectively mobilized and secured? | Yes ☐ No ☐ NA ☒ |
| Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies? | Yes ☒ No ☐ NA ☐ |
| Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents? | Yes ☒ No ☐ NA ☐ |

## C. Clearance

Is the project compliant to the Bank's environmental and social safeguards requirements, and to be submitted to the Board? Yes ☒ No ☐

[11] **Note**: *This ESCON shall be appended to project appraisal reports/documents before Senior Management and/or Board approvals.*

[12] **DI**=Direct Investment; **FI**=Financial Intermediary; **CL**=Corporate Loan; **BS**=Budget Support; **GU**=Guarantee; **RPA**=Risk Purchase Agreement; **EF**=Equity Financing; **RBF**=Results Based Financing.

| *Prepared by:* | *Name* | *Signature* | *Date* |
|---|---|---|---|
| Environmental Safeguards Officer: | Ousmane FALL | | 15/02/2021 |
| Social Safeguards Officer: | | | |
| Task Team Leader | Davies MAKASA | | 15/02/2021 |
| ***Submitted by:*** | | | |
| Sector Director: | Amadou OUMAROU |  | **2/16/2021** |
| ***Cleared by:*** | | | |
| Director SNSC: | Maman-Sani ISSA |  | 02/18/2021 |