

Document of
The World Bank

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Report No: 46694-EG

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN
IN THE AMOUNT OF US\$270 MILLION
TO THE
ARAB REPUBLIC OF EGYPT
FOR THE
NATIONAL RAILWAYS RESTRUCTURING PROJECT

February 10, 2009

Sustainable Development Department
Middle East and North Africa

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CURRENCY EQUIVALENTS7
 (Exchange Rate Effective January 8, 2009)

Currency Unit = Egyptian Pounds
 Egyptian Pounds 5.50 = US\$1.00

FISCAL YEAR

July 1 – June 30

ABBREVIATIONS AND ACRONYMS

AC	Air Conditioned Trains	IBRD	International Bank for Reconstruction and Development
APL	Adaptable Program Loan	IFI	International Financial Institution
CBE	Central Bank of Egypt	IFR	Interim Financial Report
CFAA	Country Financial Accountability Assessment	IFRS	International Financing Reporting Standards
CMA	Capital Market Authority	IRR	Internal Rate of Return
CPAR	Country Procurement Assessment Review	ISA	International Standards on Auditing
CPI	Consumer Price Index	LA	Loan Agreement
CTC	Central Traffic Control	MIS	Management Information System
DA	Designated Account	MoF	Ministry of Finance
DPL	Development Policy Loan	MoI	Ministry of Investment
EAS	Egyptian Accounting Standards	MoIC	Ministry of International Cooperation
EEAA	Egyptian Environment Affairs Agency	MoT	Ministry of Transport
EIA	Environmental Impact Assessment	NIB	National Investment Bank
EIRR	Economic Internal Rate of Return	NPV	Net Present Value
EMP	Environmental Management Plan	PFS	Project Financial Statements
ENR	Egyptian National Railways	P&L	Profit and Loss
ENRRP	Egypt National Railways Restructuring Project	PMU	Project Management Unit
ERR	Economic Rate of Return	PA	Project Agreement
ESAL	Equivalent Standard Axle Load	PSO	Public Service Obligation
ESW	Economic Sector Work	RBPIP	Results Based Project Implementation Plan
FIDIC	‘Federation Internationale des Ingénieurs-Conseils’	RSRU	Railway Safety Regulatory Unit
FIRR	Financial Internal Rate of Return	SBD	Standard Bidding Documents
FM	Financial Management	SBU	Strategic Business Unit
FMR	Financial Management Report	SC	Steering Committee
FMS	Financial Management System	SIL	Specific Investment Loan
FR	Financial Reports	SLA	Subsidiary Loan Agreement
GDP	Gross Domestic Product	SOE	Statement of Expenditure
GoE	Government of Egypt	USAID	United States Agency for International Development

Vice President:	Daniela Gressani
Country Director:	Emmanuel Mbi
Sector Manager:	Jonathan Walters
Task Team Leader:	Michel Bellier

**EGYPT, ARAB REPUBLIC OF
Egypt National Railways Restructuring Project**

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EGYPT, ARAB REPUBLIC OF
EGYPT - NATIONAL RAILWAYS RESTRUCTURING PROJECT
PROJECT APPRAISAL DOCUMENT
MIDDLE EAST AND NORTH AFRICA

MNSSD

Date: February 10, 2009 Team Leader: Michel Bellier
Country Director: Emmanuel Mbi Sectors: Railways (100%)
Sector Manager/Director: Jonathan D. Walters Themes: Infrastructure services for private sector development (P); Trade facilitation and market access (S)
Project ID: P101103 Environmental screening category: Partial Assessment
Lending Instrument: Specific Investment Loan

Project Financing Data

Loan Credit Grant Guarantee Other:

For Loans/Credits/Others:

Total Bank financing (US\$m.): 270.00

Proposed terms: Variable-Spread Loan denominated in US Dollars, payable in 30 years, including 5 years of grace period and level repayment

Financing Plan (US\$m)

Source	Local	Foreign	Total
Borrower	35.00	0.00	35.00
International Bank for Reconstruction and Development	270.00	0.00	270.00
Total:	305.00	0.00	305.00

Borrower:

Government of Egypt

Cairo

Egypt, Arab Republic of

Responsible Agency:

Egyptian National Railways

Ramses Square

PO 11111

Cairo

Egypt, Arab Republic of

Tel: 20-2-577-1388 Fax: 20-2-575-0000

Estimated disbursements (Bank FY/US\$m)

FY	2009	2010	2011	2012	2013	2014	2015		
Annual	0.00	40.00	50.00	60.00	60.00	50.00	10.00		
Cumulative	0.00	40.00	90.00	150.00	210.00	260.00	270.00		

Project implementation period: Start April 1, 2009 End: June 30, 2014

Expected effectiveness date: July 31, 2009

Expected closing date: September 30, 2015

Does the project depart from the CAS in content or other significant respects? <i>Ref. PAD I.C.</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does the project require any exceptions from Bank policies? <i>Ref. PAD IV.G.</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Have these been approved by Bank management?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is approval for any policy exception sought from the Board?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does the project include any critical risks rated "substantial" or "high"? <i>Ref. PAD III.E.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does the project meet the Regional criteria for readiness for implementation? <i>Ref. PAD IV.G.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Project development objective *Ref. PAD II.C., Technical Annex 3*

The objective of the proposed Egypt National Railways Restructuring Project (ENRRP) is to assist the Government in improving the reliability, efficiency and safety of the railways' services through signaling and track renewal investments by the Egyptian National Railways (ENR) and the modernization of its management and operating practices in order to enhance the railways' sector responsiveness to economic and social needs and to strengthen the financial viability of the Project Implementing Entity. The ENRRP would finance key elements of ENR's transformation plan, with particular emphasis on investments that are critical to improving operational efficiency and safety for passengers, and increasing revenue, as well as on initiatives modernizing management practices. The proposed Project consists of three components, and the overall financing of this Project amounts to US\$305 million, of which (i) US\$270 million IBRD financing; and (ii) US\$35 million counterpart financing from ENR's resources.

Project description [*one-sentence summary of each component*] *Ref. PAD II.D., Technical Annex 4*

The proposed Project consists of three components, and the overall financing of this Project amounts to US\$305 million, of which (i) US\$270 million IBRD financing; and (ii) US\$35 million counterpart financing from ENR's resources.

Component 1-Signaling Modernization (US\$202 million - IBRD financing US\$197 million for investment, counterpart financing US\$5 million for supervision): will finance the modernization of signaling along the Arab el-Raml to Alexandria line and a computerized Central Traffic Control system (CTC) for that section and Cairo – Banha (on the same Cairo-Alexandria line), and the supervision of those investments.

Component 2-Track Renewal (US\$80 million - IBRD financing US\$60 million, counterpart financing US\$20 million): will finance priority track-renewal works for 200 km of track along the Cairo-Aswan line (149 km on four sections of track) and the Benha-Port Said line (51 km on two sections of track), and supervision of those works.

Component 3-Modernization of Management and Operating Practices (US\$ 10 million-financed by counterparts): activities under this component, which is being financed by ENR, are directed toward developing and cementing changes in managerial and staff practices that reflect the operational and financial restructuring of ENR.

Which safeguard policies are triggered, if any? *Ref. PAD IV.F., Technical Annex 10*

The proposed project is classified as category B, requiring partial assessment in the form of preparation of an Environmental and Social Impact Assessment (ESIA) report. The ESIA was carried out by an independent environmental consulting firm. Stakeholder consultations were carried out during the ESIA preparation through: (a) interviews and data collection in public scoping for train users, users of level crossings, and residents in areas adjacent to construction sites; and (b) a public consultation meetings in Cairo, which was well advertised in a major daily newspaper and well attended. Information on the project as well as a summary of the findings of the ESIA were posted on consulting firm's website for

public review prior to the consultation meetings. The meetings attracted a pool of stakeholders representing different sectors of society, including social and economic class, gender, and affiliation.

The main possible project impacts are believed to be socio-economic impacts on train users, local residents of communities adjacent to the train corridor, and frequent users of level crossings. No biological impacts are expected. The project does not entail any land acquisition as all works will be carried out on existing rights-of way.

An environmental management plan (EMP) was developed for the project activities as part of the ESIA. The EMP includes the following three components: (a) a mitigation plan, (b) an environmental monitoring plan, and (c) an institutional strengthening and training plan.

Significant, non-standard conditions, **if any**, for:

Ref. PAD III.F.

Board presentation:

Confirmation of Government's approval of the negotiated documents.

Loan/credit effectiveness:

Conditions of effectiveness include: (i) Legal opinion; and(ii)the Subsidiary Loan Agreement is executed and delivered on behalf of the Borrower and the ENR.

Covenants applicable to project implementation:

Dated Covenants

- ENR shall establish the PMU by no later than April 30, 2009, appoint the Director and the procurement specialist by that date, and fully staff the unit by June 30, 2009; the consulting firm assisting the PMU shall be hired by June 30, 2009, based on terms and conditions satisfactory to the Bank;
- By no later than June 30, 2009 ENR shall enter a contract, on terms and conditions satisfactory to the Bank, for supervision of signaling modernization works under Component 1 of the Project;
- By no later than June 30, 2009 ENR shall enter a contract, on terms and conditions satisfactory to the Bank, regarding the supervision of track renewal works under Component 2 of the Project;
- ENR shall enter a contract, on terms and conditions satisfactory to the Bank, regarding the provision of assistance to the implementation of the EMP;
- By no later than September 1, 2009, the Borrower shall establish through the Ministry of Transport a steering Committee with membership and terms of reference satisfactory to the Bank; and
- The mid-term review shall take place by March 31, 2012.

I. STRATEGIC CONTEXT AND RATIONALE

A. Country and Sector Issues

1. Egypt's economic growth has averaged around 5 percent since FY04 and grew robustly at 7.2 percent in FY08, slightly above the 7.1 percent posted in FY07¹ driven by a strong domestic demand. The share of investment in GDP increased to more than 22 percent (up from 21 percent in FY07 and 16.9 percent in FY03), supporting future economic prospects that project average GDP growth rates at about 6.0 percent through FY11, although a slowdown of GDP growth to about 5.0 percent is likely in the short term due to the international financial crisis.² In response to increased growth, unemployment rate has declined to about 8.8 percent, down from 9.4 percent in FY07, while poverty declined from 23.4 percent in 2005 to 18.9 percent in 2008. The fiscal deficit stabilized in spite of upward revisions in public spending, and the fiscal deficit of the general Government remained at 7.7 percent of GDP.
2. Inflation remains a serious challenge facing Egyptian policymakers. After declining to 6.9 percent in November and December of 2007, Consumer Price Index (CPI) inflation has been accelerating mostly due to rising food prices and expanding domestic demand fuelled by monetary growth. Between January and June 2008, overall CPI and food inflation rates increased to 21 and 30 percent, respectively. In August, the rates had risen to 25.6 and 30.9 percent, respectively, the highest level in 19 years, while a drop to about 21.5 percent has been reported for September as commodity prices has fallen. Inflation, which slowed down consumer spending, has resulted in additional pressures on the economy despite the positive indicators of Egypt's reform success, with the economy slowing down in the fourth quarter of 2007/08 when growth dropped to 6.8 percent (compared to 7.6 percent for the same quarter the year before). Public spending is also on the rise, mainly due to increases in food and fuel subsidies which increased to 7.2 percent and 9.4 percent of GDP, respectively.
3. To alleviate the social impacts of higher prices, Government remains committed to the on-going economic liberalization program but should step up the expansion of social security (the food ration card scheme has been extended to more low-income families) and restructuring of subsidy-agencies. Furthermore a 30 percent increase in salaries for civil servants (estimated at about 30 percent of the total workforce) has been approved, while private sector has been called to raise wages. Going forward, although in the short-term real GDP growth in Egypt is expected to remain high, there will be a slowdown as a consequence of the global financial crisis and recession in the developed economies. Talks are underway in the Government on the appropriate combination of policies to mitigate the external shock, including stepping up public investment plans and a temporary freeze on some of the energy price increases recently announced. The challenge, therefore, will be to maintain the appropriate balance between the short term stabilization objective of stimulating aggregate demand and the long term growth requirement of sound fiscal accounts and predictable future policies essential to business-friendly environments.

¹ The World Bank, Egypt Economic Monitoring Note, September 2008

² The World Bank, Country Assistance Strategy Progress Report, June 2008

4. The broad mandate of the present Government is to improve living standards, promote investment, reduce unemployment, contain inflation, and improve the performance of administrative entities. To support its stated objectives and strengthen the business climate, the Government intends to develop well integrated and cost-effective transport systems through greater private sector involvement in the management and delivery of transport facilities and services.

5. The railway sector plays a significant role in the Egyptian economy and is an essential mode of transport for low-income Egyptians. The extensive 5,085 km-long network, sixty percent of which is concentrated in the Nile Delta and along the Nile Valley, reaches most of the Egyptian population – even relatively small population centers, which are served by minor lines and small, poor quality trains. Rail infrastructure is owned by, and rail services are provided by, the Egyptian National Railways (ENR), a public entity created in 1980 and reporting to the Ministry of Transport (MoT).

6. The Egyptian rail sector differs from its regional counterparts in several ways. First, its operations are large. Total traffic (passengers and freight) in FY2007 amounted to 68 billion traffic units³, which exceeded the combined traffic of railways in Algeria, Iran, Morocco, Tunisia and Turkey. Second, ENR is a predominantly passenger railway, as passenger traffic accounts for more than 90 percent of ENR's physical activity. In contrast, passenger traffic on other railways in the region average between 30 percent and 42 percent.

7. Railway operations became a matter of deep concern to the Government in the 1990s and early 2000s due to several issues, in particular, acute safety issues, deteriorating quality of service, and the significant impact of the sector on the Government's budget. During the 2000-2007 period, ENR generated an accumulated deficit of EGP 6.53 billion (equivalent to US\$1.18 billion), almost equivalent to its cumulated gross revenue (EGP 7.24 billion). Its operational deficit totalled EGP 3.91 billion over the same period, and interest totalled EGP 3.83 billion. ENR revenue was not able to finance needed investments in infrastructure and rolling stock, let alone repay investment loans provided by Egypt's National Investment Bank (NIB), Egypt Central Bank, and foreign banks, which amount to a total of about EGP 12 billion.

8. In order to address these challenges, the Government developed a strategy for the railway sector based on policy recommendations from the Bank,⁴ and with the assistance of an international consulting firm during 2006-2008. The strategy's main pillars are to restructure operations to create safer, more dynamic, responsive, and competitive rail services, while continuing to provide transport services to poor people and remote areas under Public Service Obligation (PSO) arrangements. In order to achieve these objectives, the Government is fully committed to a far-reaching transformation plan that will take several years to implement and will entail costly investments (about EGP19.7 billion over the FY08-FY16 period) to modernize ENR network and increase transport capacity, induce financial restructuring including the capitalization of ENR debt, and introduce a number of interrelated institutional reforms that will affect the legal and regulatory framework, financial relations with the Government based on

³ Expressed in terms of Passenger km for passenger traffic, and ton km for freight traffic

⁴ *Egyptian Railways - Diagnosis of the Present Situation and Restructuring Strategy* (August 2005)

financial compensation for PSOs, the restructuring of ENR's organization along strategic business lines (Long-distance Passenger Services, Short-distance Passenger Services, Freight Services, and Infrastructure Services), and the private sector's role in railway activities. The restructuring strategy, which began implementation in 2007, is expected to be implemented over three to five years. As a result, ENR would become profitable from FY2009/2010.

9. The Government fully endorsed the plan proposed by the Minister of Transport in December 2006, and the Minister of Finance has immediately provided a significant initial financial support through a budgetary transfer of EGP 5 billion in 2006. The finalization and overall implementation of the transformation plan has been prepared by working groups set up by ENR, coordinated by a Project Management Office (PMO) established with the support of an international consulting firm, under the close guidance of MoT. The migration of ENR to a new organizational structure was fully completed in early 2008. New heads of the Strategic Business Units (SBUs) have been appointed and the management positions down to level six have been staffed (1,444 managers). ENR is now modernizing its working methods with the support of a group of experts seconded by the Italian National Railways. Furthermore ENR has started investing in purchasing new locomotives and rehabilitating the existing locomotives fleet, modernizing coaches and other rolling stock, and rehabilitating train stations. Progress has also been made in key areas of financial restructuring, in particular, in agreements and discussions with ministries of Education, Justice, and Defense to compensate ENR financially for reduced fares, and with the Ministry of Finance regarding PSOs compensation for loss-making local trains. In addition, significant progress has been made with MoF to capitalize the large outstanding debt owed by ENR to the NIB, and this is expected to materialize by the end of June 2009. Finally, MoT has succeeded in mobilizing substantial Donors' funds to assist in the financing of the first five years of the investment program.

B. Rationale for Bank Involvement

10. The Bank's experience in reorganizing railway operations and addressing the associated development issues is extensive. Worldwide, the Bank has nearly two dozen on-going operations that are designed to improve, strengthen, or reorganize railway services, ranging from high-trafficked Latin American networks to African railways with lower traffic volumes. In addition, the Bank is well positioned to support the Government's initiative through its widespread understanding of the country's transport sector, with an ongoing lending operation supporting airport development, and a recent ESW in the railway sector.

11. Since mid-2005, when the Government approached the Bank about assistance to develop a restructuring strategy to revive public railway services, counterparts have been impressed with the consistent quality of the Bank's advice and guidance and have regularly sought the Bank's views. Policy dialogue among the MoT, ENR and the Bank resulted in a strategy to restructure the sector, and in a request for assistance to finance needed investments as part of the overall restructuring program. The GoE may also recognize the role the Bank plays in promoting timely and effective implementation of infrastructure investments in a sustainable manner, particularly in institutions that may have less experience in capital improvements. The World Bank's \$270 million loan is a small but key part of the overall restructuring of ENR under the transformation

plan of the railways sector. The Bank involvement will also accelerate the acquisition of new management methods that ENR needs to achieve the transformation plan objectives.

C. Higher Level Objectives to which the Project Contributes

12. The current Country Assistance Strategy⁵ (CAS) for Egypt (FY06 to FY09) identifies *enhancing the provision of public services* as a key objective to be supported through Bank operations, and identifies a railway sector project as one of the inputs contributing to CAS outcome 2.2 – expanded supply and improved efficiency of infrastructure services.

13. The project would seek to support this strategic objective by: (i) investing in rail infrastructure and signaling systems to improve efficiency, service levels and operational safety on some of the most heavily trafficked lines; and (ii) introducing measures to strengthen ENR's management capacity. In addition, the project is part of the comprehensive financial and operational restructuring of ENR undertaken by the GoE. The success of that restructuring is key to enabling ENR to fulfill its economic and social mandates in Egypt and progress towards financial sustainability.

II. PROJECT DESCRIPTION

A. Lending Instrument, Financing Arrangements and Other Approaches

14. The Borrower has selected an IBRD Flexible Loan with Variable Spread and level repayments. The Loan has a 30-year maturity with a five-year grace period, and will be denominated in US Dollars.

B. Project Development Objective and Key Indicators

15. The objective of the proposed Egypt National Railways Restructuring Project (ENRRP) is to assist the Government in improving the reliability, efficiency and safety of the railways' services through signaling and track renewal investments by ENR and the modernization of its management and operating practices in order to enhance the railways' sector responsiveness to economic and social needs and to strengthen the financial viability of the Project Implementing Entity.

16. The principal target beneficiaries include: i) passengers (in particular, low-income passengers) who will benefit from safer, more reliable and faster services; ii) businesses, with respect to freight transport, which will have access to a much larger range of more reliable rail services; and iii) the GoE, with respect to the accountability of financial support to ENR, since at term ENR should become financially self sustainable after payment of compensations for contractual Public Service Obligations. Key annual performance indicators that will be used to monitor project outcomes include:

⁵ The World Bank, Country Assistance Strategy for the Arab Republic of Egypt (May 2005)

- *ENR's reliability:*
 - Locomotive productivity (availability ratio of the useful fleet, average annual distance traveled per available locomotive) for each Business Unit (Freight, Long-distance passenger, Short-distance passenger);
 - Long distance passenger traffic on the Cairo – Alexandria line.
 - *ENR's Efficiency:*
 - PSO compensations paid to ENR (a critical indicator of GoE commitment to ensuring ENR financial sustainability);
 - Total freight in ton km carried by ENR.
 - *ENR's safety:*
 - Average number of fatalities due to rail accidents.
17. The following indicators will also be used to monitor intermediate outcomes:
- Punctuality of Air Conditioned trains on the Cairo-Alexandria line.
 - Cost of infrastructure maintenance on sections where tracks are renewed.
 - Average training time of managers.

Performance indicators are further detailed in Annex 3.

C. Project Components

18. The ENRRP would finance key elements of ENR's transformation plan, with particular emphasis on investments that are critical to improving operational efficiency and safety for passengers, and increasing revenue, as well as on initiatives modernizing management practices. The proposed Project consists of three components, and the overall financing of this Project amounts to US\$305 million, of which (i) US\$270 million IBRD financing; and (ii) US\$35 million counterpart financing from ENR's resources.

Component 1: Signaling Modernization (US\$202 million - IBRD financing US\$197 million for investment, counterpart financing US\$5 million for supervision)

19. Component 1 of the Project will finance the modernization of signaling along the Arab el-Raml to Alexandria line and a computerized Central Traffic Control system (CTC) for that section and Cairo – Banha (on the same Cairo-Alexandria line), and the supervision of those investments. The section was selected on the basis of a multi-criteria assessment of the network giving special attention to congestion levels and safety situation. When completed, this section will be the most modern part of the Egyptian railway network in terms of signaling and safety standards. The total investment cost of this component is estimated to be US\$197 million, financed by the IBRD loan.

20. The signaling system to be implemented on the existing right of way will comprise an automatic block signaling system (on open line), electronic interlocking systems (in stations), and a level-crossing protection system. In addition, the Project will finance a computerized CTC, offering sophisticated information to railway staff, including: (i) command and monitoring

of train circulation, (ii) a presentation-of-train graph, (iii) event recording, and (iv) dispatcher communications.

21. The investments will be implemented by a single contractor selected under International Competitive Bidding (ICB) procedures. Supervision of the investments along the general rules of FIDIC, estimated at US\$5 million, will be financed by ENR's own budget and undertaken by an engineering firm with a strong expertise in modern automatic signaling systems, competitively selected, and based on terms and conditions satisfactory to the Bank.

Component 2: Track Renewal (US\$80 million - IBRD financing US\$60 million, counterpart financing US\$20 million)

22. Component 2 of the Project will finance priority track-renewal works for 200 km of track along the Cairo-Aswan line (149 km on four sections of track) and the Benha-Port Said line (51 km on two sections of track), and supervision of those works. Track sections to be renewed have been identified based on current conditions, traffic levels, and contiguity with track in similar condition. The rationale for the Bank involvement is to help ENR modernize working methods and transfer know-how from specialized engineering firms involved in the design and the supervision of works. The identified sections will be fully renewed, including installation of long-welded rail, concrete sleepers, elastic fastenings, and ballast without any land acquisition. The renewal will significantly decrease the risk of derailments and track maintenance costs while increasing train speed (notably through elimination of speed restrictions due to the bad quality of track). Investment costs are estimated at US\$75 million for works of which US\$60 million will be financed by the loan and US\$15 million to be financed by ENR (rails and turnouts).

23. Works will be undertaken by a single contractor selected under ICB procedures (with prequalification of bidders). Supervision of the works along the general rules of FIDIC, with an estimated cost of US\$5 million, will be financed by ENR's budget and carried out by an engineering firm with a large experience in track works, competitively selected, based on terms and conditions satisfactory to the Bank.

Component 3: Modernization of Management and Operating Practices (US\$ 10 million-financed by counterparts)

24. Activities under this component, which is being financed by ENR, are directed toward developing and cementing changes in managerial and staff practices that reflect the operational and financial restructuring of ENR. They are therefore designed to complement changes and new structures elsewhere in the institution, as well as to develop longer-term and continuous training programs in managerial and operating practices. The activities are grouped under four sub-components as follows:

Sub-component 3.1: Technical Training Program (US\$4 million): Activities under this sub-component will support the development of the new Railway Academy by ENR, which will be housed within the Wardan Institute, a center for training and research in the rail, road, river and maritime transport sectors. USAID has already agreed to participate in the financing of some training equipment for the Academy (US\$48 million). Under the project

support will be provided to, among other activities, undertake a training needs assessment, develop training program requirements and curricula specifications, and arrange exchange programs with similar institutions elsewhere. The project will also support the reengagement of ENR with international railways bodies. ENR has been absent from the International Union of Railways for several years and does not participate either in other international bodies. ENR participation in these would allow it to benefit from joint research initiatives and studies, gather information on best practices developed by other railways, and access to international training program. Support will be provided under the project to, among others, identify the most appropriate programs ENR could join.

Sub-component 3.3: Support to Modernize Managerial Practices (US\$4 million): In conjunction with sub-component 3.1, this sub-component would encompass the development and delivery of an intensive management training program for mid- and upper-level ENR management and relevant officials from MoT. On-the-job training provided by experts seconded by the Italian railways under a twinning program with ENR financed by Italy will initiate that program. In addition, training modules would include topics on, for example, developing and monitoring business plans, marketing, financial budgeting and management, pricing policies and subsidy calculations, technical project management, regulation of railways, etc. The Bank would assist ENR to prepare terms of reference for the assessment of training needs and development of a training program. The sub-component would also include the development of human resource policies to support ENR's restructuring, the development of a young professionals and distance learning programs, and the strengthening of capacity and skills required to manage freight business.

Sub-component 3.4: Business Development Activities (US\$2 million): This subcomponent would consist of short-term consulting assignments to undertake studies and research for near-term business development. These would support the newly established strategy department and the business development units in SBUs. Studies may include market research for development of the freight business, demand and usage analysis of key passenger lines, and analysis of means to increase revenues from ENR property. The Bank would assist in the preparation of terms of reference and the management of the above studies.

25. During project preparation the Bank has helped ENR to determine the scope of the third component. Throughout project supervision and in relation with the implementation of that component, the Bank will be kept informed about the results of the transformation plan and will continue assisting ENR and MoT on ways to address critical implementation issues. Bank railways experts will especially advise ENR on the scope and organization of innovative training programs and business development initiatives.

D. Lessons Learned and Reflected in Project Design

26. The proposed ENRRP builds on the findings of the Bank's policy recommendations prepared in 2005. Many of the report's recommendations have been adopted by the Government and incorporated into ENR's current transformation program. The design of the ENRRP – key infrastructure and support for institutional strengthening in the context of commitment to reform and financial and operational restructuring – reflects valuable lessons learned from preparing and

implementing railway projects that have supported the restructuring of state-owned railways in the Middle East and North Africa Region, as well as in other regions. Key lessons include:

- Strong political will, ownership, and commitment are required to realize the benefits of ambitious reform programs. Restructuring long-standing policies takes time, and projects with major reform agendas can expect to encounter roadblocks that require continuous follow-up and support from donors and the Government agencies involved. In other projects, the Bank's presence has helped maintain momentum for reforms when enthusiasm has waned. In the proposed Project, the Bank has been instrumental in Government's decision to undertake a far-ranging restructuring of the railway sector and has assisted the MoT on key elements of the transformation plan.
- During project preparation, it is important that measures be taken to identify and reach accord on potentially divisive reform issues. Involving key stakeholders early on and soliciting their views on proposed reforms will increase the likelihood for success. Accordingly the ENR restructuring plan prepared by the MoT has been endorsed by GoE, and implementation measures were prepared with the participation of ENR staff.
- Improving governance structures and management capabilities is fundamental to strengthening the operational and financial performance of entities targeted for reform, and to ensuring that investments in infrastructure are effective and beneficial. The restructuring of ENR involves a fundamental reorganization with the establishment of business units, an option that has proven successful in many reformed railways worldwide.
- The financial sustainability of railway passenger operations depends upon effective compensation of PSOs, be it the discounted fares for certain categories of passengers or for unprofitable services. The PSOs compensation is a key aspect of ENR's financial sustainability, and the GoE has already committed to compensating reduced fares for students and staff from line Ministries, and non profitable local services requested by governorates.
- Although often an important part of restructuring plans, major expenditures to upgrade management information and control systems should not be implemented until a substantial amount of the restructuring and reform process has taken hold. This helps ensure that systems are compatible with new management structures and will be properly utilized. In the case of ENR, the functions of the Enterprise Resource Planning system will take into account the new organization, as the installation of the system has been postponed until the migration to business units is completed.

E. Alternatives Considered and Reasons for Rejection

27. At the time of the 2005 Economic and sector Work (ESW) on a restructuring strategy for ENR, Bank staff considered the potential for a comprehensive project encompassing operational and financial restructuring of ENR, possibly through support of a Development Policy Loan (DPL). This alternative was rejected, however, given the very weak restructuring capacity within ENR, unclear Government commitment at that time to overarching reforms, and the recognition that a DPL would need to be complemented by a loan for technical assistance to ENR – something precluded by GoE rules regarding borrowing from IFIs.

28. Providing a straightforward Specific Investment Loan (SIL) for investment needs but without the context of an overall restructuring program was considered at that time as well, but rejected on the grounds that investments would not be sustainable without significant reforms to ENR's management and financial structure. Placing conditionality in the loan agreement for such reforms was considered unrealistic given the scope and difficulty of necessary reforms. In the intervening period dedicated technical assistance from a capable international firm has been brought on board by the MoT to prepare a comprehensive transformation plan, government has demonstrated a strong commitment to implementing proposed reforms, and the team is confident that investments under the loan will both support those reforms and be sustained by more widespread changes.

29. When GoE took the decision to restructure ENR in 2006 and looked for the Bank financing support, it considered applying for an Adaptable Program Loan (APL) given the broad objectives and breadth of investments identified under the transformation program. However, this was rejected in favor of a SIL because: (i) the infrastructure investments related to the restructuring program have a relatively short implementation period of five years, and all investments to be financed by the Bank will be carried out during the outset of the program; and (ii) the overall transformation program has been approved by the Government – i.e. uncertainty regarding support for investments is low. If ENR and the GoE decide at a later date to seek financing from the Bank for additional investment needs, this could be done as a follow-on SIL.

III. IMPLEMENTATION

A. Partnership Arrangements (if applicable)

30. With the assistance of the Ministry of International Cooperation (MoIC), the MoT has received positive responses from various donors, in addition to the Bank, regarding funding the first five year of the investment program under the ENR transformation plan. These donors include the governments of Libya and Qatar for grants amounting to about US\$250 million, and Arab funds. As the investments are all definable, independent projects that are part of the transformation plan, funding does not need to be coordinated with the Bank loan. Funds will be mobilized under parallel financing.

B. Institutional and Implementation Arrangements

31. *Project Implementation:* ENR will serve as the implementing agency of the Bank-financed ENRRP under the oversight of a Steering Committee. As ENR does not have experience with Bank projects, it was considered particularly important that a Project Management Unit (PMU) be established within ENR to coordinate and implement project activities and to liaise with the Bank. The PMU will be headed by a Director, who will report directly to ENR's Chairman and General Manager. Chief among the PMU's tasks and responsibilities are:

- Ensuring the project is implemented within budget, on schedule, and according to technical specifications agreed upon at appraisal;

- Coordinating and supporting all procurement of works, goods and services, and ensuring all contracts financed by the loan are procured in accordance with Bank procurement guidelines;
- Establishing and maintaining an appropriate project financial management system and managing the project Special Account, if one is opened;
- Ensuring effective implementation of the environmental management plan; and
- Monitoring and evaluating project progress and reporting on project implementation and performance.

32. PMU staff will include specialists in procurement, financial management, environment, and monitoring and evaluation. The PMU will liaise with various ENR departments during implementation. As ENR does not have recent experience with Bank projects, PMU staff will receive advanced training in the Bank's procurement and FIDIC principles for works contracts, financial management and environmental and social safeguards policies, and guidelines and procedures ahead of effectiveness. Additional training will take place throughout implementation for ENR staff involved in procurement operations, as needed. A consulting firm with experience in project management will also provide assistance to the PMU and deliver on-the-job training to staff during the first two years of project implementation, in particular in procurement and contract management, financial management, monitoring, evaluation, and reporting. The Bank will review the TOR and short-list of firms.

33. The proposed structure of the PMU is presented in Annex 6. It was agreed that the PMU will be established by April 30, 2009, and the PMU Director and procurement specialist appointed by this date. The PMU will be fully staffed by June 30, 2009 and the consulting firm appointed by the same date. ENR will finance PMU costs from its own budget. The PMU will be maintained, throughout the duration of the Project, with organization, functions, staff and terms of reference satisfactory to the Bank.

34. *Steering Committee.* A steering Committee will be established through the Ministry of Transport by no later than September 1, 2009 and maintained throughout the implementation of the project. Membership of and terms of reference for the steering committee will have to be satisfactory to the Bank. The Steering Committee shall, *inter alia*, have responsibility for Project oversight and coordination.

35. *Results-Based Project Implementation Plan (RBPIP).* The RBPIP prepared by ENR includes agreed performance indicators and a format for quarterly progress reports.

36. *Flow of Funds.* There will be a Loan Agreement (LA) between the Bank and GoE represented by MoIC, as well as a Project Agreement (PA) between the Bank and ENR. GoE will on-lend proceeds from the Bank Loan to ENR under a Subsidiary Loan Agreement (SLA). Payments to contractors and suppliers will be made directly by the Bank with respect to works and goods under component 1 and component 2, with the exception of rails owned or financed by ENR, and while ENR will finance supervision costs of component 1 and 2 works, and consulting expenditures under component 3.

C. Monitoring and Evaluation of Outcomes/Results

37. Performance indicators to track the performance and outcome of the project have been identified and agreed with MoT and ENR as part of project appraisal. Baseline and benchmark indicators have also been determined. Performance indicators are detailed in Annex 3, and are nearly all derived from operational information that should be tracked on an ongoing basis by ENR management, and will not pose an undue burden on management or the PMU. Rather, the establishment of benchmarks consistent with indicators that should already be used by management should strengthen management's attention to performance in those areas.

38. Progress against these performance indicators will be conveyed as part of the regular reporting undertaken by the PMU. The PMU will submit quarterly and annual progress reports detailing project implementation and progress against indicators. Semi annual interim financial reports and annual project financial statements will address financial management issues. Given expected effectiveness by July 2009, a mid-term review will be scheduled by the end of March 2012. An Implementation Completion and Results Report will be prepared by the Bank within six months of project closing, and will include a final evaluation by ENR.

D. Sustainability

39. The restructuring strategy of ENR includes reforms that will have wide-ranging impacts on ENR, its management, operation and financing. The sustainability of the Project therefore depends critically on the long-term success of the comprehensive transformation plan. Without wholesale changes in the ability of ENR to make necessary investments and to undertake continued maintenance of assets, the sustainability of these assets cannot be assured. Key conditions for sustainability of the project are the same as those necessary for the sustainability of ENR – continued compensation to ENR for required-but-unprofitable services and discounted fares under PSO agreements, and engaged management able to make independent operational and investment decisions.

40. That said, there is significant GoE commitment to the turnaround of ENR. The GoE has endorsed the MoT's objective of restructuring ENR and the Cabinet approved the transformation plan prepared by the MoT in December 2006. Accordingly, support is strong among key Government agencies, including the MoF and MoIC, with respect to financing arrangements for the investment program. The MoF provided ENR with an early EGP 5 billion budget allocation during summer 2006. Furthermore most of the complementary financing for the first five years of investments (FY07 to FY12) has been secured through grants and Donors funds, including the Bank loan, under the coordination of the MoIC. ENR has signed agreements with the Ministry of Higher Education, the Ministry of Education, the Ministry of Defense and the Ministry of Justice regarding PSOs for reduced fares, as well as a Memorandum of Understanding with the Ministry of Finance for financial compensations for loss making PSOs on local services during the next three years. Finally, all ENR domestic debt, both principal and interest, to the NIB (approximately EGP 10.5 billion) will be capitalized by the end of June 2009. In addition to the NIB debt, the MoF will take over interest payments and repayments of about EGP 1.6 billion in loans to ENR from the Central Bank of Egypt and foreign Banks.

E. Critical Risks and Possible Controversial Aspects

Risks	Risk Mitigation Measures	Risk Rating with Mitigation
<i>To Project Development Objectives</i>	<p><u>Insufficient Government commitment to stated reforms.</u> Although the Government has approved the transformation program and has made significant financial investments in ENR, the commitment needs to be for the long term.</p> <p>Service and safety improvements, which are reflected into the Project Development Objectives, may be the best encouragement for longer-term Government commitment.</p>	M
<u>Delays in implementing key elements of ENR's Restructuring Strategy.</u>	<p>The first stage of the restructuring – reorganization of ENR along SBUs, has taken place, and all key management positions have been staffed.</p> <p>The Bank continued support to the implementation of the plan under the project will contribute to overcoming potential hurdles.</p>	S
<u>Other Donors' funds for other ENR investments do not materialize.</u>	<p>Government and World Bank commitment to the program under the project are a strong signal to other donors, and during project preparation MoT has secured most of funding required to carry out the first five years of the investment program. In addition, as ENR's operating and financial performance improve, donors will have greater confidence that investments will be used wisely.</p>	M
<u>Late and/or insufficient funding for PSOs.</u>	<p>The MoF is involved in ongoing negotiations between ENR, assisted by MoT, and (i) ministries requesting reduced fares for categories of passengers, and (ii) governors for local services. The MoF has also agreed to fund, through the relevant ministries, the negotiated compensation. In order to help mitigate the risk of late or insufficient funding, there should be a strong understanding that if PSO compensation is not arranged, rail passenger services cannot be provided.</p> <p>The effective payment of PSO compensation will be monitored under the project.</p>	M

Risks	Risk Mitigation Measures	Risk Rating with Mitigation
<p><u>Resistance to reforms.</u> It is possible that ENR management and staff will resist proposed measures to restructure the railways.</p>	<p>With no labor retrenchment required, social impacts are expected to be minimal. The stated objective of reviving the railway sector should facilitate staff support, to whom the key features of the transformation plan have been presented. For example, an 80-person reorganization team was established to engage staff on the organizational restructuring.</p> <p>ENR has also set up a series of working groups involving a large number of managers to prepare the implementation measures of the transformation plan. Staff affected by the regional reorganization has received extensive information on the changes through a series of meetings with the Unions, at the headquarters and in the regions.</p> <p>Furthermore all management positions until level 6 have been staffed in 2008.</p> <p>Finally the training program of ENR management under the project will contribute to increasing key staff endorsement of the plan. The included Young Professionals Program should especially foster retention of younger managers with high potential.</p>	S
<p><i>To Component Results</i></p> <p><u>The cost and completion time of capital investments are underestimated.</u></p>	<p>An international railway consultant has undertaken the engineering design of signaling investments and is preparing bidding documents. This consultant or an experienced engineering firm will assist ENR to supervise works. Similarly, another international consultant is preparing bidding documents for the outsourced track renewal works, while an experienced engineering firm will supervise works.</p> <p>Works contracts financed by the Loan will be procured through International Competitive Bidding in accordance with Bank guidelines.</p>	M
<p><u>Counterpart funding is not allocated.</u></p>	<p>ENR has received an EGP 5 billion transfer from the MOF to finance their contribution to the investment program under the transformation plan. Assurances have also been given by MoT that the contracts for the</p>	M

Risks	Risk Mitigation Measures	Risk Rating with Mitigation
	supervision of works and the assistance to the implementation of the Environment Management Plan will be financed by ENR budget. On an annual basis, all investment funds, including counterpart funds, will be included in ENR's capital budget.	
<u>ENR is not familiar with Bank guidelines and procedures.</u>	Throughout preparation, the Bank has provided support on safeguards and fiduciary requirements to the temporary project unit established by ENR for that phase. During two years the PMU will be assisted by a consultant including on procurement and financial management matters. Training on the Bank's fiduciary and safeguards processes will be provided to the PMU officials and other ENR staff involved into the project implementation in advance of effectiveness, and additional sessions will be organized throughout implementation, as needed. The Bank team will closely monitor compliance throughout implementation.	S
<u>Funds to finance TA support to the PMU may not be available in a timely manner.</u>	MoT has confirmed that funds necessary for the PMU will come from ENR budget.	M
Overall Risk Rating		M

H: High; S: Substantial; M: Modest; N: Negligible

F. Loan Conditions and Covenants

Conditions for Board Presentation

- Confirmation of Government's approval of the negotiated documents.

Conditions for Effectiveness

- Legal opinion; and
- The Subsidiary Loan Agreement is executed and delivered on behalf of the Borrower and the ENR.

Dated covenants

- ENR shall establish the PMU by no later than April 30, 2009, appoint the Director and the procurement specialist by that date, and fully staff the unit by June 30, 2009; the consulting firm assisting the PMU shall be hired by June 30, 2009, based on terms and conditions satisfactory to the Bank;
- By no later than June 30, 2009 ENR shall enter a contract, on terms and conditions satisfactory to the Bank, for supervision of signaling modernization works under Component 1 of the Project;

- By no later than June 30, 2009 ENR shall enter a contract, on terms and conditions satisfactory to the Bank, regarding the supervision of track renewal works under Component 2 of the Project;
- ENR shall enter a contract, on terms and conditions satisfactory to the Bank, regarding the provision of assistance to the implementation of the EMP;
- By no later than September 1, 2009, the Borrower shall establish through the Ministry of Transport a steering Committee with membership and terms of reference satisfactory to the Bank; and
- The mid-term review shall take place by March 31, 2012.

Reporting Covenants

- ENR shall submit the Bank quarterly project progress reports within two weeks of the end of each quarter.
- ENR shall submit the Bank annual consolidated project reports, integrating the information provided in the quarterly reports and setting out the measures recommended to ensure the efficient execution of the project and the achievement of objectives, within 45 days of the end of each fiscal year.

Financial Covenants

- ENR shall maintain a Financial Management system for loan funds acceptable to the Bank;
- ENR shall submit to the Bank semi annual interim financial reports within 45 days of the end of each semester;
- ENR shall provide the Bank with ENR's annual audited financial statements within six months of the end of each fiscal year; and
- ENR shall submit to the Bank annual audited project financial statements within six months of the end of each fiscal year.

IV. APPRAISAL SUMMARY

A. Economic and Financial Analyses

41. Economic and financial analyses of Project investments were undertaken as part of the Project's appraisal; the investments were found to be both economically and financially viable. Details of the analyses are provided in Annex 9; summaries are provided below. As a general matter it is important to note that different and more pessimistic assumptions than MoT under the transformation plan have been made in several instances in this Project Appraisal Document for the purpose of taking a more conservative view specific to the WB.

Summary of Economic Analysis:

42. The physical investments financed under the proposed project include: (i) the modernization of signaling system on the Arab El Raml-Alexandria Line and the creation of a central traffic management center for this section and Cairo - Banha; and (ii) outsourcing of a track renewal program on 200 km of track. The first component is the largest and is mainly aimed at increasing passenger and freight transport capacity on the railway line between Cairo

and Alexandria. The track renewal program in the second component consists of scattered track sections over the whole network, which makes it difficult to assess benefits associated with this investment. Thus, the economic evaluation of the proposed project has been undertaken only on the first component of the project.

43. The economic internal rate of return of the signaling component was estimated by the use of a stylized model that considered the actual and forecast freight and passenger traffic on the Arab El Raml-Sidi Gaber line, and the impact of the proposed investments on available line capacity in a defined “do-minimum” scenario and a defined “do-something” scenario.

44. The economic analysis considers the following main benefits: (i) time savings to existing and forecasted rail freight and passenger traffic; (ii) directly generated rail traffic which would not have traveled before but travels as a result of the reduction in journey time; (iii) generalized cost savings (including operating cost and time value) for diverted traffic from road to rail resulting from the saturation of the line capacity in the “do-minimum” scenario; (iv) savings in highway maintenance costs through the diversion of freight and bus traffic from road to rail; and (v) generalized cost savings particularly in term of safety improvements.

45. The economic analysis indicates that signaling investments on Arab El Raml-Alexandria are economically viable, returning a positive NPV of US\$67 million. The estimated Benefit/Cost ratio is 1.41 and the Economic Internal Rate of Return (EIRR) is 15.3 percent, above the 12 percent threshold, therefore confirming the viability of this investment. The economic analysis revealed that most economic benefits are derived from improvements in safety, representing about 61 percent of total discounted benefits. Time savings for existing traffic represent 12 percent of total discounted benefits, whereas savings in maintenance costs of the signaling system are about 10 percent.

46. A sensitivity analysis has been carried out and reveals that the proposed investments are relatively robust to defined variations in key parameters, including: (i) capital costs of the project; (ii) forecasted freight and passenger growth rates; and (iii) delayed construction period. Significant variation in all of these parameters still results in a positive NPV and an EIRR above the 12 percent threshold.

Summary of Financial Analysis:

47. The financial analysis aims at: (i) assessing the financial viability of the project; and (ii) assessing ENR’s ability to repay the World Bank Loan. Thus, it comprises two main sections: the financial appraisal of the project and the financial analysis of ENR. As for the economic evaluation, the financial appraisal of the proposed investment has been undertaken only on the signaling component of the project. Components 2 and 3 of the project are not included in the financial appraisal of the project but are included in the financial analysis of ENR.

48. The financial benefit of the signaling component will be derived from the additional revenue that will be realized from additional freight and passenger traffic that can be carried as a result of investments for capacity improvement on the Arab El Raml-Alexandria line; the costs

include the investment costs and increased operating costs due to higher volume of traffic. The financial analysis indicates that the investments are financially viable, returning a positive NPV of US\$33 million at a discount rate of 10.7 percent. The financial internal rate of return is 11.8 percent which is above the discount rate and the cost of IBRD financing. The sensitivity analysis reveals that the proposed investment is relatively robust to defined variations in key parameters, with significant changes in both the capital costs of the project, the forecast growth rates, and a delayed construction period still resulting in a positive NPV and a Financial Internal Rate of Return (FIRR) at the 10.7 percent threshold.

49. ENR has been operating with significant financial losses over the past decade, placing a continuous and substantial burden on Egypt's public sector finances. ENR revenues increased at an average annual growth rate of 4.6 percent per year between FY00 and FY07, mainly driven by passenger business. Operating margins in passenger business started to recover in FY04/FY05 but remained negative for most services, excluding Intercity; while freight cost recovery has dropped by 3.2 percent per year between FY01 and FY07 to reach about 50 percent in FY07. Furthermore, ENR has generated significant financial deficits and could not finance its investments. During the FY00-FY07 period, ENR has generated an accumulated deficit of EGP 6.53 billion (equivalent to US\$1.15 billion), almost equivalent to its cumulative gross revenue (EGP 7.24 billion).

50. In order to overcome this unfavorable financial situation, the ongoing transformation plan includes several initiatives: (i) reorganization based on the establishment of business lines to develop a commercially minded approach and foster efficiency gains, (ii) an investment program amounting to EGP 19.7 billion over 10 years, (iii) financial compensation of PSOs, (iv) and debt capitalization. Financial forecasts show that ENR faces losses of about EGP 560 million in FY 2007/2008 but should reach positive EBIT in FY2013/2014 and Net Profit in FY2017/2018. ENR should be able to repay the debt raised to finance new investments. However, ENR's cash flow from operating activities will not be sufficient to finance required capital expenditures without external loans. ENR's balance sheet will show a very low debt-equity ratio due to the debt write-off, with total loans of EGP 10.2 billion by FY2016. It should be noted that the financial forecasts are based on information available according to the transformation plan, and are largely dependents on the timely occurrence of the debt consolidation of ENR, the payment of PSO compensations, and of the materialization of the investment plan.

51. A sensitivity analysis has been carried out and confirms that the financial recovery remains vulnerable to adverse factors affecting ENR's capacity to meet its financial objectives, including: (i) lower freight price increases; (ii) lower freight traffic; (iii) lower passenger traffic; or (iv) lower PSOs compensation, which would all result in FY2017 in a negative net profit and a postponed break even date. In view of these results, it will be essential to monitor closely the evolution of financial parameters and ensure full compliance with key targets. The pace of the implementation of the transformation program will be essential to ensure ENR meets break-even and long-term financial sustainability. However, given ENR's legal nature (as a state-owned enterprise), long-term deficits will be covered by the GoE.

B. Technical

Component 1: Signaling Modernization

52. The section selected for the modernization of signaling and centralized traffic control (CTC) systems, Arab el-Raml to Alexandria, and the CTC for Cairo – Banha on the Cairo-Alexandria line, is part of a corridor which has the highest traffic density in Egypt. The modern signaling system, based on modern automatic train protection along the whole length of the railway section, electronic interlocking systems in the main stations, and traffic control based on CTC systems, will increase the safety of traffic and create conditions for better utilization of the capacity of the railway section. It is expected that very strong international consortia will be interested in bidding for this very challenging project. The section was selected based on the results of several rounds of assessment of the network condition and congestion. The technical option was chosen after a detailed comparison by consultants of a range of alternative standards used in the world. The preparation of the technical specifications and of the bidding documents requires deep technical skills and a good knowledge of state-of-the-art solutions in the railway signaling technology worldwide. For these reasons, an independent international consultant financed by a PHRD grant and another grant provided by the French government has prepared the engineering design of the new signaling system on both lines. This consultant has also prepared bidding documents according to the provisions of the World Bank Standard Bidding Document (SBD) “Procurement of Plant and Equipment” and will provide assistance to ENR during the pre-qualification of bidders, evaluation of bids, and contract award. During execution of works, a consultant with strong expertise in modern signaling systems will supervise the quality of works along the general rules of the International Federation of Consulting Engineers (FIDIC).

Component 2: Renewal of 200km of track

53. Sections of track to be renewed are included in the priority program prepared by ENR. Selection of those sections has been done on the basis of the current condition of the track and traffic density. Implementation of renewal works will be undertaken in an efficient manner due to the fact that (a) selected sections are at least 20 km long; and (b) long “working windows” will be made available to the contractor. As a consequence, costs for the track renewal works are expected to be relatively low. Technical characteristics of track components (UIC 54 continuous-welded rail, concrete sleepers, and elastic fastenings) are appropriate for the type and volume of traffic on the lines; they will also lead to low track maintenance costs.

54. Procurement packaging of the component (as summarized in Annex 4) is designed to trigger competition between contracting firms and transfer know-how to ENR. As ENR has no experience in preparation and management of large “turnkey” track renewal contracts, an engineering consultant partly financed by a PHRD grant has provided support for the preparation of bidding documents in accordance with the World Bank SBD “Procurement of Works”, prequalification of bidders, and will continue assisting ENR for the evaluation of bids and contract award. During execution of works, an international consultant with a large experience in track works will play the role of “the Engineer” along the general rules of FIDIC.

Component 3: Modernization of Management and Operating Practices

55. The Railway Academy will operate within ENR's existing Wardan Institute. USAID has accepted to participate in the financing of railway-specific training equipment. The proposed scope of the sub-component regarding managerial training is based on key factors for the success of the transformation plan and the new organization put in place. Finally business development activities will complement the strategy and other operational studies, with a view toward strengthening business development strategy and providing ENR management with better insight into business opportunities.

C. Fiduciary

56. *Financial Management (FM):* A financial management (FM) assessment was conducted to evaluate the adequacy of the ENR current financial management arrangements for project implementation. The assessment was based upon visits to ENR and discussions with ENR staff in the signaling and railway engineering departments as well as the financial and planning departments regarding current work procedures and the corresponding documentary cycle. In addition, a review of sample reports produced by both departments was undertaken. ENR does not possess recent experience with implementing Bank-financed projects and lacks familiarity with World Bank guidelines related to fiduciary requirements.

57. ENR's current staffing structure is not conducive to adequate tracking of project expenditures or to comprehensive reporting. Thus the project FM functions will be placed with the Project Management Unit which will be established within ENR to support day-to-day project implementation. A FM specialist will be appointed based on a job description acceptable to the Bank and assisted by additional staff from ENR for capacity building purpose. The PMU will be responsible for monitoring and overseeing the contractors' compliance with the contracts, ensuring compliance with World Bank guidelines, and reporting project implementation progress, among other tasks. External support to the PMU would be provided during the first two years, both to support general project management and implementation, in particular, financial management and procurement-related activities. Other issues include the availability of financing for technical assistance and the capacity to review certification of progress certificates. The former will be mitigated by securing consulting services to support FM implementation as indicated above. The latter will depend on engineering supervision consultant to be recruited to support the supervision of the works. Financing will be secured from ENR budget.

58. On the reporting side and due to the expected limited number of transactions, the PMU will prepare semiannual financial reports and annual financial statements for the project. Annual project audits will be conducted by independent private auditors acceptable to the Bank. In addition, ENR annual financial statements audits will be required since ENR financial viability is relevant to the Bank as a revenue earning entity and to monitor the financial ratios used as performance indicators. Its audit however will be conducted by Egypt Central Auditing Organization given the statutory restrictions in this regard. The overall FM risk is assessed to be significant. The successful implementation of mitigating measures/actions would reduce the risk to moderate. These include providing adequate training to FM staff on Bank fiduciary guidelines, finalization of the project implementation manual (RBPIP) to provide a proper guidance for

project staff, and securing counterpart financing especially for the engineering supervision and technical assistance contracts.

59. *Procurement:* Procurement for the Project will be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004, revised October 2006, and provisions stipulated in the Loan Agreement. For each contract to be financed by the Loan, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame have been agreed between the Borrower and the Bank and described in the Procurement Plan (see Annex 8). The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. Procurement will be done using the Bank's SBD for Works for the construction works related to track renewal and the SBD for Supply and Installation of Plants and Equipments for installing and modernizing the signaling system. Under the procurement plan, all works contracts will be procured through International Competitive Bidding. Prequalification of bidders will be used for both contracts for signaling and track renewal; the Bank's Standard Prequalification Documents will be used.

60. An assessment of the capacity of ENR to undertake procurement activities for the Project was carried out by the Bank preparation mission of November, 2007. Because of ENR's lack of experience with World Bank procurement, it has been agreed that the PMU will include a dedicated procurement specialist, who will work closely with technical specialists in ENR's Signaling and Track Maintenance departments in the procurement and supervision of Project-financed contracts. In addition, it has been agreed that the consultant ENR will hire to strengthen the PMU for the first two years of implementation will have good experience in procurement and contract management. The consultant will also assist in capacity building of ENR procurement staff. Overall procurement risk is assessed to be high.

D. Social

61. Overall, the proposed ENRRP is expected to have positive impacts through improved services and safety on core routes resulting from project investments in track renewal and signaling. On a broader scale, the overall ENR transformation plan should result in improved services, improved safety throughout ENR's network, and a return to sustainable operations due to increased income from traffic, financial compensation of PSOs by line Ministries and regional governorates, and reinvigorated managerial practices. While tariffs on Air Conditioned (AC) trains catering to the needs of the higher income passengers have increased in early 2008 (another increase may be considered once the quality of those services has improved), third class services have been folded into second class services and tariffs on the later trains used among others by low income passengers will remain stable. Furthermore specific local services used by rural residents and selected classes of passengers (e.g., students and staff from line ministries) will remain highly subsidized by Government through direct payments to ENR under PSOs compensation agreements signed with respectively the Ministry of Finance and line ministries. Where local services will be discontinued, the decision will be taken by the Ministry of Transport after Governors have made sure that alternative transport modes are available to passengers.

62. Implementation measures of ENR's transformation plan, among others the reorganization of regions, were presented to ENR staff during numerous meetings with the Unions, at headquarters and in the regions, prior to the decision and during the reorganization process. As a general matter the plan does not entail reducing staff redundancies except through natural attrition and retirement. Between 1999 and 2007 ENR succeeded in gradually reducing its staff from approximately 85,000 to 73,600 through a combination of natural attrition and a hiring freeze. This number is expected to be reduced after further attrition and the transfer of staff to various subsidiaries established for non-core services (staff will keep their work contracts with ENR). A program for hiring some highly-qualified technical staff will probably be required in the future in order to fully implement the transformation plan.

63. There are likely to be some socio-economic impacts during implementation of the project related to construction, for example, some delays in train travel along affected corridors, safety considerations in work areas, and localized – and limited – air quality and noise impacts. The Environmental Management Plan specifies mitigation measures required to alleviate expected adverse impacts.

64. The project does not entail any land acquisition as all works will be carried out on existing rights-of way.

E. Environment

Project Environmental Classification

65. According to the World Bank's Operational Policy 4.01 on Environmental Assessment, the proposed project is classified as category B, requiring partial assessment in the form of preparation of an Environmental and Social Impact Assessment (ESIA) report. The ESIA was carried out by an independent third party (an Egyptian environment consulting firm hired by ENR) and focused on the modernizing the signaling system on the Arab El Raml-Alexandria Line, creating a Central Traffic Control (CTC) Center in Tanta, and replacement of 200 km of the tracks in upper and lower Egypt. The ESIA report was completed according to terms of reference prepared by ENR and cleared by the Bank. The ESIA includes an environmental management plan (EMP), detailing institutional settings, mitigation measures, and monitoring plan for the potential impacts expected from the project during the construction and operation phases.

66. The ESIA report was approved by the Egyptian Environmental Affairs Agency (EEAA) on January 14, 2009.

Public Consultation and Disclosure of ESIA

67. Stakeholder consultations were carried out during the ESIA preparation through: (a) interviews and data collection in public scoping for train users, users of level crossings, and residents in areas adjacent to construction sites (totaling 1,166 individuals representing the different groups); and (b) two public consultation meetings in Minya and Cairo, which were well advertised in a major daily newspaper, and were attended by a total of 184 participants. Information on the project as well as a summary of the findings of the ESIA were posted on consulting firm's website for public review prior to the consultation meetings. The meetings attracted a pool of stakeholders representing different sectors of society, and various social and economic class, gender, and affiliation.

Potential Environmental Impacts and their Mitigation

68. The potential environmental impacts are expected to arise primarily during construction activities. For example, it is expected that noise generated during certain construction activities (mechanical shaking and sifting of ballast gravel of basaltic fragments during ballast replacement work) will exceed permissible levels. Similarly, certain construction activities (e.g., welding, asphalting, excavation of foundations and cable trenches, etc) are expected to generate some air pollutants. These impacts will also affect people in communities adjacent to the railway corridor as well as construction crews.

69. Although these impacts are all temporary in nature, occurring only during actual construction work, which will mostly be undertaken for a few hours to a few days at any given site, mitigation measures of the impacts will be easily incorporated during construction in the works contracts. The baseline conditions were taken as the maximum permissible concentrations of different pollutants by the EEAA. Noise levels, air emissions, and/or water pollutants

exceeding the national permissible standards will be monitored, addressed, and mitigated through the EMP.

70. Underwater cables are expected to cross the Rosetta Branch of the Nile River at Kafr El Zayat, and at four major irrigation canals. The insulated cables will be placed in water-tight PVC pipes before lying on the bottom. The pipes will be anchored to the river bottom using precast cement blocks. The process is, therefore, unlikely to result in any water contamination and does not impact any elements of the aquatic ecosystem of the water courses.

71. Habitats along the railway corridor in this project are all man-made and none is considered threatened. Wildlife of the Nile Delta and Valley is among the most diverse of any terrestrial habitat in Egypt. The wildlife consists of species that are able to tolerate human activities and manage to survive the changes introduced on their habitat. There is no indication that the construction works and subsequent operation of the lines will have any irreversible or significant additional adverse impacts on wildlife and habitats in areas adjacent to these lines.

72. The operation of system after project implementation will result in a net positive environmental impact as stipulated by the more efficient use of the system, less passenger travel time, less energy consumption and gaseous emissions per passenger unit, and reduction of noise levels and disturbance to passengers, inhabitants near the railway corridor, and the wildlife of the nearby habitat.

Environmental Management Plan

73. The findings of the ESIA and the concerns raised by the public and stakeholders were addressed in the EMP and the designed mitigation measures addressing adverse environmental and social impacts. Details of the EMP, possible environmental impacts of the works of the project, proposed mitigation measures, a monitoring plan outlining responsibilities and costs are enclosed in Annex (10). The estimated cost of the EMP implementation, including institutional capacity building, public awareness, and the monitoring plan, is EGP 1.32 million which will be financed by ENR budget.

F. Safeguard Policies

Safeguard Policies Triggered by the Project	Yes	No
<u>Environmental Assessment (OP/BP 4.01)</u>	X	
<u>Natural Habitats (OP/BP 4.04)</u>	X	
<u>Pest Management (OP 4.09)</u>	X	
<u>Cultural Property (OPN 11.03, being revised as OP 4.11)</u>	X	
<u>Involuntary Resettlement (OP/BP 4.12)</u>	X	
<u>Indigenous Peoples (OP/BP 4.10)</u>	X	
<u>Forests (OP/BP 4.36)</u>	X	
<u>Safety of Dams (OP/BP 4.37)</u>	X	
<u>Projects in Disputed Areas (OP/BP 7.60)*</u>	X	
<u>Projects on International Waterways (OP/BP 7.50)</u>	X	

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

G. Policy Exceptions and Readiness

74. The project will not necessitate exceptions to Bank policies and complies with all regional criteria on readiness for implementation. A realistic Procurement Plan and satisfactory RBPIP are available. Engineering designs and associated bid documents for the first year's activities, as well as cost estimates and detailed terms of reference for consultancy services, have been prepared.

Annex 1: Country and Sector Background
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

A. Country Background

Egypt's economic growth has averaged around 5 percent since FY04 and grew robustly at 7.2 percent in FY08, slightly above the 7.1 percent posted in FY07⁶ driven by a strong domestic demand. The share of investment in GDP increased to more than 22 percent (up from 21 percent in FY07 and 16.9 percent in FY03), supporting future economic prospects that project average GDP growth rates at about 6.0 percent through FY11, although a slowdown of GDP growth to about 5.0 percent is likely in the short term due to the international financial crisis.⁷ In response to increased growth, unemployment rate has declined to about 8.8 percent, down from 9.4 percent in FY07, while poverty declined from 23.4 percent in 2005 to 18.9 percent in 2008. The fiscal deficit stabilized in spite of upward revisions in public spending, and the fiscal deficit of the general Government remained at 7.7 percent of GDP.

Inflation remains a serious challenge facing Egyptian policymakers. After declining to 6.9 percent in November and December of 2007, Consumer Price Index (CPI) inflation has been accelerating mostly due to rising food prices and expanding domestic demand fuelled by monetary growth. Between January and June 2008, overall CPI and food inflation rates increased to 21 and 30 percent, respectively. In August, the rates had risen to 25.6 and 30.9 percent, respectively, the highest level in 19 years, while a drop to about 21.5 percent has been reported for September as commodity prices has fallen. Inflation, which slowed down consumer spending, has resulted in additional pressures on the economy despite the positive indicators of Egypt's reform success, with the economy slowing down in the fourth quarter of 2007/08 when growth dropped to 6.8 percent (compared to 7.6 percent for the same quarter the year before). Public spending is also on the rise, mainly due to increases in food and fuel subsidies which increased to 7.2 percent and 9.4 percent of GDP, respectively.

To alleviate the social impacts of higher prices, Government remains committed to the on-going economic liberalization program but should step up the expansion of social security (the food ration card scheme has been extended to more low-income families) and restructuring of subsidy-agencies. Furthermore a 30 percent increase in salaries for civil servants (estimated at about 30 percent of the total workforce) has been approved, while private sector has been called to raise wages.

Going forward, although in the short-term real GDP growth in Egypt is expected to remain high, there will be a slowdown as a consequence of the global financial crisis and recession in the developed economies. Talks are underway in the Government on the appropriate combination of policies to mitigate the external shock, including stepping up public investment plans and a temporary freeze on some of the energy price increases recently announced. The challenge, therefore, will be to maintain the appropriate balance between the short term stabilization objective of stimulating aggregate demand and the long term growth requirement of sound fiscal accounts and predictable future policies essential to business-friendly environments.

⁶ The World Bank, Egypt Economic Monitoring Note, September 2008

⁷ The World Bank, Country Assistance Strategy Progress Report, June 2008

The broad mandate of the present Government is to improve living standards, promote investment, reduce unemployment, contain inflation, and improve the performance of administrative entities. To begin addressing these ambitious goals, bold reforms have already been initiated, and plans for others have been announced. A fundamental part of the Government's plan is to promote private sector development by strengthening trade policies, the financial sector, and regulations governing business transactions. Opportunities for private sector activity will expand through further privatizations, while planned public sector reforms will promote partnership with investors to develop physical and social infrastructure, and to generally improve the delivery of public services.

To support its stated objectives and strengthen the business climate, the Government intends to develop well integrated and cost effective transport systems through greater private sector involvement in the management and delivery of transport facilities and services. To ensure fairness and equity for investors, consumers and users, appropriate policy, regulatory and operational frameworks will be developed.

B. Situation of the Railway Sector

The railways sector plays a significant role in the Egyptian economy and is an essential mode of transport for low-income people. The 5,085 km long network, sixty percent of which is concentrated in the Nile Delta and along the Nile Valley, adequately serves the main activities and population centers in Egypt. Railways are operated by the Egyptian National Railways (ENR), a public entity under the Ministry of Transport that was created in 1980. Egyptian railways differ from their regional counterparts in a couple of ways. First, its operations are large. Total traffic (passengers and freight) in FY2007 amounted to 68 billion traffic units, which exceeded the combined traffic of railways in Algeria, Iran, Morocco, Tunisia and Turkey. The ENR is also a predominantly a passenger railway, as passenger traffic accounts for more than 90 percent of ENR's physical activity; railways in the region average between 30 percent and 42 percent.

ENR Status and Organization

ENR is a public sector entity that was created by Law No. 152 of 1980 and entrusted with responsibility for operating and maintaining the country's railways. An amendment to Law 152 enacted in 2006 allows for concessions to be granted to investors (persons or economic entities) to construct and operate new railway networks and lines.

ENR, which is under the tutorship of the Ministry of Transport, is headed by a Board whose members are appointed by the President of the Republic upon designation by the Minister of Transport, and include representatives of the Ministries of Transport, Treasury, Economy, Industry and Supply, the Armed Forces, and the Counselor of State. The remaining members are nominated by the Minister of Transport and include one of the ENR's managers. The Board controls ENR's operating and financial policies, and decides on all matters referred to it by the Minister of Transport and the Chairman. The Minister of Transport must endorse all decisions made by ENR's Board before they can be made effective. Matters involving general policy, borrowing, regulations governing ENR staff, and rail tariffs and fares are subject to the approval of the Minister of Transport.

ENR's new organizational structure of four strategic business units, two corporate units (the corporate center and shared services) based on the transformation plan approved by Government; eight subsidiary companies⁸ will have been established and initially only provide services to ENR. In addition, the number of regions has been reduced from eight to six and only the infrastructure and short distance passenger services business units have kept regional layers. Staffing is only being reduced by retirement and normal attrition. The plan includes a change in the compensations system. Currently introduced for manager it provides for performance based remuneration. Some staff will be seconded to the ENR subsidiaries; however they will keep their work contracts with ENR. The outsourcing of some ENR activities is a sound approach for the commercial organization of specific activities. The newly created subsidiaries should be incentivized to offer services on a contractual basis to clients other than ENR. This will decrease, over time, the pressure on ENR to cover all the costs of its subsidiaries.

Passenger transport services

Passenger transport, which accounted for 94 percent of the ENR's physical activity and 67 percent of traffic revenue in FY2007, is the railway's predominant activity. Passenger traffic steadily developed from the early 1990s through FY2001 when it reached a record 66 billion passenger-km, then dropped sharply in FY2002 to just 39 billion passenger-km probably due to a 10 percent increase in first class fares, and the introduction of passenger insurance levy to all classes. Since FY2003, traffic has recovered and stabilized to about 64 billion passenger-km in FY2006 and FY2007. The ENR's present market share is reported to be about forty percent of the total public passenger transport market. The ENR operates four categories of passenger services, including: (a) intercity services; (b) express services; (c) local services; and (d) suburban services. It also provides special services for military, police and some factories. The economic role and development potential of these various categories of services are quite different.

➤ *Intercity Passenger Services*

These long-distance, high-quality services (in terms of comfort⁹ and speed) operate between Cairo and Alexandria (18 pairs of trains per day, some continuing to Marsa-Matrouh), and between Cairo, Luxor and Aswan (twelve pairs of trains). Main competitors to intercity passenger services are private cars, bus services¹⁰, and air transport. Intercity passenger services account for about 20 percent of the total seat-km produced by ENR and generate about 50 percent of passenger traffic revenue. Cost recovery was above 120 percent before tariff increases in 2008, meaning that intercity passenger services are profitable. Furthermore, intercity passenger services, which are considered as commercial services, offer excellent prospects for expanding services along existing routes and favor expansion on other routes, possibly the Cairo to Port Said and Cairo to Damietta Routes.

⁸ ERJET for real estate, ERMAS for locomotives overhaul, EGYFRAY and EGYRCO for track works, Trans IT for IT services, cleaning and security services, manufacturing workshops, and medical services

⁹ Intercity services offer First and Second class services, all air-conditioned and sleeping services on routes to Aswan

¹⁰ Bus services are operated by five public enterprises (four regional and one "Superjet" company) and increasingly private companies

➤ *Express Services*

These are long-distance, lower-quality services that utilize non-air-conditioned coaches and operate at lower speeds. They serve medium- and large-sized cities on routes that are also served by intercity services, and provide services in the Nile Delta, including from Cairo to Damietta, Cairo to Port Said, Cairo to Suez, Alexandria to Damietta, and Alexandria to Port Saïd. Customers are primarily lower income passengers who cannot afford the more expensive intercity services. Competitors are mainly buses, mini-buses (14 seaters), and taxis (seven seaters). Intercity services accounted for about 45 percent of ENR's total seat-km in FY2006, but generated just 29 percent of passenger traffic revenue. Cost recovery is estimated to be around 50 percent in FY2007, thus express services generated deficits of about EGP 100 million (US\$ 18 million) before the changes brought by the transformation plan. Development prospects for these services are likely to be limited, as competition from low-cost buses and mini-buses should increase in the future.

➤ *Local Services*

Although they cover short distances and are of low quality, local services serve an important social dimension by connecting lower-income residents of rural communities with cities and markets. Services are offered on ten routes - nine in the Nile Delta and one in Upper Egypt. They accounted for 29 percent of ENR's total seat-km in FY2006, just eleven percent of passenger traffic revenue, and cost recovery level was only about 25 percent in FY 2005, thus generating an estimated deficit of some EGP 57 million (US\$10 million). This significant deficit was derived from the combination of: (a) high production costs of small capacity, short-distance trains;¹¹ and (b) low revenue per seat-km. The latter is due to low fares set by the Government for social purposes, and poor train occupancy ratios. Mini-buses and taxis operated by the private sector are fierce competitors and often offer better quality services, particularly in terms of service frequency, a factor that explains the low occupancy ratio of trains.

➤ *Suburban Services*

Suburban services are operated by the ENR in the Cairo and Alexandria areas. They accounted for about three percent of the total seat-km produced by ENR, and two percent of ENR's total passenger revenue in FY06. In FY2007, these services reportedly generated a deficit of EGP 10 million (US\$ 1.8 million).

➤ *Special Services*

ENR also operates special passenger services for the military (almost 90 percent of the services), police, and some factories. This activity is marginal, accounting for only four percent of total seat-km and total passenger revenue. These services also produced a deficit of some EGP 12 million (US\$ 2.17 million) in FY2007.

¹¹ According to ENR, fully-allocated cost per seat-km is 35 percent higher for local services than for express services

Freight Transport Services

Although rail freight transport represents just six percent of ENR's total traffic volume and current rates are very low, freight traffic provided about 18 percent of revenues in FY2007. While not fully covering its "allocated cost," freight traffic was likely to cover its direct costs.¹² The ENR mainly transports mineral resources, including iron ore, phosphate, and clay, coal and coke for the steel industry, petroleum products, and imported wheat and containerized goods across the "land-bridge" from the Red Sea in the east to the Mediterranean Sea in the north.¹³ The average transport distance is 367 km, which is low, but similar to average distances in most European and Middle Eastern countries. Over the past decade, rail freight traffic has stagnated globally at around 12 million tons and around 4.2 billion ton-kilometers, in large part because of intense competition from the trucking industry and ENR operational capacity constraints. An aggressive private trucking industry generally provides good and flexible service, enjoys total freedom in setting tariffs, unlike the ENR, and reduces its costs by overloading trucks. By-and-large, the railway company has not been able to adjust its commercial and operating practices to maintain a competitive edge on highly-competitive segments of the market. Contrary to passenger activity, asset productivity in the freight sector is low. The productivity of ENR's wagons only reaches about 359,000 ton-km/year, and in FY2006 its freight trains only averaged 669 tons per train.

C. ENR Restructuring Objectives

As market forces gain strength and competition increases from alternative modes of transport, ENR needs to adapt its railway services to be more efficient, productive, cost-effective, and less reliant on budget transfers. To do so, its economic role and relations with the Government need to be redefined.

In December 2006 the Government of Egypt (GoE) approved the Ministry of Transport's strategy, established with the assistance of an international consulting firm, to restructure the railways sector, which seeks to: (i) enhance safety of services; (ii) improve customer level of services; (iii) develop rail freight business; (iv) commercialize with social responsibility; and (v) achieve financial self sustainability.

This strategy translates into a three phase program spread over the next ten years aiming at creating a high-performing railway company in an open and competitive transport market:

- **Phase 1 (2007-2009).** This phase entails a dramatic restructuring of ENR through: (i) implementation of a comprehensive rail sector framework; (ii) implementation of a new operating model for ENR; (iii) upgrade of ENR assets and safety capabilities to ensure efficient and safe operations; (iv) development of ENR freight and passenger markets; (v)

¹² ENR utilizes an Independent Traffic Costing Model ITCM, which is part of a Business Evaluation and Management System, or BEAMS. The system has several capabilities to assess the profitability of ENR's various services, but they are not fully-used. In particular, only "fully-allocated costs" are computed, but there would be benefits to calculating "direct costs" (short-, medium- and long-term), as well. Utilizing "replacement values," rather than historical values to calculate the depreciation of assets, would be preferential in many instances. Simple adjustments to ITCM and BEAMS would make them more efficient management tools

¹³ "Domestic" traffic of import-export containers (between ports and main cities) is low, part of which is due to the complete lack of intermodal rail connections with inland container terminals

efficiency improvement of ENR operations and maintenance; (vi) divestment of non-core activities; and (vii) long-term infrastructure expansion plan.

- **Phase 2 (2010-2012).** The second phase of the transformation plan will consist of a combination of continued investments and commercialization, i.e. introducing market based concepts into ENR practices through: (i) achievement of ENR's financial sustainability; (ii) expansion of profit center concept within ENR; (iii) incorporation of ENR as a commercial entity, Government as sole shareholder; and (iv) opening of the rail freight market to private sector freight operators.
- **Phase 3 (2012-2017).** The final phase of the transformation plan will enhance market opening policies through: (i) liberalization of the rail passenger market; (ii) definition of fair infrastructure access charges; (iii) private partnerships in new and ancillary railways businesses; and (iv) investment into attractive business sectors (e.g. logistics).

To implement this transformation plan, five strategic priorities have been identified, and numerous specific projects have been identified as inputs into those priorities:

- 1. **Sector Framework.** The Sector Framework priority focuses on three different issues:
 - *Public Service Obligations*, consisting of low fares for specific categories of passengers and unprofitable local services, need to be compensated by Government. Under the new system, there is a clear distinction between commercial services that should be profitable and public service obligations, and contracts will be introduced for public services rendered. Separate mechanisms will be put in place for financial compensation of obligations imposed by Government regarding: (i) application of mandatory rebates on commercial fares (“concessionary fares”) in favor of students, military, police, justice, etc; and (ii) specific loss making rail passenger services (mainly local and suburban) operated as PSOs services.
 - *Opening Freight Market.* In the medium-term, the development of freight traffic will be a major driver for increasing revenue in the railway sector. In the short term, investments in the fleet of locomotives to develop services meeting demand and in multimodal terminals, commercially based tariffs, and operating improvements will restore the profitability of freight activities. In the longer term, the liberalization of the rail freight sector will entail the opening of these activities to private sector participation, competition for services and the establishment of an access-charging regime to guarantee fair access for third-party operators to ENR infrastructure.
 - *Regulatory Framework.* A revised structure for railway regulation in Egypt is being put in place, on safety issues for the time being, with clear separation of roles for policies/sector oversight, and provision of services/operations. Therefore, a railways safety regulator has already been set up within the Ministry of Transport while ENR has strengthened internal safety functions. It is also recommended in the plan that an amendment of law 152/1980 to allow for concessions to third parties of rail freight services on the existing network be enacted.

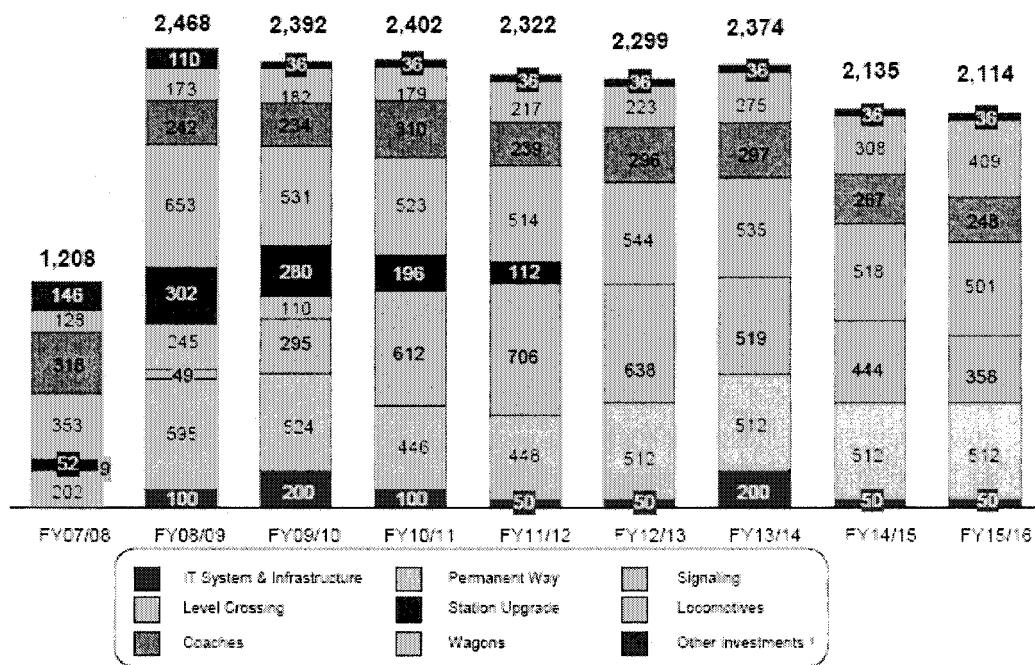
2. ***Restructuring and New Operating Model.*** This strategic priority entails the following:

- ENR's *organizational structure* represented a classical railway structure that is production driven, whereas the new proposed operating model is based on four strategic business units (Passenger Long Distance, Passenger Short Distance, Freight, and Infrastructure), Shared Services (including Information Technology, General Procurement and General Services), and a strong corporate center (comprising Safety, Strategic Planning, Finance, Human Resources, and Corporate Affairs departments). Eight subsidiaries complete the organizational structure: (i) Egyptian Railways Maintenance Services (ERMAS), which manages the maintenance and rehabilitation of locomotives, wagons and coaches, (ii) ERJET, which focuses on attracting private sector into ENR's substantial real estate holdings, for advertising and development of commercial activities in stations; (iii) TRANS IT for IT services, (iv) ERIS that will manage cleaning of trains and security of ENR sites, (v) manufacturing workshops, (vi) ERMED that has taken over hospitals previously owned by ENR, and (vii) EGYFRAY and EGYRCO for track works. This new organization ensures high customer focus, bottom-line responsibility, and functional integration.
- *Performance Improvement* assessments carried out by the consulting firm in most of ENR's departments (operations, rolling stock, permanent way, maintenance, commercial, support functions, and general services) indicate a headcount reduction potential of about 24,000 Full-Time Equivalent. Workforce reduction would result from retirement, normal attrition, and staff transfer to ENR subsidiaries, but no redundancy plan is envisaged.
- *Finance and Accounting* systems will have to be tailored to the new operating model. SBUs will be set up as profit centers to provide dedicated profit and loss (P&L) reporting, enabling performance target setting. Proper revenue and cost allocation will ensure transparency of results across SBUs by having a clear and vertically separated P&L.
- *Management of Information Systems (MIS).* MoT and ENR have a number of experienced members working on specific components, including telecommunications, infrastructure applications, and railway operations. To realize an effective telecommunication network based on fiber optic cables will be vital for successfully implementing the chosen MIS strategy. Consideration should be given to commercializing excess capacity of the telecommunication network, thereby becoming an additional source of revenue for ENR. Communications for low density traffic lines and with moving vehicles should be based on existing technologies that have been proven as reliable solutions for other railways. If necessary, a market survey could be launched through an independent consultant, but one that is not related to any supplier. For freight management solutions and for ticketing and seat reservation systems, separate market surveys should be carried out by independent consultants, not related to any hardware and/or software supplier, in an effort to identify the most appropriate applications for ENR. Ultimately ENR's MIS will be

based on an Enterprise Resources Program complemented by specific operational systems.

- *Non-Core Businesses.* A preliminary assessment made by the consulting firm indicates ENR's medical facilities and sports clubs as first priorities for asset divestment and outsourcing. This could bring in some EGP 40 million (US\$7 million).
3. ***Asset and Infrastructure Upgrade.*** ENR will need to invest a total of about EGP 19.7 billion (US\$ 3.6 billion) in infrastructure, rolling stock, maintenance workshops and MIS over the next ten years. A preliminary assessment of investment needs is presented in the figure 1 below.

Figure 1: ENR Investment Plan, 2007-2016, (in EGP million at constant price), Source BAH report



4. ***Revenue Optimization*** will be achieved through three main initiatives:

- *Development of freight services.* In order to increase its revenues from freight services, ENR should focus on participation in market growth, increase of market share for commodities, and developing port freight services. Based on these initiatives and the opening of the market after 2012, the transformation plan estimates that the overall rail freight market should grow to approximately 32.6 million tons over 10 years. Revenues from freight services could then reach EGP1,260 million (US\$ 231 million) by FY2016, of which about two third would come from additional traffic and one third from increased tariffs.

- *Establishment and development of ER JET.* ER JET will focus on real estate management, advertising concessions and station development. The transformation plan projects that ER JET will generate up to EGP 287 million (US\$ 51 million) in FY2016 from competitive allocation of advertising concessions and development of real estates assets.
 - *Optimize revenues from Passenger services.* Passenger cost recovery is currently around 55 percent, which is well below a financially sustainable level. Passenger services revenues should be optimized through: (i) fare structure reform; (ii) review of fare products and business rules (introduction of yield management for long distance passenger services, class differentiation and pricing, and creation of an Egypt Explorer program); (iii) review of fare and tariff levels: A/C class fare have been increased by 15% in January 2008 and should be realigned once the quality of services is improved, higher priced “special trains” have been introduced, and third class services have been folded into second class services; and (iv) tackling fare evasion (introduction of penalty fares on short distance trains, mobile revenue enforcement teams on long and short distance trains, and enforcement of controls in stations). Those initiatives, combined with the revision of commercial freight rates (twice since January 2008 aiming to better recover costs), could contribute to significantly increase ENR freight revenues.
5. ***Safety Capabilities Upgrade.*** Immediate actions and a set of safety initiatives will significantly increase rail safety. Immediate actions include: (i) improving the culture of safety in front line behaviors (driver, block and signaling); (ii) improving control center signal box communications; (iii) improving maintenance standards to put safety over operations; and (iv) refocusing MoT and ENR safety activities for immediate impact. Furthermore, policies, regulations and MoT oversight could be developed through: (i) establishment of a safety regulatory organization within MoT (done); and (ii) development of a crisis management process and operational strategy for MoT. Within ENR operations, several initiatives will be carried out: (i) risk assessment process to prioritize risks together with corrective actions and accountabilities; (ii) internal safety auditing; (iii) development of a Safety Management System Framework; and (iv) establishment of an ENR Safety Department.

D. Status of the implementation of the transformation plan

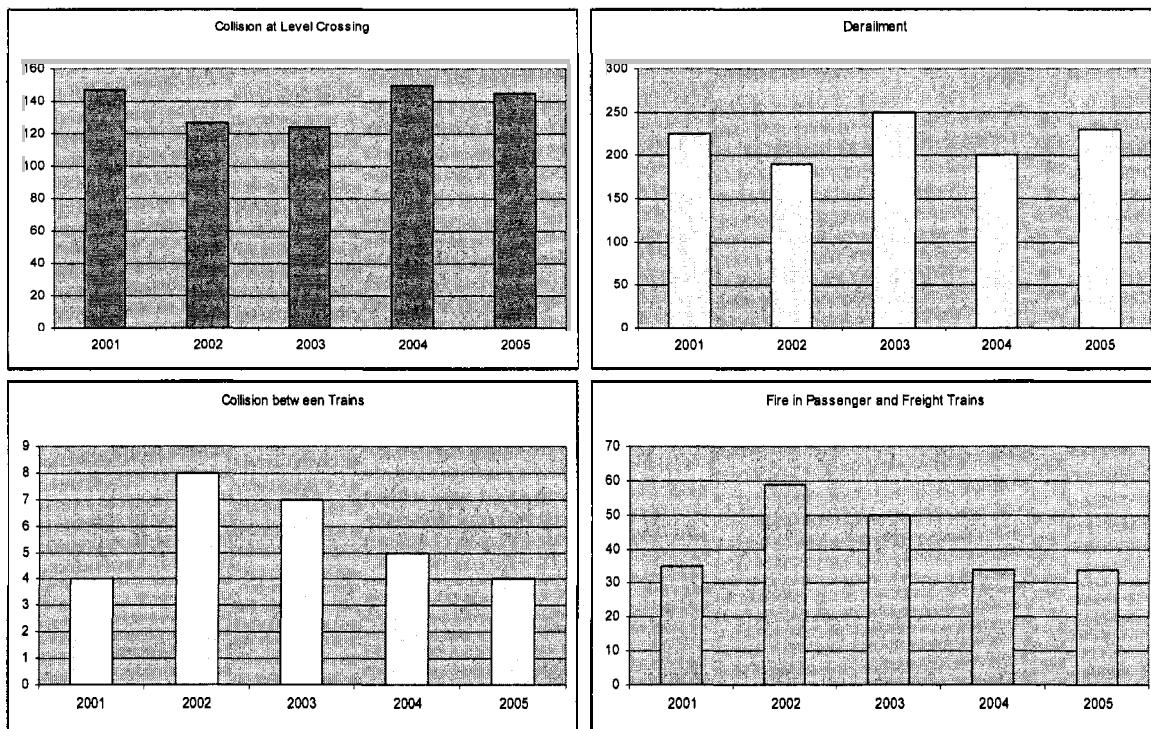
General Overview of the implementation of the transformation plan. The reorganization of ENR has been implemented. The overall program of actions under the transformation plan was prepared by working groups set up by ENR and supervised by MoT and a Project Management Office (PMO) established with the assistance of the consulting firm which had prepared the plan. The corporate structure was put in place in December 2007 and the migration to a new organizational structure based on strategic lines of business (Long-distance Passenger Service, Short-distance Passenger Service, Freight Services, and Infrastructure Services) has been fully completed in July 2008 (the formal approval of new job descriptions by GOE is still pending). The new heads of the Strategic Business Units have been appointed, as well as managers down to level 6 (1,444 positions) and the migration of regions and corporate functions was completed

by July 2008. The remainder of the restructuring program will be implemented over a three- to five-year period while the investments are spread other 10 years.

ENR's new organizational structure. Consists of the four strategic business units, two corporate units (the corporate center and shared services) based on the transformation strategy approved by Government; eight subsidiary companies¹⁴ have also been established and initially only provide services to ENR. In addition, the number of regions has been reduced from eight to six and only the infrastructure and short distance passenger services business units still have regional layers. Staffing will only be reduced by normal retirement and attrition. A performance based compensation scheme will be put in place, starting with the Chairman and Vice-Chairmen. An interfaces development task force composed of SBUs representatives is in place to develop processes and recommend policies to better manage interfaces in ENR new organization. Some staff will be seconded to the ENR. The outsourcing of some ENR activities is a very good approach for the commercial organization of specific activities. The newly created subsidiaries should be incentivized to offer services on a contractual basis to clients other than ENR. This will decrease, over time, the pressure on ENR to cover all the costs of its subsidiaries. Finally to facilitate the transformation a team of 10 experts seconded by the Italian railways has been embedded into the organization and will assist the Chairman, all Vice-Chairmen as well as the procurement and maintenance Directors during five years.

Railway Safety. With the exception of fires in passenger and freight trains, ENR safety indicators have all grown worse over the last five years. Presently, on averages six fatalities are recorded every 10,000,000 passenger journeys, a rate that is at least 6 times above international best practices (see Figure 2). Recognizing the critical importance of safe railway operations, MoT recently launched measures to create a new culture of safety, introduce safety regulation and oversight, and improve performance to acceptable safety levels. At the core of the initiative is the establishment of a safety department within ENR with an oversight by a Railway Safety Regulatory Unit (RSRU) inside the Ministry of Transport. In addition, safety liaison officers have been placed within each of ENR's business units and report directly to the newly-created Safety Vice-Chairmanship. Finally, the French railways are assisting ENR on safety issues under a twinning program organized by the European Commission. Although there has been some resistance, safety incidents are now investigated by the safety Vice-Chairmanship, which is beginning to gain traction among ENR staff. Additionally, a process to identify and prioritize risks together with corrective actions will be established. The new safety structure is also undertaking an evaluation of poor safety costs focusing on vandalism and theft that are critical issues to address. Other safety measures to be implemented will include: (i) investing in signaling systems and other infrastructure; (ii) improving equipment standards, especially for stronger windshields, side windows and to ensure more effective braking systems; and (iii) organizing in-house safety programs to reinforce a "culture of safety." One early action is the level crossing program which will upgrade 345 of them in a first phase at a cost of EGP400 million for ENR (the overall cost is estimated at EGP1,400 million for 1,300 crossings).

¹⁴ ERJET for real estate, ERMAS for locomotives overhaul, EGYFRAY and EGYRCO for track works, Trans IT for IT services, cleaning and security services, manufacturing workshops, and medical services



Debt Forgiveness/Capitalization. MoT is still in discussions with the MoF, the Central Bank of Egypt (CBE), and the National Investment Bank (NIB) regarding arrangements to manage approximately EGP 12 billion in ENR liabilities to the CBE, the NIB, and foreign lenders. In principle, it has been agreed that approximately EGP 10.5 billion in principal and interest owed to the NIB will be capitalized on ENR's balance sheet. Approximately EGP 1 billion owed to the CBE and another EGP600 million owed to foreign banks will remain on ENR's balance sheet as long-term liabilities; however, interest payments and repayments of the loans will be taken over by the MoF. Arrangements should be finalized by end of June 2009.

Public Service Obligations. It was estimated that uncompensated PSOs (e.g., fare reductions to students, the military, etc., and the provision of rail services to rural areas) have costed ENR over EGP 1 billion each year, and are an important reason for ENR's poor financial performance. Compensations should cover these costs expected to stabilize to EGP850 million by the end of the plan. MoT and ENR have completed agreements with the Ministry of Education, the Ministry of Higher Education, the Ministry of Defense and the Ministry of Justice that will altogether provide an estimated EGP 400 million next year as compensation for the fare discounts that ENR provides to students and employees of those departments. The MoF will pay the amount to the line ministries, which in turn will transfer it to ENR. Gains from a reduction in the number of passes will benefit these Ministries. With respect to loss making local services, the current cost to ENR of providing regional/rural services is estimated to be EGP 660 million. MoT and ENR initially intended to negotiate agreements with governors, to be backed by MOF, but finally a three year global agreement has been reached regarding compensation for loss making services. Compensations are based on current losses of services and will amount to EGP540 million in year one (partially paid this fiscal year). ENR is committed to reduce costs by 10 percent every

year to reflect expected efficiency gains. In any event, MoT has to approve the cancellation of services, and beforehand Governors should make sure that alternative transport services are available to affected users.

Passenger Revenue Optimization. In addition to losing money due to mandated fare and service obligations, ENR also loses significant revenue due to fare evasion, especially on express and local services (40 percent, and even as high as 80 to 90 percent on some services). Furthermore, increases in full fares for long-distance passenger services have not kept pace with inflation, resulting in further losses. A fare increase of 15 percent (for 1st and 2nd class air-conditioned coaches) was approved and implemented in January 2008, and ENR could institute further increase when the quality of services is improved. As a general matter, fare increases are not proposed – nor would they likely be approved – for lower classes of service. ENR has only folded third class services - prices had become meaningless - into more comfortable second class services. Despite these necessary increases, the general revenue strategy is not to increase fares significantly, but rather to improve the quality of services (ENR launched a customer service initiative on long and short-distance services in May 2008), including changing the fleet structure to include more air-conditioned coaches, to increase the percentage of 1st class coaches, and to introduce new VIP coaches. With respect to fare evasion, ENR has launched public awareness campaigns, increased controls on trains and in stations, and raised penalties. Four hundred conductors' responsibilities have been shifted to fare controls. Altogether annual revenue from commercial passengers is expected to reach EGP1.25 billion in year 2016 (EGP689 million during FY06/07).

Freight Development Policy. In the medium-term, the development of freight traffic will be a major driver for increasing revenue in the railway sector. The creation of a separate business unit for freight is a good first-step to generate greater traffic. Objectives for restructuring freight services are phased, and the medium-term program includes significant asset upgrades, starting with a significant increase in the number of locomotives dedicated to freight, and reviews of current rates (prices were hiked twice in 2008 with a view to improve cost recovery ratios on main commodities) and commodities transported. The transformation plan foresees a rapid and significant increase in freight traffic despite higher fares projections – annual income should increase from EGP144 million to EGP1,260 million – and a large competition from the trucking industry. The projected increase in freight traffic is justified by MoT on the basis that there currently exists a significant suppressed demand due to the lack of equipment, poor quality of services, and lack of proper marketing. The transformation plan will address these constraints therefore facilitating a significant freight traffic increase.

Signaling System. As a follow-up to a strategy study carried out by MoT in 2007, an in-depth, line-by-line analysis of ENR's network was conducted, which resulted in the sequencing and prioritization of sections to be upgraded. For the Cairo to Alexandria Line, priority has been given to rehabilitating or upgrading the 162 km Arab el Raml-Alexandria section and installing a CTC for the whole line. The second priority for modernizing signaling will be the 252 km Beni Suef-Asyut section on the Cairo to High Dam line, which is highly utilized, faces design capacity limitations, and currently relies on a mechanical signaling system.

Track Renewal. A new policy for track renewal is being adopted by ENR and will be implemented through the project. The new policy encompasses both preparation of track renewal programs and modalities of execution of the track renewal works. Track renewal programs will

be determined on the basis of the periodic assessment of the condition of the track, which will replace the fixed pre-determined track life method used (at least in principle, since shortage of funds has halted execution of track renewal programs for several years) in the past. As regards the modalities of execution of track renewal works, the project will introduce the “turnkey” track renewal approach, in which a contractor will be responsible for procuring all track components (with the only exception of rail and turnouts, which remain directly procured by ENR) and for executing all track renewal works; the contract package will be related to a large volume of work (200km of track renewal in total) encompassing a limited number of long sections of track to be renewed (at least 20km per section allowing use of efficient renewal working methods). Such a packaging will trigger competition between specialized international firms (which are likely to associate with local construction firms either in the form of joint-ventures or as sub-contractors). This formula will replace the traditional method of track renewal used in the past by ENR, whereby (i) track renewal programs were split into numerous small sections of track and (ii) procurement of various track components was handled by ENR and works were executed by two ENR-controlled companies using mainly ENR machinery and ENR staff, without competition between companies. As for track maintenance, ENR is also considering shifting from a “time-based” preventive maintenance (often replaced in reality by an unscheduled repair policy) to a “condition-based” preventive maintenance policy.

Motive Power and Rolling Stock. ENR has undertaken a major renewal and rehabilitation program of its motive power. It has placed orders for 120 new locomotives, 80 for passengers and 40 for freight. The first 80 locomotives will be delivered between January and February 2009 and the remainder over the following four months. Financing comes from grants by the governments of Qatar and Libya (US\$247 million for 80 locomotives) and ENR budget (US\$120 million for 40 locomotives). As part of its contract, one of the suppliers has provided a maintenance team of seven engineers for the Boulak facility. In addition, ENR is planning a large overhauling program of 210 locomotives, the refurbishment of coaches, and rehabilitation of wagons.

Management Information Systems. The outsourcing of IT activities to a specialized subsidiary (Trans-IT) has been achieved. The establishment of Trans-IT will enable the hiring of highly skilled staff at competitive salaries, and increases the capacity of developing valuable IT solutions for ENR. For the time being ENR has put in place an interim financial management system reflecting the new organization as of July 1, 2008 and will migrate the accounting on it by January 2009. A more comprehensive Enterprise Resources Planning system will be installed within two years. It will also manage the costing system, whereas operational and ticketing systems will be procured independently.

Creation of ENR Subsidiaries

The transformation plan includes the creation of various subsidiaries by ENR. Subsidiaries will be involved in the management of support activities and specific development activities.

- **ERMAS** was established in 2007. ERMAS is entirely owned by ENR, but operates independently. Some assets and staff were transferred to ERMAS. Overhaul of locomotives will be carried out at the Boulak workshops, and ERMAS will invoice ENR for these services. ERMAS has issued a tender for spare parts, and once they become available, will begin to overhaul up to 210 locomotives. ERMAS is negotiating with a locomotive supplier the

secondment of experts for 30 months and may outsource some overhaul tasks. The overhaul should take about 24 months to complete, and by 2010, the ENR's motive fleet is expected to be in good condition. ERMAS is also responsible for refurbishing 730 coaches – a pilot program is ongoing on two lines - and rehabilitating wagons.

- **ER JET** was established in 2002 as a subsidiary and was reactivated under the transformation plan to focus on managing ENR's substantial real estate holdings, advertising, and development of stations. ER JET's general mandate is to generate revenue through: (i) investment and development of ENR property; (ii) competitive allocation of advertising concessions; and (iii) development retail and commercial centers in stations through third parties. One of ER JET's first contracts was with the University of Alexandria to prepare designs and supervise works to renew Ramses and Sidi Gaber Stations in Alexandria. ENR will finance the rehabilitation of other stations and ERJET should award and manage concessions to investors of commercial space. Large and small stations should be bundled, and ENR will share in profits.

- **ERIS** was established to take over cleaning activities and provide safety services for ENR facilities. It will employ 5,000 staff at term. For the time being it has hired 1,500 people to carry out cleaning tasks while the transfer of staff from ENR to that activity is pending. Security services will be provided later on.

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

Agency/Project	Fiscal Year	Amount (million)	Objectives	Rating
IBRD/Airports Development Project Additional Financing (ongoing)	2008	US\$40	To eliminate capacity bottlenecks to air traffic growth, particularly related to tourism, raise the quality of the Cairo and Sharm el-Sheikh Airports to best-practice standards, and promote efficient private-sector participation in airport management and service delivery.	Satisfactory
IFC/Sokhma Port Development Company	2005	US\$20	To develop new port capacity for container transshipment and import/export	Highly Successful
IBRD/Airports Development Project (ongoing)	2004	US\$335	To eliminate capacity bottlenecks to air traffic growth, particularly related to tourism, raise the quality of the Cairo and Sharm el-Sheikh Airports to best-practice standards, and promote efficient private-sector participation in airport management and service delivery.	Satisfactory
IDA/Port Sector Reform	1998	US\$2	To assist the government in improving the efficiency of Egyptian ports and ancillary services in line with the CAS objectives of promoting private sector development and growth in exports.	N/A
IBRD/Port Said Port Rehabilitation and Expansion Project	1985	US\$37	To: (i) reduce excessive utilization of barges to unload general cargo ships moored at buoys located near the eastern bank of the Suez Canal and the shallow draft berths at Port Said; (ii) increase port productivity by rehabilitating existing port facilities; (iii) improve the efficiency of port operations by providing modern cargo handling equipment; and, (iv) strengthen port management including budgetary control, planning, cost accounting, and internal audit through technical assistance and staff training.	Project was reviewed and found that it did achieve most of its objectives.
IBRD/Road Maintenance Project	1983	US\$24	To support the Government's efforts to improve road maintenance and help improve road planning, training and traffic safety and control	Project was reviewed and found that it did achieve most of its objectives.
IBRD/El Dikhaila Port Project	1982	US\$132	(i) Rehabilitate road II-29 from the Romanian border /Negru Voda/ to General Toshevo / 18 km; (ii) Rehabilitation and partial reconstruction of road II-15 Miziya – Oryahovo / 16km	Project was reviewed and found that it did achieve most of its objectives.

IBRD/Suez Canal Expansion I	1978	US\$100	To bring the Suez canal to its 1967, prewar condition. The Expansion Project was intended to adapt the canal to the new shipping, and particularly tanker market conditions of the mid 1970s, allowing the transit of larger ships than those the 1967 canal could take. The Expansion Project, was also intended to assist in strengthening the ability of the Suez Canal Authority (SCA) to operate the canal efficiently and carry out better economic, financial and engineering planning.	Project was reviewed and found that it did achieve most of its objectives.
IBRD/Port of Alexandria	1976	US\$45	This project was to assist the Alexandria Port Authority in reducing the congestion in the Port of Alexandria. Hence the focus on creation of additional berths, provision of equipment, and improvement in organization and management.	Project was reviewed and found that it did not achieve all its objectives.
IBRD/Egypt First and Second Railways Projects	1972 & 1975	US\$67	The two loans were intended to support a multiyear investment program for the Egyptian Railways (ER). The projects' most objectives were to reduce costs and improve the financial sustainability of the railways sector.	Project was reviewed and found that it did not achieve all its objectives.

Annex 3: Results Framework and Monitoring
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

Results Framework

PDO	Outcome Indicators	Use of Outcome Information
Assist the Government in improving: (a) the reliability; (b) the efficiency; and (c) the safety of railways services.	(a) Rate of utilization of ENR assets; long distance passenger traffic on Cairo Alexandria. (b) PSOs paid; freight traffic. (c) Number of fatalities due to rail accidents.	a) Monitor ENR performance, modify operations. b) Determine budget allocations, other Government support (PSOs). c) Adjust railway and overall transport strategies.
Intermediate Outcomes	Intermediate Outcome Indicators	Use of Intermediate Outcome Monitoring
Component 1: Modernize the signaling system on Cairo – Alexandria line.	Punctuality on Cairo-Alexandria Line.	
Component 2: Improve technical condition of track by renewal works.	Maintenance costs on renewed tracks.	Detect implementation delays, identify causes, and take corrective actions.
Component 3: Modernization of management practices.	Training time of management.	

Monitoring Indicators

Outcome Indicators	Baseline FY 07/08	FY 08/ 09	FY 09/ 10	FY 10/ 11	Target Value FY11/ 12	Frequency of reports FY12/ 13	Data Collection and Reporting	
							Data Collection Instrument	Responsibility for Data Collection
<i>I. (i) Locomotive productivity</i>								
Availability ¹⁵ ratio of the useful fleet [%]							Annual	ENR statistics
○ The sum of the number of hours of availability of all locomotives during a month/year divided by the number of locomotives multiplied by the numbers of hours per month/year.								
1. Long Distance Passenger	85	85	85	85	85	85	85	ENR
2. Short Distance Passenger	82	82	85	85	85	85	85	
3. Freight	85	85	85	85	85	85	85	
<i>All activities</i>	83	83	85	85	85	85	Annual	ENR statistics
Kilometrage per available locomotive								
○ Total number of km (000s) run by all locomotives during a year divided by the average number of yearly available locomotives								
○ Long Distance Passenger	260	252	207	217	208	208	208	ENR
○ Short Distance Passenger	114	111	112	111	112	111	111	
○ Freight	146	134	95	95	95	95	95	
<i>All activities</i>	139	136	120	120	119	117	Annual	ENR statistics
<i>I. (ii) Long distance Passenger traffic on Cairo – Alexandria</i>								
○ Total annual passenger-km in AC trains (million)	855	864	890	934	986	1,028	ENR	
○ Total annual passenger-km in non-AC long distance trains (million)	1,323	1,336	1,356	1,383	1,411	1,453		
<i>2. Payment of PSOs</i>								
PSO compensation for ENR								
○ Total annual amount of PSO paid by the government to	357	488	779	787	796	805	Annual	ENR

¹⁵ **Locomotive availability** = Measures the time [in hours] when the useful locomotive is under the control of the operating (traffic) department for services. The useful fleet of locomotives is composed of the total fleet of locomotives less those locomotives which are either unavailable and under the process of being written off or stranded for a period of time that has exceeded or is going to exceed four months (due notably to lack of spare parts for repair or overhaul or periodic maintenance or due to the lack of capacity of the maintenance facilities. The locomotive is unavailable when it is under servicing (fueling, sanding, oiling, greasing), current periodic maintenance, periodic overhauls, unscheduled repairing, time waiting for spare parts, time waiting for admission to a repair facility.

ENR [expressed in EGP million].								Accounts		
3. Social and Economic Needs										
Average number of fatalities due to railway accidents on the ENR network ¹⁶								Annual	ENR statistics	ENR
○ Typical accidents ¹⁷										
○ Non Typical accidents ¹⁸										
<i>Total</i>										
Freight traffic carried by ENR										
○ Total annual net-ton-km of freight traffic (million)										
2,020	0.56	0.50	0.43	0.37	0.34	0.31	6,673	Annual	ENR statistics	ENR
Intermediate Outcome Indicators										
Baseline										
2007	2008	2009	2010	2011	2012	Target Value				
Frequency of reports										
Data Collection Instrument										
Data Collection and Reporting Responsibility for Data Collection										
<i>1. Component 1</i>										
Punctuality of AC trains on the line Cairo-Alexandria										
○ Total number of minutes of AC train delays during one month/year divided by the total number of AC trains operated in the same period of time.										
30	27	25	23	20	18					
<i>2. Component 2</i>										
Maintenance costs on sections were tracks are renewed										
○ Annual total cost of track infrastructure maintenance on sections renewed under the project (US\$000's) ¹⁹ .										
1,210	1,210	1,210	1,210	996	507					
<i>3. Component 3</i>										
Average management training time										
○ The ratio between the number of staff-days allocated for training during a year and the average number of management staff at ENR ²⁰ .										
n/a	2	5	10	9	9					

¹⁶ Calculated as the total annual number of victims on ENR network per one million passenger-km. ENR shall develop an internal system for collecting data concerning the number of fatalities (persons killed in the accident and deceased after the accident). Figures about the total annual number of fatalities and the total volume of passenger-km will be presented for the annual evaluation of the indicator

¹⁷ Accidents produced as a consequence of railways malfunctioning or railway staff human error

¹⁸ Other accidents involving railways (level crossing accidents ignoring the signalling warnings, people's negligence in the railway area, etc.)

¹⁹ Contracted works and ENR's own costs

²⁰ ENR shall communicate the categories of staff considered as management staff (first six levels of management)

Annex 4: Detailed Project Description
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

Component 1: Signaling Modernization (US\$202 million - IBRD financing US\$197 million for goods and works, counterpart financing US\$5 million for supervision)

A key rail section, Arab El Raml-Alexandria, was selected for modernization of the signaling system. The investment under this component is estimated to cost US\$197 million. When completed, the section will be the most modern part of the Egyptian railway network in terms of signaling and safety standards. The modernized system could become a model to be replicated throughout the core railway network of ENR.

The signaling system to be implemented will mainly comprise an automatic block signaling system (on open line), electronic interlocking systems (in stations), and a level-crossing protection system. All necessary cables and cabling equipment related to the signaling system will be replaced, all signaling equipment will be remote controlled, and diagnosis systems for all components will be available. All components of the signaling system, protection systems in level crossings, and train and security brake systems will be in conformity with a train speed of 160 km/hour.

Train circulation will be controlled by a computer-based Centralized Traffic Control (CTC)²¹ offering sophisticated information to railway staff, including: command and monitoring of train circulation; presentation and evaluation of train graph; information event-recording system; and dispatcher communications. CTC functionality will be based on non-proprietary interfaces in order to enable data collection from signaling equipment provided by different suppliers and for data exchange with the local equipment in railway stations. A Local Command Console will be available in the main stations of the section for local command of signals, switches, shunting activities, etc., and for the exchange of information with the CTC. The non-proprietary interface will ensure its interoperability among different components of the signaling system, and enable the extension of traffic controls beyond the initial extent of this particular system as other sections are modernized. The CTC will also control trains between Cairo and Banha.

The installation of the new systems will offer the opportunity to optimize the operations of the target section through the rationalization of railway stations (unnecessary stations may be closed), remodeling of track layout at stations, and the rationalization – based on traffic needs – of the number of “objects” (points, signals, etc.) controlled by the interlocking systems in each railway station.

The power supply for the CTC and the signaling system components will be provided by two independent sources. In the event of an interruption of the main power system, the CTC and the

²¹ CTC: Centralized Traffic Control consists of a centralized train dispatcher's office that controls railway switches and signals. The dispatcher is constantly aware of the position of each train as it is electrically reported, and controls the switches and signals remotely. In the dispatcher's office there is a graphical depiction of the railway, and the dispatchers can keep track of trains' locations across the territory that the dispatcher controls

other vital functions would be supplied by an uninterrupted power source over buffer-charged accumulators that can provide steady energy.

ENR operation and maintenance staff will be trained for the proper utilization of the new signaling system funded by the Project.

The Automatic Train Control (ATC²²) system, the role of which is to ensure that train drivers respect the indications given by way-side signals, is not part of the project. However, the structure of the signalling system installed on the target section will allow the implementation of any ATC system. The ATC components will be installed by ENR as a separate project. The compatibility of the ATC components envisaged by ENR (ZUB 100²³ and ZUB 200²⁴) with the signalling equipment included in the present Project will be taken into consideration during the installation of the ATC system.

The signalling modernization component will be undertaken by a single contractor selected under International Competitive Bidding (ICB) processes. The contractor will be responsible for all aspects of the procurement, storage, and transportation of materials, preparation and execution of works, installation of signalling and other related equipment according to the RFP, installation of hardware and software related to the CTC and diagnosis system, testing of functionality of all installed component of the signalling system, and training of ENR staff for the operation of the system. The forecasted period of execution of the works is 48 months.

The investments (goods and works) will be implemented by a single contractor selected under International Competitive Bidding (ICB) procedures. Supervision of the investments, estimated at US\$5 million, will be financed by ENR. Supervision will be undertaken by an engineering firm with a strong expertise in modern signaling systems, competitively selected, based on terms of references and a short-list of preselected consultants accepted by the Bank (terms of references and short list of consulting firms or Joint Ventures between firms accepted by the Bank), and along general rules of the International Federation of Consulting Engineers (FIDIC).

Component 2: Track Renewal (US\$80 million - IBRD financing US\$60 million, counterpart financing US\$20 million)

Under the project, ENR will implement a priority program of track renewal. A total length of 200 km of track – 149 km on four sections of the Cairo-Aswan line and 51 km on two sections of the Benha-Port-Saïd line – will be fully renewed, including continuous-welded rail, concrete

²² Automatic Train Control (ATC) is a safety system ensuring the safe and smooth operation of trains on ATC-enabled lines. Its main advantages include making possible the use of on-board (locomotive cab) signaling instead of track-side signals, and the use of smooth deceleration patterns in lieu of the rigid stops encountered with the older automatic-train-stop technology. On-board signaling refers to a railroad safety system that communicates track status information to the train cab (driving position), where the engineer or driver can see the information. The system can display allowable speed, location of nearby trains, and dynamic information about the track ahead. A track circuit in which the energy is interrupted periodically (coded track circuit) is used to transmit information from the track to the locomotive driver via on board equipment. Transponders (balises) may be installed on track for transmitting specific information

²³ ZUB-100: Proprietary ATC system manufactured by Siemens, presently installed on ENR locomotives. It is an obsolete solution, as Siemens is abandoning the production of ZUB-100 and no spare parts will be available.

²⁴ ZUB-200: The new generation of the Siemens proprietary ATC system, compatible with ZUB-100

sleepers, elastic fastenings and ballast at a cost of US\$60 million for works, which will be financed by the Bank and US\$15 million by ENR (local component) which will finance the provision of rails and turnouts. The objective of the track renewal operation is to reduce the probability of derailments, which are a major cause of accidents, to reduce the cost of track maintenance and to enable an increase in the speed of trains (notably through deletion of speed restrictions imposed by the bad quality of track).

The component would finance:

- (a) procurement of all track components (including sleepers, fastenings, ballast), with the only exception of rails (already in possession of ENR) and turnouts, which will be procured directly by ENR;
- (b) preparation of long-welded rails;
- (c) execution of all renewal operations; and
- (d) supervision of all works.

The track renewal component – with the exception of the supervision of works – will be undertaken by a single contractor selected under ICB procedures, after pre-qualification of bidders. The contractor will be responsible for all aspects of the procurement, storage, and transportation of materials and execution of all renewal works. The forecasted period of execution of the works is 30 months.

Supervision of the works (to be done along the general rules of FIDIC), with an estimated cost of US\$5 million, will also be financed by ENR from its own budget. Supervision will be undertaken by an engineering firm with a large experience in tracks works, selected by ENR through an international competitive scheme based on terms of reference and a short-list of pre-selected firms, acceptable to the Bank.

Component 3: Modernization of Management and Operating Practices (US\$ 10 million-financed by ENR)

In conjunction with the operational and financial restructuring of ENR, ENR staff and management need to incorporate very different methods into management practices. Above all, the previously prevailing attitude – that neither staff nor management were accountable for inefficiency or poor performance – has to be radically changed to one that promotes and encourages safety, customer service, initiative, and accountability.

Management training toward this end should be seen as a continuous process – one that will extend far beyond the closing date of this project. That said, the activities under this component can be viewed as a “jump start” to longer-term and continuous strengthening of managerial and operating practices.

Note that GoE rules prohibit loan financing for technical assistance or training, and therefore this component of the project is funded entirely by ENR’s own resources. However, under the project the Bank would assist ENR to develop programs, prepare Terms of Reference, and review deliverables by consultants.

Sub-component 3.1: Support to the Railway and Transport Academy (US\$4 million)

MoT plans to establish a training establishment – the Railway Academy – within the ENR's Wardan Institute that provides training services in rail, road, river and maritime transport. The Academy would develop training and other instruments for managers and staff of ENR. USAID is providing some financing for the acquisition of training equipment (locomotives). As part of the project, support would be provided to Academy initiatives in several areas:

- development of training program structures and curricula, in particular for rail management and operations;
- arrangement of exchange programs with similar institutions; and
- development of capacity for sector research and studies.

Sub-component 3.2: Support the reengagement of ENR with international railways bodies

ENR has been absent from International Union of Railways for several years and does not participate either in other international bodies. Their absence has isolated them from the flow of information on successful reforms of the railways sector in other countries, and on new methods for managing networks and serving railways markets. ENR participation in those bodies would allow it to benefit from joint research initiatives and studies, information on best practices developed by other railways, and access to international training program. Support will be provided under the project to, among others, identify the most appropriate programs ENR could join.

Sub-component 3.3: Support to Modernize Managerial and Operational Practices (US\$4 million)

In conjunction with sub-component 3.1, ENR needs to develop of an intensive management training program. Agreements with other railway companies and suitable training institutes inside and outside Egypt would be entered into to carry out appropriate capacity building programs. Experts from the Italian railways have already been seconded to ENR under a twining program financed by the Italian government. Staff targeted for training should be mid- to upper-level management of ENR, as well as relevant officials from MoT. Training modules for managers the Bank would help develop would likely include (but not be limited to) topics on developing and monitoring business plans; marketing; railway financial management and budgeting; investment appraisal and decision-making; railway financial performance; pricing of passenger and freight services; public service obligations and subsidy calculations; railway real estate development; incentive structures for maximum performance; regulation of railways; technical project management; and case studies in railway restructuring and performance turnaround. Other initiatives would include the following:

- Development of human resource policies and tools to promote staff excellence;
- Development of a young professionals program as an entry to ENR for high-performing graduates;
- Development of a distant learning program; and
- Capacity strengthening and development of appropriate skills to manage the freight business.

Sub-component 3.4: Business Development Activities (US\$2 million)

This subcomponent would consist of assistance to the newly established strategy department and business development units of SBUs in the preparation, procurement and management of studies and research for near-term business development. Studies may include, for example:

- Market research for freight business development;
- Customer surveys for passenger (including of different passenger classes) and freight;
- Demand and usage analysis of key passenger lines; and
- Analysis of means to increase the revenues from ENR property.

EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

Annex 5: Project Costs

COMPONENT	Total Cost (US\$ million)	Percentage Financed by Bank Loan	Local Financing (US\$ million)	Bank Financing (US\$ million)
COMPONENT 1: MODERNIZATION OF SIGNALING SYSTEMS				
Modernize signaling systems on the Arab El Ramly/Alexandria route including CTC	197	100	0	197
Supervision of works	5	0	5	0
COMPONENT 2: TRACK RENEWAL PROGRAM				
Renewal works of 200 km of Track	60	100	0	60
Acquisition of 400 km of Rail	15	0	15	0
Supervision of works	5	0	5	0
COMPONENT 3: MODERNIZATION OF MANAGEMENT PRACTICES				
Training Program	8	0	8	0
Business development	2	0	2	0
PHYSICAL AND PRICE CONTINGENCIES				
Physical Contingencies	6,825	100	0	6,825
Price Contingencies	5,500	100	0	5,500
Front End Fee	0.675	100		0.675
Total:	305		35	270

Annex 6: Implementation Arrangements

EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

1. Proposed Organization and Estimated Budget for the Project Management Unit (PMU)

1.1. PMU Role and Organization

The Ministry of Transport has designated ENR as the Project Implementing Agency. In this respect, ENR will establish a Project Management Unit (PMU), which will be the main counterpart of the Bank for the project's implementation, and responsible for the coordination, and in some cases the implementation, of all aspects of the ENRRP, including administrative, fiduciary (financial management and procurement) and safeguard (environmental) issues associated with the project.

The PMU's duties include:

- (i) overall management of Project implementation, including ensuring the Project is implemented within budget, on schedule, and according to the implementation arrangements agreed with the Bank;
- (ii) preparing and providing periodic progress and financial management reports, including a Mid-Term Report and an Implementation Completion Report;
- (iii) ensuring that Project implementation meets the fiduciary requirements of the Bank, including the procurement of works, goods and services for components financed by the Bank according to World Bank guidelines, and financial management and reporting;
- (iv) establishing and maintaining an appropriate financial management system (FMS) and project accounts. The FMS will encompass all funds – Bank loan, internal ENR funds, and funds from other donors – for the purposes of the ENRRP;
- (v) overseeing the management of or administering contracts with consultants, suppliers or contractors financed by the loan and processing payments for services rendered;
- (vi) ensuring compliance with the Bank's safeguard policies, including effective implementation of the environmental management plan; and
- (vii) monitoring project progress based on implementation indicators agreed upon with the Bank, evaluating project outcomes, and reporting to the Bank on project progress.

The PMU will include the following positions:

- **PMU Director.** The PMU Director will be responsible for managing staff and overseeing the day-to-day activities of the PMU in its management of the implementation of the ENRRP. The Director will report directly to the Chairman of ENR, which will facilitate resolution of any internal delays to implementation.
- **Procurement Officer.** The Procurement Officer will be responsible for overseeing all aspects of the procurement process for contracts financed by the project, including preparation and supervision of the procurement plan, preparation of TORs and requests for World Bank no-objections, organization of bidders conferences and bid evaluations,

oversight of contractual obligations, etc. In cooperation with the Director and other PMU staff, the Procurement Officer will prepare and submit periodic procurement progress reports. With respect to the procurement of the main components – track renewal and signaling – the Procurement Officer will work closely with the consulting firms carrying out the engineering design and bid documents, which will provide support during the procurement and contracting phase as well as carry out the construction supervision.

In order to ensure appropriate procurement and contract management at early stages of the project and to assist in capacity building of the PMU, and in addition to the full-time Procurement Officer, an external consultant with extensive procurement experience will be included as part of an overall technical assistance contract to the PMU.

- ***Environment Specialist.*** The environmental specialist will address the environmental and social safeguards requirements of the World Bank and of the Egyptian Environmental Affairs Agency. Given the lack of ENR experience with these safeguards, ENR is recommended to secure external consulting support in this area in order to monitor the implementation of the EMP. Specifically, the environmental consultant will monitor the implementation of the environmental mitigation measures, monitoring plan, and institutional/training requirements of the EMP, and will be responsible for environmental reporting responsibility within the PMU.

A full-time staff would be appointed at the PMU, who would be assisted by an environmental consultant throughout project implementation (about two weeks per month). The latter arrangement which ENR has chosen ensures continuity in the learning and implementation process.

- ***Financial Management Officer.*** Tasks of the financial management specialist include development and monitoring of annual Project budgets, reporting on the status of Project accounts and the disbursement of funds, liaising with the external auditor, and handling the Project flow of funds (disbursements to project contractors/suppliers and withdrawals from the Project accounts). The financial management may be seconded from within ENR, however, given the lack of ENR experience with the World Bank procedures, external financial management support will be secured for the first year of the project as part of the support provided by a consulting firm.
- ***Monitoring and Evaluation Specialist.*** In coordination with the PMU director, the procurement and financial management specialists, and ENR technical staff involved in Project implementation, the M&E specialist will be responsible for preparing the periodic Project progress reports, including reporting progress on general implementation, procurement, project finances, and progress against agreed indicators.

Taking into consideration the unfamiliarity of ENR staff with Bank procedures, ENR will engage an external consulting firm for the first two years of Project implementation. The consulting firm will help train staff in all aspects of PMU tasks, in addition to trouble-shooting any problems related to procurement and disbursement. ENR will finance the costs of PMU staff costs and the external consulting firm.

2. PMU relationship with ENR and other institutions

2.1. Relationship with ENR

The PMU will be part of the organizational structure of ENR, reporting directly to the office of the ENR Chairman.

For the technical and operational aspects of the Project, the PMU will work closely with assigned staff from the ENR departments concerned: the Permanent Way department, the Signaling and Communications department, the Finance department, etc. These ENR staff will not be part of the PMU, but will be selected by their directors to be the lead technical specialists for the respective ENRRP component. The technical specialists will work closely with PMU staff for specific tasks related to the Project, such as the elaboration of technical specifications, the technical evaluation of bids, the monitoring of the quality of works, etc.

2.2. Oversight of the PMU

The PMU reports directly to the office of the Chairman of ENR regarding Project implementation and issues requiring management decisions.

2.3. Relationship with the World Bank

The PMU will be the World Bank's primary interface with ENR on all Project matters, including reporting on the status of the Project, requests for the Bank's No Objection on procurement documents, the disbursement of loan funds, etc.

The PMU will also prepare and provide the Bank with the following project reports:

- **Quarterly Progress Reports**, including a summary of physical and financial progress of project components, explanations of variances between physical and financial progress versus forecasts, a description of issues encountered (such as variation orders under works contracts), a summary of actions considered or undertaken to address them, and updates of implementation and outcome indicators.
- **Semi-Annual Interim Financial Reports**. The format and content of these reports will be detailed in the financial manual.
- **Annual Consolidated Reports**, integrating the information provided in the quarterly reports and setting out the measures recommended to ensure the efficient execution of the project and the achievement of objectives.
- **Annual Project Financial Statements**. The format and content of these reports will be detailed in the financial manual.
- **Annual Financial Statements of ENR**.

Since the last Bank-financed railway operation in Egypt closed in 1981, ENR does not have recent experience with Bank projects. Therefore, PMU staff will receive advance training in the Bank's procurement, financial management, and safeguards policies, guidelines, and procedures before effectiveness. Additional training opportunities will occur during the launch workshop and throughout implementation, as needed.

3. PMU Equipment and training

In order to ensure that the PMU is fully functional and to enable PMU staff to accomplish their tasks in an efficient manner, the PMU will acquire IT equipment. This could include computers, printers, a local area network, etc.

4. Financial Management System for the Project

The implementation of a World Bank Project requires specific tools for financial management. Although the number of contracts under the Project is not envisaged to be large, implementation of an automated accounting and reporting system will add to the efficiency of access to information and will provide a capacity-building and training opportunity for ENR FM staff. It is therefore recommended that an appropriate FMS will be used by the PMU staff to ensure that accounting, procurement, disbursement, and audit are integrated in order to facilitate good project financial management, reduce the administrative burden on the Borrower, and ensure better client service. Better integration of all these elements of loan administration will yield financial management reports that present a complete picture, virtually at a glance. Through the Italian/Egyptian project for the reforms of ENR, a system is already being developed to monitor and report on the operational costs and revenue. Further studies will take place to incorporate the investment projects into the system in order to have a one unified system for ENR. Unless successful development and operation of such system is achieved, a parallel system for the World Bank project will be procured and installed before project effectiveness. The successful system will need to bear the following features:

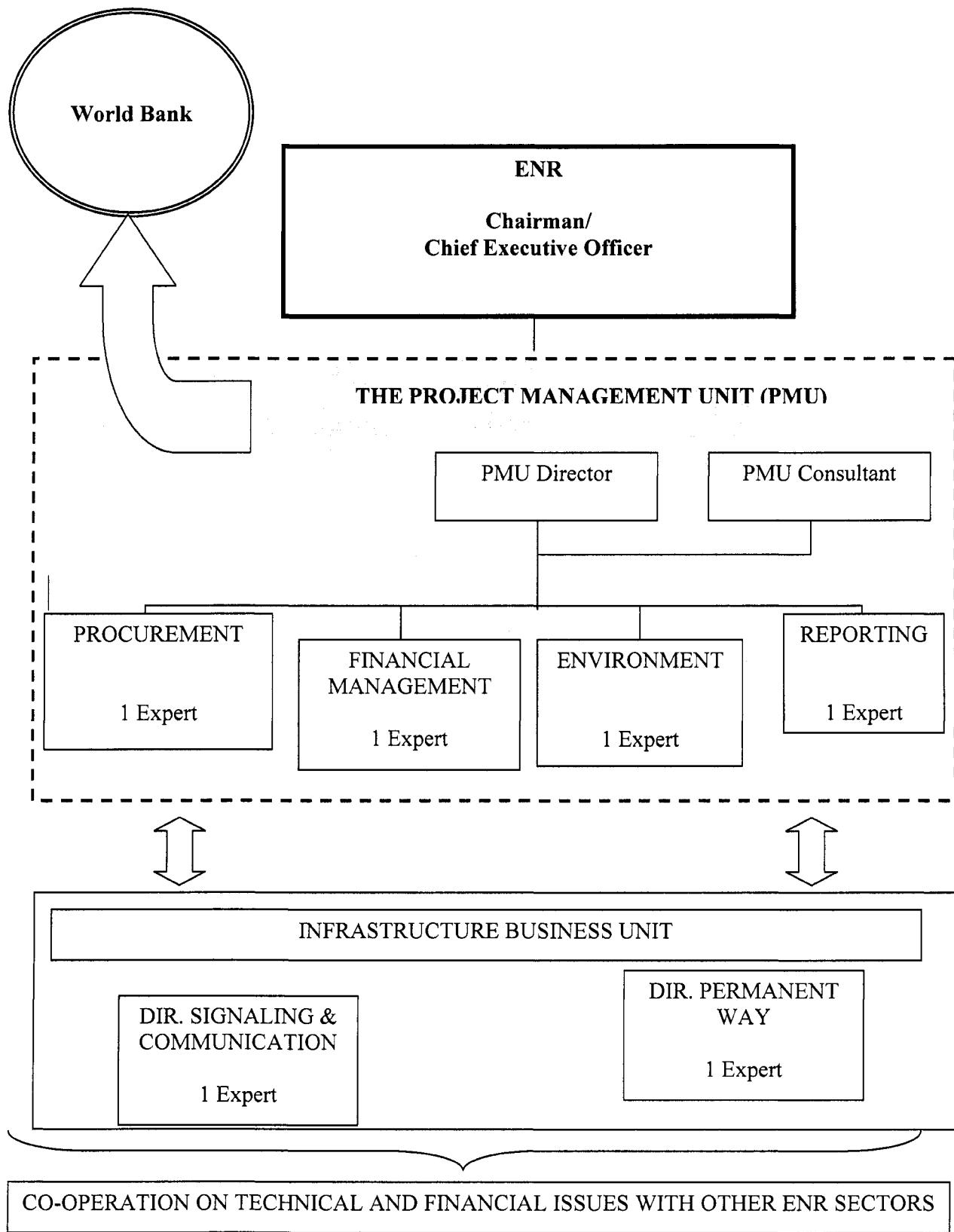
At the accounting level:

- Expenses are captured by project component, category and contract;
- Expenses are captured by source of financing i.e. the system is capable of recording expenses financed by the Bank separate from those financed by any other source under the same project;
- Sources of funds are captured by donor;
- Internal security features adequate (e.g. cannot delete posted transactions, controlled access, password protection, back-up and system maintenance procedures, self-diagnostic checks to ensure integrity);
- Ability to account under different comprehensive basis of accounting (cash, modified cash).

At the reporting level:

- Ability to track and report by project funding entity (Sources of funds), credit agreement category, and project component (Uses of Funds);
- Reports can easily identify the percentage of financing of each category by different donors under the same project;
- Multi-currency accounting (including US\$, EGP);
- Multi-language (i.e., English and Arabic);
- Ability to monitor commitments under each contract;
- Ability to track actual, budget, and forecasts data.

Box 1: Institutional Structures for Project Management



Annex 7: Financial Management and Disbursement Arrangements
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

Executive Summary:

A financial management (FM) assessment was conducted to evaluate the adequacy of the ENR current financial management arrangements for project implementation. The assessment was based upon visits to ENR and discussions with the staff of ENR, MOT and the Italian team of consultants assisting MOT for the reform of ENR regarding current work procedures and the corresponding documentary cycle.

ENR does not possess recent experience with implementing Bank-financed projects and lacks familiarity with World Bank guidelines related to fiduciary requirements. A PMU will be established for the management of the World Bank project's activity. The FM unit of the PMU will be headed by a financial specialist acceptable to the Bank. In addition, a RBPIP was prepared with the assistance of a consultant under the PHRD grant for the project preparation.

ENR's current staffing structure is not conducive to adequate tracking of project expenditures or to comprehensive reporting. Thus the project FM functions will be placed with the Project Management Unit (PMU) which will be established within ENR to support day-to-day project implementation. The PMU will be responsible for monitoring and overseeing the contractors' compliance with the contracts, ensuring compliance with World Bank guidelines, and reporting project implementation progress, among other tasks. External support to the PMU would be provided during the first year, both to support general project management and implementation, in particular, financial management and procurement-related activities.

Other issues include the availability of financing for technical assistance and the capacity to review certification of progress certificates. The former will be mitigated by securing consulting services to support FM implementation during the first two years as indicated above. The latter will depend on engineering supervision consultant to be recruited to support the supervision of the works. Financing will be secured either from ENR budget.

Country Issues:

The Report on Observance of Standards and Codes – Accounting & Auditing (ROSC-AA) (2002) and the draft Country Financial Accountability Assessment (CFAA) report (2003) identified some weaknesses in the reporting and auditing environment in Egypt. The ROSC-AA included an assessment as to the level of compliance to International Financial Reporting Standards (IFRS) by State Owned Enterprises which was concluded to be weak. The 2003 CFAA assessed the fiduciary risk associated with the budgeting arrangements, internal control system, and accounting and financial reporting arrangements to be significant (this assessment covered state owned enterprises and public authorities). Thus, the condition of the country overall reporting and auditing environment will affect the project assessed risks.

The ROSC-AA included an assessment as to the level of compliance with International Financial Reporting Standards (IFRS) and with International Standards on Auditing (ISA). The report concluded some gaps between the standards as designed and as practiced. The Ministry of Investment (MOI) issued in July 2006 the new Egyptian Accounting Standards (EAS) which

align with IFRS except for few disclosed variations. The Capital Market Authority (CMA) is working on disseminating the 2006 issued EAS, sponsoring training courses, and enforcing their adoption.

The overall FM risk is assessed to be **significant**. The successful implementation of the following actions would reduce the risk to **moderate**.

Action	Responsibility	Date
Provide FM staff with training on Bank guidelines related to financial management and disbursement.	Bank FMS and external consultant.	Up to the end of the first year of implementation.
Secure finance for the engineering supervision consultant contract.	ENR	ENR has confirmed they will finance contracts.
Readiness of the PMU FM unit in terms of staff and accounting and reporting system.	ENR	Before effectiveness.

Risk Assessment and Mitigation:

Inherent Risks:

Risk	Risk Before MM	Mitigating Measures (MM)	Risk After MM
Country/Entity level: - Budgeting arrangements, accounting and financial reporting at the ministry and public authority (ENR) levels may not be readily equipped to account and report on specific projects in detail. This can result in incomplete financial reporting on the project.	S	- Bank financing will be ring-fenced, with funds allocated to specific contracts through a PMU that is in charge of day-to-day implementation. - Audit terms of reference for a private independent auditor will clearly define the auditor's responsibilities.	M
Entity level			

Risk	Risk Before MM	Mitigating Measures (MM)	Risk After MM
ENR does not possess experience with implementing Bank-financed projects, and in turn lacks familiarity with World Bank guidelines and fiduciary requirements.	S	<p>The PMU being created will be introduced to the Bank guidelines and will receive close support from the Bank project team.</p> <ul style="list-style-type: none"> - ENR was introduced to the Airport Project PMU that is implementing a successful Bank financed project to obtain familiarity with the WB requirements and the arrangements to fulfill such requirements. 	M
Inherent Risk Before MM	S	Inherent Risk after MM	M

Control Risks:

Risk	Risk Before MM	Mitigating Measures (MM)	Risk After MM
Staffing			
ENR staffing structure is not conducive to support the tracking of all project expenditures and comprehensive reporting.	H	<ul style="list-style-type: none"> - A PMU was agreed to be established, with clear definition of its organization, staffing and lines of reporting. - External support will be secured to support the first year of implementation. 	S
Budgeting			
- The unavailability of co-financing can result in project delayed implementation.	S	<ul style="list-style-type: none"> - Project allocations will be included in ENR's budgets. 	M
Internal Control			
Review and approval of progress certificates requires specific technical expertise.	S	<ul style="list-style-type: none"> - Construction supervision consultants will support ENR in this regard. - The project reporting will monitor the physical progress and link it to the incurred expenditures. 	M
Accounting and Reporting			

Risk	Risk Before MM	Mitigating Measures (MM)	Risk After MM
Multiple sources of funding may result in financial reports that do not reflect comprehensive project costs.	S	The PMU will ensure that all financing sources (WB loan and local financing) are included in project reporting.	M
Control Risk Before MM	S	Control Risk After MM	M

Implementing Entity:

The project will be implemented by ENR, which was established by law 152 in 1980. According to the above law, ENR is affiliated with the Ministry of Transportation. It is entrusted with constructing and operating railway networks and implementing investments to meet the above purposes.

As part of the Technical Assistance provided by the Italian government to ENR, an accounting and reporting system development for ENR is underway to capture revenue and related costs as well as investment activities. If the latter is not viable, a separate system will be installed for this project at the envisaged PMU.

The day-to-day management will be the responsibility of a PMU, with staff seconded from within ENR for capacity building purposes and with external support as needed. The PMU will be headed by a PMU director and supported by specialists in the following areas: (i) financial management; (ii) procurement; (iii) monitoring and evaluation; and (iv) environment. PMU staff will work closely with engineering/technical staff in ENR responsible for the technical aspects of project implementation. The PMU will be responsible for monitoring and overseeing contractors' compliance with contracts, ensuring compliance with World Bank guidelines, and reporting on project implementation progress.

Staffing:

The two technical departments (Signaling and Railway Engineering) involved with the project components are both sufficiently staffed. In addition to the accounting units structured within different sectors of ENR, supporting one or more departments, a central financial management department also exists that is in charge of budget coordination and reporting consolidation.

For project purposes, the PMU will include an FM officer acceptable to the Bank. However, given ENR's lack of experience with World Bank procedures and with the implementation of WB-financed projects, ENR will secure external support for financial management under a technical assistance contract to cover the first two years of implementation. The contract may be extended if needed. The scope of services under this contract, which may provide for the full time secondment of a financial expert in an early stage depending upon the skills and experience of the FM officer, include support to monitoring the project budget, progress reporting, liaising with the external auditor, and handling the project flow of funds (disbursements to project contractors/suppliers and withdrawals from the loan account). The support will be provided as

part of a larger assignment of a consulting firm that supports project implementation, including FM aspects.

Budgeting:

The sample budgets checked indicate sufficient details and breakdowns. The 2007/2008 Railway Engineering department budget for railway renovations included breakdowns of lines, directions, distances, locations and costs.

The project budgets will be finalized upon the completion of the signaling and track renewal consultancy studies financed under the ongoing PHRD grant. The PMU will then develop a disbursement plan in accordance with the contracts' payment terms and the timeline for implementation.

The interim financial reports to be issued under the project will reflect the actual costs against the forecasted amounts.

Accounting System:

Although the number of contracts under the proposed project is envisaged to be limited (2 main contracts), the implementation of an automated accounting and reporting system will add to the efficiency of access to information and will provide a capacity-building and training opportunity for ENR FM staff. Through the Italian/Egyptian TA project for the reforms of ENR, a system is already being developed to monitor and report on the operational costs and revenue. Further studies will take place to incorporate the investment projects into the system in order to have a one unified system for ENR. Unless successful development and operation of such system is achieved, a parallel system for the World Bank project will be procured and installed before project effectiveness. The successful system will need to bear the following features:

At the accounting level:

- Expenses are captured by project component, category and contract.
- Expenses are captured by source of financing i.e. the system is capable to recording expenses financed by the Bank separate from those financed by any other source under the same project.
- Sources of funds are captured by donor.
- Internal security features adequate (e.g. cannot delete posted transactions, controlled access, password protection, back-up and system maintenance procedures, self-diagnostic checks to ensure integrity).
- Ability to account under different comprehensive basis of accounting (cash, modified cash).

At the reporting level:

- Ability to track and report by project funding entity (Sources of funds), credit agreement category, and project component (Uses of Funds).
- Reports can easily identify the percentage of financing of each category by different donors under the same project.
- Multi-currency accounting (including US\$, EGP).
- Multi-language (i.e., English and Arabic).

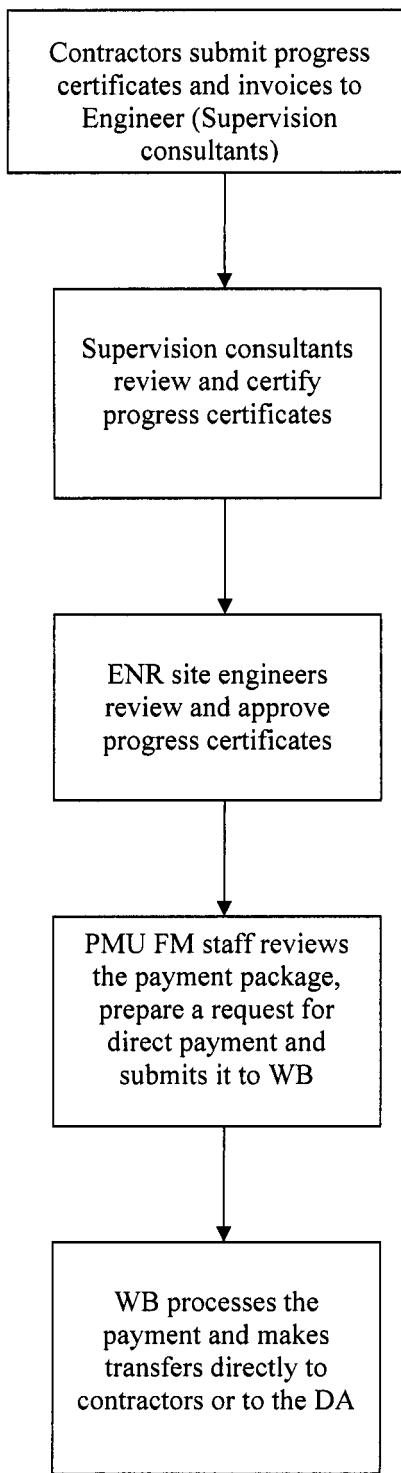
- Ability to monitor commitments under each contract.
- Ability to track actual, budget, and forecasts data.

Flow of Funds:

Giving the expected limited number of transactions, disbursement under this loan will be made according to the direct payments and special commitments procedures. A Designated Account (DA) may be opened at a later stage of the lifespan of the project if deemed necessary. Payment requests will be prepared and sent by the PMU, signed by authorized signatories. The name(s) and corresponding specimen of signature of authorized signatories will be submitted to the World Bank office in Cairo through MoIC. The project shall apply for access to the Bank's disbursement website ("Client Connection") in order to follow up on the status of its withdrawal applications and to reconcile its records with the Bank records.

The following chart describes the flow of documents pertaining to the project until the payment is concluded.

Chart 1: Flow of Project Documents



Reporting:

Sample reports prepared by the two respective departments were checked. The reports included details of physical progress, a listing of outstanding contracts, and a summary of procurement progress. The financial reports, however, were not sufficiently detailed. It provided information on total allocated and actual expenditures for projects, but not on the detailed activities under each project with detailed classification of activities. The checked follow-up reports did not show clear linkages between the physical progress and the incurred expenditures.

The PMU will be responsible for issuing monthly financial reports (FR), interim financial reports (IFR) and annual Project Financial Statements (PFS):

Report	Frequency	Due Date	By	Sent to:	Language
FR	Monthly	2 weeks from end of month.	PMU	ENR	Arabic/English
IFR	Semiannually	45 days from end of semester	PMU	ENR & WB	English
PFS	Annually	3 months from end of fiscal year (FY).	PMU	ENR & WB	English

- (i) Monthly un-audited FR. The reports will be prepared by the PMU on a monthly basis. They will not be sent to the World Bank. They will be reviewed and reconciled with the monthly withdrawal applications and quarterly IFRs sent to the Bank. The Bank will follow up during supervision missions. The format of the reports should be quite simple (a trial balance listing all sources and uses of funds and bank reconciliation (s)).
- (ii) Semiannual IFRs. The semiannual IFRs will be produced within 45 days from the end of each semester. Their format will be included in the financial management manual. These reports will be complemented by the progress reports that will be prepared and submitted to the Bank. They should allow for establishing proper linkage with the physical progress reports.
- (iii) Annual PFS. The PFS should be ready within 3 months after the end of fiscal year to enable the submission of the audit report within 6 months after the closing date of the fiscal year. The PFS would have to include: (i) a statement of sources and uses of funds indicating funds received from various sources, project expenditures, assets and liabilities; (ii) schedules classifying project expenditures by components, sub-components, and category; (iii) a DA reconciliation statement; and (iv) detailed statement of withdrawals made on the basis of SOEs.

External Audit:

Two types of audits are required by the Bank. These are as follows:

1- Project Audit: Annual audits for the project will be conducted by independent private auditors acceptable to the Bank. The audit will be performed for the project as a whole (i.e., all components and sources of funds). The audit report, accompanied by a management letter, will

cover the project's financial statements, reconciliation and use of the DA, use of direct payments, and withdrawals based on SOEs. The report should be submitted by ENR to the Bank no later than six months following the close of the fiscal year subject of the audit (*fiscal year July 1 to June 30*). The external audit report should be in accordance with the Bank auditing requirements/TOR and in compliance with International Standards on Auditing (ISA).

2- ENR Audit: As the continuing entity entrusted with project implementation, ENR is required under Bank rules to have its financial statements audited on an annual basis. Since it is required by the Egyptian law, such audits will be conducted by the Egyptian Central Auditing Organization. Copies of the annual financial statements and their respective audit reports are required to be submitted to the World Bank within six months after the closing of ENR's fiscal year.

Report	Audit Due Date	Responsibility	Sent to:	Language	Scope
PFS	6 months from end of FY	External Private Auditor	World Bank	English	Audit
ENR FS	6 months from end of FY	Central Audit Organization	World Bank	English	Audit

Supervision Plan:

Given the project's moderate risk level upon the implementation of the agreed actions, the Bank will conduct two supervision missions per year, with closer support throughout the early stages of the project. Among the priorities at the early stage are the following: (i) reaffirming the project reporting responsibilities for tracking and reporting on all project-related transactions, including all project components and all sources of financing and (ii) reviewing the issuance of IFRs in accordance with loan covenants.

Annex 8: Procurement Arrangements
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

A. General

Public sector procurement in Egypt is governed by a legal framework anchored in Public Tender Law No. 89 for the year 1998. Further information about the country procurement system is detailed in the Country Procurement Assessment Report (CPAR) of December 2003.

Procurement for the proposed project will be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004 and revised October 2006; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004 and revised October 2006, and the provisions stipulated in the Legal Agreement. The various items under different expenditure categories are described in general below. For each contract to be financed by the Loan, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

General Procurement: Due to the high contract values envisaged under this project, National Competitive Bidding (NCB) procedures will not be used. Prequalification of bidders will be used for both the signaling modernization and track renewal contracts; and in this regard the Bank's Standard Prequalification Documents of works (August 2006) will be used.

Procurement of Works: Works procured under this project include the renewal of 200 km of tracks (US\$60 million). The procurement for contracts bid under International Competitive Bidding (ICB) procedures will be done using the Bank's Standard Bidding Documents (SBD) for Works, May 2006 revised March and April 2007, for the construction works related to track renewal.

Procurement of Goods: Goods procured under this project include the supply and installation of the signaling system on the Arab el-Raml-Alexandria Line (Cairo to Alexandria Route) and creation of a central traffic management center (US\$197 million). The procurement for contracts bid under International Competitive Bidding (ICB) procedures will be done using the SBD for Supply and Installation of Plants and Equipments (April 2008) for installing and modernizing the signaling system.

Selection of Consultants: During the preparation phase and in order to advance the readiness of the project, the Bank has financed through a PHRD grant the consultancy services required for the engineering design, the preparation of bidding documents, and the technical support during the procurement and award phase for the modernization of signaling system on selected lines and the track renewal components. Furthermore ENR has secured another grant from the French FASEP trust fund to finance the remainder of the costs for the preparation of bidding documents regarding the Arab El Raml-Alexandria line.

Consulting services under the project will be financed from ENR resources. They will include but are not limited to the following packages for consultancy services which are detailed in the procurement plan presented as Attachment 1 to this Annex:

- Supervision of construction works and installation of the signaling systems on the Arab El Raml – Alexandria line;
- Supervision of construction works for track renewal; and
- Services required for the modernization of ENR management practices;
- Technical assistance to support the PMU in procurement, contract management, and financial management aspects; and
- Technical assistance to implement the EMP.

The construction supervision consultants will be procured through an international competitive selection process based on terms of reference and short list of consulting firms accepted by the Bank and will execute their role along the general rules of FIDIC.

B. Assessment of the agency's capacity to implement procurement

During the preparation of the Project, a Dutch grant financed the recruitment of international consulting firms to develop feasibility studies for the signaling system and track renewal components of the projects. To increase the implementation readiness of the project, other consultants, financed by the PHRD grant, a French FASEP grant, and ENR, have prepared bidding documents for these two main contracts and will assist in the procurement and award phase. The selection process has also included contract for the supervision of signaling works that would be financed from ENR budget.

An assessment of the capacity of ENR to undertake procurement activities for the project was carried out by a Bank preparation mission in November, 2007.

A PMU will be established within ENR to coordinate and implement project activities and to liaise with the Bank. The PMU will be headed by a Director. The Director will report directly to ENR's Chairman. The responsibilities of the PMU are detailed in Annex 6.

PMU members will include specialists in procurement, financial management, monitoring and evaluation, and environmental matters. A consulting firm with experience in project management will support the PMU during at least the first two years of Project implementation.

Risk Assessment:

Several issues that may hinder efficient procurement under World Bank procurement guidelines have been identified. These include:

- Financing for technical assistance under the component on the modernization of management and operating practices: technical assistance costs cannot be financed by the IBRD loan.
- Capacity in applying Bank procurement procedures: The project procurement arrangements for works and goods financed by the loan will follow Bank's Guidelines, however, ENR does not have experience in implementing Bank financed projects.

- Length of time to engage a contract: Major contracts with ENR usually take from 6 to 8 months from the invitation to bid up to contract signing. This is notably due to several approvals required from the ENR High Tender Committee.
- ICB: ENR does not have sufficient procurement staff who can work in English, which hinders ENR's ability to procure under ICB procedures.
- Track Renewal: ENR experience in this area is mostly limited to executing contracts limited in scope through companies owned in majority by ENR (EGERCO and EGFRAIL).
- Eligibility: EGERCO and EGFRAIL, because ENR is the majority shareholder, and because the companies are not administratively autonomous (e.g., chairmen are nominated by ENR), are ineligible for Bank-financed track renewal works either as sole bidders, or members of a joint-venture or sub-contractors to the winning bidder.

Corrective measures recommended by the mission:

Financing of Technical Assistance: ENR will have to ensure that sufficient funds, from its own resources, be available to finance necessary technical assistance.

Capacity in applying Bank procurement procedures: Specialized consulting firms are supporting ENR for the design of signalling and track renewal operations, and the procurement of respective works, and will assist them for the supervision of those works during the execution by contractors. This support is provided through separate contracts as follows:

Signalling operations

- Two contracts financed by the PHRD grant and a French grant for the design and the assistance to the procurement of works; and
- One contract financed by ENR for the supervision of works, on terms and conditions satisfactory to the Bank.

Track renewal works

- A contract financed by the PHRD grant and awarded in accordance with the Bank procurement guidelines for the design and a second one financed by ENR for the assistance to the procurement of works; and
- A second contract financed by ENR and yet to be awarded for the supervision of works on terms and conditions satisfactory to the Bank.

To ensure the PMU's handling of procurement and contract management, a consulting firm with good experience in these areas will be hired to assist the PMU. The consulting firm will also assist in ensuring proper communications with the Bank and will address capacity building of ENR procurement staff. This contract will have to be financed by ENR.

Length of time to engage a contract: the procurement arrangements to be agreed between GoE and the Bank would define clear procurement procedures intended to reduce unnecessary delays.

Eligibility and Competition: One of the main assumptions behind World Bank procurement rules is the promotion of open competition. Procurement procedures for the project will promote international, open competition, in turn promoting economy, efficiency, transparency, and fairness. Publicly owned companies will not be eligible to participate unless they demonstrate

they: (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not dependant agencies of the Borrower or Sub-Borrower.

The mission estimates the overall risk assessment related to procurement as high.

C. Procurement Plan

The Borrower, at appraisal, developed a procurement plan for project implementation that provides the basis for the procurement methods. This plan has been agreed between the Borrower and the Project Team and is available at ENR headquarters in Cairo, Egypt. It will also be available in the project's database and on the Bank's external website. The Procurement Plan will be updated in agreement with the Project Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

D. Frequency of Procurement Supervision

In addition to the prior review supervision to be carried out from the World Bank's Cairo office, twice-yearly supervision missions will carry out post reviews of procurement actions.

PROCUREMENT PLAN

1. Goods, Works, and Non Consulting Services

2. Consulting Services

	Description	Selection Method	Cost Estimate (US\$)	Procuring Entity	Bank Review	EOI Advert.	Issuing	Submission	RFP dates	Negotiations	Bank Objection	No contract B	Contract dates
1	Supervisory services of works for Signaling contract/s on Arab El Ramly – Alexandria and Beni Suef – Asyut (financed by counterpart funds.)	Planned	US\$5 million	ENR	Short list and TOR	Option A: QCBS done already during the selection of the consultant in charge of the preparation of bidding documents Option B: International competitive selection is organized	April 09			na	31 Jan 09 30 Jun 09	Option A: Option B: 28 Feb 14	
2	Supervisory services of works for track renewal (financed by counterparts funds.)	Actual											
3	Consultancy services for the technical assistance support to the PMU (financed by counterpart funds.)	Planned			ENR	Short-list TOR	01 Dec 08	15 Jan 09	28 Feb 09	April 09	na	30 June 09	30 June 11
4	Consultancy services for the technical assistance to ENR on the implementation of the na EMP (financed by counterpart funds)	Actual	EGP 720,000	ENR	Short list and TOR	01 Jan 09	01 Mar 09	15 Apr 09	30 June 09	na	1 Sept 09	28 Feb 14	

3. Use of Statement of Expenditures (SOEs)

Prior Review Thresholds:

Goods: US\$ 150,000 plus the first three contracts

Works: US\$ 400,000 plus the first three contracts

Services: US\$ 100,000

All applications to withdraw proceeds from the Loan will be fully documented, except for: (i) expenditure of Contracts for Civil Works with an estimated value equivalent to \$ 400,000 or less; (ii) expenditure of Contracts for Goods with an estimated value equivalent to \$ 150,000 or less. Documentation supporting expenditure claim against SOEs will be retained by the PMU and will be available for review when requested by Bank supervision missions and Project Auditors. All disbursements will be subject to the conditions of the Loan Agreement and the procedures defined in the Disbursement Letter.

Annex 9: Economic and Financial Analyses
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

A. Economic Analysis

This section of Annex 9 presents the economic analysis of the project. It comprises two main parts: the methodology of the economic analysis and the results of the economic appraisal.

I – Methodology of the Economic Analysis

The physical investments financed under the proposed project include: (i) the modernization of signaling system on the Arab El Raml-Alexandria line and the creation of a central traffic management center; and (ii) outsourcing of a track renewal program on 200 km of track. The first component is the largest (US\$202 million) and is mainly aimed at increasing passenger and freight transport capacity on the railway line between Cairo and Alexandria. The track renewal program in the second component consists of scattered track sections over the whole network, which makes it difficult to assess benefits associated with this investment. Thus, the economic evaluation of the proposed project has been undertaken only on the first component of the project, which is the modernization of signaling system on the Arab El Raml – Alexandria line. It is important to note that different and more pessimistic assumptions than MoT under the transformation plan have been made for the purpose of taking a more conservative view specific to the WB.

a) Actual and Potential Traffic²⁵:

■ Actual traffic

Table 1 presents data illustrating the trend in freight and passenger traffic over the period 2000-2007 on the Cairo Alexandria Line.

Table 1: Rail traffic on the Cairo Alexandria Line 2000-2007 (source ENR)

Year	Ton (thousands)	Annual Change	Pax (millions)	Annual Change	GDP growth
2000	580	-	-	-	5.4%
2001	834	43.8%	56	-	3.5%
2002	855	2.5%	59	4.4%	3.2%
2003	955	11.7%	66	12.1%	3.2%
2004	894	-6.4%	72	10.0%	4.1%
2005	1,036	15.9%	118	63.9%	4.5%
2006	1,036	0.0%	118	0.0%	6.8%
2007	669	-35.4%	-	-	6.8%

²⁵ Year 2007 refers to FY 06/07 as fiscal year in Egypt starts on July 1st and ends on June 31st of the following year

The table illustrates that both freight and passenger traffic have been volatile over this period, with annual growth varying: (i) for freight from +43.8 percent to -35.4 percent; and (ii) for passengers from stabilization in 2005-2006 to +63.9 percent in 2004-2005. Figures 3 and 4 illustrate this volatility in comparison with GDP growth.

Figure 3: Rail Freight Traffic carried on the Cairo Alexandria Line and GDP growth 2000-2007 (source ENR)

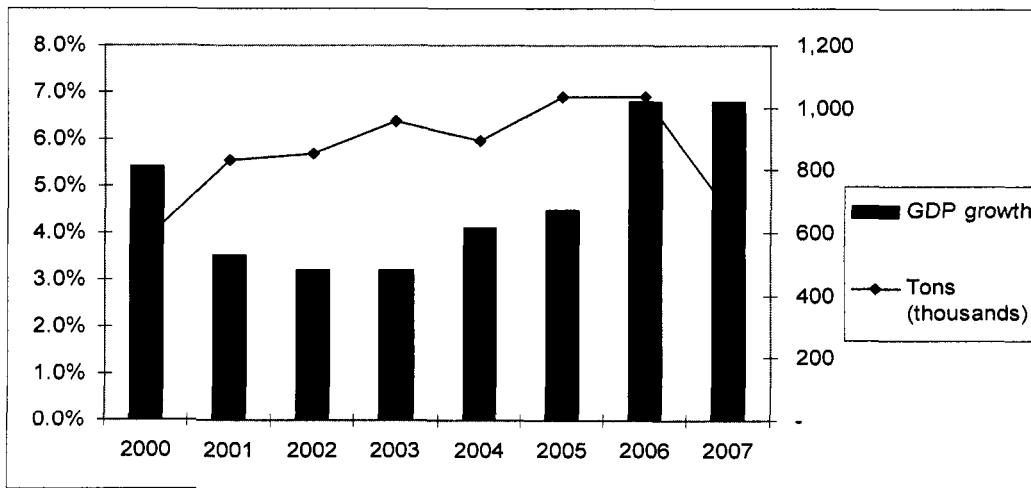
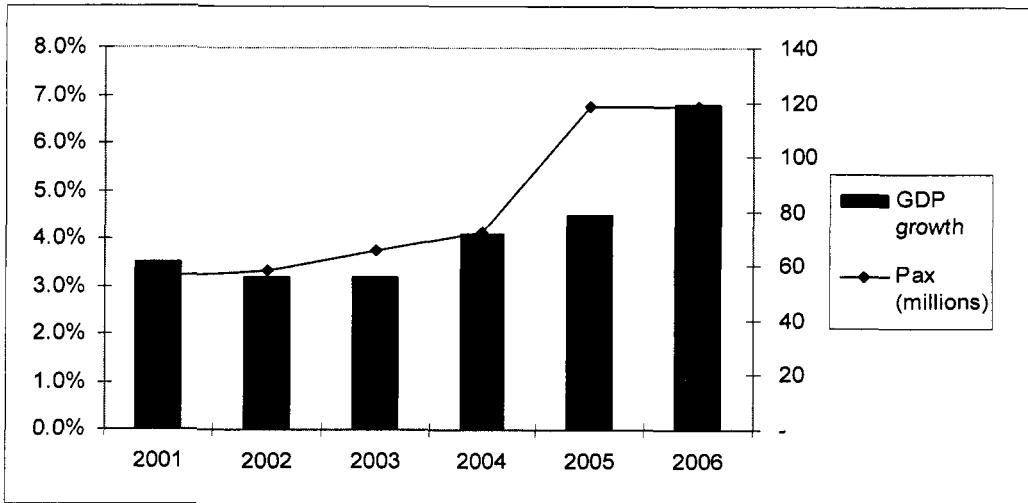


Figure 4: Rail Passenger Traffic carried on the Cairo Alexandria Line and GDP growth 2001-2006 (source ENR)



Average annual GDP growth over the period 2000-2007 is estimated at 4.7 percent, while the average growth in freight volume carried by ENR on the Cairo-Alexandria Line is about 4.6 percent for the same period, which implies an income elasticity of demand for freight services of roughly 1. Average growth in passenger volume carried by ENR on the Cairo Alexandria Line is about 5 percent for the period 2000-2005²⁶, which implies an income elasticity of about 1.3 over the same period.

²⁶ Income elasticity of passenger services has been estimated on the period 2000-2005 only to take out the exceptional growth between 2005 and 2006

The stabilization in both freight and passenger traffic levels in 2006 and the sharp decrease in 2007 for freight could be explained by the Qalyoub rail crash²⁷ and a shortage of locomotives. Since then, the Cairo Alexandria Line more particularly has been operated under stricter safety standards. The ongoing Transformation Plan is expected to address the locomotive shortage issue, and about 120 new locomotives have already been purchased, while the proposed signaling project aims at improving safety standards and increasing line capacity.

▪ **Traffic forecast**

Forecasted real GDP growth at the national level²⁸ is 6 percent per annum for the whole appraisal period. Forecast growth of rail traffic is based on estimates for the Transformation Program prepared by MoT. The transformation plan foresees a rapid and significant increase in freight traffic combined with higher fares despite overwhelming competition from the trucking industry, as MoT considers that significant latent demand exists, which couldn't be met before due to lack of equipment constraining transport capacity and marketing. The latent demand was estimated at about 16 million tons per year, while current volumes are at 6 million tons. The latent demand estimates remain conservative given they are based on current requests from ENR main clients, and the fact that in 2004 actual transported freight amounted to 14 million tons. The drop in freight traffic was mainly due to the lack of locomotives assigned for freight transport at ENR given that priority is given to passenger services. This provides compelling arguments regarding the potential for high freight traffic growth. With the allocation to the freight SBU of 40 locomotives out of the 120 new units to be delivered in the near future, the planned refurbishment of old locomotives, and further infrastructure and signaling improvements, freight traffic has the potential to significantly increase beyond the current estimated latent demand. In addition, the plan also includes building multimodal terminals and dry ports in industrial zones and operating shuttles to ports under partnership agreements with shipping lines. Nevertheless, given the uncertainty regarding several parameters, slightly more conservative assumptions have been adopted for the purpose of the WB project appraisal (see Table 4 for a comparison of MoT's assumptions and the Bank's assumptions):

- Rail freight traffic is assumed to grow at an annual rate of 6 percent from 2008 to 2010 mainly driven by a focus on high-potential commodities along the corridor (containers, cement and clay) and ongoing rate negotiations that would increase rail freight competitiveness. Then an annual growth rate of 12 percent between 2011 and 2016 is assumed as a result of higher locomotive and wagon availability, development of intermodal services, and more efficient management techniques to be implemented under the transformation program. Finally, an annual growth rate of 10 percent is assumed from 2016 onwards.

²⁷ On August 21st, 2006, two trains collided in the town of Qalyoub, between Cairo and Alexandria, killing 57 people and injuring 128

²⁸ Source: IMF forecasts

- Rail freight traffic has significant growth potential given the small market share of ENR in the transport of cargo handled in the Alexandria-area ports (Alexandria and El Dekheila). Indeed, MoT considers that significant latent demand exists, which couldn't be met before due to lack of equipment and marketing. Tables 2 and 3 below indicate the goods handled in Alexandria and El Dekheila Ports and the goods transported by rail on the Cairo Alexandria Line. Alexandria/El Dekheila traffic is essentially import and export cargo. Currently, less than 3 percent of total freight handled in Alexandria and El Dekheila Ports is transported through rail.

Table 2: Goods Handled in Alexandria and El Dekheila Ports 2000-2007 (Source: Egyptian Maritime Databank)

Goods Handled in Alexandria and El Dekheila Port 2000-2007 (in 000s tons)								
Commodity	2000	2001	2002	2003	2004	2005	2006	2007
General Cargo	9,041	7,933	9,262	9,874	9,868	10,348	10,288	8,181
Containers	5,703	5,320	5,580	5,288	6,002	5,606	6,460	7,852
Dry Bulk	12,007	13,246	14,125	13,478	14,139	11,705	15,438	16,106
Liquid Bulk	4,700	4,846	6,609	7,671	8,259	4,678	4,869	5,397
Special Cargo	1,795	2,116	2,057	1,610	1,697	2,647	3,291	2,250
Total	33,246	33,461	37,633	37,921	39,965	34,984	40,346	39,786

Table 3: Goods Transported by Rail on the Cairo Alexandria Line 2000-2007 (Source: ENR)

Goods Transported by Rail on Cairo Alexandria Line (in 000s tons)								
Commodity	2000	2001	2002	2003	2004	2005	2006	2007
Grains	-	4	10	18	28	42	160	-
Containers	266	279	340	503	508	561	495	382
General Cargo	-	-	-	-	-	93	79	67
Phosphate	190	239	215	204	100	57	40	80
Clay	21	21	28	35	49	31	21	-
Cement	103	291	262	195	209	252	241	140
Total	580	834	855	955	894	1,036	1,036	669
Rail Freight Market share	2%	2%	2%	3%	2%	3%	3%	2%

- Rail passenger traffic is assumed to grow at an annual rate of 4% during the whole period, in line with historical trends.

Traffic growth assumptions are summarized in the table 4 below.

Table 4: Growth rates assumed for traffic forecasts

Growth rate	2008-2011	2011-2016	2016-2039	Source
GDP growth	6%	6%	6%	IMF
Rail Freight traffic growth	6%	12%	10%	World Bank
Rail Freight traffic growth	8%	15%	10%	MoT
Rail Passenger traffic growth	4%	4%	4%	World Bank
Rail Passenger traffic growth	4%	4%	4%	MoT

b) General Assumptions:

The economic analysis is based on the comparison between the Do-Minimum scenario and the Do-Something scenario. These are defined as the following:

- **Do-Minimum scenario:** Minimal investment to allow operations to be continued over the rail line.
- **Do-Something scenario:** Modernization of signaling systems, and creation of a central traffic control management center. This will result in an increased capacity on the rail line of 96 trains per day starting from 2012 and lower journey times by 20 minutes for passengers and 35 minutes for freight.

Table 5 below indicates the estimated capacity and travel times by line section in both the “Do-Minimum” and the “Do-Something” scenario.

*Table 5: Estimated Capacity of Line sections and Journey Times
(Source: ENR)*

Line Section	"Do-Minimum" Line Capacity (Daily number of trains)	"Do-Something" Line Capacity (Daily number of trains)	"Do-Minimum" Average Freight Journey Time (min)	"Do-Minimum" Average Passenger Journey Time (min)	"Do-Something" Freight Journey Time (min)	"Do-Something" Passenger Journey Time (min)
Cairo/Qulyub	320	320	30	20	30	20
Cairo/Qulyub (Sharq Line)	90	90	35	28	35	28
Cairo/Qulyub (Menouf Line)	90	90	30	23	30	23
Quluyb/Benha	320	320	45	30	45	30
Benha/Tanta	224	320	60	38	50	33
Tanta/Etay el Baroud	224	320	50	33	40	28
Etay el Baroud/Damanhour	224	320	35	15	30	12
Damanhour/Abis	224	320	70	38	60	33
Abis/Sidi Gaber	224	320	0	6	0	5
Sidi Gaber/Alexandria	224	320	0	8	0	7

The economic analysis considers the following main benefits:

- Time savings to existing and future rail freight and passenger traffic;
- Generated rail traffic which would not have traveled before but travels as a result of the reduction in journey time;
- Generalized cost savings (including operating cost and time value) for diverted traffic from road to rail;
- Savings in highway maintenance costs through the diversion of freight and bus traffic from road to rail;
- Savings in maintenance costs of the electro-mechanical signaling system; and
- Improvement in safety level.

Other general assumptions include:

- The project evaluation period is 28 years, starting in 2009, when the first expenditure is expected to take place, and finishing in 2037. The construction period is assumed to be three years. Thus, the appraisal period is 25 years corresponding to the operational life of a new signaling system;
- Costs and benefits are expressed in USD assuming an exchange rate of approximately US\$1=EGP5.35²⁹;
- The discount rate traditionally used for World Bank projects is 12 percent.

c) Time savings to existing and forecast rail traffic:

The estimated economic benefits of the project for existing and forecasted rail traffic are derived from two sources:

- **Freight Time Savings:** Time savings for freight are computed based on estimated value of time for freight, and on freight traffic for the Do-Something scenario. The estimated value of time for freight is based on the average value of the commodity and an annual interest rate representing the cost of opportunity set equal to 5 percent. In this case, the major commodity transported by rail on the Cairo Alexandria line is container: given an average value of US\$75,000 per container³⁰, the value of time assumed for freight is 2.8755 EGP/ton/hour³¹. Time value for freight grows in line with real GDP from 2009 onwards.
- **Passenger Time Savings:** Time savings for passengers are computed based on estimated value of time for passengers and on passenger traffic for the Do-Something scenario. The value of time assumed for passengers is derived from the Cairo Masterplan study and updated to 2009 prices which give a value of approximately 2.3523 EGP/pax/hour. Time value for passengers grows in line with real GDP from 2009 onwards.

²⁹ Source: <http://finance.yahoo.com> June 4th, 2008

³⁰ Source: *Pre-feasibility study of the Mohamedia Container Terminal, 2005, EU MEDA Program*

³¹ Value of time expressed in 2009 current EGP

d) Generated traffic:

Major improvements to the existing rail network will attract new rail passenger traffic which would not otherwise make a travel journey under the present conditions. In order to assess this traffic, travel time elasticity of intercity rail passengers should first be evaluated. The period 1999-2003 has known considerable increases in the fare levels with the consequence that passenger demand decreased dramatically. The table 6 below shows the percentage changes in rail passenger demand over the whole network against percentage changes in revenue per passenger and the resulting price elasticity net of inflation.

Table 6: Impact on Passenger demand due to fare increases over the whole network 1999-2003 (source: ENR)

Year	Percentage change in revenue per passenger net of inflation	Percentage change in passenger demand	Price elasticity
1999-2000	33.4%	-19.1%	-0.57
2000-2001	65.1%	-37.0%	-0.57
2001-2002	17.6%	-5.0%	-0.39
2002-2003	28.6%	-21.0%	-0.74

The fare elasticity observed during this period averages -0.57. As a check on this estimate, a 1990 World Bank survey³² concluded that the price elasticity of intercity rail travel fell between -0.1 and -0.7. Furthermore, a recent survey of transport elasticity in Canada³³ found that the elasticity of travel time of inter city rail passengers was about 30 percent higher than the fare elasticity. Thus, it would be reasonable to conclude that the travel time elasticity of rail passengers traveling between Cairo and Alexandria would be at the top end of the range i.e. -0.7. Thus, 8 percent reduction in travel time for passengers will generate an increase in traffic of 6 percent equivalent to about 7 trains per day.

Generated rail passenger benefits are then computed through the rule of half³⁴ and equal to the average journey cost saving * the annual volume of generated traffic * 50 percent.

e) Generalized cost³⁵ savings for diverted traffic:

The estimated economic benefits of the project for diverted traffic from road to railways are derived from the following:

- **Reduction in total generalized cost for freight traffic:** Total generalized costs for freight include freight delay costs and freight operating costs. Time savings for freight are computed based on estimated value of time for freight (see paragraph

³² *A Survey of Recent Estimates of Price Elasticities of Demand for Transport*, Oum et al., World Bank Working Paper, 1990

³³ *Transportation Elasticities*, Todd Litman, Victoria Transport Policy Institute, 2005

³⁴ As there is no generated traffic in the Do-minimum scenario, benefits are valued through the rule of half

³⁵ Generalized costs include time and money converted into a common metric for each mode of transport (roads and railways)

c), and on freight traffic for both scenarios. Based on estimated operating costs for both road and rail, and on road and rail traffic forecasts for both the Do-Minimum and Do-Something scenarios, the freight operating costs over the project period are determined (table 7). The freight traffic in the Do-Minimum scenario is constrained by the railway line capacity (expected to be reached by 2026) whereas in the Do-Something scenario, the increased capacity enables diverting additional traffic from road to rail. Rail freight operating cost is based on the average unit freight operating cost for the period 2001-2006, whereas road freight operating cost is based on HDM4 output³⁶. A standard conversion factor of 1.72 has been applied to all costs in order to take into consideration shadow cost of fuel: indeed, consumers benefit from an average subsidy of 26 US cents per liter of Diesel in Egypt³⁷.

Table 7: Freight Economic Operating Costs Assumptions

Data	Value (2009 prices)	Source
Rail Freight Operating Cost	0.165 EGP/ton km	ENR (Average 2001-2006)
Road Freight Operating Cost	0.219 EGP/ton km	Cairo Masterplan JICA

- **Reduction in total generalized cost for passenger traffic:** Total generalized costs for passenger include passenger delay costs and passenger operating costs. Time savings for passenger are computed based on estimated value of time for passenger (see paragraph c), and on passenger traffic for both scenarios. Based on estimated operating costs for both road and rail, and on road and rail traffic forecasts for both the Do-Minimum and Do-Something scenarios, the passenger operating costs over the project period are determined (table 8). The passenger traffic in the Do-Minimum scenario is constrained by the railway line capacity (expected to be reached by 2026) whereas in the Do-Something scenario, the increased capacity enables diverting additional traffic from road to rail. Rail passenger operating cost is based on the average unit passenger operating cost for the period 2005-2006, whereas road passenger operating cost is based on HDM4 output³⁸. A standard conversion factor of 1.72 has been applied to all costs in order to take into consideration shadow cost of fuel.

³⁶ Source: *Greater Cairo Transport Masterplan Study, 2004, JICA*

³⁷ Source: *International Fuel Prices, 2007, GTZ*

³⁸ Source: *Greater Cairo Transport Masterplan Study, 2004, JICA*

Table 8: Passenger Economic Operating Costs Assumptions

Data	Value (2009 prices)	Source
Rail Passenger Operating Cost	0.052 EGP/pax km	ENR (Average 2005-2006)
Road Passenger Operating Cost	0.159 EGP/pax km	Cairo Masterplan JICA

f) Savings in Highway maintenance costs:

Two highways link Cairo to Alexandria, namely the Agricultural Road and the Desert Road. Diverted traffic from road to rail could help diminish the annual equivalent standard axle loads on both and thus reduces the costs of highway maintenance. Given the Average Annual Daily Traffic, by section, on the Cairo Alexandria link³⁹, and the Equivalent Standard Axle Loads (ESAL)⁴⁰, the proportion of road damage caused by each type of vehicle are estimated for the year 2006. The estimated annual cost of periodic maintenance for the road section from Cairo to Alexandria attributed to road damage from vehicles is then evaluated assuming an adequate level of funding for annual highway maintenance of EGP 1.1 billion⁴¹ on 22,000 km of arterial roads (e.g. 50,000 EGP/km/year). Based on estimated road ton and passenger kilometers, the potential road maintenance savings are finally computed.

g) Savings in Maintenance costs of the electro-mechanical signaling system:

The electro-mechanical signaling system currently operated on the Cairo to Alexandria route requires heavy and costly maintenance works. This maintenance is currently reported by ENR to be around EGP 15 million per year. However, maintenance is currently underperformed and this amount probably under estimate the real maintenance needs. In addition, the proposed electronic signaling system is expected to require less maintenance. Thus, savings in maintenance cost of the signaling system in the Do-Something scenario in comparison with the Do-Minimum scenario can be estimated at around EGP 15 million per year.

h) Improvement in Safety level:

The proposed signaling investment is expected to improve dramatically the level of safety on the Cairo to Alexandria route. Those benefits will accrue mainly to the passenger traffic and will be derived from two sources:

- **Reduced accident risk for the existing traffic:** indeed, in the do-nothing scenario, the railway line would be operated under the electro-mechanical signaling system, thus the level of safety on the line is similar to the one observed in the past (i.e. 4.20 rail accidents per billion traffic unit); whereas in the do-something scenario, the level of safety is improved thanks to the

³⁹ Source: General Authority for Roads, Bridges and Land Transport (GARBLT), 2007

⁴⁰ Source: Minnesota Department of Transportation, 2006

⁴¹ Source: Road Financing Strategy for the Arab Republic of Egypt, 2007, Working Paper of the World Bank

electronic signaling system and the number of rail accidents per billion traffic unit falls down to 0.10⁴².

- ***Reduced accident risk for the diverted traffic from road to rail:*** the increased line capacity in the do-something scenario enables diverting road traffic to the railway. This diverted traffic will benefit from a reduction in accident risk from 47.9 road accidents per billion traffic unit observed in the past to 0.10.

For each class of accident (road and rail), an average cost is associated (table 9). Estimates are based on the following:

- Road Accidents:
- *Fatalities:* Based on road accidents data provided by GARBLT over the last 10 years, about 0.59 fatalities occur per road accident. Assuming a reference cost of a fatality of about 676,000 EGP (see further for justification), we can compute the cost per road accident associated to fatalities which is 400,000 EGP/accident.
 - *Injuries:* Based on road accidents data provided by GARBLT over the last 10 years, about 2.75 injuries occur per road accident. Assuming a reference cost of injury of about 170,000 EGP (see further for justification), we can compute the cost per road accident associated to injuries which is 465,000 EGP/accident.
 - *Material Damage Cost:* GARBLT estimates an average annual total loss associated to road accidents of about 4 billion EGP, which corresponds to an average material damage cost of 900,000 EGP per accident, based on 2004 accident data.
- Rail Accidents:
- *Fatalities:* Based on rail accidents data on the Cairo to Alexandria route provided by ENR over the last 10 years, about 0.91 fatalities occur per rail accident. Assuming a reference cost of a fatality of about 676,000 EGP, we can compute the cost per rail accident associated to fatalities which is 615,000 EGP/accident.
 - *Injuries:* Based on rail accidents data on the Cairo to Alexandria route provided by ENR over the last 10 years, about 2.15 injuries occur per rail accident. Assuming a reference cost of injury of about 170,000 EGP, we can compute the cost per rail accident associated to injuries which is 363,000 EGP/accident.
 - *Material Damage Cost:* Material damage cost of rail accidents is much higher than material damage cost of road accidents. The ratio between these has been set to 5, thus the average material damage cost of rail accidents is estimated to be 4.50 million EGP per accident.
 - *Value of Time Lost due to traffic interruption:* An average of 8 hours of traffic interruption is estimated to occur per accident. During this time, we

⁴² In order to take into consideration the fact that the newly installed signaling system can breakdown at some point, the accident risk is not set equal to zero, but to 0.10 per billion traffic unit.

can assume that about 80% of passengers that should have taken the train have not taken it. The associated economic loss could be appraised by the lost income to ENR of these passenger trips. We can also assume that freight traffic is not impacted by such interruption. The value of time lost due to traffic interruption is then about 190,000 EGP per rail accident.

Table 9: Accident Costs

Class	Fatalities	Injuries	Material Damage Cost	Value of Time Lost due to traffic interruption	Total Average Accident Cost
Road	400,000 EGP / accident	465,000 EGP / accident	900,000 EGP / accident	NA	1.77 million EGP / accident
Rail	615,000 EGP / accident	363,000 EGP / accident	4.50 million EGP / accident	190,000 EGP / accident	5.67 million EGP / accident

NB: Reference Cost of Fatality and Injury:

Based on the International Road Assessment Program (iRAP) model for valuing life and injuries⁴³, the following could be assumed:

$$\begin{aligned} \text{Value of Statistical Life} &= 70 * \text{GDP per capita} \\ \text{Value of Serious Injury} &= 17 * \text{GDP per capita} \end{aligned}$$

With a GDP per capita for Egypt of about US\$ 1,806⁴⁴, the following values could then be used as reference costs:

$$\begin{aligned} \text{Value of Statistical Life} &= 676,000 \text{ EGP} \\ \text{Value of Serious Injury} &= 170,000 \text{ EGP} \end{aligned}$$

II - Results of the economic appraisal

a) Results of the base case:

The results of the economic analysis in terms of the Net Present Value (NPV), the Economic Internal Rate of Return (EIRR), and the Benefit Cost Ratio (B/C) are presented in the following table 10.

⁴³ “The true cost of road crashes: valuing life and the cost of serious injury”, iRAP, 2007

⁴⁴ Source: World Bank database, 2007

Table 10: Results of the economic appraisal

Year	Investment Costs	Time Savings for existing traffic	Generated Traffic Benefits	GC Savings for diverted traffic	Savings in Highway Maintenance costs	Savings in Maintenance costs	Safety Benefits	Total Benefits in EGP	Total Net Benefit in EGP	Total in US\$
2009	(360,233,333)	-	-	-	-	-	-	-	(332,235,000)	\$62,100,000
2010	(360,233,333)	-	-	-	-	-	-	-	(332,235,000)	\$62,100,000
2011	(360,233,333)	-	-	-	-	-	-	-	(332,235,000)	\$62,100,000
2012	16,571,674	10,520,726	-	-	15,000,000	83,621,845	125,714,245	125,714,245	\$23,497,990	
2013	17,346,916	10,994,158	-	-	15,000,000	88,006,951	131,348,025	131,348,025	\$24,551,033	
2014	18,408,852	11,488,895	-	-	15,000,000	92,664,041	137,561,788	137,561,788	\$25,712,484	
2015	19,552,333	12,005,886	-	-	15,000,000	97,614,314	144,172,543	144,172,543	\$26,948,139	
2016	20,785,081	12,546,161	-	-	15,000,000	102,880,996	151,212,238	151,212,238	\$28,263,970	
2017	22,010,253	13,110,738	-	-	15,000,000	108,228,517	158,349,509	158,349,509	\$29,598,039	
2018	23,319,542	13,700,721	-	-	15,000,000	113,888,465	165,908,728	165,908,728	\$31,010,977	
2019	24,719,631	14,317,254	-	-	15,000,000	119,882,076	173,918,961	173,918,961	\$32,508,217	
2020	26,217,795	14,961,530	-	-	15,000,000	126,232,263	182,411,589	182,411,589	\$34,095,624	
2021	27,821,955	15,634,799	-	-	15,000,000	132,963,758	191,420,512	191,420,512	\$35,779,535	
2022	29,540,738	16,338,365	-	-	15,000,000	140,103,274	200,982,377	200,982,377	\$37,566,799	
2023	31,383,546	17,073,592	-	-	15,000,000	147,679,683	211,136,820	211,136,820	\$39,464,826	
2024	33,360,627	17,841,903	-	-	15,000,000	155,724,207	221,926,737	221,926,737	\$41,481,633	
2025	35,483,160	18,644,789	8,250,439	3,507,596	15,000,000	171,632,428	252,518,411	252,518,411	\$47,199,703	
2026	37,763,336	19,483,804	26,493,779	12,113,860	15,000,000	198,780,292	311,635,073	311,635,073	\$58,249,546	
2027	40,214,464	20,360,576	49,809,497	21,176,036	15,000,000	227,463,122	374,023,695	374,023,695	\$69,910,971	
2028	42,851,071	21,276,802	72,261,992	30,721,502	15,000,000	257,781,321	439,892,688	439,892,688	\$82,222,932	
2029	45,663,789	22,234,258	95,499,276	40,600,612	15,000,000	289,321,297	508,319,232	508,319,232	\$95,012,941	
2030	47,483,092	23,234,799	99,796,463	42,427,521	15,000,000	297,661,650	525,603,525	525,603,525	\$98,243,650	
2031	49,484,325	24,280,365	104,523,369	44,437,120	15,000,000	306,836,039	544,561,218	544,561,218	\$101,787,144	
2032	51,685,681	25,372,982	114,203,056	50,437,221	15,000,000	325,347,139	582,046,078	582,046,078	\$108,793,659	
2033	54,107,173	26,514,766	125,411,741	57,511,885	15,000,000	346,763,670	625,309,235	625,309,235	\$116,880,231	
2034	56,770,814	27,707,930	137,741,294	65,294,016	15,000,000	370,321,855	672,835,909	672,835,909	\$125,763,721	
2035	59,700,819	28,954,787	151,303,802	73,854,360	15,000,000	396,235,858	725,049,627	725,049,627	\$135,523,295	
2036	62,923,825	30,257,752	166,222,562	83,270,738	15,000,000	424,741,261	782,416,139	782,416,139	\$146,246,007	
2037	-	65,931,606	31,619,351	173,666,413	89,816,611	15,000,000	444,984,096	821,018,078	821,018,078	\$153,461,323

The economic analysis indicates that the signaling component of the proposed project is economically viable, returning a positive NPV of US\$ 67 million, following an investment of US\$202 million. The EIRR is 15.3%, and the estimated B/C ratio is 1.41, which supports a decision to invest in the project.

Table 11: NPV and EIRR

Indicator	Value
NPV(@12%)	US\$67 million
EIRR	15.3%
B/C Ratio	1.41

As can be seen from the following table 12, the majority of economic benefits are derived from improvements in safety level, representing about 61% of total discounted benefits. Time savings for existing traffic represent 12 percent of total discounted benefits, whereas savings in maintenance costs of the signaling system are about 10 percent.

Table 12: Percentage of different types of benefits relative to the total discounted benefits

Type of Benefits	Percentage of Total Discounted Benefits
Time Savings for Existing Traffic	12%
Generated Traffic Benefits	7%
Reduction in Total GC for Diverted Traffic	7%
Highway Maintenance Savings	3%
Savings in Maintenance costs of the signalling system	10%
Improvement in Safety level	61%

b) Sensitivity and Switching Analysis:

This section indicates the impact of uncertainty or variation in the key parameters of interest on the economic appraisal of the project. Those key parameters are perceived to be the growth rate of future freight and passenger traffic, the investment costs, the construction period and the discount rate. The impact of defined variation in these parameters is presented in the following table 13, together with the percentage change in the former necessary to make the project unviable, the switching values.

Table 13: Sensitivity Analysis

Capital Costs	-20%	Base Case	+20%
NPV	US\$99 million	US\$67 million	US\$34 million
EIRR	17.7%	15.3%	13.5%
Freight Traffic Growth	-20%	Base Case	+20%
NPV	US\$48 million	US\$67 million	US\$98 million
EIRR	14.5%	15.3%	16.3%
Passenger Traffic Growth	-20%	Base Case	+20%
NPV	US\$35 million	US\$67 million	US\$96 million
EIRR	13.9%	15.3%	16.5%
Construction Period	-One year	Base Case	+One year
NPV	US\$76 million	US\$67 million	US\$59 million
EIRR	16.1%	15.3%	14.6%
Discount Rate	8%	10%	Base Case: 12%
NPV	US\$232 million	US\$133 million	US\$67 million
B/C Ratio	2.34	1.80	1.41
Estimated Switching Values			
Increase in Capital Costs		41%	
Reduction in Passenger Traffic Growth		47%	
Reduction in Freight Traffic Growth		105%	

The table reveals that the proposed investment is relatively robust to the defined variation in the key parameters of interest, with significant changes in both the capital costs of the project, the forecast growth rates, and a delayed construction period still resulting in a positive NPV and an EIRR at the 12 percent threshold. The sensitivity analysis also reveals the estimated switching values, with capital costs needing to increase by 41 percent, passenger traffic growth falling short of the forecast by 47 percent, and freight traffic growth falling short of the forecast by 105 percent before the project becomes unviable.

B. Financial Analysis

The financial analysis aims at: (i) assessing the financial viability of the project; and (ii) assessing ENR's ability to repay the World Bank Loan. Thus, it comprises two main sections: the financial appraisal of the project and the financial analysis of ENR. As for the economic evaluation, the financial appraisal of the proposed investment has been undertaken only on the signaling component of the project. Components 2 and 3 of the project are not included in the financial appraisal of the project but are included in the financial analysis of ENR. As a general matter it is important to note that different and more pessimistic assumptions than MoT under the transformation plan have been made in several instances for the purpose of taking a more conservative view specific to the WB.

I - Financial Appraisal of the Signaling System Modernization

The analysis is based on a marginal analysis by comparing the Do-Minimum scenario and the Do-Something scenario. These are defined as the following⁴⁵:

- **Do-Minimum scenario:** Minimal investment to allow operations to be continued over the rail line.
- **Do-Something scenario:** Installation of new signaling systems, and creation of a central traffic control management center. This will result in an increased capacity on the rail line of 96 trains per day starting from 2012.

Other general assumptions include:

- The project evaluation period is 28 years, starting in 2009, when the first expenditure is expected to take place, and finishing in 2037. The construction period is assumed to be three years. Thus, the appraisal period is 25 years corresponding to the operational life of a new signaling system.
- Costs and benefits are expressed in USD assuming an exchange rate of approximately US\$1=EGP5.35⁴⁶.
- The discount rate used is the Central Bank of Egypt's Treasury Bonds fixed coupon rate⁴⁷ which amounts 10.7 percent. It should be noted that this rate is likely to decrease in the short term in light of the global financial crisis, and therefore the estimates of this analysis remain conservative.
- Inflation rate is assumed to be around 6 percent⁴⁸.

The financial benefit will be derived from the additional revenue that will be realized from additional freight and passenger traffic that can be carried as a result of

⁴⁵ For more detailed assumptions on the two scenarios including traffic, GDP, line capacity, etc... please refer to Annex 9.1 Economic Analysis

⁴⁶ Source: <http://finance.yahoo.com> June 4th, 2008

⁴⁷ The maturity of the CBE's T-bonds is 8 years on June 4th, 2008.

⁴⁸ IMF forecasts

investments for capacity improvement on the Cairo-Alexandria line. The benefits have been computed based on:

- Historical freight revenues observed on the Cairo-Alexandria line were very low at an average of 0.0493 EGP per ton-km (in 2008 EGP). ENR has recently revised its freight fares to improve cost recovery. This resulted in substantial price increases per ton-km, ranging from about 25 percent to 400 percent for different commodities. Average freight revenue is currently estimated at about 0.103 EGP per ton-km. Average revenue per ton-km is then indexed on inflation from 2010 onwards. It should be noted that these remain conservative assumptions as freight prices per ton-km are estimated to remain well below market prices. A proper market study will allow ENR to adjust its fares to best reflect the assessed market conditions.
- Historical passenger revenues observed on the Cairo-Alexandria line were about an average of 0.105 EGP per ton-km (in 2008 EGP). ENR has recently revised its fares by inducing a slight increase, and the currently estimated average revenue is at about 0.12 EGP per ton-km. Average revenue per passenger is then indexed to inflation from 2010 onwards. Marginal benefits from PSO compensations on the Cairo-Alexandria line were not accounted for in this analysis, which is another conservative assumption for this analysis.

The costs include the project investment costs and increased operating costs due to higher volume of traffic. The increased operating costs have been computed based on:

- An average operating cost for freight of 0.096 EGP per ton-km (in 2008 EGP) corresponding to historical data observed on the Cairo -Alexandria line. This average cost is then following inflation growth.
- An average operating cost for passenger of 0.0302 EGP per passenger-km (in 2008 EGP) corresponding to historical data observed on the Cairo-Alexandria line. This average cost is then indexed on inflation.

The financial analysis indicates that the investment is financially viable, returning a positive Net Present Value of US\$33 million at a discount rate of 10.7 percent, following an investment of US\$202 million (table 14). The financial internal rate of return is 11.8 percent, which is well above the discount rate and the cost of financing proposed by the Bank.

Table 14: Financial Appraisal of the project

Indicator	Value
NPV	US\$33 million
FIRR	11.8%

The impact of uncertainty or variation in the key parameters of interest on the financial appraisal of the project has been evaluated. Those key parameters are perceived to be the growth rate of future freight and passenger traffic, the investment costs, and the discount rate. The impact of defined variation in these parameters is summarized in the following table 15.

Table 15: Detailed Financial Appraisal of the Project

Year	Investment Costs in EGP	Increased Operating Costs in EGP	Incremental Revenues in EGP	Total Costs in EGP	Total Net Benefits in EGP	Total Net Benefits in US\$
2009	360,233,333	0	0	360,233,333	(360,233,333)	(67,333,333)
2010	360,233,333	0	0	360,233,333	(360,233,333)	(67,333,333)
2011	360,233,333	0	0	360,233,333	(360,233,333)	(67,333,333)
2012	0	6,044,529	27,588,345	6,044,529	21,543,816	4,026,881
2013	0	6,430,230	30,559,610	6,430,230	24,129,379	4,510,164
2014	0	6,840,543	33,850,880	6,840,543	27,010,336	5,048,661
2015	0	7,277,039	37,496,619	7,277,039	30,219,581	5,648,520
2016	0	7,741,386	41,535,005	7,741,386	33,793,619	6,316,564
2017	0	8,235,364	46,008,325	8,235,364	37,772,961	7,060,367
2018	0	8,760,863	50,963,422	8,760,863	42,202,559	7,888,329
2019	0	9,319,894	56,452,182	9,319,894	47,132,289	8,809,774
2020	0	9,914,596	62,532,083	9,914,596	52,617,487	9,835,044
2021	0	10,547,246	69,266,788	10,547,246	58,719,542	10,975,615
2022	0	11,220,266	76,726,821	11,220,266	65,506,555	12,244,216
2023	0	11,936,231	84,990,299	11,936,231	73,054,068	13,654,966
2024	0	12,697,882	94,143,755	12,697,882	81,445,873	15,223,528
2025	0	18,454,660	142,470,304	18,454,660	124,015,645	23,180,494
2026	0	31,760,948	255,311,194	31,760,948	223,550,246	41,785,093
2027	0	46,234,926	386,994,375	46,234,926	340,759,449	63,693,355
2028	0	61,968,855	540,089,881	61,968,855	478,121,027	89,368,416
2029	0	78,791,626	715,040,628	78,791,626	636,249,003	118,925,047
2030	0	83,819,136	792,048,769	83,819,136	708,229,633	132,379,371
2031	0	89,325,157	878,902,339	89,325,157	789,577,182	147,584,520
2032	0	122,650,954	998,063,902	122,650,954	875,412,947	163,628,588
2033	0	163,805,045	1,137,660,791	163,805,045	973,855,746	182,029,111
2034	0	210,312,263	1,298,272,450	210,312,263	1,087,960,187	203,357,044
2035	0	262,818,116	1,483,193,920	262,818,116	1,220,375,804	228,107,627
2036	0	322,045,303	1,696,248,735	322,045,303	1,374,203,432	256,860,455
2037	0	382,143,569	1,858,362,846	382,143,569	1,476,219,277	275,928,837

The table 16 reveals that the proposed investment is relatively robust to defined variation in key parameters, particularly the project capital costs and the forecasted freight traffic growth rates, yielding positive NPV. The investment appears more sensitive to variations in forecasted passenger traffic growth given that passenger traffic currently accounts for most of ENR traffic volumes and revenues. Nevertheless, the analysis is based on several conservative assumptions (discount rate, lower ‘base’ traffic growth rate,...).

Table 16: Sensitivity Analysis

Capital Costs	-20%	Base Case	+20%
NPV	US\$66 million	US\$33 million	US\$0 million
FIRR	13.1%	11.8%	10.7.%
Freight Traffic Growth	-20%	Base Case	+20%
NPV	US\$8 million	US\$33 million	US\$52 million
FIRR	11%	11.8%	12.3%
Passenger Traffic Growth	-20%	Base Case	+20%
NPV	(US\$28) million	US\$33 million	US\$80 million
FIRR	9.7%	11.8%	13.1%
Discount Rate	8%	9%	Base Case: 10.7%
NPV	US\$166 million	US\$107 million	US\$33 million
B/C Ratio	1.71	1.49	1.16%

II- Financial Analysis of ENR

This section aims at assessing ENR ability to repay the World Bank Loan, as well as the financial sustainability of ENR due to the transformation program. It comprises a review of the recent financial performance of ENR, a summary of the assumptions used for projections, and an analysis of the results along with sensitivity analysis.

a) Review of Recent Financial Performance:

ENR has been operating with significant financial losses over the past decade, placing a continuous and substantial burden on Egypt’s public sector finances:

- *ENR revenues increased at an average annual growth rate of 4.6 percent per year between 2000 and 2007, mainly driven by passenger business.* Passenger revenues represent 67 percent of total revenues in 2007, while freight revenues represent only 18 percent.
- *ENR Passenger Revenues grew at an annual average of 8.2 percent between 2000 and 2007.* Intercity business represents about 50% of total revenues and its share has been stagnating. Express business has known a more important growth (about 14 percent per year during the period 2000-2007), mainly driven by improved coach quality. The Turbine profit center with one single service line represents about 50 percent of total Local profit center revenue containing 10 service lines.

- *Operating margins in Passenger business started to recover in 2004/2005 but remain negative for most services excluding Intercity.* Intercity and Express cost recovery improved since 2003 while Turbine and Commuter services decreased. Turbine recovery is heavily affected by the sharp increase in its operations cost due to major locos and coaches overhauls carried out in 2003⁴⁹. Newly introduced timings of Express services are key enabler for the recovery improvement. Eventually, local cost recovery is very low due to its high depreciation and operation cost, and low revenue.
- *Freight Cost Recovery has dropped by 3.2 percent per year between 2001 and 2007 to reach about 50 percent in 2007* (see table 4). This decrease in cost recovery can be explained mainly by two factors: (i) low availability of freight locomotives; and (ii) lower demand of Iron Ore (Iron Ore is transported mainly between Baharia Mine and El Maraziq and represents 21 percent of total traffic volume and 30 percent of total freight revenues in 2007).
- *Revenue per rail traffic unit is very low.* Revenue per rail traffic unit earned by ENR is particularly low, both for passenger and for freight transport. In FY 2008, average revenue for passenger traffic amounted to EGP 0.0108 (equivalent to 0.19 US cent) per passenger-km and average revenue for freight traffic to EGP 0.0528 (equivalent to 0.89 US cent) per ton-km. In comparison, average revenue in Morocco is around 2.0 US cents per passenger-km and 2.4 US cents per ton-km (10 US cents per p-km and 3.4 US cents per t-km in France). This very low level of revenue derives principally from low level of official tariffs approved by Government and from important discounts imposed on official tariffs by Government for various categories of travellers (students, military, etc.).
- *ENR generated important financial deficits and could not finance its investments.* During the 2000-2007 period, ENR has generated an accumulated deficit of EGP 6.53 billion (equivalent to US\$1.15 billion), almost equivalent to its cumulated gross revenue (EGP 7.24 billion). Operational deficit (after depreciation, but before interest on investment loans and overdraft) reached for the same period EGP 3.91 billion (US\$ 707 million) and interest EGP 3.83 billion (US\$ 691 million).
- *ENR has a significant impact on the situation of public finances in Egypt.* Financial transfers from Government to the railway sector is significant and, according to estimates, might have reached between 0.25 and 0.50 percent of total public spending during the last years.

ENR income statements are detailed in table 17.

⁴⁹ Maintenance costs are likely to be covered under the line item of spare parts/goods and services as part of operating cost

Table 17: ENR Income Statement (2000-2007) in EGP million

Year	2000	2001	2002	2003	2004	2005	2006	2007
REVENUE								
Passenger traffic	437	468	483	510	568	643	690	689
Freight traffic	164	180	212	193	224	209	196	188
Others	175	142	217	222	78	112	85	173
TOTAL	776	789	912	926	856	973	978	1027
CURRENT EXPENSES								
Labour costs	455	508	505	534	568	615	700	780
Spare parts/goods	275	231	250	289	252	281	425	372
Services	82	76	86	103	112	120	123	177
Others	14	5	3	18	30	6	26	8
TOTAL	826	820	844	1 034	962	1022	1274	1337
RESULTS								
Cash-flow from operations	(50)	(31)	68	(108)	(106)	(49)	(296)	(310)
Depreciation	335	317	322	336	432	446	467	490
Interest	771	514	85	445	867	629	205	312
Profit (loss) before interest	(385)	(348)	(254)	(354)	(537)	(495)	(763)	(800)
Profit (loss) after interest	(1156)	(862)	(339)	(799)	(1404)	(1125)	(968)	(1112)

b) Main Assumptions used for projections:

This section presents the main Bank assumptions used for forecasting the future financial situation of ENR.

All ENR debt is to be written off as of July 1st, 2009. MoT is still in discussions with the MoF, the Central Bank of Egypt (CBE), and the National Investment Bank (NIB) regarding arrangements to manage approximately EGP 11 billion in ENR liabilities to the CBE, the NIB, and foreign lenders. Given that no final agreement has been reached yet, and in light of the ongoing discussions, the model assumes that approximately EGP 9.5 billion in principal and interest owed to the NIB will be capitalized on ENR's balance sheet. Approximately EGP 1 billion owed to the CBE and EGP 600 million owed to foreign banks will remain on ENR's balance sheet as long-term liabilities; however, interest payments and repayments of the loans will be taken over by the MoF.

Under the transformation plan, ENR will invest a total of about EGP 19.7 billion (US\$ 3.2 billion) in infrastructure, rolling stock, maintenance workshops and MIS over the next ten years, of which EGP 9,776 million (US\$ 1.76 billion) over 2007/2008 – 2011/2012. A preliminary assessment of investment needs is presented in the table 18 below. Eventually, EGP 4.54 billion will be invested in permanent way, EGP 4.00 billion in signaling, EGP 4.67 billion in locomotives, EGP 1.79 billion in passenger coaches, and EGP 1.75 billion in freight wagons. The proposed World Bank loan amounting US\$ 270 million (EGP 1.5 billion) will finance part of that investment program.

Table 18: ENR Investment Program for the period 2006-2016 (Source: BAH) in EGP million

	2006/07 Forecast	2007/08 Forecast	2008/09 Forecast	2009/10 Forecast	2010/11 Forecast	2011/12 Forecast	2012/13 Forecast	2013/14 Forecast	2014/15 Forecast	2015/16 Forecast
Permanent Way	7	358	584	554	545	452	510	510	510	510
Signaling	-	43	366	619	697	641	497	390	371	345
Station Development	-	40	40	40	7	7	-	-	-	-
Subtotal Infrastructure	7	441	990	1,213	1,249	1,100	1,007	900	881	855
Locomotives	-	381	634	521	523	514	544	535	518	501
Passenger Coaches	-	355	206	129	136	137	139	144	209	332
Freight Wagons	-	20	20	30	116	274	215	253	307	512
Rolling Stock Maintenance Workshop	-	145	109	30	30	30	30	30	30	30
Subtotal Rolling Stock	-	901	969	710	805	955	928	962	1,064	1,375
IT systems and Infrastructure	-	157	143	86	25	25	25	25	30	30
Total	7	1,499	2,102	2,009	2,079	2,080	1,960	1,887	1,975	2,260

Revenues from Freight business. Although freight revenues decreased during the last years, several initiatives regarding freight services have already started under the transformation plan and entail: (i) rate negotiations and increases, and (ii) exit non-focus commodities. Those initiatives are expected to bring in positive effects on freight business starting from FY 08. The rail freight volume expressed in billion ton-km is assumed to increase by 6 percent during the first 2 years (2008-2009) due to ENR lack of readiness (rolling stock availability, service level). The freight traffic growth rate is expected to reach 12 percent from 2009 to 2011 and decrease to 10 percent thereafter. Indeed, rail service to ports is expected to grow faster than GDP as a result of strong investments in port development and as a result of improved freight service. The average revenue per ton-km is then used to estimate ENR total revenue from freight business by multiplying this quantity with the total rail freight volume. An increase of 120 percent spread over the first 3 years is assumed for the average revenue per ton-km and takes into consideration the following factors: (i) aggressive rate increases; (ii) increased focus on high revenue commodities; and (iii) growth of intermodal services. Average revenue per ton-km is then indexed on inflation from 2012 onwards.

Revenues from Passenger business: ENR loses significant revenue due to fare evasion, especially on express and local services (40 percent, and even as high as 80 percent on some services). In addition, increases in full fares for long-distance passenger services have not kept pace with inflation, resulting in further losses. A fare increase of 15 percent (for 1st and 2nd class air-conditioned coaches) was approved and implemented in fiscal year 2008, and ENR hopes to institute another increase when the quality of services has improved, with subsequent increases at the level of inflation. Fare increases are not proposed – nor would they likely be approved – for lower classes of service. Despite these necessary increases, the general revenue strategy is not to increase fares significantly, but rather to improve the quality of services, including changing the fleet structure to include more air-conditioned coaches, to increase the percentage of 1st class coaches, and to introduce new VIP coaches. With respect to fare evasion, ENR is running a public awareness campaign as well as increasing controls on trains and in stations. Four hundred conductors' responsibilities have been shifted to fare controls. The passenger business has been reorganized in two business units: Short Distance Passenger and Long Distance Passenger. ENR revenues from these two business units have been reconstituted assuming no tariff increases will be implemented. A 3.6 percent traffic growth rate has been assumed for the whole period as a pondered average of long and

short distance traffic growth. Indeed, growth on short distance lines is in line with population growth forecasts (1.8 percent) while growth on long distance lines is driven by a soaring demand on the main corridors (4 percent) due to economic development. Revenues are expected to grow at an average annual rate of 15 percent between 2007 and 2012 due to the implementation of revenue optimization measures. After 2012, passenger revenues are assumed to grow in line with traffic and inflation.

PSOs Compensation: Under the transformation plan, all PSOs should be compensated by the end of FY 08. To date, MoT and ENR have completed agreements with the Ministry of Education, the Ministry of Higher Education, and the Ministry of Finance (MoF) that provides an estimated EGP 355 million in FY08 as compensation for the fare PSOs that ENR provides to students. The compensation is based on the difference between the cost of student tickets (1 or 2 percent of full fare) and 60 percent of full fare. Negotiations are ongoing with the Ministries of Defense and Justice for the fare PSOs of members of the military and judges, and with regional governors and MoF regarding compensation for services in unprofitable rural areas (estimated to be EGP 660 million). It is assumed in the present model that by the end of FY 09, all PSOs will be compensated. A growth rate of 1.1 percent has then been assumed for the period 2009-2016, taking into consideration traffic growth and suppression of loss making services. During the period 2016-2027, both Fare and Service PSOs are assumed to grow in line with traffic growth and inflation.

Other Income: This category includes revenues mainly from real estate management, advertising concessions and station development. An 8.5 percent growth rate has been assumed for the period 2007-2016 followed by a 2 percent growth rate for the period 2016-2027. Indeed, ER JET which is expected to become ENR subsidiary responsible for real estate management, advertising concessions and station development under the transformation program will generate sizable revenues through: (i) investment and development of real estate assets; (ii) competitive allocation of advertising concessions; and (iii) development of stations into retail and commercial centers. The growth in the first years is expected to be higher due to the backlog of undeveloped assets.

Operating Expenses: Operating expenses have been split between: (i) salaries and wages; (ii) material supplies; and (iii) non material supplies. It is assumed that : (i) salaries and wages will increase by 5 percent per year during the period 2008-2012 due to normal attrition, then by 8 percent per year during the period 2012-2016, and then 5 percent per year from 2016 onwards due to efficiency gains;(ii) material supplies will increase by 8 percent per year during the period 2008-2012 due to the maintenance backlog, and possible fuel price hikes, and then will follow inflation; and (iii) non material supplies will increase in line with inflation.

Investment and Depreciation: Capital expenditures for the period 2007-2016 have been derived from ENR's investment program under the transformation plan. For the following period (2016-2027), an average annual capital expenditure of EGP 1.7 billion has been assumed. Investment cost is indexed on inflation and depreciation is computed on the basis of a 20 years amortization period.

Debt and Interest Payments: All ENR debt is assumed to be written off during FY 2009. Non current liabilities are then all converted into equity in FY 09. Foreign loans are used to finance part of the capital expenditures, assuming general loan conditions of 10 years reimbursement period and 5 percent interest rate. The World Bank loan is assumed to be reimbursed on the basis of the standard WB loan conditions for Egypt.

Tables 19, 20 and 21 present ENR projected income and cash flow statements, and the projected balance sheets.

Table 19: ENR Projected Income Statement (2005-2016) in EGP million

	2004/05	2005/06	2006/07	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
	Audited	Audited	Opening balance	Audited	Forecast								
INCOME STATEMENT													
Operating Revenue													
Passengers Income	643.5	690.2	689.0	771.7	864.3	968.0	1,084.2	1,174.9	1,273.2	1,379.8	1,495.4	1,620.8	
Freight Income	196.1	189.0	189.0	144.0	212.7	439.6	566.2	665.9	769.1	888.3	1,026.0	1,185.0	1,388.7
Sleeping Coach	20.2	14.1	14.1	21.0	22.9	25.0	27.2	29.6	32.3	35.2	38.4	41.8	45.6
PSO	-	-	-	-	488.0	779.0	787.6	796.2	805.0	813.8	822.8	831.8	841.0
Other Income	112.9	85.4	85.4	173.0	187.7	203.7	221.0	239.8	260.1	282.2	306.2	332.3	360.5
Total Revenue	972.8	978.7	978.7	1,027.0	1,683.0	2,311.5	2,569.9	2,815.7	3,041.4	3,292.8	3,573.2	3,886.4	4,236.5
Operating Expenses													
Salaries & Wages	615.6	699.9	699.9	788.0	879.0	923.0	969.1	1017.6	1068.4	1153.9	1246.2	1345.9	1453.6
Material Supplies	281.2	425.4	425.4	372.0	401.8	433.9	468.6	506.1	531.4	558.0	585.9	615.2	645.9
Non-Material Supplies	125.4	122.6	122.6	177.0	401.0	421.1	442.1	464.2	487.4	511.8	537.4	564.2	592.5
Redundancy costs	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	1,022.2	1,247.9	1,247.9	1,337.0	1,681.8	1,777.9	1,879.8	1,987.9	2,087.3	2,223.7	2,369.5	2,525.3	2,692.0
EBITDA	(49.4)	(269.2)	(269.2)	(310.0)	1.2	533.6	690.1	827.8	954.1	1,059.1	1,203.8	1,361.1	1,544.6
Depreciation	446.2	466.7	466.7	490.0	565.0	670.1	770.5	874.5	978.5	1,076.5	1,170.8	1,269.6	1,382.6
EBIT	(495.6)	(736.0)	(736.0)	(800.0)	(563.8)	(136.5)	(80.4)	(46.7)	(24.3)	(7.3)	33.0	91.5	162.0
Interest	629.4	205.2	205.2	312.0	11.3	31.8	80.4	126.0	193.8	254.0	302.6	348.6	406.7
Capital losses	-	-	-	-	-	-	-	-	-	-	-	-	-
Income from Asset Disinvestment	691.1	256.4	256.4	-	40.0	-	-	-	-	-	-	-	-
Net Profit	(433.9)	(684.8)	(684.8)	(1,112.0)	(535.0)	(168.3)	(160.7)	(172.7)	(218.1)	(261.3)	(269.6)	(257.1)	(244.6)

Table 20: ENR Projected Cash Flow Statement (2005-2016) in EGP million

		2004/05	2005/06	2006/07	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
		Audited	Audited	Opening balance	Audited	Forecast								
CASH FLOW STATEMENT														
Net Profit		(433.9)	(684.8)	(684.8)	(1,112.0)	(535.0)	(168.3)	(160.7)	(172.7)	(218.1)	(261.3)	(269.6)	(257.1)	(244.6)
Depreciation		446.2	466.7	466.7	480.0	565.0	670.1	770.5	874.5	978.5	1,076.5	1,170.8	1,269.6	1,382.6
Addition to provisions		-	-	-	-	-	-	-	-	-	-	-	-	-
Changes in Account Receivables		(67.5)	2.4	2.4	-	-	-	-	-	-	-	-	-	-
Changes in liabilities		(554.2)	(74.3)	(74.3)	-	-	-	-	-	-	-	-	-	-
Changes in Inventories		(20.9)	3.8	3.8	-	-	-	-	-	-	-	-	-	-
Cash Flow from operating activities		(630.3)	(286.1)	(286.1)	(622.0)	29.9	501.8	609.8	701.8	780.4	815.1	901.2	1,012.5	1,137.9
CAPEX		(589.4)	(287.6)	(287.6)	(7.9)	(1,499.0)	(2,102.0)	(2,009.0)	(2,079.9)	(2,080.0)	(1,960.0)	(1,887.0)	(1,975.0)	(2,260.0)
Investments		-	-	-	-	-	-	-	-	-	-	-	-	-
Cash Flow from investment activities		(589.4)	(287.6)	(287.6)	(7.0)	(1,499.0)	(2,102.0)	(2,009.0)	(2,079.0)	(2,080.0)	(1,960.0)	(1,887.0)	(1,975.0)	(2,260.0)
Capital Increase		(758.8)	(508.1)	(508.1)	1,492.0	1,549.0	1,949.0	10.0	-	-	-	-	-	-
Distributions		-	-	-	-	-	-	-	-	-	-	-	-	-
Net Borrowing		2,039.3	1,052.1	1,052.1	250.0	1,335.0	1,375.0	1,575.0	1,535.0	1,355.0	1,205.0	955.0	905.0	1,145.0
Cash Flow from financing activities		1,280.6	544.0	544.0	1,742.0	2,884.0	3,324.0	1,585.0	1,535.0	1,355.0	1,205.0	955.0	905.0	1,145.0
Net Cash Flow		60.8	(29.7)	(29.7)	1,113.0	1,414.9	1,723.8	185.8	157.8	35.4	60.1	(30.8)	(57.5)	22.9
Cash Opening balance		169.4	230.2	230.2	200.5	1,313.5	2,728.4	4,452.2	4,638.0	4,795.8	4,831.2	4,891.3	4,860.5	4,803.0
Cash Ending Balance		230.2	200.5	200.5	1,313.5	2,728.4	4,452.2	4,638.0	4,795.8	4,831.2	4,891.3	4,860.5	4,803.0	4,825.9

Table 21: ENR Projected Balance Sheet (2005-2016) in EGP million

	2004/05	2005/06	2006/07	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
	Audited	Audited	Opening balance	Audited	Forecast								
BALANCE SHEET													
Fixed Assets	13,759.00	14,047.0	14,047.0	13,564.0	14,498.1	15,930.0	17,168.5	18,373.1	19,474.6	20,358.2	21,074.4	21,779.8	22,657.3
Current Assets	3,064.5	3,028.00	3,028.00	4,141.00	5,555.94	5,919.74	6,105.52	6,263.31	6,298.69	6,356.82	6,328.03	6,270.48	6,293.40
Inventory	581.4	578.0	578.0	578.0	578.0	578.0	578.0	578.0	578.0	578.0	578.0	578.0	578.0
Cash & Cash equivalent	2,483.1	2,450.0	2,450.0	3,563.0	4,977.9	5,341.7	5,527.5	5,685.3	5,720.7	5,780.8	5,750.0	5,682.5	5,715.4
Total Assets	16,823.5	17,075.0	17,075.0	17,705.0	20,054.0	21,849.7	23,274.0	24,636.4	25,773.3	26,717.0	27,402.4	28,050.3	28,950.7
Equity	(1,828.6)	(3,174.0)	15,097.0	15,477.0	16,491.0	18,271.7	18,121.0	17,948.4	17,730.3	17,469.0	17,199.4	16,942.3	16,697.7
Reserves	83.9	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0	88.0
Capital	7,126.0	6,618.0	20,800.0	22,292.0	23,841.0	25,790.0	25,800.0	25,800.0	25,800.0	25,800.0	25,800.0	25,800.0	25,800.0
Cumulated Retained earnings	(5,151.4)	(5,891.0)	(5,891.0)	(7,003.0)	(7,538.0)	(7,706.3)	(7,867.0)	(8,039.6)	(8,257.7)	(8,519.0)	(8,788.6)	(9,045.7)	(9,290.3)
Shortage financed by MoF	(3,887.1)	(3,989.0)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Current Liabilities	1,796.7	1,975.0	1,975.0	1,975.0	1,975.0	1,975.0	1,975.0	1,975.0	1,975.0	1,975.0	1,975.0	1,975.0	1,975.0
Non Current Liabilities	16,855.0	18,274.0	3.0	253.0	1,568.0	1,603.0	3,178.0	4,713.0	6,068.0	7,273.0	8,228.0	9,133.0	10,278.0
Provisions	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
National Investment Bank's Loan	6,441.7	7,131.0	-	-	-	-	-	-	-	-	-	-	-
MoF Loans - Loan Instalment Pay Back	5,681.5	6,190.0	-	-	-	-	-	-	-	-	-	-	-
MoF Loans - Interests Pay Back	3,887.1	4,089.0	-	-	-	-	-	-	-	-	-	-	-
Loans 1 (WB loan)	-	-	-	-	400.0	800.0	1,200.0	1,200.0	1,200.0	1,200.0	1,100.0	1,000.0	900.0
Loans 2	-	-	-	-	-	1,000.0	1,600.0	2,220.0	2,220.0	2,220.0	2,220.0	2,220.0	2,220.0
Loans 3	690.0	707.0	-	250.0	225.0	200.0	775.0	1,290.0	2,645.0	3,850.0	4,905.0	5,910.0	7,155.0
Grants	151.7	154.0	-	-	1,360.0	-	-	-	-	-	-	-	-
Total Equity & Liabilities	16,823.1	17,075.0	17,075.0	17,705.0	20,054.0	21,849.7	23,274.0	24,636.4	25,773.3	26,717.0	27,402.4	28,050.3	28,950.7

c) Results and Sensitivity Analysis:

ENR should be facing losses of about EGP 560 million in FY 07/08 but should reach positive EBIT in FY13/14 and positive Net Profit starting from FY17/18 (see figure 5 and table 22). However, ENR cash flow from operating activities will not be sufficient to finance required capital expenditures for investments without external loans. The ENR balance sheet will show a very low debt-equity ratio due to the debt write-off with total loans of EGP 10.2 billion by 2016.

Figure 5: ENR EBIT and Net Profit Forecasts (2007-2027)

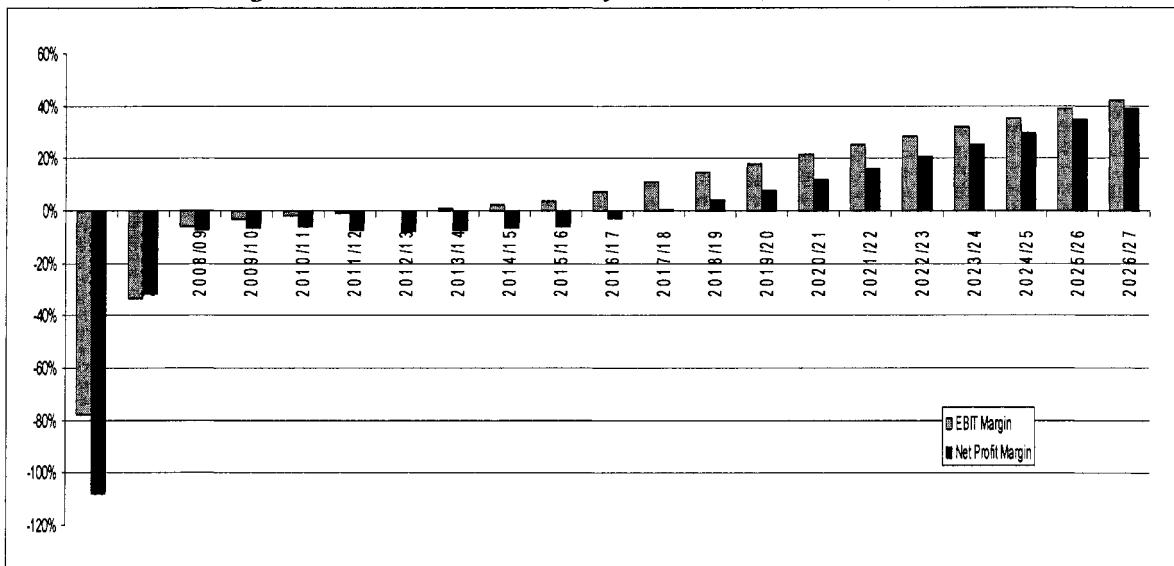


Table 22: ENR selected financial indicators (2005-2027)

	Working Ratio (%)	Working Ratio with depreciation and interest (%)	Operating EBITDA Margin (%)	Operating EBIT Margin (%)	Net Operating Margin (%)	Debt to Equity Ratio	Return on Equity (%)
2004/05	128%	196%	-28%	-75%	-70%	0.00	-4.5%
2005/06	130%	208%	-30%	-78%	-108%	0.02	-7.2%
2006/07	100%	134%	0%	-33%	-32%	0.10	-3.2%
2007/08	77%	107%	23%	-6%	-7%	0.09	-0.9%
2008/09	73%	106%	27%	-3%	-6%	0.18	-0.9%
2009/10	71%	106%	29%	-2%	-6%	0.26	-1.0%
2010/11	69%	107%	31%	-1%	-7%	0.34	-1.2%
2011/12	68%	108%	32%	0%	-8%	0.42	-1.5%
2012/13	66%	108%	34%	1%	-8%	0.48	-1.6%
2013/14	65%	107%	35%	2%	-7%	0.54	-1.5%
2014/15	64%	106%	36%	4%	-6%	0.62	-1.5%
2015/16	60%	103%	40%	7%	-3%	0.71	-0.8%
2016/17	57%	100%	43%	11%	0%	0.78	0.1%
2017/18	54%	96%	46%	14%	4%	0.84	1.3%
2018/19	51%	92%	49%	18%	8%	0.87	2.9%
2019/20	48%	88%	52%	22%	12%	0.86	4.6%
2020/21	46%	84%	54%	25%	16%	0.82	6.6%
2021/22	43%	79%	57%	29%	21%	0.74	8.6%
2022/23	40%	75%	60%	32%	25%	0.63	10.4%
2023/24	38%	70%	62%	35%	30%	0.50	12.1%
2024/25	36%	65%	64%	39%	35%	0.36	13.6%
2025/26	34%	61%	66%	42%	39%	0.24	14.6%
2026/27	32%	76%	68%	32%	24%	0.41	6.7%

The impact of uncertainty or variation in the key parameters of interest on the financial appraisal of the company has been evaluated. Those key parameters are perceived to be the growth rate of future freight and passenger revenues, and the PSO compensations. The impact of defined variation in these parameters is presented in the following table 23.

Table 23: Sensitivity Analysis

Base Case	2007	2018	2027
EBIT (million EGP)	-800	566	5,747
Net Profit (million EGP)	-1112	22	5,358
Break-Even met in	FY13/14		
Lower Freight Revenues (20% less than base case scenario)	2007	2018	2027
EBIT (million EGP)	-800	243	3,729
Net Profit (million EGP)	-1112	-301	3,340
Break-Even met in	FY16/17		
Lower Passenger Revenues (20% less than base case scenario)	2007	2018	2027
EBIT (million EGP)	-800	333	5,074
Net Profit (million EGP)	-1112	-211	4,685
Break-Even met in	FY16/17		
Lower PSO Compensations (20% less than base case scenario)	2007	2018	2027
EBIT (million EGP)	-800	367	5,329
Net Profit (million EGP)	-1112	-177	4,940
Break-Even met in	FY16/17		

The sensitivity analysis confirms that the financial recovery remains vulnerable to adverse factors that would not allow ENR to meet its financial objectives such as lower freight revenues, lower passenger revenues, or lower PSO compensations that would all result in 2018 in a negative net profit and a later break-even date.

Thus, the restructuring will require a substantial financial support from the Government. It is important to note that Egypt is not an exception as throughout the world: (i) governments had to pay very substantial amounts to salvage ailing railway companies (paying for the “sins of the past”); and (ii) investment and operations of rail passenger services are financially supported by Governments/States through PSOs or other mechanisms.

Annex 10: Safeguard Policy Issues

EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

General

According to the World Bank's Operational Policy 4.01 on Environmental Assessment, the proposed project is classified as category B, requiring partial assessment in the form of preparation of an Environmental and Social Impact Assessment (ESIA) report. The ESIA was carried out by an independent third party (an Egyptian environmental consulting firm) and focused on the modernization of the signaling system on the Arab El Raml-Alexandria Line, creation of a Central Traffic Control (CTC) Center in Tanta, and replacement of 200 km of the tracks in upper and lower Egypt. The ESIA report was completed according to terms of reference prepared by ENR and cleared by the Bank.

Public Consultation

A series of interviews were conducted with various knowledgeable individuals to collect data on the project and its activities, as well as to explore different views regarding its positive and negative impacts. These include several ENR engineers and other representatives, a consulting engineering team responsible for the design of the project components, train engineers, representatives of the Egyptian Environmental Affairs Agency (EEAA) in relevant EEAA Branch Offices, local government officials, shopkeepers, residents near expected project activity areas, commuters and other users of the train lines, and other stakeholders.

Based on the results of the initial impact screening process, the following three target groups that might experience substantial socio-economic impacts as a result of the project have been identified: (a) train users, (b) local residents of communities adjacent to the train corridor, and (c) frequent users of level crossings. The three potentially impacted populations were then sampled in three governorates namely, Beni Suef, Minya and Cairo. Different tools were utilized in the selected governorates in order to solicit information regarding the socio-economic impacts of the proposed project. Meetings with stakeholders were carried out by the consulting firm field team in collaboration with the Asyut Businessmen's Association (ABA) and its branches in upper and lower Egypt. ABA's efficient public outreach capabilities were instrumental in allowing the exploration of public opinion and concerns of a good, representative sample of the society in the limited time frame of the study. Interviews and data collection forms were used in the public scoping for train users, users of level crossings, and residents in areas adjacent to construction sites. A total of 1,166 individuals representing different groups likely to be affected by the project were interviewed.

Furthermore, two consultation meetings were held, in Minya and in Cairo. The two meetings were advertised in a daily major newspaper and the public at large was invited to attend the meetings to discuss different aspects of the project and its expected positive and negative impacts. Information on the project as well as a summary of the findings of the ESIA were posted on the consulting firm's website for public review prior to the

consultation meetings. The meetings attracted a number of stakeholders (184 in total) representing different sectors of society, and various social and economic class, gender, and affiliations.

Based on the findings of the initial scoping activities, as well as the consultation meetings and interviews, it became clear that most of the adverse impacts of both components of the project will occur during the construction process and mostly affect human populations in the project area. Most of these impacts are expected to be temporary in nature and affect both the local populations close to the construction sites as well as the general users of the railway line regardless of where they live. Impacts on the operation of the railway lines during construction will affect larger sectors of the society, particularly those using the train. Impacts on the physical environment and the ecology of the project area appear to be minor.

Analysis of Alternatives

Two levels of analysis of alternatives were undertaken for each project component. First, a scenario of two alternatives is considered: a project implementation alternative and the no action alternative. The two alternatives were analyzed and discussed in the two public consultation meeting. The “no action” alternative was deemed unacceptable when compared to the “with project”. To continue operating the Cairo-Alexandria, line with the existing signaling system, with its frequent breakdowns and inefficient operational capabilities, would place a major additional burden on the ENR’s efforts to improve its services to the public, enhance the safety of train operations and overcome its major financial difficulties. Many of the present financial difficulties also stem from the frequent breakdowns of the existing systems, and the resulting uneconomical use of the lines and its equipment. It is expected that difficulties facing ENR will grow worse if not addressed now and will become more difficult and more costly to resolve without the implementation of the proposed project. The same holds true for the track renewal component, where maintaining the tracks as they currently exist in those 200 km is not an option, as it represents a growing safety and operational risk.

At the second level of analysis, the preferred alternative is subjected to further analysis, where the relative environmental and social merits of elements and activities of the selected project alternative are considered. In terms of construction scheduling, the study evaluated the alternatives of (a) proceeding on several sites in parallel to reduce the total construction time, (b) focusing on fewer sites at a time to reduce intensity of construction-related impacts, or (c) proceeding intensively on predefined, relatively large “construction sectors” of the line, one at a time, to minimize generalized impacts and to allow more focused management. In terms of transportation of construction material and waste, the study evaluated the alternatives of transporting material and waste mostly using trucks, versus transportation using trains as much as practically possible. Finally, for track installation, the study evaluated the alternative of standard, 18-m long track sections transported on flat train cars from central ENR warehouses to construction sites, laid and welded in place, versus rail assembling and welding into 250 m long segments

undertaken in ENR's workshop. The study evaluated the environmental advantages and disadvantages of each of these options.

Environmental Management Plan

An environmental management plan (EMP) was developed for the project activities as part of the ESIA. The EMP includes the following three components: (a) a mitigation plan, (b) an environmental monitoring plan, and (c) an institutional strengthening and training plan. The cost of EMP implementation is estimated at around EGP 1.32 million, which includes EGP 720,000 for institutional strengthening measures, and EGP 600,000 for a public awareness campaign on train safety.

Institutional strengthening and training for implementation requirement

ENR's present organizational structure does not include any institutional entity with the responsibility for undertaking environmental management duties. The ESIA suggested the formation of an Environmental Affairs Directorate (EAD) to oversee the implementation of the environmental management plan and its mitigation measures. The ESIA also proposed a makeup of the directorate and terms of reference of its staff. A summary of the institutional and training requirement is shown in the following table 24.

Table 24: Institutional strengthening and training requirements

Institutional Strengthening Activity	Position(s)	Responsibilities		Cost Estimates (EGP)
		Implementation	Supervision	
Establishing the Environmental Affairs Directorate (EAD) of the ENR.	- Director - Environmental Engineer/Manager - Environmental Specialist - Environmental Specialist	Institutional capacity building consultant	- ENR Management	150,000
Training of EAD staff	- Director - Environmental Engineer/Manager - Environmental Specialist - Environmental Specialist	Training and environmental consultant	- ENR Management	120,000
Environmental awareness	- ENR general staff - EAD site inspectors	Public awareness and environmental consultant	- ENR Management	250,000
Training of environmental inspectors	Staff of different ENR departments and operations regions	Training and environmental consultant	- ENR Management	200,000

Mitigation and monitoring plans

The mitigation, monitoring, and institutional plans are included in the following tables 25 and 26.

Table 25: Potential environmental and social impacts of the project activities during the construction and operation phases and their proposed mitigation measures

Project Activity	Potential Environmental /Social Impacts	Proposed Mitigation Measures	Institutional Responsibilities		Cost Estimates (EGP)	Comments
			Enforcement	Coordination		
Construction activities at areas accessible to the public.	Safety risk to the public at or near construction sites.	- Construction sites closed to the public. - Excavation and construction material should be covered to minimize spillage and dust generation.	Contractor	EAD ENR	-ENR -EAD -Third party construction supervision	To be covered as part of the construction costs.
- Installation of communication and power cables, block systems, interlocking equipment, track-side signals, automated level crossing systems and signalling equipment: - Excavation work - Removal of old cables - Disposal of old cables - Installation of optic fibers cables - Installation of power cables - Storage and disposal of construction solid waste.	- Dust air pollution and noise generation from construction activities, vehicles and equipment. - Risk to public safety at construction sites.	- Vehicles delivering construction material or waste should be covered to avoid material spillage. - Vehicles uploading material should maintain the lowest possible fall height to reduce noise and dust generation. - All construction activities should be carried out during the day time to minimize noise disturbance to communities near work sites. - Workers exposed to noise exceeding permissible levels should wear hearing protection. - No exposed, hot power cables should be left unattended at any time. - Construction waste should be disposed of at dumpsites designated by local governments. - Construction sites should be closed to the public.				

Project Activity	Potential Environmental and Social Impacts	Proposed Mitigation Measures	Institutional Responsibilities		Cost Estimates (EGP)	Comments
			Enforcement	Coordination		
Construction Phase, continued						
- Construction of new dispatcher towers and the CTC building in Tanta, and renovation of existing dispatcher towers.	<ul style="list-style-type: none"> - Dust and noise generation from construction activities, vehicles and equipment. - Hazardous emissions (e.g. asphalting), operation of vehicles and other equipment). - Risk to public safety at construction sites. 	<ul style="list-style-type: none"> - Construction material and waste should be covered to minimize generation of dust. - Vehicles delivering construction material to, or removing construction waste should be covered to avoid material spillage and dust generation. - Fall height for truck downloading of construction sand and other material shall be minimized to reduce noise and dust generation. - All construction activities should be carried out during the daylight hours to minimize noise disturbance to communities near work sites. - Workers exposed to noise exceeding permissible levels should use hearing protection. 	<p>Contractor</p> <p>-ENR -EAD -Third party construction supervision</p>		To be covered as part of the construction costs.	

Project Activity	Potential Environmental and Social Impacts	Proposed Mitigation Measures		Institutional Responsibilities		Cost Estimates (EGP)	Comments
		Enforcement	Coordination	ENR Contractor	- MoT - ENR -EAD		
Construction Phase, continued							
Reduction of train speed at work sites.	<ul style="list-style-type: none"> - Longer train trip time. - Unexpected train delays. 	<ul style="list-style-type: none"> - Construction scheduling should be negotiated with the contractors to minimize train delays. - Train re-scheduling should be undertaken taking into account the expected delays and showing new departure and arrival times during the construction work - A plan for making alternative means of transportation available in case of significant train delay should be developed and implemented. 			<ul style="list-style-type: none"> - To be covered as part of the construction costs. 	<ul style="list-style-type: none"> - Some train users may become forced to use other, more costly mode of transportation. - Shifting to other transportation modes will reduce the number of train passengers, reducing demand on goods and services offered by businesses in the vicinity of train stations. 	

Project Activity	Potential Environmental and Social Impacts	Proposed Mitigation Measures	Institutional Responsibilities		Cost Estimates (EGP)	Comments
			Enforcement	Coordination		
Construction Phase, continued						
- Construction at level crossings (Partial or complete closure of the crossing to pedestrian and vehicle traffic).	<p>Increased traffic congestion at certain level crossings.</p> <ul style="list-style-type: none"> - Concentrating work in level crossings during times of reduced traffic, possibly during the night, as long as noise level can be kept at an acceptable level. - In cases where a level crossing has to be completely closed during construction, an alternative crossing should be identified and advertised to the public in advance. Traffic detours will have to clearly marked and provided with proper direction signage for incoming traffic. - Law enforcement authorities (Traffic Police) should take charge of controlling vehicular and pedestrian traffic flow and preventing illegal track crossings. 	<ul style="list-style-type: none"> - Work should be so planned as to avoid the complete blockage of level crossing, as much as practical. - Interrupting normal movement of people and goods. - Increased illegal track crossing. 	<p>Contractor ENR</p>	<p>- EAD - Local law enforcement authorities (Traffic Police).</p>	<p>To be covered as part of the construction costs.</p>	<p>- Traffic congestion or reduced traffic flow in areas leading to or from level crossings. This, in turn, will temporarily increase noise and air pollution with vehicle emission of slow moving vehicles. - Delay to work.</p>

Project Activity	Potential Environmental and Social Impacts	Proposed Mitigation Measures		Institutional Responsibilities		Cost Estimates (EGP)	Comments
		Enforcement	Coordination				
Operation and Maintenance Phase							
Operation and maintenance of trains at increased travel speeds.	- Accidents due to inadequate traffic and pedestrian control at level crossings. - Accidents due to illegal pedestrian crossing.	Improving control of traffic and pedestrian crossing at level crossings.	EAD Traffic Police	EAD Railway Police	ENR	-	Training of operators of trains and signaling system.
		Repair of protective railway corridor walls in densely populated area.	EAD	ENR	Should be covered as part of the project contract.		
	A public awareness campaign on railway safety.		EAD	ENR	600,000	The campaign should be implemented in parallel with the construction phase of the project.	
Operation and maintenance of trains.	None	-	EAD	ENR	To be covered as part of the project contract.	Training of operators of trains and signaling system.	
Operation and maintenance of automated signaling system.	None	-	EAD	ENR	To be covered as part of the project contract.	Training of operators of trains and signaling system.	

Table 26: Environmental Monitoring plan

Proposed Mitigation Measure	Parameters to be Monitored	Location	Measurements	Frequency of Measurement	Responsibilities		Cost (EGP)
					Implementation	Reporting	
Construction Phase							
- Measures for minimizing dust generation. - Measures for minimizing noise generation (including disallowing ballast sifting at the site). - Proper storage of construction material. - Measures for safe disposal of solid waste (including old ballast basalt). - Daily work schedule. - Measures to protect work environment. - Construction site is closed to the public.	Check: - application of dust suppression measures - application of noise suppression measures - application of workers' health and safety procedures - adherence to work schedule - disposal of construction waste practice - complaints of noise, dust or other air pollution recorded and validated.	Construction sites	- Health and safety inspection protocol. - Review weekly logs of complaints of noise, dust and other air pollution.	Weekly	- Contractor. - EAD site inspectors. - Independent consultant.	- EAD - ENR	- Training EAD staff (120,000) - Training EAD site inspectors (250,000) - Institutional capacity building consultant's fees (150,000).
Construction scheduling to minimize train delays.	Adherence to construction schedule.	Construction sites	Adherence to schedule.	Bi-monthly	- Contractor. - EAD site inspectors.	- EAD - ENR	

Proposed Mitigation Measure	Parameters to be Monitored	Location	Measurements	Frequency of Measurement	Responsibilities		Cost (EGP)
					Implementation	Reporting	
Construction Phase, continued							
Train re-scheduling during construction work.	Revised train schedule announced and applied.	Train stations.	- Train delays - Passengers' complaints recorded.	Bi-monthly	- EAD site inspectors.	- EAD - ENR	
- Alternative means of transportation developed and implemented.	Availability and cost of alternative transportation.	Selected population centers (e.g. Cairo, Bani Sweif, Minya and Assuit).	- Transportation cost. - Average trip time. - Passengers' complaints recorded.	Bi-monthly	EAD site inspectors.	- EAD - ENR	
Planning construction work on level crossings to:	- avoid complete crossing blockage. - concentrate work during times of reduced traffic. - assign alternative crossing routes.	- Traffic flow across level crossings and their vicinity.	- Selected level crossings and population centers.	Extent of traffic congestion at crossings. Complaints of crossing users and other citizens recorded.	Daily at construction sites	- Contractor: - EAD Site Inspectors.	- EAD - ENR - relevant traffic department
	Law enforcement authorities (Traffic Police) should take charge of controlling vehicular and pedestrian traffic flow and preventing illegal track crossings.						

Proposed Mitigation Measure	Parameters to be Monitored	Location	Measurements	Frequency of Measurement	Responsibilities		Cost (EGP)
					Implementation	Reporting	
Operation Phase							
Improving control of traffic and pedestrian crossing at level crossings.	Management of traffic and pedestrian crossing at level crossings.	Level crossings along the two project lines.	Control and safety aspects.	Every three months.	EAD	ENR	
Repair of protective railway corridor walls in densely populated area.	Conditions of railway corridor walls.	Densely populated areas along the two project lines.	-	Every three months.	EAD	ENR	
A public awareness campaign on railway safety.	Frequency of illegal crossing at formal and informal crossing sites.	Selected sample level crossings and informal crossing sites.	-	Every three months.	EAD	ENR	

Annex 11: Project Preparation and Supervision
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

	Planned	Actual
PCN review	06/29/2006	06/29/2006
Initial PID to PIC	07/07/2006	07/24/2006
Initial ISDS to PIC	07/07/2006	07/26/2006
Appraisal	11/09/2008	11/09/2008
Negotiations	01/22/2009	01/22/2009
Board approval	03/12/2009	03/12/2009
Planned date of effectiveness	07/31/2009	
Planned date of mid-term review	03/31/2012	
Planned closing date	09/30/2015	

Key institutions responsible for preparation of the project:

- Ministry of Transport
- Egyptian National Railways
- Ministry of International Cooperation

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Mr. Michel Bellier	Lead Transport Specialist	MNSSD
Mr. Ziad Nakat	Transport Specialist	MNSSD
Mr. Vasile Olievschi	Sr. Railway Specialist	ECSSD
Mr. Richard Humphreys	Senior Transport Economist	ECSSD
Mrs. Cordula Rastoggi	Transport Economist	ECSSD
Mr. Mikael Sehul Mengesha	Senior Procurement Specialist	MNAPR
Mr. Akram El-Shorbaqi	Senior Financial Management Specialist	MNAFM
Dr. Maged Mahmoud Hamed	Sr. Environmental Specialist	MNSRE
Mr. Zeyad Abu-Hassanein	Consultant Environment	MNSSD
Mr. Karim-Jacques Budin	Railway Consultant	Consultant
Mrs. Rasha Mohamed Debes	Team Assistant	MNCO3
Mrs. Fatiha Amar	Program Assistant	MNSSD

Bank funds expended to date on project preparation:

1. Bank resources: US\$720,000
2. Trust funds: \$800,000 (PHRD Grant)
3. Total: US\$1,520,000

Estimated Approval and Supervision costs:

1. Remaining costs to approval: US\$5,000
2. Estimated annual supervision cost: \$100,000

Annex 12: Documents in the Project File
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

A. Bank Staff Assessments

“Egyptian Railways - Diagnosis of the Present Situation and Restructuring Strategy,” August 2005.

B. Other

Summary ENR financial accounts FY07 and FY08

Environment and Social Impact Assessments for Arab El Raml – Alexandria signaling investments and the track renewal program

ENR’s Results Based Project Implementation Plan

Egyptian National Railways – Comprehensive Transformation Program; Booz Allen Hamilton presentation, December 10, 2006.

Annex 13: Statement of Loans and Credits
EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

EGYPT, ARAB REPUBLIC OF
 Operations Portfolio (IBRD/IDA and Grants)

Project ID	FY	Purpose	Original Amount in US\$ Millions						Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF	Cancel.	Undisb.	Orig.	Frm. Rev'd
P095392	2008	EG-NATURAL GAS CONNECTIONS	75.00	0.00	0.00	0.00	0.00	75.00	0.00	0.00
P094311	2008	EG INTEGRATED SANITATION & SEWERAGE INFRASTRUCTURE	120.00	0.00	0.00	0.00	0.00	120.00	0.00	0.00
P093470	2007	EG-MORTGAGE FINANCE	37.10	0.00	0.00	0.00	0.00	37.53	11.69	0.00
P087970	2007	West Delta Water Conserv. & Irrig. Rehab	145.00	0.00	0.00	0.00	0.00	145.00	20.00	0.00
P091945	2006	EG-EL TEBBIN POWER	259.60	0.00	0.00	0.00	0.00	216.67	23.80	0.00
P090073	2006	Second Pollution Abatement Project	20.00	0.00	0.00	0.00	0.00	18.00	2.67	0.00
P073977	2005	EG-INTEGRATED IRRIGATION IMPR. & MGT	120.00	0.00	0.00	0.00	0.00	114.99	22.49	0.33
P082952	2005	EG-Early Childhood Education Enhancement	20.00	0.00	0.00	0.00	0.00	17.94	9.96	0.00
P082914	2004	EG-AIRPORTS DEVELOPMENT PROJECT	335.00	0.00	0.00	0.00	0.00	92.04	43.71	-3.23
P049702	2004	EG-SKILLS DEVELOPMENT	5.50	0.00	0.00	0.00	0.00	3.12	3.12	-0.23
P056236	2002	EG-HIGHER EDUCATION ENHANCEMENT PROG	50.00	0.00	0.00	0.00	0.00	3.20	3.20	-0.46
P045499	2000	EG-NATIONAL DRAINAGE II	50.00	0.00	0.00	0.00	0.00	2.43	2.43	0.52
P050484	1999	EG Secondary Education Enhancement Proj	0.00	50.00	0.00	0.00	0.00	25.08	19.87	18.21
P049166	1998	EG East Delta Ag. Serv.	0.00	15.00	0.00	0.00	0.62	4.86	3.51	3.24
P045175	1998	EG-HEALTH SECTOR	0.00	90.00	0.00	0.00	0.00	2.87	-5.87	-7.36
		Total:	1,237.20	155.00	0.00	0.00	0.62	878.73	160.58	11.02

STATEMENT OF IFC's
Committed and Disbursed Outstanding Investment Portfolio as of 10/31/2008
(In USD Millions)

FY Approval	Company	Committed					Disbursed Outstanding				
		<u>Loan</u>	<u>Equity</u>	<u>**Quasi Equity</u>	<u>*GT/RM</u>	<u>Partici pant</u>	<u>Loan</u>	<u>Equity</u>	<u>**Quasi Equity</u>	<u>*GT/RM</u>	<u>Partici pant</u>
2002	Al-amir sanitary	1.88	0	0	0	0	1.88	0	0	0	0
2004	Alexandria fiber	6.5	0	0	0	0	6.5	0	0	0	0
2001	Amreya	1.01	0	0	0	0	1.01	0	0	0	0
1996	Ansdk	0	0	0	1.33	0	0	0	0	0	0
2008	Aspet	35	0	0	0	0	0	0	0	0	0
0	Aub egypt	0	35.59	0	0	0	0	35.14	0	0	0
2008	Bank alexandria	0	196.56	0	0	0	0	0	0	0	0
1992/97	Carbon black- egt	0	2.96	0	0	0	0	2.96	0	0	0
2006	Cib llc	0	0.72	0	0	0	0	0.48	0	0	0
1999/04	Cil	0	0.89	0	0	0	0	0.89	0	0	0
2006	Cmrci intl bank	0	23.28	0	0	0	0	23.03	0	0	0
2007	Dar al fouad	0	4	0	0	0	0	2.11	0	0	0
2006	Efg hermes	14	0	0	0	0	14	0	0	0	0
2005	Egypt factors	0	3	0	0	0	0	1	0	0	0
2004	Ehf	0	1.7	0	0	0	0	1.7	0	0	0
2007	Emrc	0	3.53	0	0	0	0	3.53	0	0	0
0	Eshc	17	0	0	0	0	0	0	0	0	0
2006	Gippsland	0	3.7	0	0	0	0	1.51	0	0	0
2007	Indo-egyptian	80	0	0	0	160	0	0	0	0	0
2007	Ipi	26.4	0	0	0	0	15.6	0	0	0	0
2007	Ipr	21.4	0	0	0	0	21.4	0	0	0	0
2004	Lecico egypt	5.69	0	0	0	0	5.69	0	0	0	0
0	Magrabi egypt	15	2.66	0	0	0	0	0	0	0	0
1986/88/92	Meleihha oil	0	30.82	0	0	0	0	11.04	0	0	0
2002	Metro	4.5	0	0	0	0	4.5	0	0	0	0
1992	Misr compressor	6.8	0	0	0	0	6.8	0	0	0	0
0	New al-salama	15	0	0	0	0	5	0	0	0	0
2008	Nile suez	20	0	0	0	0	0	0	0	0	0
2007	Omar effendi	40	8.5	0	0	0	30	5.67	0	0	0
0/96	Orix leasing egt	3.6	0.53	0	0	0	3.6	0.53	0	0	0
2002	Sekem	2.36	0	0	0	0	2.36	0	0	0	0
2004	Spdc	14.79	0	0	0	0	14.79	0	0	0	0
1997/01	Uni	1.81	0	0	0	0	1.81	0	0	0	0
2005/08	Wadi group	37	0	0	0	0	12	0	0	0	0
Total Portfolio:		369.74	318.44	0	1.33	160	146.94	89.59	0	0	0

Annex 14: Country at a Glance

EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

Egypt, Arab Rep. at a glance

9/24/08

		M. East & North Africa	Lower- middle- income	
		Egypt		
POVERTY and SOCIAL				
2007				
Population, mid-year (<i>millions</i>)		75.5	313	3,437
GNI per capita (<i>Atlas method, US\$</i>)		1,580	2,794	1,887
GNI (<i>Atlas method, US\$ billions</i>)		119.4	876	6,485
Average annual growth, 2001-07				
Population (%)		1.8	1.8	1.1
Labor force (%)		2.8	3.6	1.5
Most recent estimate (latest year available, 2001-07)				
Poverty (% of population below national poverty line)	
Urban population (% of total population)		43	57	42
Life expectancy at birth (years)		71	70	69
Infant mortality (per 1,000 live births)		29	34	41
Child malnutrition (% of children under 5)		5	..	25
Access to an improved water source (% of population)		98	89	88
Literacy (% of population age 15+)		71	73	89
Gross primary enrollment (% of school-age population)		105	105	111
Male		107	108	112
Female		102	103	109
KEY ECONOMIC RATIOS and LONG-TERM TRENDS				
	1987	1997	2006	2007
GDP (US\$ billions)	40.5	78.4	107.5	128.1
Gross capital formation/GDP	26.1	17.6	18.7	21.9
Exports of goods and services/GDP	12.6	18.8	29.9	31.3
Gross domestic savings/GDP	15.9	11.5	17.1	14.0
Gross national savings/GDP	19.1	17.3	22.0	24.3
Current account balance/GDP	-2.3	0.2	1.6	2.1
Interest payments/GDP	1.2	1.0	0.6	..
Total debt/GDP	109.0	38.4	27.3	..
Total debt service/exports	17.9	10.0	5.4	..
Present value of debt/GDP	24.0	..
Present value of debt/exports	63.1	..
	1987-97	1997-07	2006	2007
(average annual growth)	4.1	4.5	6.8	7.1
GDP	6.8	6.8
GDP per capita	2.0	2.6	4.9	5.2
Exports of goods and services	6.3	9.5	21.3	14.2
	2006	2007	2007-11	
STRUCTURE of the ECONOMY				
	1987	1997	2006	2007
(% of GDP)				
Agriculture	20.5	17.0	14.1	13.0
Industry	27.1	31.2	38.4	35.5
Manufacturing	16.5	17.6	16.6	15.8
Services	52.4	51.8	47.5	51.5
Household final consumption expenditure	69.9	77.2	70.6	74.8
General govt final consumption expenditure	14.3	11.3	12.3	11.2
Imports of goods and services	22.8	24.9	31.6	39.2

Development diamond*

Legend: Egypt, Arab Rep. (solid line), Lower-middle-income group (dashed line)

- Life expectancy:** Egypt is slightly above the Lower-middle-income group.
- GNI per capita:** Egypt is significantly lower than the Lower-middle-income group.
- Gross primary enrollment:** Egypt is slightly above the Lower-middle-income group.
- Access to improved water source:** Egypt is slightly above the Lower-middle-income group.

Economic ratios*

Legend: Egypt, Arab Rep. (solid line), Lower-middle-income group (dashed line)

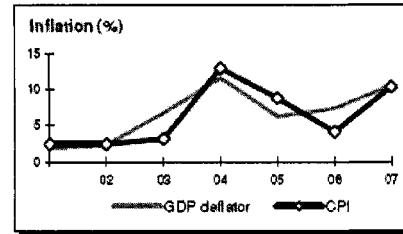
- Trade:** Egypt is slightly above the Lower-middle-income group.
- Domestic savings:** Egypt is significantly lower than the Lower-middle-income group.
- Capital formation:** Egypt is slightly above the Lower-middle-income group.
- Indebtedness:** Egypt is slightly above the Lower-middle-income group.

Growth of capital and GDP (%)

Year	GCF (%)	GDP (%)
2002	0.0	0.0
2003	-1.0	0.0
2004	0.0	0.0
2005	0.0	0.0
2006	0.0	0.0
2007	0.0	0.0

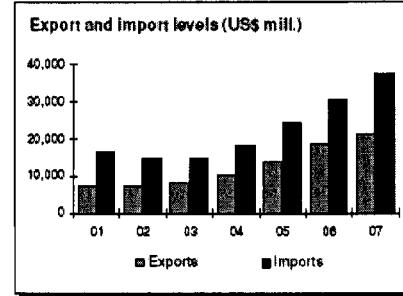
PRICES and GOVERNMENT FINANCE

	1987	1997	2006	2007
Domestic prices				
(% change)				
Consumer prices	..	6.2	4.2	10.4
Implicit GDP deflator	31.1	9.9	7.4	10.5
Government finance				
(% of GDP, includes current grants)				
Current revenue	20.3	22.8	27.3	25.3
Current budget balance	20.3	22.8	27.4	0.3
Overall surplus/deficit	26.2	24.3	28.5	-8.3



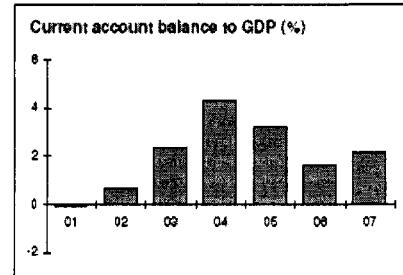
TRADE

	1987	1997	2006	2007
(US\$ millions)				
Total exports (fob)	2,264	5,345	18,455	21,336
Cotton	458	2,578	10,407	11,038
Other agriculture	343	107	146	182
Manufactures	665	1,902	5,172	5,947
Total imports (cif)	7,923	15,565	30,441	37,469
Food	2,338	2,885	1,921	2,159
Fuel and energy	884	1,909	5,443	5,928
Capital goods	1,764	4,114	7,888	12,030
Export price index (2000=100)	87	126	150	157
Import price index (2000=100)	86	116	135	138
Terms of trade (2000=100)	101	108	111	113



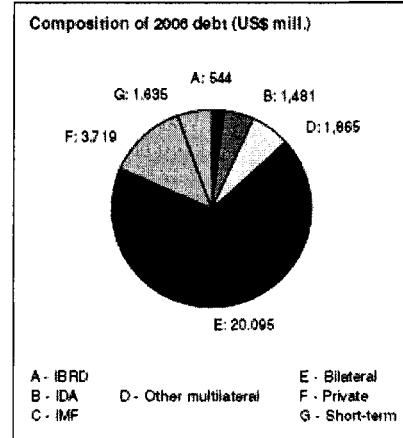
BALANCE of PAYMENTS

	1987	1997	2006	2007
(US\$ millions)				
Exports of goods and services	5,667	14,534	33,891	40,008
Imports of goods and services	9,468	19,528	38,217	50,121
Resource balance	-3,801	-4,994	-4,326	-10,114
Net income	-480	967	531	940
Net current transfers	3,356	4,145	5,547	11,915
Current account balance	-924	119	1,752	2,741
Financing items (net)	106	1,793	1,502	3,940
Changes in net reserves	819	-1,912	-3,253	-6,681
<i>Memo:</i>				
Reserves including gold (US\$ millions)	26,660	30,320
Conversion rate (DEC, local/US\$)	1.3	3.4	5.7	5.7



EXTERNAL DEBT and RESOURCE FLOWS

	1987	1997	2006	2007
(US\$ millions)				
Total debt outstanding and disbursed	44,147	30,102	29,339	..
IBRD	1,703	969	544	1,181
IDA	892	1,206	1,481	1,490
Total debt service	1,661	1,985	2,201	..
IBRD	244	297	93	144
IDA	10	24	53	58
Composition of net resource flows				
Official grants	560	1,028	639	..
Official creditors	753	-10	-1,040	..
Private creditors	574	-37	-250	..
Foreign direct investment (net inflows)	948	991	10,043	..
Portfolio equity (net inflows)	0	515	502	..
World Bank program				
Commitments	0	75	817	0
Disbursements	163	260	164	737
Principal repayments	125	241	108	144
Net flows	38	19	56	593
Interest payments	129	80	39	58
Net transfers	-91	-61	18	535



Note: This table was produced from the Development Economics LDB database.

9/24/08

Annex 15: Map

EGYPT, ARAB REPUBLIC OF: Egyptian National Railways Restructuring Project

ARAB REPUBLIC OF EGYPT

EGYPTIAN NATIONAL RAILWAYS RESTRUCTURING PROJECT



- PROJECT WORKS:**
- SIGNALLING INVESTMENTS
 - TRACK RENEWAL INVESTMENTS*

*To be implemented on portions of indicated sections,
not the entire length of the sections.

- SELECTED CITIES AND TOWNS
- GOVERNORATE CAPITALS
- ⊗ NATIONAL CAPITAL
- ~~~~ RIVERS
- MAIN ROADS
- +— RAILWAYS
- GOVERNORATE BOUNDARIES
- - - INTERNATIONAL BOUNDARIES

