TERMS OF REFERENCE

EG - Helwan South Power Project (P117407)
Utilization of Project Savings
ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA) STUDY
A-1 introduction

The proposed project is an integral part of Egypt’s strategy which aims to expand the uses of natural gas as a clean source of energy. This project aims to transfer rich gas from Raven gas field in north Alex to the western desert gas complex in Alexandria to extract the rich components. The Egyptian Natural Gas Company (GASCO) is taking the responsibility of the implementation of this project, with funding and assistance from the World Bank.

The project includes the following main components: (a) power plant; and (b) gas pipelines, as described below. The total project amount is US$2.404 billion, with other financing sources, including: (i) Borrower (US$921.8 million); (ii) Arab Fund for Economic and Social Development (US$193.5 million); (iii) Islamic Development Bank (US$449.9 million); (iv) Kuwait Fund for Arab Economic Development (US$213.8 million) and (v) OPEC Fund for International Development (US$40 million). The IBRD Loan is financing two main components, including: Component (1) The Helwan South Power Plant (IBRD: US$ 503.8 million) and Component (2) Gas pipelines (IBRD: US$ 81.6 million).

The project was approved by the World Bank on June 27, 2013 with an IBRD loan of US$585 million, and was declared effective on April 30, 2014. The latest ISR (June 2015) rated progress towards achieving the PDO as Moderately Satisfactory (MS). US$46.53m disbursed to date, which represents 8% of the total project amount. Current disbursement projection for FY16 is $107m. The end of August overall project implementation progress forecasts the pre-commissioning of the power plant June 2018 and full operations by end December 2018, which is within the project closing date of June 30, 2019.

Component (1) - The Helwan South Power Plan - Under this component, the Bank is financing three packages, including: Steam Generator (boiler), Power Transformers, and Distributed Control System (DCS).

Component (2) - Gas pipelines - This component will not be implemented as originally planned due to the change in the scope of the gas supply to Helwan, arising from the significant reduction in the pipelines from 158km to 1.2km at a cost of about US$7m vis-à-vis approved loan of US$81.6m. The original 158km pipelines were considered no longer relevant due to a reprioritization of gas expansion plan. Accordingly, GASCO decided to tap into an existing network to secure gas supply for the plant. This has resulted in loan saving of US$74.6m.

GASCO decided to utilize the loan savings to procure, construct and operate a new gas pipeline which aims to transfer rich gas from the Raven gas fields in north Alexandria to the Western Desert Gas Complex (WDGC) in Alexandria for processing. In accordance with the National plan of developing natural gas fields and the new explorations to meet the national gas demand as the main energy source, the Western Mediterranean & Northern Alex fields are scheduled to commence production starting from 2019 with an expected production of 900 MMSCFD.

Raven gas field is one of those fields expected to transport about 600 MMSCFD of rich gas through a 75 km (primary estimation) pipeline from "Idku" to "Western Desert Gas Complex" with a minimum pressure of 40 bar and a maximum pressure of 70 bar. More technical details are presented in Annex I of this ToR.

It is worth mentioning that the shortage in feed gas forecast of Western Desert Gas Complex (WDGC) starting from the production year 2019/2020 will be matching the start-up production from Raven gas field. About 90-95% of the natural gas entering WDGC will be pumped into the natural gas national grid after processing which takes place in the WDGC.

WDGC receives feed gas to recover and produce the following products:

- Methane (sales gas), which be injected in natural gas national grid.
- Ethane/propane mixture, which is a feedstock of petrochemicals plants
- Commercial Propane product
• Butane (LPG) product which is highly needed for domestic use and households and also eliminates the imported quantities;
• Condensate product

Therefore GASCO intends to establish a new gas pipeline with 75 Km length & 28 inch diameter between Raven gas field delivery point to WDGC, which guarantees supplying WDGC with feed rich gas achieving the following strategic objectives:

• Securing the natural gas national grid in Alexandria area with additional quantities of natural gas supply which has a direct positive impact on supplying more power plants with their demands from natural gas;
• Maximizing the utilization of existing WDGC facilities;
• Secure Egyptian General Petroleum Corporation (EGPC) with LPG which decreases the imported LPG and compensate the shortage in local market;
• Secure petrochemicals plants (SIDPEC, ETHYDCO and EGPC) with feedstock.

According to the World Bank requirements, GASCO needs to:

a) Prepare a site/route specific Environmental and Social Impact Assessment study for the new proposed line;
b) Conduct a due diligence for the facilities which are associated with the proposed gas pipeline;
c) Prepare a Resettlement Action Plan

d) Consult with the public and project affected persons and address their concerns with the necessary mitigation measures.

GASCO is seeking a competent consultant with previous experience in conducting similar studies to deliver the above requirements.

**A-2 Background**

According to the feasibility studies, the route of the pipeline have been largely identified. It is expected that the pipeline will cross agricultural lands, inhabited areas and parts of desert lands. The route is also expected to cross several major roads, railways and waterways.

Laying of gas pipelines will involve excavation of trenches where possible, but upon encountering waterways, major roads or railways, it will utilize technologies which minimize disruption of physical or natural assets.

GASCO prepared this TOR in order to prepare an Environmental and Social Impact Assessment (ESIA) according to the World Bank standards and to satisfy national requirements. The study will examine the effects of the planned activities on existing environmental and social conditions in the areas which may be affected by the project, and propose measures for mitigating and monitoring any potential negative impacts.

The Consultant will prepare an ESIA report which will be designed with the following consideration:

• Identify the environmental and social impacts of the proposed gas pipeline and assess their significance;

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1 A separate RAP ToR is prepared.
Propose appropriate mitigation measures for the significant impacts;
- Develop Environmental and Social Monitoring Plan specific to the route of the pipeline;
- Prepare a Draft ESIA and conduct public consultation with relevant stakeholders and address their concerns which should be incorporated into the Final ESIA Report.
- An executive summary will be prepared to be used as a stand-alone document in a manner that can be accessible to non-technical readers both in English and Arabic languages

A detailed Table of Contents of the required ESIA is presented in Annex II of this ToR.

Since the construction of the proposed pipeline will pass through privately owned agricultural lands, therefore, Resettlement Action Plans (RAP) shall be prepared and completed prior to construction. In addition, an environmental and social due diligence for the facilities which are associated to the proposed pipeline shall be conducted. The associated facilities have been identified as follows:

i) Offshore gas field (under development);
ii) Offshore pipeline transporting extracted gas to an onshore receiving facility (not yet existing);
iii) West Delta Gas Complex (in operation);

The Consultant is required to prepare the ESIA report and the due diligence report according to the scope and tasks which are described in this ToR in the following sections.

A-3 Needs and Justification

A.3.1 Environmental and Social Impact Assessment

The aim of the ESIA study is to assess the environmental and social impacts associated with the design, construction and operation of the planned pipeline. The ESIA will propose practical and effective mitigation measures to prevent or reduce any potential negative implications of the construction and operation of the planned pipeline. In addition, an environmental and social management plan will be developed to ensure best environmental and social performance. In principle, for each of the planned pipeline, the ESIA will be based on the following:

- Environmental and social impacts associated with the project are assessed and examined at the earliest planning stage possible.
- Environmental and social impacts to be investigated and examined include factors that impact public health and safety as well as the natural environment, such as: air, water, soil, waste, accidents, water usage, ecosystems, and biota. Social concerns include: involuntary resettlement of the population, cultural heritage, landscape, gender, communicable diseases, etc. Traffic impacts should also be assessed.
- In addition to the direct and immediate impacts, derivative, secondary and cumulative impacts will also be examined and investigated to a reasonable extent.
- Alternative proposals and/or minimization measures to prevent or reduce adverse impacts are examined to choose a better project option in terms of environmental and social considerations. In examination of measures, priority is to be given to the prevention of environmental impact, and when this is not possible, minimization and reduction of impact must be considered next. The findings of this examination should be incorporated in the plan.
- Examination of the environmental and social considerations will include analysis of environmental costs and benefits in quantitative terms, as much as possible, while take into consideration economic, financial, institutional, social and technical aspects.
- Appropriate follow-up environmental and social management and monitoring plans will be prepared as part of the ESIA. Estimated costs of implementing such plans and financial resources to cover such costs will be determined.
The ESIA will ensure that the construction and operation of the proposed pipeline will be in compliance with relevant national, laws and ordinances as well as the World Bank safeguards.

A.3.2 Due Diligence

The purpose of conducting an environmental and social due diligence on the existing and planned facilities for gas extraction, off taking and processing have been identified as “associated facilities” according to the World Bank criteria which have three elements concerning an associated facility as follows:

- directly and significantly related to the Bank-assisted project;
- necessary to achieve its objectives as set forth in the project documents; and
- carried out, or planned to be carried out, contemporaneously with the project.

The consultant shall undertake an environmental and social due diligence to of the plant(s) in conformity with World Bank guidelines under OP/BP 4.01.

A-4 Tasks

A.4.1: Environmental and Social Impact Assessment

According to the Terms of Reference, the following tasks are expected to take place in order to prepare the ESIA for the proposed pipeline:

- Conduct meetings with GASCO planning, design, construction and operation team to understand and familiarize with GASCO plans and activities related to the proposed pipeline;
- Conduct visits, to all sites for the purpose of site reconnaissance and establishing updated baseline and collecting data from the local concerned authorities;
- Review all relevant laws and regulations relevant to the planned activities;
- Describe the environmental and social settings for the areas where the planned pipeline will pass across;
- Assess the potential positive and negative environmental and social impacts associated with the planned activities;
- Assess risks and hazards associated with the project activities;
- Prepare a comprehensive Environmental and Social Management Plan (ESMP);
- Perform effective and efficient public consultation process at two stages: during scoping phase and once the Draft ESIA is prepared. A proper communication plan should be prepared and specific actions to be taken to ensure good representation and good attendance of affected communities and stakeholders in the planned Public consultation events;
- Develop an institutional development and capacity building plan to ensure effective and efficient implementation of the proposed environmental and social management and monitoring activities.

A.4.2 Due Diligence

The consultant shall utilize the following tools and methods to perform the required due diligence for the following associated facilities:

(i) offshore gas field (under development);
(ii) offshore pipeline transporting extracted gas to an onshore receiving facility; and
(iii) West Delta Gas Complex

The specific tasks are as follow:
• Review the national legal requirements pertinent to the construction and operation of the above associated facilities;
• Identify gaps between national requirements and The World Bank requirements concerning environmental limits and standards;
• Review existing relevant environmental and social documentation prepared for each of the associated facilities;
• Identify any sensitive environmental or social issues related to the construction or operation of the associated facilities;
• Research the historical land use of WDGC (e.g. through historical aerial photographs, interviews with key informants, and other local resources);
• Identify the land uses, communities and facilities located on or surrounding the associated facilities;
• Interview persons and key stakeholders familiar with the associated facilities.

A-5 APPROACH

The Consultant will try to the extent possible to identify and compile the readily available technical data and information that would allow preparing the Environmental and Social Impact Assessment and the Environmental and Social Due Diligence with the least uncertainties. Appropriate and justified engineering/scientifically based assumptions should be made to cover any information or data gaps.

In preparing the ESIA and the Due Diligence, the Consultant will ensure compliance with:

• Current environmental and social regulations and standards in Egypt
• The World Bank Operational Policy 4.01 and other World Bank procedures and guidelines on conducting environmental impact assessment.
• The General and Industry guidelines on Environmental, Health and Safety Guidelines (EHSGs) in particular the General Guidelines and Sector Guidelines for Natural Gas Processing, Offshore Oil and Gas Development, and Gas Distribution Systems, as appropriate.\(^2\)

A-6 Methodology

A-6.1 ESIA

This section describes the methodology for conducting the Environmental and Social Impact Assessment and this will cover the planned gas pipeline route and pressure reduction station.

\(^2\) See ifc.org/ehsguidelines
In general, the methodology for preparing the Environmental and Social Impact Assessment has to be in accordance with the Environmental Regulations and Standards in Egypt and the World Bank Operational Policies/Best Practices on environmental safeguards OP/BP 4.01.

The Consultant is expected to prepare and submit his own detailed work methodology and approach to fulfill the assignment requirements given the large geographic scope covered under this TOR.

The following will be the minimum requirements of the proposed methodology

1) **Gain an understanding and study project objectives and familiarize with project locations**
   - Obtain necessary documents including maps, site plans, photographs, diagrams, and any visual and graphic aids.
   - Familiarize with project, including project purpose; location; components and phases; workforce and equipment; associated activities; schedule; and cost.
   - Gather information about pre-construction, construction, and operation plans.
• Detail the elements of the project, highlighting the areas to be reserved for construction and determining the surrounding areas in terms of residential areas, industrial areas, protected areas, historical sites, etc.

(2) Review relevant legislative and regulatory considerations
• Review national and international legislations and regulations relevant to the project, including also required governmental permits and authorizations required.
  o Prepare reports to meet the requirements of EEAA, the Oil and Gas Sector and World Bank.
  o The consultant will consider the various relevant safeguard policies of the World Bank, particularly the policy on environmental assessment and the involuntary resettlement

(3) Conduct the First Public Consultation (Scoping Session)
Initially, a process for identifying relevant stakeholders shall be undertaken through conducting interviews with local communities in the vicinity of the project, government officials within the local authorities, ministry of Environment, oil and gas sector, roads authority and other relevant government authorities. In addition, interviews with civil society organizations shall be conducted to identify their concerns and needs concerning the proposed project.

A community consultation will be initiated as early as possible. The Consultant will consult with the stakeholders twice. The first public consultation will be conducted after the identification of relevant impacts in order to discuss and agree on the scope of the ESIA.

In coordination and consultation with GASCO, relevant governmental authorities and other stakeholders will be identified. The Consultant in coordination with GASCO and the relevant authorities will arrange and conduct scoping sessions which should be attended by the relevant authorities and stakeholders. The aim of these scoping sessions is to:

• Explain and reach a common understanding of the potential impacts and sensitivities of the surrounding environment, and similarities and differences between the present project and other similar projects implemented in the area and in Egypt at large.
• Identify, early in the process, any environmental and social aspects, which the stakeholders raise, which may not have been included in the scope of work
• Provide a basis for reviewing the issues that will be considered in the ESIA

(4) Identify Relevant Environmental and Social Aspects
The Consultant will identify relevant environmental and social aspects to be discussed at the beginning of the work with a sample of concerned parties. The various impacts will be categorized as either positive or negative, and dealt with accordingly. Relevant impacts will be assessed for both the construction and operation phases of the project.

The following are anticipated to be the most relevant:

i) Environmental aspects:
  • Loss of vegetation and erosion during installation of pipeline, affecting drainage patterns and soil stability;
  • Solid waste, hazardous waste, wastewater, noise, and other possible soil and water pollutants produced from associated facilities and activities during construction and operation;
  • Air pollution during construction due to operation of construction equipment;
  • Potential leakages in the pipelines thus potential release of Green House Gas emissions;
• Impacts of condensate or other effluents;
• Loss of land use by occupation of land with permanent structures, creation of ROW’s, or other barriers to humans and wildlife;
• Disruption of traffic and blockage of waterways and channels.

ii) Safety aspects:
• Fire and explosion related accidents and emergencies;
• Occupational health and safety

iii) Social aspects:
• Impacts on employment, housing of workers, and general public safety issues
• Displacement of people and other adverse impacts upon income or living standards due to land acquisition or other activities associated with construction and operation.
• Impacts on the local market in change in demand for local services, as well as access to social infrastructure
• Loss of land use by occupation of land with permanent structures, creation of ROW’s, or other barriers to humans and wildlife
• Impacts on archaeological sites, historical buildings, and cultural heritage
• Impacts caused by inducting secondary development, such as squatters, within the pipeline ROW;

The above points will be explained and discussed with relevant authorities and stakeholders of the project including government institutions, national authorities and bodies.

(5) Scoping

Based on the First Consultation the following activities will be performed:
• Document the issues raised during the scoping exercise. This shall provide a basis for reviewing the issues that will be considered in the ESIA
• Finalize the terms of reference for this assignment by incorporating the raised issues in the scoping sessions
• Issue Inception Report including the final ToR of this assignment along with the results of the First Consultation

(6) Analysis of Alternatives

The environmental and social assessment should also include on analysis of alternatives that would examine different alternatives with the objectives of minimizing environmental, health, safety and social impacts of the project. The analysis would focus on the following:
• Summarizing and referencing the alternatives in a manner consistent with national and international guidance
• Analyzing the benefits and impacts expected from the project and other technical and economic alternatives including the "Do-Nothing" alternative
• Evaluating the social and environmental analysis of each alternative
• Propose preferred alternatives by comparing alternatives, and justify the rationale for preferring he proposed alternatives
(7) Data Collection and Review

General information about the project site and/or pipeline routing and surrounding areas will be provided in map form, including:

- Provide appropriate image of proposed alignment, general layout of facilities at project related sites
- layout of the existing gas pipeline network and other utility services network;
- project area maps at appropriate scales to illustrate general siting of project related development sites and surrounding areas likely to be environmentally and socially affected
- topographic contours, as available, as well as locations of surface waters, roads, railways, town centers, parks and reserves, and political boundaries
- maps to illustrate existing land use, including industrial, residential, commercial and institutional development, agricultural, etc.
- pre-construction activities

Specific data will be complied on the characteristics of the project area in terms of its sensitivity to adverse and beneficial environmental impacts. Historical and secondary source data will be collected, when possible, and validated with field observations. The consultant will conduct the necessary baseline surveys to collect data on the following points, as part of the IEE:

- Physical Environmental Data:
  - Geology (e.g. stratigraphy and structure, seismic history if any of the areas)
  - Topography (e.g. drainage patterns around the pipeline construction areas, view-shed around facilities)
  - Soils (e.g. bearing capacity of soil, agriculture value, soil cover, and any contaminated soils)
  - Climate and meteorology
  - Ambient air quality (including identification of and collection of data at nearest sensitive receptors)
  - Ambient water quality
  - Surface water quality
  - Surface water hydrology
  - Receiving water quality (other major pollution sources in the area, if any)
  - Ground water table condition of the study area
  - Ambient noise (including identification of and collection of data at nearest sensitive receptors)
  - Significant sources of pollution in the area and prospect for their mitigation
  - Existing traffic patterns, types of roads, etc.

- Biological Environmental Data
  - Flora and fauna, including rare, endemic, migratory or endangered species in areas adjacent to project-related development sites
  - Sensitive habitats and habitats with high conservation/biodiversity values; including wetlands, parks or reserves, significant wild lands, forests within or in areas downstream/downgrading of project-related development areas.
  - Species of commercial importance in areas affected by the project.

- Socio-Economic Data
  - Culturally Valuable Sites
  - Geography, administrative districts, etc.
Basic Demographic characteristics (population, age structure, birth rate, death rate, rate of natural increase, handicapped, etc.)
- Living Conditions (household size and density, access to electricity, source of potable water, sanitation, etc.)
- Human Development Profile (education, work status, economic wellbeing, etc.)
- Undertake a socio-economic assessment/survey with a representative group of households with a focus on lower-income groups to assess the affordability of the residents to connect to the network and identify alternatives for subsidy support.

Subsequent to gathering of data, the environmental and social issues will be assessed in terms of the environmental and social risks and benefits associated with the project.

(8) Analysis - Environmental and Social Assessment

The consultant will assess the potential impacts of the project during construction and operation phases. The Consultant will perform the below tasks to identify and concisely present the significant environmental and social impacts:

- Explain and justify the methods used to predict potential impacts of the project on the environment, and on interactions among the project components
- Nominate and classify issues that are potentially important in the assessment of impacts and for decision-making in relation to the project
- Identify potential impacts in the construction and operation phase by conducting an impact analysis on the physical, biological, land-use and socio-economic environments, and the interactions among them.
- Evaluate the impact significance of the project components and activities on the environment and society
- Establish that criteria on which the assessment of the impacts will be based on
- Develop a matrix as a means to present assessment of the impacts graphically, and specify and discuss positive or negative impacts, direct or indirect impacts, reversible or irreversible impacts, short-term and long-term, and cumulative avoidable impacts on the environment and society

(9) Develop an Environmental and Social Management Plan

After the evaluation of impacts, the consultant will establish strategies to reduce or eliminate potentially negative outcomes. This includes avoiding negative impacts where possible, and employing mitigation measures for those that are unavoidable. Issues related to the project location, equipment, and surveys conducted previously will be categorized according to how critical the impact is. These strategies will be formulated in an Environmental and Social Management Plan (ESMP) This process entails:

- Detailing the management measures, roles, and responsibilities for implementation, supervision, reporting and cost
- Indicating parameters to be monitored, their location, frequency of monitoring, national and World Bank Group EHS Guidelines reference standards or thresholds, roles and responsibilities and cost
- Assessing the ability of the implementing agencies to implement the proposed environmental management and monitoring plan
- Developing the institutional arrangement and capacity building programs necessary to ensure successful implementation

(10) Conduct the Second Public Consultation Meetings to Involve the Stakeholders of the Project in the ESIA/
- Select appropriate venue for public consultation meeting.
- Manage logistics of the meetings, including participants and thorough documentation of the event.
- In addition to making a public announcement, invite stakeholders of the project, and potential interested parties including those relating to alignment of the pipeline, address the same in the environmental assessment and provide opinion on project design wherever relevant. Invited stakeholders should have balanced representation of women, NGOs, local community groups, youth and other vulnerable groups (e.g. handicapped, elders….etc.)
- Provide attendees with a summary of the project, and briefing on the impacts and analyses developed in non-technical Arabic and English language.
- Document stakeholders’ concerns and issues raised. The consultant will document all the consultations including the issues raised and actions planned/taken and justifications for no action wherever relevant.
- Assess the public's perception to the proposed project.
- Document the means by which the public engagement was used in the identification of the issues, and how it affected the project.

The final version of the ESIA report will summarize and incorporate the comments raised in the second public consultation meeting. The final report will discuss how the public concerns that are raised during different stages of consultations have been considered and addressed in the project.

(11) Submit a Draft ESIA Report for Review

Based on the results of the public consultation, the consultant will finalize the draft ESIA report and submit it to the client for review.

(12) Submit Final ESIA Report

Based on the comments received from GASCO, the Consultant will perform the following tasks:
- Revise the Draft ESIA report in accordance with comments and concerns received
- Finalize the ESIA report and present the final ESIA report to GASCO
- Submit the Final Report to the Client for public disclosure

A.6.2 Due Diligence
The due diligence activities will include, but not limited to, the following activities:
1. Ensure environmental compliance of the above mentioned associated facilities - prior to construction - to the national Egyptian environmental legislations;
2. Review and comment on the existing Environmental and Social Impact Assessment studies which were prepared for the offshore gas field and its linked facilities;
3. Review the Environmental and Social Management and Monitoring Plans and assess its implementation;
4. Review the environmental reports (registers) prepared by WDGC which is currently in operation, and highlight key environmental and social issues and how they are being managed and mitigated
5. Identify key stakeholders and conduct interviews with them to determine and assess any environmental or social impacts raised by them as of key importance;
6. Identify mitigation measures or actions taken to mitigate any environmental non-compliance;
7. Assess and opine on the monitoring program and the preventive and major maintenance program; and finally
8. Assess if existing facilities are operating in conformity with good standards and industry practices.

In addition, the consultant shall investigate the following:

**Permits and Licenses**
- Does the associated facility (s) have a nationally approved Environmental and Social Impact Assessment study?
- Does the associated facility (s) have all the required environmentally related permits (such as: environmental, construction permits, disposal of solid and hazardous wastes, traffic permits, civil defense,…etc.)
- Are the current operations being conducted in compliance with the permits?
- Verify that all major permits have been obtained and are in full force and effect, and identify what major permits have not obtained, if any, and comment from a technical perspective, on the likelihood that they may or may not be able to obtained in a timely manner

**Violations, fines and complaints**
- Are there any outstanding violations or pending fines or penalties on the facility? (such as air emissions, noise, disposal of wastewater, disposal of wastes…etc.)
- Does the facility have a history of violations or penalties?
- What is the facility’s relationship with regulatory agencies and the local community?
- Does the facility maintain and regularly update an environmental register?

**Waste disposal**
- What are the current and historical methods of waste disposal?
- What offsite facilities have been used for waste disposal?
- Are the offsite facilities recognized as “formal” or legally accepted site?
- Does the facility identify and separate hazardous wastes from domestic wastes?
- How are the hazardous wastes treated?

**Spill control and management**
- What are the current and historical methods of controlling oil spills not only from storage tanks and pipelines?
- How many and what kind of spills have occurred and are there records to document satisfactory remediation?
Institutional arrangements for Environmental and Social Management

- Does the facility have an environmental department/unit/officer who is responsible for ensuring environmental compliance?
- Does the person in charge for environmental affairs have sufficient capacity to perform his/her duties?

Land acquisition

- Amount of land acquired by each of associated facilities
- Time of land acquired
- Ownership and land use of acquired land (for instance, vacant state owned land, state owned land with occupancies and uses, private owned land with legal titles, land used by tenants)
- Approaches of land acquisition (for instance, transferring by government at free of charge, willing buy and willing seller approach, eminent domain)
- Documentation of land acquisition
- Number of people affected
- Compensation value and payment if eminent domain is used for land acquisition
- The method in determining the compensation value and willing buy-willing seller price
- Any pending issues or unresolved complaints if there is any

A-7 Deliverables

A.7.1 ESIA Report
The following reports reflect the main outputs expected from the study:

1. Inception Report (including the work methodology, approach, detailed work plan and results of the scoping phase)
2. Draft Environmental and Social Impact Assessment (ESIA) Report
3. Final Environmental and Social Impact Assessment (ESIA) Report

A.7.2 Due Diligence Report

- An inception report, (maximum three pages) outlining the approach/methodology and execution program/timetable.
- The final report, which shall include the (i) brief description of the associated facility, (ii) evaluation of the overall performance of the associated facility, (iii) key findings and recommendations and (iv) the raw data collected and supporting documents (official permits, copies of environmental records, photographs, videos…etc.) as an annexes.

A-8 Timeframe

The following is the proposed timeline for the expected project deliverables. The Consultant should prepare and submit a detailed work plan showing how the proposed dates will be met.

A-8.1 ESIA Report

1. Inception Report: 0.5 Month from Contract Signature
2. Draft ESIA 2 Months from Contract Signature
3. Final ESIA 4 Months from Contract Signature
A-8.2 Due Diligence Report

1. Draft Report
   Three weeks from Contract Signature
2. Final Report
   Six Weeks from Contract Signature

A.9 Organizational setup of the assignment and staffing.

It is expected that the Consultant will establish a strong core team of specialists, which should include Arabic-speaking personnel. The consultant is solely responsible for proposing an organizational setup of the assignment and the staffing / team composition which is appropriate for carrying out the assignment, fulfilling the Terms of Reference and producing the required outputs. The client has nevertheless some general ideas and suggestions about the organizational setup which reflect the client's knowledge of the local situation and desired outcomes, as follows:

It is envisaged that an experienced environmental or social specialist would serve as the Project Team Leader. The Consultant should complement the skills of the core team with other social, environmental, technical, and institutional specialists with experience in Egypt and/or internationally. Social and environmental specialists who have previous experiences working with the World Bank’s social safeguards requirements and prior experience in preparing ESIA, ESMFs, RPFs, and RAPs will be an advantage. The team is expected to provide pragmatic and insightful planning to complete the above scope of work.

Primary skills and specialties of the team are suggested below. The Project Team Leader should have minimum of 8 years professional experience working in environmental and social assessment of projects, ability to work with government officials, transport / road and environmental specialists, familiarity with environmental and social assessments for equivalent size projects, and a proven track record in managing and coordinating a diverse group of professionals. The team shall include specialists who are highly familiar with specifying detailed mitigation measures, focused training programs, and structured monitoring programs. The overall proposed Project Team should be able to cover the areas listed below:

- Environmental assessment
- Environmental Engineering
- Oil and gas engineering
- Air emissions and dispersion
- Terrestrial ecology / natural habitats
- Environmental health and safety
- Social Science and social safeguards.
TOR Appendices
Appendix I: Technical details of the proposed gas pipeline

Pipeline Aim:
Transferring rich gas from the Raven gas fields in north Alex to the western desert gas complex in Alexandria to extract the rich components.

Pipeline data:
- Length: (67-70) km
- Diameter: 28”
- Material: API 5L X 56
- Maximum operating pressure: 70 bar
- Minimum operating pressure: 40 bar
- Pipeline Capacity: 17 MMSCMD

Route Path:
The path starts from Rashid Petroleum Company 1 km away from the Mediterranean sea coast and then it deviates south till km (1), then deviates southwest parallel to a canal till km (3.800) at the intersection of the canal with the international coastal road then it deviates west parallel to the international coastal road from the northern side parallel with ADCO - Elmadya pipeline 20” for a distance of 14 km and passes through ADCO lake and fish farms for a distance 7 km from km (18.800) until km (25.700) and intersect with (petroleum companies road – Abokeer Rasheed road and railway - a number of canals and drains) and then intersects with the international coastal road at km (32.500), extends parallel to it from the south side and intersects with ElMahmudiyah Canal at km (34.400), then intersects with Cairo / Alexandria agricultural road and railway at km (35.400), it continues parallel to the road till km (42.500) where it cuts New Mariout canal and Aldashody drain, then it deviates southwest parallel to the canal and the drain from the western side till km (50.200), where it intersects with Elemoom drain, a canal and an asphalt road, then extends parallel to Elhares elomomy drain from the southeast till km (57.300), where it cuts Elhares elomomy drain and Elhares drain no. (1), then it extends parallel to and extends parallel to Elhares drain no. (1) from the south side and parallel to Nubaria navigational canal from the south-east side inside farmlands till km (66.500) where it deviates West cutting Nubaria navigational canal, West Nubaria drain and Railway till it reaches the end inside the Western desert gas complex of the Egyptian natural gas Company (GASCO).

Crossings:
19 asphalt roads - 13 canals & drains – 1 railway
Appendix II: Proposed Annotated Table of Contents of ESIA Report

Executive Summary – Non-Technical Summary
An executive summary will be prepared to be used as a stand-alone document in a manner that can be accessible to non-technical readers both in English and Arabic languages.

Chapter 1 – Introduction
The section will include the following:
- Purpose of the terms of reference
- Identify the development project to be assessed
- Explain the executing arrangements for the environmental and social assessment
- Background information which provides a brief description of the major components of the proposed project
- Statement for the project need and objectives it is intended to meet
- Project implementation strategy
- A brief history of the project including alternatives considered
- Project current status and timetable
- Identify associated projects
- Summary of the general scope of ESIA

Chapter 2 – Policy, Legal and Administrative Framework
This section will provide an overview of the pertinent regulations and existing codes of practice and standards governing environmental and water quality, health and safety, protection of sensitive areas, siting, land use control, etc. at the international, national, regional and local levels

The section will include the following:
- Permits required to construct and operate the proposed pipeline.
- Relevant environmental policy, legal and administrative issues
- Requirements and scope of the ESIA
- Regional development planning
- International and national environmental standards and guidelines

Chapter 3 – Description of the Proposed Project
This section will provide a description of the project, using maps at appropriate scale when necessary. This section will include the following sections:
- Project Infrastructure
- Project strategic approach and objective
- Prioritization methodology and technical design of the pipeline
- Project main components (including location, general layout, size, capacity, etc.)
- Description of the pre-construction and construction phase
- Description of the operation and maintenance phase
- Project schedule
- Operational management and staffing
- Support facilities and services
- Required offsite facilities
- Project life span
- Institutional arrangement proposed
Chapter 4 – Description of the Environment and Social Context

This section will assemble and evaluate data on the relevant environmental and social characteristics of the project areas. It will include information on any changes anticipated before the project commences, including physical, biological and socio-cultural environments. The presented data will be relevant and commensurate with the project. Information of the existing physical, biological, land-use and socio-economic environment will include, but will not be limited to the following:

- Geology, soils, existing terrain including local topographic and ground surface features, etc.
- Air quality including pollution levels, pollution causes, particulate emissions from stationary or mobile sources, precipitation, etc.
- Water quantity and quality including descriptions and maps of the existing water resources within or near the boundaries of the project, underground water resources, drainage, and hydrological characteristics.
- Climatic conditions including data from the nearest meteorological station including prevailing climatic conditions, seasonal variations, wind direction, velocities, ambient temperatures, relative humidity, and climate-related extreme events, etc.
- Noise levels including the existing noise sources, duration, frequency and levels of noise sources.
- Land-use patterns in the region including areas that can be combined and reclaimed within the development needs, area of future extension, archaeological and historical preserved or unexamined areas, valued aesthetic locations and areas used by the community.
- Baseline social data, that includes:
  - Characterize the communities in terms of population, gender, health, education, leadership, households, land tenure, occupations, incomes and other relevant factors such as poverty.
  - Determine rural community prospective on previous and ongoing sanitation and solid waste management system development.
  - Discuss community conditions and readiness for accepting and participating in the projected sanitation and solid waste management systems.

Chapter 5 – Analysis of Alternatives

This section will describe alternatives that were examined in the course of developing the proposed project and identify other alternatives, which would achieve the same objectives. The concept of alternatives extends to siting, design, technology selection, construction techniques and phasing, and operation and maintenance procedures. It will compare alternatives in terms of potential environmental and social impacts and suitability under local conditions. This includes, for example, alternative ways of meeting the electricity demand, alternative technologies, alternative fuels, alternative heat rejection systems, alternative water supply/intake, engineering and pollution control equipment alternatives, alternative sites, etc.

The section will include the following:

- Current Situation (“No Action” option).
- Alternative alignments to avoid/minimize damage to environmentally sensitive areas.
- Alternative sites for associated facilities (to improve public safety as well as to reduce public interference on such facilities).
- Provide opinion on alternative construction technologies.

Chapter 6 – Environmental and Social Impact Assessment

A description of the significant positive and negative environmental impacts will be mentioned in this
section during both the construction and operation phases. This section will also discuss the positive and negative social impacts that the project might have on communities in general and on various sub-groups (women and men, the poor, youth) in particular. Recommendation will be provided for ways to address negative social impacts.

The section will include the following:

- Environmental Impact Process
- Air Quality
- Aquatic Environment
- Noise and Vibration
- Flora and Fauna
- Land Use, Landscape and Visual Impact
- Soils, Geology and Hydrogeology
- Traffic
- Socio-Economic Effects, Quality of Life values
- Archaeological, Historic and Cultural Heritage
- Natural Disaster Risk
- Major Accidents and Hazards
- Solid Waste Management
- Public Health
- Occupational Health and Safety
- Associated Infrastructure

**Chapter 7 – Mitigation of Environmental and Social Impacts**

Specific details of mitigation measures during design, construction and operation phases will be proposed and delineated here. Compensation for affected parties will also be addressed here thoroughly.

The section will include the following:

- Mitigation Measures During Design and Construction
- Mitigation Measures During Operation
- Compensation for Affected Parties (cross referenced to the prepared RAP studies)

**Chapter 8 – Environmental Mitigation, Management and Monitoring Plan: Environmental and Social Management Plan (ESMP)**

This section will provide details on the measures to be implemented during both construction and operation phases of the project. In particular, this section will:

- Outline the procedures for the environmental and social assessments
- Ensure an appropriate level of consultation and disclosure takes place
- Develop screening procedures for project assessment
- Ensure systems and resources are in place for the successful monitoring of the management program
- Possible costs of the mitigation and compensation measures will be included
- Institutional capacity issues will be addressed

The ESMP will address the following:

- Environmental and Social Guidelines and Procedures: will include the guidelines and procedures to be used for the application of the proposed screening procedures and mitigation measures during the construction and operation phases in the various districts and areas of implementation.
• Monitoring Program: a detailed plan to monitor the implementation of mitigating measures and consciously monitor the impacts of the project during construction and operation phases in the various districts and areas of implementation.

• Institutional Arrangements: this section will review the authority and capability of the institutions at local, regional and national levels and recommend steps to strengthen or expand them so that the management and monitoring plans in the environmental and social assessment can be implemented. The costs and sources of funds for the proposed measures and any training requirements for capacity building in the field of environment and social safeguards will be specified.

The ESMP will be presented in a tabular format as follows:

A. Mitigation

<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Potential Environmental Impacts</th>
<th>Proposed Mitigation Measures</th>
<th>Responsibility of mitigation</th>
<th>Responsibility of direct supervision</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Phase</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Operational Phase</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

B. Monitoring

<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Impact</th>
<th>Monitoring indicators</th>
<th>Responsibility</th>
<th>Frequency/Duration</th>
<th>Location</th>
<th>Methods</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction phase</td>
<td></td>
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<tr>
<td>Operational Phase</td>
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</tbody>
</table>

C: Institutional setup and Capacity development requirements

• Proposed institutional structure for environmental management, monitoring and reporting.
• Capacity development requirements (e.g. required equipment, training...etc.)

Chapter 9 – Consultation and Disclosure: Inter-Agency Coordination and Public/NGO Participation

This section will describe the process that will result in:

• Coordinating the ESIA with other government agencies
• Obtaining views of local NGOs and affected groups
• Proper records keeping and timely disposition of records

The following two consultations will be documented in this section:

• First Public Consultation (Scoping Session) to discuss and finalize the scope of ESIA
• Second Public Consultation after the draft ESIA report is prepared

The section will include the following:
• Introduction and General Approach
• Consultation Methodology
• First Public Consultation (Scoping Session)
• Second Public Consultation
• Future Consultation and Disclosure
• Ongoing Facility for Public Consultation and Disclosure

References
Appendices