



Environmental and Social Action Plan

Delta Sunrise Project – 150MW Power Plant in
Sapele Delta State, Nigeria



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DOCUMENT CONTROL PAGE

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Date: 25/10/2016

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1.0 INTRODUCTION

Proton Energy Limited (PEL) herein referred to as the *proponent* intends to construct and operate a Gas Turbine Power Plant in Sapele, Delta State, Nigeria herein referred to as the “*Delta Sunrise Project*” (DSP). DSP is planned in two phases with first phase of 150MW capacity with an additional 350MW in second phase of development.

The DSP is aimed at achieving improved power generation capacity and sustainability in the Nigerian energy sector.

1.1 Background Information on ESAP Development

PEL an independent power plant (IPP) developer across Sub Saharan Africa, with a particular focus on Nigeria applied for licence to construct and operate a power plant in 2013 from the Nigerian Electricity Regulatory Commission (NERC).

During same application period, PEL embarked on feasibility studies of the project, including the conduct of an Environmental and Social Impact Assessment. In March 2015, PEL was successful in receiving an approval/licence from NERC on the development of the DSP. In January same year an interim approval was received from the Federal Ministry of Environment (FMEnv) on the ESIA. A final approval and Environmental Impact Statement (EIS) on the ESIA from the FMEnv was issued on the 29th of October, 2015.

In line with requirements of project lenders and financing stakeholders, PEL embarked on updating the ESIA to meet requirements of the International Finance Corporation (IFC), Overseas Private Investment Corporation (OPIC) and the World Bank. In addition, an Environmental and Social Management System (ESMS) in line with requirements of IFC Performance Standard 1 was also developed for the DSP.

The ESIA and accompanying ESMS documents have been subsequently reviewed by the World Bank, OPIC and other experts as part of the pre-investment process. To ensure the DSP complies with international E&S assessment and management standards like that of the IFC and other stakeholders, an Environmental and Social Action Plan (ESAP) has been developed.

This document, thus presents the ESAP developed for the DSP as part of international investment requirements.

1.2 Corporate Profile of Proton Energy Limited

PEL was established by industry professionals in 2011 as an independent power plant developer to with its footprint in the Nigerian Power Sector. PEL plans to develop three (3) Independent Power Plants in Nigeria with a total installed capacity of 1,500 MW over the next five years, contributing positively towards national goal of generating 20,000 MW by 2020.

PEL is a “Power Africa Partner”, leveraging partnerships towards improving access to power in Sub-Saharan Africa. Power Africa is a United States-led initiative to increase the number of people with access to clean and efficient energy in Africa.

The day-to-day affairs of PEL is managed by the Vice Chairman/Chief Executive Officer (CEO). He is supported by the Chief Finance Officer (CFO) and Executive Director, Corporate and Legal.

The issues related to environmental and social management of the Project is overseen by the Health, Safety and Environment (HSE) Officer, who is also the Project Manager. There is a Human Resources (HR) Manager to handle workers-related matters as well. PEL’s project development organogram is presented in **Figure 1.0** below, while the ESHS organogram for construction phase is in **Figure 2.0**.

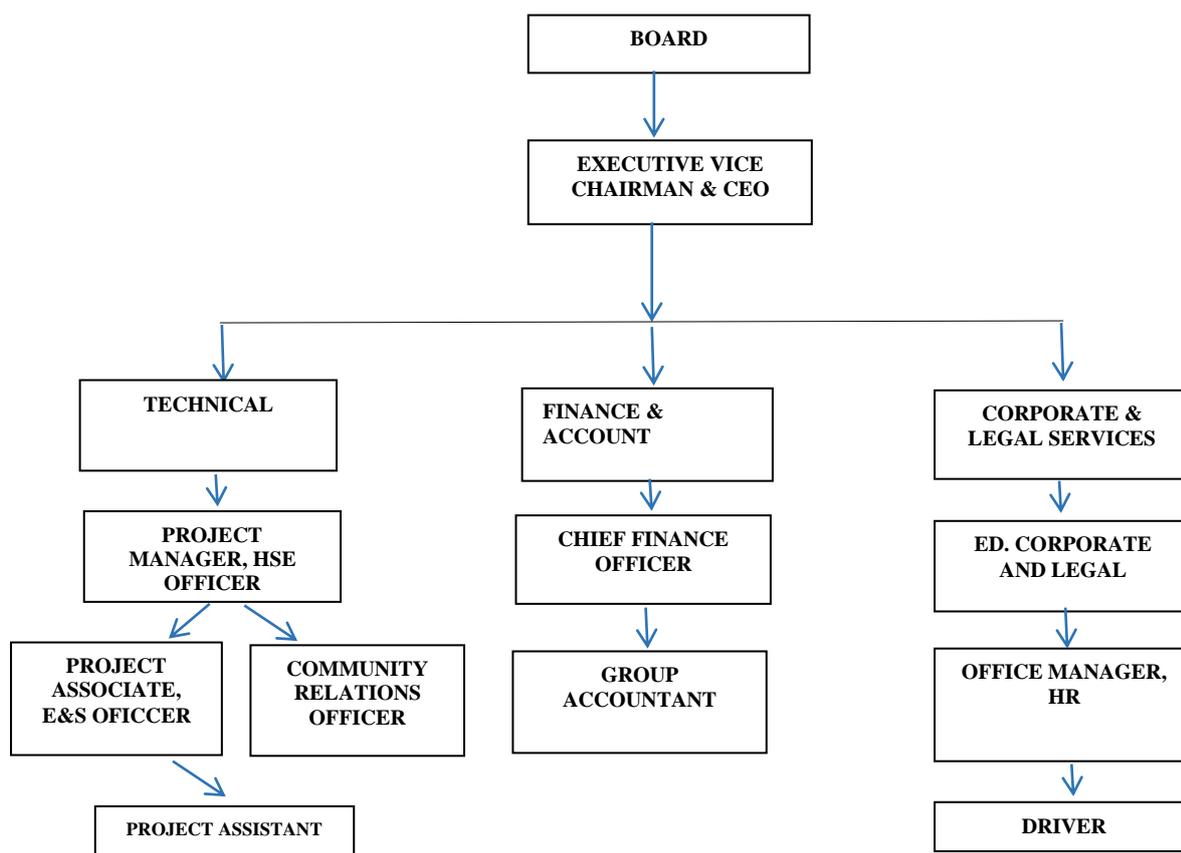


Figure 1.0: PEL Organogram

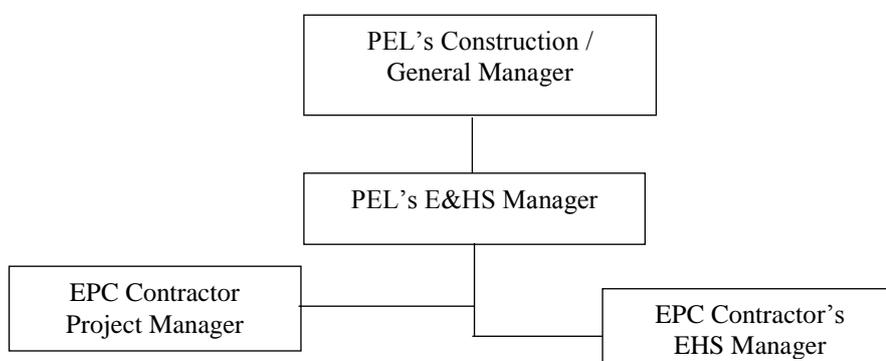


Figure 2.0: Construction EHS Organogram

1.3 Overview of Delta Sunrise Project

The proposed DSP would be located in Ogorode Community, in Sapele Local Government Area (LGA) of Delta State, Nigeria. The project will be strategically situated adjacent to two existing power plants; the National Integrated Power Project (NIPP) Plant and the Sapele Power Plant. This location provides advantageous synergy of existing facilities and footprint reductions relating to gas supply, transmission network and other infrastructure.

The project will be developed in two phases. The first phase will be a 150 MW Open Cycle Gas Turbine (OCGT). The second phase would be expanding the 150 MW to 500MW using a Combined Cycle Gas Turbine.

The main project components of the first phase, include;

- construction of 150 MW OCGT power plant;
- gas transmission pipeline (1.5 km) connecting to existing gas supply pipeline network;
- a 1 km evacuation line connecting to existing Sapele 330/120 kV switchyard substation ;
- Other facilities to be installed would include electrical and administrative building and internal road network.

1.4 ESAP Objectives

An Environmental and Social Action Plan is a management tool that identifies the actions required to close out E & S issues (gaps) identified during an environmental and social assessment or due diligence audit of major capital developments. It assures overall environmental and social sustainability throughout the investment period and lifespan of the project

The key specific objectives of the DSP ESAP are listed below:

- i. Identify key compliance gaps/issues of the Delta Sunrise Project ESIA and ESMS documents in line with requirements of the IFC, 2012;
- ii. Assess and rank importance of the identified gaps/issues;
- iii. Highlight corrective actions to close-out each of the identified gaps; and
- iv. Develop an action plan table detailing the key deliverables, responsibilities, timelines, budgetary requirements, etc. of each of the gaps/issues;
- v. Serve as post investment covenant commitments to manage E&S gaps of the Delta Sunrise Project.

1.5 Methodology

The ESAP has been developed primarily from review comments (highlighting key compliance gaps) from the World Bank and OPIC experts. In addition, a review of the ESIA and ESMS document by independent experts lead to further identification of the E&S gaps. The participating AquaEarth Consulting independent experts are highlighted below.

| Name | Specialisation | Role in ESAP Development |
|-----------------------------|---|--|
| Kaine Edike Adewumi | Environmental and Social Management Systems and Compliance Audits | <ul style="list-style-type: none"> • Overall ESAP Co-ordination • Technical Review |
| Oluwashina Akinsanmi | Social Assessments and Sustainability Reporting | <ul style="list-style-type: none"> • ESAP Reporting; • Compliance Gaps Assessment |
| Enefe Ameze | Health Safety and Environment Engineering | <ul style="list-style-type: none"> • Process Review; • ESAP Report Drafting |

In documenting the ESAP, a kick-off meeting was held between representatives of AquaEarth Consulting and PEL. This was followed by a desktop review of available gaps and review of all E&S related reports/documents associated with the Delta Sunrise Project.

An evaluation of each identified gaps in alignment with the corresponding IFC E&S Performance Standards Requirements was also carried out. Preparation of this final ESAP document was the final phase of the environmental and social action plan development.

2.0 INSTITUTIONAL FRAMEWORK

Environmental and Social assessments and management are guided principally by international conventions, protocols, statutes, standards, guidelines and also national/local regulations, laws and edicts.

However, for the purpose of the DSP ESAP development the following institutional frameworks are reviewed. Other relevant compliance frameworks and/or guidelines have been detailed in the DSP ESIA report.

- International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability, 2012;
- Overseas Private Investment Corporation (OPIC) Environmental and Social Policy Statement, 2010;
- World Bank Environmental, Health and Safety Guidelines for Thermal Power Plants, 2008;
- Federal Ministry of Environment Environmental Impact Assessment Act of 1992 Revised 2004;

2.1 IFC Performance Standards in Environmental and Social Sustainability, 2012

The IFC Performance Standards is an international regulatory framework in respect of environmental and social sustainability focused on environmental and social management; labour and working conditions; workplace health & safety; community health, safety and security; land acquisition and involuntary resettlement; relations with indigenous communities, biodiversity and natural resources conservation and; preservation of cultural heritage. The performance standards are designed to help manage and improve a business' environmental and social performance through a risk and outcomes based approach.

The standards are non-binding to independent organisations but are mandatory for such organisations that seek any form of project funding/lending through financial institutions that are allegiant to the requirements of IFC and the World Bank. PEL as a result of its lending obligations will be required to comply with key requirements of the IFC Performance Standards.

For the Delta Sunrise project, **Box A** below highlights the IFC Performance Standards and their applicability to the project. In addition the status of the project compliance to each triggered standard is also highlighted.

Box A: Project Alignment to IFC Performance Standards, 2012

| IFC Environmental and Social Performance Standard | Project Applicability |
|---|---|
| <p>Performance Standard 1 ASSESSMENT AND MANAGEMENT OF ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS Underscores the importance of identifying E&S risks and impacts, and managing E&S performance throughout the life of a project.</p> | <p>As a Power Plant, the project has environmental and social aspects which may pose potential E&S risks and/or impacts. These include air emissions, engagement of labour, wastes and effluents etc. IFC suggest projects where E&S aspects exist, should possess systems for assessing and managing potential E&S risks and impacts. Therefore, PS 1 is applicable.</p> |
| <p>Performance Standard 2 LABOR AND WORKING CONDITIONS Recognizes that the pursuit of economic growth through employment creation and income generation should be balanced with protection of basic rights for workers</p> | <p>Workers (permanent and temporary) would be engaged to carry out various duties to construct and operate the project. it is therefore necessary for the Project to maintain appropriate labour and working conditions for these workers. As such, PS 2 is applicable.</p> |
| <p>Performance Standard 3 RESOURCE EFFICIENCY AND POLLUTION PREVENTION Recognizes that increased industrial activity and urbanization often generate higher levels of air, water and land pollution, and that there are efficiency opportunities.</p> | <p>Construction works are likely to generate wastes during the construction phase. In addition operational effluent discharges including associated emissions may have pollution potentials. In addition, the DSP will depend on resources / raw material inputs such as natural and manufactured resources. PS3 is triggered.</p> |
| <p>Performance Standard 4 COMMUNITY HEALTH, SAFETY AND SECURITY Recognizes projects can bring benefits to communities, but can also increase potential exposure to risks from incidents, structural failures, and hazardous materials.</p> | <p>Though the project is specifically beneficial to PEL and stakeholders, some beneficial impacts are also expected to the community e.g. employment as well as negative impacts e.g. fire and explosion risks.</p> |
| <p>Performance Standard 5 LAND ACQUISITION AND INVOLUNTARY RESETTLEMENT Applies to physical or economic displacement resulting from land transactions such as expropriation or negotiated settlements.</p> | <p>This PS is triggered only based on short-comings of the Nigeria land use act of 1978. However, the 27.4 hectares of land acquired by PEL was on a willing seller and willing buyer arrangement. In addition, prior to and as at time of purchase there were no livelihood activities and/or physical structures within same land thus ruling out the need for a LRP or an RAP. PEL has however planned development of a Land Acquisition and Management Framework to guide and direct all land acquisition activities for the company.</p> |
| <p>Performance Standard 6 BIODIVERSITY CONSERVATION AND SUSTAINABLE MANAGEMENT OF LIVING NATURAL RESOURCES Promotes the protection of biodiversity and the sustainable management and use of natural resources.</p> | <p>The construction of both phases of the DSP project is expected to affect vegetation cover and some level of ecosystem services in the area of influence. In addition, the project boundary is situated about 7km away from a protected area. These aspects suggest the PS6 is triggered</p> |
| <p>Performance Standard 7 INDIGENOUS PEOPLES Aims to ensure that the development process fosters full respect for Indigenous Peoples.</p> | <p>There are no indigenous peoples in Nigeria according to the definition by the IFC and UNESCO and thus this PS is not triggered.</p> |
| <p>Performance Standard 8 CULTURAL HERITAGE Aims to protect cultural heritage from adverse impacts of project activities and support its preservation.</p> | <p>As at time of the ESIA reporting and stakeholder consultation process no tangible or intangible cultural artifact (this includes shrines, graves, etc.) has been identified within the project area. It is further expected from history of the area that non-is expected, thus not triggering this PS.</p> |

2.2 OPIC Environmental and Social Policy Statement, 2010

The Environmental and Social Policy Statement outlines how OPIC will put into practice its commitment to the development goals through its environmental and social review and monitoring processes. Specifically OPIC will ensure through its processes that projects receiving OPIC support:

- Are environmentally and socially sustainable
- Are compatible with low and no-carbon economic development.
- Respect human rights, including the rights of Workers and the rights of affected communities.
- Avoid negative impacts and if such impacts are unavoidable properly mitigate or compensate for the impacts.
- Provide timely information regarding its activities to Project Affected People
- Are undertaken in countries that are taking steps to adopt and implement laws that extend Internationally Recognized Worker Rights

Finally, this Policy Statement adopts, as a standard for the environmental and social review process, the International Finance Corporation's Performance Standards on Social and Environmental Sustainability, and Industry Sector Guidelines and any subsequent revisions to those standards.

2.3 World Bank EHS Guidelines for Thermal Power Plants, 2008

The World Bank Group General Environmental, Health and Safety Guidelines as well as the Industry specific EHS Guidelines for Thermal Power Plants and EHS Guidelines for Electric Power Transmission and Distribution are applicable to the Project. The EHS Guidelines are technical reference documents with industry-specific examples of Good International Industry Practice (GIIP) relating to EHS issues. The Guidelines contain information on cross-cutting environmental, health and safety risks potentially applicable to all industry sectors. Therefore, the EHS Guidelines were also considered relevant and applicable to the project's operational activities.

The sections of the EHS Guidelines that are substantially relevant to the Company's operations are listed as follows:

Environmental

- Air emissions
- Energy efficiency and Greenhouse Gas emissions
- Water consumption and aquatic habitat alteration
- Effluents
- Solid wastes
- Hazardous materials and oil
- Noise

Occupational Health and Safety (OHS)

- Non-ionizing radiation
- Heat
- Noise
- Confined spaces
- Electrical hazards
- Fire and explosion hazards
- Chemical hazards
- Dust

Community Health and Safety

- Water Consumption;
- Traffic Safety.

2.4 Federal Ministry of Environment EIA Act, 1992 Revised 2004

This law requires that EIA is carried out prior to implementing any development projects. EIA is mandatory for certain project types based on the sector, size of the project and environmental sensitivities. In accordance with the Federal Ministry of Environment (FMEnv) EIA Procedural Guidelines, a full EIA study is required for a power plant.

In addition, as related to implementation of an ESAP the final phase prior to Environmental Impact Statement is the conduct of an Impact Mitigation Monitoring. This exercise is a monitoring tool used by the FMEnv to assess Proponents compliance to mitigation actions outlined in the EIA report submitted for approval.

3.0 ACTION PLAN

This section provides the identified E&S compliance gap of the Delta Sunrise Project. The gaps have been identified and presented strictly against the requirements of the IFC performance standards of 2012.

3.1 Importance Evaluation of Gaps

After identifying the gaps based on review comments by lenders experts, independent expert reviews of the ESIA and ESMS document, the gaps were further subjected to importance evaluation using the matrix below:

The identified gaps are categorized into importance levels based on associated risks of the gaps to environmental and social components as well as potential to delay project timeline

| Definition | |
|-----------------------|---|
| Gap Importance | <p>Low</p> <ul style="list-style-type: none"> No associated E&S risks or the associated risks are negligible or insignificant Risks or gaps have the potential to delay timelines for less than 1 month |
| Gap Importance | <p>Medium</p> <ul style="list-style-type: none"> There exist E&S risks of not addressing the gap and this risk has moderate impact Risks or gaps have the potential to delay timelines for 1 to 3 months |
| Gap Importance | <p>High</p> <ul style="list-style-type: none"> The associated risks of not addressing the gap is of major significance Risks or gaps have the potential to delay timelines for over 3 months |

Note: the risks to environmental and social components have been qualitative for the purpose of this ESAP and based on expert judgements from previous experiences and trainings..

3.2 E&S Action Plan Table

The environmental and social action plan table is presented below.

| S/N | Compliance GAP | Importance | Corrective Action | Key Approach / Makeup | Responsibility | Deliverables | Budget (USD) ¹ | Timeline | Monitoring /Reviews |
|--|------------------------------------|------------|--|--|----------------------|---------------------|---------------------------|-----------------------------------|---|
| IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts | | | | | | | | | |
| 1 | Geotechnical study of project site | High | Undertake a geotechnical study of the project site in consistent with best practice methodology and interpretation | <p>The prepared geotechnical study report should include the following:</p> <ul style="list-style-type: none"> • Overview of all subsurface exploration data, including subsurface soil profile, exploration logs, laboratory or in situ test results, photographs, and ground water information; • Description of subsurface soil, rock, and groundwater conditions • Lab soil classification tests such as natural moisture content, and gradation, performed on selected representative samples to verify field visual soil identification • Interpretation and analysis of the subsurface data • Specific engineering recommendations for design • Study or data interpretation limitations (if any) • Recommended geotechnical special provisions | Head, Technical Unit | Geotechnical Report | 50,000 | Four months prior to construction | Once during Investigation |
| 2 | Emergency Response Plan | Medium | Update existing Emergency Preparedness and Response Plan (EPRP) commensurate with the potential risks and impacts of the Project | <p>The EPRP Should capture the following:</p> <ul style="list-style-type: none"> • Identification of areas where accidents and emergency situations may occur • Clear and specific emergency response procedures • Training programme for assigned emergency response teams and the frequency of the training • Procedures for interaction and collaboration with government authorities in charge of emergency response e.g. Federal Fire Service and Delta State Fire Service • Procedures for interaction and collaboration with project affected communities and the nearby companies around the project area (e.g. Ogorode community) • Emergency contacts and communication systems (such as emergency notification procedure) • Identification of evacuation routes and muster points (i.e. Facility Evacuation Plan and diagrams) • Retainership agreement with nearby medical centre around the project area with regards to emergency situations • Emergency drills (e.g. fire drill, spill drill) and its frequency • Roles and responsibilities • Procedures to communicate the ERPR to workers (employee, contractor and subcontractors), PAPs and sensitize them on it • Procedures to station emergency equipment and facilities (e.g., | HSE Officer | EPRP Report | 3,500 | One month before construction | Monthly Drills during construction and operations |

¹ The budgetary estimates contained in the action plan table were primarily based on consultants' expertise, previous project experiences, project case and average industry rates in Nigeria.

Environmental and Social Action Plan

| S/N | Compliance GAP | Importance | Corrective Action | Key Approach / Makeup | Responsibility | Deliverables | Budget (USD) ¹ | Timeline | Monitoring /Reviews |
|-----|---|------------|--|--|--|--|---|--|---------------------|
| | | | | first aid stations, firefighting equipment, spill response equipment, personal protection equipment at strategic locations | | | | | |
| 3 | Annual evaluation of occupational health and safety (OHS) hazards | Low | Develop and maintain a programme for periodic evaluation of occupational health and safety hazards of the project | The programme shall cover: <ul style="list-style-type: none"> Hazard assessments for the project using internationally recognized methodologies such as Hazardous Operations Analysis (HAZOP) and Hazard Identification (HAZID). Internal and external audits (aligned to requirements of OHSAS 18001:2007) to evaluate the effective management of occupational health and safety hazards | HSE Officer | OHS hazards evaluation programme and Audit Reports | 2,000 | 4 months into operations | Annually |
| 4 | Training and Awareness Plan | Medium | Develop and implement a training and awareness plan to address knowledge and skills gaps in the implementation of the project's ESMS, programs, management plans stipulated in the ESIA and the requirements in the ESAP | The approach of the training and awareness plan should include the following: <ul style="list-style-type: none"> Training policy Identification of E&S training needs for the project personnel (including contractors and sub-contractors performing task for the implementation of management system) Duration of training sessions of training identified, frequency of training and syllabus Procedures for verification of training program to ensure consistency with the Project/PEL's policy, regulatory requirements and investors' requirements Documentation of training received Evaluation of training received to determine its effectiveness. The evaluation of personnel competence and periodicity of evaluation after several trainings In cases of outsourcing, training plan should indicate procedures to address the skill gaps of contractors and ensure competency to perform the work | HSE Officer and HR Manager | Training and Awareness Plan | 0 (training plan can be developed in-house) | One month prior to construction and annually during operations | Annual Audits |
| 5 | Stakeholders' Engagement Plan | High | Develop and maintain a stakeholder engagement plan (SEP) in line with IFC PS 1 requirements | The SEP should document the following: <ul style="list-style-type: none"> Project description (including maps, diagrams) objectives and purpose of the plan Legal and regulatory framework Summary of previous project-related engagements with documented evidence Identification, characterization and priority of stakeholders Stakeholder mapping Procedures for identifying legitimate stakeholder representatives Engagement principles Grievance redress mechanisms Periodicity of engagement with stakeholders Engagement resources Methods of engagement | HR Manager and Community Relations Officer | SEP document | 6,200 | three months prior to construction | Bi-annually |

| S/N | Compliance GAP | Importance | Corrective Action | Key Approach / Makeup | Responsibility | Deliverables | Budget (USD) ¹ | Timeline | Monitoring /Reviews |
|--|---|------------|---|---|---|---|---------------------------|---|-----------------------|
| | | | | <ul style="list-style-type: none"> • Disclosure of information • Roles and responsibilities for implementing SEP • Monitoring and review of SEP | | | | | |
| 6 | Grievance Mechanism | Medium | Develop and establish a grievance mechanism to receive and facilitate resolution of stakeholders' (most especially Project Affected Communities) concerns and grievances concerning project's environmental and social performance | <p>Elements of the grievance mechanism:</p> <ul style="list-style-type: none"> • Easily accessible, understandable and communicated to Affected Communities • Procedures for seeking solutions to complaints with the involvement of the Affected Communities • Procedures for registering, acknowledging, investigating, acting and closing-out grievances • Procedures for documenting grievances received and responses provided • Protecting the confidentiality of the complainants • Documented Grievance Lodgment Form and Grievance Register • Procedures for monitoring and evaluating the grievance mechanism to ascertain if the objectives have been met | Community Relations Officer and HR Manager | Grievance mechanism | As part of item 5 | Three months prior to construction | Bi-annually |
| 7 | Environmental and Social (E&S) Reporting and Auditing Systems | Medium | <p>Establish and implement an internal audit programme, which will evaluate conformity with requirements and effectiveness of the project's ESMS, ESMP and ESAP.</p> <p>Establish and implement an external audit programme using independent external auditors to evaluate the effectiveness of the ESMS, EMP and ESAP. This should include regulatory compliance E&S monitoring requirements</p> <p>Establish and maintain a process of reporting periodically to affected communities on the environmental and social performance of the project</p> | <p>The E& S reporting to affected communities should cover:</p> <ul style="list-style-type: none"> • Implementation of and progress on the ESAP, EMP and specific items on the management program • Any changes and updates to the management programs and action plans • Compliance E&S performance monitoring to regulators and government stakeholders | HSE Officer and Community Relations Officer | E & S Reporting and Auditing Systems Plan | 1,600 | Six months into construction and annually during operations | Quarterly to annually |
| IFC Performance Standard 2: Labour and Working Conditions | | | | | | | | | |
| 8 | Workers' Health | Medium | Establish and implement an | The OHS system should entail, at the minimum the following: | HSE Officer | Workers | 6,100 | One month | Annual |

Environmental and Social Action Plan

| S/N | Compliance GAP | Importance | Corrective Action | Key Approach / Makeup | Responsibility | Deliverables | Budget (USD) ¹ | Timeline | Monitoring /Reviews |
|---|--|------------|---|--|------------------------------|--|---------------------------|---------------------------------------|-----------------------------|
| | and Safety Plan | High | OHS system, program and plan to protect the health and safety of workers in line with IFC Performance Standards 2 | <ul style="list-style-type: none"> • Identification of potential hazards and responses (e.g. during project design, installation, working environment and work processes etc.) • Hazard preventive and protective measures • Provision of OHS training to all workers as well as OHS briefing for visitors and other third parties accessing the premises • Documentation and reporting on occupational accidents, diseases and incidents. • Use of PPE, Identification and provision of appropriate PPE and maintenance of PPE • Programme to ensure contractors have received adequate training and information enabling them to understand work hazards and to protect their health before the start of new assignments • Programme to sensitize workers on emergency arrangement and response • Procedures to monitor contractor performance on the implementation of OHS requirements • Incorporate into contractors' contract agreement the provisions that they meet the project's OHS requirements of IFC PS 2 • OHS monitoring programs to evaluate the effectiveness of hazard prevention and control strategies | | Health and Safety Plan | | prior to construction | Audits |
| 9 | Local procurement, recruitment and supplier policy | Low | Develop and implement a supply chain management policy statement. | <p>The policy shall commit to:</p> <ul style="list-style-type: none"> • Procurement process in line with international and local legal and regulatory requirements as well as PEL's code of conduct • Prohibition of forced and child labour in the supply chain • Promoting equal opportunity and not tolerate any form of discriminations and harassments • Workers freedom of association • Due diligence review of commercial and contractual terms of suppliers prior to executing contracts, agreements, amendments and changes • Ensure suppliers provide a safe, secure and healthy workplace for its employees • Incorporating E & S considerations in contractual agreement with suppliers • Periodic monitoring of suppliers' performance (supply chain audit) | HR Manager and Legal Officer | Supply Chain Management Policy/Procedure | 1,000 | Three months prior to construction | Annual supply chain audit |
| IFC Performance Standard 3: Resource Efficiency and Pollution Prevention | | | | | | | | | |
| 10 | Air quality and noise levels monitoring | Medium | Develop an air quality and noise monitoring program to assess the effectiveness of the | <p>The monitoring program should capture:</p> <ul style="list-style-type: none"> • Monitoring parameters (in line with FMEnv and IFC EHS guidelines); baseline data; monitoring type and frequency; | HSE Officer | Air quality and noise monitoring | 9,000 | Throughout construction and operation | Construction phase: Monthly |

| S/N | Compliance GAP | Importance | Corrective Action | Key Approach / Makeup | Responsibility | Deliverables | Budget (USD) ¹ | Timeline | Monitoring /Reviews |
|-----|--|------------|--|--|----------------|--|---------------------------|---------------------------------------|---|
| | | | project's emissions management strategies | monitoring locations; sampling and analysis methods; and a format for reporting the results <ul style="list-style-type: none"> The frequency of the monitoring in line with Environmental Management (EMP) Plan of the ESIA The monitoring should cover the plant area, point locations sampled in the ESIA which serve as baseline data in order to differentiate between existing ambient conditions and project-related impacts The air quality and noise monitoring reports should be submitted to regulators (e.g. FMEnv) | | reports | | | Operation phase: Quarterly |
| 11 | Noise Pollution Measurements | Low | Undertake noise measurements to establishing the baseline ambient noise levels in the project area. | <ul style="list-style-type: none"> The measurement should capture sensitive noise receptors and natural habitat locations within the Project's area of influence (aol) The baseline noise measurement should be designed and conducted by qualified and trained noise specialist The monitoring period of the noise measurement should last at the minimum of 48 hours using well calibrated noise monitors to obtain sufficient data for statistical analysis The calibrated noise monitors should be positioned approximately 1.5 m above the ground and no closer than 3 m to any reflecting surface (e.g., wall). | HSE Officer | Noise baseline measurement report | 2,000 | Four months before construction | NA |
| 12 | Groundwater and surface water monitoring | Medium | Develop, implement and maintain a monitoring program for periodic monitoring of groundwater and surface water sampling | The monitoring program should entail: <ul style="list-style-type: none"> Monitoring parameters; baseline data; monitoring type and frequency; monitoring locations; sampling and analysis methods; and a format for reporting the results The frequency of the monitoring will be monthly during the construction phase and quarterly during operation phase. This is in accordance to the Environmental Management (EMP) Plan of the ESIA The monitoring parameters for surface and groundwater sampling should include: parameters specified in FMEnv guidelines and IFC EHS guidelines The monitoring location for groundwater and surface water sampling should be designed to providing representative monitoring data and sensitive receptors. It should include the locations sampled in the ESIA study for reference and comparison purpose Engage trained and qualified specialist to design and conduct the monitoring Internationally approved methods (such as ASTM methods) should be applied for sample collection, preservation and analysis. | HSE Officer | Groundwater and surface water monitoring reports | 11,000 | Throughout construction and operation | Construction phase: Quarterly Operation phase: Quarterly |

Environmental and Social Action Plan

| S/N | Compliance GAP | Importance | Corrective Action | Key Approach / Makeup | Responsibility | Deliverables | Budget (USD) ¹ | Timeline | Monitoring /Reviews |
|--|--|------------|--|--|---------------------------------|--|---------------------------|------------------------------------|-------------------------------|
| | | | | <ul style="list-style-type: none"> Adequate Quality Assurance/Quality Control (QA/QC) procedures should be prepared and implemented for the sampling and analysis QA/QC procedures should be included in monitoring reports. The air quality and noise monitoring reports should be submitted to regulators (e.g. FMEEnv) | | | | | |
| 13 | Greenhouse gas (GHG) monitoring and accounting | Medium | <p>PEL should establish and maintain a Greenhouse gas (GHG) emission (direct and indirect) inventory for the project using internationally recognized GHG emissions methodologies such as IPCC protocols, ISO 14064 etc. .</p> | <ul style="list-style-type: none"> The GHG of importance are Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur hexafluoride (SF₆) Develop measures to reduce GHG emissions associated with the Project Implement and monitor GHG reduction measures Develop a Climate Change Mitigation/ Adaptation Plan for the project Disclose Project's GHG emissions annually through corporate reports to investors and regulators | HSE Officer and Head, Technical | GHG Inventory and Climate Change Mitigation/ Adaptation Plan | 12,000 | One month before operations | Annual Audits |
| 14 | Oil-spill contingency plan | Medium | <p>Develop and maintain an oil spill contingency plan for management of unplanned spills of dangerous or hazardous materials during the Project life cycle</p> | <p>The Spill Contingency Plan should include the following basic elements:</p> <ul style="list-style-type: none"> Identification of oil spill hazards during the project life cycle (i.e. construction, operations and decommissioning) Risk assessment of spill Lists of hazardous chemicals in the facility Clear and specific spill prevention measures Procedures for spill control and countermeasures Procedures for spill emergency response Training and updating requirements for spill response personnel. Spill notification procedures Monitoring and auditing programmes of spill contingency plan and procedures Facility evacuation routes and procedures Procedures to stationed Spill response equipment | HSE Officer and Head, Technical | Documented Oil-spill contingency plan | 7,000 | Three months prior to operations | Annual Audits |
| IFC Performance Standard 4: Community Health, Safety and Security | | | | | | | | | |
| 15 | Influx Management Plan | Medium | <p>Develop and implement an influx management plan (IMP) to manage in-migration related impacts that are likely to result from the Project</p> | <p>The IMP should include interventions to manage the following influx impacts:</p> <ul style="list-style-type: none"> Increased price inflation and economic vulnerability due to the influx of migrants into the Project's social area of influence (AOL) Increased pressure on existing infrastructure, such as schools, health centres, and water supply network Increased potential for the transmission of communicable | Community Relations Officer | Documented Influx Management Plan | 3,000 | Three months prior to construction | Quarterly During Construction |

Environmental and Social Action Plan

| S/N | Compliance GAP | Importance | Corrective Action | Key Approach / Makeup | Responsibility | Deliverables | Budget (USD) ¹ | Timeline | Monitoring /Reviews |
|-----|-----------------------------|------------|--|---|--|--|---------------------------|---|---------------------------------|
| | | | | <p>diseases and epidemics from in-migration induced by the Project to local communities</p> <ul style="list-style-type: none"> Increased disposable income which might in increased incidences of prostitution and casual sexual relations Conflict and security arrangements resulting from in-migrants' anti-social behaviors due to lack of knowledge of the local culture, beliefs, habits and rules of behavior | | | | | |
| 16 | Traffic management plan | Low | Develop and implement a Traffic Management Plan (TMP) to ensure the safety of all road users including waterways, workers at site as well as affected communities | <ul style="list-style-type: none"> Identification and evaluation of potential traffic and road safety risks and impacts to workers and affected communities throughout the project life cycle (construction, operation and decommissioning). Evaluation of potential traffic and road safety risks and impacts should include traffic survey Traffic management measures to address the identified risks and impacts. Procedures to consider national and local road and traffic safety management regulations and standards Procedures for incorporating traffic and road safety components into project design to mitigate traffic/road-related impacts to potentially affected communities Traffic and road safety audit at each phase of the project (construction, operation and decommissioning) Roles and responsibilities Training on driving, road and vehicle safety Procedures for public notification when required Monitoring and review of the plan | HSE Officer | Documented Traffic Management Plan | 2,300 | Two months prior to construction | Bi-annually during construction |
| 17 | Security Plan | Medium | Prepare and implement a security plan in accordance with the requirements of IFC PS 4, United Nation's (UN) Code of Conduct for Law Enforcement Officials, and UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials | <ul style="list-style-type: none"> Identification of security risks and impacts within the project's environs Security management measures to manage security risks Procedures for engaging private security Procedures for engaging armed security Principles of conduct for engaged security personnel Grievance mechanism to address any grievances due to security operations or conflicts between locals and security staff Assign responsibilities for the management measures | Community Relations Officer | Documented Security Plan | 1,300 | Three months prior to construction | Annual Audits |
| 18 | Community health monitoring | Low | Develop a program to continuously monitor community health in order to avoid and minimize community exposure to communicable disease and | <p>The community health monitoring program should include:</p> <ul style="list-style-type: none"> Accurate community health information/data Health screening for workers Sensitization and awareness campaign Procedures to avoid discrimination and job loss as a result of the health screening outcome | HR Manager and Community Relations Officer | Documented Community Health Monitoring Program | 8,200 | Three months prior to construction Annually during | Annually |

| S/N | Compliance GAP | Importance | Corrective Action | Key Approach / Makeup | Responsibility | Deliverables | Budget (USD) ¹ | Timeline | Monitoring /Reviews |
|---|---|------------|---|---|---|---------------------------------------|---------------------------|------------------------------------|--------------------------------------|
| | | | water-borne disease due to project activities | | | | | operations | |
| IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement | | | | | | | | | |
| 19 | Land Acquisition Management Framework | Medium | Develop a Comprehensive Land Acquisition Management Framework Outlining PEL's Procedure to Align with IFC PS5 and NERC 2012 Compliance Requirements | The LAMF shall as a minimum detail PEL's Approach and Resources as highlighted below <ul style="list-style-type: none"> • LAMF Objectives • Administrative and Legal Requirements • Voluntary and Involuntary Land Acquisition Processes • Stakeholders Engagement and Participation • Social Baseline Requirements • Impacts Assessment including Ecosystem Services • Economic and Physical Displacement Guidelines • Procedures for LRP and RAP • Roles and Responsibilities • Grievance Mechanism • Monitoring and Audit | Community Relations Officer | Land Acquisition Management Framework | 1,500 | 2 Months prior to construction | Auditable after any land acquisition |
| IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources | | | | | | | | | |
| 20 | Biodiversity Conservation Strategy and Commitment | Medium | Develop a Biodiversity Action Plan that describes corrective actions for fulfilling requirements of IFC PS6. | The BAP shall include the following minimum requirements: <ul style="list-style-type: none"> • Objectives and Scope of the BAP • Legal regulatory and institutional framework • Stakeholders Analysis and Engagement • Biodiversity Baseline Description including approach, habitat and important species description • Priorities for Biodiversity Conservation • BAP Action plan including current factors and actions as well as further action plan • BAP Implementation and Monitoring | HSE officer and Community Relations Officer | Biodiversity Action Plan Document | 3,500 | Three months prior to construction | Bi-annually |