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7 Environment and Social Management

The Environmental and Social Management Program for the Project describes the prevention, control, mitigation, monitoring, supervision, reporting, training and institutional measures to be taken to eliminate adverse Project-related environmental, social, and health and safety (ESHS) impacts, offset them, or reduce them to acceptable levels.

Because the Project consists of components being managed by two different entities, the environmental, social, and health and safety management (ESHSM) is separated and presented as follows:

- ESHSM for the Hydropower Facility and Electrical Interconnection components of the Project, which is the responsibility of the Company
- ESHSM for the Access Road component of the Project, which is the responsibility of the GoG.

The focus of the ESHSM is to assist in prioritizing risk management strategies, with the objective of achieving an overall reduction of risk to human health and the environment, and emphasizing the prevention of irreversible and/or significant impacts, by methods such as:

- Favoring strategies that eliminate the cause of the hazard at its source; for example, by selecting less hazardous materials or processes that avoid the need for ESHS controls.
- When impact avoidance is not feasible, incorporating engineering and management controls to reduce or minimize the possibility and magnitude of undesired consequences; for example, the application of pollution controls to reduce the levels of contaminants entering the environment.
- Preparing workers and nearby communities to respond to accidents, including providing technical and financial resources to effectively and safely control such events, and restoring workplace and community environments to a safe and healthy condition.
- Improving ESHS performance through a combination of ongoing monitoring of facility performance and effective accountability.

The Hydropower Facility and Electrical Interconnection ESHSM includes the following:

- Control and mitigation measures to reduce potentially significant adverse ESHS impacts and risks to acceptable levels (Section 7.1).
- Monitoring programs to provide information about key ESHS impacts and risks and assist in evaluating the success of mitigation (Section 7.2).
- Supervision, inspection, and reporting of the construction and operation activities to assess performance and compliance with the established control, mitigation and management measures (Section 7.3).
- Responsibility and organizational structure that identifies the entity responsible for implementing the various components of the ESHSM, including carrying out the mitigation measures and monitoring programs (Section 7.4).

- Training that identifies the actions to strengthen ESHS management capability and reinforce employee awareness and responsibilities (Section 7.5).

The Access Road ESHSM is presented in Section 7.6, and also includes control and mitigation measures, monitoring programs, supervision and reporting, responsibilities and organization, and training.

### 7.1 Hydropower Facility and Electrical Interconnection Control and Mitigation Measures

The Hydropower Facility and Electrical Interconnection ESHSM includes a series of programs to prevent, control, and mitigate environmental, social, health and safety, and labor impacts and risks. These programs have been separated based upon the relevant responsible party for their implementation, and the detailed measures are presented as:

- Programs/measures related to the construction of the Hydropower Facility and Electrical Interconnection that the EPC Contractor is responsible for implementing; the “Construction Contractor Environmental, Social, Health and Safety Management Plan” (“Construction Contractor ESMP”)

- Programs/measures related to the construction and operation of the Hydropower Facility and Electrical Interconnection that the Company is responsible for implementing; the “Company Environmental and Social Management Plan” (“Company ESMP”).

The Construction Contractor ESMP consists of various programs with specific control, mitigation and monitoring measures (see Table 7.1 for list of programs and Appendix E.1 for complete description). The Company ESMP also consists of various programs with specific control, mitigation and monitoring measures (see Table 7.2 for list of programs and Appendix E.2 for complete description).

As part of the EPC contract, the Company will require the EPC Contractor to take primary responsibility for implementing the measures required by the Construction Contractor ESMP and develop, as needed, more detailed specific procedures based on the requirements established in the Construction Contractor ESMP. Portions of both ESMPs, in some cases, are the frameworks for more detailed plans, programs, and procedures that will be developed by the EPC Contractor and Company. The relevant environmental, social, and health and safety plans will be reviewed on an annual basis and updated if necessary based on the performance and effectiveness of the mitigation measures and monitoring programs.
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Table 7.2 List of control, mitigation and monitoring programs in Company ESMP

**Influx Management Program**

**Land Acquisition and Resettlement Plan**  
- Transmission line land lease and resettlement action plan  
- Forestry concession compensation

**Amerindian Community Plan**  
- Kaburi community plan  
- Amerindian monitoring program  
- Amerindian community development

**Local Community Support Program**  
- Local worker training and hiring program  
- Local supplier development program  
- Community investment program

**Biodiversity Monitoring Program**  
- Flora monitoring program  
- Aquatic fauna monitoring program  
- Terrestrial fauna monitoring program

**Environmental Compensation Program**  
- Potential compensation/offsets  
- Compensation/offsets framework plan

**Community Stakeholder Engagement**  
- Project implementation stages  
- Access control  
- Project Environmental/compensation offset  
- Information communication approaches  
- Community monitoring plan  
- Grievance mechanism

**Public Health**  
- Monitoring public health indicators  
- Monitoring populations of endemic disease vectors  
- Public health control measures

**Reservoir Management Program**  
- Water quality and limnology monitoring plan  
- Reservoir margin stability monitoring and erosion control plan  
- Groundwater monitoring plan  
- Sedimentation monitoring plan

**Kuribrong River Management Plan**  
- Downstream water quality and limnology monitoring plan  
- River margin stability monitoring plan

**Operation Health, Safety and Environment Plan**

**Transmission Line Vegetation Management Program**

**Dam and Reservoir Safety Program**  
- Dam design  
- Construction supervision and quality assurance plan  
- Instrumentation plan  
- Operation and maintenance plan  
- Emergency preparedness plan  
- Reservoir use plan

**Compliance Monitoring**
7.2 Hydropower Facility and Electrical Interconnection Monitoring Programs

7.2.1 Construction

The Construction Contractor ESMP and Company ESMP include measures for ESHS monitoring during construction of the Hydropower Facility and Electrical Interconnection, and consist of two primary groups/types:

- Environmental and social monitoring programs that will be implemented by the Company during construction and operation, and will focus on ongoing assessment of biodiversity and social conditions (see Appendix E.2 for details):
  - Biodiversity Monitoring Program
    - Flora monitoring, including forest border monitoring, altered wetland flora monitoring, and waterfall mist-zone flora monitoring plan
    - Aquatic fauna monitoring, including reservoir and upstream tributary ichthyofauna monitoring and reduced flow segment and downstream ichthyofauna monitoring plan
    - Terrestrial fauna monitoring, including reservoir area fauna monitoring, altered wetland fauna monitoring plan, and transmission line bird-life monitoring plan
  - River Water Quality Monitoring
  - Public Health Monitoring
  - Amerindian Monitoring
  - Local Labor and Supplier Monitoring
  - Land Acquisition and Resettlement Monitoring

- Environmental and social monitoring that will be implemented by the EPC Contractor or the Company and focused specifically on assessing compliance and performance with Project environmental and social requirements (e.g., Project environmental standards listed in Section 3.6) include (see Appendix E.2, Compliance Monitoring for details):
  - Air quality
  - Noise
  - Potable water
  - Wastewater
- Waste management
- Flora/fauna
- Erosion and sediment runoff
- Social (including community complaints/grievances)
- ESHS training
- Job generation
- Acquisition of local goods and services
- Worker health and safety.

### 7.2.2 Operation

The principal environmental and social monitoring activities during operation of the Hydropower Plant and Electrical Interconnection will include (see Appendix E.2 for details):

- **Biodiversity**
  - Flora
  - Aquatic fauna
  - Terrestrial fauna
- **Environmental Compensation Program**
- **Community Stakeholder Engagement**
  - Community monitoring
  - Grievance mechanism
- **Reservoir**
  - Water quality and limnology
  - Reservoir margin stability and erosion control
  - Groundwater
  - Sedimentation
- **Kuribrong River**
  - Downstream water quality and limnology
  - River margin stability
- **Dam and Reservoir Safety**
• Operation Health, Safety and Environment
• Transmission Line Vegetation

The environmental and social monitoring during operations that focused specifically on assessing compliance with Project environmental and social requirements (e.g., Project environmental standards listed in Section 3.6) include (see Appendix E.2, Compliance Monitoring for details):

• Noise
• Potable water
• Wastewater
• Waste management
• Social (including community complaints/grievances)
• ESHS training
• Worker health and safety.

7.3 Hydropower Facility and Electrical Interconnection Supervision and Reporting

7.3.1 Construction

7.3.1.1 EPC Contractor

The EPC Contractor will perform routine daily and weekly supervision activities (e.g., inspections, audits), and reporting thereof will be implemented by the EPC Contractor ESHS Manager. Inspectors will use pre-established checklists that are to be finalized by the ESHS Manager. The supervision and inspection activities will include checking outstanding issues and documenting the associated corrective activities performed. The EPC Contractor shall prepare supervision and monitoring reports, records, forms, and photos.

Monthly meetings, including ESHS matters, will be held with senior managers of the EPC Contractor. During these meetings, ESHS performance will be discussed, and where necessary, any additional mitigation measures will be agreed upon. Additional meetings may be held in the case of an identified/reported noncompliance or the receipt of a material complaint. Any changes to the Construction Contractor ESMP or required corrective actions that occur as a result of the management review will be implemented as soon as reasonable.

The EPC Contractor will include in the monthly report to the Company any relevant ESHS aspects associated with its activities. Routine meetings will be held with each sub-contractor to discuss performance and outstanding issues related to ESHS matters. The EPC Contractor
ESHS Manager will be responsible for supervision and monitoring of the implementation of the Construction Contractor ESMP.

When an ESHS nonconformance is detected and is not, or cannot be, immediately resolved, then a corrective action process will be initiated. The issue will be documented and sent to the EPC Contractor ESHS Manager and the Company ESHS Manager. The cause of the non-conformance will be investigated, and an appropriate corrective and/or preventive action will be recommended, along with an estimate of the time and resources needed to implement the measure. On completion of the corrective or preventive action, the Company EHS Manager will confirm and record all the necessary details.

Details of any contact or communications (including any complaint or demand made by a third person) with local people or Amerindian communities shall be documented and immediately communicated to the designated representative of the Company.

The EPC Contractor shall immediately notify the Company of any material ESHS issue, including any complaint or demand made by any third party or person, or if any evidence is identified of potential use of the cleared areas (e.g., movement of non-EPC Contractor workers or subcontractors).

7.3.1.2 Company

The Company will supervise compliance with commitments included in the Construction Contractor ESMP. This will be achieved through systematic inspections and reviews of construction activity and of associated EPC Contractor ESHS documentation, including not only works by the EPC Contractor, but also that of subcontractors. The Company’s oversight should include:

- Ensure that ESHS commitments are disclosed to and comprehended by those responsible for Project implementation
- Monitor and manage impacts and/or environmental risks, and control actions or activities that generate impacts
- Ensure that ESHS issues are considered properly when design or construction changes are discussed
- Advise EPC Contractor and subcontractors on adjustment and/or improvement of ESHS measures as deemed necessary during construction
- Ensure that documented evidence of proper implementation of ESHS commitments is in place
- Ensure that Project-induced impacts are properly monitored and measured
- Evaluate ESHS performance continuously and implement a continuous improvement cycle.
The Company ESHS supervision will consist of routine inspections and periodic reviews. Routine inspections will focus on verification of compliance with components of the Construction Contractor ESMP, scope and intensity of environmental impacts induced by construction work, and disturbance to local communities resulting from construction work. In order to ensure thoroughness of verification, the Company will prepare Inspection Checklists according to location and type of activity (see Appendix E.2, Compliance Monitoring, for representative list of areas). Decommissioning Checklists will be developed during final construction stages and will be applied before work is accepted as complete.

Periodic ESHS reviews will consist of, as applicable:

- Inspection of construction activity and facility
- Review of EPC Contractor’s ESHS management records, including records of inspections, supervision of subcontractors, and non-conformity management
- Review of EPC Contractor’s ESHS monitoring records
- Review and discussion of key ESHS performance indicator compliance
- Interviews with EPC Contractor ESHS team and subcontractor ESHS representatives
- Assessment of adequacy of ESHS staffing
- Meeting to discuss required ESHS corrective actions and opportunities for improvement.

### 7.3.1.3 Environmental Compliance Monitoring

Environmental monitoring will be performed to assess compliance with applicable Project standards and to identify potential impacts or risks (Appendix E.2, Compliance Monitoring, for details).

### 7.3.1.4 Compliance Assurance

Instances of non-compliance with commitments in the Construction Contractor ESMP will trigger a request for corrective action. Two levels of corrective action requests are:

- ESHS Observations
- ESHS Non-Conformity Notices (NCN).

ESHS Observations will be issued in the case of minor issues that do not result in any material impacts and that can be easily resolved. ESHS Observations will be consolidated into an observation tracking table that will specify the non-compliant aspect, location of the problem, suggested corrective action, timeframe for implementation, and responsible party.
More significant non-compliances, or those that require a more complex set of actions to be resolved, will motivate issuance of NCNs. NCNs will be issued according to a standard format and, where possible, will include photographic documentation of the nonconformity. The NCN will indicate the item(s) that were noncompliant, the location, proposed action, estimated time schedule to complete, and responsible person/unit. NCNs can discriminate between two kinds of required action: immediate action and corrective action. Immediate action can be a stop-work request or an emergency clean-up. Corrective action can be, in some cases, submittal of a Corrective Action Plan (CAP) by the EPC Contractor to the Company ESHS Manager. CAPs will be approved by the Company. NCN Closure Forms will be prepared by the Company to formalize acceptance of corrective action executed by the EPC Contractor (or subcontractors) to comply with NCNs.

In cases of inadequate ESHS performance and/or repetitive delays in complying with NCNs, the Company’s project manager will determine how to proceed. The ESHS compliance assurance procedure above will need to be consistent with the Company’s construction oversight administration procedures and may be adjusted accordingly.

7.3.1.5 Reporting

The Company will be responsible for preparing quarterly ESHS Monitoring Reports for Company management review. These will make use of information contained in the EPC Contractor’s Monthly Construction ESHS Reports and will also consolidate supervision and inspection documentation generated by the Company. The quarterly ESHS Monitoring Reports will include, as applicable:

- Construction progress during the reporting period
- Construction planning for the following quarter
- ESHS incidents (accidents, spills, environmental fines, other)
- Management of change summary
- Updated ESHS permitting status
- Summary of ESHS supervision and inspection activities (number of inspections by type and location, monitoring campaigns, meetings, liaising with local communities, liaising with government, other activities)
- Summary of Construction Contractor ESMP implementation and results during the reporting period
- Summary of ESHS compliance assurance statistics
- Health and safety statistics
- Labor statistics (including gender, local labor, place of residence, worker grievances, other key issues)
• Community and other stakeholder grievance and grievance management statistics
• Conclusions on construction ESHS performance and opportunities for improvements.

Additional information may be included in the quarterly ESHS Monitoring Reports, depending on specific events during the reporting period. Documentation of ESHS issues will be a responsibility of the Company. Supervision and inspection documentation that will be maintained includes:

• Inspection reports
• Observation tracking tables
• NCN, CAPs, NCNCs, and other non-conformity management documentation
• Grievance tracking tables
• Monitoring results.

### 7.3.2 Operation

Routine supervision activities (e.g., inspections, audits) and reporting thereof will be implemented by the Company’s ESHS Manager. Inspectors will use pre-established checklists adapted to applicable requirements at each work area. The supervision and inspection activities will include checking outstanding issues and associated corrective activities performed. Supervision and monitoring reports, records, forms, and photographic records shall be prepared.

Monthly meetings regarding ESHS matters will be held with the Company management team. During these meetings, ESHS performance will be discussed, and where necessary, any additional mitigation measures will be agreed upon. Additional meetings may be held in the case of a significant, identified/reported noncompliance or the receipt of a material complaint. Minutes will be recorded and maintained by the ESHS Manager as records and shall include any changes to the ESHS Management Plan or required corrective actions that are established as a result of the management review.

When an ESHS non-conformance is detected and is not, or cannot be, immediately resolved, then an ESHS corrective action process will be initiated. The cause of the non-conformance will be investigated, and an appropriate corrective and/or preventive action will be recommended, along with an estimate of the time and resources needed to implement the measure. On completion of the corrective or preventive action, the ESHS Manager will confirm and record all the necessary details.

Any serious worker or environmental accidents will be reported immediately to the Company Manager. Details of any material grievances received from Amerindian communities shall be
documented and reported in writing to the Plant Manager and to the applicable government entity when required. All ESHS documentation will be kept organized and available for review.

### 7.4 Hydropower Facility and Electrical Interconnection Responsibilities

The responsibilities for implementing the Hydropower Facility and Electrical Interconnection ESMPs are divided among the:

- Company, which will supervise implementation of the Construction Contractor ESMP and contractually enforce compliance, and implement all aspects of the Company ESMP. The Company is also responsible for implementing all operation-related ESHS plans. The Company will allocate an ESHS Manager to coordinate this effort.

- EPC Contractor, which will be directly responsible for executing construction in compliance with the Construction Contractor ESMP. The EPC Contractor will be responsible for ensuring that all subcontractors are in compliance.

- Construction subcontractors, which will be required to comply with the Construction Contractor ESMP as it applies to their respective contract scope and will be supervised by the EPC Contractor.

Environmental monitoring associated with construction activities will be a shared responsibility between the EPC Contractor and the Company.

#### 7.4.1 Company

The Company’s key personnel include the Project Manager, the ESHS Manager, and ESHS staff. The primary responsibility for ESHS issues will be with the Project Manager. The Project Manager shall be responsible for:

- Ensuring implementation of the Company ESMP and Construction Contractor ESMP
- Appointing an Environmental, Social, Health and Safety (ESHS) Manager
- Ensuring that all workers and contractors are aware of their responsibilities and obligations related to ESHS matters, and that they receive the necessary training
- Ensuring that all workers and contractors comply with their responsibilities and obligations related to ESHS matters
- Ensuring that any non-mitigated impact or risk related to ESHS that may arise is properly resolved
• Ensuring that adequate resources are provided to comply with all applicable ESHS requirements.

The Company ESHS Manager will report directly to the Project Manager, having the following responsibilities during construction:

• Coordinate ESHS supervision, monitoring, and compliance assurance procedures, and enforce compliance as appropriate.

• Manage any Company ESHS specialists and liaise and coordinate with the EPC Contractor ESHS Manager

• Assess supervision and monitoring of ESHS aspects, incorporating adjustments and/or improvements as deemed pertinent, including a review of all plans on an annual basis and updating those plans, if necessary.

• Coordinate the design of strategies and/or measures that can enhance control over ESHS aspects and contribute to improvement of the construction process’s environmental and social performance.

• Assess and approve material changes to design or construction that may have an adverse environmental or social impact or worker health and safety risk.

• Approve the EPC Contractor’s environmental, social and health and safety plans and ensure that such plans are reviewed on an annual basis and updated, if necessary.

• Review and approve the EPC Contractor’s ESHS Reports.

• Report periodically on the performance related to ESHS issues to Company management for the purpose of review.

• In case of any non-compliance with the Construction Contractor ESMP or Company ESMMP or circumstances that cause or are likely to cause serious damage and/or impacts on the environment, immediately notify the Project Manager and ensure that actions are taken to properly address the issue.

• Coordinate implementation of emergency procedures in the case of environmental incidents or worker accidents.

• Communicate with the general public and parties that raise issues related to ESHS and construction.

During operation phase, the Company ESHS Manager shall:

• Ensure development and implementation of an Operational Health, Safety and Environment Plan by all workers and contractors

• Supervise and control such implementation, and maintain records
Manage any Company ESHS specialists and liaise and coordinate with any sub-contractor ESHS personnel

• Report periodically on performance related to ESHS matters

• Assess and approve material changes to the operations that may have an adverse ESHS impact

• Review the operation phase ESMP on an annual basis and update them, if necessary

• In case of any circumstances that cause or are likely to cause serious damage and/or impacts on the environment due to the Project, immediately notify the Project Manager and ensure that actions are taken to properly address the issue

• Train workers on issues related to ESHS matters

• Implement emergency procedures in the case of environmental incidents or worker accidents

• Communicate with the general public and parties that raise issues related to operations and ESHS.

### 7.4.2 EPC Contractor

The responsibility for implementation of the Construction Contractor ESMP will be the EPC Contractor Project Manager, who shall be responsible for:

• Ensuring implementation of the Construction Contractor ESMP

• Appointing the EPC Contractor ESHS Manager and all EPC Contractor key ESHS staff

• Ensuring that all EPC Contractor workers and subcontractors are aware of and comply with their responsibilities and obligations related to ESHS matters, and that they receive the necessary training

• Ensuring that any non-mitigated impact or risk related to ESHS matters that may arise is properly resolved

• Ensuring that adequate resources are provided by the EPC Contractor to comply with all applicable ESHS requirements.

To successfully implement the Construction Contractor ESMP, the EPC Contractor will be required to structure a multidisciplinary ESHS team that will be responsible for ESHS performance. The ESHS team will be composed of staff with the following responsibilities:
The EPC Contractor ESHS Manager will report directly to the EPC Contractor’s Project Manager and will have the following main responsibilities:

- Ensure implementation of the Construction Contractor ESMP by all workers and contractors
- Supervise and control such implementation, and maintain records
- Manage any EPC Contractor ESHS specialists and liaise and coordinate with the EPC Contractor and Company construction management team
- Report periodically on the performance of the Construction Contractor ESMP
- Assess and approve material changes to the design or construction that may have an adverse ESHS impact
- In case of any non-compliance with the Construction Contractor ESMP or circumstances that cause or are likely to cause serious damage and/or impacts on the environment, immediately notify the EPC Contractor Project Manager and ensure that actions are taken to properly address the issue
- Ensure EPC Contractor and subcontractor workers are trained on ESHS matters
- Implement emergency procedures in the case of environmental incidents or worker accidents
- Coordinate implementation of all corrective action on ESHS issues requested by the Company
- Review all EPC Contractor environmental, health and safety plans on an annual basis and update those plans, if necessary
- In conjunction with the Company, communicate with the general public and parties that raise issues related to construction and ESHS.

The EPC Contractor Environment and Community Relations Coordinator will report directly to the EPC Contractor ESHS Manager and will be responsible for assisting the EPC Contractor’s construction management team in achieving compliance with the environmental management requirements in the Construction Contractor ESMP. He/she will also supervise environmental performance by construction subcontractors, be responsible for liaising with local communities, managing the grievance response procedure, verifying local worker and supplier hiring, and
ensuring implementation of the community relations and public health requirements in the Construction Contractor ESMP. The EPC Contractor Environmental and Community Relations Coordinator will be assisted by additional staff as required.

The EPC Health and Safety Coordinator will have the equivalent functions with regard to health and safety issues and will coordinate the work of the construction medical team and will be assisted by additional staff as necessary.

The EPC Contractor ESMS Manager will be able to draw on the expertise of a biologist during fauna rescue and relocation activities and when working in environmentally sensitive locations. The EPC Contractor ESMS Manager will also be able to draw on the expertise of a cultural property specialist as needed to ensure adequate implementation of archeological procedure (chance find).

The EPC Contractor will require that each of the subcontractors nominate an ESMS representative. Subcontractors will be responsible for ensuring that their site staff implements the Construction Contractor ESMP mitigation measures relevant to their subcontracted works to the satisfaction of the EPC Contractor’s Project Manager and the ESMS Manager. To ensure that each subcontractor complies with the Project’s ESMS requirements, each subcontractor’s ESMS representative shall be required to attend ESMS induction training. If workers or contractors fail to fulfill their responsibilities and obligations, the EPC Project Manager or designee shall inform them of such and take appropriate actions to adequately resolve the issue.

The procedures and administration of the Contractor ESMP will need to be consistent with the overall administration procedures of the EPC Contractor.

7.5 Hydropower Facility and Electrical Interconnection Training

7.5.1 Construction

The EPC Contractor will provide ESMS training to all workers under their control. A formal training module shall be created that encompasses both standard ESMS aspects but also reflects specific conditions of the Hydropower Facility and Electrical Interconnection. The training module shall be approved by the Company. The objectives of the training are to:

- Raise awareness among the Project personnel about the ESMS issues associated with the Project, so that they can develop positive attitudes regarding each of these areas, both inside and outside the Project
- Inform the personnel involved in the Project phases about the ESMS issues and obligations in the Construction Contractor ESMP and all Project ESMS permits and regulatory requirements.
The design and development of the worker induction and training will consider the following issues: topic, duration, date, time, audiovisual support, location, and target personnel. The training will address occupational health and safety and the environment, as well as subjects of social importance in the works. An initial training shall be provided to all workers upon being hired. Subsequent more detailed training will be provided as needed based upon job responsibilities. Refresher training will also be provided. The participation of workers in the training shall be documented. The following are some of the topics to be considered for the training program:

- ESHS requirements, including the ESHSM and ESHS regulations applicable to the Project and its activities
- Governmental authorities that regulate Project ESHS aspects
- Protection and preservation of natural resources, flora and fauna, including emphasis on endemic and endangered species
- Awareness of sensitive site areas
- Vegetation preservation
- Prevention and control of erosion
- Forest fire prevention
- Prohibitions concerning hunting and vegetation removal
- Management of construction materials and concrete works
- Management of debris, and recyclable and domestic wastes
- Management and protection of surface water and groundwater
- Solid and liquid waste management
- Management of construction materials and concrete works
- Control and management of oil and lubricants (including spills)
- Control and management of hazardous materials and wastes
- Spill prevention and response
- Signposting and traffic management
- Archaeological finds procedures
- Relationship with communities
- Hazard identification and hazardous working conditions
- First aid
• Emergency management
• Worker code of conduct
• Camp regulations
• Worker rights
• Worker grievance redress
• Community interaction procedures
• Hazardous working conditions
• Worker health and safety, including use and maintenance of personal protection equipment, safe working procedures, encounters with poisonous animals, and endemic diseases and their symptoms.

Additional training will be provided for those workers involved directly in environmental and social matters or exposed to specific worker health and safety risks. This will include:

• Wastewater treatment plant operation
• Industrial plant operational controls
• Hazardous material management
• Waste management
• Environmental monitoring.

Subcontractor ESHS representatives will undergo specific induction on the EPC Contractor’s ESHS requirements, corrective action process, the Company’s non-compliance procedure, and reporting standards.

7.5.2 Operation

The Company will develop and implement an ESHS training program for operation of the Hydropower Plant and Electrical Interconnection as part of the operation-phase EHSMP that will be developed prior to completion of construction.

7.6 Access Road Environmental, Social, Health and Safety Management

The Access Road Contractor has been contracted by the GoG to construct the Project Access Road. The GoG is responsible for the Access Road operational phase but may contract the execution out to a third party.
7.6.1 Control and Mitigation Measures

The Access Road control and mitigation measures have been separated based upon the relevant responsible party for their implementation, and the detailed mitigation measures are presented as:

- Measures related to the construction of the Access Road that the Access Road Contractor is responsible for implementing, and entitled “Access Road Contractor Environmental, Health and Safety Management Plan” (Access Road Contractor EHSMP).

- Measures related to the construction and operation of the Access Road that the GoG is responsible for implementing, and is entitled “Access Road Sponsor Environmental and Social Management Plan” (Access Road Sponsor ESMP).

The Access Road Contractor EHSMP consists of various programs with specific control, mitigation and monitoring measures (see Table 7.3 for list of programs and Appendix F.1 for complete description). The Access Road Sponsor ESMP consists of various programs with specific control, mitigation and monitoring measures (see Table 7.4 for list of programs and Appendix F.2 for complete description).
Table 7.3  List of programs in Access Road Contractor EHSMP

<table>
<thead>
<tr>
<th>Program</th>
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<tbody>
<tr>
<td>Vegetation/Forest Clearing</td>
</tr>
<tr>
<td>Erosion Control and Stormwater Management</td>
</tr>
<tr>
<td>Road Base Construction and Road Rehabilitation</td>
</tr>
<tr>
<td>Quarries, Source Material, and Waste soil Disposal Area Management</td>
</tr>
<tr>
<td>Equipment and Machinery</td>
</tr>
<tr>
<td>Water Crossings</td>
</tr>
<tr>
<td>Demobilization</td>
</tr>
<tr>
<td>Restoration and Revegetation</td>
</tr>
<tr>
<td>Drilling and Blasting</td>
</tr>
<tr>
<td>Health and Safety Management</td>
</tr>
<tr>
<td>Hazardous Materials Management</td>
</tr>
<tr>
<td>Waste Management</td>
</tr>
<tr>
<td>Traffic Management</td>
</tr>
<tr>
<td>Spill Management</td>
</tr>
<tr>
<td>Emergency Response</td>
</tr>
<tr>
<td>Labor</td>
</tr>
<tr>
<td>Work Camps</td>
</tr>
<tr>
<td>Job Creation and Acquisition of Local Goods/Services</td>
</tr>
<tr>
<td>Security Management</td>
</tr>
<tr>
<td>Air Quality</td>
</tr>
<tr>
<td>Noise</td>
</tr>
<tr>
<td>Amerindian communities</td>
</tr>
<tr>
<td>Archaeological</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Supervision</td>
</tr>
<tr>
<td>Monitoring</td>
</tr>
<tr>
<td>Training</td>
</tr>
</tbody>
</table>
Table 7.4  List of programs in Access Road Sponsor ESMP

<table>
<thead>
<tr>
<th>Framework Access Control Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach to access control</td>
</tr>
<tr>
<td>Potential impacts arising from improved access</td>
</tr>
<tr>
<td>Planned mitigation measures</td>
</tr>
<tr>
<td>Legal basis for implementation of access control</td>
</tr>
<tr>
<td>Public consultations</td>
</tr>
<tr>
<td>Institutional arrangements for controlling access</td>
</tr>
<tr>
<td>Implementation schedule and work plan</td>
</tr>
<tr>
<td>Sources of financing for tasks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stakeholder Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roles and responsibilities</td>
</tr>
<tr>
<td>Community monitoring plan</td>
</tr>
<tr>
<td>Grievance mechanism</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kaburi Community Plan</th>
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<table>
<thead>
<tr>
<th>Access Road Compensation/Offsets Framework</th>
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</thead>
<tbody>
<tr>
<td>Offset approach</td>
</tr>
<tr>
<td>Stage 1 - Access road direct offset</td>
</tr>
<tr>
<td>Stage 2 - Overall Project offset</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operation Phase Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigation Measures</td>
</tr>
<tr>
<td>Monitoring</td>
</tr>
</tbody>
</table>

7.6.2  Monitoring Programs

7.6.2.1  Construction

The Access Road monitoring by the Access Road Contractor during construction includes the following components (see Appendix F.1, Monitoring, for details):

- Air quality
- Noise
- Water quality
- Waste management
- Flora/fauna
- Erosion and stormwater runoff
- EHS training
- Job creation
- Acquisition of local goods and services
- Health and safety.
7.6.2.2 Operation

The Access Road monitoring during operation includes the following components (see Appendix F.2, Operation Phase, Monitoring, for details):

- Air quality
- Noise
- Water quality
- Road safety.

7.6.3 Supervision and Reporting

7.6.3.1 Access Road Contractor

The Access Road Contractor will perform routine daily and weekly supervision activities (e.g., inspections, reviews), and reporting thereof will be implemented by the Access Road Contractor EHS Manager. Inspectors will use pre-established checklists that are to be finalized by the Access Road Contractor EHS Manager (see Appendix F.1, Supervision, for representative examples). The supervision and inspection activities will include checking outstanding issues and associated corrective activities performed. Supervision and monitoring reports, records, forms, and photos shall be prepared.

Monthly meetings including ESChS matters will be held with senior managers of the Access Road Contractor. During these meetings, ESChS performance will be discussed, and where necessary, any additional mitigation measures will be agreed upon. Additional meetings may be held in the case of an identified/reported noncompliance or the receipt of a material complaint. Any changes to the Access Road EHSMP or required corrective actions that occur as a result of the management review will be implemented as soon as reasonable.

The Access Road Contractor will include in the monthly report to the GoG any relevant ESChS aspects associated with its activities. Routine meetings will be held with each sub-contractor to discuss performance and outstanding issues related to environmental, social, and health and safety matters. The Access Road Contractor EHS Manager will be responsible for supervision and monitoring of the implementation of the Access Road Contractor EHSMP.

When an ESChS nonconformance is detected and is not, or cannot be, immediately resolved, then a corrective action process will be initiated. The issue will be documented and sent to the GoG Project Manager. The cause of the non-conformance will be investigated, and an appropriate corrective and/or preventive action will be recommended, along with an estimate of the time and resources needed to implement the measure. On completion of the corrective or preventive action, the Access Road Contractor EHS Manager will confirm and record all the necessary details.
Details of any contact or communications (including any complaint or demand made by a third person) with local people or Amerindian communities shall be documented and immediately communicated to the designated representative of GoG and the Company.

The Access Road Contractor shall immediately notify the GoG of any material environmental, social, health and safety issue, including any complaint or demand made by any third party or person or if any evidence is identified of potential use of the cleared areas (e.g., movement of non-Project persons).

The Access Road Contractor EHS Manager will establish a suitable system to ensure that all relevant legal and other requirements are identified and are readily accessible to all necessary staff.

7.6.3.2 GoG

The GoG will retain overall responsibility to ensure Access Road Contractor compliance with all ESHS measures, but has hired an independent oversight consultant, SRKN, to perform oversight of the Access Road Contractor, including technical, engineering, construction, environmental, health and safety aspects.

The GoG will supervise compliance with commitments included in the Access Road EHSMP. This will be achieved through systematic inspections and reviews of construction activity and of associated Access Road Contractor ESHS documentation. Routine inspections will focus on verification of compliance with components of the Access Road Contractor EHSMP, worker health and safety, scope and intensity of environmental impacts induced by construction work, and disturbance to local communities resulting from construction work. Additionally, monthly meetings with the Access Road Contractor will be held.

Any unsafe or unacceptable practices or issues noted will be at first discussed with the Access Road Contractor to facilitate corrective actions. If the non-compliance is not immediately addressed, the Access Road Contractor shall be formally informed of the infringement. If the Access Road Contractor does not resolve the issue, a meeting will be called with the NICIL/GoG.

7.6.3.3 Reporting

The Access Road Contractor will include in the Monthly Construction Report to the GoG any relevant ESHS aspects associated with its activities.

The GoG independent supervisor will submit weekly reports to the GoG.

The GoG will be responsible for preparing Quarterly ESHS Monitoring Reports to be made available to the GoG Management Committee. These will make use of information contained in the Access Road Contractor’s Monthly Construction Reports and will also consolidate information from GoG’s supervision and inspection activities.
Supervision and inspection documentation will be maintained, including inspection/supervision reports.

7.6.4 Training

The Access Road Contractor will provide ESHS training to all workers under their control. A formal training module shall be created that encompasses both standard ESHS aspects but also reflects specific conditions to the Access Road (See Appendix F.1, Training, for details).

7.6.5 Responsibilities

The responsibilities for implementing the Access Road Contractor EHSMP and Sponsor ESMP are divided as follows:

- The Access Road Contractor will be responsible for maintaining and implementing the Access Road Contractor EHSMP, which includes control and mitigation measures (Section 7.6.1), monitoring programs (Section 7.6.2.1), supervision measures (Section 7.6.3.1), reporting (7.6.3.3) and training program (Section 7.6.4).

- The GoG will be responsible for maintaining and implementing the Access Road Sponsor ESMP, which includes control and mitigation measures (Section 7.6.1), monitoring (Section 7.6.2.2), reporting (7.6.3.3), and supervision measures (Section 7.6.3.2).

7.6.5.1 Access Road Contractor

The Access Road Contractor will be responsible for maintaining and implementing the Access Road Contractor EHSMP. The key personnel include the Access Road Project Manager, EHS Manager and EHS staff.

The primary responsibility for implementation of the Access Road Contractor EHSMP will be with the Access Road Project Engineer, who will be responsible for:

- Ensuring implementation of the EHSMP
- Appointing a Project Environmental, Health and Safety (EHS) Manager
- Ensuring that all Project workers and contractors are aware of their responsibilities and obligations related to environmental, social, and health and safety matters, and that they receive the necessary training
- Ensuring that all Project workers and contractors comply with their responsibilities and obligations related to environmental, social, and health and safety matters
- Ensuring that any non-mitigated impact or risk related to environmental, social, or health and safety matters that may arise is properly resolved
• Ensuring that adequate resources are provided to the Project to comply with all applicable environmental, social, and health and safety requirements.

The EHS Manager will report directly to the Project Engineer, having the following responsibilities:

• Ensure implementation of the ESMP by all workers and contractors
• Supervise and control such implementation, and maintain records of such
• Manage any EHS specialists and liaise and coordinate with the contractor’s EHS-responsible individuals
• Report periodically on the performance of the ESMP to Project management for the purpose of review
• Assess and approve material changes to the Project design or construction that may have an adverse environmental or social impact
• In case of any non-compliance with the ESMP or circumstances that cause or are likely to cause serious damage and/or impacts on the environment due to the Project, immediately notify the Project Engineer and ensure that actions are taken to properly address the issue
• Train workers and contractors related to EHS matters
• Implement emergency procedures in the case of environmental incidents or worker accidents.
• In conjunction with the GOG and the Company Sithe, communicate with the general public and parties that raise issues related to EHS issues and the Project road construction.

Each of the main subcontractors will nominate a EHS representative(s). Subcontractors will be responsible for ensuring that their site staff implements the EHS mitigation measures relevant to their subcontracted works to the satisfaction of the Access Road Project Manager and EHS Manager. To ensure that each subcontractor complies with the Access Road EHS requirements, each subcontractor’s representative shall be required to attend EHS induction training. If workers or contractors fail to fulfill their responsibilities and obligations, the Access Road Project Manager or designee shall inform them of such and take appropriate actions to adequately resolve the issue.

7.6.5.2 GoG

The GoG has hired an independent oversight consultant, SRKN, to perform oversight of the Access Road Contractor, including technical, engineering, construction, environmental, health and safety aspects.
The GoG’s Project Manager shall be responsible for the following:

- Ensuring that SRKN adequately monitors implementation of the Access Road Contractor EHSMP
- Ensuring that SRKN adequately implements its scope.

SRKN will report directly to the GoG Access Road Project Manager and have the following responsibilities during construction:

- Supervise and monitor ESHS status and compliance
- As warranted, provide input on control and mitigation measures to improve the construction ESHS performance.
- Assess material changes to design or construction that may have an adverse ESHS impact or risk.
- Review the Access Road Contractor’s Monthly Reports related to ESHS aspects.
- Report periodically on the performance of the Access Road EHSMP to GoG management for the purpose of review.
- In case of any non-compliance with the Access Road EHSMP or circumstances that cause or are likely to cause serious damage and/or impacts on the environment, immediately notify the GoG Project Manager and ensure that actions are taken to properly address the issue.
- Communicate with the GoG regarding issues related to ESHS and construction.

For operation, the GoG will assign responsibility for Access Road operation and maintenance to the Ministry of Public Works and Communication which will implement the GoG operation phase programs in the Access Road EHSMP. The responsibilities include:

- Implement the operation phase ESHS mitigation measures and monitoring programs
- Manage any ESHS specialists and liaise and coordinate with the Company’s ESHS Manager
- Report periodically to the GoG Management Committee on performance related to ESHS matters
- Assess and approve material changes to the Access Road operation that may have an adverse ESHS impact or risk
- Review all plans on an periodic basis and update them, if necessary
• Communicate with the general public and parties that raise ESHS issues related to the Access Road.