CENTRAL ELECTRICA DA NAMAACHA

ENVIRONMENTAL MANAGEMENT PLAN (UPDATED NOVEMBER 2023)

Namaacha Wind Energy Facility

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CONFIDENTIAL

PREPARED BY WSP

WSP PROJECT NO. 41104276

GLOBELEQ NAMAACHA WEF (UPDATED EMP)

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Abbreviations

AQUA – National Environmental Quality Control Agency

CEN - Central Eléctrica da Namaacha, SA

CER - Construction Environmental Monitoring Reports

CHMP – Cultural Heritage Management Plan

CHSSF – The Community Health, Safety and Security Framework

CHSSP - The Community Health, Safety and Security Plan

CFP – Chance Finds Procedure

dB – Decibel

DINAB - National Directorate of Environment

EIA - Environmental Impact Assessment

EMP - Environmental Management Plan

EPC - Engineering, Procurement and Construction

EPDA - Environmental Pre-feasibility and Scoping Study

ERP - Emergency Response Plan

ESO - Environmental and Safety Officer

HASP - Health and Safety Plan

FEED – Front End Engineering and Design

GBV – Gender based Violence

HIV - Human Immunodeficiency Virus

IEC – Information, Education and Communication

IFC - International Finance Corporation

ILO – International Labour Organisational

IMS – Integrated Management System

KPI – Key Performance Indicator

kV – Kilovolts

LSA – Local Study Area

MICOA - Ministry for Coordination of Environmental Affairs

MITADER - Ministry of Land, Environment and Rural Development

MTA – Ministry of Land and Environment

MW – Megawatt

NGO – Non-governmental Organisation

OHS - Occupational Health and Safety

PLA – Project Labour Agreement

PPP – Public Participation Process

PPE - Personal Protective Equipment

PS – Performance standards

RAPF – Resettlement Action Plan Framework

SEA- Simplified Environmental Assessment

STD - Sexually Transmitted Diseases

STI – Sexually Transmitted Infections

SWM – Solid Waste Management

WHO - World Health Organisation

WMP - Waste Management Plan

WWTP – Wastewater Treatment Plant

DEFINITIONS AND TERMINOLOGY

Bio-Medical Waste	Mozambican waste Decree 8/2003 of 18 February defines bio-medical waste as waste resulting from medical or veterinary diagnosis, treatment and research.
CEN	Refers to Central Eléctrica de Namaacha, the project proponent
Contractor	The organisation that is appointed to represent the Proponent and to manage the sub-contractors' activities.
Decibel (dB)	Decibel - a descriptor that is used to indicate a level determined as 10 times the logarithmic ratio of two quantities of the same physical unit.
Disposal	The burial, deposit, discharge, abandoning, dumping, placing or release of waste into, or onto, any land. In accordance with National Law it is the use of any of the operations specified in Annex V of Decree 83/2014 of 31 December.
Domestic Waste	Waste excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, health care, sport or recreation purposes.
Environmental Coordinator	Any senior CEN environmental personnel with medium to long term experience whose role is to co-ordinate environmental aspects for the Project and ensure compliance with the EMP.
Environmental Management Plan	Defines the measures to be taken during the life of a project, including design, construction, operation and decommissioning to prevent and/or manage adverse environmental impacts; defines the actions needed to implement these measures; and describes how this shall be achieved.
Environmental Management Plan Audit	A systematic, documented and objective evaluation of the environmental performance of a project by objectively obtaining and analysing evidence to determine whether the implementation of the EMP conforms to its requirements.
Environmental Management System	The part of the overall management system that includes organisational structure, planning activities, responsibilities, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining an environmental policy.
Environmental Site Officer (ESO)	This is a person with environmental training who is responsible for the day-to-day environmental management of construction activities.
Environmental Specialists	These are either CEN personnel or external specialists called in for specific environmental aspects as defined by the environmental coordinator.

Hazardous Waste	Waste bearing risk characteristics for being flammable, explosive, corrosive, toxic, infectious or radioactive, or for showing any other characteristic that constitutes hazard for the life and health of mankind and other living creatures and for environmental quality.
Noise	Unwanted sound.
Noise emission	The noise energy that is emitted by a noise source into the environment.
Non-hazardous Waste	Waste with no risk characteristics, including but not exclusive to paper or paperboard, plastic, glass, metal, domestic rubbish, metal scrap and organic matter.
Re-instatement	This is the process at the end of construction phase which entails returning the construction area to a situation which will facilitate the rapid return of the indigenous, surrounding vegetation. It involves the following: ▪ Returning the work site to its natural contour levels (e.g. filling in trenches, returning drainage ditched) using spoil. ▪ De-compacting any compacted areas. ▪ Placing the topsoil evenly over the site ▪ Pulling adjacent vegetation over the site ▪ In some instances putting in erosion control measures ▪ In some instances reseeding areas.
Rehabilitation	This is the process of allowing the return of the natural vegetation after re-instatement has occurred. The Project shall use natural succession which entails allowing indigenous species to regenerate naturally in re-instated areas, in their natural sequence of succession (i.e. primary succession species such as grasses and groundcovers first and then secondary succession of woody species). As part of this monitoring shall occur to assess problem areas, where CEN will intervene to restore the vegetation.
The Works	All areas within which CEN's and the Contractor's activities shall take place.

1 INTRODUCTION

This Environmental Management Plan (EMP) has been prepared for the Namaacha Wind Energy Facility which will consists of 18 wind turbines near the village of Namaacha, with a total power delivery capacity of 120 MW.

The purpose of the EMP is to provide a document that sets out how the main environmental, socioeconomic, and occupational health and safety (OHS) impacts, as identified in the Environmental Impact Assessment (EIA), will be managed across all phases of the project: construction, operation and decommissioning.

The EMP identifies a set of measures with obligations and responsibilities of each one of the parties involved in the project, the methodology and procedures that must be followed.

Note that the EMP will be a 'living document' that will be continually refined over the life of the project to incorporate the most current available information.

The two key objectives of the EMP are as follows:

- Provide Central Eléctrica da Namaacha, SA (CEN) with a clear methodology to follow to manage the identified environmental and social impacts associated with the project and to align with the project standards; and
- Provide the Ministry of Land and Environment (MTA) (previously the Ministry of Land, Environment and Rural Development (MITADER)), with a tool that helps the evaluation of the proposed measures to minimize the impacts studied, taking into account national environmental legislation, specifically related to the project.

2 ENVIRONMENTAL POLICY AND LEGAL FRAMEWORK

This section focuses on the applicable legislation, CEN's policies and commitments with regards to the project.

2.1 Compliance with Legislation and Best Industry Standards

The Namaacha Wind Energy project will aim to comply with international guidelines and standards, including best practice where these are more rigorous or detailed than Mozambican national standards or where Mozambique standards do not exist.

The EMP has been developed in accordance with Article 12 of the Regulation on the Environmental Impact Assessment Process (Decree No. 54/2015, of 31 December) and the General Directive for the Preparation of Environmental Impact Studies (Ministerial Diploma No. 129/2006, of 19 July). In meeting regulatory requirements, the EMP includes (but not restricted to) the following:

- An environmental vision and associated strategies;
- Measures and actions to be adopted to ensure that strategies are met;
- Procedures for specific action programmes and plans;
- Monitoring procedures, including environmental auditing;
- An environmental awareness and training programme;
- Environmental performance;
- A stakeholder engagement plan;
- A grievance redress mechanism; and
- A decommissioning and rehabilitation plan.

The below list makes reference to the national legislation considered most directly applicable to the Project activities, and have been incorporated into this document:

- National Water Policy - The National Water Policy outlines specific strategies for the main areas of urban and peri-urban water supply, rural water supply, sanitation, and integrated water resource management. Integrated water management is promoted within the policy to optimise the benefits to communities, while also considering environmental impacts and sustainability of resources over time.
- Environment Law (Law 20/97 of 1 October) – This law defines the legal basis for the good use and management of the environment and its components in order to guarantee the sustainable development in Mozambique. This law applies to all public or private activities that may directly or indirectly influence the environment.
- The Regulation on Environmental Inspection (Decree No. 11/2006, of 15 June) - The Regulations regulate supervision, control and audit activities related to compliance with environmental protection standards throughout the country.
- Regulation on the Environmental Audit Process (Decree No. 25/2011, of 15 June) - The Regulations define environmental audit as an instrument for managing and systematically

assessing an organization's capability to protect the environment and contain norms for making this operational.

- Labour Law (Law No. 23/2007, of 1 August) – This law defines the general principles and establishes the legal regime applicable to individual and collective relations of subordinate work, provided on behalf of others and by means of remuneration. Among others, the law determines hygiene, safety and health conditions for workers.
- Health and Safety at Work in Industrial Establishments Regulation (Legislative Diploma No. 48/73, of 5 June) - Specifies norms on hygiene and safety at work.
- Regulation on Environmental Quality and Effluent Emission Standards (Decree No. 18/2004 of 2 June) with additions and amendments in supplement (Decree n°67/2010, of 31 December) – It regulates and ensures effective control and monitoring on the quality of the environment and natural resources. It establishes specific standards and regulations on water quality, atmospheric emissions and noise.
- Regulation on Urban Solid Waste Management (Decree No. 94/2014 of 31 December). The regulation establishes the general principles of management of urban solid waste and industrial waste with characteristics similar to urban waste, in its article 4, and establishes the obligations of waste producers in its article 11. The Decree in its article 8 and Annex I (Waste Management Plan), mandates all the public or private entities that perform waste management activities, to develop and implement a waste management plan.
- Regulation on Management of Hazardous Waste (Decree No. 83/2014, of 31 December) – The regulation establishes the general principles of hazardous waste management, in its article 4, and establishes the obligations of waste producers in its article 8.

The project has also made the commitment to fully align with the International Finance Corporation's Performance Standards (PS) and associated guidelines. These PSs include:

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS 2: Labour and Working Conditions;
- PS 3: Resource Efficiency and Pollution Prevention;
- PS 4: Community Health, Safety and Security;
- PS 5: Land Acquisition and Involuntary Resettlement;
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PS 7: Indigenous People; and
- PS 8: Cultural Heritage.

3 ENVIRONMENTAL MANAGEMENT STRUCTURE

The overall organisational structure for the Project's environmental management identifies and defines the roles and responsibilities for the various organisations and individuals involved in the Project. The structure of the Project and associated personnel must be sufficient and suitably qualified to meet the role's requirements and undertake the necessary responsibilities. The environmental management structure to be implemented for the Project is presented below.

3.1 ORGANISATIONAL STRUCTURE AND RESPONSIBILITIES

3.1.1 GENERAL

The organisational structures and dedicated roles and responsibilities list for environmental and social management on the Project for the construction and operation phases are set out below. The responsibilities of the parties involved are described in Section 3.1.2 below.

The following general principles apply to all organisations and individuals involved in the Project:

- All parties shall comply with all the requirements of the EMP and shall, in accordance with accepted industry standards and the World Bank policies and guidelines, employ up to date techniques, practices and methods that comply to the legislative requirements and, in general aim to minimise environmental damage, control waste, avoid pollution, prevent loss or damage to natural resources and minimise effects on surrounding landowners, occupants and the general public.
- All parties shall prevent or minimise the occurrence of accidents which may cause damage to the environment or people and aim to return the environment to a state as close to the condition existing prior to any such accident as possible.
- All parties shall take proactive steps to ensure that the requirements in the EMP are met during construction, operational and decommissioning activities. These shall include, but not be limited to, the following:
    - Employment of competent and dedicated members of staff to oversee the implementation of the EMP.
    - Training of staff about the relevant environmental aspects and the specific measures that each employee must implement to meet the environmental protection and management standards defined by the EMP.

The proposed organisational structures are shown on **Figure 1** and **Figure 2.**

3.1.2 CONSTRUCTION MANAGEMENT

Specific responsibilities associated with the key positions during the construction phase are summarized below:

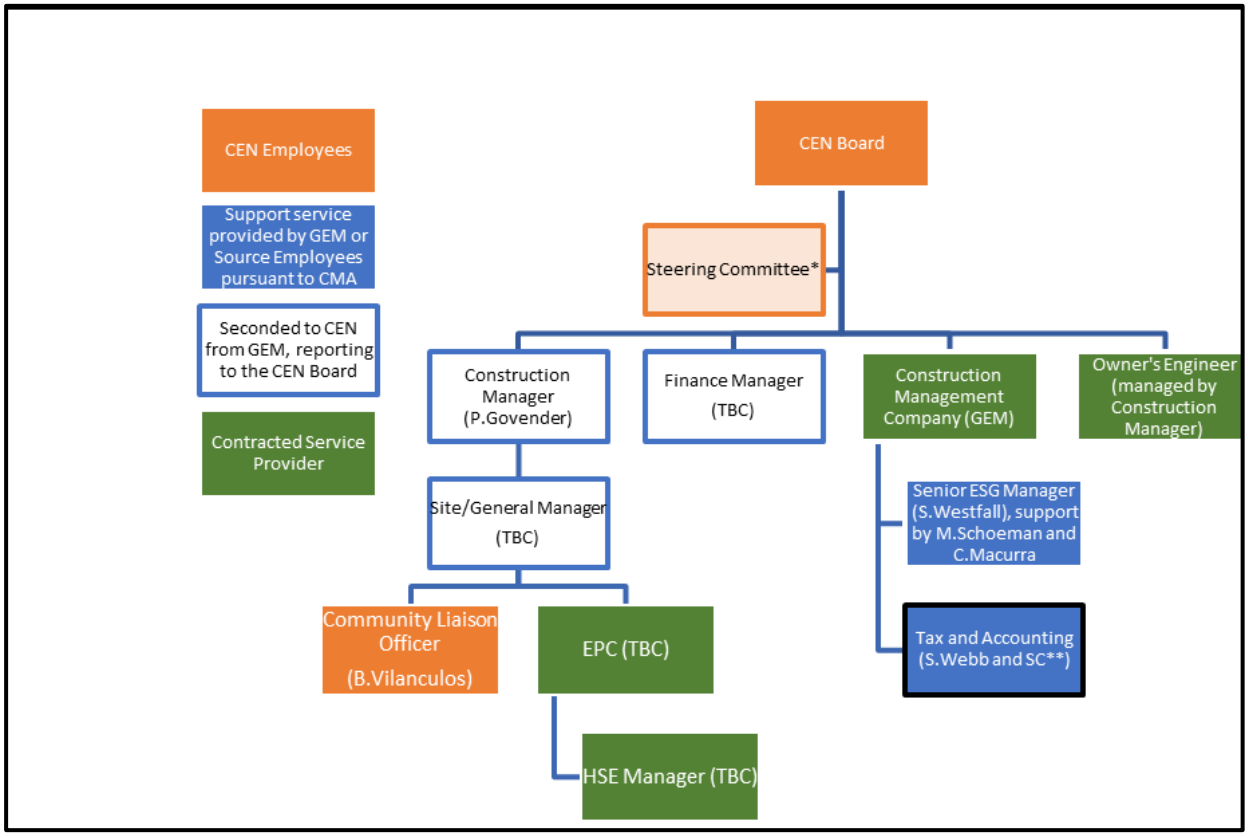

Figure 1: Organisational Structure for the Construction Phase

3.1.2.1 CEN Board

CEN is accountable for ensuring compliance with the EMP and any conditions of approval from the MTA. All operations involved will be managed to ensure that the environment, health and safety of workers and all other stakeholders involved in the project are protected. CEN must:

- Adopt this EMP, implementing the recommendations contained in the EMP;
- Assume overall responsibility for the EMP, monitoring compliance with legislative and contractual requirements. Non-compliances with the EMP must be corrected through the implementation of corrective measures;
- Make the EMP available to all parties involved in the activity, contractors, subcontracted companies and workers in general;
- Ensure measures are in place to promote the principles of cordiality and mutual interest, as provided for in Mozambican legislation, are observed during stakeholder activities;
- Appoint a HSE Manager (or equivalent) to oversee compliance with the EMP and undertake regular internal audits with the respective contractors and environmental officers;

- Verify that managers, supervisors, workers and visitors are informed about safety, health and environmental requirements; and
- Monitor and evaluate the performance of the contractor, subcontractors and workers in general in the areas of environmental protection, health and safety.
- Communication with the communities shall be an important responsibility of the project proponent. CEN should provide periodic reports to the Project Affected Persons that describe progress with implementation of the project. Action plans should be developed on issues that involve ongoing risk to or impacts on Affected Communities and on issues that the consultation process or grievance mechanism have identified as a concern to those Communities.
- CEN will be responsible for auditing the implementation of the Environmental and Social Management System (developed by the Managing Contractor) during construction.

3.1.2.2 Community Liaison Officer (CLO)

The CLO shall be the principal interface between the community and the Construction Contractor (and subcontractors) during construction and shall also be responsible for all ongoing communications with communities and stakeholders affected by CEN's operations.

The CLO shall preferably be hired from the district in which the Project is proposed, shall be trained by the Site Manager about all relevant aspects of the project, shall have experience in communication with communities and local and district authorities and shall be able to communicate in local languages.

During the construction phase, the CLO shall act as a guide and advisor to the Construction Contractor in respect of the EMP concerning communication and local community issues. This shall be achieved by ongoing liaison with and monitoring of relations with communities, identification of problem areas and supporting their resolution. The CLO shall comply with all requirements for ongoing communication with affected communities during the construction period.

Responsibilities of the CLO shall be set by CEN and will include the following:

- To keep communities informed about upcoming construction activities and progress with construction;
- To arrange occasional visits to construction sites for District Government and community leaders;
- To provide traffic safety educational programmes to those communities near or on access routes that will be used by construction vehicles;
- To support CEN in the implementation of the Project Labour Agreement by communicating to government, community leaders and community members the aims and objectives of CEN's transparent recruitment approach for unskilled temporary construction workers, aimed at providing maximum benefit to and fair job distribution between locally affected communities.
- To liaise between CEN, the community and service providers implementing community projects for the construction phase.
- To communicate and manage the CEN's Compliments and Complaints Register;
- To report any transgressions of foreign construction workers in the communities to the CLO and the Site Manager;

- Provide guidance on and evaluate the implementation of the social aspects of the EMP.
- Provide the community with the Grievance Redress Mechanism (**ANNEXURE F**) and train community members how the grievance process works as well as how to lodge a grievance;
- Provide ongoing reporting and communication to affected communities revealing project progress, addressing community concerns, security and safety incidents;
- Engage and train community members on the Emergency Preparedness and Response Plan and procedures for the project.
- All communications with the communities and stakeholders shall be undertaken by the CLO appointed for the construction period in conjunction with CEN management.

3.1.2.3 Site / General Manager

- The site manager will be responsible for the day to day management of all Contractor construction components and ensuring sufficient resources are available for the implementation of the EMP and the accompanying sub-plans across all construction activities as described within the EMP.
- The site manager will also be responsible for ensuring appropriate corrective actions are implemented as a result of any identified non-compliances or environmental incidents related to any of the sub-plans included within the EMP.
- It is the overall responsibility of the Contractor Site Manager to ensure that all sub-contractors implement requirements of the EMP and sub-plans.

3.1.2.4 Engineering, Procurement and Construction (EPC) contractor

CEN management is responsible for oversight of the civil works for the Project including appointment of an engineering, procurement and construction (EPC) contractor.

The EPC Contractor hired to carry out the activities related to the construction of the Namaacha Wind Energy Facility must comply with the following obligations:

- Communicate with CEN and respond to issues related to the implementation of the EMP;
- Ensure that all subcontractors (including the Construction Contractor) employ up to date techniques, practices and methods of construction that comply with the E&S standards enunciated above, and, in general, minimise environmental damage, control waste, avoid pollution, prevent loss or damage to natural resources and minimise effects on surrounding landowners, occupants and the general public.
- Implement the mitigation measures contained in this EMP as well as techniques and methods to achieve management outcomes. The EPC Contractor shall make efforts to minimise damage to the environment, control waste, avoid pollution and all other aspects that impact the environment associated with the Project;
- Organise work plans, transport logistics and equipment needed to conduct activities in a manner that conforms to the environmental requirements;
- Comply with the environmental audits carried out by the CEN and relevant government bodies, and provide whenever necessary, information that facilitates the audit;

- Regularly update the Health, Safety and Environment (HSE) Manager and subcontractors about any non-conformance in respect of this EMP and advise the HSE Manager of the actions that will be taken to rectify the non-conformance.
- If government authorities consider that operational activities developed by the contractor cause damage to the environment, the EPC contractor must consult CEN and the competent authorities to reach consensus on the minimization measures to be implemented. The measures agreed should be implemented as early as possible in order to avoid subsequent damage and repair any damage that has occurred; and
- Ensure the hiring of personnel with experience and a high sense of responsibility to respond to issues related to the Environment, Health and Safety during activities.
- During construction, the EPC contractor must ensure that a suitable ESMS is developed which aligns with the Project and CEN's policy and procedures.

3.1.2.5 HSE Manager

Specific responsibilities of the HSE Manager shall be as follows:

- Ensure compliance with the measures provided for in the EMP and report to CEN and to MTA whenever necessary on the level of implementation of the EMP;
- Ensure that subcontractors during the construction phase as well as operation, are informed and held accountable for the application of the recommendations presented in the EMP;
- Ensure that the ISO 14001 standard requirements are in place;
- Ensure that the environmental parameters are monitored as per the EMP requirements;
- Ensure that CEN has an Emergency Preparedness and Response Plan;
- Ensure that all environmental incidents are reported and investigated and that measures are in place to prevent recurrence;
- Ensure and facilitate communication between relevant institutions as is the case of MTA, among others;
- Provide monthly reports that include an assessment of EMP compliance, which must be supplied to CEN and external stakeholders such as MTA or Lenders;
- Produce an Environmental Management Report at the end of each phase of the project, providing an assessment of the degree of compliance with the recommendations presented in the EMP;
- Review environmental performance, ensuring that action plans are in place to address non-compliance and that issues are investigated and reported to the appropriate levels within the organisation;
- Ensuring that the environmental audit and inspection programme is carried out;
- Ensuring that the independent environmental monitoring activities are regularly conducted, the reports analysed, and measures put in place to address trends; and
- Establish procedures for collecting and channelling complaints submitted during the construction and operation phase also known as the Grievance Redress Mechanism.

3.1.2.6 Senior ESG Manager

The construction management company shall employ the services of a Senior Environmental and Social Governance (ESG) Manager as and when required during construction and project implementation to ensure compliance with the requirements of the EMP or to advise about environmental sensitivities that were previously unknown and are not adequately dealt with in the EMP.

The ESG Manager shall have a demonstrated track record in the specific environmental or social aspects under consideration. The specialist shall advise CEN of any appropriate actions to be taken and will participate in the review, approval, and as necessary, update or modification of this EMP in response to changing project conditions.

- The ESG Manager responsibilities shall include (but not limited to) the following:Provide management support to the EPC Contractor, Site Manager, HSE Officer and CLO as necessary to ensure proper implementation of EMP planning requirements.
- Undertake routine (at least every three months) audits of the implementation of EMP on site in line with the environmental and social audit programme;
- Approve any updates to the EMP and its sub-plans and procedures;
- Liaise with the Site and HSE Managers in defining appropriate corrective actions to be implemented as a result of any identified non-compliances or incidents related to any environmental, social and health and safety aspects and provide project-wide advice to ensure consistent approach and outcomes are achieved;
- Identify applicable environmental training requirements for all staff and ensuring that training is undertaken;
- Annually review the EMP and update as required;
- Track and document any applicable changes to national and international legislation and standards, and identify environmental permission requirements, issued by the regulator;
- Report on the performance of the EMP to the top management review and as a basis for improvement of the EMP;
- Consult and liaise with environmental regulators as necessary; and
- Attend Project meetings.

3.1.3 OPERATIONS MANAGEMENT

Specific responsibilities associated with the key positions during the operational phase are summarized below:

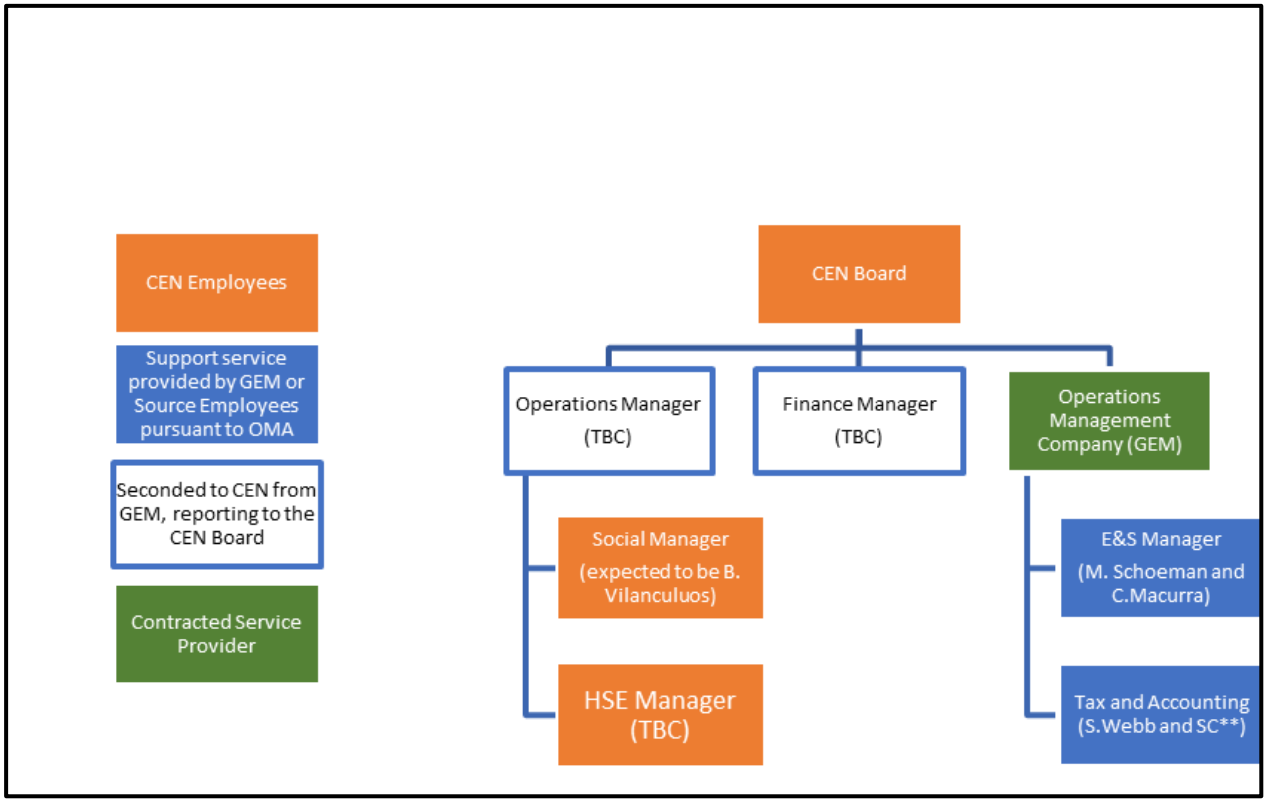

Figure 2: Organisational Structure for the Operational Phase

3.1.3.1 All Parties

All parties shall comply with all the requirements of the CEN operations ESIA and ESMP and shall, in accordance with accepted industry standards and the World Bank, employ such up to date techniques, practices and methods that will ensure compliance to the requirements and, in general, minimise environmental damage, control waste, avoid pollution, prevent loss or damage to natural resources and minimise effects on surrounding landowners, occupants and the general public.

All parties shall prevent or minimise the occurrence of accidents which may cause damage to the environment, prevent or minimise the effects of such accidents and shall return the environment to a state as close to the condition existing prior to any such accident as possible.

All parties shall take proactive steps to ensure that the requirements in the ESMP are met during operation. These shall include, but not be limited to, the following:

- Employment of competent and dedicated members of staff to oversee the implementation of the ESMP.
- Instruction of staff about the relevant environmental aspects and the specific measures that each employee will implement to meet the environmental protection and management standards defined by the ESMP. This will also require adequate oversight of the implementation and management of the Resettlement Policy Framework (RPF). The Sponsor will be responsible to ensure that the

RAP/ LRP is implemented according to requirements of MTA as well as the WBG requirements (PS5).

3.1.3.2 Social Manager

Similar to the construction phase, the Social Manager will act in a similar capacity as the CLO during the operational phase. This includes:

- To keep communities informed about any changes or updates to the operational activities;
- To arrange occasional visits to the operational site for District Government and community leaders;
- To provide traffic safety educational programmes to those communities near or on access routes that will be used by operational vehicles;
- To support CEN in the implementation of the Project Labour Agreement by communicating to government, community leaders and community members the aims and objectives of CEN's transparent recruitment approach for unskilled temporary construction workers, aimed at providing maximum benefit to and fair job distribution between locally affected communities.
- To liaise between CEN, the community and service providers implementing community projects for the operational phase.
- To communicate and manage the CEN's Compliments and Complaints Register;
- To report any transgressions of foreign workers in the communities to the CLO and the Site Manager;
- Provide guidance on and evaluate the implementation of the social aspects of the EMP.
- Provide the community with the Grievance Redress Mechanism (**ANNEXURE F**) and train community members how the grievance process works as well as how to lodge a grievance;
- Provide ongoing reporting and communication to affected communities revealing project progress, addressing community concerns, security and safety incidents;
- Engage and train community members on the Emergency Preparedness and Response Plan and procedures for the project.
- All communications with the communities and stakeholders shall be undertaken by the CLO appointed for the construction period in conjunction with CEN management.
- Review stakeholder engagement reports to assess and understand issues related to environment, health, safety and social.

3.1.3.3 HSE Manager

The HSE Manager is responsible for providing overall governance for HSE matters relating to CEN's operations, including the management of resources by providing guidance and support and monitoring progress against established work plans to meet defined environmental targets and objectives.

He/she will ensure strategic planning with regard to medium and long-term environmental and social management for CEN's operations by:

- Ensuring compliance with the approved ESMP for CEN's operations.
- Ensuring that the ISO 14001 standard requirements are in place.
- Ensuring that the environmental parameters are monitored as per the o-ESMP requirements.
- Ensuring accurate and timeous reporting on environmental performance, analysing trends and ensuring that measures are in place to address deviations.

- Ensuring that all environmental incidents are reported and investigated and that measures are in place to prevent recurrence.
- Chairing the environmental task team meetings and ensuring that actions are allocated to responsible persons and that close-out is monitored in CEN's ESMS.
- Ensuring that a regular meeting platform is created where environmental performance is discussed at employee and management level.
- Ensuring that the environmental audit and inspection programme is carried out.
- Periodically reviewing the CEN HSE Strategy.
- Investigating Health and Safety incidents and near misses.
- Monitoring Health and Safety Performance.
- Compiling and verifying regular environmental performance reports produced for CEN management and external stakeholders such as MTA or Lenders.
- Conducting regular site visits, environmental audits and inspections (encompassing Environmental, Social, Health and Safety aspects).
- Reviewing environmental performance, ensuring that action plans are in place to address non-compliance and that issues are investigated and reported to the appropriate levels within the organisation.
- Initiating, co-ordinating and managing all environmental related communication with the Government (local, provincial and national) on environmental matters.
- Liaising with the CEN Operations Manager.
- Providing advice and support to the Operations Manager and Environmental and Social (E&S) Manager as required.
- Keeping abreast of local, regional and national developments in the environmental field. and
- Ensuring that the independent environmental monitoring activities are regularly conducted, the reports analysed and measures put in place to address trends.

3.1.3.4 Operations Manager

The Operations Manager shall ensure that all parties comply to all the requirements of the ESIA and ESMP and shall, in accordance with Mozambique Legislation and the World Bank standards, employ such up to date techniques, practices and methods of Operations that will ensure compliance to these requirements and, in general, minimise environmental damage, control waste, avoid pollution, prevent damage to natural resources and minimise effects on surrounding landowners, occupants and the general public.

- Ensure the provision of sufficient and suitable resources both on and off-site to ensure that pollution is prevented, waste minimised and the rights of the environment protected.
- Ensure compliance to all applicable environmental legislation and commitments at all times.
- Ensure the implementation of an environmental management system to achieve all of the above.
- Assume responsibility for all decisions on all environmental matters.

The Operations Manager shall establish systems and approaches to prevent or minimise the occurrence of accidents which may cause damage to the environment, prevent or minimise the effects of such accidents and shall return the environment to a state as close to the condition existing prior to any such accident as possible.

The Operations Manager shall take proactive steps to ensure that the standards in the ESMP are met during operation. These shall include, but not be limited to, the following:

- Employment of competent and dedicated members of staff to oversee the implementation of the ESMP; and
- Instruction of staff about the relevant environmental sensitivities and the specific measures that each employee will implement to meet the environmental protection and management standards defined by the ESMP.

The Operations Manager shall ensure the availability of sufficient and suitable resources to ensure the aforementioned. This will also require adequate oversight of the implementation and management of the Resettlement Policy Framework (RPF).

3.1.3.5 Environmental and Social Manager

The E&S Manager will act as a guide and advisor to employees and contractors on environmental issues associated with CEN's operations. This will be achieved by ongoing inspections / auditing of Operations, identification of problem areas and provision of actions plans to ensure environment protection.

The E&S Manager will ensure compliance to the requirements of the EMP by all parties, as well as with any other requirements related to environmental issues as they become known. The E&S Manager should have adequate and relevant training in environmental management and will be required to be able to evaluate the effectiveness of specified management measures and be familiar with environmental management techniques. The E&S Manager should be able to propose solutions to problems identified as regards the implementation of the plans. Specific responsibilities of the E&S Manager will be as follows:

- To thoroughly familiarise him/herself with existing information regarding operations area and the ESMP.
- Ensure the protection of the biophysical and social environment.
- Maintain CEN's ISO14001 Environmental Management System and ensure that CEN retains its certification.
- Perform all of the day-to-day tasks necessary to monitor performance with regard to the requirements of the ESMP and any other relevant requirements and / or commitments.
- Update the ESMP based on requirements of operations, the Government or internal CEN requirements.
- Monitor the impact of operations on the environment with particular emphasis on areas of environmental sensitivity.
- Audit compliance by employees, contractor(s) and suppliers with this environmental standard.

- To liaise with the Operations Manager and SHE Manager in the case of incidents, non-compliance or any matter where the course of action is unclear.
- Prepare environmental audit reports documenting the effectiveness of environmental management, problem areas, remedial actions proposed and taken and compliance/non-compliance by the Contractor(s) with the operations standard.
- Verify the accuracy of the information contained in the ESMP and to bring any errors, omissions, oversights to the attention of all parties as necessary.
- Compile regular environmental performance reports which include trend analysis and which identify areas and actions for improvement.
- Commission and oversee the execution of regular independent environmental monitoring activities.

4 ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

The Environmental and Social Management System (ESMS) is a tool for management at the Namaacha Wind Energy Facility. It will include the construction, operational and decommissioning phases. The EMP is intended to guide impact management and mitigation associated with the Namaacha Wind Energy Facility. It converts EIA mitigation measures into actions and allocates responsibility and deadlines to those actions. The ESMS confirms management commitment to the EMP and describes how the requirements of the EMP will be achieved. It sets the management framework in terms of environmental organisational structure, reporting, review and monitoring, training and public disclosure.

The EPC Contractor, in conjunction with the HSE Manager and E&S Manager is to ensure that a suitable ESMS is implemented to monitor and evaluate compliance (and be able to demonstrate compliance) to the EMP.

A comprehensive ESMS aligned to IFC ESMS Implementation Handbook – General (2015) and ISO 14001:2015 standards must be developed and implemented, inclusive of the following system elements:

i. Policy;
ii. Identification of Risks and Impacts;
iii. Management Programmes;
iv. Organisational Capacity and Competency;
v. Emergency Preparedness and Response;
vi. Stakeholder Engagement;
vii. External Communications and Grievance Mechanisms;
viii. Ongoing Reporting to Affected Communities; and
ix. Monitoring, auditing and Review.

5 PROJECT DESCRIPTION

5.1 GENERAL INFORMATION

Central Eléctrica da Namaacha, S.A. and Source Energia are currently developing the Namaacha Wind Energy Project, a Wind Energy Facility (WEF) of an approximate capacity of 120 MW (the Project) located near to the town of Namaacha, Mozambique. The Namaacha WEF has two possible operational designs, with two different turbine layouts, which include:

- A WEF comprising 21 Nordex N163 5.9 MW wind turbines with a 118 m hub height.
- A WEF comprising twenty Goldwind 165 6.0 MW wind turbines with a hub height of 120 m.

The proposed project components include the following:

- Wind turbines (height of approximately 120m from the base to the hub, with a rotor diameter of approximately 150 m) and concrete foundations;
- Substation (consisting of a panel with 275 kV equipment and a transformer within a fenced-off area);
- Internal power cable network (underground 30 kV cables connecting each wind turbine to the substation);
- Control building (with office, warehouse, and ablutions);
- Access roads; and
- Associated infrastructure (including overhead transmission line connecting the facility to the national grid).

5.2 PROJECT LOCATION

The proposed Namaacha WEF is located approximately 50 km west of Maputo in Mozambique (Figure 3). The site covers an area of approximately 857 ha and encompasses natural vegetation with a few isolated homesteads comprising of between one and five (5) houses. Within 2 km of the proposed boundary there is also agricultural areas and villages.

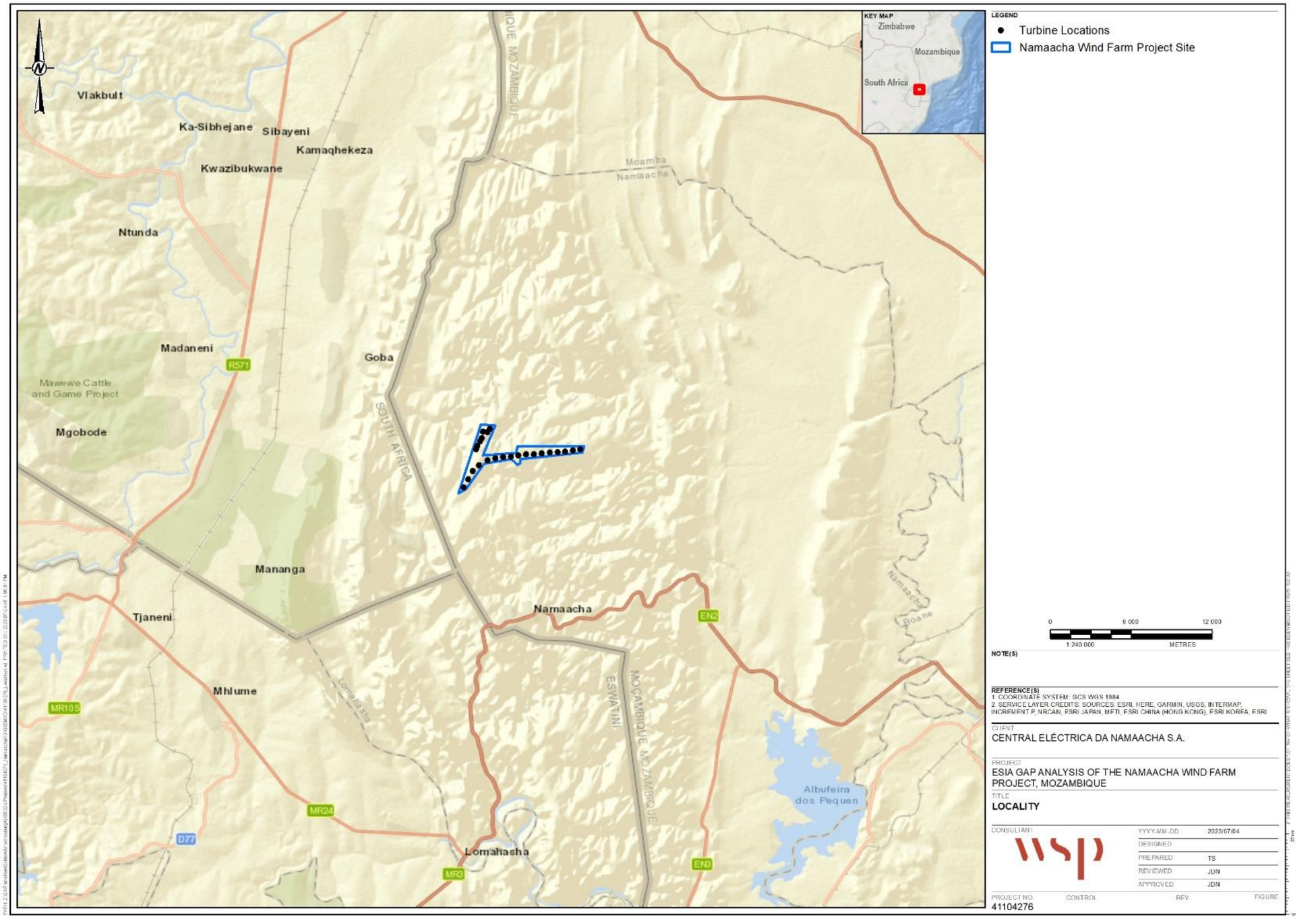

Figure 3: Layout map

6 PRE-CONSTRUCTION PHASE

At this stage of Project development, despite having already been considered in defining the layout of the Namaacha Wind Energy Facility, it is recommended that the following measures be maintained in prior to construction:

- Maintain the design locations for the turbines proposed in the revised EIA addendum (as submitted in July 2023). If a different location is proposed for any turbine, a revised assessment to consider any changes to impacts and mitigation measures will be required prior to implementation.
- Follow the methodology set out in the Resettlement Action Policy Framework (RAPF) and Resettlement Action Plan (RAP) for all physical and economic resettlement required for the project;
- Any project vehicles accessing site should use existing access roads and tracks wherever possible.
- No clearance of vegetation should be undertaken without express approval of the Environmental Manager or equivalent.
- As part of the planning for the construction phase, maintain continuous access to the church through the existing access in order to guarantee safe access for people who attend the church.
- Disseminate the execution program of the works to the interested populations, namely to the population residing in the surrounding area. The information provided must include the purpose, the nature, location of the work, the main actions to be carried out, the respective timetable and possible allocations to the population, namely the allocation of accessibilities;
- Implement a public service mechanism to clarify doubts and handling any complaints;
- Carry out training and environmental and safety awareness actions for the workers and supervisors involved in the execution of the works in relation to the actions likely to cause environmental impacts and the minimisation measures to be implemented, namely rules and precautions to be taken during the course of work (included in the Health, Safety and Environmental (HSE) Plan);
- Draw up a Work Plan of all the works assigned to the contract that includes, among other relevant aspects of the contract, the phases foreseen for earthmoving, for clearing and deforestation actions and for the crossing of water lines.
- Draw up a Landscape Integration Plan for the works, in order to guarantee the adequate landscape framework that guarantees the attenuation of visual impairments associated with the presence of the works and respective integration in the surrounding area;
- Implement the Environmental Monitoring Plan for the works, consisting of execution planning of all elements of the works and identification and detailing of the measures of minimization to be implemented in the phase of execution of the works, and their respective timetable ;
- Mark correctly the accesses to the project area with speed limit signs clearly displayed. The signs should include a 30 km/h speed limit within the construction areas.

7 CONSTRUCTION PHASE MANAGEMENT PLAN

Overall Goal for Construction: To ensure that the construction of the Project does not have unforeseen impacts on the environment and to ensure that all impacts are monitored, and the necessary corrective action is taken in all cases. To address this goal, it is necessary to operate the project in a way that:

- Ensures that construction activities are properly managed in respect of environmental aspects and impacts.
- Enables the project construction activities to be undertaken without significant disruption to other land uses in the area, in particular access routes and existing livelihoods, traffic and road use, and effects on local residents.

Table 1: Construction Management Requirements

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
Installation of the laydown area and materials storage	■ The location of the construction site, if different from the one foreseen in this EIA, should be chosen avoiding areas within 50 m of permanent water lines, avoiding the destruction of tree species. ■ The site should be organised in the following areas: ▪ Social areas (support containers for the technical teams present on site); ▪ Waste disposal: two types of containers should be placed - containers intended for Urban Solid Waste and similar and container intended for construction waste; ▪ Storage of polluting materials (oils, lubricants, fuels): this area should be properly dimensioned, waterproofed and covered so as to prevent overflows and that, in the event of accidental spillage, contamination of adjacent areas does not occur (it should have a drainage system for a watertight retention basin); ▪ Car and equipment parking; and ▪ Deposition of construction materials. ■ The construction site should be fenced off, or if this is not possible, the area allocated to it should be marked off with visible signs. Warning signs should be placed on the fencing, including the safety rules to be observed and the schedule of works. ■ The construction site and the different work fronts must be equipped with all the necessary materials and means to respond to environmental incidents/accidents, including accidental spillages of polluting substances. They must be waterproofed and with effective drainage, easily accessible. ■ Access by personnel not assigned to the works must be avoided or, if possible, prohibited. Therefore, the intervention areas that intersect public roads and paths must be signposted in accordance with the municipal traffic regulations, and whenever justified, fenced off. ■ Measures should be adopted in the field of information signalling and traffic regulation on the roads crossed by the Work Site, aiming at safety and information during the construction phase, complying with the National Regulations in force and the best international rules on the subject. international rules on the matter. ■ A rainwater drainage system should be established around the construction site area.	■ EPC Contractor ■ HSE Manager	As required	■ Location outside of prohibited areas ■ Authorisation of Site Manager ■ Appropriate security around laydown areas

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
Deforestation, cleaning and stripping of soils	■ The deforestation and soil stripping works should be limited to the areas strictly necessary for the execution of the works, and the vegetation cover of each intervention area should be restored as soon as the earthworks (which are expected to be minor) are completed, particularly in the excavation and embankment areas. This measure is particularly important in the areas of the working platforms for the construction of the control building and the substation and in the construction sites of the foundations of the power line supports. In this way, some potential direct affectations of the subsurface hydrogeological system of local scope will also be taken care of. ■ Prior to earthmoving works, topsoil should be removed and stockpiled for later re-use in areas affected by the works. ■ Stockpiling of topsoil from surface stripping should not exceed two metres in eight and should be located in the vicinity of the sites from which the topsoil was removed, on flat, well-drained areas, for later use in reclamation actions. ■ Plant biomass and other waste resulting from these activities should be reused wherever possible. ■ Earthmoving and machinery movements should, as far as possible, favour the use of existing accesses or those less sensitive to soil compaction and waterproofing, avoiding the movement of machinery indiscriminately over the entire site.	EPC Contractor	During site preparation where the removal of topsoil is required.	■ Details of topsoil removal (quantity) and topsoil stockpile location. ■ As per requirement.
Excavations and earthworks	■ Excavation and backfill works should be started as soon as the soil is clean, avoiding repetition of actions on the same areas. ■ Land clearing and stripping, earthmoving and exposure of bare soil should, where possible, be reduced during periods when heavy rainfall is most likely to occur, to minimise waterborne erosion and the consequent transport of sediment to major water lines. ■ The execution of excavations and embankments should be interrupted during periods of high rainfall and precautions should be taken to ensure the stability of the slopes and to avoid landslides. ■ Where possible, use materials from excavations as backfill material in order to minimise the volume of surplus land (to be transported outside the intervention area). ■ Excavation materials that cannot be utilised, or are in excess, should be stored in suitable storage facilities. ■ In areas where works are carried out that may affect water lines, measures should be implemented to minimise interference with the water regime, pre-existing vegetation cover and bank stability. The natural flow of the water line should never be interrupted. All interventions in the water domain that are necessary during the course of the work must be previously licensed. ■ During the temporary storage of earth, it must be protected with waterproof coverings. The height of earth piles should be such as to ensure their stability.	■ HSE Manager ■ Site Manager ■ EPC Contractor	■ At the beginning of construction phase	■ As per requirement

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
Construction and rehabilitation of accesses	■ Favour the use of existing paths to access the construction sites. If new access roads or improvements to existing access roads are required, the works should be carried out in such a way as to minimise changes in land use outside the areas that will subsequently be occupied by the access road. ■ Ensure correct compliance with safety regulations and signalling of works on public roads, taking into account safety and minimising disruption to the activities of the population. ■ Non-waterproofing materials should be used for the access roads to be built. ■ Ensure that paths or access roads in the vicinity of the Project area are not obstructed or in poor condition, enabling their normal use by the local population.	■ EPC Contractor Construction Manager	At all times	■ Limited new access road development. ■ Written authorisation from EPC Contractor where access roads necessary
Movement of vehicles and operation of machinery	■ When crossing inhabited areas, moderate speeds should be adopted in order to minimise dust emissions. ■ Ensure that dusty or particulate materials are transported in suitable vehicles with the load covered to prevent the dispersion of dust. ■ Ensure that construction methods and equipment are selected that give rise to the least possible noise. ■ Ensure that only equipment that is in a good state of repair/maintenance is present on site. ■ Carry out maintenance and periodic overhaul of all machinery and vehicles assigned to the work, in order to maintain normal operating conditions and ensure the minimisation of gaseous emissions, risks of soil and water contamination, and in order to comply with noise emission standards. Ensure that the noisiest operations carried out in the vicinity of dwellings are restricted to the daytime and on working days. ■ Parking areas for machinery and vehicles must be paved or waterproofed. ■ Regular and controlled sprinkling of water, especially during dry and windy periods, in the work areas and in the accesses used by the various vehicles, where the production, accumulation and re-suspension of dust may occur. ■ Structural and construction solutions for bodies and buildings, and installation of soundproofing systems for equipment and/or buildings housing the noisiest equipment, should be adopted to ensure compliance with the limits set out in the IFC standards.	■ EPC Contractor	As required by visual observation	■ Availability of sufficient water spray capacity to prevent dust. ■ Absence of community complaints in Compliments and Complaints Register ■ Records of monitoring in HSE monthly reports.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
Product, effluent and waste management	■ Implement the Waste Management Plan and the respective minimisation measures contained therein, in accordance with the provisions of the EMP. ■ Ensure the correct temporary storage of the waste produced, according to its typology and in accordance with the legislation in force. Provision must be made for the containment/ retention of any run-off/spillages. It is not permissible to deposit waste, even temporarily, on the banks, beds of water lines and areas of maximum infiltration. ■ Open burning of hazardous waste is prohibited. ■ Waste produced in social areas and comparable to urban solid waste must be deposited in containers specifically designated for this purpose and must be sent to an appropriate final destination to be agreed with the municipality. ■ Construction and demolition waste and similar non-hazardous industrial waste shall be sorted and separated into its recyclable components and subsequently recovered. ■ Used oils, lubricants, paints, adhesives and resins should be stored in suitable, leak-proof containers and then sent to an appropriate final destination, preferably recycling. ■ Keep an up-to-date record of the quantities of waste generated and their final destinations, based on the documentation provided for in the legislation. ■ Ensure proper final disposal of domestic effluent from the site, collection in tanks or watertight pits. ■ The product storage area and the car parking area must be drained into a retention basin, sealed and isolated from the natural drainage network, in order to prevent accidental spills of oils, fuels or other hazardous products from contaminating soil and water. This retention basin must be equipped with a hydrocarbon separator. ■ The storage of fuels and/or other polluting substances is only permitted in watertight containers, properly secured and within the site area prepared for that purpose. Containers must be clearly identified and labelled to indicate their contents. ■ Whenever a chemical spill occurs on the ground, the contaminated soil should be collected, if necessary with the aid of a suitable absorbent product, stored and sent for final disposal or collection by a licensed operator. ■ If generators are used in the course of the work, to supply electricity to the site, for testing the wind turbines or for other purposes, they must be properly conditioned to avoid contamination of the soil. ■ Maintenance and washing of machinery and vehicles should not be carried out in the project area. If indispensable, conditions must be created to ensure that the soil is not contaminated.	■ EPC Contractor ■ Construction Contractor	At all times	■ As per requirement ■ Incident and corrective action records. ■ Maintenance records ■ General good house keeping
Traffic routes	■ Specific roads/routes and timetables should be defined for the circulation of heavy vehicles, involved in the construction of the WEF, in order to reduce pressure on other roads and congestion at times of peak traffic ■ Whenever necessary, repair damaged roads during the construction phase.	■ EPC Contractor ■ Construction Contractor	At all times	■ Maintenance of access roads (especially damage caused by heavy vehicles)

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
Access roads	■ Whenever necessary, carry out the process of resettlement of the machambas agreed with the users in accordance with the RPF. ■ Improvement of existing or alternative accesses in order to give access to the machambas.	■ EPC Contractor ■ Construction Contractor	At all times	■ Maintenance of access roads including access to machambas for residents
Final phase of the execution of the works	• Decommission the area allocated to the works for the execution of the project, with the dismantling of the construction sites and removal of all equipment, support machinery, material deposits, among others. Carry out the cleaning of these sites, at the very least restoring them to the conditions that existed before the work began. • Part of the area around each of the wind turbine assembly platforms should be restored, leaving only one road around each wind turbine, necessary for the circulation of vehicles assigned to maintenance operations. • Restore paths and roads used as access to sites under construction. • Ensure the reinstatement and/or replacement of any existing infrastructure, equipment and/or services in the areas under construction and adjacent areas, which are affected during the course of the works. • Ensure the unblocking and cleaning of all hydraulic drainage elements that may have been affected by the construction works. • Re-establish and restore the landscape of the degraded surrounding area, if applicable, through reforestation with native species and the re-establishment of natural infiltration conditions, with the decompaction and aeration of the soils. Carry out landscape restoration of borrow pits, if materials from outside the intervention area are found to be necessary.	■ HSE Manager ■ Site Manager ■ EPC Contractor	At the end of construction phase	■ As per requirement
Ecosystem services – Wild foods	■ Limit the removal of vegetation to the areas strictly necessary for the execution of the work – these must be demarcated for construction workers. ■ Identify and protect any important wild food supply areas within the local study area (LSA) during construction activities. ■ Awareness/education programmes that share knowledge on the importance of maintaining natural habitats for the continued supply of ecosystem services should be developed and disseminated amongst construction workers.	■ EPC Contractor	At all times	■ Inclusion of information on protection of natural habitats and ecosystem services in training / induction programme(s) and contractor toolbox talks. ■ Successful enforcement of a ban on wild food harvesting by construction workers and contractors.
Ecosystem services – Subsistence Hunting	■ Minimise wildlife disturbance by completing construction work to schedule. ■ Plan the timing of the works to minimise impacts on the different species of species relevant to this area. ■ Awareness/education programmes that share knowledge on the importance of maintaining natural habitats for the continued supply of ecosystem services should be developed and disseminated amongst construction workers. ■ Provide mess facilities for construction workers and ban hunting. ■ Support of community development initiatives for improving food security and agricultural output.	■ EPC Contractor ■ CEN Management	At all times	■ Inclusion of information on protection of natural habitats and ecosystem services in training / induction programme(s) and contractor toolbox talks. ■ Successful enforcement of a ban on hunting for construction workers and contractors.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
Ecosystem services – Grazing for livestock	■ Limit vegetation clearing to new access tracks, and turbine footings. ■ Limit the use of security fencing to laydown areas, site offices only. ■ Maintain access through fenced roads/areas via agreed crossing points. ■ Support of community development initiatives for improving food security and agricultural output. ■ Any economic displacement experienced by impacted pastoralists will be addressed via a Resettlement Action Plan.	■ CEN Management ■ HSE Manager ■ EPC Contractor	During construction and operation	■ Continued access to grazing resources utilised by pastoralists at baseline (with exception of BESS/office and WEF infrastructure footprints) ■ No loss of livelihoods experienced by pastoralists as a result of project-induced limitations on access to grazing resources ■ Any economic displacement to be appropriately addressed in RAP report
Ecosystem services – Loss in extent of ecosystems supplying fuel wood	■ Limit vegetation clearing to new access tracks, and turbine footings. ■ Provide electrical power to non-electrified communities/households that are reliant on wood fuel within the LSA. ■ Protect and maintain alternative areas where the local community can access wood.	■ EPC Contractor ■ HSE Manager ■ CEN Management	During construction and operation	■ Availability of alternative fuel resources for people currently reliant on uncontrolled fuel wood harvest – electrification or sustainably managed woodlots.
Ecosystem services – Loss in extent of ecosystems supplying biological raw materials	■ Limit vegetation clearing to new access tracks, and turbine footings. ■ Protect and maintain alternative areas where the local community can access biological raw materials within the LSA.	■ EPC Contractor ■ HSE Manager ■ CEN	During clearance activities	■ Site inspection ■ Documented important areas of biological raw material supply in LSA, where present. ■ Inclusion of management measures in BMP
Ecosystem services – Loss in extent of ecosystems supplying medicinal resources	■ Limit vegetation clearing to new access tracks, and turbine footings. ■ Identify any important medicinal plant supply areas within the LSA and manage/conserve accordingly.	■ EPC Contractor ■ HSE Manager	At all times	■ Record keeping ■ Site inspection ■ Documented important areas of medicinal plant supply in LSA, where present. ■ Inclusion of management measures in BMP
Ecosystem services – Changes in quality of freshwater supply	■ Implement stormwater management plan and sediment traps. ■ Monitor water quality throughout construction and employ additional mitigation measures (adaptive management) as required. ■ Schedule earthworks during periods of low rainfall (dry season).	■ EPC Contractor	At all times	■ Site inspection ■ Discharges to receiving environment to consist of clean water only. ■ Discharges to be done in diffuse manner to prevent erosion. ■ Earthworks completed during dry season only.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
Geology	■ The execution of excavations and embankments should be interrupted in periods of high rainfall and due precautions should be taken to ensure the stability of the slopes and to avoid ravines and/or landslides/slips. ■ In the vicinity of the site planned for the construction of the platforms of wind turbines No. 3 and No. 10, 11, 12, 13, 14 and 15, and their respective access roads, special care should be taken in earthmoving to avoid the dragging of soils into the hydrographic network, namely the Maxongoluluane River in the northern sector of the N-S ridge (wind turbine No. 3) and the tributaries of the Mixumene, Mitesandene, Libunzene, Macuabane rivers in the eastern sector of the W-E ridge that drain the area of wind turbines No. 10 to 15 and their access roads. ■ Any storage of the stripped topsoil horizon, despite its reduced thickness, should be carried out in an appropriate place, duly protected by covers to prevent its mobilisation by rainwater and wind, and should be replaced later during the restoration phase of the affected areas, especially the excavation and embankment slopes of the wind turbine platforms, substation and access roads. ■ The height of the earth heaps must ensure their stability and the cover must ensure that the soil is aerated. This measure is highly effective in protecting the soil and reduces the costs of restoring the affected sites, since it is a pedological stratum of the intervention site where seeds of local plant species are present and will easily develop. At the same time, the use of stripped soils for restoration of affected areas will avoid the use of other soils of good quality and consequently the movement of earth. ■ The land resulting from the excavations should be used, whenever possible and if the materials have adequate geotechnical characteristics, in construction works where there is a need for landfill, namely in the need for backfill, namely in the regularisation of the platforms of the accesses to be built and in the construction and regularisation of the platforms of the wind turbines and substation.	■ Site Manager ■ EPC Contractor	At all times	■ As per requirement
Hydrogeology	In view of the proximity of a well identified in the vicinity of the access to be regularised (approximately 400 m to the south of the site planned for wind turbine no. 6), it should be signposted and a protection and safety area demarcated to prevent it from being affected.	■ Construction Manager	At all times	■ As per requirement
Location of planned maintenance facilities	The handling of oils during the construction phase and the maintenance of machinery must be carried out with the necessary care in order to limit possible spillages that could cause contamination of the soil and groundwater. To this end, it is recommended that these operations take place in a specifically designed area of the site, isolated from the natural drainage network and prepared (waterproofed and capped) to retain any possible spillage. In addition, it is recommended that waste oils are stored in suitable, leak-proof containers for further treatment by a licensed operator.	■ EPC Contractor	At all times	■ As per requirement.
Hydrocarbon spills	In the event of an accidental spillage of oils, fuels or other substances, the affected soil layer should be removed immediately and the spillage should be directed to an appropriate final	■ EPC Contractor	After any spill.	■ As per requirement. ■ Incident and corrective action records.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	destination. This prevents contamination of the underlying soil layers and deep penetration of the substances involved, which could also contaminate groundwater.			
Wastewater	■ Ensure the appropriate final destination for domestic effluents from the site, in accordance with the legislation in force, with collection in leak-proof removable devices and subsequently forwarded for treatment, thus avoiding the possibility of infiltration into the soil and potential affectation of groundwater and surface water. ■ The discharge of the water resulting from the cleaning of the concrete mixers should be carried out in places to be indicated by the environmental monitoring team and never in places close to water lines. Depending on the site under consideration, the opening of a retention basin may be indicated, preferably in a place where the concrete mixers must pass. The retention basin should be waterproofed and may have a layer of gravel, which after some washing can be removed and used for backfill and replaced in the retention basin.	■ EPC Contractor Stores Managers ■ Workshop Managers ■ WWTP Operators	At all times	■ Compliance with domestic wastewater specification as per Decree No. 18/2004 of 2 June (amended by Decree No. 67/2010 of 31 December
Avoidance of obstruction to surface water flow	■ Clearing and general earthmoving works should be programmed to minimise the period of time during which soils are uncovered and should preferably take place during the dry season. Otherwise, the necessary measures should be taken to control the flow of water in the work areas in order to reduce their erosive capacity. ■ Ensure natural drainage at all stages of site development. ■ All project infrastructure shall be designed to minimise impacts on the natural flow of water. ■ The site area should not be waterproofed, with the exception of places for handling and storing polluting substances. ■ In instances whereby watercourses are crossed, an engineered design shall be used to cross the watercourse as to avoid disruption to the flow. ■ Carry out temporary crossings of water lines in such a way as not to cause obstruction to the normal flow of water. ■ ■ The EPC Contractor shall obtain all necessary permits for the use of surface water and groundwater from the relevant authorities. ■ The project shall have no detrimental impact on water volumes available to existing users in the area.	■ EPC Contractor All contractors	Pre-construction	■ No damming of water or obstructions to water flow ■ Monitoring of community boreholes, if required
Hazardous waste	■ It is recommended that oil and fuel handling operations take place in the site area, specifically designed for that purpose, and prepared (waterproofed and capped) to be able to retain any spills. ■ It is recommended that waste oils are stored in suitable, leak-proof containers. In the event of an accidental spillage of oils, fuels or other substances, the affected soil layer should be immediately removed and the spillage directed to an appropriate final destination. ■ In the event of accidental spillage outside the substance storage areas, a layer of absorbent material should be applied immediately and removal of the affected soil should	■ EPC Contractor ■ Construction Manager	At all times	■ As per requirement ■ Incident and corrective action records.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	be arranged to a suitable destination to be indicated by the entity responsible for environmental supervision, where no additional environmental damage will result.			
Wastewater	■ The discharge of water resulting from the cleaning of concrete mixers must be carried out in areas approved by the environmental monitoring team.	■ EPC Contractor	At all times	■ Compliance with domestic wastewater specification as per Decree No. 18/2004 of 2 June (amended by Decree No. 67/2010 of 31 December)
Soils and land occupation	■ The layers of vegetable soil or live soil resulting from stripping should be deposited in flat areas, in stockpiles, in a place not in conflict with the works and with the areas of greatest ecological sensitivity, preferably as close as possible to the place where they are to be applied and should not be trampled by vehicles. ■ Carry out appropriate modelling of the slopes and cover them with vegetable soil. Place live soil to allow and stimulate the growth of native vegetation, with a view to conserving and/or rehabilitating habitats. ■ In order to avoid situations where the soil remains uncovered for long periods of time, the works should be properly planned, i.e., immediately after a stripping action the coating works should take place. These actions should be carried out successively in small sections, in order to avoid stripping large areas at once. ■ Controlled removal of all spoils from stripping, clearing/deforestation actions required for the implementation of the Project shall be ensured and may be used for soil fertilisation. ■ Adequate decompaction of soils that have been compacted by the circulation of machinery and vehicles, thus facilitating the regeneration of soils, vegetation favouring the recovery of habitats.	■ EPC Contractor	Immediately following backfilling.	■ Photographic record as per requirement.
Habitat change	■ Through training, promote an awareness-raising action among workers for the non-harvesting or damage to plant specimens and address the issue of the ecological value of flora, vegetation and habitats. ■ Carry out landscape restoration as soon as practical after the end of construction activities on the land that has been affected by the works (e.g. construction laydown areas). Only native species should be used for restoration. ■ Avoid conducting construction activities in the evening (i.e. after 22:00). ■ Avoid affecting areas of riparian vegetation and placing equipment/establishing a laydown area within 500m of rivers and 200 m within drainage lines. Vegetation clearing should be restricted to the proposed development footprints only, with no clearing permitted outside of these areas. ■ Avoid creation of new linear edges of forested areas from the site clearance activities that could create a new pathway for bat foraging.	■ EPC Contractor ■ Construction Manager ■ HSE Manager	At all times	■ Records of HSE Manager accompanying contractors during construction works in these areas. ■ Records of monitoring and rehabilitation of riparian areas after construction activities.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	■ Construction activities should be restricted to the immediate footprint of the infrastructure as far as possible. Access to the remainder of the area near construction activities should be strictly controlled to prevent unnecessary disturbance of priority bird species. ■ Application of noise and dust control measures (see section 11.11.1 and section 11.3 from the ESIA Addendum). ■ Promote an awareness-raising action among workers for the non-harvesting or damage to plant specimens. ■ Through training, inform workers and supervisors of the possible consequences of a negligent attitude in relation to the identified mitigation measures, through instruction on the environmentally appropriate procedures to be carried out on site (environmental awareness). ■ Avoid leaving roots uncovered and unprotected in ditches and excavations; ■ The removal of natural vegetation and man-made buildings, for the purpose of constructing project infrastructure, should be avoided in all high sensitive areas, as far as possible, and reduced across the Project site in all other areas. ■ Limit the removal of vegetation to the areas strictly necessary for the execution of the work and avoid clearing large trees (DBH >20 cm).The trees to be preserved in the project footprint must be visibly marked and site clearance staff notified of these restrictions before the start of the clearance work. The markings must be preserved until the end of the work that may cause damage to these trees. ■ Develop maintenance actions in the areas under restoration to ensure that conditions are created for the normal development of natural habitats. ■ Implement a landscape restoration plan that includes the use of native species belonging to the vegetation type described in the 2022 EIA. ■ Concentrate works in time, especially those that cause the greatest disruption. ■ If the use of explosives proves necessary, pre-cut techniques must be used and the use of micro-retarders, thus attenuating the intensity of vibrations produced. ■ The HSSE manager should be on-site during vegetation clearing to monitor and manage any fauna-human interaction. ■ All tree and shrub species that are not located within the project footprint should be safeguarded; ■ The felling of trees with logging interest (as determined by the HSE Manager) should be avoided, as well as marula trees, as they constitute an important source of food for the local community. Whenever possible, the felling of these trees should be compensated by planting in a nearby area. ■ The principle of minimising vegetation clearing, and topsoil disturbance shall be followed at all times. No vegetation shall be cleared outside of the project footprint and along access roads to the site without the approval of the site supervisor. ■ The impact of *Coptosperma nigrescens* individuals should be avoided. A walkdown survey should be undertaken to demarcate these species to ensure they are not cleared ■ Whenever possible, the impact of agricultural areas should be avoided, minimizing the loss of agricultural production services. ■ Perform landscape restoration as soon as practicable after construction activities.			

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	▪ Implement the rehabilitation plan, in order to guarantee that conditions were created for the normal development of natural habitats. ▪ Implement a landscape recovery plan that includes the use of native species belonging to the vegetation type described in this report			
Bat Injury and/or Mortality	▪ All wind turbines are to be subjected to standard blade feathering (up to 3.5 m/s) during spring and summer from the date of project inception. ▪ All turbines (including the full blade length) are to avoid highly sensitive areas as a primary measure of mitigation (i.e. avoidance), in accordance with the mitigation hierarchy as defined by IFC (2012a). ▪ In the event that high sensitivity areas are unable to be avoided, then minimisation must be applied at those turbines encroaching into such areas from the start of project inception. Such minimisation includes either turbine curtailment or deterrence mechanisms. Turbine curtailment is however preferred, as ultrasonic deterrence mechanisms are not effective against mitigating impacts on megabats (bats which predominantly use sight and smell to forage and navigate and lack the ability to echolocate – particularly frugivorous bats). ▪ All turbines (including the full blade length) are to avoid medium sensitive areas (associated with buildings/dwellings), as far as possible. ▪ For all wind turbines, if the fatality thresholds are reached at any point during the projects' lifespan, then appropriate mitigation in the form of either turbine curtailment and/or acoustic deterrence mechanisms is to be applied to reduce residual impacts. ▪ Adherence of all buffers of the bat sensitivity map (Figure 6 of the Bats Specialist Study Report), to avoid physical destruction of roosts and bat mortality during construction.	▪ HSE Manager ▪ Site Manager	At all times	▪ Record of bat mortalities
Bat Displacement and/or Disturbance	▪ Limit construction activities to daylight hours. ▪ Limit construction activities in areas that are listed as High sensitivity. ▪ Lighting at the Project site should be kept to a minimum during all phases, and appropriate types of lighting are to be used to avoid attracting insects, and hence, bats. This includes downward facing low-pressure sodium and warm white LED lights. ▪ If using explosives, pre-cutting techniques and the use of micro-retarders should be used, thus attenuating the intensity of the vibrations produced. ▪ Prior to construction, a suitably qualified bat specialist should revisit the site to identify any potential new roosts, so these can be documented and monitored during the construction and operational phases of the Project - with appropriate management/mitigation measures implemented, where required.	▪ HSE Manager ▪ Site Manager	At all times	▪ Record of bat displacement
Ecology (Birds)	▪ Construction activity should be restricted to the immediate footprint of the infrastructure as far as possible. Access to the remainder of the area should be strictly controlled to prevent unnecessary disturbance of priority species. ▪ Measures to control noise and dust should be applied according to current best practice in the industry. ▪ Removal of vegetation must be restricted to a minimum and must be rehabilitated to its former state where possible after construction. ▪ Construction of new roads should only be considered if existing roads cannot be used/upgraded.	▪ EPC Contractor ▪ Construction Manager ▪ HSE Manager	At all times	▪ Photographic evidence of vegetation clearance, regular noise monitoring measurements during the construction phase and proof of rehabilitation (documented and photographed)

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	■ Noise deterrents shall be installed on all turbines to help promote bird avoidance behaviours. ■ The recommendations of biodiversity/botanical specialist studies must be strictly implemented, especially as far as limitation of the activity footprint is concerned. ■ Additional actions are recommended to refine and improve the implementation of bird mitigation measures: ▪ Flight Risk Modelling (of all Red List raptors) to create a spatially explicit risk profile and delineate a high-risk turbine exclusion zone. ▪ Collision Risk Modelling (CRM). The CRM should be used to calculate fatality estimates for the all the Red List raptors at the Source Area.			
Socioeconomics	■ Contracting principles and procedures should give priority to contracting skilled local workers, contributing to the creation of jobs and wealth at the place. ■ CEN must establish a Project Labour Agreement (PLA) with the National Department of Labour, taking into consideration the Mozambican law, International Labour Organisation (ILO) Labour Standards and fulfil the requirements of IFC Performance Standards on labour (PS2) which include but are not limited to: ▪ Adopting and implementing human resources policies and procedures appropriate to size of the work force; ▪ Provision of reasonable working conditions and terms of employment for all workers (including equivalent terms and conditions for migrant workers); ▪ Non-discrimination and equal opportunity in employment decisions; ▪ Analysis of alternatives to retrenchment including adequate notice of dismissal and severance payments in accordance with national law; ▪ Provision of grievance mechanism for workers to raise workplace concerns; and ▪ No child or forced labour in a manner that is economically exploitative or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development. ■ The EPC Contractor shall weight the award of specific unskilled jobs in favour of women, disabled and other disadvantaged people wherever practical. ■ Hiring policies must ensure the principle of gender equality. ■ Training actions should be provided for workers in order to encourage their qualification.In the event that there are local employment expectations that cannot be met by the Project, the limited availability of job positions must be made known to the stakeholders through local authorities and community representatives. ■ Hiring requirements must be transparent (including the number of available posts), following pre-established and recognized eligibility criteria, and duly publicized before the start of the recruitment process and respected by the contractor, so as not to limit application opportunities. For a better impact on communities this process must be conducted with the involvement of local leaders. Where positions are available for semi-skilled and skilled jobs, the contractor shall coordinate with local authorities and the education sector to identify appropriate local candidates. The Contractor shall follow the 'spiral' principle in seeking qualified candidates, i.e. start in local communities, then the closest town, and then rest of the Maputo Province and Nationally. ■ Prioritize, whenever possible, the acquisition of local or regional services, in this way fostering the greatest added value for the local economy.	■ CEN Local Procurement Officer ■ Social Manager ■ EPC Contractor	Pre-construction and ongoing	■ Signed Project Labour Agreement ■ Maximisation of labour use, where practical. ■ Records of Community Liaison Forum, showing unskilled employment from project-affected communities. ■ Absence of justifiable complaints in the Compliments and Complaints Register. ■ Compliance with the Labour Law.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	■ Among the local workers there should be a group responsible for communicating with the community, which will be particularly important in cases of conflict. This group must be familiar with the project in general and be able to properly eliminate any difficulties or pass on any grievances/complaints.			
Archaeological and Historic Resources	■ Prepare and implement a Chance Find Procedure (CFP) specific for the project as per Mozambican cultural heritage legislation (Law. No. 10/88 and Decree No. 27/94) and IFC best practice guidelines (IFC PS 8, 2012a and b), to manage impacts from previously unknown resources. ■ The CFP should apply for the lifetime of the Project, throughout the entirety of the footprint and during any / all ground works, including vegetation clearance. ■ Report all findings that may potentially be classified as assets of cultura	■ EPC Contractor ■ HSE Manager	At all times	■ Chance Find Procedure developed and available. ■ Inclusion in training / induction programme(s). ■ Records on process followed ■ Compliance with CFP ■ Number of chance finds
Cultural and Sacred Resources	■ A CHMP should be developed and implemented to manage and monitor all cultural heritage effects for the project's lifetime in line with PS 8 and Mozambican heritage legislation (Law 10/1988 and Decree 27/1994). The CHMP should include the following: ▪ Cultural heritage avoidance plans (constraints mapping) to locate tangible cultural heritage receptors (CH-1 – CH-14), and suitable buffers, to inform final Project design, such as the relocation of access tracks, compounds etc in order to avoid sites and to allow for continual community access, if necessary, in consultation with local custodians. ▪ Measures to physically demarcate known grave sites by establishing suitable buffers, in consultation with local custodians. ▪ A programme for scheduled / ongoing engagement with the Affected Communities local to the Project, to provide a forum to identify any unanticipated impacts and assess the effectiveness of these mitigation measures proposed. ▪ A programme for cultural heritage awareness training to be incorporated into the site induction process for all site staff and contractors.	■ EPC Contractor	At all times	■ No heritage sites affected
Intangible Cultural Heritage	■ Preparation and implementation of a CHMP, including the following measures: ▪ The physical demarcation of known grave sites by establishing suitable buffers, in consultation with local custodians, to ensure continued safe access. ▪ The CHMP will outline a programme for cultural heritage awareness training to be incorporated into the site induction process for all site staff and contractors. ▪ A programme for scheduled / ongoing engagement with the Affected Communities local to the Project, to provide a forum to identify any unanticipated impacts and assess the effectiveness of these mitigation measures proposed. ▪ Linkage to the overall Project Grievance Mechanism.	EPC Contractor	At all times	■ Inclusion of cultural heritage sensitisation in induction programme(s) and contractor toolbox talks. ■ Absence of complaints from members of the community in the Compliments and Complaints Register.
Increased construction vehicle traffic	■ Specific lanes/routes and schedules for the circulation of heavy vehicles should be defined, involved in the construction of the Namaacha Wind Energy in order to reduce the pressure on other roads and congestion during peak traffic hours. ■ Damaged roads must be repaired and inspected by the EPC.	CLO	At intervals during construction.	■ Records of traffic awareness campaigns

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	■ Warn people who inhabit and frequent the areas most affected by the works, about the schedule of the work, especially to avoid constraints due to the greater circulation of vehicles; ■ Create security areas with limited and properly signposted access, in order to reduce the risk of an accident, due to the proximation of people to the construction area.			
Health and Safety	■ Develop and implement a Health and Safety Plan. This Plan shall include Plans for Training for workers in the area of Health and Safety at work. ■ The use of PPE will be mandatory on-site (e.g. helmet, vest, footwear, among others). The Health and Safety Plan shall outline what PPE is required for specific site activities and /or portions of the site. Required PPE shall be provided to all employees free of charge. ■ Ensure that all construction vehicles and equipment (including mobile equipment) are suitable for the specific activity and comply with current legislation and standards. Regular maintenance of these should be carried out. ■ All construction equipment must be operated by operators who have been previously trained and certified for this purpose. ■ All temporary electrical installations must be assembled using the same safety specifications as in fixed electrical installations. ■ All temporary electrical installations must be inspected at least once a week by a competent person and this inspection must be recorded. ■ For the control of temporary electrical installations on a construction site, a person with competence for this purpose should be appointed. ■ Create security areas with limited access and properly flagged, with a purpose of reducing the risk of accidents, by people moving closer to the work area. Among local workers there should be a group responsible for communication with the community, which will be particularly important in cases of conflict.	EPC Contractor	At all times	■ Provision of PPE ■ Records of HSE Training conducted. ■ HSE Plan
Fire Outbreak	■ All flammable liquids used on the construction site must be properly stored in order to avoid fire or explosion. The storage location must be well ventilated. ■ It will be prohibited to smoke at the site and this information must be properly signposted. ■ Appropriate fire-fighting equipment must be provided. must be well located and identified on site.	■ EPC Contractor ■ HSE Manager	At all times	■ Inclusion of smoking areas in training / induction programme(s).
Vehicle Maintenance and Operation	■ Verify that all construction vehicles and equipment (including mobile equipment) are those suitable for the specific activity and which comply with the legislation and standards in force. Periodic maintenance must be carried out. ■ All construction equipment must be operated by operators, who have been previously trained and certified for this purpose.	■ Construction Contractor	Ongoing	■ Maintenance records ■ Training Records
Noise	■ Plan construction activities in consultation with local communities so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance. ■ Information regarding construction activities should be provided to identified and nearby receptors likely to be affected. Such information includes: ▪ Proposed working times.	■ EPC Contractor ■ CLO	At all times.	■ Absence of community complaints in complaints register. ■ Records of timeous corrective action to resolve.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	▪ Anticipated duration of activities. ▪ Explanations on activities to take place and reasons for activities. ▪ Contact details of a responsible person on site should complaints arise. ■ When working near a potential sensitive receptor, limit the number of simultaneous activities to a minimum as far as possible. ■ Use noise control devices, such as temporary noise barriers and deflectors for high impact activities, and exhaust muffling devices for combustion engines. ■ Select equipment with the lowest possible sound power levels whilst still being suitable for the specific task. ■ Ensure equipment is well-maintained to avoid additional noise generation. ■ Noise and vibration awareness actions for all on-site personnel, including subcontractors as part of general site induction. ■ Reduce the movement of necessary trucks, through planning of the building material needs. ■ Avoid leaving engines idling at the site unless absolutely necessary.			■ complaints Records of monitoring in HSE weekly and monthly reports
Hiring and employment practices	■ Hiring principles and procedures should give priority to hiring qualified local workers, contributing to the creation of jobs and wealth at the local level. ■ Hiring policies should ensure the principle of gender equality. ■ Training actions should be planned for workers in order to boost their qualification. ■ In case there are local expectations of jobs that cannot be met by the Project, the limited availability of posts should be made known to interested parties through local authorities and community representatives. ■ Disclose for each position, the exact number of jobs available, the applicable period and the remuneration to be attributed to each type of work. ■ Hiring requirements must be transparent, following pre-established and recognized criteria, and duly publicized before the start of the recruitment process and respected by the contractor, so as not to limit application opportunities. ■ As much training as possible should be given to local workers to perform semi-skilled tasks, to enhance their capacities and reduce the number of workers hired from abroad for this purpose.	■ CEN Management ■ HSE Manager ■ EPC Contractor	At all times	■ Review and revisions of hiring policies and requirements ■ Training registers ■ Proof of disclosure for each position
Workforce	■ Adopt and implement human resources policies and procedures appropriate to size of the workforce. ■ Provision of reasonable working conditions and terms of employment for all workers (including equivalent terms and conditions for migrant workers). ■ Compliance with national law which recognises workers rights to form and join workers' organisations or unions; ■ Non-discrimination and equal opportunity in employment decisions. ■ Analysis of alternatives to retrenchment including adequate notice of dismissal and severance payments in accordance with national law; ■ Provision of a grievance mechanism for workers (and their organizations, where theyexist) to raise workplace concerns; ■ No child labour in a manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development; ■ Inclusion of measures to address and eliminate gender-based violence at a project level; and	■ CEN Management ■ HSE Manager ■ EPC Contractor	At all times	■ Review and revisions of human resource policies ■ Record of worker unions and compliance against national requirements ■ Policy on non-discrimination and equal opportunity ■ Retrenchment procedures and policies in place in compliance with national requirements

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators or verification
	■ Monitoring of human rights and accessibility; Reference should also be made to contractual arrangements, employment relationship on vulnerable groups, safe and healthy work environments, workers' rights (including grievance mechanism) and organisational structures. The International Labour Organisation (ILO) standards and World Bank Environmental Health and Safety Guidelines should also be referenced where appropriate. Due consideration should also be taken of workers engaged by third parties.			

8 REHABILITATION PLAN

8.1 INTRODUCTION

The present plan aims to establish the guidelines for the implementation of actions for the rehabilitation of areas impacted during the construction works for the Project, guaranteeing adequate environmental conditions, which contribute to the minimisation of potentially introduced negative impacts.

After the conclusion of the works for the execution and assembly of the wind turbines, backfilling of the necessary trenches for the installation of all associated cabling, electrical energy conditioning systems, the electrical installation of the substation and command building, the paths and respective drainage system, and the sealing of the command building/substation, there will be landscaping restoration of impacted areas where there are no definitive infrastructures on the surface of the land.

The recovery of these areas has the objective of re-establishing the native vegetation which will in turn promote the minimisation of the impact on the landscape, and the minimisation of the erosive action of the winds and the rains.

Through simple options, which are fundamentally based on the execution of actions that favour the natural regeneration, the aim is to achieve the following objectives:

- Value the landscape in its most global meaning (bearer of an ecological and cultural), whose quality was reduced by the execution of the work, which consequently contributes to human comfort, both for visitors and residents in the vicinity of the Project; and
- Protect slopes, both embankment and excavation ones, against water and wind erosion.

The recovery of the affected areas could be achieved more slowly through a process of natural regeneration, or it can be accelerated using hydroseeds.

In the current situation of the Project, and taking into account local conditions, it is proposed that the recovery of the intervened areas be carried out only at the cost of covering them with topsoil in the manner defined in the following points.

After two years, if the vegetation regenerates poorly, then a reassessment will be carried out of the natural conditions of the land and proposed complementary recovery measures, if justified.

The scope of this Rehabilitation Plan applies during the construction of the Project, and the assessment and monitoring of vegetation recovery will be developed during the first two years of the operational phase, which may be extended if additional corrective measures are implemented at the end of the two years.

8.2 AREAS TO REHABILITATED

Within the scope of this Plan, the following areas will be rehabilitated:

- Laydown area;
- Places of deposit of diverse and inert materials;
- Surroundings of wind turbines (base of foundations and the assembly support platforms);
- Surroundings of the substation and command building (namely the foundations of the fence to be built around these);
- Cable trenches; and

- Excavation and embankment slopes.

8.3 ACTIONS TO BE PERFORMED

8.3.1 ACTIONS TO BE CARRIED OUT AT THE BEGINNING OF THE CONSTRUCTION PHASE

In order to ensure the necessary conditions for rehabilitation of the intervened areas, the Contractor will have to ensure from the beginning of the work and throughout its development, the implementation of some measures related to deforestation and stripping and topsoil storage, as described in the following points.

8.3.1.1 Deforestation and disturbed areas

The controlled removal of all spoils from deforestation that is necessary for the execution of the Project, which can be used in the fertilization of soils. The exception is woody material, which must be properly disposed in accordance with the Waste Management Plan (WMP) (refer to **ANNEXURE B**).

Ground surfaces to be excavated or backfilled must first be cleaned of debris and woody vegetation (trees and shrubs), however, the shrubs and herbaceous vegetation are to be removed by picking. Cleaning and clearing should also include the storage and transport of materials from this operation to an area pre-defined by the environmental inspection team.

Deforestation and soil stripping work should be limited to areas strictly needed. The areas adjacent to the areas impacted within the scope of the Project, must not be cleared or stripped.

The stripping of areas of land to be excavated or to be filled in, makes it possible to obtain topsoil necessary for the rehabilitation of the impacted areas. This should take place before earthmoving work and must focus on areas with soils richer in organic matter and smooth texture, in a variable thickness according to the characteristics of the terrain, comprising of the removal of topsoil. Topsoil shall be appropriately protected and bunded in accordance with the management actions (refer to Table 1) until required for rehabilitation after the construction phase.

8.3.1.2 Topsoil storage

The pieces of topsoil resulting from surface stripping of the soil must not exceed the two meters height and must be located in the vicinity of the places where the topsoil was removed, in flat and well-drained areas for subsequent use in recovery actions.

The loading and unloading of stored topsoil must be carried out in such a way that the vehicles assigned to these operations do not step on the walls.

Only the application of topsoil from construction works itself is authorized.

8.3.2 REHABILITATION ACTIONS TO BE PERFORMED AFTER COMPLETION OF CONSTRUCTION

At the end of works, the following recovery actions stand out:

- Cleaning of Work Fronts: after completion of the civil construction works and assembly of the equipment, the contractor must clean all work fronts. It will comprise actions such as dismantling the laydown area, removing any waste, removal of construction materials and unnecessary equipment for environmental recovery actions of the intervened areas.

- Terrain Modelling: All areas to be renaturalized that were subject to intervention during the construction contract must be modelled before starting the construction work. The land must be placed at the final Project dimensions, using the aggregates resulting from the excavations for this purpose, seeking to establish surfaces in perfect connection with the natural terrain and in order to avoid erosion phenomena and to enhance the installation of vegetation.
- Laydown area and Work Support Areas: the surfaces that are occupied, must be mobilized to a depth of 0.30 m when not rocky, if they are compacted, using ploughing or scarification followed by harrowing. External materials must be removed in advance that have been used to cover the natural terrain, such as *tout-venant* and/or gravel.
- Slopes: A layer of topsoil should be applied on the existing slopes along the access routes, as well as throughout the surrounding areas that have suffered deforestation or soil compaction, in the shortest possible time after the operations of earthwork.
- Wind Turbine Assembly Platforms: once completed the assembly work of the wind turbines equipment the platform must be renaturalized, with the application of a layer of topsoil, in order to ensure the natural repopulation by the autochthonous vegetation, leaving uncovered, in tout-venant, an area around the wind turbine, in order to ensure the circulation of maintenance team vehicle.
- Substation and command building: on completion of construction work, assembly of structures and equipment, in the surrounding areas, a layer of topsoil should be applied, in order to ensure the natural repopulation of these areas by native vegetation.
- Cable Trenches: after the backfill of the open trenches for the installation of underground cables, with earth from its excavation, a layer of topsoil must be placed to enhance the recovery of native vegetation cover in a natural way.
- Spreading of topsoil: the spreading of the topsoil should be carried out only after the soil surface is properly prepared. The land surface must present itself, immediately before the distribution of the topsoil, with the degree of roughness indispensable to allow a good adhesion to the layer of topsoil and not show signs of surface erosion. In the event that there are signs of erosion, a slight surface mobilization of the soil should be carried out to a depth of about 10 cm, to fill in the furrows and ravines in already eroded spots.

8.4 MONITORING OF REHABILITATED AREAS

Monitoring the recovery of intervened areas that were subject to environmental requalification at the end of construction will be carried out for a period of 2 years. For its implementation, visits will be made to the Project site, the first being at the end of the construction, and the others in the first two years of the operational phase of the Namaacha Wind Energy.

The report corresponding to the end of the construction phase will depict the general verification of the work of requalification carried out by the contractor, and also include the bases that will constitute the situation of reference for the comparison with the future situations of the state of evolution of the vegetation. In effect, the technician responsible for monitoring the recovery of the intervened areas that were subject to environmental requalification will travel to all work fronts in order to select the sites that will serve as a reference for the evaluation of the subsequent recovery and proceed with the records necessary in order to remain in a position of reference suitable for the purpose in view.

In the operational phase, the same technician will travel to the Project site once a year, halfway spring, adjusting the schedule to the most favourable time for carrying out floristic inventories, but also

considering the time that has elapsed since the completion of the works of requalification. At this stage, annual reports will be delivered, one after 1 year, and the other after 2 years.

The reports will include the results of the vegetation assessment that will allow the perception of whether it is evolving in accordance with the intended objective (total covering of the intervened areas) or if, on the contrary, it will be necessary to intervene in the area to induce the colonization of the spaces intervened by the Project. These reports will describe the evolution of vegetation in the affected areas and surroundings, identifying unrecovered areas and the respective reasons, and minimization measures and new campaigns will be proposed, if justified.

Any complementary measures to be adopted will depend on the results obtained over the two years of follow-up. If after two years there is no recovery or poor recovery of vegetation and/or the existence of eroded areas, proposals must be made. Corrective measures, which may include, for example, the application of hydroseeds.

Any measures that may be proposed should be subject to a recovery verification campaign for one year after its completion.

9 OPERATIONAL PHASE MANAGEMENT PLAN

The operational phase management plan is derived from the ESIA and supporting specialist studies.

It is intended to achieve the following objectives:

- Provide a management plan for the operational activities of CEN's facilities in compliance with Mozambican legislative and regulatory requirements, as well as international standards and best practice.
- Ensure that measures stipulated in this plan are in place and executed fully to appropriately manage impacts in order to reduce negative impacts and enhance positive impacts/benefits arising from the operation of CEN; and
- Provide requirements for assessment, monitoring and auditing, during operations.

Table 2: Operational Management Requirements

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators
Geology and Hydrogeology	■ Waterproofed areas should be reduced to the bare minimum, promoting the decompaction of the soils of the work areas after completion of the works, in places where no future maintenance of the Power Station is foreseen. This measure will have an impact on the easier infiltration of rainwater.In the operational phase, emergency and safety plans must be considered to deal with any accidental spills that may affect the hydrogeological environment of the study area. ■ The location of the laydown area, if different from that provided for in this EIA, must be chosen avoiding areas to be less than 50 m from permanent water courses, avoiding the destruction of tree species. ■ If applicable, an application must be made for the necessary licenses to capture water.	HSE Manager	Ongoing	■ Inspection records
Laydown areas	■ Deactivate the area allocated to the works for the execution of the work, with the dismantling of the laydown areas and removal of all equipment, support machinery, material warehouses, among others. Clean these areas, at least with the replacement of the conditions existing before the start of the works.	■ HSE Manager ■ Site Manager	At the end of construction phase	■ As required
Hydrocarbons spill	■ Oil handling operations, in the case of maintenance and repair of structures, must take place in an area specifically designed for this purpose, and prepared (waterproofed and limited) in order to retain any spills. ■ It is recommended that used oils be stored in suitable, airtight containers. In the event of an accidental spillage of oils, fuels or other substances, the affected layer of soil must be removed immediately and sent to a suitable place. ■ In the event of accidental spillage outside the areas intended for the storage of substances and maintenance of equipment, a layer of absorbent material and the removal of affected soils for disposal at an appropriate location must be indicated by the entity responsible for environmental inspection, where they will not cause additional environmental damage.	■ HSE Manager ■ Stores Manager	Ongoing	■ Storage areas as per requirement. ■ Register of tools available for handling spills. ■ Procedure for spill
Soils	■ If erosive phenomena are identified, corrective solutions must be applied, study case by case to control erosion.	■ HSE Manager	Prior to decommissioning	■ Visual inspection of erosion ■ Photographic records
Ecology	During the operational phase, maintenance actions should essentially be carried out, namely: ■ Limit vegetation clearing to new access tracks, and turbine footings. ■ Identify any important supply areas of medicinal plant within the LSA and manage/conserve accordingly. ■ Areas that were subject to recovery (areas that have been affected by the work or in areas where environmental requalification actions were carried out). In this way, we continue to prevent erosion, promote the reestablishment of vegetation units with conservation value and avoid infestation by unwanted species such as exotic species with an infesting nature;	■ Site Manager	Ongoing	■ Monitoring records ■ Audit findings ■ Documented important areas of medicinal plant supply in LSA, where present.

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators
	■ The accesses must be maintained in order to guarantee a barrier to propagation of possible fires and to allow the access and circulation of Firefighting vehicles; ■ Watercourse protection strips: elimination of exotic species that present weed character, correction of erosion points, incentive to natural regeneration. ■ Support development of a management plan for the Goba conservancy such as a Community Development Plan (CDP) to encourage ecotourism			
Death or injury of bats	■ The lighting of wind turbines should be reduced to the minimum recommended for aeronautical safety, also avoiding attracting birds or bats; The intensity, type of lights and flashing frequency must be selected based on the legislated requirements of Mozambiquan aviation associations. ■ Minimise artificial light sources as far as possible. ■ Appropriate types of lighting are to be used to avoid attracting insects. ■ All wind turbines are to be subjected to standard blade feathering (up to 3.5 m/s) during spring and summer from the date of project inception. This should be implemented throughout the lifespan of the project, with specific parameters (seasonality and wind speed) being updated throughout the course of an operational bat monitoring campaign, as more fatality and acoustic data becomes available. ■ A minimum of two years of operational bat monitoring is required (acoustic monitoring, carcasses searches and fatality estimations) in accordance with the methodologies, as laid out in the South African best practice guidelines for monitoring bats at operational wind energy facilities. Thereafter, monitoring must be repeated again in year five, and every five years thereafter. ■ All turbines (including the full blade length) are to avoid highly sensitive areas as a primary measure of mitigation (i.e. avoidance), in accordance with the mitigation hierarchy as defined by IFC (2012a). ▪ In the event that high sensitivity areas are unable to be avoided, then minimisation must be applied at those turbines encroaching into such areas from the start of project inception. Such minimisation includes either turbine curtailment or deterrence mechanisms and shall be implemented from the start of operation. Turbine curtailment is however preferred, as ultrasonic deterrence mechanisms are not effective against mitigating impacts on megabats (bats which predominantly use sight and smell to forage and navigate and lack the ability to echolocate – particularly frugivorous bats). ■ All turbines (including the full blade length) are to avoid medium sensitive areas (associated with buildings/dwellings), as far as possible. ■ The mitigation measures for bats are to be updated on an on-going basis, as part of an adaptive management process, whereby any residual impacts are mitigated according to the best available data obtained at the time that the impact is realised. ■ For all wind turbines, if the fatality thresholds are reached at any point during the projects' lifespan, then appropriate mitigation in the form of either turbine curtailment and/or acoustic deterrence mechanisms is to be applied to reduce residual impacts.	■ HSE Manager ■ Site Manager	Throughout project lifecycle	■ Lack of bat fatalities

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators
	■ Fatality thresholds for all identified bat species should be calculated following international best practice (e.g. The South African Bat Assessment Association fatality threshold guidelines, MacEwan et al. 2018).			
Ecology (Birds) mortality / injury	■ Flight Risk Modelling (of all Red List raptors and the Black Stork) to create a spatially explicit risk profile and delineate a high-risk turbine exclusion zone. ■ Collision Risk Modelling (CRM). The CRM should be used to calculate fatality estimates for the all the Red List raptors and the Black Stork at the Source Area. ■ Automated Shut-down-on-Demand using a camera system such as Identiflight® should be implemented. ■ Blade Painting – All wind turbines must have one blade painted according to a local civil aviation authority approved pattern to reduce the risk of raptor collisions. ■ If estimated collision rates indicate unacceptable mortality levels of priority species additional mitigation measures will have to be implemented. ■ Implementation of a Livestock carcass and prey-availability management programme. ■ Underground cabling should be used as much as is practically possible. ■ If the use of overhead lines is unavoidable due to technical reasons, the Avifaunal Specialist must be consulted timeously to ensure that a raptor friendly pole design is used, and that appropriate mitigation is implemented pro-actively for complicated pole structures e.g., insulation of live components to prevent electrocutions on terminal structures and pole transformers. ■ Regular inspections of the overhead sections of the internal reticulation network must be conducted during the operational phase to look for carcasses according to the applicable International Best Practice standards at the time. ■ Bird flight diverters should be installed on all the overhead line sections for the full span length according to the applicable International Best Practice standards at the time.	■ Operations Manager	Ongoing	■ No Net Loss of Priority Bird species ■ Net Gain of Priority Bird species which are Critical Habitat Triggers ■ No Net Loss and Net Gain targets for priority species to be confirmed, based on residual impact (fatality) estimates as an outcome of CRM. These targets to be detailed in the Project Biodiversity Action Plan.
Access to property	■ Ensure accessibility to the church is maintained.	■ Operations Manager	Ongoing	■ Absence of complaints or formal grievances ■ Number of compliments
Impact of dwellings (discomfort due to the effect of shadows and noise) and field crops	■ Relocation of families or people who live in these houses in accordance with the RFP (Annexure 8). ■ Compensation thereof in accordance with the RPF. ■ Livelihoods restoration to be implemented in accordance with the RPF.	■ CEN Management ■ RAP Consultant	Once-off	■ Relocation or compensation in accordance with national and IFC PS5 requirements ■ Development of a formal and implementable Resettlement Action Plan (RAP)
Socioeconomics	At the socio-economic level, the promoter will be responsible for implementing the following measures: ■ Prioritize the acquisition of services (maintenance, supply of materials, supply of goods and services) to local or regional companies, in this way promoting permanent and indirect employment derived from the operation of the Namaacha Power Station. ■ Procurement principles and procedures should, as far as possible, give priority to hiring skilled local workers, contributing to job creation and wealth at the local level;	■ Supply Chain Manager	Ongoing	■ Local suppliers in service provider list ■ Register and percentage of procurement in communities, the District and Province, and nationally

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators
Grievance procedure	■ A formal Grievance Redress Mechanism (Procedure) shall be developed as required by IFC Performance Standard 1, and wide communication to communities of the existence of this instrument to register grievances when they believe they have suffered damages that require compensation as a result of CEN's activities.	■ Public Affairs Coordinator and staff	Ongoing	■ Number of grievances registered ■ Number of grievances resolved ■ Nature of grievances analysed and corrective actions taken for trends in grievances
Procurement of goods and services	■ CEN, SA must establish a Project Labour Agreement (PLA) with the National Department of Labour, taking into consideration the Mozambican law, International Labour Organisation (ILO) Labour Standards and fulfil the requirements of IFC performance standards on labour (PS2) which include but are not limited to: ▪ Adopting and implementing human resources policies and procedures appropriate to size of the work force; ▪ Provision of reasonable working conditions and terms of employment for all workers (including equivalent terms and conditions for migrant workers); ▪ Non-discrimination and equal opportunity in employment decisions; ▪ Analysis of alternatives to retrenchment including adequate notice of dismissal and severance payments in accordance with national law; ▪ Provision of grievance mechanism for workers to raise workplace concerns; and ▪ No child or forced labour in a manner that is economically exploitative or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development. ■ Hiring policies must ensure the principle of gender equality. ■ The EPC Contractor shall weight the award of specific unskilled jobs in favour of women, disabled and other disadvantaged people.	■ HR Manager	Ongoing	■ Statistics reflecting percentage of Mozambican employees and gender roles.
Employee Training	■ Employees shall all receive adequate training based on the activities they undertake and the associated SHE risks. Training shall also comply with any Mozambican legal requirements.	■ HR Manager	Ongoing	■ Training Records ■ Inspection findings ■ Audit findings
Health and Safety	■ Implement occupational safety and health standards which include an OSH policy, an organizational structure to implement the policy, an implementation program, a monitoring and employee feedback program, an action plan for continuous improvement, a training plan and communication program. ■ Provide Personal Protective Equipment (PPE), training and monitoring as well as ongoing safety checks and safety audits. ■ Provide workers with access to primary health care and basic first aid at worksites. ■ Develop and implement an internal Grievance Mechanism that is easily accessible to through which complaints related worker rights and health and safety can be lodged and responded to.	■ CEN Management ■ Occupational Health Practitioner ■ EPC Contractor	■ At start-up ■ Ongoing	■ Health strategies ■ Preventable disease programmes ■ Training records ■ Regular inspections ■ Health and safety meetings minutes

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators
Social Corporate Responsibility	■ Involve local community representatives in determining social development activities that will be implemented in coordination with the District and Local Government.	■ Public Affairs Coordinator and staff	Ongoing	■ As per requirement. ■ Records of fund allocations in consultation with District Government
Cultural and Sacred Resources	■ Implementation of a CHMP providing ongoing measures to minimise negative Project effects through the operational phase which include: ▪ The physical demarcation of known grave sites by establishing suitable buffers, in consultation with local custodians, to ensure continued safe access. ▪ A programme for cultural heritage awareness training to be incorporated into the site induction process for all site staff and contractors. ▪ A programme for scheduled / ongoing engagement with the Affected Communities local to the Project, to provide a forum to identify any unanticipated impacts and assess the effectiveness of these mitigation measures proposed. ▪ Implementation of the Project's Stakeholder Engagement Plan (SEP) and Community Grievance Redress Mechanism. ▪ Linkage to the overall Project Grievance Mechanism.	■ Site Manager	At all times	■ No heritage sites affected
Intangible Cultural Heritage	■ Implementation of a CHMP providing ongoing measures to minimise negative Project effects.	■ Site Manager	At all times	■ Inclusion of cultural heritage sensitisation in induction programme(s) and contractor toolbox talks. ■ Absence of complaints from members of the community in the Compliments and Complaints Register
Control of noise nuisance	■ **Vehicles and Machinery** ▪ Regular/periodic and effective maintenance of vehicles, machines and equipment, as appropriate, and operated and maintained at all times in conformity with the manufacturer's specifications, instructions and manuals. ▪ Control the speed of vehicles on the roads that give access to the Namaacha Wind Energy (30 km/h). ■ **Turbines** ▪ Locate turbines away from receptors. A buffer zone of at least 1 km should be developed. ▪ Selection of the proposed turbines (Nordex N163 and Goldwind 165) with higher hub heights. ▪ Selection of turbines with lower noise levels. ▪ Operate the turbines in reduced noise mode.	■ Site Manager ■ CEN	At all times	■ Maintenance and service records. ■ Monitoring records. ■ Records of action taken as necessary. ■ Minimal/no complaints from communities.
Waste Management	In addition to the measures already mentioned in the chapter on general measures and water resources, ensure the implementation of the following measures:	■ HSE Manager ■ E&S Manager	Ongoing	■ As per requirements

Management Aspect	Requirement/specifications	Responsibility	Scheduling	Key Performance Indicators
	■ Waste must be properly stored, separating hazardous and non-hazardous waste, under technical conditions that prevent contamination of the environment; ■ Waste must be sent to duly licensed companies as described in subchapter 9.10 of the EIA Technical Report; and ■ Waste produced in the operations shall be sent to a duly authorized final destination site.			
Hiring and employment practices	■ Hiring principles and procedures should give priority to hiring qualified local workers, contributing to the creation of jobs and wealth at the local level. ■ Hiring policies should ensure the principle of gender equality. ■ Training actions should be planned for workers in order to boost their qualification. ■ In case there are local expectations of jobs that cannot be met by the Project, the limited availability of posts should be made known to interested parties through local authorities and community representatives. ■ Disclose for each position, the exact number of jobs available, the applicable period and the remuneration to be attributed to each type of work. ■ Hiring requirements must be transparent, following pre-established and recognized criteria, and duly publicized before the start of the recruitment process and respected by the contractor, so as not to limit application opportunities. As much training as possible should be given to local workers to perform semi-skilled tasks, to enhance their capacities and reduce the number of workers hired from abroad for this purpose.	■ CEN Management ■ HSE Manager ■ EPC Contractor	At all times	■ Review and revisions of hiring policies and requirements ■ Training registers ■ Proof of disclosure for each position

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10 PROCEDURES, COORDINATION AND REPORTS

The structure of all communication, correspondence and reporting between stakeholders in the Project shall be defined at the beginning of the Project with the Contractor(s). All records of monitoring results, monitoring reports, incident records, audit reports must be maintained by CEN.

10.1 PERFORMANCE ASSESSMENT, REVIEW AND PREVENTIVE ACTIONS

The performance evaluation of this Project comprises the following main objectives:

- Confirmation of compliance with the requirements described in this EMP, that is, the performance of CEN and contractors;
- Environmental performance measurements using Key Performance Indicators (KPI's) to indicate the level of success of the EMP and its specifications; and
- Identification of any deficiencies or shortcomings in the EMP. The EMP should be treated as a 'live' document that is updated as the Project progresses as well as after performance assessments and audits.

These objectives will be achieved through important tools such as the monitoring strategy, as well as inspections and audits. Specification for monitoring, inspections and audits are provided in the sections that follow. Corrective actions will be critical to ensure that any problem areas identified be addressed effectively.

10.2 MONITORING

Regular monitoring will be undertaken to monitor the performance of the environmental aspects as outlined in 7.0 and 9.0 of this report. Senior management at CEN must receive periodic performance reviews of the effectiveness of the EMP and ESMS. Senior management should thereafter take appropriate steps to update the EMP based on the findings of the audits and ESMS review.

10.2.1 SCHEDULE OF ENVIRONMENTAL MONITORING OF THE WORK

The E&S manager will travel to the work weekly (two days a week) in the initial and final phases, and once a week in the remaining period.

The work owner on site will have a supervision team stationed at the site almost continuously. The E&S manager will collaborate with the Environmental and Safety Supervisor, in the sense of monitoring compliance with the EMP.

The defined periodicity may be adjusted as necessary during the development of the work.

10.2.2 CONTENT AND PERIODICITY OF THE REPORTS TO BE PREPARED

The summary environmental monitoring reports for each visit carried out during the works will address the following aspects:

- Evolution of construction works;
- Conformities and non-conformities detected during the inspection carried out on site;
- Occurrences of environmental accidents and corrective measures adopted;

- Difficulties manifested by the Contractor that, eventually, may have led to the nonconformity changes;
- Aspects to be improved by the Contractor;
- Unforeseen measures and procedures, but which may eventually prove to be needed;
- Recommendations and suggestions to ensure the continuous improvement of the environmental performance of the Contractor;
- Complaints from official entities, associations or individuals, and steps taken for the resolution of critical situations.

The content of summary reports will be adapted whenever necessary to include additional unspecified relevant information. These reports will include, where relevant, the registration of photographs of the visits carried out.

The following schedule is foreseen for the delivery of reports:

- Report 1 - will be delivered 15 days after the first visit to the Project site, to be carried out by the Environmental Monitoring Team, CEN and Managing Contractor, after the Project has been properly staked out, and will include the necessary information so that MTA can be aware of any adjustments that the Project will suffer and the performance of the entire team involved in the work;
- Report 2 - will be delivered roughly halfway through the construction period and will include all information necessary for a good understanding of the evolution of the work and the way in which the minimisation measures were fulfilled;
- Report 3 - will be delivered at the end of the work and will include, in addition to the type of information provided in previous reports, the final result of measures relating to the rehabilitated areas.

10.2.1 FOLLOW-UP METHODOLOGY

As mentioned, on each site visit, the team responsible for environmental monitoring must verify and record the results of the evaluation carried out for each measure, provided for in this EMP. The following table format below should be used to verify compliance and provide recommendations thereof:

Table 3: Environmental monitoring framework and respective phase of work in which they are applied

Phase of development of works	Monitoring Action	Responsibility	Verification				Compliance Status	Recommendation (including period for rectification)

The final environmental monitoring report must include a status concerning the implementation of the environmental measures and conditions established in the Environmental License, the demonstration of the implementation of environmental measures and conditions must be sustained in objective evidence, namely written, photographic, cartographic elements.

10.3 SITE INSPECTIONS

The HSE Manager will carry out regular inspections, at least weekly, of all the works (including at subcontractors' sites) in the construction phase and monthly in the operational phase in order to identify any activities or components of the project that are causing, or that may cause a potential environmental impact.

Inspections must be constant and must form part of the functions of the HSE Manager, who will immediately notify CEN about any non-conformity, which will promptly notify the party responsible for the rectification of these identified cases.

After inspections, an inspection report should be developed and maintained. These reports must be submitted to CEN upon request or at least on a quarterly basis as a minimum.

All problem areas will be recorded and managed in accordance with the requirements set out in the subchapter 10.5 (Preventive and Corrective Actions).

10.4 AUDITS

10.4.1 EXTERNAL AUDITS

According to Decree No. 25/2011 of 15 June, which approves the Regulation on Environmental Auditing, this tool can be carried out in a public or private way, depending on the decision by MTA.

There are some requirements for the preparation of audits, and following the legislation mentioned in paragraph above, this cannot be carried out by a person (technician) who has participated as an environmental consultant in the EIA process. In this context, CEN should contract someone for this purpose who will be responsible for preparing environmental audit reports.

The auditor must prepare a complete report in triplicate, taking into account the criteria established in Article 8 of Decree No. 25/2011 of 15 June. These must be submitted to MTA and must be carried out at least once a year.

According to Decree No. 25/2011 Article 4, the Auditor is responsible for evaluating:

- The impacts of routine activities on the environment and public health;
- The risks of accidents and contingency plans for the evacuation and protection of workers and the population within the area of influence of the project;
- The degree of conformity of the development activities in accordance with the defined and applicable parameters for their implementation, decommissioning and restoration;
- The actual or potential levels of pollution or environmental degradation resulting from the implementation of the development activities and other phases of the project;
- The operating and maintenance conditions of the equipment and pollution control and prevention systems;
- The measures to be taken to restore the environment and human health;
- The training of those responsible for the operation and maintenance of systems, routines, facilities and equipment to protect the environment and human health;
- Management and conservation of energy sources, raw materials, water and other resources;
- The reuse, recycling, reduction, treatment, transport and safe disposal of waste;
- Noises and vibrations inside and outside the premises;

- Selection of new production methods and modification of existing methods including industrial process and continuous monitoring systems to reduce pollutant levels;
- Measures for the prevention, reduction, control, contingency and emergency of accidents; and
- The research and development, use, storage, handling and transportation of controlled products.

10.4.2 INTERNAL AUDITS

Internal environmental audits of the activity and implementation of the EMP must be undertaken monthly by the HSE Manager in coordination with the E&S Manager. The findings and outcomes must be included in the EMP on site. At a minimum the monthly reports are to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the bi-monthly Environmental Site Meetings.

The HSE Manager must prepare and organise an Environmental Site Meeting. The findings of the report must be tabled as an agenda item for discussion. The report must also be submitted for acceptance at the meeting and the final report distributed to CEN and the Managing Contractor.

10.5 PREVENTIVE AND CORRECTIVE ACTIONS

The need for corrective actions will result from discrepancies in meeting the requirements of the EMP.

In this context, CEN, including the HSE Manager, and the subcontractor(s) during the construction and operation phase shall submit corrective measures and preventive measures, in accordance with the procedure established for these phases.

The procedure to be elaborated includes the following aspects:

- Ensuring the registration of incidents/cases of non-compliance;
- Provide information on incidents/cases of non-compliance to environmental entities; and
- Identification of corrective and preventive actions/measures.

Corrective actions should be identified in relation to reported incidents/cases of non-compliance and in the results of EMP monitoring, management assessments and/or EMP audits. Thereafter, a Corrective Action Plan (CAP) should be developed that should result in:

- Implementing a specific action to remedy the identified deficiency(s); or
- A change in performance standards or objectives established in the EMP; and
- A sequence of supporting documents that can be audited.

10.6 COMPETENCE, TRAINING AND AWARENESS

All persons involved in activities that may result in an environmental impact(s) must receive appropriate training and awareness.

Workers at CEN and subcontractors must ensure that the training provided is carried out in such a way that all persons are aware of the commitment of CEN to carry out the proposed activities, respecting the local population and avoiding unnecessary damage to their land and resources.

Training should consist of, but not be limited to introductory training, the use of educational posters and daily meetings to discuss certain topics in relation to the environment, before the start of every turn. During these training sessions, the following principles should be presented/discussed:

- The policies of CEN in relation to the environment, health and safety and, applicable Mozambican environmental regulations, as well as the relevant IFC Standards;
- Declaration and clarification of the communication policies of CEN;
- EMP requirements and commitments;
- No-go areas;
- Biodiversity aspects, including species of conservation concern;
- Waste and water management;
- Project constraints and procedures;
- Procedures for fighting fires and responding to emergencies; and
- Procedures for reporting and addressing incidents.

11 MANAGEMENT PLANS

11.1 PLANS

As already mentioned in previous chapters of this Environmental Management Plan, different Plans must be defined and implemented, to be developed by the Bidder and the Contractor, based on more detailed elements of the work, then summarizing their contents and the guidelines below to be ensured:

11.1.1 ENVIRONMENTAL MANAGEMENT PLAN

- This Plan, for the construction phase, is defined in Chapter 7.0 of this EMP. It must be adapted according to the detail of the work to be defined later and jointly with the contractor. It will include as an annexure the Plans referred to below.

11.1.2 RESETTLEMENT ACTION FRAMEWORK PLAN AND RESETTLEMENT ACTION PLAN.

- This Plan will only be developed if there is even a need for resettlements in accordance with what is foreseen in the minimization measures of the project phase. Refer to **ANNEXURE A** – Resettlement Policy Action Framework.
- This Plan must be developed in accordance with the Mozambican Legislation on Resettlement and Compensation (Constitution of the Republic and the Regulation on the Resettlement Process Resulting from Economic Activities) and international legislation on Resettlement and Compensation (IFC Standards -World Bank);
- The Regulation on the Resettlement Process Resulting from Economic Activities (Decree No. 31/2012), provides rules and principles for resettlement, with a view to promoting citizens' quality of life and protecting the environment;
- The national legislation that guides compensation, Decree No. 181/2010 and regulation No. 66/1998 establish the various guidelines and norms for the expropriation process for the purposes of planning the use of land due to activities of development of public interest or public utility; and
- The Resettlement Action Plan to be developed should take into account the actions already undertaken in contact with the people;

11.1.3 WASTE MANAGEMENT PLAN

- This Plan must follow the guidelines already defined in **ANNEXURE B** of this EMP for the of work. It should be adapted according to the waste management procedures of each contractor. For the operational phase, work procedures must be defined that include the measures referred to in the WMP and ensure compliance with legislation.

11.1.4 EMERGENCY RESPONSE AND PREPAREDNESS PLAN

- This Plan must be defined and implemented both for the construction phase and for the operational phase, identifying all possible accident situations and defining the necessary procedures for action in each situation. More details for this plan can be found in **ANNEXURE C** in this document;

- It should take into account the health and safety and environment management system of each contractor and, in the operational phase, of the Project.

11.1.5 AWARENESS AND TRAINING PLAN

- This Plan, also to be prepared for the construction and operation phase, should ensure the guidelines of this EMP (with respect to the construction phase) and the measures defined in the construction and operational phases.

11.1.6 HEALTH AND SAFETY PLAN

- This Plan, to be defined in accordance with Mozambican legislation and taking into account the IFC guidelines, should include the measures already indicated in construction and operation phases.

11.1.7 COMMUNITY HEALTH, SAFETY AND SECURITY PLAN (CHSSP)

- This plan (including a traffic management plan) should be developed by the construction/ contractor company and include measures to minimise accidents and incidents resulting from road works and construction activities during the construction phase. The CHSSP included in **ANNEXURE D** of this EMP should be modified by the EPC to include site specific details.

11.1.8 BIODIVERSITY MANAGEMENT PLAN

- This plan will be necessary in order to satisfy the requirements of the IFC PS6. However, it must be noted that should significant residual impacts on biodiversity remain after mitigation, biodiversity offsets will be required as part of the mitigation strategy. In such an event, IFC PS6 requires a Biodiversity Action Plan (BAP) should be developed. The Biodiversity Management Plan has been included under **ANNEXURE E** of this document.

11.1.9 SOCIOECONOMIC PLAN

- This Plan should be developed and define the methodologies for monitoring the socio-economic impacts of this Project, namely in terms of employment, training, safety and health and the use of the value to be delivered by the developer to support and finance social development activities.

11.1.10 GRIEVANCE REDRESS MECHANISM

- An external GRM has been developed for the Project which details the process of which stakeholders can raise issues and concerns with the Project.

12 MONITORING PLANS

The negative environmental impacts identified for this Project are reduced by the adoption and implementation of the minimization measures identified in the previous chapter, focusing mainly on the construction phase. However, the following specific monitoring plans have been identified as necessary to monitor aspects related to noise, birds, bats and air quality for phases prior to construction, construction and operations.

12.1 NOISE MONITORING PLAN

12.1.1 GENERAL CONSIDERATIONS

The Noise Monitoring Plan, which is implemented here, aims to determine if the activities developed during the construction phase, operation phase and decommissioning phase of the Namaacha Wind Energy, are inducing significant change to the sound environment currently registered in the study area, namely near the main sensitive receptors present in the surroundings of the study area.

The monitoring must be conducted in line with both the IFC general EHS guidelines and the IFC EHS guidelines for wind energy supplemented by ETSU-97 where necessary.

12.1.2 ASSESSMENT CRITERIA / ACCEPTABLE NOISE LEVELS

In the absence of national standardization, WHO and IFC guidelines should be adopted. For the construction phase and decommissioning phase operations the WHO guidelines for community noise, also adopted by the IFC, should be used to assess if the ambient noise levels and the increase from the pre-development noise climate are within acceptable limits. For the operational phase, the guidelines provided in the IFC EHS guidelines for wind energy should be adopted.

12.1.3 SAMPLING FREQUENCY

Before the start of the construction phase, a monitoring campaign should be carried out to assess the acoustic reference framework and establish the residual noise as the basis for the acoustic assessment. This campaign must comprise of monitoring setups for both community noise (IFC general EHS guidelines) and wind energy facilities (IFC EHS guidelines for WEFs, ETSU-97 and IEC 61400-11:2012 + A1:2018).

During the construction and decommissioning phases, bimonthly campaigns should be planned. For any of campaigns listed here, sufficient measurements must be carried out to ensure the statistical representativeness of the measurements, given the characteristics of the acoustic signal(s), of the environment to characterize.

During the operational phase, semi-annual campaigns should be foreseen, during the first two years of operation in conditions representative of the average wind speeds present in the study area.

12.1.4 PARAMETERS TO BE MONITORED

The monitoring campaigns to be carried out will determine the ambient noise values for the equivalent continuous sound level with an A-weighting mesh, (LAeq), in 1/3 octave bands. The 95% and 50% percentile level statistical parameters will also be recorded.

12.1.5 SAMPLING LOCATIONS

In Figure 4, the measurement points to be carried out within the scope of this monitoring are located, adjusted to the sensitive receptors identified in the Technical Report.

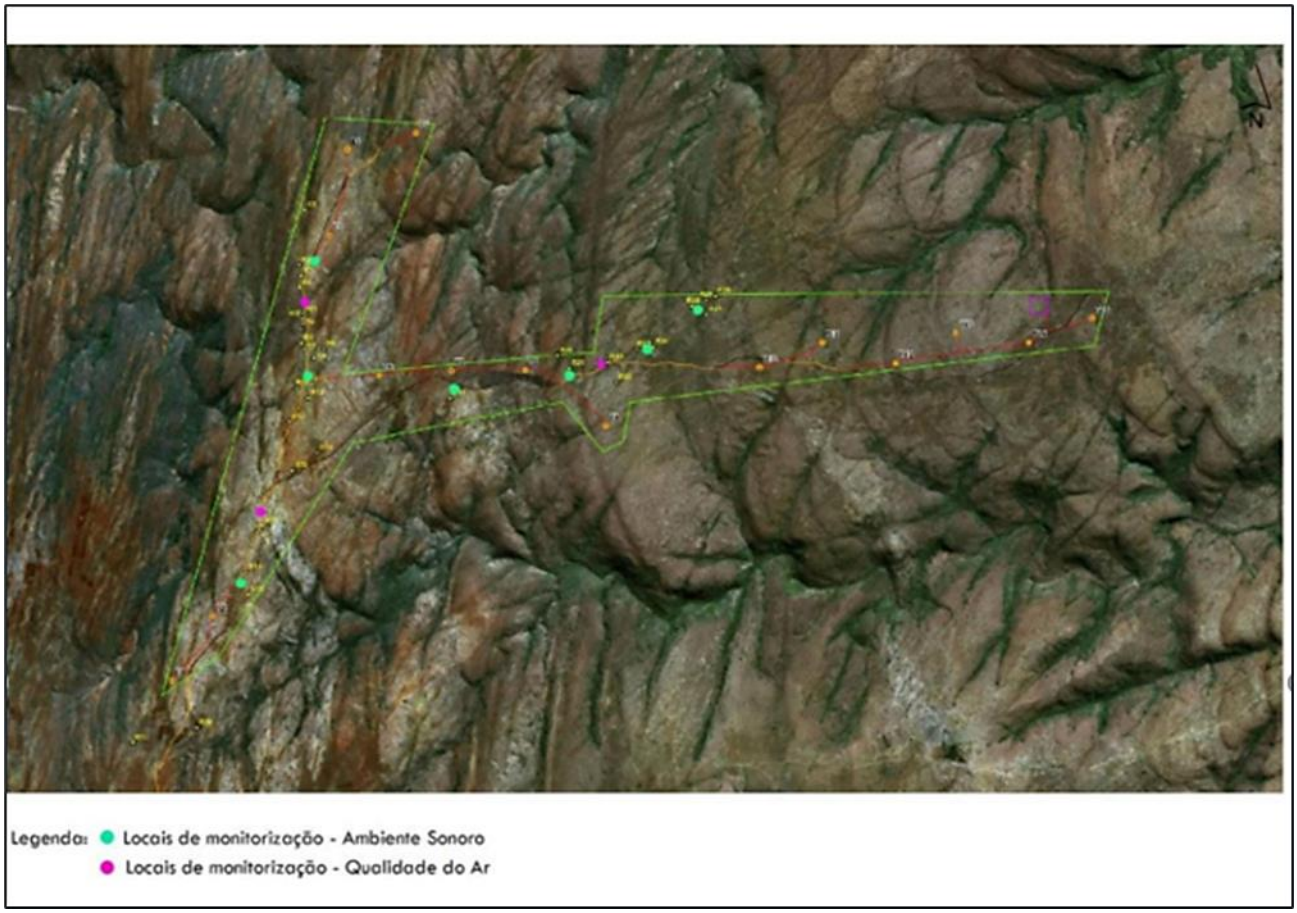

Figure 4: Monitoring locations

12.1.6 EQUIPMENT TO USE

The measurement system should be based on an integrating digital sound level meter with a band microphone wide range of high sensitivity and spectral and statistical analysis filters. The system must be equipped with windshield, to eliminate spurious signals due to the wind. For the construction phase tripod, to guarantee stability. The system must be approved and must belong to accuracy class 1.

12.1.7 DATA EVALUATION CRITERIA

The criterion for evaluating the data collected will be in compliance with the limits established by the World Health Organization environmental guidelines, according to which impacts on environmental noise shall not exceed the levels shown in Table 4 or result in a maximum increase in the levels of noise that characterize the (existing) acoustic frame of reference by more than 3dB closest to the identified sensitive receptor.

Table 4: Noise levels according to the "Guidelines for Community Noise", World Health Organisation (WHO), 1999

Receptor	One Hour LAeq [dB(A)]	
	Day 07:00 – 22:00	Night 22:00 – 07:00
Environmental conditions	Maximum boost in base levels of 3 dB on location closest to receiver off-site	
Residential/Institutional/Educational	55	45
Industrial/Commercial	70	70

12.2 BIRDS MONITORING PLAN

12.2.1 PRE-CONSTRUCTION MONITORING SURVEY

Monitoring was conducted with reference to the specific guidance related to pre-construction assessments of birds for onshore wind farms set out in the Environmental, Health, and Safety Guidelines for Wind Energy (EHS Guidelines) (ifc.org 2015), and in document '*Best practice guidelines for avian monitoring and impact mitigation at proposed wind energy development sites in southern Africa'* which was produced by the Wildlife & Energy Programme of the Endangered Wildlife Trust & BirdLife South Africa (Jenkins et al., 2015). The South African guidelines were followed since Mozambique does not have its own guidelines for assessing the impacts of wind energy facilities on avifauna, and since the South African guidance is considered best practise and conforms to the requirements of the World Bank Group: Environmental, Health and Safety Guidelines for Wind Energy (August 2015).

12.2.2 ASSESSMENT CRITERIA

The objective of the 12 months of pre-construction monitoring at the proposed Namaacha Wind Energy Facility (WEF) was to gather pre-construction baseline data according to internationally accepted standards e.g., the World Bank Environmental, Health, and Safety Guidelines for Wind Energy (EHS Guidelines) (IFC 2015) and the IFC Performance Standards (IFC 2012) on the following aspects pertaining to avifauna:

- The abundance and diversity of birds at the proposed WEF, and a suitable control site to measure the potential displacement effect of the wind farm.
- Flight patterns of priority species at the WEF to assess the potential collision risk with the turbines

12.2.2.1 SAMPLING PERIOD AND FREQUENCY

The first survey was conducted in spring when many migrant raptor species are already present e.g. Common Buzzard and Wahlberg's Eagle. The second survey was conducted during late summer (end February – early March) when migratory species were still present. The autumn survey took place at the end of March early April while the dry season winter survey took place at the end of May – early June during the peak breeding season of most resident raptors. Weather conditions during surveys ranged from cloudy, partly cloudy to sunny but visibility was generally always good. Surveys were conducted during three-time envelopes to cover all the daylight hours: morning, mid-afternoon and late afternoon. Nocturnal species were recorded on site before dawn and after dusk while travelling to / from vantage points.

Table 3-1 - Surveys conducted at the proposed Namaacha Wind Farm

Survey	Date	Season
1	9 – 17 November 2022	Spring
2	28 February to 6 March 2023	Summer
3	25 March to 2 April 2023	Autumn
4	30 May to 05 June 2023	Winter

12.2.2.2 SAMPLING METHODS AND MATERIALS

The field team consisted of two experienced observers using the following equipment:

- Binoculars
- Two-way radios
- Nikon D810 DSLR with a 600mm lens
- 4 x 4 vehicle

Wind priority species were identified using the latest (November 2014) BirdLife SA (BLSA) list of priority species for wind farms. The BLSA list of priority species consider the following factors:

- Family groups of bird that were killed or otherwise affected by wind farms in the rest of the world. Other families of birds that do not occur in the rest of the world and that might be affected by wind farms (for example all larger birds) were also added to the list.
- Conservation status (regional and global)
- Endemic status (southern Africa)
- Range size
- Morphology
- Behaviour

The International Union for Conservation of Nature (IUCN) Red List of Threatened Species was consulted to determine the conservation status of the priority species that were recorded. Established in 1964, the International Union for Conservation of Nature's Red List of Threatened Species has evolved to become the world's most comprehensive information source on the global extinction risk status of animal, fungus and plant species.

12.2.3 POST-CONSTRUCTION MONITORING

The avifaunal post-construction monitoring at the proposed WEF must be conducted in accordance with international best practise standards at the time or the latest version (2015) of the *Best practice guidelines for avian monitoring and impact mitigation at proposed wind energy development sites in southern Africa* (Jenkins *et al*. 2015)[1].

Post-construction monitoring is therefore necessary to:

- Confirm as far as possible what the actual impacts of the WEF are on avifauna; and
- Determine what mitigation is required if need be (adaptive management).

12.2.4 PARAMETERS TO MONITOR

The avifaunal post construction monitoring aims to assess the impact of the WEF by comparing pre- and post- construction monitoring data and to measure the extent of bird fatalities caused by the WEF. The proposed post-construction monitoring can be divided into three categories:

[1] Jenkins, A.R., Van Rooyen, C.S., Smallie, J.J., Anderson, M.D., & A.H. Smit. 2015. Best practice guidelines for avian monitoring and impact mitigation at proposed wind energy development sites in southern Africa. Produced by the Wildlife & Energy Programme of the Endangered Wildlife Trust & BirdLife South Africa.

- Habitat classification
- Quantifying bird numbers and movements (replicating baseline pre-construction monitoring)
- Quantifying bird mortalities.

12.2.5 SAMPLING PERIOD AND FREQUENCY

Given the known sensitivity of the source area and the likelihood of high collision mortalities it is recommended that avifaunal monitoring should take place annually for the lifespan of the operational phase. After the first year of monitoring, the programme should be reviewed in order to incorporate significant findings that have emerged.

Habitat classification - The avian habitats available must be mapped at least once a year (at the same time every year), using the same methods which were used during pre-construction.

Bird numbers and movements - In order to determine if there are any impacts relating to displacement and/or disturbance, all methods used to estimate bird numbers and movements during baseline monitoring must be applied as far as is practically possible. This includes sample counts of small terrestrial species, counts of large terrestrial species and raptors, focal site surveys and vantage point surveys according to the current best practice.

Collisions - The collision monitoring must have three components:

- Experimental assessment of search efficiency and scavenging rates of bird carcasses on the site.
- Weekly searches in the immediate vicinity of the wind farm turbines for collision casualties.
- Estimation of collision rates.

The value of surveying the area for collision victims is only valid if some measure of the accuracy of the survey method is developed. The probability of a carcass being detected and the rate of removal/decay of the carcass must be accounted for when estimating collision rates and when designing the monitoring protocol.

12.2.6 TIMING AND DURATION

Post-construction monitoring should commence as soon as possible after the first turbines become operational to ensure that the immediate effects of the facility on resident and passing birds are recorded, before they have time to adjust or habituate to the development.

It is recommended that avifaunal monitoring should take place annually for the lifespan of the operational phase. After the first year of monitoring, the programme should be reviewed in order to incorporate significant findings that have emerged, given the known sensitivity of the source area and the likelihood of high collision mortalities.

12.3 BATS MONITORING PLAN

This plan took into account the guidelines proposed by the IFC and the South African Good Practice Guidelines for Bats at Wind Energy Facility.

Goals

The intention behind the monitoring plan is to understand how bats use the project area and assess any impacts resulting from the implementation of the Project as well as obtain data that allow the establishment of possible mitigation measures, covering three different situations:

- Determine the list of existing bat species and their population status (number of colonies/ individuals, location of occupied/potential shelters and assessment of activity in the study area);
- Analyse the influence of environmental variables on bat activity (for example, wind intensity and air temperature); and
- Assess the impacts of the project on bats.

The monitoring plan is divided into two phases, covering the period prior to the construction of the wind facility (Phase 1) and the initial period of operation (Phase 2).

The following terms of reference and objectives form part of Phase 1 of the monitoring plan (before construction) requirements:

- Conduct a full 12-month bat monitoring campaign, in accordance with international best practice, as well as the latest version of the South African best practice guidelines for monitoring bats at wind energy facilities in South Africa, to determine which bat species are present at the site, their relative risk to wind turbines, how bat activity is influenced by meteorological conditions at the site, and to understand how bats use the site;
- Assess known and potential bat roosting habitats on site to determine their significance for the proposed project; and
- Compile a final monitoring report upon completion of the monitoring campaign, summarising bat activity relative to meteorological conditions, highlighting relevant concerns or opportunities, summarising the methodology used and briefly discuss relevant impacts (where applicable) and provide an opinion, with mitigation options, on any potential impacts to bats.

The objectives of Phase 2 (operational phase, duration of 2 years) are to monitor bat colonies detected; evaluate bat activity in the area where the wind farm is located (at the level of the ground and height); estimate bat mortality caused by the wind farm; and evaluate the effectiveness of the minimisation measures adopted, as well as the need to change them. The following terms of reference and objectives form part of Phase 2 of the monitoring plan (during operation) requirements:

- Overall, a minimum of two years of operational monitoring is required (acoustic monitoring, carcasses searches and fatality estimations) in accordance with best practice guidelines. Thereafter, monitoring must be repeated in year five, and every five years thereafter. Should any such threshold values be exceeded, then further curtailment or deterrents are recommended to be applied. Monitoring of fatalities is to occur from the outset, as soon as the first wind turbine is erected and starts spinning.

12.3.1 PARAMETERS TO MONITOR

In accordance with the stated objectives, it is considered important to monitor the following parameters:

- Specific richness, which corresponds to the determination of species or groups of species of bats that occur in the Project area;
- Activity, which corresponds to the determination of the number of encounters with bats per unit of time, in the area of the wind farm;
- Mortality, which corresponds to counting the number of dead bats near the wind turbines;
- Cadaver removal rate, which corresponds to the determination of the rate of consumption or removal of cadavers by time interval;
- Efficiency in the detection of cadavers, which corresponds to the estimate of the relative proportion of cadavers not detected by technicians;
- Causes of death, that is, determination of the probable cause of death of the detected cadavers (wherever possible);
- Prospectability classes, which correspond to the determination and mapping of the degree of difficulty of progression provided by the terrain and visibility that the vegetation allows;
- Air temperature, precipitation, wind direction and intensity, coinciding with the periods of sampling.

To collect these parameters, the following sampling will be carried out: prospecting and bats; listening with manual ultrasound detectors (assessment of activity at ground level); listening with automatic ultrasound detectors (assessment of activity at height); and estimate of mortality (prospecting, removal tests and cadaver detection tests).

12.3.2 SAMPLING LOCATIONS

The inspection of abandoned buildings/shelters will be carried out in an approximate radius of 10km around the wind turbine footprints, but special attention will be given to the area closest to the wind farm (radius of 5km) and to the most important shelters/buildings. These should include the abandoned building/shelter located approximately 11km away from the planned location for the wind turbines.

In Phase 1, sampling of bat activity was undertaken at one (1) location using Song Meter SM4 bat detectors (Wildlife Acoustics, Inc.). At this location, a single meteorological mast has been used to accommodate the installation of the equipment. The microphones have been installed at 10 m (“ground level”) and 55 m (“at height”), which is in agreement with the recommendations set out in the South African Best Practice Guidelines (MacEwan et al. 2020) and international best practice standards (Rodrigues et al. 2014), whereby activity surveys are recommended to take place at both ground level as well as at rotor height. All detectors have been configured to record every night from 30 minutes before sunset until 30 minutes after sunrise.

In addition to the static acoustic monitoring, manual transect monitoring has also been undertaken, with the aim of completing 2 nights per season, in order to provide an indication of spatial use of the site by bats. Potential roosting structures that bats could use were also searched for and investigated during the day for the presence or evidence of roosting bats (e.g. individuals, guano and culled insect remains, etc.) whenever the Arcus team were on site. These included buildings, rocky outcrops and trees.

In Phase 2, sampling for the assessment of activity at ground level (with manual detector) must be carried out at 22 fixed points distributed throughout the area where the wind farm is located, in order to cover the main vegetation units existing there. Acoustic sampling at height (with automatic detector) will be carried out in a meteorological tower located in the area of implantation of the wind farm. In this tower, 2 ultrasonic detectors will be installed and respective microphones, in order to sample the area of rotation of the wind turbine blades (microphone at about 55m height) and the area close to the ground (the microphone at 3m height slightly oriented downwards).

Sampling to estimate mortality should be carried out within a minimum radius of 50m around the wind turbines, however this radius should be adjusted to accessible areas (ease of progress vs visibility), in particular the percentage of the area not accessible.

12.3.3 SAMPLING PERIOD AND FREQUENCY

In regard to shelters/abandoned buildings, a minimum of one sampling per season will be conducted in the places referenced with bats. The inspection of new shelters/buildings will be carried out throughout the year (coincident with assessment of activity at ground level).

In the evaluation of the activity at ground level, listening will be carried out with an ultrasound detector in at least 8 months of the year (4 months of each season), during the first 3 years of the operations. listening will last for 5 minutes at each location. No sampling will be carried out in adverse weather conditions (rain, fog, and winds of more than 5 m/s at ground level), or in situations of obvious risk for the responsible technicians.

In evaluating the activity at height, monthly listening will be carried out with automatic ultrasonic detectors for 7 days a month, during every month, during the first 3 years of the operational phase. Sampling will take place continuously throughout the period from 30 minutes before sunset to sunrise.

The mortality estimate will take place during the first three years of operation of the wind farm, with the following being carried out: weekly samplings in the 12 months of the year for the prospection of cadavers; At least one sampling per team in each season (dry and wet), to determine the effectiveness of detection of cadavers; and four sampling campaigns to determine the cadaver removal rate (two in each season), the latter in the first two years of operation.

12.3.4 SAMPLING METHODS AND MATERIALS

With regard to shelters, sites that apparently have conditions for shelter bats (natural and artificial cavities, abandoned buildings, sheds, bridges, cliffs interiors, fruit trees, large trees, ...), will be monitored by consulting cartography, aerial photography, bibliography, field work and interviews with local populations. Whenever possible, daytime visits will be made to the inventoried sites, recording the species and the number of individuals present. When this is not possible (for security reasons, as it is a private property), the visits must be replaced by sampling campaigns with an ultrasound detector over a period of at least 30 to 45 minutes, starting just before sunset. In these sampling campaigns, the number of individuals leaving the shelter will be counted (by direct observation) and identified the species detected (through sound recordings). If capture is necessary, the bats will be temporarily stored in individual cloth bags, before being handled for identification and collection of biometric data.

The collection of data for the evaluation of the activity at ground level will be carried out through listening with full spectrum type ultrasound detectors. To enable comparison with the data collected in the pre-construction phase. Sampling will be carried out through continuous recording of 5 minutes. For the collection of temperature and wind data (intensity and orientation) at the level of the ground,

a pocket anemometer and a compass will be used. These amounts will be collected at the beginning of each sampling campaign, and if possible, also throughout the sampled period.

In assessing the use of activity at height, 2 automatic detectors of the full spectrum type will be installed. The detectors will be programmed for the sampling periods previously indicated, and to record all detected contacts for 3 seconds, with no interval between two consecutive recordings. The following settings are recommended: gain - 12dB; filter below 16kHz - no; sampling rate - 384kHz; minimum duration - 1.5ms; maximum duration: none; minimum frequency of trigger - 10kHz; trigger intensity - 12dB; trigger window - 3s; maximum duration: 3s. The meteorological data will be obtained through the measuring equipment available in the meteorological tower.

In the acoustic samples, encounters with bats will be counted, that is, the sequence of at least two sound pulses within a maximum interval of 500ms between consecutive pulses (Sowler et al., 2017), as well as the presence of social pulses and feeding buzzes (sequence of pulses emitted with a high repetition rate, which indicate the final phase of approaching an insect).

Regarding the estimation of mortality, the prospection of cadavers will consist of carrying out random walks through the area to be prospected. Whenever a bat cadaver is found, its location will be recorded (at least the GPS coordinate, ideally also the distance and orientation in relation to the wind turbine), noting its state of decomposition, date and the wind turbine where it was found. The cadavers will be collected for later identification, freezing or placing in alcohol after being collected is recommend. To determine the effectiveness of detecting cadavers by the observers, models of bats will be randomly scattered within a radius equivalent to the one for prospecting for cadavers (location unknown to observers), and later, each observer begins the normal prospection of cadavers, and must record the number of models detected. The methodology for the rate of removal of cadavers will be to randomly spread cadavers of rats in the area of installation of the wind farm, recording their localization. Then, daily visits will be made to record the status of removal of each cadaver for a maximum period of 10 days. If the cadavers to be used are of species that may occur in the wild in the region, they must be marked in such a way as to allow their association with the study, but in such a way as not to facilitate or indicate its location to potential consumers.

12.3.5 DATA PROCESSING METHODS

The analysis of the sound recordings obtained in the sampling of the use of space at ground level and in height, will be carried out using computer programs for sound analysis, which allow for obtaining of the main variables characterizing the noise emissions of bats, such as the type of frequency (constant, modulated or quasi-constant), the maximum energy frequency (kHz), the range frequency (kHz), pulse duration (ms), pulse interval (ms) and pulse shape. The collected parameters will later be compared with reference bases (Fenton et al., 2014; Monadjem et al., 2017n; Monadjem et al., 2010; Taylor et al., 2013), so that it is possible to determine the species present, or the group of possible species.

In the specific case of sampling with manual detector, considering that recording of the entire sampling will be carried out before carrying out the analysis to identify the species, it will be necessary to previously select the sequences with bats present in the recordings (presence of at least two pulses with a maximum interval of two seconds between consecutive pulses) and then divide these sequences into three-second portions.

Regarding the sampling with automatic detector, considering the high number of recordings they create and the fact that a large part of them correspond only to noise, before proceeding with the analysis and identification of the species present, it will be necessary to carry out screening to

separate recordings with noise from those with bats. This screening can be done manually or automatic (through its own software), in which case it is necessary to validate at least 5% of files classified as noise, to determine the percentage of software error (percentage of recordings with bats, misclassified as noise). On the other hand, as the number of files with bats will be potentially high, it may be impractical to analyse them all, in which case, the option to analyse samples should be chosen. In this case, it is suggested that nights with less encounters are analysed in their entirety, and that the nights with the greatest number of encounters are analysed by sampling, and recordings of all hours with activity should always be selected. It is suggested that samples be selected by random stratified selection processes, using for example the program R v3.2.0, as described in Cochran (1977), Lohr (1999) and Pereira (2001).

Subsequently, in the evaluation of the activity, activity indexes (number of encounters/h) will be calculated by species, groups of species and/or in global terms, being also considered the variation between samples and period of the year (month). Meteorological data will also be presented considering the variation between samplings and period of the year (month). Adequate statistical treatment will also be carried out on the collected data, to assess the influence of the measured parameters on the activity of the bats and, if possible, on the specific richness.

To estimate mortality, specific estimators such as those proposed by Erickson. et al. (2004), Huso (2010) and Korner-Nievergelt et al. (2011) will be used. These estimators use data from the detected mortality, detection of effectiveness and removal rate as a basis for estimating the mortality in a wind farm. Bearing in mind that it will not be possible to prospect for cadavers throughout the predicted area, mortality in non-prospected areas should also be estimated, following, for example, that proposed by Huso & Dalthorp (2014).

12.4 AIR QUALITY MONITORING PLAN

12.4.1.1 General considerations

The Air Quality Monitoring Plan implemented here aims to determine whether the activities carried out during the construction phase of the Project, are inducing significant impact changes on the air quality that is currently registered in the study area, namely with the main sensitive receptors present in and around the study area. It will only be carried out in the event of situations that give rise to complaints from the population.

12.4.1.2 Parameters to be monitored

The monitoring campaigns to be carried out will determine the ambient air quality values for the Total Particulates in Suspension parameters. **These campaigns will be carried out in the event complaints are raised from the population.**

Sampling must be carried out for 24hrs. The sampling results should allow comparison with IFC standards.

12.4.1.3 Sampling locations and frequency

Sampling sites are shown in Figure 5. IFC guidelines should be adopted in addition to Mozambican national legislation (Decree No. 18/2004 of 2 June).

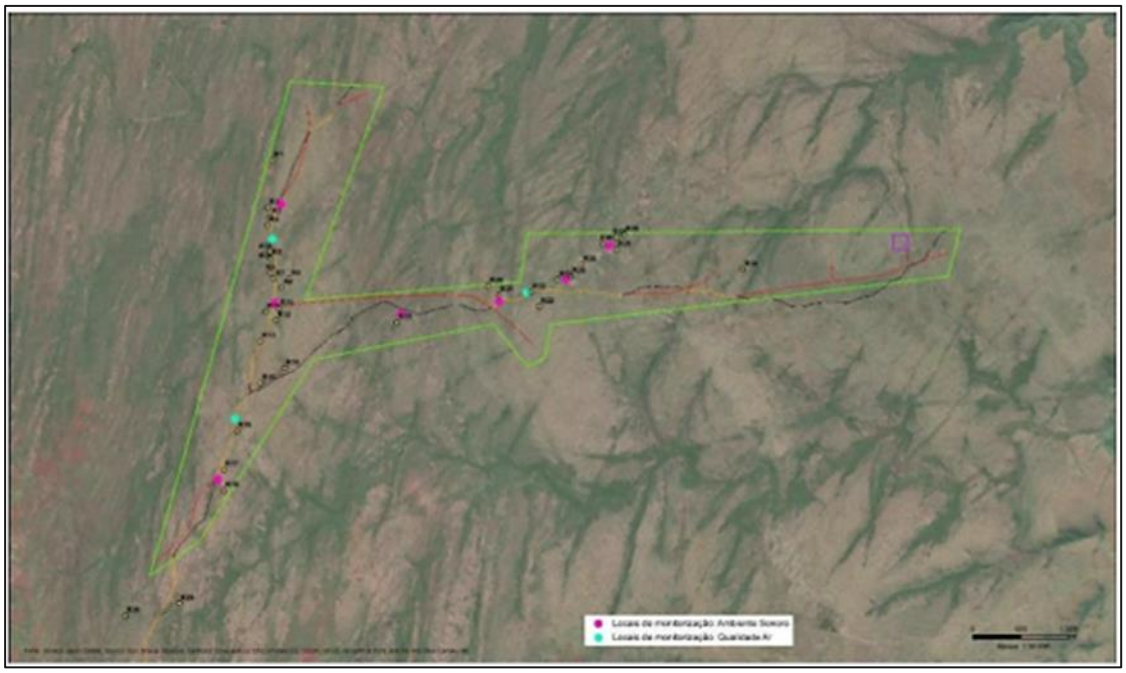

Figure 5: Proposed air quality and noise monitoring sites

ANNEXURE A: RESETTLEMENT ACTION FRAMEWORK PLAN AND RESETTLEMENT ACTION PLAN.

ANNEXURE B: WASTE MANAGEMENT PLAN

13 WASTE MANAGEMENT PLAN

13.1 PURPOSE AND OBJECTIVES OF THIS DOCUMENT

The objective of the Waste Management Plan (WMP) is to provide a system for the identification, classification, minimization, handling, storage and treatment/disposal of all wastes generated as a result of the Namaacha Wind Energy project activities and associated infrastructures, on the surrounding environment during the project lifecycle, to ensure:

- Compliance with Mozambique waste management legislation;
- Conformation with IFC performance standards and EHS guidelines; and
- Implementation of industry best practice waste management procedures, in order to eliminate or mitigate potential impacts on the environment and human health.

In the long term, this will reduce waste management costs, environmental liabilities, and risks.

The WMP elaborates the requirements with respect to the definition and assessment of the potential impacts of all types of wastes expected to be produced from the project activities.

13.1.1 INTENDED USERS

This document is applicable to all of the activities undertaken during the Namaacha Wind Energy project. It is also applicable to contractors working under business agreements with the proponent for the Namaacha Wind Energy project.

13.2 LEGAL FRAMEWORK

This section summarizes the current national and international legislation, standards and guidelines that regulate environmental matters relevant to the management of waste.

13.2.1 REGULATORY AUTHORITIES

- **Ministry of Land and Environment (MTA)**

MTA is responsible for directing the implementation of environmental policy, coordinating, advising and auditing. Under waste management, it is the Ministry's responsibility for the following:

a) To issue and disseminate binding rules on the procedures to be followed under waste management;
b) To carry out the environmental licensing of facilities or places of storage and / or disposal waste;
c) To monitor compliance with the provisions of the regulations and the rules on waste management;
d) To ensure public participation in the licensing process provided in paragraph (b) of this number, as well as access to relevant information on waste management.

The legal framework summarised below are the main laws, policies, directives and guidelines applicable to the Namaacha Wind Energy project activities.

- Constitution of the Republic of Mozambique, 16 November 2004
- Environmental Law (Decree No. 20/1997, of 1 October)

- Regulations on Urban Solid Waste Management (Decree No. 94/2014, of 31 December)
- Regulation on Hazardous Waste Management (Decree No. 83/2014, of 31 December
- Regulation on the Management of Biomedical Solid Waste (Decree No. 8/2003, of 18 February)
- Technical Directive for the implementation and operation of sanitary landfills (2010); and
- National Strategy for the Integrated management of Urban Solid Waste in Mozambique for the period of 2013-2025 (2012).

13.2.2 INTERNATIONAL GUIDELINES AND CONVENTIONS

This section outlines the international guidance and conventions related to waste management as is applicable to the Namaacha Wind Energy project. Wind energy facilities do not normally generate process emissions and effluents during their operation (WBG, 2015). Solid wastes wastewater discharges, and solid wastes related to construction and decommissioning activities are discussed in the General EHS Guidelines:

- **General WB EHS Guidelines: Environmental Waste Management**

These guidelines apply to projects that generate, store, or handle any quantity of waste across a range of industry sectors. It provides guidance in terms of general non-hazardous waste, hazardous waste and waste monitoring options. The Proponents' commitment to waste minimisation, reuse and recycle is audited against the intent of these general EHS guidelines.

Sludge and other discarded material, including solid, liquid, semi-solid, or gaseous material resulting from industrial operations needs to be evaluated on a case-by-case basis to establish whether it constitutes a hazardous or a non-hazardous waste. Facilities that generate and store wastes should practice the following:

- Establishing waste management priorities at the outset of activities;
- Establishing a waste management hierarchy that considers first prevention then reduction, reuse, recovery, recycling, removal and finally disposal of wastes;
- Avoiding or minimizing the generation of waste materials, as far as practicable;
- Where waste generation cannot be avoided, minimize, recover and reuse waste; and
- Where waste cannot be recovered or reused, treating, destroying, and disposing of it in an environmentally sound manner.

- **Conventions**

  - The Basel Convention (1992) (on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal) to which Mozambique has acceded (1997), controls the movement, storage, transport, treatment, reuse, recycling, recovery and final disposal of hazardous waste as well as requiring producers of hazardous waste to dispose of their waste in an environmentally responsible manner close to where it is generated.
  - The Bamako Convention (1991) is supplementary to the Basel Convention and specifically covers the movement of hazardous waste into or between signatory African countries. Mozambique acceded this convention in 1999.

- The Stockholm Convention (2004) on Persistent Organic Pollutants is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment. Mozambique acceded this convention in 2006.

- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998).

- The European Waste Incineration Directive, Directive 2000/76/EC on the Incineration of Waste. This directive provides regulations for the incineration of household and hazardous waste in Europe. The aim of the Waste Incineration Directive is to prevent or to reduce, as far as possible, negative effects on the environment caused by the incineration and co-incineration of waste.

- Basel Convention Technical Guidelines on Incineration on Land, 2002. These guidelines focus on the disposal of hazardous waste by thermal processes.

13.3 WASTE IDENTIFICATION AND CLASSIFICATION

All waste generated by the Namaacha Wind Energy project will be classified in accordance with the Mozambican applicable legislation, namely the Regulations on Urban Solid Waste Management Regulations (Decree No. 94/2014 of 31 December) and the Regulations on Hazardous Waste Management (Decree No. 83/2014 of 31 December), which classifies hazardous waste based on specific characteristics.

Where materials of unknown type or composition are identified, they will be treated as hazardous (precautionary approach). Raw material MSDS sheets, process knowledge, sampling and analyses, as required, will be used to classify unknown wastes for the purposes of storage, transportation, recycling/reuse, and disposal.

If the material is determined to be waste and the risks have been assessed, the integrity of the storage container, if any, will be evaluated and the waste will be transferred to an appropriate management area within the site.

All unknown waste shall be managed and disposed in discussion with the Environmental Coordinator.

A list of wastes anticipated to be generated during the Namaacha Wind Energy project activities is presented in Table 5 together with the provisional classification for each waste and preferred treatment/disposal route.

Table 5: Projected Waste Streams and Classification

Source of Waste	Waste Stream	Classification	Reuse/Recycle/ Treatment/Disposal Route
Site clearance	Wood or vegetation	Non-hazardous	Reuse and/or recycle. Uncontaminated wood shall be made available to communities for their use. Wood-chipping may be used for composting
	Surplus excavated material	Non-hazardous	Re-use if possible, in the vicinity of works (bunding /landscaping).
Supply of materials	Containers (metal, plastics, etc.)	Non-hazardous	Reuse and/or recycle uncontaminated, source separated plastic, ferrous and non-ferrous metals, at local recycler or scrap metal merchant respectively.
	Transport Infrastructure (pipelines, access roads)	Non-hazardous	Reuse and/or recycle uncontaminated source separated plastic, and reuse of inert aggregate in construction of roads.
Storage and Transport of Equipment	Lubricating oils from the equipment	Hazardous	Recycling of oil by gravity separation or centrifugation (or reuse as a fuel source e.g. as RDF in cement kilns).
Kitchen	Food waste	Non-hazardous	Where possible used as compost or animal-feed. Otherwise, collection and disposal by third party waste contractor at approved landfill.

Source of Waste	Waste Stream	Classification	Reuse/Recycle/ Treatment/Disposal Route
Packaging, general waste	Various contaminated packaging waste	Non-hazardous, combustible	Collection and disposal by third party waste contractor at approved landfill if contaminated and unsuitable for reuse or recycling.
Offices	Paper and cardboard	Non-hazardous	Reuse and/or recycle paper and card. Otherwise, disposal by third party waste contractor if contaminated with food waste.
Offices	Plastics	Non-hazardous	Reuse and/or recycle.
Maintenance works	Wastewater (Sewage)	Hazardous	Process through a wastewater treatment plant before discharging effluent to the environment.
	Protective contaminated clothes	Hazardous	If PPE is reusable, follow the specified cleaning and maintenance instructions. Otherwise, dispose of contaminated single use PPE for collection by third party waste contractor.
	Pesticides	Hazardous	Follow instructions on pesticide product label, i.e. return to supplier or incineration most likely required.
	Aerosol Propellants	Hazardous	Collection and disposal by third party waste contractor for proper handling (separation, recycling). Aerosols may be degassed under a nitrogen blanket and metal component recycled.

Source of Waste	Waste Stream	Classification	Reuse/Recycle/ Treatment/Disposal Route
Offices and kitchen	Glass	Non-hazardous	Reuse and/or recycle.
Offices and kitchen	Electronic equipment	Hazardous	Collection and recycling of e-waste by suitable approved contractors. Otherwise, appropriate treatment or disposal.
Construction	Metals	Non-hazardous	Reuse and/or recycle ferrous and nonferrous metals.
	Wires	Non-hazardous	Reuse and/or recycle uncontaminated source separated, ferrous and non-ferrous metals at local recycler or scrap metal merchant respectively.
Kitchen	Kitchen oil / grease	Non-hazardous	Collection and disposal by third party waste contractor for recycling or treatment.
Offices	Printer cartridges	Hazardous	Recycle by returning to supplier for re-inking.
Offices, kitchen, workshops	Hazardous wastes (e.g. small batteries, Fluorescent and sodium lamps)	Hazardous	Collection and recycling of batteries (lead acid battery recycling) and recycling of e-waste by suitable approved contractors. Otherwise, appropriate treatment or disposal.

Source of Waste	Waste Stream	Classification	Reuse/Recycle/ Treatment/Disposal Route
First aid / medical treatment centres	Bio-medical wastes	Bio-medical	Collection by third party waste contractor for treatment. Most bio-medical wastes may be treated until rendered non-hazardous for onward disposal, and only limited amounts of toxic chemicals/laboratory waste or sharps (needles) require incineration.
Vehicle workshops	Tyres	Non-hazardous	Recycle.
Vehicle workshops	Waste Oil, Oil filters, Lubricating/ Hydraulic Oil	Hazardous	Recycle waste oils. Collection and disposal of non-recyclable waste at hazardous landfill by third party waste contractor.
Construction / maintenance works	Lead-acid batteries,	Hazardous	Recycle lead acid batteries. Collection and disposal of non-recyclable waste at hazardous landfill by third party waste contractor.
	Waste Oil from Transformers, Lubricating/ Hydraulic Oil, Sludge	Hazardous	Recycle waste oils. Collection and disposal of non-recyclable waste at hazardous landfill by third party waste contractor.
	Contaminated Soils	Hazardous	Collect soil samples for waste disposal profiling as necessary to fulfil appropriate soil disposal requirements or Collection and disposal by third party waste contractor at project approved landfill.
	Paints	Hazardous	Collection and disposal by third party waste contractor at project approved landfill.

Source of Waste	Waste Stream	Classification	Reuse/Recycle/ Treatment/Disposal Route
Emissions controls	By-products from air pollution controls	Non-hazardous	Collection and disposal by third party waste contractor at project approved landfill.
Construction activities, demolition (after decommission-ing), sand blasting	Inert waste – concrete rubble and washout, grit	Non-hazardous	Reuse as aggregate in crusher and screener for construction (as foundation material).
	Chemical waste (Sludge, Scrapings removed from the generators, tanks and pipelines)	Hazardous	Collection and disposal at hazardous landfill by third party waste contractor. Oily solids may be bio-remediated, or sludges sent for landfilling.
	Power Electronics (Inverters, transformers and other power electronics)	Hazardous	Re-use or re-sale of transformers and collection and disposal of non-recyclable e-waste at hazardous landfill by third party waste contractor
	Pylons and Cables	Non-hazardous	Reuse and/or recycle ferrous and nonferrous metals.

13.3.1 WASTE MANAGEMENT INFRASTRUCTURE

The table below provides the nearest references of waste disposal facilities, to the project site.

Table 6: Waste disposal facilities

Waste Type	Waste and/or Treatment Facility	Location	Distance to project site
Non-hazardous general waste	Mahlampsene Dumpsite	Matola	~52 km
Hazardous Waste	Mavoco Sanitary Landfill	Matola	~65 km
Wastewater	Infulene Wastewater Treatment Plant	Maputo-Matola metropolitan area	~56 km

13.4 WASTE MANAGEMENT ACCOUNTABILITIES

The section below details roles and responsibilities for all employees, contractors and suppliers to accomplish the Namaacha Wind Energy project environmental objectives. In relation to waste management the roles and responsibilities are outlined below:

Table 7: Waste Management Responsibilities

Role	Responsibility
All employees and contractors	Ensure the effective implementation of this Waste Management Plan (WMP) with respect to their work area. Ensure any potential or actual waste management issues, including environmental incidents, are reported to the Project Manager or Supervisor. Ensure equipment (relevant to task/area of responsibility) is maintained and operated in a proper and efficient manner and as per design and operation specification.
CEN	CEN is to ensure that the EPC Contractor conforms to this WMP. The EPC Contractor shall be required to prepare a method statement, based on this WMP, detailing his waste management activities for approval by CEN.
MTA	MTA is the authority responsible for coordinating all environmental activities at national level and for this reason it should be the main driver of the implementation of environmental and social sustainability in all projects. This entity has the responsibility to establish acceptance standards for the various environmental indicators through legislation; and shall evaluate and jointly monitor the measures and actions proposed in the WMP in order to prepare environmental audits as soon as appropriate management deems necessary. MTA through the National Development Fund (FNDS) established a Hazardous Waste Handling Facility at Mavoco, Beluluane district in Mozambique. The facility serves the total territory of Mozambique. It includes a weigh bridge, an unloading packaging bay, a treatment plant, land fill cells, a temporary storage facility for wastes that cannot be landfilled, offices, a laboratory and other service buildings.
EPC Contractor	CEN's representative, responsible for engineering, procurement and construction management of the project. Construction management includes all social and environmental management. The EPC Contractor is specifically responsible for: ■ Appointing appropriate resources for the implementation of this Plan. ■ Ensuring the effective implementation of strategies designed to reduce waste from the operations through communication with site staff and contractors. ■ Ensuring any potential or actual waste issue is reported in accordance with legal requirements, licences and corporate standards.

Role	Responsibility
	■ Providing the necessary work environment and resources to ensure that all processes are carried out under controlled conditions. ■ Ensuring that operational changes consider the potential impacts of waste on the surrounding environment and adjacent landowners. ■ Monitoring waste management performance of employees and project contractors through regular audits and 6-monthly report review. ■ Ensuring adequate resources are budgeted for in relation to waste management for their task/project. ■ Conducting regular inspections and audits of the work area to monitor compliance with this plan.
Site Manager	Environmental staff shall report directly to the Site Manager.
Sub-contractor (including all sub-contractors for construction and other CEN project activities)	The sub-contractor is responsible for the construction of all the works required by the project. The WMP shall form part of the EPC Contractor's agreement with CEN and shall be legally binding. The EPC Contractor shall be responsible for the actions and performance of all sub-contractors. The sub-contractors shall be responsible for ensuring compliance with relevant Mozambican legislation applicable to waste management. The EPC Contractor shall take proactive steps to ensure that the standards in the WMP are met during all phases of construction/operations. These shall include, but not be limited to, the following: ■ Employment of competent and dedicated members of staff to oversee the implementation of the WMP. All employments and replacements of staff responsible for the waste management of the contract shall be subject to the EPC Contractor's and the Proponent's approval. ■ Active participation of such staff in the planning, construction and re-instatement of the works ■ Regular interaction with the EPC Contractor's environmental staff. ■ Ensure that the equipment required for waste management is maintained according to the equipment specifications (including inspection and maintenance records keeping). Staff must be instructed about the relevant environmental sensitivities and the specific measures that each employee will implement to meet the environmental protection and waste management standards defined by the WMP.
HSE Officer	The HSE officer shall be appointed under the EPC Contractor's staff and shall be employed on a full-time basis for the duration of the contract in the case of all projects for which authorisation has been required by MTA. The HSE Manager shall: ■ Ensure the protection of the environment.

Role	Responsibility
	■ Ensure that waste considerations are undertaken in the installation of all new infrastructures for the operation. ■ Identify waste management risks and impacts to the environment and assess resources required to mitigate identified risks and impacts. Ensure that waste management controls are implemented in accordance with this Waste Management Plan. ■ Ensure all internal and external reporting requirements are met, including incident reporting in accordance with established Environmental Management Systems (EMS). ■ Ensure all reporting complies with internal and external monitoring standards, protocols and regulations (Annex VII of Decree No. 83/2014[2]) ■ Coordinate the collation and evaluation of monitoring data. ■ Compile and maintain the hazardous waste inventory. ■ Conduct (site) waste inspection regularly and report environmental performance to Environmental Managers. ■ Liaise with the Site Manager and E&S Manager in the case of incidents, non-conformance or any matter where the course of action is unclear. ■ Prepare internal and external reports for review by the E&S Manager. ■ Coordinate the implementation of any corrective actions and evaluate their effectiveness. ■ Provide visible and proactive leadership in relation to waste management on the project. ■ Assess new waste. ■ Conduct waste audits as part of the Scheduled Internal Environmental Audits. ■ Participate in the ongoing review of this Plan.
E&S Manager	The E&S Manager is a senior CEN employee with extensive environmental work experience. The E&S Manager shall liaise with any consultants or specialists, as necessary, during the course of the project. The E&S Manager shall monitor environmental performance on the project and shall review monthly non-conformance reports. The E&S Manager shall liaise with the Site Manager regarding any significant non-compliance by the EPC Contractor and the steps to be taken to rectify this. The E&S Manager shall provide support to the HSE Manager and shall review the HSE Manager monthly reports. The E&S Manager shall update the WMP, when necessary, based on experience of the works. Any updates shall be submitted to MTA for

[2] *An annual log of the sources, quantities and types of waste produced, transported, processed, recovered, disposed of or exported, and the occurrence of accidents shall be submitted to the Ministry that oversees the Environmental Sector by the end of the first quarter of the following year, and must be kept for five years.*

Role	Responsibility
	authorisation. The E&S Manager shall oversee the re-instatement of the site and provide final sign-off following acceptable re-instatement.
Waste Transportation Contractor	Accredited waste transportation contractor.

13.5 WASTE MANAGEMENT HIERARCHY

Responsible waste management can be accomplished through the hierarchical application of the practices of source reduction, re-use, recycling/recovery, treatment, and responsible disposal. This is provided for in article 4 of Hazardous Waste Management Regulation, Decree No. 83/2014 of 31 December and Regulations on Urban Solid Waste Management, No. Decree 94/2014 of 31 December.

At all stages of the construction and operation phase, the first priority in terms of waste management will be to minimise the amount and toxicity of all waste streams generated.

Waste minimisation can be accomplished applying the principles below:

1) **Reduce -** source reduction or 'waste avoidance' requires that waste managers examine ways of eliminating or reducing waste at source. This is the first step in responsible waste management. In the event of choices, this is the preferred alternative.

2) **Reuse** - where waste can be reused this is a preferred option. Reuse is different from recycling insofar as it involves the reuse of a resource without changing its original form. The reuse of water would be an example of this. Wherever possible, unused or partially used materials which are surplus should be returned to the original suppliers.

3) **Recycling** - involves the collection of materials that can be re-processed for further use, such as aluminium cans and metal scrap. The separated material can be used as a product or raw material. There are local markets for some recyclable materials such as plastic, metals and tyres. Market for the recycling of paper and cardboard will be used to recycle wastepaper and cardboard no longer utilised by project activities.

4) **Resource recovery** - involves the capture of energy or some other valuable benefit from the waste.

5) **Incineration** - involves the destruction of wastes, leaving a small quantity of ash to be disposed, and it is found at the most advanced level of waste disposal/treatment.

6) **Landfil**l - this is the final (least desirable) alternative which should only be used when all other reasonable alternatives have been considered.

The above principles are applicable to both hazardous and non-hazardous waste.

13.6 WASTE MANAGEMENT PLAN

13.6.1 NON-HAZARDOUS WASTE MANAGEMENT

Regarding segregation of non-hazardous waste, the following measures shall be applied:

- Organic and inorganic waste shall be separated at the work sites. Ensure bins are clearly labelled and / or colour coded to indicate which waste types they contain.
- Inorganic waste shall be collected in appropriately labelled waste bins and separated for recycling. There shall be separate bins for plastics, glass, and aluminium cans and scrap metal.

Table 8: Required Management Actions for Non-hazardous Waste

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
Waste generation and recycling	■ Develop waste inventories. These inventories will be updated throughout the project, commissioning and operational phases. ■ Stipulate the storage and disposal requirements for each waste stream. ■ Develop waste management strategies for each waste stream based on the waste management hierarchy. ■ Prepare waste management procedures for the specific scope of work and expected waste types and volumes. ■ Ensure worksites are kept free of litter and that any litter is cleaned up immediately. ■ Demonstrate efforts to reduce waste volumes, where possible, and to segregate and recycle waste where not possible.	■ EPC Contractor ■ HSE Manager	■ Prior to start of project. ■ At all times during the project.	■ Record of waste reduction and recycling initiatives. ■ Recycling bins on site.	■ Construction ■ Work sites
Waste handling and storage	■ Comply with applicable regulatory requirements and standards regarding the design and operation of all waste storage areas (Decree No. 83/2014 of 31 December; Decree No. 94/2014, of 31 December). ■ Segregate all waste streams at source, where practicable (see section 13.6.2 below). ■ Label all hazardous waste containers in accordance with the labelling system as described in Annex IV of Decree No. 83/2014. This labelling system is consistent with international guidelines. ■ Store all waste in appropriately designed and clearly labelled waste bins or waste containers. ■ Cover or close waste receptacles that may present an issue for attraction of pests and other fauna. ■ Regard any unidentified wastes as hazardous waste and handle and store such waste accordingly. ■ Separate combustible wastes from ignition sources to minimise fire hazards.	■ EPC Contractor ■ HSE Manager	At all times	■ Evidence of waste storage containers. ■ Evidence of waste segregation, separate bins/containers for different kinds of waste. ■ Clear labels on bins ■ Evidence of waste inspection records ■ Evidence of inspection of waste transport vehicles.	■ Construction ■ Work sites

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
	■ Inspect and empty temporary waste bins/facilities regularly. ■ Securely store and contain all wastes during transport to landfill facilities. Waste transport vehicle shall be in secure skips or containers which are covered during transport.				
Waste transport and disposal	■ Comply with Mozambican waste management regulations regarding waste disposal (Decree No. 83/2014 of 31 December, Decree No. 94/2014 of 31 December). ■ Stipulate the storage and disposal requirements for each waste stream. ■ For items that are marketable, re-use or recycle waste materials. These materials shall be separated from the waste stream at their point of generation and stored separately for collection by an accredited recycling contractor. ■ In accordance with the legislation, where transport of waste off-site is required, use a transporter that is certified by Ministry that oversees the Environmental Sector (MTA). ■ Implement a Waste Transfer Note (WTN), which is to be signed by the Site Engineer. ■ Correlate the waste manifests with the contractor's waste management method statement. ■ Retain the WTN for at least 3 years. ■ Collect waste sufficiently frequent to ensure that there is no overloading of the temporary storage at the site. ■ Have in place the means to respond appropriately to spillages of waste anywhere along the route within a time limit acceptable to the Proponent. ■ Provide certificates of safe disposal to the Site Engineer for all wastes disposed at the waste site. ■ Where possible, dispose waste in a discreet location at the waste site that permits deposition and closure independently of other waste, so that due diligence can be verified and documented.	■ EPC Contractor ■ HSE Manager ■ Workshop Managers ■ Waste transportation Contractor	At all times	■ Record of waste manifest signed by HSE Manager ■ Certificates of safe disposal	■ Construction ■ Work sites
Specific requirements for burying of waste	Prohibit the discard or burying of waste materials on site.	■ EPC Contractor ■ HSE Manager ■ Workshop Managers	At all times	As per requirement	■ Construction ■ Work, sites.

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
Specific requirements for recycling of inorganic wastes	Separate inorganic waste into appropriately labelled waste bins for recycling. Provide bins for plastics, glass, waste packaging, aluminium cans and scrap ferrous metal.	■ EPC Contractor ■ HSE Manager ■ Workshop Managers	At all times	As per specification	■ Construction

13.6.2 HAZARDOUS WASTE MANAGEMENT

Table 9: Required Management and Monitoring Actions for Hazardous Waste

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
Compliance with legislation	Comply with the Mozambique Regulations for the Management of Hazardous Wastes (Decree No. 83/2014 of 31 December). The specifications below cover key requirements, but a full listing should be obtained from the regulations themselves.	■ EPC Contractor ■ HSE Manager ■ Workshop Managers	■ From project initiation and at all times.	Compliance with Decree No. 83/2014 of 31 December	■ Construction ■ Work sites
Hazardous waste method statement	■ Prepare a Method Statement for Management of Hazardous Waste in accordance with Article 11 of Decree No. 83/2014 of 31 December, including the relevant information required by Annexure II. The plan shall include but not be limited to: ▪ An inventory of all hazardous waste, together with estimated quantities, documented in accordance with the classification system in Annexures III and IX of the regulations. ▪ Measures to comply with waste hierarchy requirements for minimizing hazardous waste generation and recycling of waste ▪ Measures to safely contain and temporarily store hazardous waste prior to collection. ▪ Measures to label hazardous waste in accordance with Annexure IV of the regulations. ▪ Measures to transport hazardous waste in accordance with Annexures VI and VIII of the regulations. ▪ Details of the licensed disposal site.	■ EPC Contractor ■ HSE Manager ■ Workshop Managers	■ Before project initiation as a basis for licensing of the activity	Authorisation by MTA	■ Construction ■ Work sites
Waste generation and recycling	■ Develop waste inventories. These inventories must be updated throughout the project. ■ Stipulate the storage and disposal requirements for	■ EPC Contractor ■ HSE Manager ■ Workshop Managers	■ Before establishment on site	■ Record of waste reduction and recycling initiatives. ■ Recycling bins on site	■ Construction ■ Work sites

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
	each waste stream. ■ Develop waste management strategies for each waste stream based on the waste management hierarchy. ■ Prepare waste management procedures for their specific scope of work and expected waste types and volumes. ■ Manage controlled waste as required by the Mozambican waste management decree and Proponent's SHE policy. ■ Demonstrate efforts to reduce waste volumes. ■ Recycle used oils and greases, where possible, or dispose of them appropriately according to the regulation (Decree No. 83/2014).		■ At all times during the project		
Waste storage and handling	■ Comply with applicable regulatory requirements and standards regarding the design and operation of all waste storage areas (Decree No.83/2014). ■ Segregate all waste streams at source, where practicable. ■ Line hazardous waste containers of materials that are compatible with the wastes to be stored. Keep containers in good condition, free from corrosion, leaks or ruptures and sealed to prevent spillage. ■ Label hazardous waste in accordance with the labelling system required by Annexure IV of No. Decree 83/2014 of 31 December. ■ Keep Material Safety Data Sheets (MSDS) for stored hazardous waste, where available, at the following locations: - the hazardous waste storage area at the plant - the office of the EPC Contractor's site manager - the HSE Manager office ■ Regard any unidentified wastes as hazardous waste and handle and store such waste. ■ Locate spill kits at hazardous liquid waste storage areas. ■ Handle waste chemicals in accordance with the appropriate MSDS. ■ Keep temporarily stored hazardous waste at the work sites on pallets underlain by a plastic liner. All waste stored in this manner shall be removed to a storage area within 7 days. ■ Ensure that storage area is a concrete floored, bunded, facility, covered to provide shade and	■ EPC Contractor ■ HSE Manager ■ Workshop Managers ■ Hazardous Waste Transportation Contractor	■ At all times	■ Evidence of waste storage containers. ■ Evidence of waste segregation, separate bins/containers for different kinds of waste. ■ Clear labels on bins ■ Evidence of inspection of waste storage facilities/containers ■ Presence of spill kits ■ Record of MSDS for hazardous waste materials ■ Manifest of waste removal from site	■ Construction ■ Work sites

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
	prevent ingress of rain. Bunded areas shall include a trap to collect wash-down water from cleaning of the area. If this water is likely to contain hydrocarbons, then the washdown shall be treated as Potentially Oil Contaminated (POC) water. ■ Fully secure the storage area, with lockable gates, to prevent unauthorised access. ■ Inspect and empty hazardous waste storage facilities regularly.				
Waste transport and disposal	■ Comply with Mozambican waste management regulations regarding waste disposal, as described in Decree No. 94/2014 of 31 December. ■ Dispose of hazardous waste at a licensed hazardous waste disposal site. ■ Stipulate the disposal requirements for each waste stream. ■ Implement a waste manifest which must be signed by the Site Manager. ■ Correlate the waste manifest with the contractor's waste documentation. ■ Maintain the waste manifest for at least 3 years. ■ Collect waste sufficiently frequent to ensure that there is no overloading of the temporary storage at the site. ■ In accordance with the legislation, ensure that waste to be transported off site is removed by a transporter that is certified by MTA. ■ Securely contain all wastes during transport to hazardous waste disposal sites or other means. ■ Have in place the means to respond appropriately to spillages of waste anywhere along the transport route within a time limit acceptable to the Proponent. ■ Provide certificates of safe disposal to the Site Engineer for all wastes disposed at the licensed waste site.	■ EPC Contractor ■ HSE Manager ■ Workshop Managers	At all times	■ Record of waste manifest signed by HSE Manager ■ Certificates of safe disposal	■ Construction ■ Work sites
Specific requirements – bioremediation of contaminated soils	Treat small quantities of soils contaminated by hydrocarbons (less than 20kg) in-situ using bioremediation. Where large quantities of contaminated soils are involved (greater than 20kg) or if there is the potential to cause pollution to groundwater, surface water or community water facilities, remove to the area allocated by the Site Manager at for longer-term bioremediation (over a surfaced hard standing area). Monitoring of surface and ground water in the areas with potentially impacted soils	■ CEN ■ HSE Manager ■ E&S Manager ■ Workshop Managers	At all times		■ Construction ■ Work sites.

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
	will be necessary, A monitoring programme is recommended for inclusion in the EMP. Contractors shall be responsible for the bioremediation of their own contaminated soil until the following standards are met: ■ There is no hydrocarbon odour. ■ The soil particles do not coagulate as a result of hydrocarbon contamination. ■ There is no visual evidence of hydrocarbons in the soil. ■ Where there is uncertainty, the soil shall be sent for analysis. ■ Where soils are contaminated by other hazardous chemicals they shall be removed and disposed of as per hazardous waste disposal requirements, indicated in the MSDSs.				
Specific requirements - disposal of unused chemical waste	Chemicals that are no longer used, or are past their shelf-life date, shall be stored in the hazardous waste storage area for interim storage until disposal (toxic chemicals are normally sent to incineration).	■ EPC Contractor ■ HSE Manager ■ Workshop Managers ■ Stores Managers	At all times	Records of disposal	■ Construction ■ Work sites
Specific requirements - pesticide use for vector control	■ Should pesticides be used to control the mosquito vector in and around work sites, they shall be selected to minimise negative effects on non-target organisms. ■ The disposal of waste pesticide and pesticide containers shall be as per the requirements of section 13.6.2	■ EPC Contractor ■ HSE Manager ■ Process Engineers ■ Workshop Managers	At all times	■ Records of pesticide use and eco-toxicity management ■ Records of selection procedure	■ Construction ■ Work sites
Specific requirements - cement storage, use and disposal	Cement/aggregate shall be stored and mixed on compacted ground in designated areas.	■ EPC Contractor ■ HSE Manager	Cement mixing	As per requirement	Construction

13.6.3 WASTEWATER MANAGEMENT

There are three types of wastewater streams would be expected from the Namaacha Wind Energy project activities. These are:

- Potentially oil contaminated (POC) wastewater and storm water from maintenance areas and vehicle wash bays; this would be an intermittent stream;
- Domestic wastewater, which includes grey water (from kitchens and washing facilities) and sewage waste; and
- Oily water effluent.

Table 10: Required Management and Monitoring Actions for Wastewaster

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
Effluent Disposal (oily wastewater)	■ Dispose of effluent in line with Mozambican regulations on effluent water disposal requirements and irrigation (Decree No. 18/2004, of 2 June, amended by Decree No. 67/2010 of 31 December.) and in line with industry specific WB EHS guidelines for effluent disposal. ■ Prepare a method statement describing effluent management at the plant that shall include, but not be limited to: ▪ How effluent will be stored prior to treatment. ▪ How the effluent will be treated to meet the standards required under Mozambican legislation: Decree No. 18/2004 and under the EHS guidelines for effluent disposal. ▪ Measures to ensure that there will be no release of polluted runoff from the site. ▪ Measures to prevent erosion at any discharge point. ▪ The duration of the use of the site. ■ CEN/Managing Contractor shall approve the Method Statement prior to submission of the effluent management method statement to MTA as a part of wastewater licensing requirements.	■ CEN ■ EPC Contractor ■ HSE Manager	Prior to initiation of project activities	Method statement available	■ Construction ■ Work sites
Potentially oil-contaminated wastewater	In work areas for servicing of vehicles and equipment and other tasks where oils and fuel are handled, route spillages via appropriately sized mechanical oil separators. Undertake planned maintenance activities under roofed areas to minimise contaminated storm water.	■ EPC Contractor ■ HSE Manager ■ WWTP operators	At all times	POC-contaminated areas contained, and drainage routed through mechanical oil traps	■ Construction ■ Work sites
Potentially oil contaminated storm water	Keep potentially oil contaminated storm water separate from other drainage. If necessary, test and treat POC storm water to remove contaminants before being released into the environment.	■ EPC Contractor ■ HSE Manager ■ Process Engineers ■ Stores Managers ■ Workshop Managers	At all times	Incident reports and corrective action reports where contaminated water is generated	■ Construction ■ Work sites
Compliance with Mozambique oil and grease specification for effluent	Ensure that water draining from POC areas complies with the Mozambique specification for oil and grease in effluent discharged to the environment (20 mg/l).	■ EPC Contractor ■ HSE Manager ■ Process Engineers ■ Stores Managers ■ Workshop Managers ■ WWTP operators	At all times	Compliance with oil and grease standard for POC-wastewater released into the environment	■ Construction ■ Work sites

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Key Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
Vehicle wash bays	Regards heavy vehicle wash bay(s) as POC areas.	■ EPC Contractor ■ HSE Manager ■ Workshop Managers	At all times	Compliance with oil and grease standard for wastewater released into the environment	■ Construction ■ Work sites
Sand washing	Should sand washing be necessary, prepare a Method Statement for approval by the Managing Contractor, which shall include details of, but not be limited to, the following: ■ Location of the washing process; ■ Estimated quantity to be washed and water volumes required; ■ Source of water for washing; ■ Any additives to be used in the washing process, including chemistry and environmental status (include MSDSs); ■ Methods for the management of effluent, including TDS and the monitoring thereof; and ■ Measures to prevent erosion as a result of the washing process.	■ C EPC Contractor ■ HSE Manager ■ Workshop Managers	Prior to sand washing	Approved and implemented method statement	Construction
Domestic wastewater (irrigation)	■ Discard grey water (kitchens) into French drains. ■ Size the sewage plant in order to cater for the maximum forecast loads over the project construction and operation periods. Undertake regular compliance monitoring of effluent quality. ■ Ensure that no septic tank is situated closer than 150 m from a community borehole. ■ For work sites, ensure that there is a sufficient complement of compositing toilets available.	■ EPC Contractor ■ HSE Manager	At all times	Compliance with domestic wastewater specification as per Decree No. 18/2004 of 2 June (amended by Decree 67/2010 of 31 December)	Work sites

13.6.4 BIO-MEDICAL WASTE MANAGEMENT

Table 11: Required Management and Monitoring Actions for Bio-medical Waste

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
Disposal of medical waste	■ Separate all medical waste from other waste. Place medical waste in labelled bags in accordance with the requirements of Decree No. 8/2003 of 18 February. ■ Separate infectious waste in yellow plastic bags or, if not possible, any other yellow impermeable plastic bags or containers labelled with the wording “Infectious Waste”. ■ Clearly identify all infectious waste container through	■ EPC Contractor ■ HSE Manager	As required	Certificates of disposal	■ Construction ■ Work sites

Management Aspect	Requirements / specifications	Responsibility	Scheduling	Performance indicator(s)	Relevant Namaacha Wind Energy Project Activities
	the label “Infectious Waste” and the international Infectious Waste logo stamp. ■ Third party waste contractor to collect for treatment/incineration. Records of all medical waste collected shall be kept and submitted to the Site Manager.				
Procedure for medical waste disposal	Dispose of the waste in accordance with CEN’s approved medical waste management procedures.	Third party waste contractor	As required	Records of medical waste disposal.	■ Construction ■ Work sites
Off-site disposal of medical waste	The third-party waste contractor shall provide CEN with the license of the site(s) at which the waste is to be disposed. In addition, ensure that the site(s) receiving the waste provide certificates of acceptance of the waste.	■ CEN ■ EPC Contractor ■ HSE Manager	As required	Certificates of disposal	■ Construction ■ Work sites

13.6.5 VEHICLES AND WASTE CONTRACTORS

Only waste contractors that can demonstrate they have the necessary authorisation from MTA for transporting the particular types of waste will be considered for the Plant's waste management facility. The following requirements shall therefore apply:

- The collection vehicle will be checked to ensure that it is designed for the type of waste and containers to be transported and that it is roadworthy.
- The contractor must be familiar with the requirements for the transportation of the type of waste (including hazardous);
- The frequency of waste collection and the interim measures for the storage of waste on site shall have to be appropriate to one another and would have to be such that the system as a whole does not pose an unacceptable risk to either the environment or human health and safety;
- The transportation contractor shall have in place the means to respond appropriately to spillages of waste anywhere along the route within a time limit acceptable to the Namaacha Wind Energy project (spill containment kits);
- Certificates of safe disposal shall have to be provided to CEN for all wastes removed from site. Such certificates shall be issued by a recognized waste disposal operation; and
- The site at which such waste is disposed of shall have to comply with the corporate requirements of the Namaacha Wind Energy project and its shareholders. As such it shall have to be audited at intervals appropriate to the risk associated with the disposal operation.

13.6.6 CONTRACTOR INSPECTION

The HSE Manager will inspect the Contractor periodically to ensure compliance with waste management requirements in relation with project activities.

13.7 TRAINING AND AWARENESS OF WORKERS

The Contractor shall ensure that all its workers, as well as the workers of the subcontracted companies who are involved in activities that could result in an environmental impact(s), receive training and are competent and are competent.

Training shall take the form of, but not be limited to induction training, use of educational posters and daily environmental discussion topics prior to the start of each shift. During these training sessions, the following principles shall be presented / discussed:

- CEN's corporate environmental, health and safety policies and applicable Mozambican environmental regulations.
- Their roles and responsibilities in achieving conformity with the requirements of the Plant.
- Environmental Permits for the Plant and their conditions; and
- The Waste Management Plan and its procedures for managing identified environmental (and social) impacts arising from Plant operations:
    - Restrictions and procedures for collection, treatment and disposal of waste and hazardous substances.
    - Need to refrain from destruction of animals and plants, indiscriminate defecation, waste disposal and/or pollution of local soil and water resources.

The contractor shall:

- Describe the training and awareness requirements necessary for the effective implementation of the Plan; and
- Document training activity associated with the Waste Management Plan by means of a training needs assessment, training matrix/plan and records of training undertaken.

13.8 INSPECTIONS, AUDITING, REPORTING AND REVIEW

13.8.1 INSPECTIONS

An internal inspection schedule shall be developed and maintained for the Namaacha Wind Energy project. A record of all internal inspections results shall be recorded and maintained. Actions arising from internal inspections shall be tracked until their close out. Performance in respect of waste management shall be included in the monthly HSE reports.

13.8.2 INTERNAL AND EXTERNAL AUDITING

An internal Audit Schedule shall be developed and maintained for the Namaacha Wind Energy project. A record of all internal audits and the audit outcomes will be maintained. Actions arising from internal audits will be tracked until their close-out.

Audits and/or inspections undertaken by external regulators will be facilitated via CEN's Environmental Manager. The findings of external regulatory audits will be recorded, and actions and/or recommendations will be addressed and tracked.

13.8.3 REPORTING TO MTA

Reporting on the Namaacha Wind Energy project shall be included in the Proponent's six-monthly environmental performance report submitted to MTA. Additionally, an annual compliance audit report will be submitted to Government as set by Government regulation for Category A projects.

13.8.4 REVIEW OF THIS PLAN

CEN is committed to conduct activities in an environmentally responsible manner and aims to implement best practice environmental management as part of a program of continuous improvement. This commitment to continuous improvement means that CEN will review this Waste Management Plan every 3 years or more often as required (e.g. in response to new information).

Reviews will address matters such as the overall design and effectiveness of the Plan, progress in waste management performance, changes in environmental risks associated with waste management, changes in business conditions, and any relevant emerging waste environmental issues appropriately covered by the Plan, or measures that are identified to improve the Plan.

CEN may submit an amendment or addendum to the Plan to MTA from time to time (for approval under the EIA conditions for the Namaacha Wind Energy project).

All changes to the WMP shall be submitted to MTA for approval.

ANNEXURE C: EMERGENCY PREPAREDNESS RESPONSE PLAN

14 EMERGENCY PREPAREDNESS AND RESPONSE PLAN

The purpose of the Emergency Preparedness and Response Plan (ERP) is to identify project risks and prevention controls of the development and all procedures that would be implemented if an emergency occurs on site or in the vicinity of the site.

The ERP must be prepared before the construction phase, based on an analysis and risk assessment, in the health and safety and environment management system of CEN, and also, considering the organizational structure of the company for the project implementation. The ERP must identify areas where accidents and emergency situations may occur, communities and individuals that may be impacted, response procedures, provision of equipment and resources, designation of responsibilities, communication, including that with Project Affected Persons and periodic training to ensure effective response. The ERP and response activities must be periodically reviewed and revised, as necessary, to reflect changing conditions.

This Plan must contain at least the following components:

- A summary of the results of the risk assessment and the likely accident scenarios that the plan covers;
- Identification of areas where accidents and emergency situations may occur, communities and individuals that may be impacted;
- A description of the facility or establishment to which the ERP applies, with site plans indicating safety-relevant information such as escape routes, areas or assembly points and emergency equipment;
- Updated key contacts for all areas and personnel;
- A method to collect private information of all staff, including family members and place of residence;
- A description of the emergency committee that will respond to emergencies;
- The facilities and equipment that are available for emergency response, including means of communication and reference to:
    - Emergency controllers/coordinators;
    - First Aid/Emergency Medical Services;
    - Fire & Rescue Services;
    - Environmental, occupational safety and health professionals;
    - Security.
- A description of security monitoring, early warning, incident detection or and minimum emergency reporting mechanisms, procedures, protocols and standards;
- A description of the notification and activation procedures;
- A description, or reference, to the incident management procedure;
- The set of forms and templates that will be used during an emergency;
- Post emergency reporting requirements, including discussions/communications and the update or improvement of procedures;
- An explanation of how often exercises and drills will be arranged for testing procedures, and what types of exercises and drills are required;
- A description of the procedure for maintaining, reviewing and updating the ERP; and
- Training.

ANNEXURE D: COMMUNITY SAFETY AND SECURITY FRAMEWORK PLAN

15 COMMUNITY SAFETY AND SECURITY FRAMEWORK – CONSTRUCTION PHASE

The Community Health, Safety and Security Plan (CHSSP) shall cover all activities related to the implementation of the project, including contractors (subcontractor) activities. It shall outline CEN's commitment and approach to avoid and reduce community health, safety and security risks that may arise as the result of the project.

This chapter presents the Community Health, Safety and Security Framework (CHSSF).

The purpose of this Community Health, Safety and Security Framework is to:

- Identify the relevant legislation, regulations and standards;
- Define the scope of the CHSSF, including roles, responsibilities and timeframes;
- Prepare a list of potential community health, safety and security risks associated with the proposed project;
- Discuss project commitments, programmes, operational procedures and guidance that respond to and mitigate the identified risks;
- Suggest monitoring and reporting procedures and identify Key Performance Indicators to measure the achievements of the proposed project commitments, programmes and key health, safety and security measures;
- Anticipate training requirements; and
- Discuss the audit programme.

The CHSSF will be implemented at the beginning of the construction phase and continue to the end of the project life.

15.1 SCOPE OF THE FRAMEWORK PLAN

The scope of the CHSSF addresses the CEN's commitment to:

- Identify the potential negative impact of the Project at the level of the surrounding communities;
- Mitigate potential impacts of project related activities that may affect the health, safety and security of communities within the project area and along the transportation route.
- Maintain a healthy workforce and labour pool in the community;
- Contribute to the improved health and wellbeing of the local community in the project area;
- Develop the necessary tools and procedures for the management, monitoring and verification of the impacts on local communities; and
- Set Key Performance Indicators

In accordance with the current state of project development, this management plan provides a framework which is conceptual in nature and will need to be updated as necessary, when more information becomes available as the project's front-end engineering and design (FEED) programme

continues. Reference is made to a CHSS Plan, as this is ultimately what this framework is guiding the Proponent to achieve and implement prior to activities commencing on the project.

15.2 REGULATORY REQUIREMENTS

CEN and all contractors (and sub-contractors) are required to comply with all relevant national legislation and regulatory requirements related to health, safety and security. Project Standards comprise:

1) Applicable Mozambican national standards;

2) International standards and guidelines; and

3) Other industry guidelines with which CEN has committed to comply.

Contractors must also ensure that relevant requirements of the various construction-related permits for the Project issued by national (and local) regulators are addressed.

The Community Health, Safety and Security Plan must be observed in parallel with the following relevant legislation:

15.2.1 APPLICABLE MOZAMBICAN NATIONAL LEGISLATION

15.2.1.1 Relevant national laws to ensure the health and safety of employees

Summary/citation: The employer must provide its employees with good physical, environmental and moral work conditions, inform them about the risks present at their workplace, and instruct them on the proper observance of OSH rules:

- Law 23/2007 of 1 August - Labour Law. (Article 59º; 216/2º);
- Decree No. 120/1971 of 13 November; Regulation on Personnel Safety and Hygiene at Work applicable to civil engineering works;
- Decree No. 61/2006 of 7 November, that approves the Regulation of Technical and Health Security for Geological-Mining Activities and revokes the legislation that opposes this Regulation; and
- Decree No. 48/1973 of 5 July; General Safety Rules at Work in Industrial Units.

15.2.2 RELEVANT NATIONAL LAWS TO ENSURE THE HEALTH AND SAFETY OF PEOPLE OTHER THAN THEIR OWN EMPLOYEES

Summary/citation: On a construction site measures to protect the visitors must be taken. The safety of the public must be ensured with regard to the installation of scaffolding, ladders and walkways and other facilities.

Decree No. 120/1971 of 13 November; Regulation on Personnel Safety and Hygiene at Work applicable to civil engineering works (Article 20º; 52º).

15.2.3 RELEVANT NATIONAL LAWS TO ENSURE SURVEILLANCE OF THE WORKING ENVIRONMENT AND WORKING PRACTICES

Summary/Citation: In the industry, construction and mining sectors there are specific OSH regulatory developments, namely on premises, facilities, vehicles and other work equipment, work environment, use of explosives and social facilities.

In the event of any production and storage units of explosives, the enterprise must define safety and emergency rules and procedures:

- Decree No. 120/1971 of 13 November; Regulation on Personnel Safety and Hygiene at Work applicable to civil engineering works;
- Decree No. 61/2006 of 7 November, that approves the Regulation of Technical and Health Security for Geological-Mining Activities and revokes the legislation that opposes this Regulation;
- Decree No. 40/2013 of 21 August, approves the Regulation of Law 6/2011 of 11 January, Law on Explosive Substances (Article 38º); and
- Decree No. 48/1973 of 5 July; General Safety Rules at Work in Industrial Units.

15.3 INTERNATIONAL STANDARDS AND GUIDELINES

The international standards which CEN will implement are those set by the WB OP 4.03 PS4.

PS4 recognises that project activities, equipment, and infrastructure can increase community exposure to risks and impacts and recognizes the responsibility of the Project to avoid or minimize the risks and impacts to community health, safety, and security that may arise from Project-related activities, with particular attention to vulnerable groups.

WB OP 4.03 Performance Standards for Social and Environmental Sustainability set out a range of recommendations with regard to community health, safety and security (Performance Standard 4). CEN will comply with Performance Standard 4.

Key requirements include:

- Evaluation of the risks and impacts on the affected community during the design, construction, operation and decommissioning of the project;
- Infrastructure and equipment safety
- Where the project poses risks to the health, safety and security of communities, an Action Plan will be disclosed on an ongoing basis to enable the community to understand the risks and adverse impacts;
- The Design, construction, operation and decommissioning of the project will be in accordance with good international industry practice. Consideration will be given to potential exposure to natural hazards;
- Adverse impacts on soil and groundwater as a result of the project will also be avoided;
- The transmission of communicable diseases from temporary or permanent labour will be minimised;
- Risks and impacts of project activities will be assessed and communicated in a culturally appropriate manner. Emergency community situations shall be addressed; and
- Where employees or contractors are retained to provide security, the risks to those inside and outside the project site will be assessed.

The WBG Environmental, Health, and Safety Guidelines include community health, safety and security aspects. The guidelines address aspects related to:

- Water quality and availability – preventing adverse impacts to the quality and availability of groundwater and surface water resources, and protecting drinking water sources, whether public or private, at all times;
- Structural safety of project infrastructure – reducing potential hazards posed to the public while accessing project facilities, and undertaking hazard analysis to identify opportunities to reduce the consequences of a failure or accident;
- Life and fire safety – design, construction and operation of all new buildings accessible to the public in accordance with building codes, fire regulations, legal/insurance requirements, and an internationally accepted life and fire safety standard. Fire prevention means of egress (design measures that facilitate safe evacuation in case of an emergency), detection and alarm systems, and an emergency response plan are important elements of the life and fire safety provisions (best practice standards will be adopted);
- Traffic safety – preventing traffic accidents and promoting traffic safety of all project personnel and community;
- Transport of hazardous materials – establishing procedures to ensure compliance with local laws and international requirements applicable to the transportation of hazardous materials, as well as measures presented for preventing or minimising the consequences of catastrophic releases of hazardous materials;
- Disease prevention – preventing the occurrence and spread of communicable diseases, including surveillance, active screening and treatment of workers, undertaking health awareness and education initiatives in local communities, and providing health services; and
- Emergency preparedness and response – preparing Emergency Preparedness and Response plans commensurate with the risks of the facility, including provisions for communication systems, community notification, media and agency relations, medical services and government capacity and collaboration.

15.4 ROLES AND RESPONSIBILITY

CEN will ensure that sufficient resources are allocated on an ongoing basis to achieve effective implementation of the CHSSP.

The role of the Proponent legal representative is to ensure compliance with legislation and company standards and other requirements set out in this framework.

Table 12 below provides addiitonal the key roles and responsibiltiies for implementing the CHSSP:

Table 12: Key roles and responsibilities

Roles	Responsibilities
Managing Director	Approves this framework and develops a plan to ensure the resources required for implementation are available and that the plan is implemented.

Roles	Responsibilities
Head of Stakehoders Management	Ensures compliance with the requirements set out in the Plan. Has overall responsibility for implementation of the Plan, including the Contractors. Monitors and reviews the plan, according to the changes in legislation or other emerging requirements. Provides the necessary support to contractors for them to comply with the Plan. Performs regular inspections to contractors to monitor compliance with the requirements of the Plan.
Contractor Subcontractors CLOs	Ensure that all activities are carried out in accordance with the requirements of the Plan. Performs routine inspection on work sites to ensure that all activities are carried out in accordance with Plan. Reports on all hazards, incidents and nonconformities occurred during execution.

15.5 MITIGATION MEASURES: PROJECT COMMITMENTS AND PROGRAMMES

Prior to commencing with the works, CEN will undertake a detailed community health, safety and security assessment, to identify potential negative risks related to the different phases of the project. Some of the significant risks to be considered include:

- Possible pressure and additional demand on community health services associated with the influx of workers from outside the project area.;
- Possible pressure and additional demand on utility services including water and wastewater treatment plant associated with the influx of workers from outside the project area;
- Increased risks of GBV/SEA as a result of influx of employment and business seekers and cash income
- Possible pressure and additional demand for social services as a result of increased family stress and violence;
- Possible change in community wellness as a result of alcohol, and substance abuse associated with the influx of workers from outside the project area;
- Possible change in community health as a result of the sudden spread of communicable and non-communicable diseases, including sexually transmitted diseases associated with the influx of workers from outside the project area;
- Possible pressure on traffic and transportation network associated with construction and operations activities, including the risk of accidents; and

- Possible change in water and air quality associated with construction and operations activities.

In addition to the potential negative impacts which would require mitigation, the operation of the project also has the potential to improve community health safety and security through the following means:

- Improved access to facilities for communities due to rehabilitated and widened roads;
- Improved workforce health awareness;
- Improved standards of living for direct and indirect employees due to better income in the employee's households; and
- Improved standards of living of vulnerable groups and their households, including support to the elderly within the respective households.

The comprehensive community development plan will specify how the provision of social services and infrastructure highlighted above will be provided. The necessary control measures in CHSSP will be developed and adapted in response to the risks identified through the Social Impact Assessment. The CHSSP will be elaborated on and implemented via the mitigation measure commitments contained in the EMP, prior to the commencement of the project.

Table 13: Required management for community health, safety and security impacts.

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
Impact Category: Community Health, Safety and Security Impacts: Construction and Operational Phases of the Project						
Community health, safety and security impacts: General	For purposes of the construction and operational phases of the project, develop a CHSSP as required to meet WB OP 4.03 Performance Standard 4. For purposes of the construction and operational phases of the project, develop an induction programme, including a code of conduct, for all workers directly related to the project. As part of the CHSSP, the following will also need to be developed and implemented: ■ Develop and implement SEA/GBV Prevention and Response Plan ■ Health Management plans (STI, STD, Malaria, Communicable Diseases, etc); ■ Community Health Information System; ■ Security Management Plan; ■ Contractors Code of Conduct; ■ Community Awareness Program; ■ Environmental Health Programs (to reduce pollutants that could pose a risk to community health); and ■ Accident Prevention and Response Procedure A copy of the code of conduct is to be presented and explained to all workers and signed by each person Additionally, a copy of the code shall be displayed in a location easily accessible to the community and project affected people. It shall be provided in languages comprehensible to the local community, Contractor's Personnel, Employer's Personnel and affected persons. The code of conduct must address the following aspects:	Construction/Operations	■ CEN Management; ■ OHS division; ■ Contractors; ■ Supervisors; and ■ Community liaison officers.	Ongoing	■ CHSSP and an Emergency Response Plan; ■ Develop and implement SEA/GBV Prevention and Response Plan ■ A document setting out the Induction programme and code of conduct; and ■ Complaint reports.	■ Compliance with WB OP 4.03 Performance Standard 4; ■ Health and safety-related incidents and/or medical attention/hospitalisation against the baseline; ■ Implementation of the induction programme and a code of conduct as evidenced by implementation monitoring reports; ■ Complaints/grievances register: Local residents and village councillors plus proof of feedback regarding actions taken in response to complaints lodged; and ■ Feedback to site and management meetings with agreement on interventions to remedy deviance from plans.

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	■ Respect for local residents and customs; ■ Non-Discrimination (for example based on family status, ethnicity, race, gender, religion, language, marital status, birth, age, disability, or political conviction) ■ Compliance with applicable laws, rules, and regulations of the jurisdiction Zero tolerance of bribery or corruption; ■ Zero tolerance of illegal activities by construction and plant personnel, including prostitution, illegal sale or purchase of alcohol, sale, purchase or consumption of drugs, illegal gambling or fighting; ■ Zero tolerance policy of drunkenness and a no alcohol and drugs policy during working time (Power Station and construction personnel); ■ A programme for drug and alcohol abuse prevention and random testing that is equivalent in scope and objectives to the policies prescribed in the code of conduct; ■ Zero tolerance of sexual harassment (for example to prohibit use of language or behaviour, in particular towards women or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate); ■ Compliance with applicable health and safety requirements (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment) Zero tolerance of violence or exploitation (for example					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favours or other forms of humiliating, degrading or exploitative behaviour); ■ Protection of children (including prohibitions against abuse, defilement, or otherwise unacceptable behaviour with children, limiting interactions with children, and ensuring their safety in project areas). Zero tolerance for sexual relations with anyone under the age of 18, except if married prior to employment. ■ Sanitation requirements such as workers using specified sanitary facilities provided by their employer and not open areas. ■ Avoidance of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favours, are not provided to any person with whom there is a financial, family, or personal connection). ■ Respecting reasonable work instructions (including regarding environmental and social norms). ■ Protection and proper use of property (for example, to prohibit theft, carelessness or waste. ■ Duty to report violations of this Code. ■ Non- retaliation against workers who report violations of the Code, if that report is made in good faith. ■ The Code of Conduct should be written in plain language and signed by each worker to indicate that they have: ▪ received a copy of the code; ▪ had the code explained to them;					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	▪ acknowledged that adherence to this Code of Conduct is a condition of employment; and ▪ understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities ■ Description of disciplinary measures for infringement of the code and company rules. If workers are found to be in contravention of the code of conduct, which they signed at the commencement of their contract, they must face proportionate disciplinary procedures; ■ Publicise the code of conduct in settlements potentially affected by the construction camps, as part of the community relations plan. This will help ensure that the local residents are aware of the expected behaviour of the construction staff; ■ Provide entertainment facilities for workers at the construction accommodation camp as well as for operational workers and establish clear rules for conduct during leisure time as well as the need to remain within the camp boundaries during leisure time; and ■ Provide appropriate sporting facilities, including organised sporting activities for workers at the permanent accommodation camp. For purposes of the construction and operational phases of the project, implement a grievance procedure that is easily accessible to the local community, through which complaints related to CEN contractor or employee behaviour that infringes on the health, safety or security of community members can be lodged and					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	responded to. CEN must respond to such complaints in a considered manner, including: ■ Circulation of contact details of community liaison officers or, if separate, of 'grievance officers' or other key contact; ■ Raising of awareness amongst the local community regarding the grievance procedure and how it will work; ■ Establishment of a grievance register that is continuously updated and maintained by CEN; ■ Provision of a mechanism to provide feedback to individuals, groups and village councillors regarding actions that have been taken in response to complaints lodged; and ■ Also establish a Worker's complaint mechanism					
Impact on Diseases	For purposes of the construction and operational phases of the project: ■ Develop a Health Management plans (STI, STD, Malaria, Communicable Diseases, etc); ■ Develop a Community Health Information System; ■ Develop Environmental Health Programs (to reduce pollutants that could pose a risk to community health); ■ Develop an Employee Health Awareness Policy and ensure its implementation amongst CEN personnel and its contractors and sub-contractors. The policy must provide for;	Construction/Operations	■ CEN Management; ■ OHS division; ■ Contractors; and ■ Supervisors.	Ongoing	■ Documented employee health awareness policy; ■ Documented training programmes; ■ Documented communicable health awareness campaign; ■ Printed posters, and leaflets; and ■ Proven interventions to reduce impacts of vector borne diseases activities.	■ Employee Health Awareness Policy implementation; ■ Minutes of liaison meetings with local authorities; and ■ In-situ proof of distribution of printed posters, leaflets and leaflets at health clinics and community meetings.

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	▪ HIV/AIDS related advocacy, factual data provision, awareness creation as well as behaviour change issues around the transmission and infection of HIV/AIDS that provides linkages with the Government of Mozambique HIV/AIDS related initiatives; ▪ Health awareness training for workers, including communicable diseases at induction and then periodically throughout construction; ▪ Awareness raising on communicable diseases for communities close to camps (via posters, leaflets, through health clinics, community meetings, through schools and other local organizations); ▪ Liaison with local health authorities, and Implement interventions aimed at reducing the impacts of vector borne diseases through mechanisms such as sanitary improvements and minimising areas where water is impounded because of construction and operational activities.					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
General Communicable and Non-Communicable Disease Related Impacts	■ Ensure that no waste whatsoever, including operational waste, is dumped in watercourses or at any site that impacts on villagers or their land use; ■ Ensure that the CEN use of water does not disturb public water availability and that sources of water are carefully selected; ■ Ensure the development of a water and hygiene code of conduct that prohibits open defecation/urination, stresses the proper water use, water conservation, hygiene and sanitation to prevent pollution of community water sources; ■ Evaluate opportunities for health systems strengthening (HSS) with government and key partners for improved case detection and treatment of TB; ■ Support community based information, education and communication (IEC) campaigns to promote improved knowledge and awareness of TB, other infectious diseases and their associated determinants; ■ Reassess project impacts on community-dependent ecosystem services and develop corresponding mitigation measures. This includes the design and development of appropriate environmental health programmes to reduce the potential risk of airborne pollutants such as dust, which may impact on community health; ■ Develop educational materials regarding the prevention of water, sanitation and waste related diseases; ■ Monitor changes to footprints of animal husbandry activities adjacent to the CEN facilities; and ■ Support the improvement of veterinary public health services in the project area, including preventative	Operations	■ CEN Management; ■ OHS division; ■ Contractors; and ■ Supervisors.	Ongoing	Plans and their actioning in respect of all mitigation measures, including proof of purchase of medicines and apparatus.	■ Reports on water source/course quality and availability against baseline; ■ Water and hygiene code of conduct implementation as evidenced by monitoring reports; ■ Evidence (minutes/attendance registers of community work groups) mosquito source reduction in communities through environmental; ■ Documentation (minutes; records; attendance; treatment logs; and pictures showing implementation) proving health intervention programmes on community nutrition education and health programmes; ■ Documentary proof of community based IEC campaigns re. TB determinants; ■ Evidence of outbreak planning, rehearsal and updating; and ■ Using valid and reliable indicators to determine change, as a result of the above interventions, against the baseline.

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	programmes such as vaccinating and sterilising dogs, vaccinating livestock and the control of the public slaughter of livestock.					
Impact on Community Safety	Ensure the ongoing implementation of the CHSSP and an Emergency Response Plan as required to meet WB OP 4.03 Performance Standard 4; Traffic and Pedestrian Safety: - ■ Ensure the adoption and implementation of the CEN driving and vehicle management plan during initial activities which will be adopted for the construction phase. Based on this, CEN must adopt the best transport safety practices with the goal of preventing traffic accidents and minimising injuries suffered by project personnel and the public, as well as creating awareness amongst the local people and villages about road safety. Other mitigation should include: ▪ Development of a Security Management Plan ▪ Development of a Contractors Code of Conduct ▪ Development of a Community Awareness Program ▪ Development of an Environmental Health Programs (to reduce dust and other pollutants that could pose a risk to community health) ▪ Development of an Accident Prevention and Response Procedure ▪ Emphasising safety aspects amongst project drivers, explicitly ensuring that drivers respect speed limits through busy and built up areas; ▪ Ensuring the roster and shifts structure for the project allows employees plenty of opportunity for	Construction	■ CEN Management; ■ OHS division; ■ Contractors; ■ Supervisors; and ■ Community liaison officers.	Ongoing	Documentation and action plan based on mitigation measures.	■ Proof of Traffic Management Plan; ■ In respect of traffic and pedestrian safety, compliance with CEN driving and vehicle management plan, based on regular inspection and monitoring; ■ Compliance with transport, Storage and Handling of Hazardous Materials and Waste Plan and protocol; ■ Documented proof of implementation of violence and crime mitigation measures and monitoring; ■ Documented proof of the implementation of fire risk management mitigation measures and monitoring; ■ Site and management meeting minutes and directives to improve performance in respect of community safety, generally; and ■ Reported community safety and fire related incidents against the baseline to gauge intervention efficacy and impact.

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	sleep and rest between shifts and on their days off; ▪ Adopting a proactive approach to managing driver fatigue, based on adequate hours of rest to avoid overtiredness; ▪ Avoiding dangerous routes and times of day to reduce the risk of accidents; ▪ Positioning traffic guides at children's crossings to control driver speeds and seeking cooperation with local educational facilities (school teachers) for road safety campaigns; ▪ Implementing safe traffic control measures, including road signs and flag persons to warn of dangerous conditions and children's crossings; ▪ Provision of alternative transport (bus) for the construction workforce; ▪ Ensuring contractors maintain vehicles to minimise potentially serious accidents such as those caused by brake failure commonly associated with loaded construction vehicles; ▪ Ensuring contractors compile a list of service schedules of all equipment deployed on site; ▪ Minimising interaction of pedestrians with construction vehicles through collaboration with local communities and responsible authorities (e.g. police) to improve signage, visibility, and overall safety of roads, particularly along stretches located near schools or through busy areas; ▪ Considering additional warning tape at accident-prone stretches and sensitive locations (schools and hospitals) if identified as required; and					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	▪ Collaborating with local communities on education about traffic and pedestrian safety (e.g. one road safety campaign at a nearby location once a month). ▪ Prepare a Traffic Management Plan that includes provision for speed control along roads, requirements for training of drivers to ensure competence (including those of contractor's / suppliers), monitoring of driver hours and performance, tracking devices in vehicles to monitor speed limit compliance, monitoring of vehicle roadworthiness, requirements for warning signs along in-field roads, ongoing education of communities in the project area , particularly children, and procedures to follow in the event of an accident; ▪ Construct pedestrian walkways along the perimeter of the in-field access roads. Educate local inhabitants to use these walkways and not the roads; Transport and Storage of Hazardous Materials and Waste: - ■ Ensure that appropriate management plans are in place and implemented in respect of the Transport, Storage and Handling of Hazardous Materials and Waste; ■ Ensure that there is timely public notification of planned transport of hazardous materials and suitable arrangements for support vehicles. ■ Ensure that transport and storage of hazardous materials and wastes are comprehensively aligned with regulatory and community health and safety compliance requirements;					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	■ Ensure that relevant personnel are trained in safe transport, storage, use and handling of hazardous materials as well as the use of spill kits and disposal practices; and ■ Ensure that any hazardous material storage areas are provided with containment measures as per regulatory and community health and safety compliance requirements. Violence and Crime: - ■ Sensitise and build the capacity of local governance systems (village chairperson and councillors at the settlement level), including the establishment of checks and balances for maintaining individual rights and responsibilities and for managing crime; ■ Identify mechanisms for constructively incorporating traditional (clan) leaders into processes for promoting stability and moral 'regeneration' at village level; ■ Promote the development of a disciplined policing forum for the area, in collaboration with appropriate civil society organisations as well as the Police Department; and ■ Ensure the development of appropriate mechanisms as part of the CHSSP. Fires: - ■ Manage the risks of fire through specific management requirements for hot works and through education of personnel about careless behaviour in respect of cigarette smoking; ■ Promote the establishment of village level firefighting and emergency preparedness capacity, including the					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	sourcing of fire-fighting equipment capacity; ■ Promote awareness amongst members of the settlements about potential fire hazards and mechanisms for promoting household safety from fires; and ■ Manage the risks of fire through specific management requirements for hot works and through education of personnel about careless behaviour in respect of cigarette smoking; Security: - ■ Mechanisms for ensuring site security and associated access management onto CEN property; ■ Rights and responsibilities regarding movement within the concession area; ■ Specific 'no-go' areas as well as interaction with security guards and risks to those within and outside the project site posed by its security arrangements; Engagement and consultation: - ■ Incorporate and integrate the Voluntary Principles on Security and Human Rights into CEN operational related security management policies, awareness creation and training materials and procedures and assessment processes; ■ Communicate regularly with stakeholders about the CEN operations as well as plans in support of community initiatives, as a means of reducing local unease or resistance. It is a critical requirement that CEN builds trust with its stakeholders in respect of the continuing safe operation of all facilities; and					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	■ Ensure the ongoing functionality and accessibility of the grievance procedure that has been implemented in the local community, and that complaints related to CEN contractor or employee behaviour that infringes on the health, safety or security of community members that are lodged are responded to satisfactorily. The grievance procedure must include ongoing efforts in respect of: ■ Circulation of contact details of community liaison officers or, if separate, of 'grievance officers' or another key contact; ■ Circulation of the details of the Witness NGO as well as the mechanisms to access the NGO; ■ Raising of awareness amongst the local community regarding the grievance procedure and how it will work; ■ Establishment of a grievance register that is continuously updated and maintained by CEN; and ■ Provision of a mechanism to provide feedback to individuals, groups and village councillors regarding actions that have been taken in response to complaints lodged;					
Management of Security personnel	The proposed CEN project will require security personnel to monitor project infrastructure and movements with the project area. Consequently, local communities will be made aware of the presence of the Security personnel on site and of their roles and responsibilities. Additionally, a grievance mechanism will be in place for members of the communities to express their concerns or grievances regarding security conduct. Security staff	Pre-construction and operation	■ CEN Management; ■ CEN HR; ■ Contractors; and ■ Supervisors.	Ongoing	Scheduled training and induction sessions/s	Evidence of training attendance

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	shall be trained adequately in the appropriate conduct towards the local communities, security personnel will undergo the following trainings: ■ Healthy working conditions and Safety Knowledge of rules for healthy and safety; and ■ Induction - Introduction to the working environment, policies and practices, organizational structure, and Introduction to the company mission, vision, values and goals To promote the security of communities, the client shall ensure the following key aspects: ■ security personnel are unarmed; ■ all security personnel receive training on Project expectations and procedures for security behaviour and practices on induction and annually; ■ Screening of security personnel prior to employment to avoid hiring those who have previously been involved in abuse or violation of human rights; ■ Appropriate supervision is provided to ensure that established procedures are being applied by security personnel; ■ security arrangements are communicated to relevant stakeholders including workers and communities, without compromising the security of the Project; ■ community grievances in relation to the conduct of security personnel or activities are addressed in accordance with the Project's established Grievance Procedure; ■ if unlawful or abusive acts are committed by security personnel					

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	immediate action is taken to prevent recurrence and report unlawful and abusive acts to public authorities; ■ monitor the performance of security personnel through the use of a range of indicators including grievances; and ■ there is agreement with government authorities on the principles to be followed in use of government forces, and on an appropriate response prior to any incident being attended by government forces					
Nuisance Impacts	During the construction and operational phases of the project, implement all mitigation measures recommended by specialist studies related to, e.g. noise and air quality.	Construction/Operations	■ CEN Management; ■ OHS division; ■ Contractors; and ■ Supervisors.	Ongoing	Reports reflecting noise and air quality interventions.	Compliance with noise and air quality legislation and regulations as reflected in noise and air quality specialist studies.
Crime	For purposes of the construction and operational phases of the project: ■ Provide support for the establishment of a crime prevention and policing forum in collaboration with role-players from central, district as well as local levels; ■ Provide all stakeholders with contact details of maintenance and emergency staff at the production facility and ensure that this information remains updated. Local inhabitants will be CENs eyes and ears in this regard and can be of assistance in day to day monitoring of any events that should be noted or acted upon in relation to the safety and maintenance of CEN infrastructure and facilities; and ■ Establish reliable systems to monitor violence and crime at the community level and establish protocols with the appropriate authorities regarding the management of incidents. ■ Support training for local law enforcement agents and community safety patrols	Construction/Operations	■ CEN Management; ■ Supply chain; ■ OHS division; ■ Contractors; ■ Supervisors; ■ Grievance officers (where applicable); and ■ Community liaison officers.	Ongoing	■ Documentation regarding support actions; ■ Mechanisms (Forums); ■ Information; ■ Expenditure reports; ■ Safety attire; and ■ Policies and crime statistics database.	Documentary evidence (minutes; plans) of support to Crime Prevention and Policing Forum establishment. Proof (e.g. photographs) of posting of contact details of maintenance and emergency staff and procedure for local inhabitants to make reports on safety and maintenance. Documentary evidence (monitoring reports; pictures; procurement records) regarding the use of branded safety vests and vehicles. Site and management meeting minutes and directives to improve performance in respect of crime management.

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
Impact of In-Migration	■ For purposes of the construction and operational phases of the project to implement the strategy for minimising in-migration. ■ Ensure that the influx management and labour recruitment plans limit in-migration to the project area and prevent the mushrooming of “camp followers” settlements near the accommodation or work areas of the project; and ■ Undertake a regular census in the area and, in collaboration with all relevant central, district and local authorities and develop strategic plans to ensure adequate provision of basic services such as housing, water and sanitation, power, education and health care	Construction/Operations	■ CEN Management; ■ HS division; ■ Contractors; and ■ Supervisors.	Ongoing	Documented strategies; plans with mechanisms	Compliance with Influx Management Plan. Documented proof (minutes) of engagement with government and all partners on Influx Management Strategy plan implementation.
GBV/SAE prevention/response action plan	Develop and implement a GBV Action Plan’ which outlines: ■ How the project will put in place the necessary protocols and mechanisms to address the GBV risks; and, ■ How to address any GBV incidents that may arise. The GBV action plan should include: ■ A GBV/SAE zero tolerance policy including agreed sanctions for the Accountability and Response Framework. These should be provided by the contractor and consultants as part of the EMP/ ■ Specific arrangements for the project by which GBV risks will be addressed, including: ■ Referral Pathway: Identification of qualified GBV service providers and setting up a referral pathway so GBV survivors will be referred, and the services which will be available (health, legal, psychosocial, etc.) ■ Establish a GBV Accountability and Response Framework, to be finalized	Pre-construction and operation	■ CEN Management; ■ HS division; ■ Contractors; and ■ Supervisors	Ongoing	Documented strategies; plans with mechanisms	Compliance with GBV action plan. Documented proof (minutes) of engagement with government and all partners on GBV action plan implementation.

Management Aspect	Mitigation Measure	Scheduling	Responsibility	Monitoring and Reporting	Means of Verification	Key Performance Indicators
	with input from the contractor, should include at minimum: ■ Set up GBV Allegation Procedures: How the project will provide information to employees and the community on how to report cases of GBV code of conduct breaches to the GRM. ■ GBV Allegation Procedures to report GBV issues to service providers, and internally for case accountability procedures which should clearly lay out confidentiality requirements for dealing with cases; and, ■ Mechanisms to hold accountable alleged perpetrators associated to the project; The GRM process for capturing disclosure of GBV; And, a referral pathway to refer survivors to appropriate support services. ■ Disciplinary action for violation of the code of conduct by workers. It is essential that such actions be determined and carried out in a manner that is consistent with local labour legislation and applicable industrial agreements.[3] The supervision consultant should monitor and report on the effectiveness of the implementation of the GBV Action Plan to prevent and mitigate GBV risks associated with the project. Reporting should be done on a monthly basis.					

[3] It is important to note that, for each case, disciplinary sanctions are intended to be part of a process that is entirely internal to the employer, is placed under the full control and responsibility of its managers and is conducted in accordance with the applicable national labour legislation and the individual worker's employment contract. It is key that the proposed sanctions will be in line with local law as these may prohibit certain types of disciplinary measures, including termination of employee.

15.6 MONITORING

The monitoring measures to be implemented during all project phases, to assess compliance with the outlined required project standards, are described in this section.

Monitoring of community health, safety and security will be conducted to:

- Assess the effectiveness of mitigation actions and other actions/controls
- Assess actual impacts against predicted impacts
- Assess compliance with applicable legal and other requirements

15.6.1 ASSESSMENT AND REVIEW

The assessment process is designed to determine the level of implementation of the mitigation measures identified above, the extent of the impacts that have occurred, and the extent to which the mitigation measures are effective in minimising or moderating those impacts.

15.6.2 AUDIT

Daily inspections will be carried out by operational area superintendents and supervisors covering a broad range of operational aspects, including community health, safety and security issues as appropriate to activities outside the project area.

Conformance will be monitored via an annual internal audit programme in accordance with other audit programmes via the Integrated Management System (IMS) or ESMS. This will be undertaken to assess broad compliance with the requirements of the HSE management system (including ESIA and management plans).

All incidents and non-conformances identified during these inspections are reported as per the requirements of the CEN Management System.

15.7 REPORTING

Any community health, safety or security incidents which meet the requirements for incident notification must be reported in accordance with the incident management procedure, as described in the EMP. Any disease outbreak identified through the community health surveillance systems will also be reported internally, and externally as appropriate.

15.8 TRAINING AND AWARENESS

CEN will ensure that personnel responsible for the execution of tasks and requirements in the CHSSP are competent on the basis of education, training and experience.

Training will include:

- Voluntary Principles training for all security guards and security management, including specific modules on the appropriate use of force and protection of human rights.
- STI and HIV/AIDS prevention and awareness training for all employees, with extension to communities through education and awareness campaigns as appropriate
- Driver training for all Project drivers including training on speed restrictions in populated areas, safe driving in rural areas and basic first aid

The head Community Liaison Officer (CLO) will undergo the following training:

- Introduction to the company mission, vision, values and goals;

- Introduction to the organisational structure, working environment, policies and practices;
- Knowledge of rules for health and safety;
- Development of skills for managing the effectiveness and efficiency of company processes;
- Understanding leadership styles, managing conflicts and introduction to motivational techniques necessary for the effective organisation of people;
- Development of skills for problem solving and decision making; and
- Introduction to the communication channels of the company, development of methods for giving feedback and managing the performance of employees.

The Community Liaison Junior officers will undergo the following training:

- Introduction to the company mission, vision, values and goals;
- Introduction to the organisational structure, working environment, policies and practices;
- Knowledge of rules for health and safety;
- Improvement of skills for better efficiency in work;
- Development of team effectiveness and cooperation in the work process; and
- Improvement of Presentation and Communication skills.

Security personnel will undergo the following training:

- Healthy working conditions and Safety Knowledge of rules for health and safety; and
- Induction - Introduction to the working environment, policies and practices, organisational structure, and Introduction to the company mission, vision, values and goals.

15.9 RECORD KEEPING

Records of audits, inspections and incidents will be managed in accordance with CEN's Data and Records Management System.

ANNEXURE E: BIODIVERSITY MANAGEMENT PLAN

ANNEXURE F: GRIEVANCE REDRESS MECHANISM

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