Environmental and Social Impact Assessment for the Gove-Chipindo-Cuvango-Jamba Transmission Line Project, Angola

Volume 2: ESMP Report

Report Prepared for

RNT & PAK YATIRIM

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Project Naming Clarification:
The Gove-Chipindo-Cuvango-Jamba Transmission Line Project was referred to as the Cassinga Electrical Power Supply Project during the ESIA process and stakeholder engagement.

Environmental and Social Impact Assessment for the Gove-Chipindo-Cuvango-Jamba Transmission Line Project, Angola

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Disclaimer

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List of Abbreviations

°C	Degree Celsius
AIP	Alien Invasive Plant
AoI	Area of Influence
ASM	Artisanal and Small-scale Mining
BAP	Biodiversity Action Plan
BI	Biodiversity Importance
BMP	Biodiversity Management Plan
CHMP	Cultural Heritage Management Plan
CHSS	Community Health, Safety and Security
CLO	Community Liaison Officer
cm	Centimetre
CO	Carbon Monoxide
CSOs	Civil Society Organisation
ECO	Environmental Compliance Officer
EHS	Environmental Health and Safety
EMF	Electromagnetic Field
ENDE	Empresa Nacional de Distribuição de Eletricidade (National Electricity Distribution Corporation Company)
EPC	Engineering, Procurement and Construction
EPFIs	Equator Principles Financial Institutions
EPRP	Emergency Preparedness and Response Plan
EPs	Equator Principles
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
GAC	Grievance Appeal Committee
GBVH	Gender-Based Violence and Harassment
Geolab	Geolab, Engenharia e Consultoria Lda
GHG	Greenhouse Gas
GIIP	Good International Industry Practice
GPS	Global Positioning System
ha	Hectares
HIV	Human Immunodeficiency Virus
HRIA	Human Rights Impact Assessment
HV	High Voltage
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEC	International Electrotechnical Commission
IFC	International Finance Corporation
ILO	International Labour Organisation
IMS	Integrated Management System
km	kilometre (A thousand metres)

KPIs	Key Performance Indicators
kV	kilo Volt (A thousand Volts)
LARF	Land Acquisition and Resettlement Framework
LMP	Labour Management Plan
LRP	Livelihood Restoration Plan
LV	Low Voltage
m	metre
MINAMB	Ministério do Meio Ambiente (Ministry of the Environment)
MINEA	Ministerio da Energia e Aguas
MV	Medium Voltage
NOx	Nitrogen Oxides
OECD	Organisation for Economic Co-operation and Development
OHL	Overhead Transmission Line
OHS	Occupational Health and Safety
OHSP	Occupational Health and Safety Plan
PAC	Project Affected Community
PAH	Project Affected Household
PAP	Project Affected Party
PES	Present Ecological State
PM	Particulate Matter
PPE	Personal Protective Equipment
QA/QC	Quality Assurance/Quality Control
RNT	Rede Nacional de Transporte de Electricidade
SCC	Species of Conservation Concern
SDGs	Sustainable Development Goals
SE	Stakeholder Engagement
SEIA	Socio-Economic Impact Assessment
SEP	Stakeholder Engagement Plan
SF_6	Sulphur Hexafluoride
SHEQ	Safety, Health, Environmental and Quality
SIMOPs	Simultaneous Operations
SMMEs	Small, Medium and Micro Enterprises
SO2	Sulphur Dioxide
SRK	SRK Consulting (South Africa) Pty Ltd
TB	Tuberculosis
UN	United Nations
UNGP	United Nations Guiding Principles
UXOs	Unexploded Ordnances
VOCs	Volatile Organic Compounds
VPSHR	Voluntary Principles on Security and Human Rights
WMP	Waste Management Plan
°C	Degree Celsius

7 Environmental and social management plan

7.1 Introduction

The purpose of the Environmental and Social Management Plan (ESMP) is to ensure that social and environmental impacts, risks and liabilities identified during the ESIA process are effectively managed during the construction, operations and decommissioning of the project. The ESMP specifies the mitigation and management measures to which RNT (the proponent and operator of the Project), and PAK Yatirim (the EPC contractor) are committed and shows how the Project should mobilise organisational capacity and resources to implement these measures. The ESMP also shows how mitigation and management measures will be scheduled.

The ESMP serves as the overarching framework, and detailed site-specific management will be achieved through the development and implementation of a Construction Environmental and Social Management Plan (C-ESMP) during the pre-construction and construction phases, and an Operational Environmental and Social Management Plan (O-ESMP) for the operational phase. These plans will align with the principles outlined herein and provide detailed, actionable measures tailored to the respective project phases.

The key objectives of the ESMP are to:

- Formalise and disclose the programme for environmental and social management; and
- Provide a framework for the implementation of environmental and social management initiatives.

Good practice principles require that every reasonable effort be made to reduce and preferably to prevent negative impacts, while enhancing positive benefits, especially within the environment and communities most directly affected by the proposed Project. These principles are guiding in the ESIA process.

The ESMP covers information on the management and/or mitigation measures that should be taken into consideration to address impacts in respect of:

- Planning and design;
- Pre-construction and construction activities;
- Operation and maintenance; and
- Decommissioning and closure.

It is necessary to highlight that the ESMP is a living document that should be periodically reviewed and updated by RNT and PAK Yatirim (when the need arises).

Figure 7-1 below illustrates the principle of continual improvement in development of a policy framework, environmental and social management planning, which are implemented through a number of plans, programmes and operating procedures. Implementation is monitored on a regular basis to determine environmental and social performance and conformance, and corrective action is taken where necessary. Management review is undertaken on scheduled basis to determine whether the system reflects the requirements and commitments of the company. These combined elements comprise the Environmental and Social Management System (ESMS).

PAK Yatirim has an established Integrated Management Systems (IMS) Manual, which will serve as the foundation for developing a Project-specific Environmental and Social Management System (ESMS). This IMS Manual includes a comprehensive framework of policies and procedures that ensure effective governance and operational control. Key policies include the Management of Change Procedure, Procedure for Control of Environmental, Health and Safety (EHS) Activities, IMS Policy, Sustainability Policy, Anti-bribery and Anti-corruption Policy, Code of Conduct and Ethics Policy and a Whistleblower Protection Policy. These documents provide a robust structure to address health,

safety, environmental, and social risks, ensuring the Project complies with both national regulations and international best practices.

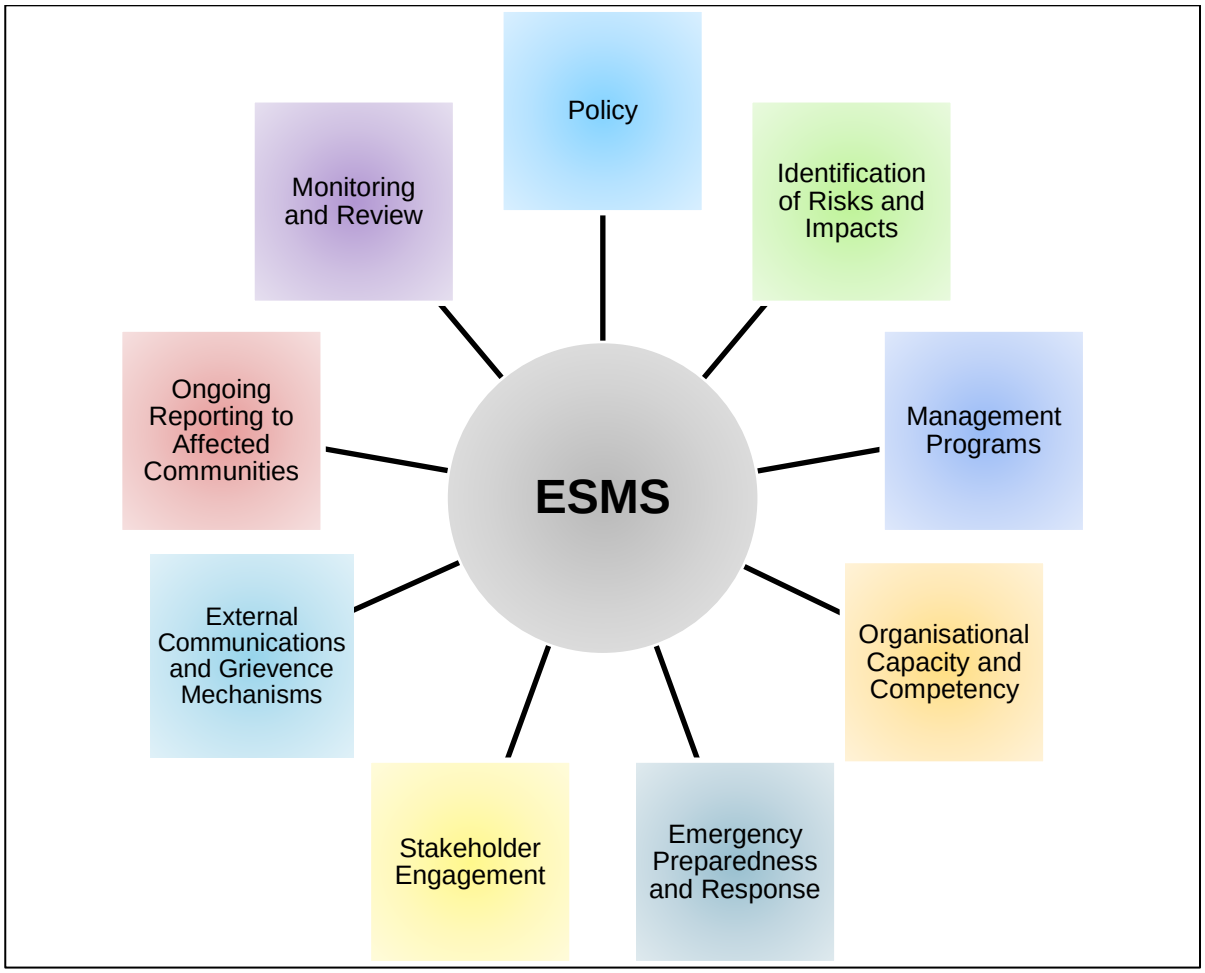

Figure 7-1: Key elements of an ESMS (International Finance Corporation, 2015)

This section outlines the structures, plans and procedures and human resources that will support the implementation of the ESMP.

7.1.1 Recommendations for role players in ESMP implementation

It is advised that RNT and PAK Yatirim:

- Formalise and implement the ESMS including the ESMP in accordance with Angolan legal requirements and applicable international standards (e.g., Equator Principles, IFC Performance Standards, and World Bank Group EHS Guidelines);
- Formalise and implement the ESMS including the ESMP in alignment with PAK Yatirim's Management of Change Procedure (PY-ANG-MOC-PRO-00001) to ensure Environmental and Social (E&S) risks are assessed before Project changes occur;
- Ensure that the contractors and sub-contractors implement the measures set out in the ESMP, and undertake its work to meet all relevant requirements set out in Angolan legislation and applicable international standards;
- Meet the requirements of lenders as specified in covenant documentation;
- Report to stakeholders on performance on a regular basis; and
- Undertake capacity building with project stakeholders, including government, on environmental and social issues, rights and responsibilities.

It is advised that contractors and sub-contractors:

- Implement the ESMP in compliance with Angolan legislation and applicable international standards; and
- Ensure adequate training of staff in effective environmental and social management.

7.2 ESMP implementation structure, roles and resourcing

The main responsible parties for the implementation of the ESMP is as follows:

- The contractor (PAK Yatirim): Responsible for the implementation of the ESMP during construction. PAK Yatirim has an organogram in place to clearly outline the roles and resourcing of all key personnel involved in the implementation and supervision of the ESMP. This ensures adequate capacity and a structured approach to management and accountability throughout the Project (Refer to Figure 7-2). This organogram should be updated by the contractor as additional details become available to establish linkages to the Project Owner, Lenders, and relevant external parties ensuring alignment with IFC standards; and
- External service providers and sub-contractors: Responsible for the external supervision of the implementation of the ESMP during construction.

The proponent and operator (RNT): Responsible for all follow-up activities of the ESMP during operation. PAK Yatirim in collaboration with RNT needs to develop an operation phase project-specific organogram prior to the completion of the construction phase to ensure that all required roles and responsibilities are clearly defined. The monitoring of the execution and implementation of mitigation measures should be achieved by:

- Continuous monitoring of construction works and maintenance during operation (through internal inspection / monitoring); and
- Periodical internal and external supervision by the environmental and social supervision team and the ESIA Authority, respectively.

Reporting should consider progress reporting, supervision reporting and monitoring programme reporting through various responsibilities such as:

- Routine progress reporting should be the responsibility of PAK Yatirim (including sub-contractors) during the construction phase and then RNT throughout operation will provide the same type of reports, as the manager of the substations and transmission lines' operation, synthesising the results of inspections, monitoring programmes and other relevant documents;
- Periodical supervision reporting should be the responsibility of PAK Yatirim (during construction) and RNT (throughout project lifespan and when necessary) summarising the project status, implementation and efficiency / efficacy of proposed measures and monitoring plans (a synthetic checklist of measures can be used as support for in situ supervision actions) and need of adjustment of any measures, with proper justification; and
- Monitoring programme reporting (frequency: dependent on monitoring programme) should be the responsibility of PAK Yatirim and RNT when necessary or as stipulated in the ESMP monitoring programme in Table 7-1 and should present the main results from the implementation of each monitoring programme proposed.

Table 7-1 below presents relevant responsibilities for key personnel related to the implementation and oversight of the ESMP and its management during the specific project phases. It should be noted that the positions presented here are for guidance purposes and the realistic position may differ and responsibilities may overlap slightly. As the project progresses, a formalised handover process for environmental and social commitments should be documented by PAK, ensuring that roles and responsibilities are clearly transferred between the construction and operational phases.

Table 7-1: Relevant responsibilities related to the ESMP

Position	Responsibilities
PAK Yatirim (Contractor)	
Construction phase	
Project Manager	The Project Manager is the senior representative for the Site and, as such, is the ultimate authority on all matters including environmental and social management. Key responsibilities include: • Ensure compliance with Project requirements including relevant legislation and GIIP requirements; • Ensure that the ESMP implementation team is sufficiently capacitated; • Monitor Environmental, Social, Health and Safety (ESHS) implementation performance and ensure continuous improvement of standards or take appropriate remedial action as necessary; • Control and distribute documentation: technical update (specifications, plans, etc.) and work documentation (procedures, instructions, etc.); • Managing non-conformities, grievances and communications; • Propose improvement actions; • Identify training needs; • Approval of suppliers and purchase of supplies that meet the technical and quality requirements of the project; and • Ensure a sufficient budget and a realistic schedule.
Construction Site Manager	The Construction Site Manager is responsible for the day-to-day operations of the construction, and may replace the Project Manager if required. Key responsibilities include: • Ensure that all workers have the necessary competence and training; • Report to the Project Manager on all accidents and incidents and corrective and preventative measures; • Report to the Project Manager any public grievances or concerns raised by the local communities with respect to the project; • Manage non-conformities; • Propose improvement actions; • Disclose the rules of conduct; • Identify training needs; and • Approval of subcontractors.
Administrative and Social Affairs Manager	The Administrative and Social Affairs Manager is responsible for maintaining community relationships and ensuring compliance to international and national social standards and regulations during the construction phase. Key responsibilities include: • Registering social performance anomalies detected and participating in their resolution; • Reporting accidents / incidents to the site / project manager; • Propose improvement actions; • Identify social training needs; • Preparation and implementation of social training; • Ensure that subcontractors meet the social requirements of the project; • Manage relationships with the local community and expectations; • Keep a record of social incidents and complaints;

Position	Responsibilities
	• Manage the grievance mechanism and grievance resolution process; • Communicate community feedback and engagement efforts; • Ensure all resource planning and allocation of supervisors in terms of staff, duration, and equipment to make sure that all tasks are carried out in line with ESHS standards; • Ensure that risks have been assessed adequately prior to the commencement of activities and operations; • Be present to discuss and resolve any issues that may arise in relation to the ESHS and actively participate the meetings related to the ESHS; • Ensure that all supervisors are present and actively participate in all ESHS trainings organised by the company or within the Project; • Personally set an example for all personnel during the Project, by complying with all ESHS requirements; and • Ensure that all subcontractors across the site are aware of the ESHS requirements of the Project and have the information and resources needed to meet these requirements.
EHS Manager and QA/QC Manager	The EHS and QA/QC Manager is responsible for environmental focussed management and monitoring measures as well as health and safety in a construction context. Key responsibilities include: • Ensure worker and public safety during construction; • Provide regular safety reports and conducts inspections; • Implement measures related to environmental management; • Keep updated documents/records of non-conformities; • Reporting accidents / incidents to the site / project manager; • Propose improvement actions; • Support the treatment of detected anomalies; • Conduct training on the rules of behaviour/conduct; • Identify quality and/or environmental training needs; • Preparation and implementation of quality and/or environmental training; • Provide inductions on road safety for employees and subcontractors; • Identification and implementation of health and safety training requirements; • Ensure that subcontractors and suppliers meet the quality and environmental requirements of the project; • Carry out formal and informal inspections; • Respond to environmental incidents and supervise corrective actions such as clean-ups; and • Keep a record of environmental incidents and complaints
Administrative and Social Affairs Manager	The Administrative and Social Affairs Manager is responsible for all security concerns relating to the construction phase. Responsibilities may overlap with health and safety in certain instances. Key responsibilities include: • Implement measures relating to security; • Carry out security inspections; • Propose improvement actions; • Ensure that security forces conduct themselves in a manner aligning to international standards; • Provide awareness of human rights risks and community interactions; • Reporting accidents / incidents to the site / project manager;

Position	Responsibilities
	• Keep documents / records of incidents / accidents up to date; • Identify and implement security training needs; • Ensure that subcontractors meet the security requirements of the project; • Conducting inspections of subcontractor sites to assess compliance with labour standards and worker welfare protocols; • Reviewing welfare-related grievances submitted through the Workers Grievance Mechanism and tracking resolution progress; and • Reporting findings to the Project Manager and proposing corrective actions where deficiencies are identified.
RNT (Operator)	
Operation phase	
Project Manager	The Project Manager is the senior representative for the operator who is directly responsible for the operating of the OHL and associated infrastructure and, as such, is the ultimate authority on all matters including environmental and social management. Key responsibilities include: • Ensure compliance with Project requirements including relevant legislation and GIIP requirements; • Ensure that the ESMP implementation team is sufficiently capacitated; • Monitor ESHS implementation performance and ensure continuous improvement of standards or take appropriate remedial action as necessary; • Control and distribute documentation: technical update (specifications, plans, etc.) and work documentation (procedures, instructions, etc.); • Managing non-conformities, grievances and communications; • Propose improvement actions; • Identify training needs; • Approval of suppliers and purchase of supplies that meet the technical and quality requirements of the project; and • Ensure a sufficient budget and a realistic schedule.
Administrative and Social Affairs Manager	The Administrative and Social Affairs Manager is responsible for maintaining community relationships and ensuring compliance to international and national social standards and regulations during the operation and potential decommissioning phases. • Registering social performance anomalies detected and participating in their resolution; • Reporting accidents / incidents to the project manager; • Propose improvement actions; • Identify social training needs; • Preparation and implementation of social training; • Ensure that subcontractors meet the social requirements of the project; • Manage relationships with the local community and expectations; • Keep a record of social incidents and complaints; • Manage the grievance mechanism and grievance resolution process; • Communicate community feedback and engagement efforts; • Ensure all resource planning and allocation of supervisors in terms of staff, duration, and equipment to make sure that all tasks are carried out in line with ESHS standards;

Position	Responsibilities
	• Ensure that risks have been assessed adequately prior to the commencement of activities and operations; • Be present to discuss and resolve any issues that may arise in relation to the ESHS and actively participate the meetings related to the ESHS; • Ensure that all supervisors are present and actively participate in all ESHS trainings organised by the company or within the Project; • Personally set an example for all personnel during the project, by complying with all ESHS requirements; and • Ensure that all subcontractors across the site are aware of the ESHS requirements of the Project and have the information and resources needed to meet these requirements.
EHS and QA/QC Manager	The EHS and QA/QC Manager is responsible for environmental focussed management and monitoring measures as well as health and safety during the operation and potential decommissioning phases. In the operational context, the responsibilities of a security manager may be designated under this position. Key responsibilities include: • Ensure worker and public safety during operation; • Provide regular safety reports and conduct inspections; • Implement measures related to environmental management; • Keep updated documents/records of non-conformities; • Propose improvement actions; • Ensure security incidents and recorded and implement measures to conform with international standards; • Ensure security training and awareness of human rights considerations; • Support the treatment of detected environmental anomalies; • Conduct training on the rules of behaviour/conduct; • Identify quality and/or environmental training needs; • Preparation and implementation of quality and/or environmental training; • Ensure that subcontractors and suppliers meet the quality and environmental requirements of the project; • Reporting accidents / incidents to the project manager; • Respond to environmental incidents and supervise corrective actions such as clean-ups; • Keep a record of environmental incidents and complaints; • Ensure all resource planning and allocation of supervisors in terms of staff, duration, and equipment to make sure that all tasks are carried out in line with ESHS standards; • Ensure that risks have been assessed adequately prior to the commencement of activities and operations; • Be present to discuss and resolve any issues that may arise in relation to the ESHS and actively participate the meetings related to the ESHS; • Ensure that all supervisors are present and actively participate in all ESHS trainings organised by the company or within the Project; • Personally set an example for all personnel during the project, by complying with all ESHS requirements; and • Ensure that all subcontractors across the site are aware of the ESHS requirements of the Project and have the information and resources needed to meet these requirements.
Health and Safety Officer	The health and safety officer would be responsible for the day-to-day EHS aspects during the operation phase which may affect both occupational and community health and safety. Additional responsibilities may include:

Position	Responsibilities
	• Ensuring worker and public safety during operation; • Reporting of incidents to respective managers; and • Provide regular safety reports and conduct inspections.
External management	
Environmental Compliance Officer (ECO)	The ECO provides an external compliance perspective to ensure that applicable environmental and social management monitoring measures are being conducted appropriately. Key responsibilities include: • Conducting environmental and social compliance auditing during construction and providing expertise; and • Provide updates on environmental compliance and mitigation measures if required to improve ESMP performance.
Social impact, livelihood and resettlement specialist	If required, a specialist may be appointed to support any livelihood restoration and resettlement prior to and during construction. This specialist may support by evaluating social implications and community engagement and communicating grievances and progress on social initiatives.

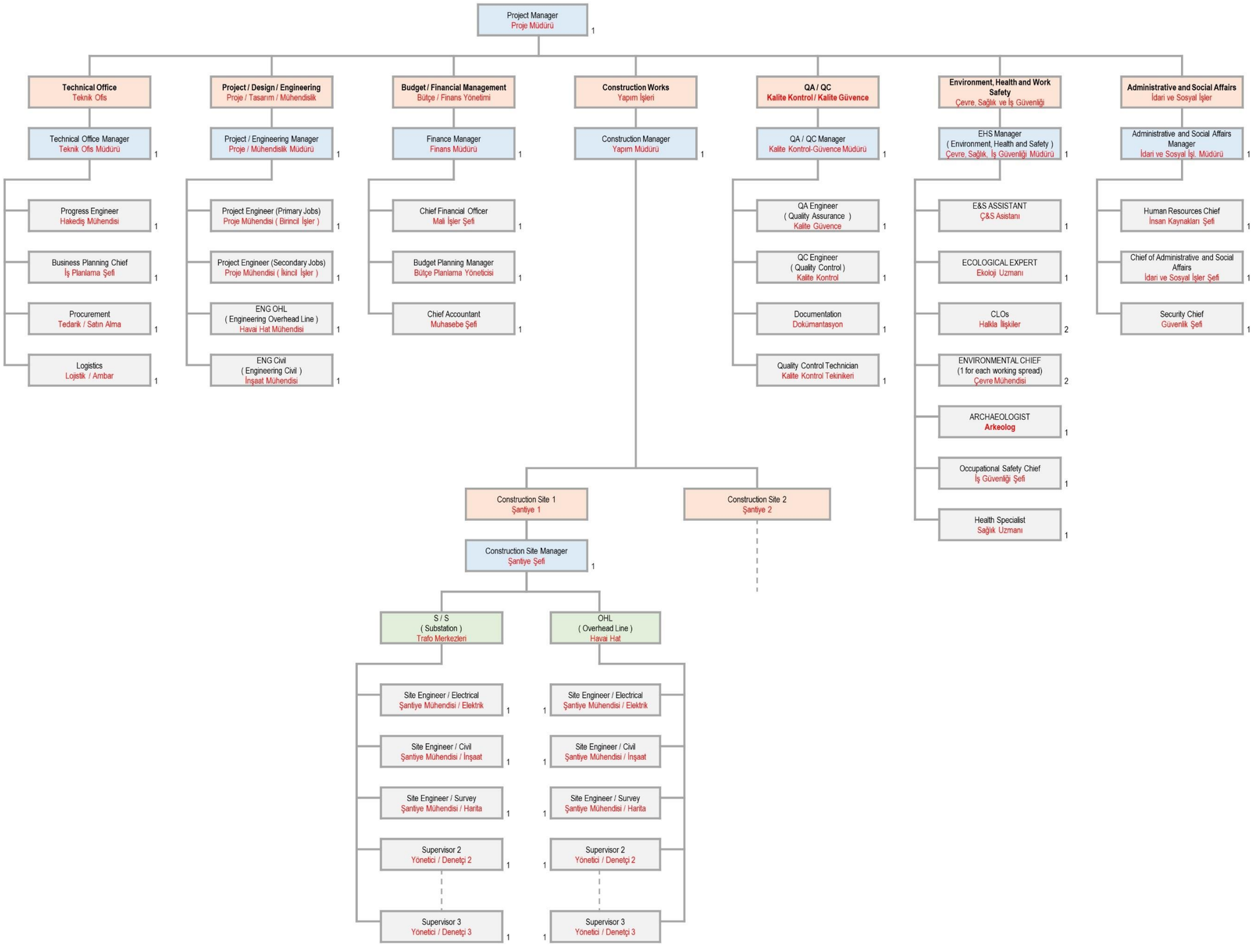

Figure 7-2: PAK Yatirim Organogram

7.3 Management measures

Table 7-2 summarises the proposed mitigation and management measures for the identified environmental and social impacts assessed as part of this ESIA.

The table is organised into biophysical and socio-economic aspects, and features assessed potential impacts arising from various Project phases (construction, operation and decommissioning) as well as the recommended management measure/s. The table is also informed by the analysis and recommendations arising from the specialist studies undertaken as part of the ESIA process.

The Project ESMS will be informed by a number of detailed management plans forming the ESMP including those Project-specific execution management plans and procedures as presented in Figure 7-3 and detailed in Sections 7.4 and 7.5. These management plans are also included in Table 7-2 under applicable corresponding and relevant specific management measures.

In addition to the mitigation measures outlined in Table 7-2, the following measures shall guide the definition of undefined components, such as borrow pits and temporary laydown and assembly areas:

- Avoid critical and natural habitats as identified in the biodiversity baseline and in accordance with PAK Yatirim's Management of Change Procedure (PY-ANG-MOC-PRO-00001);
- Minimise proximity to sensitive receptors, including residential areas, watercourses, and cultural heritage sites;
- For borrow pits, implement rehabilitation plans post-extraction to restore ecological function and ensure long-term land stability;
- Ensure concurrent rehabilitation of temporary components, such as laydown and assembly areas, immediately after use to minimise environmental impacts; and
- Incorporate changes, associated risks, and response measures identified through the Management of Change Procedure into the ESMP and all relevant management plans to ensure alignment and effective implementation.

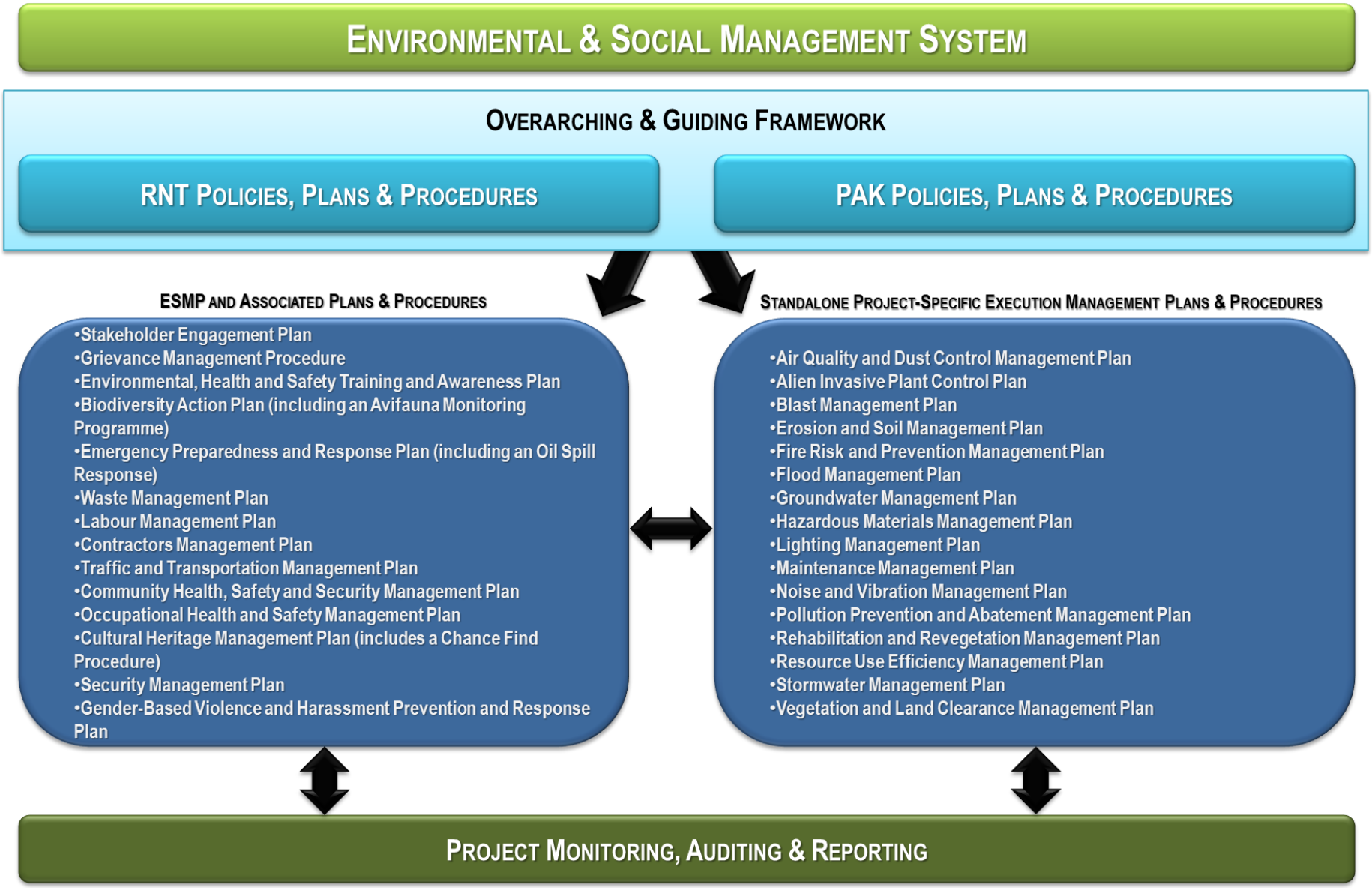

Figure 7-3: Conceptualisation of the ESMS and management plans involved

Table 7-2: Management measures for identified impacts

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
Bio-Physical				
Climate Change (Refer to Volume 1, Section 6.4.1, Tables 6.10 – 6.12)	CC1 - Increased runoff and erosion (construction phase)	• Minimise environmental impact • Enhance equipment resilience • Protect worker health and safety • Prevent hazardous material incidents	Clearing of land must kept to a minimum and should only take place immediately prior to the start of construction activities.	Erosion and Soil Management Plan
			Rehabilitation of cleared areas must take place as soon as construction activities have been concluded.	Rehabilitation and Revegetation Management Plan
			Land clearing should be avoided during December and January when heavy rainfall is most likely to occur. Should this not be possible, erosion management measures should be implemented.	Erosion and Soil Management Plan
	CC2 – Increased possibility of landslides near Chipindo due to the geomorphic changes associated with land clearance and if large, cleared areas are left unvegetated.		Clearing for construction must ensure that cleared areas are kept to a minimum and are only cleared immediately prior to the start of construction and rehabilitated as soon as possible thereafter.	Erosion and Soil Management Plan
			Land clearing should be avoided during December and January when heavy rainfall is most likely to occur.	Erosion and Soil Management Plan
	CC3 - Temperatures exceed the designed operational limits of the equipment causing equipment malfunction and electricity disruptions (operation phase)		Ensure all equipment is appropriately designed / supplied for temperatures up to 50°C.	N/A - Design specification / Procurement specifications
			Ensure substations are fitted with a fire suppression system which is regularly maintained.	Fire Risk and Prevention Management Plan
	CC4 - Increased staff heat stress, demand for cooling and associated increase in GHG emissions (construction/operation phase)		Ensure actions and management measures are in line with the OHS Management Plan.	OHS Management Plan (Section 7.4)
			Develop and roll out a toolbox talk to educate staff of heat stress and preventative measures.	OHS Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Tailor work schedules to limit employee exposure during the hottest times of the day.	OHS Management Plan (Section 7.4)
			Make sufficient water and other PPE available to limit sun/ heat exposure.	OHS Management Plan (Section 7.4)
	CC5 - Uncontrolled release of hazardous materials or waste to surrounding environment due to flooding (construction/operation phase)		Implement appropriate stormwater management, taking predicted extreme rainfall into account to prevent the flooding and damage to hazardous storage/management areas.	Stormwater Management Plan
			Store all hazardous materials in enclosed buildings and containers as specified in the Material Safety Data Sheets (MSDS) as per the Hazardous Materials Management Plan.	Hazardous Materials Management Plan
	CC6 - Failure of wastewater treatment facilities resulting in discharge of contaminated water to the environment (construction/operation phase)		Oil traps and other wastewater containment and treatment facilities should be designed to accommodate additional annual and extreme rainfall predicted.	Design specification, Flood Management Plan
			Oil traps and other wastewater containment and treatment facilities should be regularly inspected and drained as appropriate.	Maintenance Management Plan
	CC7 - Operational disruptions or damage to project infrastructure due to flooding, lightning strikes, or high winds (operation phase)		Adhere to conservative offsets from the stream centrelines as indicated in Volume 3, Appendix D2. If pylons and infrastructure are required to be placed within these offsets, detailed surveys and floodline calculations will be required at the crossings.	Flood Management Plan
			Ensure all substations are located outside of the 1:100 year flood line.	Flood Management Plan
			Measures relating to impact CC4 also applicable – i.e., Uncontrolled release of hazardous materials or waste to	As per impact CC4

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			surrounding environment due to flooding during construction and operation.	
	CC8 - Operational disruptions or damage to project infrastructure due to lightning		The infrastructure will be fitted with lightning protection to reduce risks. The Disaster Management Plan (or EPRP) should include measures to address damage to infrastructure as a result of lightning.	EPRP (Section 7.4), Fire Risk and Prevention Management Plan
	CC9 - Operational disruptions or damage to project infrastructure due to high windspeeds.		Update baseline meteorological data sets every 5 years with available monitoring data and implement infrastructure upgrades/ reinforcement as applicable.	Maintenance Management Plan
	CC10 - Increased prevalence or intensity of fires due to the extended dry period (construction/operation phase)		Ensure the EPRP addresses the safety risk of fires to Project infrastructure and communities. The plan should detail measures to reduce fire risk and manage the extent of damage as a result of fires.	EPRP (Section 7.4), Fire Risk and Prevention Management Plan
	CC11 – Increased possibility of landslides near Chipindo due to moderate-high landslide susceptibility.		Ensure all areas have been revegetated as required in the environmental management plan.	Erosion and Soil Management Plan and Rehabilitation and Revegetation Management Plan
			Undertake monitoring of steep slope areas to identify areas that become denuded of vegetation.	Erosion and Soil Management Plan and Rehabilitation and Revegetation Management Plan
	CC12 - Increased prevalence of vector borne diseases due to higher temperatures and rainfall in certain months (construction/operation phase)		Create and roll out a staff awareness campaign to educate staff of vector borne diseases (e.g. malaria) and preventative measures.	OHS Management Plan (Section 7.4)
			Provide any equipment/ vaccines or other materials to support staff in preventing disease.	OHS Management Plan (Section 7.4)
	CC13 - Disruption of transportation routes due to offsite/ remote flooding		Identify and map all alternative access routes.	Traffic and Transportation Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	related infrastructure damage (construction/operation phase)		Identify local community members to be upskilled to undertake emergency maintenance (e.g., Safely empty oil traps during heavy rainfall).	Labour Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
	CC14 – Health and safety risks to staff associated with flooding.		Include emergency evacuation routes and protocols during flood events for staff that may be undertaking infrastructure maintenance in the Disaster Management Plan (or EPRP). The emergency evacuation routes and protocols must form part of induction and be included annually in safety training.	Training and Awareness Plan and Emergency Preparedness and Response Plan, EPRP (Section 7.4)
	CC15 - Use of SF_6 as quencher for the substations given its high global warming potential (operation phase)		A comprehensive assessment of operational GHG emissions must be conducted as Project setup progresses and before construction operations, ensuring alignment with local regulations and international standards.	N/A – GHG emissions report
			Regular maintenance of the substations specifically the arc quenchers (breakers) must be undertaken to limit the potential for gas leaks.	Maintenance Management Plan
			Consider the use of alternative refrigerants with a lower global warming potential.	N/A - GHG emissions reduction study
	CC16 - Increasing the availability of electricity resulting in a reduction in the use of non-renewable fuels (operation phase)		As part of community development activities, promote the use of affordable electrical appliances over non-renewable energy alternatives through subsidies and awareness-raising	EHS Training and Awareness Plan (Section 7.4)
	CC17 - GHG impacts resulting from SF_6 emissions from substations (decommissioning phase)		Measures relating to impact CC10 also applicable – i.e., Use of SF_6 as quencher for the substations given its high global warming potential during operation.	Pollution Prevention and Abatement Management Plan
Soils, land use and land capability (Refer to Volume 1, Section	SLU1 - Loss of high potential agricultural resources and land use		The footprint of the proposed development and construction activities should be clearly demarcated to restrict	Vegetation and Land Clearance Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
6.4.2, Tables 6.13 – 6.14)	resulting from placement of infrastructure on arable and cultivated fields (construction phase)	• Minimise Vegetation Clearing and Soil Disturbance • Protect Agricultural Activities • Control Erosion and Dust Emissions • Prevent Contamination • Emergency Response Preparedness	vegetation clearing activities within the infrastructure footprint as far as practically possible.	
			Infrastructure footprint areas should be clearly demarcated to avoid unnecessary disturbance of adjacent soils.	Erosion and Soil Management Plan
			Where possible the pylons should be located outside actively cultivated plots to ensure that the agricultural activities remain uninterrupted during all Project phases.	Erosion and Soil Management Plan
			Access roads should be aligned to the existing roads as far as practically possible to avoid further potential impacts on agricultural soils through unnecessary soil disturbance.	Erosion and Soil Management Plan
			Uncontrolled construction vehicle and heavy machinery/equipment movement should be limited to the Project construction and operational areas to avoid unnecessary compaction of adjacent soils.	Erosion and Soil Management Plan
			Revegetate adjacent areas with an indigenous / native grass mix, to re-establish a protective cover, in order to minimise soil erosion and dust emissions	Rehabilitation and Revegetation Management Plan
			In working areas that are close to sensitive receptors (e.g. communities), bare soils within the access roads should be regularly dampened with water to suppress dust during the construction phase, especially when strong wind conditions are predicted.	Air Quality and Dust Control Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Contamination prevention measures should be addressed in the ESMP for the proposed Project, which should be implemented by all contractors and onsite construction crew.	Pollution Prevention and Abatement Management Plan
			A spill prevention and emergency spill response plan, as well as dust suppression and fire prevention plans should also be compiled to guide the construction works.	EPRP (including Oil Spill Response) (Section 7.4), Fire Risk and Prevention Management Plan
			An emergency response contingency plan should be put in place to address clean-up measures should a spill and/or a leak occur, as well as preventative measures to prevent contamination.	EPRP (including Oil Spill Response) (Section 7.4)
			All disturbed areas should be re-vegetated with an indigenous grass mix, if necessary, to re-establish a protective cover to minimise soil erosion and dust emission.	Rehabilitation and Revegetation Management Plan
			Temporary erosion control measures should be used to protect the disturbed soils during the construction phase until adequate vegetation has established	Erosion and Soil Management Plan
	SLU2 - Soil erosion resulting from footprint clearing and excavation activities (construction phase)		Measures relating to impact SLU1 also applicable – i.e., Loss of high potential agricultural resources and land use resulting from placement of infrastructure on arable and cultivated fields during construction.	As per impact SLU1
	SLU3 - Soil compaction due to movement of construction vehicles of good potential agricultural soils (construction phase)		As above.	As above

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	SLU4 - Soil contamination because of spillage of hydrocarbons (construction phase)		As above.	As above
	SLU5 - Loss of high potential agricultural resources and land use resulting from placement of infrastructure on arable and cultivated fields during operation (operation phase)		Maintenance vehicles should be checked for oil leaks prior to commencement of maintenance activities.	Traffic and Transportation Management Plan (Section 7.4)
			Monitoring of erosion should occur after every major rainstorm until such a time that vegetation has fully established. Any erosion should be captured and recorded and reported during the ECO site visit.	Erosion and Soil Management Plan
			Maintenance vehicles should be restricted to demarcated access roads as far as practically possible to minimise soil compaction on adjacent soils.	Erosion and Soil Management Plan
			Disturbed areas adjacent to the footprint area should be revegetated with indigenous grass mix to limit potential soil erosion.	Rehabilitation and Revegetation Management Plan
	SLU6 - Soil erosion resulting from vegetation clearing/ maintenance (operation phase)		Measures relating to impact SLU5 also applicable – i.e., Loss of high potential agricultural resources and land use resulting from placement of infrastructure on arable and cultivated fields during operation.	As per impact SLU5
	SLU7 - Soil compaction due to movement of vehicles of good potential agricultural soils during operation (operation phase)		As above.	As above
	SLU8 - Soil contamination because of spillage of hydrocarbons during operation (operation phase)		As above.	As above

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
Water resources (Refer to Volume 1, Section 6.4.3, Tables 6.15 – 6.16)	SW1 - Siltation of river systems, local disturbance to riverbanks and channels (construction phase)	• Prevent Siltation and Disturbance of River Systems • Avoid Hydrocarbon Pollution • Protect River Water Quality • Safeguard Community Wells and Groundwater Resources	Where possible, revegetation of disturbed non active cleared areas must take place within 1 month of completing the construction phase.	Rehabilitation and Revegetation Management Plan
	SW2 - Indirect siltation of river systems (construction phase)		Measures relating to impact SW1 also applicable – i.e., Siltation of river systems, local disturbance to riverbanks and channels during construction.	As per impact SW1
	SW3 - Hydrocarbon pollution (construction phase)		Regular inspections (and repair when necessary) of construction plant.	Maintenance Management Plan
			In-field service areas to be roofed and bunded.	Stormwater Management Plan
	SW4 - River pollution from effluent (construction phase)		French drains to be adequately sized if used.	Stormwater Management Plan
			Septic tanks to be emptied regularly if used.	Stormwater Management Plan
	SW5/6 - Hydrocarbon pollution (operation phase)		Transformers to be located within bunded areas	Stormwater Management Plan
	SW7 - Siltation of river systems (operation phase)		Erosion gullies repaired immediately.	Maintenance Management Plan
	SW8 - Siltation of river systems during pylon foundation scouring (operation phase)		Pylons to be constructed outside of the 100-yr floodlines where practical. Conservative offsets from the stream centrelines have been provided for in order to approximate the 100-yr floodlines.	Flood Management Plan To be considered in design projects
			Pylons that need to be built within these offsets require detailed survey and floodlines to be calculated at these locations	Flood Management Plan To be considered in design projects
	SW9 – Increase in flood level (operation phase)		No mitigation required. The impacts are less than typical wave heights.	N/A
	GW1 - Impact on community wells and		Hydrocensus to be undertaken to identify sensitive receptors	Groundwater Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
Hydrogeology (Refer to Volume 1, Section 6.4.3, Table 6.17)	available groundwater resources (construction phase)		Groundwater level monitoring	Groundwater Management Plan
	GW2 - Potential alteration or deterioration in groundwater quality (construction phase)		Clean-up of spills as soon as they occur	Emergency Preparedness and Response Plan (including Oil Spill Response) (Section 7.4)
			Implement proper sanitation procedures and dispose used oils at proper facilities	Waste Management Plan (Section 7.4)
			Groundwater quality monitoring	Groundwater Management Plan
Biodiversity (Floral) (Refer to Volume 1, Section 6.4.4, Tables 6.18 – 6.21)	BFL1 - Loss of floral habitat and species diversity (construction phase)	• Minimise Environmental Impact • Protect and Restore Vegetation • Maintain Habitat and Biodiversity • Prevent Contamination and Manage Waste • Monitor and Manage Ecological Health	The construction footprint must be kept as small as possible to minimise the impact on the surrounding environment (edge effect management).	Biodiversity Action Plan (Section 7.4)
			Construction footprint areas should be clearly demarcated to monitor footprint extent and avoid footprint creep.	Biodiversity Action Plan (Section 7.4)
			Removal of vegetation must be restricted to what is necessary and should remain within the approved development footprint.	Vegetation and Land Clearance Management Plan
			Clearing of vegetation should take place in a phased manner if feasible as to keep bare soil areas as small as possible to limit the erosion potential.	Erosion and Soil Management Plan
			Access roads should be kept to existing roads and tracks as far as is feasible so to reduce fragmentation of existing natural habitat (and to reduce the risk of AIP being introduced into natural habitats).	AIP Control Plan
			Vehicles should be restricted to travelling only on designated roadways to limit the ecological footprint of the construction activities. Additional road construction should be limited to what is absolutely	Traffic and Transportation Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			necessary, and the footprint thereof kept to a minimal.	
			No indiscriminate movement of construction vehicles or personnel are allowed in the Freshwater Habitat particularly during intense rainfall events as water may flow with greater intensity within these areas.	Traffic and Transportation Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Care should be taken during the construction of the proposed development to limit edge effects to surrounding natural habitat. At minimum, this can be achieved by: (i) Demarcating all footprint areas during construction activities, (ii) No construction rubble or cleared AIPs are to be disposed of outside of demarcated areas and should be taken to a registered waste disposal facility and (iii) manage the spread of AIP species, which may affect remaining natural habitat within surrounding areas. Any areas that have been left bare or disturbed because of the construction activities should be rehabilitated using indigenous species. Ensure AIP vegetation cuttings/propagules are disposed of adequately, i.e., it must be ensured that the spread of these species is prevented. Designated spots for cuttings are highly recommended, or potentially make use of registered waste sites.	AIP Control Plan
			No chemical control of AIP is permitted within the 32 m buffer of any Freshwater Habitat unless it has been approved as safe for use in wetlands, and the application of herbicide should only be carried out by suitably trained personnel.	AIP Control Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Any on-site fires by construction personnel must be restricted to designated areas only, and no uncontrolled fires whatsoever must be allowed.	Fire Risk and Prevention Management Plan
			No temporary dump sites must be allowed in areas with natural vegetation. It is advised that waste disposal containers and bins be provided during the construction phase for all construction rubble and general waste.	Waste Management Plan (Section 7.4)
			No dumping of general or hazardous waste must take place. If any spills occur, they should be immediately cleaned up, and be disposed of at a registered waste facility.	Waste Management Plan (Section 7.4)
			Avoid soil sealing (i.e., the destruction or covering of the ground by an impermeable material) and ensure that a vegetation layer is maintained (where possible). In this regard, use of indigenous plants from the reference vegetation type is recommended for best biodiversity outcomes.	Rehabilitation and Revegetation Management Plan
			Maintain vegetation corridors along the OHL servitudes. Contributing towards conserving the regional genetic diversity of plants in these areas must be ensured through revegetating with indigenous species from the area. AIP control in revegetated sections must take place. By using native seeds/propagules and plants that are suitable for the site and that have been collected from within a defined source region, it is possible to reduce loss of regional plant genetic diversity.	Rehabilitation and Revegetation Management Plan, AIP Control Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	BFL2 - Loss of floral SCC (construction phase)		Monitor, where applicable, the success or failures of relocated floral SCC.	Biodiversity Action Plan (Section 7.4)
			Edge effect control needs to be implemented to prevent further degradation and potential loss of floral SCC resulting from construction activities outside that of the proposed development footprint area, notably where disturbance footprints are near areas of increased suitability for SCC to be present.	Biodiversity Action Plan (Section 7.4)
			Impact must be limited to the footprint area and kept to what is essential only.	Biodiversity Action Plan (Section 7.4)
			Demarcate and monitor the floral SCC populations outside of the footprint areas to ensure construction activities do not infringe onto these species.	Biodiversity Action Plan (Section 7.4)
			No collection or harvesting of floral SCC or floral species should be allowed by construction personnel.	Biodiversity Action Plan (Section 7.4)
			Should any threatened floral species be encountered during the walkdown, rescue and relocation of the species are recommended. For this, an expert (botanist familiar with the species and traditional healers) must be consulted and should assess the feasibility of the plant rescue and relocation activities.	Biodiversity Action Plan (Section 7.4)
			Traditional healers should be consulted on the removal of important/medicinal plants to ensure the preservation of important/medicinal plants, as they hold valuable knowledge on the sustainable use and cultural significance of these species	Biodiversity Action Plan (Section 7.4), SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	BFL3 - Loss of floral habitat and species diversity (operation phase)		Disturbed areas are to be rehabilitated to a similar state as that of pre-disturbance conditions. Where this is not possible due to operational and maintenance requirements, it is recommended that at a minimum a suitable herbaceous layer is maintained within the footprint of the proposed Project to ensure that no erosion occurs.	Rehabilitation and Revegetation Management Plan
			All areas of increased ecological sensitivity beyond the approved Project footprint must be designated as No-Go areas and be off-limits to all operational and maintenance vehicles and personnel.	Biodiversity Action Plan (Section 7.4)
			No additional habitat is to be disturbed during the operational phase of the Project outside of the demarcated approved footprints.	Biodiversity Action Plan (Section 7.4)
			Monitor the Miombo Woodland and Freshwater Habitat within the 200 m buffer surrounding the footprint areas to ensure that floral communities are not degraded.	Biodiversity Action Plan (Section 7.4)
			Ongoing erosion and stormwater monitoring and control to be implemented throughout the operational phase.	Biodiversity Action Plan (Section 7.4)
			Vehicles should be restricted to travelling only on designated roadways to limit the ecological footprint of the operational activities.	Traffic and Transportation Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Manage the spread of AIP species, which may affect remaining natural habitat within surrounding areas.	AIP Control Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Ongoing AIP monitoring and clearing/control should take place throughout all phases of the project activities. The project perimeters should regularly be checked for AIP proliferation to prevent spread into surrounding natural areas.	AIP Control Plan
			Monitor the success of rehabilitation efforts of disturbed areas seasonally.	Rehabilitation and Revegetation Management Plan
			Monitor and maintain the vegetation corridors that were created along the OHL servitudes to contribute to reduced habitat fragmentation, and improved regional plant genetics.	Biodiversity Action Plan (Section 7.4)
			No illicit fires must be allowed during the operational phases.	Fire Risk and Prevention Management Plan
			Provide training and raise staff awareness of biodiversity requirements (such as protecting native floral species, preserving habitats, and preventing the spread of AIP), ensuring that all activities are aligned with the protection of local ecosystems and the conservation of floral species.	ESH Training and Awareness Plan (Section 7.4), Biodiversity Action Plan (7.4), AIP Control Plan
			No chemical control of AIP is permitted within the 32 m buffer of any Freshwater Habitat unless it has been approved as safe for use in wetlands, and the application of herbicide should only be carried out by suitably trained personnel. Adequate Personal Protective Equipment (PPE) must be supplied to the personnel involved with AIP control.	AIP Control Plan
			Bi-annual monitoring of the affected area of influence should be done to determine the presence of AIP and the success of control in affected area.	AIP Control Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Equipment used for AIP control must be cleaned in designated areas to prevent possible contamination of herbicide used in area not to be treated for AIP proliferation.	AIP Control Plan
			Minimise the impact of floral habitat fragmentation and interference with habitat connectivity in freshwater habitats (including temporary crossings/roads). In this regard it is crucial to implement mitigation measures such as preserving and restoring riparian vegetation and ensuring that construction practices avoid disturbing important plant habitats and thus hindering the movement and dispersal of species.	Biodiversity Action Plan (7.4)
			No indiscriminate movement of construction vehicles or personnel are allowed in the Freshwater Habitat particularly during intense rainfall events as water may flow with greater intensity within these areas. Additionally, construction vehicles should not drive indiscriminately through any of the surrounding natural habitats.	Biodiversity Action Plan (7.4)
	BLF4 - Loss of floral SCC (operation phase)		Harvesting of protected and threatened floral species by operational and maintenance personnel must be strictly prohibited, including collection of floral material by such personnel.	Biodiversity Action Plan (Section 7.4)
			Monitoring of any rescued and relocated floral SCC (if applicable) must commence during the construction phase and this should be continued until it is evident that relocated species have successfully established and population are stable.	Biodiversity Action Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Maintenance activities must ensure that floral SCC and protected flora (where present outside of the footprint areas) will not be adversely impacted.	Biodiversity Action Plan (Section 7.4)
			Edge effect control needs to be implemented to prevent further degradation and potential loss of floral SCC outside of the proposed development footprint area.	Biodiversity Action Plan (Section 7.4)
	BLF5 - Floral habitat fragmentation (all phases)		Measures relating to impact BLF1 also applicable – i.e., Loss of floral habitat and species diversity during construction.	As per impact BLF1
			Development should be prioritised in habitats of decreased sensitivity wherever possible given the linear nature of the project.	Biodiversity Action Plan (Section 7.4)
			Access roads should be kept to existing roads were possible so to reduce further fragmentation of existing natural habitat.	Traffic and Transportation Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			A rehabilitation plan should be developed that will promote habitat reinstatement in disturbed sites and allow for increased habitat connectivity during the operation and maintenance phase of the project.	Rehabilitation and Revegetation Management Plan
	BFL6 – Floral habitat fragmentation (specific to Decommissioning)		Decommissioning and rehabilitation footprint areas should be clearly demarcated to monitor footprint extent and avoid footprint creep.	Rehabilitation and Revegetation Management Plan
			The decommissioning and rehabilitation footprint must be kept as small as possible to minimise the impact on the surrounding environment (edge effect management).	Rehabilitation and Revegetation Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			No additional habitat is to be disturbed during the decommissioning phase of the project outside of the demarcated approved footprints.	Rehabilitation and Revegetation Management Plan
			Disturbed areas are to be rehabilitated to a similar state as that of pre-disturbance conditions. Where this is not possible, it is recommended that at a minimum a suitable herbaceous layer is maintained within the footprint of Project development and infrastructure so as to ensure that no erosion occurs.	Rehabilitation and Revegetation Management Plan
			Access roads should be kept to existing roads as far as is feasible so as to reduce fragmentation of existing natural habitat (and to reduce the risk of AIP being introduced into natural habitats).	Rehabilitation and Revegetation Management Plan
			Vehicles should be restricted to travelling only on designated roadways to limit the ecological footprint of the decommissioning activities.	Rehabilitation and Revegetation Management Plan
			All areas of increased ecological sensitivity beyond the approved footprint must be designated as No-Go areas and be off-limits to all decommissioning phase vehicles and personnel.	Rehabilitation and Revegetation Management Plan
			Management of AIPs during the decommissioning phase activities must be focused on limiting their spread. For example, roadsides should be monitored, as they serve as common corridors along which AIP species are introduced and dispersed, and disturbed areas should regularly be monitored for AIP recruitment until successfully rehabilitated.	AIR Control Plan, Rehabilitation and Revegetation Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Monitor and maintain the vegetation corridors that were created along the OHL servitudes to contribute to reduced habitat fragmentation and improved regional plant genetics.	Rehabilitation and Revegetation Management Plan
			No illicit fires must be allowed during the decommissioning phase.	Fire Risk and Prevention Management Plan
Biodiversity (Faunal) (Refer to Volume 1, Section 6.4.4, Tables 6.22 – 6.23)	BFA1 - Loss of faunal habitat and species diversity (construction/operation phase)	• Minimise Environmental Footprint • Protect Vegetation and Wildlife • Reduce Impact on Freshwater Habitats • Protect and Monitor Wildlife • Enhance Safety and Prevent Bird and bat Strikes • Plan and Conduct Maintenance Responsibly	Project footprints are to be kept as small as possible.	Erosion and Soil Management Plan
			As far as possible, no pylon footprints are to be placed within any of the freshwater habitats.	Biodiversity Action Plan (Section 7.4)
			Existing roads are to be utilised as far as possible in order to access the OHL route. Where new access roads are required, the bare minimum needed for access should be constructed.	Traffic and Transportation Management Plan (Section 7.4)
			Vegetation clearance below the OHL is to be limited to only that which is needed, and excessive vegetation clearance is to be avoided. As far as possible only tall trees should be trimmed, leaving as much of the remaining vegetation as possible (with acknowledgement of health and safety requirements for overhead lines)	Vegetation and Land Clearance Management Plan
			No hunting/trapping of faunal species is to be allowed by construction personnel.	Biodiversity Action Plan (Section 7.4)
			No illicit fires on site are to be allowed. Where fires for cooking are needed, they are to be located in designated sites at the contractor camps and all, measures to ensure that runway fires do not occur must be taken.	Fire Risk and Prevention Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Construction activities, especially those taking place near freshwater habitats, must be undertaken in the dry season to limit impacts such as erosion and increased sediment runoff into the freshwater habitats.	Erosion and Soil Management Plan
			All waste material should be cleared away from site and disposed of at a pre-determined disposal site away from sensitive habitats.	Waste Management Plan (Section 7.4)
			Waste material or excavated soil are not to be disposed of in or adjacent to freshwater habitats.	Waste Management Plan and Erosion and Soil Management Plan (Section 7.4)
			Should any raptors, notably *Terathopius ecaudatus* (Bateleur eagle), be found nesting in the proposed route, or within 500m of the proposed route, construction plans need to be duly updated to ensure that these areas are avoided during the breeding season. Active nests are not to be disturbed during breeding season and should be given a 200m exclusion buffer until after the breeding season. Construction/ vegetation clearance activities must continue on in a different locality until such a time that it is feasible to return to the area (post breeding).	Biodiversity Action Plan, and Avifauna Monitoring Programme (Section 7.4)
			Bird flappers / diverters should be fitted along the entire length of the OHL. Should the pre-construction avifaunal monitoring however indicate that certain areas are not high frequency avifaunal areas/ flight paths, then the placement of such bird flappers in areas can be reconsidered based on the additional monitoring data	Avifauna Monitoring Programme (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Where the OHL traverses freshwater habitats, bird-flappers / diverters should be installed on the powerline to minimise bird strike risks as these areas are considered to be high traffic/flights paths. These devices should be installed every 5 m – 10 m along the powerline, up to 100m on either side of the freshwater habitat;	Avifauna Monitoring Programme (Section 7.4)
			To minimise this risk of bat collisions and electrocutions, overhead power cables should be spaced sufficiently wide (>60cm) enough beyond the size of the wingspan of the largest bat known or suspected to use the area. Where this is not possible, suitable insulation of the cables may be considered	Avifauna Monitoring Programme (Section 7.4)
			No snakes, small reptiles or arachnids are to be killed or harmed by staff during the construction phase. Should any of these species be encountered, they should be carefully and safely relocated to an area outside of the disturbance footprint by a suitably trained and competent staff member.	Biodiversity Action Plan (Section 7.4)
			Any tension cables up to 1.5 m on each side of support posts and substations must be insulated /covered with rubber tape/plastic piping to decrease electrocution risks.	Biodiversity Action Plan (Section 7.4)
			All pylons / electrical infrastructure must be fitted with anti-perching/nesting devices to deter species from using these structures for nest construction/perching – notably larger raptors.	Biodiversity Action Plan and Avifauna Monitoring Programme (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			No additional clearing of vegetation beyond that which is needed for maintenance activities is to be undertaken.	Vegetation and Land Clearance Management Plan
			As far as possible, maintenance activities, notably for areas around freshwater habitats, should be planned for during the dry season to avoid excess water runoff., sedimentation and erosion.	Erosion and Soil Management Plan
	BFA2 - Loss of potential faunal SCC (operation phase)		Measures relating to impact BFA1 also applicable – i.e., Loss of faunal habitat and species diversity during construction and operation.	As per impact BFA1
	BFA3 - Habitat fragmentation (operation phase)		As above.	As above
	BFA4 - Avifaunal Collisions with Overhead Powerlines – Miombo Woodland and Freshwater Habitats (operation phase)		As above.	As above
	BFA5 - Avifaunal Collisions with Overhead Powerlines – Secondary Miombo Woodland and Transformed Habitats (operation phase)		As above.	As above
	BFA6 - Loss of faunal habitat and species diversity (operation phase)		No additional clearing of vegetation beyond that which is needed for maintenance activities is to be undertaken	Vegetation and Land Clearance Management Plan
			No new roads are to be cleared/constructed. Roads used during the construction phase are to be maintained as needed and used during the operational phase	Traffic and Transportation Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Should access roads used during the construction phase no longer be needed, they should be decommissioned and rehabilitated accordingly	Vegetation and Land Clearance Management Plan
			Old access roads and laydown areas which are no longer required should be decommissioned and rehabilitated	Vegetation and Land Clearance Management Plan
			Vegetation clearance below the OHL is to be limited to only that which is needed, excessive vegetation clearance is to be avoided.	Vegetation and Land Clearance Management Plan
			No hunting/trapping of faunal species is to be allowed by operations and maintenance personnel.	Biodiversity Action Plan (Section 7.4)
			No illicit fires on site are to be allowed.	Fire Risk and Prevention Management Plan
			As far as possible, maintenance activities, notably for areas around freshwater habitats, should be planned for during the dry season to avoid excess water runoff., sedimentation and erosion.	Erosion and Soil Management Plan
			All waste material should be cleared away from site and disposed of at a pre-determined disposal site away from sensitive habitats.	Waste Management Plan (Section 7.4)
			Waste material is not to be disposed of in or adjacent to freshwater habitats.	Waste Management Plan (Section 7.4)
			No snakes, small reptiles or arachnids are to be killed or harmed by personnel. Should any of these species be encountered, they should be carefully and safely relocated to an area outside of the disturbance footprint by a suitably trained and competent staff member.	Biodiversity Action Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Any maintenance activities that may need to take place within 500m of any recorded bateleur nests should be restricted to the non-breeding season, when the fledglings have left the nest	Avifauna Monitoring Programme
			Bird-flappers / diverters are to be replaced as and when needed should they become dislodged from the powerline. These devices should part of the regular inspection activities undertaken for the OHL.	Biodiversity Action Plan (Section 7.4)
			Ensure the insulated covering on the support / tension cables is intact to minimise risk of electrocution.	Biodiversity Action Plan (Section 7.4)
			Inspect and maintain anti-perching/nesting devices fitted.	Biodiversity Action Plan (Section 7.4)
	BFA7 - Loss of potential faunal SCC (operation phase)		Measures relating to impact BFA6 also applicable – i.e., Loss of faunal habitat and species diversity during operation.	As per impact BFA6
	BFA8 - Habitat fragmentation (operation phase)		As above.	As above
	BFA9 – Avifaunal and Bat collisions with overhead powerlines – miombo woodland and freshwater habitats (operation phase)		As above.	As above
	BFA10 - Avifaunal and bat collisions with overhead powerlines – secondary miombo woodland and transformed habitats (operation phase)		As above.	As above

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
Freshwater ecosystems (Refer to Volume 1, Section 6.4.5, Tables 6.24 – 6.26)	FE1 - Removal of vegetation leading to increased bare areas and changes in runoff in the landscape; and smothering of freshwater habitat due to dust generated from cleared areas (construction phase)	• Minimise Development Footprint • Protect Freshwater Systems • Stormwater and Erosion Control • Rehabilitation and Monitoring	All development footprint areas should remain as small as possible and vegetation clearing be limited to what is essential.	Vegetation and Land Clearance Management Plan
			As far as possible, existing roads must be utilised to gain access to sites.	Traffic and Transportation Management Plan (Section 7.4)
			All vegetation cleared as part of the site clearing activities (specifically where large areas need to be cleared) should be appropriately stockpiled in a small area. Vegetation which is suitable for use in reinstatement may be temporarily stockpiled, outside of delineated freshwater systems. Plant material suitable for use as firewood or which would normally be harvested by communities may be given to the community. No Alien or Invasive Plants (AIPs) may be donated to the local communities to limit spread.	Rehabilitation and Revegetation Management Plan, AIP Control Plan
			Freshwater systems situated downgradient and within 32 m of any construction site must be protected by means of construction of a silt trap, erected along the boundary of the freshwater system. Silt traps must be monitored closely, and accumulated sediment removed as regularly as required, preferably by hand if feasible. Removal with machinery may take place provided that no indiscriminate movement of machinery occurs within freshwater systems.	Erosion and Soil Management Plan, Stormwater Management Plan
			Contractor laydown areas and material storage facilities must remain within the designated contractor camp and batching plant footprint.	Stormwater Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			No vegetation may be removed from any delineated freshwater system or directly adjacent thereof where no infrastructure is planned, as this provides a natural buffer zone around the freshwater systems which disperse surface runoff into the freshwater systems, and thus prevents sedimentation and erosion thereof.	Erosion and Soil Management Plan
	FE2 - Impact Summary: Increased bare areas and changes in runoff in the landscape; generation of dust in the cleared areas and miscellaneous activities by construction personnel		All development footprint areas to remain as small as possible and vegetation clearing to be limited to what is essential;	Vegetation and Land Clearance Management Plan
			Suitable procedures for the disposal of construction waste and hazardous materials must be developed;	Waste Management Plan
			Containment systems to prevent contamination of groundwater and surface water such as drip trays must be installed;	Waste Management Plan
			All vegetation cleared as part of the site clearing activities (specifically where large areas need to be cleared) should be appropriately stockpiled in a small areas. Vegetation which is suitable for use in reinstatement may be temporarily stockpiled, outside of delineated freshwater systems. Any plant material suitable for use as firewood or which would normally be harvested by communities may be given to the community; and	Rehabilitation and Revegetation Management Plan, AIP Control Plan
			No Alien or Invasive Plants (AIPs) may be donated to the local communities to limit spread.	Rehabilitation and Revegetation Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	FE3 - Smothering of freshwater habitat due to dust generated from cleared areas; increase in bare areas including changes in runoff patterns in the landscape; proliferation of alien and invasive species within the freshwater habitat; increased erosion and sedimentation of the freshwater systems; alteration of surface water quality from concrete casting; and disturbance to aquatic biota (construction phase)		Careful planning of pylons for the OHLs must take place, ensuring that as far as practical (considering any restrictions relating to spanning of freshwater ecosystems) pylons are not placed within 10m of the delineated edge of the freshwater systems, to minimise potential loss of vegetation, erosion or sedimentation of the freshwater system during construction works.	Biodiversity Action Plan (Section 7.4), Erosion and Soil Management Plan
			During excavation activities, the topsoil and vegetation must be stockpiled separately from other material outside of the delineated freshwater system.	Rehabilitation and Revegetation Management Plan, Erosion and Soil Management Plan
			Excavation of pits for the pylons within close proximity to a freshwater system may cause excessive sediment to enter into the freshwater systems, specifically if works are undertaken during the rainy months. As such, during excavation of the foundations, soil must be stockpiled upgradient of the excavated pit. Mixture of the lower and upper layers of the excavated soil should be kept to a minimum. Excess soil as a result of bulking must be spread evenly in the landscape given that the excavated pits are to be filled with concrete. Alternatively excess soil must be used in rehabilitation processes of adjacent areas, immediately after installation of the pylon.	Erosion and Soil Management Plan
			Excavated materials must not be contaminated, and it should be ensured that the minimum surface area is taken up by any stockpiled materials. The mixture of the lower and upper layers of the excavated soil should be kept to a minimum, so as for later use as backfill	Erosion and Soil Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			material after construction has commenced.	
			All exposed excavated soil stockpiles should be protected from wind using suitable geo-textile or by not stockpiling more than 3 m tall and removing or infilling of stockpiled soils	Erosion and Soil Management Plan
			Suitable drainage must be ensured along the hardstand areas to ensure that water does not pond on the hardstand or does not drain in a concentrated manner into the freshwater systems for towers that are associated with watercourses and/or wetlands. This must be incorporated into the stormwater management plan and be overseen by a freshwater ecologist.	Stormwater Management Plan
			Rehabilitation of the construction footprint areas must: a) Rehabilitate construction areas and be overseen by a suitably qualified ECO with freshwater and biodiversity resource management experience. The ECO must sign off the rehabilitation before the relevant contractors leave site. b) Ensure that soils are replaced in the correct layers, ripped and re-reprofiled, and that vegetation is restored to a point where succession will lead to the same conditions as the pre-mining state as a minimum. c) The construction areas should regularly be inspected for alien and invasive vegetation species which might have established due to the construction activity related disturbances.	Rehabilitation and Revegetation Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	FE4 - Increased soil erosion and formation of preferential flow paths in the landscape; sedimentation of the freshwater system due to disturbance in the landscape resulting in changes in the instream substrate; smothering of freshwater habitat due to dust generated from cleared areas; changes in flow, pattern and timing due to increased impermeable surfaces; loss of foraging and breeding habitat and faunal migratory corridors; and proliferation of alien and invasive species within the freshwater habitat (construction phase)		Silt/sediment traps are to be used during the construction phase, to limit additional sediment associated with construction activities from reaching the freshwater habitat.	Erosion and Soil Management Plan, Stormwater Management Plan
			Design of infrastructure should be environmentally and structurally sound and all possible precautions taken to prevent contamination of surface and resources present.	Pollution Prevention and Abatement Management Plan
			Adequate stormwater management must be incorporated into the design of the substation infrastructure in order to prevent erosion and the associated sedimentation of the freshwater habitat. In this regard special mention is made of: a) Sheet runoff from cleared areas, paved surfaces and/or access roads needs to be curtailed b) Runoff from paved surfaces should be slowed down by the strategic placement of berms c) All overburden stockpiles and waste stockpiles must have berms and/catchment paddocks at their toe to contain runoff from the facilities	Stormwater Management Plan
			Erosion arising as a consequence of the development of surface infrastructure must be remedied immediately and included as part of an ongoing rehabilitation plan.	Erosion and Soil Management Plan
			Where construction activities have taken place, footprint areas must be monitored for alien and invasive vegetation encroachment and all alien vegetation/weeds must be removed	AIP Control Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			according to a suitable alien vegetation control plan.	
			If any solid materials do enter the freshwater environment, if deemed safe, they should be immediately removed and disposed at a registered waste disposal facility. Material that may be re-used must be re-used and material that will not be re-used must be disposed of.	Waste Management Plan (Section 7.4)
			Control measures specific to concrete works are as follows: a) Fresh concrete and cement mortar must not be mixed near the freshwater ecosystems. Mixing of cement may be done within the construction camp, however, may not be mixed on bare soil, and must be within a lined, bound or bunded portable mixer. Consideration must be taken to use ready mix concrete. The designated concrete mixing areas must be approved by the ECO b) No mixed concrete shall be deposited directly onto the ground within the freshwater ecosystems (outside of the designated area). A batter board or other suitable platform/mixing tray is to be provided onto which any mixed concrete can be deposited whilst it awaits placing c) A washout area should be designated outside of the freshwater ecosystems, and wash water should be treated on-site or discharged to a suitable sanitation system d) Cement bags must be disposed of in the demarcated hazardous waste receptacles and the used bags must	Erosion and Soil Management Plan, Waste Management Plan (Section 7.4), Stormwater Management Plan, Rehabilitation and Revegetation Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			be disposed of through the hazardous substance waste stream e) Spilled or excess concrete must be disposed of at a suitable landfill site. Chain of custody documentation must be provided	
			Rehabilitation measures of the construction footprint areas must be implemented in a phased manner shortly after the construction activities.	Rehabilitation and Revegetation Management Plan
	FE5 - Potential temporary in-channel diversion of the freshwater crossing to allow for excavations for road crossing to take place; loss of freshwater habitat and ecological structure resulting in impacts on biota; altered runoff patterns and alteration to flow patterns, leading to increased erosion and sedimentation of the freshwater system; disturbances of soils leading to increased alien vegetation proliferation, and in turn to further altered riverine habitat; and increased risk of pollution of surface water (construction phase)		General construction mitigation measures (site preparation activities) for clearing of vegetation, management of spills, waste, and usage of storage facilities are considered applicable;	Vegetation and Land Clearance Management Plan
			It is highly recommended that all construction and site clearing should ideally take place during the period when flows are low (outside of the rainfall season) in order to minimise impacts on the freshwater ecosystems as well those downstream as a result of the construction activities;	Traffic and Transportation Management Plan (Section 7.4)
			Implementation of erosion and sediment control measures must be implemented to prevent excessive sedimentation during construction;	Erosion and Soil Management Plan, Stormwater Management Plan
			Sandbags should be used to create a coffer dam around the construction area, if applicable (for temporary diversion), which can then be dewatered. Water must be diverted into the downstream reach of the freshwater ecosystem around the coffer area and allowed to always flow to the downstream reach;	Erosion and Soil Management Plan, Stormwater Management Plan
			Any diversion for construction activities must mimic natural flow patterns and maintain sediment transport; and	Erosion and Soil Management Plan, Stormwater Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			All alien and invasive vegetation species, debris and litter removed from the road reserve must be removed from site.	Rehabilitation and Revegetation Management Plan, AIP Control Plan
	FE6 - Changes in flow, pattern and timing due to increased impermeable surfaces; and altered drainage patterns, potentially leading to the formation of preferential flow paths and/or concentrated flows (operation phase)		An emergency plan must be developed to manage any infrastructure failure, which may impact on the freshwater ecosystems should any fault necessitate usage of heavy machinery and clearing of vegetation to access site.	EPRP (Section 7.4)
			The OHL servitude must be monitored for alien and invasive vegetation encroachment and all alien vegetation/weeds must be removed according to a suitable alien vegetation control plan. Annual follow up should be undertaken for at least 3 years post-construction.	AIP Control Plan
			Disturbances within the footprint area should be limited to what is essential for long-term maintenance in line with the mitigation measures presented herein.	Rehabilitation and Revegetation Management Plan
	FE7 - Increased impermeable surfaces due to the presence of surface infrastructure (substations) leading to changes in runoff in the landscape (operation phase)		Construction areas must be rehabilitated. Implementation of these rehabilitation measures must be overseen by a suitably qualified ECO with freshwater and biodiversity resource management experience and the ECO must sign off the rehabilitation before the relevant contractors leave site.	Rehabilitation and Revegetation Management Plan
			Ensure that soils are replaced in the correct layers, ripped and re-reprofiled, and that vegetation is restored to a point where succession will lead to the same conditions as the pre-mining state as a minimum.	Rehabilitation and Revegetation Management Plan
			Regular inspections of all stormwater infrastructure must be conducted. During the inspection, data must be recorded	Stormwater Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			and kept for the purposes of tracking and reporting.	
			Bare areas should be revegetated within suitable indigenous vegetation species.	Rehabilitation and Revegetation Management Plan
	FE8 - Altered timing and pattern of flows within the catchment; change in freshwater hydroperiod and changes in flood peaks; and Potential desiccation of downstream reaches of freshwater ecosystems due to blocked culverts (operation phase)		Regular inspection of the access roads and associated culverts must be done in order to ensure structural stability during the operation of the road;	Stormwater Management Plan
			Where culverts are proposed, spots for the build-up of debris and excess sediment must be identified and when necessary, debris/excess sediment must be removed by hand. This is particularly important following heavy rainfall events since any blockages may result in back-flooding of the freshwater ecosystems systems;	Stormwater Management Plan
			Any erosion or gully formation must be identified on an ongoing basis and re-profiled and revegetated accordingly; and	Rehabilitation and Revegetation Management Plan, Stormwater Management Plan
			Any litter from maintenance activities must be cleared from the site and discarded at suitable registered facility	Rehabilitation and Revegetation Management Plan
	FE9 - Soil erosion and sedimentation of freshwater due to disturbance in the landscape; Increase in bare areas including changes in runoff patterns in the landscape; proliferation of alien and invasive species within the freshwater habitat; and disturbance to aquatic biota (decommissioning phase)		Decommissioning vehicles should be checked for leakages of hydrocarbons prior to commencement of decommissioning and closure;	Rehabilitation and Revegetation Management Plan
			Vehicles should utilise existing access roads and minimise compaction of adjacent areas;	Rehabilitation and Revegetation Management Plan
			Disturbed areas adjacent to the decommissioning sites should be revegetated in order to limit potential soil erosion;	Rehabilitation and Revegetation Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Rehabilitation measures around areas where decommissioning took place must be developed and implemented. Implementation must be overseen by a suitably qualified Environmental Site Officer with freshwater and biodiversity resource management experience and the ESO must sign off the rehabilitation before the relevant contractors leave site;	Rehabilitation and Revegetation Management Plan
			Ensure that soils are replaced in the correct layers where infrastructure has been removed/decommissioned, ripped and re-reprofiled, and that vegetation is restored to a point where succession will lead to the same conditions as the pre-mining state as a minimum; and	Rehabilitation and Revegetation Management Plan
			Monitor spread of alien and invasive species during the decommissioning phase.	Rehabilitation and Revegetation Management Plan and AIP Control Plan
Air quality (Refer to Volume 1, Section 6.4.6, Tables 6.27 – 6.29)	AQ1 - Addition of excess dust and gaseous emissions to ambient air quality (construction phase)	• Control Dust Emissions • Ensure Air Quality • Maintain Equipment • Manage Decommissioning Activities	Reduce or stop work (notably land clearing) during very dry and windy conditions.	Air Quality and Dust Control Management Plan
			In areas close to sensitive receptors, apply dust abatement measures (e.g., water the construction site) to suppress dust and prevent it from becoming airborne.	Air Quality and Dust Control Management Plan
			Enclosing the construction site with temporary fencing and covering materials like tarps can help reduce dust and other pollutants from escaping the site.	Air Quality and Dust Control Management Plan
			Limiting the amount of earth-moving and excavation work and controlling the speed and movement of heavy equipment can help reduce the amount	Air Quality and Dust Control Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			of dust generated during the construction process.	
			Regular monitoring of air quality at the construction site can help identify potential air pollution issues and enable timely corrective measures.	Air Quality and Dust Control Management Plan
			Awareness training on air emissions should be carried out at all levels for the workforce (workers, foremen, managers), and can be included in induction courses. Training should focus on promoting understanding as to why mitigation measures are in place.	EHS Training and Awareness Plan (Section 7.4)
			Develop and implement a complaints system and make the community aware of the complaints procedure maintained by site management.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Construction vehicles and equipment are required to meet Euro VI or equivalent emission standards, ensuring reductions in CO, NOx, SO2, and Volatile Organic Compounds (VOCs) in order to minimise GHG emissions from combustion engines.	Air Quality and Dust Control Management Plan
			Regular servicing of machinery and training for operators on fuel-efficient practices are mandated to reduce unnecessary fuel consumption and emissions, which should be achieved by minimising idling times and optimising logistics for equipment use.	Air Quality and Dust Control Management Plan, Maintenance Management Plan
			Low-VOC paints, solvents, and adhesives are specified for construction to minimise emissions during application, addressing indirect GHG sources.	Air Quality and Dust Control Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	AQ2 - Addition of excess dust and gaseous emissions to ambient air quality (operation phase)		Ensure all vehicles are maintained according to the manufacturer's requirements.	Traffic and Transportation Management Plan (Section 7.4)
			Encourage driving practices that reduce fuel usage (e.g., measured acceleration and reduced driving speeds).	Traffic and Transportation Management Plan (Section 7.4)
			Replace older vehicles with newer vehicles that are more fuel-efficient.	Traffic and Transportation Management Plan (Section 7.4)
			Convert vehicles to cleaner fuels where feasible.	Traffic and Transportation Management Plan (Section 7.4)
			Install and maintain emission control devices (e.g., catalytic converters).	Traffic and Transportation Management Plan (Section 7.4)
	AQ3 - Potential emission of SF_6 from transformers and substation switchgears (operation phase)		Carry out leak detection bi-annually, both visually and with suitable gas leak detection equipment/testing.	Maintenance Management Plan
			Scheduled maintenance and inspection routines ensure that equipment is in optimal condition, reducing the likelihood of leaks and emissions.	Maintenance Management Plan
	AQ4 - Potential emission of SF_6 from transformers and substation switchgears (decommissioning phase)		Reduce or stop work during very dry and windy conditions where possible.	Air Quality and Dust Control Management Plan
			Vegetate areas that could be a source of windblown dust emissions.	Air Quality and Dust Control Management Plan, Rehabilitation and Revegetation Management Plan
			Regularly watering the area of under closure can help suppress dust and prevent it from becoming airborne.	Air Quality and Dust Control Management Plan
			Enclosing solid and material stockpiles at the decommissioning site with temporary fencing and covering materials like tarps can help reduce dust and other pollutants from escaping the site.	Air Quality and Dust Control Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
Noise (Refer to Volume 1, Section 6.4.7, Tables 6.30 – 6.32)	N1 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded (construction phase)	• Minimise Noise Impact • Control Blasting Activities • Monitor Vibrations and Air Pressure	Ensure that all machinery with noise sources exceeding 80.0dBA are adequately acoustically screened off as far as possible and where feasible.	Noise and Vibration Management Plan
			Noisy machinery (in excess of 80.0dBA) to be utilised during the day when the prevailing ambient noise levels area higher	Noise and Vibration Management Plan
			Noise complaints must be assessed within 8 hours after receipt of a noise complaint.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
	N2 - Increase in the ground vibration and/or air pressure levels at the residential areas in that the ground vibration level of 12.5mm/s and/or air pressure levels of 140dB is exceeded during blasting – if required (construction phase)		If required, no blasting should be conducted within 500m from any residential area.	Blast Management Plan
			Safe blasting techniques must be used during a blast.	Blast Management Plan
			Blast design to be conducted before a blast.	Blast Management Plan
			Ground vibration and/or air pressure levels must be monitored.	Blast Management Plan
	N3 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities (operation phase)		Measures relating to impact N1 also applicable – i.e., Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during construction.	As per impact N1
	N4 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities (operation phase)	• Minimise Noise Impact	As above.	As above
	N5 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are		As above.	As above

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	exceeded during the above activities (operation phase)			
	N6 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities (operation phase)		Ensure that all machinery with noise sources exceeding 50.0dBA are adequately acoustically screened off as far as possible and where feasible	Noise and Vibration Management Plan
			Noisy machinery (in excess of 80.0dBA) to be utilised during the day when the prevailing ambient noise levels area higher	Noise and Vibration Management Plan
			Noise complaints must be assessed within 8 hours after receipt of a noise complaint.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
	N7 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during maintenance activities (operation phase)		Measures relating to impact N6 also applicable – i.e., Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during operation.	As per impact N6
			As above.	As above
	N8 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities (decommissioning phase)		Measures relating to impact N1 also applicable – i.e., Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during construction.	As per impact N1
Visual (Refer to Volume 1, Section 6.4.8, Tables 6.34 – 6.36)	V1 - Negative visual impact on local surrounding areas (construction phase)	• Minimise Vegetation Clearing • Manage Dust and Access Roads • Maintain Site Cleanliness • Control Lighting	Minimise vegetation clearing where possible, especially at construction camps, along access roads, around laydown areas and the project site.	Vegetation and Land Clearance Management Plan
			Use manmade barriers around laydown areas and construction camps where sensitive viewers exist.	Air Quality and Dust Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Adhere to the management measures regarding dust provided by the air quality specialist.	Air Quality and Dust Management Plan
			Use existing paths and roads to access the project site.	Traffic and Transportation Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Ensure the construction sites and camps are kept neat and tidy (minimise litter).	Waste Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			If construction is happening at night, lighting should face inwards to ensure excess light does not escape to the surrounding areas.	Lighting Management Plan
	V2 - Visual impact of medium significance. Impacts are expected to be felt at a local scale (construction phase)		Measures relating to impact V1 also applicable – i.e., Negative visual impact on local surrounding areas during construction.	As per impact V1
	V3 - Significance of visual impact expected to be high at a local extent (operation phase)		If maintenance is done at night, lights should be faced inwards towards the site to avoid disturbing the surrounding area.	Lighting Management Plan
			Make sure project site is kept neat and tidy (ensure all litter and any maintenance waste is removed).	Waste Management Plan (Section 7.4), Maintenance Management Plan
	V4 - Highest visual impact significance rating. Mainly attributed to the visual impacts being felt for a long-term period (operation phase)		Where possible lighting should be faced inward or shielded from viewers. Low foot lighting should be used where deemed safe.	Lighting Management Plan
			Physical barriers and covers can be used to prevent excess light leaving the project site.	Lighting Management Plan
			External signage should be kept to a minimum and placed on existing buildings where possible.	Lighting Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Make sure project site is kept neat and tidy (ensure all litter and any maintenance waste is removed).	Waste Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
	V5 - During decommissioning the visual impact significance is expected to be low (operation phase)		Ensure all infrastructure is removed from site.	Rehabilitation and Revegetation Management Plan
			Plant natural vegetation in cleared corridor to increase VAC of the project site.	Rehabilitation and Revegetation Management Plan
	V6 - Decommissioning the substations is expected to significantly reduce the visual impact (decommissioning phase)		Ensure all infrastructure is removed from site.	Rehabilitation and Revegetation Management Plan
			Plant natural vegetation in around substations to reduce the visibility of the substations and associated infrastructure, where technically feasible and safe to do so.	Rehabilitation and Revegetation Management Plan
Social Impacts				
Land and resource acquisition (Refer to Volume 1, Section 6.5.1, Tables 6.37 to 6.45)	SE1.1 - Reduced income-earning opportunities due to a loss of, or access to, farming or grazing land or access to such land (construction/operation phase)	• Minimise Impact on Land and Agriculture • Engage and Support Stakeholders • Monitor and Address Displacement • Ensure Safety and Prevent Pollution • Avoid physical or economic displacement where possible	Ensure the project design is adapted to avoid any impacts on farming or grazing land.	Erosion and Soil Management Plan
			If avoidance is not possible, provide alternative land of the same or better carrying capacity and at the same travelling distance as the affected land.	LARF (Section 8), RAP
			If land is not available and cash compensation is preferred, this can also be considered, however, it needs to go with the necessary livelihood restoration measures since the PAP's livelihood might not change from e.g. subsistence farming to another income-generating opportunity if they cannot find land elsewhere;	LARF (Section 8), RAP
			Compile and implement an IFC-compliant SEP, including a grievance mechanism.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Compiling an IFC-compliant RAP and LRP for any physical or economic displacement as determined after the implementation of the LARF.	LARF (Section 8), RAP
			Any farmland that is impacted by construction activities must rehabilitated to the pre-construction standard or better. If this is not possible, replacement land must be provided to the affected farmers.	RAP, Rehabilitation and Revegetation Management Plan
	SE1.2 - Increased food insecurity due to loss of farming or grazing land or access to such land (construction/operation phase)		Determine if any of the existing agricultural projects, institutes or facilities, such as the PEDR, CarrinhoAgri (run by Grupo Carrinho Comercio Lda), Agricarrinho in the ECAs, CartAgri, MOSAP II, IDA, EDAs, agricultural cooperatives and associations, could be leveraged during the construction period, when the highest land-based impact is expected.	SEP (Section 7.4)
			Ensure that replacement land of the same or better carrying capacity and at the same travelling distance as the affected land is provided to affected farmers/households.	LARF (Section 8), RAP
			If land is not available and cash compensation is preferred, this can also be considered, however, it needs to go with the necessary livelihood restoration measures since the PAP's livelihood might not change from e.g. subsistence farming to another income-generating opportunity if they cannot find land elsewhere;	LARF (Section 8), RAP
			Construction activities should be limited to demarcated areas and avoid farming or grazing land used by local communities.	Erosion and Soil Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Note that such land might not be very close to villages using it and it might not be apparent that it is used for grazing. This should be determined before site establishment.	Erosion and Soil Management Plan
			Any impacts resulting from construction activities on farmland and resources, such as soil compaction due to vehicle traffic, hydrocarbon spills and water contamination, should be rehabilitated or cleared immediately after occurrence.	Rehabilitation and Revegetation Management Plan, EPRP (including Oil Spill Response) (Section 7.4)
			Consultation with sobas and local municipal administrations will be important to ensure that farmland is identified and avoided prior to site establishment.	SEP (Section 7.4)
	SE1.3 - Reduced income-earning opportunities for artisanal miners due to the loss of available artisanal mining areas (construction/operation phase)		Liaise with local law enforcement, police and/or other security entities on their strategies for managing ASM activities in the area.	SEP (Section 7.4), Security Management Plan (Section 7.4)
			Provide employment opportunities for unskilled labour from the PACs as far as possible.	Labour Management Plan (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness of the land that is in RNT's possession and that will be used for the transmission line (or ENDE's land for the distribution network).	SEP (Section 7.4)
	SE1.4 - Disruption of access in and between communities and sites used by Khoi San people due to the presence of the transmission and distribution powerlines and		Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness of the land that is in RNT's possession and that will be used for the transmission line (or ENDE's land for the distribution network).	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	substations (construction/operation phase)		Construction and no-entry areas should be clearly marked prior to site establishment and maintained once substations are constructed, to ensure that no unauthorised entry takes place which can lead to safety risks.	OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)
			Construct new roads which could be used safely by villagers (i.e., with fenced walking side paths) outside of any buffer areas required by the biodiversity-related mitigation measures.	CHSS Management Plan (Section 7.4)
			Consult the local municipalities shortly before the commencement of construction to ensure that no Khoi San people are expected to move through the project area.	SEP (Section 7.4)
	SE1.5 - Altering the sense of place of community members and Khoi San people due to the presence of the transmission line (construction/operation phase)		Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness and education of the physical project components. This could include awareness posters or other print media, or community meetings with presentations on the safety of non-ionising radiation emitted by substations in the form of Extremely Low Frequency electromagnetic radiation.	SEP (Section 7.4)
			Visuals and simple text in Umbundu, Nganguela, !Kung and Portuguese should be used, the former languages being very important to ensure that women, the elderly, and the Khoi San people (all of whom are identified as vulnerable groups in this project) who do not understand Portuguese are also equally informed.	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Ensure that the siting of the substations is as far as possible and within the land in RNT's possession, from established villages and community activities such as agriculture.	CHSS Management Plan (Section 7.4)
	SE1.6 - Underpayment as part of economic displacement compensation conducted by state entities (construction/operation phase)		Compile and implement an IFC-compliant LARF. The process should not only meet national standards, but also comply with GIIP, such as IFC PS5. If economic displacement is found to be unavoidable, compile and implement an IFC-compliant LRP.	LARF (Section 8)
			Externally monitor the valuation and compensation process undertaken to determine which plots are affected and what kind of compensation is provided, especially if undertaken by government agents. This will ensure that current valuations are used (taking inflation into account if the latest published guidelines are pre-2024 or whichever year the compensation will take place).	LARF (Section 8), RAP
			Repeated planting of the same crops and decreasing rainfall are believed by local farmers to be the leading causes of the deterioration of fertile soil. If replacement land and livelihood restoration support are provided, the land should be of better quality and potential assistance or support for agricultural resources provided. PAPs/PAHs would then have access to resources that they normally do not, such as expensive fertiliser and other crop types or seeds to do rotational farming.	LARF (Section 8), RAP
			Any livelihood restoration and transitional support must be accompanied by education and	RAP, EHS Training and Awareness Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			awareness raising on responsible and sustainable farming practices. There might be other cost-effective, waterwise and sustainable farming practices based on new technologies or research.	
			Any cash compensation should be provided along with relevant education on financial literacy and responsible spending.	LARF (Section 8), RAP
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used in awareness and education sessions on sustainable farming and financial literacy as part of transitional support and livelihood restoration. Communicating in Umbundu and Nganguela is very important to ensure that women and the elderly (who are identified as vulnerable groups in this project) who do not understand Portuguese are also empowered to undertake sustainable farming.	SEP (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
	SE1.7 - Undercompensating physically displaced PAH/PAPs (construction/operation phase)		Avoid any form of physical displacement, resettlement, or relocation. If it can absolutely not be avoided, it should be limited as far as possible and mitigated proportionally.	LARF (Section 8), RAP
			Compile and implement an IFC-compliant LARF. The process should not only meet national standards, but also comply with GIIP, such as IFC PS5. If physical displacement is found to be unavoidable. Compile and implement an IFC-compliant RAP and LRP	LARF (Section 8), RAP
			Externally monitor the valuation and compensation process undertaken to determine which households and their structures (as well as communally owned and used structures such as	LARF (Section 8), RAP

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			mills) are affected and what kind of compensation is provided, especially if undertaken by government agents. This will ensure that current valuations are used (taking inflation into account if the latest published guidelines are pre-2024 or whichever year the compensation will take place)	
			Externally monitor the physical relocation process to ensure that GIIP, IFC PS5, and RAP requirements are adequately implemented and periodically reviewed	LARF (Section 8), RAP
			Any cash compensation should be provided along with relevant education on financial literacy and responsible spending	LARF (Section 8), RAP
			Any changes to residential locations should be accompanied by security of tenure	LARF (Section 8), RAP
			The necessary support should be provided to the vulnerable elderly and disabled during any movements to new replacement houses or locations. This includes not only physical transportation of them and their possessions, but also assistance with construction or souring of replacement housing;	LARF (Section 8), RAP
			Counselling and training on house maintenance and the management of household budgets should be provided	LARF (Section 8), RAP
			Undercompensating economically displaced PAHs/PAPs should also be taken into account if there will be changes to farming locations	LARF (Section 8), RAP

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	SE1.8 - Increased gender marginalisation and vulnerability resulting from compensation payments to mostly male household heads (construction/operation phase)		Avoid any form of physical or economic displacement, resettlement, or relocation. If it can absolutely not be avoided, it should be limited as far as possible and mitigated proportionally.	LARF (Section 8), RAP
			When determining which dwellings or other household assets are affected, ensure that the census takes into account every single member of the household. Disabled persons are often not mentioned as part of the household	LARF (Section 8), RAP
			When determining which agricultural plots are affected, ensure that every person who uses it is identified, as some households share the use of a single plot. The sobas can help verify this information	LARF (Section 8), RAP
			Care should be taken not to overlook households that were not born in the affected villages, but who have migrated there after the war.	LARF (Section 8), RAP
			Externally monitor the valuation and compensation process undertaken to ensure that government agents, which might be mostly male, do not overlook female household heads such as widows, or undervalue their compensations.	LARF (Section 8), RAP
			Any livelihood restoration and transitional support must be accompanied by education and awareness raising on responsible and sustainable farming practices for both male and female farmers	RAP, EHS Training and Awareness Plan (Section 7.4)
			Ensure that, when any engagements related to displacement compensation take place, all adult members of the household are present. Females might	LARF (Section 8), RAP

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			be preparing agricultural fields, harvesting, collecting water, washing clothes, or bathing during normal working hours when these surveys or negotiations are done.	
			Any cash compensation should be provided along with relevant education on financial literacy and responsible spending.	LARF (Section 8), RAP
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used in negotiations, awareness and education sessions on sustainable farming and financial literacy as part of transitional support and livelihood restoration. Communicating in Umbundu and Nganguela is very important to ensure that women and the elderly who do not understand Portuguese understand what the compensation entails and what their rights are as PAPs (and not just a household member)	SEP (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Care should be taken to avoid younger, or any other household members taking advantage of elderly war veterans based on the argument that they “already have money”, if compensations are paid or entrusted to these elderly persons.	LARF (Section 8), RAP
			Inform and consult with Sobas and traditional leaders, including female representatives, prior to the construction phase.	SEP (Section 7.4)
			Tailor requirements and consultations to the specific needs of each location, as only a limited number of communities were consulted in the SEIA. Provide a basic overview of the project’s aims, objectives, and consultation principles.	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Ensure community leaders are aware of issues such as sexual exploitation and abuse prevention, the Project Grievance Mechanism.	SEP (Section 7.4)
	SE1.9 - Reduced community and Khoi San ecosystem services as a result of construction activities (construction/operation phase)		Establish and monitor conservation corridors.	Biodiversity Action Plan (Section 7.4)
			Establish safe access routes to natural resource-use areas.	CHSS Management Plan (Section 7.4)
			All site establishment and vegetation clearing activities should be preceded by an opportunity given to villagers to harvest natural resources or materials they could use	SEP (Section 7.4)
			No recreational hunting or fishing should take place by construction workers on- or off-duty.	Biodiversity Action Plan (Section 7.4)
			Vegetation clearing should be limited to the absolute minimum	Biodiversity Action Plan (Section 7.4)
			Hydrocarbon spills should be prevented as prescribed in the ESMP	Pollution Prevention and Abatement Management Plan
			Any construction activities should be restricted to the established and demarcated construction sites	Stormwater Management Plan
			Vehicle movement should be restricted to existing roads	Traffic and Transportation Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Locations of medicinal plants should be identified prior to site establishment to ensure that they can be avoided or replanted.	Vegetation and Land Clearance Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	SE1.10 Reduced resource accessibility by Indigenous Peoples (IPs) (construction phase)	• Protect and respect ecosystem services used by IPs. • Protect and respect IPs' culture and practices	Establish and monitor conservation corridors.	Biodiversity Action Plan (Section 7.4)
			Establish safe access routes to natural resource-use areas.	CHSS Management Plan (Section 7.4)
			All site establishment and vegetation clearing activities should be preceded by an opportunity given to IPs to harvest natural resources or materials they could use.	SEP (Section 7.4), Cultural Heritage Management Plan (Section 7.4)
			No recreational hunting or fishing should take place by construction workers on- or off-duty.	Biodiversity Action Plan (Section 7.4)
			Vegetation clearing should be limited to the absolute minimum.	Biodiversity Action Plan (Section 7.4)
			Hydrocarbon spills should be prevented as prescribed in the ESMP.	Pollution Prevention and Abatement Management Plan
			Any construction activities should be restricted to the established and demarcated construction sites.	Stormwater Management Plan
			Vehicle movement should be restricted to existing roads and contractor personnel required to drive at appropriate speed limits.	Traffic and Transportation Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Locations of medicinal plants, wild fruit or beehives should be identified prior to site establishment to ensure that they can be avoided, harvested or replanted.	Vegetation and Land Clearance Management Plan
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness of the land that is in RNT's possession and that will be used for the substations and	SEP (Section 7.4), Cultural Heritage Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			transmission line (or ENDE's land for the distribution network).	
			Construction and no-entry areas should be clearly marked prior to site establishment and maintained once substations are constructed, to ensure that no unauthorised entry takes place which can lead to safety risks.	Biodiversity Action Plan (Section 7.4)
			Construct new roads which could be used safely (i.e., with fenced walking side paths) outside of any buffer areas required by the biodiversity-related mitigation measures.	Biodiversity Action Plan (Section 7.4)
			Consult the local municipalities shortly before the commencement of construction to ensure that no IPs are expected to move through the project area.	SEP (Section 7.4), Cultural Heritage Management Plan (Section 7.4)
			Ensure that the siting of the substations is as far as possible from forested areas and within the land in RNT's possession.	Biodiversity Action Plan (Section 7.4)
			Liaise with the local municipal administration of Cuvango on the engagement structures to be followed if any consultations are required with San people, since it cannot be assumed that San people will attend or have access to such awareness-raising. They must be consulted separately as they might not feel comfortable joining a "normal" community meeting, might not understand the language used, and might be nomadic.	SEP (Section 7.4), Cultural Heritage Management Plan (Section 7.4)
			Visuals and simple text in !Kung should be used in any engagements with San.	SEP (Section 7.4), Cultural Heritage Management Plan (Section 7.4)
			Ensure that honey collection sites are not destroyed, disturbed, or access	EHS Training and Awareness Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			thereto denied during construction activities.	
			The grievance mechanism must be publicised, implemented and evaluated by the contractor, and must be accessible by Khoi San. They must be able to raise grievances through a variety of platforms to ensure that it is widely accessible, but all grievances must be recorded by the Community Liaison Officer (CLO) or similar role player. This might include visits to the villages to hear and record any complaints or grievances.	SEP (Section 7.4), Cultural Heritage Management Plan (Section 7.4)
Culture and religion (Refer to Volume 1, Section 6.5.1, Tables 6.46 to 6.47)	SE2.1 - Cultural heritage disturbance due to disruption of access to gravesites (construction/operation phase)	• Protect and Respect Cultural Heritage • Engage and Support Indigenous Khoi San Communities • Ensure Inclusive Development • Raise Cultural Awareness • Protect Natural Resources	Care should be taken to identify any features that can potentially indicate unmarked graves prior to site establishment and vegetation clearing.	Cultural Heritage Management Plan (Section 7.4)
			If any graves are identified, these should be avoided, work stopped if needed, and the relevant authorities contacted. Exhumation should only be considered as a last resort and it must be in line with local customs and legal requirements. Local authorities should be engaged regarding the process.	Cultural Heritage Management Plan (including Chance Find Procedure) (Section 7.4)
			If access to graves is altered in any way (as discussed in Impact 1.4: Disruption of access in and between communities, new footpaths should be identified which could be used safely by villagers (i.e., with fenced walking side paths) outside of any buffer areas required by the biodiversity-related mitigation measures.	Cultural Heritage Management Plan (Section 7.4)
	SE2.2 - Discrimination or inadvertent exclusion of indigenous peoples (Khoi San) in consultation		Liaise with the local municipal administration of Cuvango that has intelligence on the Khoi San groups' whereabouts on the engagement	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	processes (for work opportunities or general project awareness) (construction/operation phase)		structures to be followed if any consultations are required.	
			This is especially important when awareness is raised on the project timing, where the sites will be, and any safety and security considerations are being publicised through meetings or other media. It cannot be assumed that Khoi San people will attend or have access to such awareness-raising. They must be consulted separately as they might not feel comfortable joining a “normal” community meeting, might not understand the language used, and they might be nomadic.	SEP (Section 7.4)
			Any assistance that is provided to local communities should not be assumed to also benefit the Khoi San groups, as they face widespread discrimination and exclusion. Any such benefits should be provided in a separate forum (e.g., mobile) and in a location that is distant from Bantu communities.	SEP (Section 7.4)
			Where employment opportunities are advertised, especially local employment of unskilled labour, care should be taken not to discriminate against Khoi San applicants. Consider informing Khoi San people of potential temporary employment opportunities in a separate forum as above and in the !Kung language spoken by them.	Labour Management Plan (Section 7.4)
			Where Khoi San applicants are successful in obtaining even temporary employment, the occurrence of workplace discrimination, harassment and bullying should be monitored closely.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			When establishing which households receive electricity connections as a result of this project, care should be taken to connect Khoi San households as well.	SEP (Section 7.4)
			Ensure compliance with IFC PS 8 during ongoing engagements with Khoi San people in the project area of influence	SEP (Section 7.4)
			Ensure compliance with IFC PS 2 (Labour and Working Conditions) and the relevant ILO conventions where indigenous people are recruited and employed in any component of the project.	Labour Management Plan (Section 7.4)
			Create cultural awareness among contactors' employees around the presence of Khoi San in the project area, since some of the workers might be migrant workers who are unfamiliar with the area, or who simply do not have any cultural awareness of the sensitivities around Khoi San peoples. This could be done through visual media and toolbox talks on site.	Labour Management Plan (Section 7.4)
			Ensure that honey collection sites are not destroyed, disturbed, or access thereto denied during construction activities	EHS Training and Awareness Plan (Section 7.4)
Employment (Refer to Volume 1, Section 6.5.1, Tables 6.48 to 6.51)	SE3.1 - Improved household incomes and livelihoods as a result of temporary employment opportunities (construction phase)	• Promote Local Employment and Inclusivity • Enhance Community Awareness and Education • Ensure Fair Recruitment Processes	Where local skill sets are available, the project should aim to employ these persons as far as practicable. Skills databases can be obtained from local municipal administrations.	Labour Management Plan (Section 7.4)
			Include financial literacy awareness and education in toolbox talks, inductions, and other passive awareness media such as posters in dining and ablution areas.	EHS Training and Awareness Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
		• Support Local Infrastructure and Services • Address Health and Social Impacts • Ensure Compliance and Monitor Workplace Conditions	Ensure that the main construction contractor has a preferential recruitment policy in place that requires a certain number of local employees from within all six affected municipalities, not just the three beneficiary municipalities.	Labour Management Plan (Section 7.4)
			Establish a mobile labour desk prior to the construction phase, so that potential workers residing in the villages, and not just the municipal urban centres, also get a fair chance to apply through a single channel.	Labour Management Plan (Section 7.4)
			Awareness raising of application opportunities should be done beforehand with the support of local municipal administrators and sobas to ensure that applicants can prepare the relevant documents	EHS Training and Awareness Plan (Section 7.4)
	SE3.2 - Increased gender marginalisation and vulnerability as a result of temporary employment opportunities (construction phase)		Where possible, designate employment opportunities for women and disabled persons employees from within all six affected municipalities, not just the three beneficiary municipalities.	Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)
			Where local skill sets are available, the project should aim to employ these persons as far as practicable. Skills databases can be obtained from local municipal administrations.	Labour Management Plan (Section 7.4)
			Ensure compliance with IFC PS 2 (Labour and Working Conditions) and the relevant ILO conventions where women, disabled, and migrant (internally displaced) workers are recruited and employed in any component of the project.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Create awareness among contactors' employees on the importance of inclusivity and non-discrimination in the workplace. This could be done through visual media and toolbox talks on site, and other passive awareness media such as posters in dining and ablution areas.	Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)
			Establish a mobile labour desk prior to the construction phase, so that potential workers residing in the villages, and not just the municipal urban centres, can all get a fair chance to apply through a single channel.	Labour Management Plan (Section 7.4)
			Awareness raising of application opportunities should be done beforehand with the support of local municipal administrators and sobas to ensure that applicants can prepare the relevant documents. Capacity building with municipal administrators and sobas on the importance of inclusivity and non-discrimination might be necessary to ensure true support.	EHS Training and Awareness Plan (Section 7.4)
			Ensure that, when any engagements related to employment opportunities and financial management take place, all adult members of the household are present. Females might be preparing agricultural fields, harvesting, collecting water, washing clothes, or bathing during normal working hours when these engagements are conducted.	SEP (Section 7.4)
			Any wage payments should be provided along with relevant education on financial literacy and responsible spending.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used in workplaces, awareness and education sessions on inclusion and financial literacy. Communicating in Umbundu and Nganguela is very important to ensure that women who do not understand Portuguese know their rights as employees	SEP (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
	SE3.3 - Increase in social pathologies as a result of migrant worker influx and increased spending power (construction phase)		Where there is increased pressure on local municipal infrastructure as a result of migrant workers, provide support where possible. This could include promoting STI prevention programmes and providing support to local clinics for family planning and reproductive health services, especially for women, youth and mobile workers through mobile clinics or partnerships with multistakeholder forums.	Labour Management Plan (Section 7.4)
			Where local skill sets are available, the project should aim to employ these persons as far as practicable. Skills databases can be obtained from local municipal administrations.	Labour Management Plan (Section 7.4)
			Include sexual health awareness and education in toolbox talks, inductions, and other passive awareness media such as posters in dining and ablution areas. Provide condoms in ablution areas if culturally appropriate.	OHS Management Plan (Section 7.4)
			Ensure that adequate insurance policies are in place.	Contractors' Management Plan (Section 7.4)
			It might be useful to create awareness around these same issues in the villages and towns affected (especially among young and adolescent women) by the project to abate the impacts of	EHS Training and Awareness Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			unplanned pregnancies due to the influx of construction workers.	
			Khoi San women might also be affected by unplanned pregnancies. These issues are to be addressed in focused engagements with these groups.	EHS Training and Awareness Plan (Section 7.4)
			Ensure that the main construction contractor has a preferential recruitment policy in place that requires a certain number of local employees from within all six affected municipalities, not just the three beneficiary municipalities.	Labour Management Plan (Section 7.4)
			Establish a mobile labour desk prior to the construction phase, so that job seekers are provided with an opportunity to apply without needing to travel to the construction sites when it is already too late.	Labour Management Plan (Section 7.4)
			Awareness raising of application opportunities should be done beforehand with the support of local municipal administrators and sobas to ensure that PACs are aware of the limitations to the numbers of potential employment opportunities.	EHS Training and Awareness Plan (Section 7.4)
			Publicise the required qualifications, years of experience, and professional certifications/registrations required for any positions that might be available.	Labour Management Plan (Section 7.4)
			• Compile influx management plan to manage construction impacts and economic downturn once construction stops to: – Promote economic growth; – Plan access routes and control, material transportation, worker	SEP, Traffic and Transportation Management Plan, CHSS Management Plan, Security Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			transportation, and worker housing (if applicable); – Collaborate with multi-stakeholder forums to build capacity and manage resource allocation; – Assist PAPs to access banking services, micro-finance or enterprise development initiatives; and – Strengthen capacity of local security, governance, spatial planning, housing, water and sanitation proportionate to project impacts.	
			• Collect specific data on the following aspects prior to finalisation of detailed management plans: – Traffic incidents and accidents within the Project's direct Area of Influence. To be collected as part of the development of the Construction Traffic Management Plan; and – Crime incidents within the Project's direct Area of Influence. To be collected as part of the development of the Security Management Plan, or the Gender-Based Violence and Harassment (GBVH) Prevention and Response Plan.	Traffic and Transportation Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)
	SE3.4 - Increase in the local economy as a result of increased income and spending by temporary workers/contractors (construction phase)		Where local small, medium and micro enterprises (SMMEs) are available, the project should aim to make use of their products or services where possible. SMME databases might be available from local municipal administrations.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Where local SMMEs are supported, ensure that it does not cause division between those with whom the contractor does business and those with whom it does not.	Labour Management Plan (Section 7.4)
Health, safety and security (Refer to Volume 1, Section 6.5.1, Tables 6.52 to 6.58)	SE4.1 - Increased safety hazards, traffic and accidents to community members, Khoi San, and livestock due to unfenced project infrastructure, unsafe access routes or speeding heavy vehicles (construction phase)	• Enhance Community Health, Safety, and Security • Manage Traffic and Safety • Ensure Security and Compliance • Engage and Educate Stakeholders	Ensure that the CHSS plan included in contract documents of the main contractor and that it is implemented.	CHSS Management Plan (Section 7.4)
			Continually conduct risk assessments and comply with the relevant Health and Safety measures to ensure that the site and any hazards are access-controlled and isolated.	OHS Management Plan (Section 7.4)
			Require contractor personnel to drive at appropriate speed limits and enforce this where possible.	Traffic and Transportation Management Plan (Section 7.4)
			Include community safety in inductions and toolbox talks, along with the usual OHS measures.	OHS Management Plan (Section 7.4)
			Consult the relevant municipal or provincial traffic administrations for the relevant support e.g. place speed limit signage and limit road access.	Traffic and Transportation Management Plan (Section 7.4)
			The contractor must publicise, implement and evaluate a grievance mechanism so that PAPs who are affected by construction activities (e.g. loss of livestock due to a speeding truck) can report incidents. The grievance mechanism allows the grievance to be investigated and closed out timeously in a systematic and proactive way. This will also help to identify trends of areas that need improvement.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			The grievance mechanism must be accessible by all PAC members, including vulnerable groups such as the	SEP (Section 7.4), Grievance Mechanism (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			elderly, illiterate, disabled, Khoi San, and women. PAC members must be able to raise grievances through a variety of platforms to ensure that it is widely accessible, but all grievances must be recorded by the Community Liaison Officer (CLO) or similar role player. This might include visits to the villages to hear and record any complaints or grievances. As explained in the SEP and grievance mechanism that has been prepared as part of this Project's ESIA, concerns should be proactively addressed before they turn into grievances.	
	SE4.2 - Safety hazards, traffic and accidents to people and livestock (construction phase)		Consider including participatory monitoring by the community members if anything out of place is observed along the powerlines.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness and education of the physical project components. This could include awareness posters or other print media, or community meetings with presentations on the safety of non-ionising radiation emitted by substations in the form of Extremely Low Frequency electromagnetic radiation.	SEP (Section 7.4)
			The operators of the transmission and distribution lines must publicise, implement and evaluate a grievance mechanism so that PAPs who are located close to the transmission and distribution lines and substations can report incidents. The grievance mechanism allows the grievance to be investigated and closed out timeously in a systematic and proactive way. This will	SEP (Section 7.4), Grievance Mechanism (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			also help to identify trends of areas that need improvement.	
	SE4.3 - Nuisance impacts due to air, water and noise pollution (construction phase)		All mitigation and monitoring measures in the Air Quality, Noise, and Hydrology Impact Assessments must be taken into consideration by the contractor, along with the ESMP.	As per Air Quality, Noise and Surface Water impacts
			Highlight potential nuisance impacts during the stakeholder engagements to ensure that there is awareness and understanding of the temporary nature of the impacts among the PACs.	SEP (Section 7.4)
			The contractor must publicise, implement and evaluate a grievance mechanism so that PAPs who are affected by construction activities (e.g., excessive noise and dust after hours) can report incidents. The grievance mechanism allows the grievance to be investigated and closed out timeously in a systematic and proactive way. This will also help to identify trends of areas that need improvement.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
	SE4.4 - Increased crime and vulnerability of villagers due to harassment or tension between construction and security workers, and community members (construction phase)		Communicate the IFC-compliant grievance mechanism in the PACs	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Ensure that agreements with the appointed security company include the following: • When hiring security personnel, a reasonable effort must have been made to screen them for past abuses; • Security personnel need to be properly trained in the use of force and, most importantly, appropriate conduct towards villagers;	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			• Severe penalties/disciplinary action should be taken against any security personnel involved in theft or abuse; • A code of conduct must be developed and enforced for the security personnel; and • The code of conduct must be consistent with the UN Code of Conduct for Law Enforcement Officials, the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, and the VPSHR.	
			All workers are to be informed about the roles and responsibilities of the security personnel.	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4)
			Ensure that the CHSS plan is included in contract documents of the main contractor and implemented by them and transmission and distribution line operators, including the GBVH Prevention and Response Plan.	Contractor Management Plan (Section 7.4)
	SE4.5 - Increased vulnerability of artisanal miners due to abuse by security, law enforcement and/or local police (construction/operation phase)		Communicate the IFC-compliant grievance mechanism in the PACs.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Ensure that agreements with the appointed security company include the following: a) When hiring security personnel, a reasonable effort must have been made to screen them for past abuses b) Security personnel need to be properly trained in the use of force and, most importantly, appropriate conduct towards villagers c) Severe penalties/disciplinary action should be taken against any security personnel involved in theft or abuse	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			d) A code of conduct must be developed and enforced for the security personnel e) The code of conduct must be consistent with the UN Code of Conduct for Law Enforcement Officials, the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, and the VPSHR	
			All workers are to be informed about the roles and responsibilities of the security personnel.	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4)
			Liaise with local law enforcement, police and/or other security entities on their strategies for managing ASM activities in the area.	SEP (Section 7.4), Security Management Plan (Section 7.4)
			Provide employment opportunities for unskilled labour from the PACs as far as possible.	Labour Management Plan (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness of the land that is in RNT's possession and that will be used for the transmission line (or ENDE's land for the distribution network).	SEP (Section 7.4)
			Provide employment opportunities for unskilled labour from the PACs as far as possible.	Labour Management Plan (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness of the land that is in RNT's possession and that will be used for the transmission line (or ENDE's land for the distribution network).	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	SE4.6 - Improved community safety after removal of UXOs from project construction footprint (pre-construction)		Ensure that all relevant safety measures are implemented before conducting removals / deactivations to ensure safety of personnel involved.	CHSS Management Plan (Section 7.4), OHS Management Plan (Section 7.4)
			Inform community members or local authorities timeously about planned UXO removal or deactivation processes.	SEP (Section 7.4)
	SE4.7 - Safety risk to community and personnel during removal of UXOs in project footprint (pre-construction)		Ensure that all relevant safety measures are implemented before conducting removals / deactivations to ensure safety of personnel involved.	CHSS Management Plan (Section 7.4), OHS Management Plan (Section 7.4)
			Inform community members or local authorities timeously about planned UXO removal or deactivation processes.	SEP (Section 7.4)
	SE4.8: Unfair distribution of electricity (operation phase)		Publicise intended connections well ahead of time.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Consult stakeholders on preferred, most communally beneficial connections. If possible, prioritise connections for public lighting that would increase safety, public services such as clinics, or business centres that would allow various persons to benefit from a single connection.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Provide regular feedback on when connections are planned for implementation.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Communicate the IFC-compliant grievance mechanism in the PACs.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			The long-term functioning and maintenance of the powerlines and substations must be sustained to ensure that it benefits the PACs permanently.	Maintenance Management Plan
			Expansions from the newly constructed transmission line (after this Project) would further increase the geographical	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			reach of the benefits associated with electricity availability.	
			The potential to include remote groups such as the settled San families should also be considered in long-term strategic planning for the expansion of the transmission network.	SEP (Section 7.4), Cultural Heritage Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
	SE4.9: Perceived preferential project benefits (construction phase)		Communicate the IFC-compliant grievance mechanism in the PACs.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Where local small, medium and micro enterprises (SMMEs) are available, the project should aim to make use of their products or services where possible. SMME databases might be available from local municipal administrations.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Where local SMMEs are supported, ensure that it does not cause division between those with whom the contractor does business and those with whom it does not.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Ensure that the main construction contractor has a preferential recruitment policy in place that requires a certain number of local employees from within all six affected municipalities, not just the three beneficiary municipalities.	SEP (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Where possible, designate employment opportunities for women and disabled persons employees from within all six affected municipalities, not just the three beneficiary municipalities.	SEP (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Where local skill sets are available, the Project should aim to employ these persons as far as practicable. Skills databases can be obtained from local municipal administrations.	SEP (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Establish a mobile labour desk prior to the construction phase, so that potential workers residing in the villages, and not just the municipal urban centres, can all get a fair chance to apply through a single channel.	SEP (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Awareness raising of application opportunities should be done beforehand with the support of local municipal administrators and *sobas* to ensure that applicants can prepare the relevant documents. Capacity building with municipal administrators and *sobas* on the importance of inclusivity and non-discrimination might be necessary to ensure true support.	SEP (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Ensure that, when any engagements related to employment opportunities and financial management take place, all adult members of the household are present. Females might be preparing agricultural fields, harvesting, collecting water, washing clothes, or bathing during normal working hours when these engagements are conducted.	SEP (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)
			Any wage payments should be provided along with relevant education on financial literacy and responsible spending.	LARF, GBVH Prevention and Response Plan (Section 7.4)
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used in workplaces, awareness and education sessions on inclusion and financial literacy. Communicating in Umbundu and Nganguela is very important to ensure that women who do not understand Portuguese know their rights as employees.	SEP (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	SE4.10: ASM restrictions and consequent safety risks (construction phase)		Communicate the IFC-compliant grievance mechanism in the PACs.	SEP (Section 7.4)
			Ensure that agreements with the appointed security company include the following, and that local law enforcement are aligned with the following: a) When hiring security personnel, a reasonable effort must have been made to screen them for past abuses; b) Security personnel need to be properly trained in the use of force and, most importantly, appropriate conduct towards villagers; c) Severe penalties/disciplinary action should be taken against any security personnel involved in theft or abuse; d) A code of conduct must be developed and enforced for the security personnel; and e) The code of conduct must be consistent with the UN Code of Conduct for Law Enforcement Officials, the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, and VPSHR.	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			All workers are to be informed about the roles and responsibilities of the security personnel.	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Liaise with local law enforcement, police and/or other security entities on their strategies for managing ASM activities in the area.	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Provide employment opportunities for unskilled labour from the PACs as far as possible.	SEP (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness of the land that is in RNT's possession and that will be used for the transmission line (or ENDE's land for the distribution network) to discourage ASM.	SEP (Section 7.4), CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4)
			Ensure that the CHSS plan is included in contract documents of the main contractor and implemented by them and the transmission and distribution line operators.	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4)
	SE4.11: Restriction of traditional agricultural practices (construction and operation phases)		Communicate the IFC-compliant grievance mechanism in the PACs.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Implement an IFC-compliant RAP/LRP. The process should not only meet national standards, but also comply with GIIP, such as IFC PS5 if economic displacement is caused by the project.	LARF
			Provide alternative land or resources (e.g. water) if access is restricted.	Contractor's Management Plan (Section 7.4), Cultural Heritage Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			If replacement land and livelihood restoration support are provided, the land should be of better quality and potential assistance or support for agricultural resources provided. PAPs/PAHs should be upskilled on alternative farming methods if current practices such as soil burning cause safety risks to the project.	LARF, Biodiversity Action Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Any livelihood restoration and transitional support must be accompanied by education and awareness raising on responsible and sustainable farming practices. There might be other cost-effective, waterwise and sustainable farming practices based on new technologies or research.	LARF, Biodiversity Action Plan
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used in awareness and education sessions on sustainable farming and financial literacy as part of transitional support and livelihood restoration. Communicating in Umbundu and Nganguela is very important to ensure that women and the elderly (who are identified as vulnerable groups in this Project) who do not understand Portuguese are also empowered to undertake sustainable farming.	SEP (Section 7.4), Biodiversity Action Plan
Socio-economic development (Refer to Volume 1, Section 6.5.1, Tables 6.59 to 6.60)	SE5.1 - Improved access to electricity due to presence of transmission and distribution lines (operation phase)	• Sustain Long-Term Functioning and Maintenance • Maximise Geographical Reach of Benefits • Manage Project Expectations • Maintain Healthy Relationships with Stakeholders • Maintain Social Licence to Operate • Create Environment for IPs to Meaningfully Participate in and Benefit from Project	The long-term functioning and maintenance of the powerlines and substations must be sustained to ensure that it benefits the PACs permanently.	Maintenance Management Plan
			Shortly before the connections through the distribution network are implemented in the different beneficiary areas, create awareness on using electricity efficiently to ensure that the project remains cost-effective and that the demand does not exceed the available supply.	SEP (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
	SE5.2: Downstream economic development (operation phase)		The long-term functioning and maintenance of the powerlines and substations must be sustained to ensure that it benefits the PACs permanently.	SEP (Section 7.4), Maintenance Management Plan (Section 7.4)
			Expansions from the newly constructed transmission line (after this Project)	

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			would further increase the geographical reach of the benefits associated with electricity availability.	
			Shortly before the connections through the distribution network are implemented in the different beneficiary areas, create awareness on using electricity efficiently to ensure that the Project remains cost-effective and that the demand does not exceed the available supply.	
			Ensure that ongoing stakeholder engagement takes place to mitigate potential dissatisfaction caused by unfulfilled expectations about long-term benefits and opportunities from the operation of the project.	
	SE5.3: Dissatisfaction due to unfulfilled expectations (construction and operation phases)		Implement SEP developed for this project, noting the importance of engaging at different project stages, especially prior to and during construction to ensure expectations are adequately managed.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Publicise the grievance mechanism through appropriate forums at local level.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Ensure that PAPs receive fair or better compensation and livelihood restoration;	SEP (Section 7.4), LARF, Grievance Mechanism (Section 7.4)
			Ensure adequate resourcing for stakeholder engagement by implementer.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Create awareness of the project, the difference between transmission and distribution of electricity and how the nature of the project allows for limited work and enterprise development opportunities.	SEP (Section 7.4), CHSS Management Plan (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Maintain ongoing stakeholder engagements as new stakeholders (such as job-seekers) might come to the areas affected by construction over time.	SEP (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Encourage and implement a policy of preferential procurement and employment from nearby communities and towns.	SEP (Section 7.4), Contractors' Management Plan (Section 7.4), Labour Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Communicate the planned electrical connections in the AoI.	SEP (Section 7.4)
			Connections should be implemented systematically and to the appropriate specifications.	SEP (Section 7.4), Maintenance Management Plan
	SE5.4: Opportunity for economic participation by Indigenous Peoples (construction and operation phase)		Any assistance that is provided to local communities should not be assumed to also benefit the San groups, as they face widespread discrimination and exclusion. Any such benefits should be provided in a separate forum (e.g., mobile) and in a location that is distant from other communities.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Where employment opportunities are advertised, especially local employment of unskilled labour, care should be taken not to discriminate against San applicants. Consider informing San people of potential temporary employment opportunities in a separate forum as above and in the !Kung language spoken by them.	SEP (Section 7.4), Contractor Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Where San applicants are successful in obtaining even temporary employment, the occurrence of workplace discrimination, harassment and bullying should be monitored closely.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			When establishing which households receive electricity connections as a result of this project, care should be taken to connect San households as well.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Ensure compliance with IFC PS 8 during ongoing engagements with San people in the project area of influence.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Ensure compliance with IFC PS 2 (Labour and Working Conditions) and the relevant ILO conventions where San people are recruited and employed in any component of the project.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Create cultural awareness among contactors' employees around the presence of Khoi San in the project area, since some of the workers might be migrant workers who are unfamiliar with the area, or who simply do not have any cultural awareness of the sensitivities around Khoi San peoples. This could be done through visual media and toolbox talks on site.	SEP (Section 7.4), Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4), Grievance Mechanism (Section 7.4)
			Liaise with the local municipal administration of Cuvango on the engagement structures to be followed if any consultations are required with San people, since it cannot be assumed that San people will attend or have access to such awareness-raising. They must be consulted separately as they might not feel comfortable joining a "normal" community meeting, might not understand the language used, and might be nomadic.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Visuals and simple text in !Kung should be used in any engagements with IPs.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
Cultural heritage (Refer to Volume 1, Section 6.5.2, Tables 6.61 to 6.62)	CH1 - Impact of the project on recorded cemeteries/ burial sites (construction/operation phase)	• Conduct Heritage Surveys and Monitoring • Implement Chance Find Procedures • Avoid and Manage Known Heritage Features	Pre-construction heritage survey of the final route alignment specifically in areas of land-clearing, excavation and construction activities	Cultural Heritage Management Plan
			Monitoring of heritage features during construction and routine monitoring of demining and land-clearing activities	Cultural Heritage Management Plan
			Implementation of a chance find procedure	Cultural Heritage Management Plan (including Chance Find Procedure) (Section 7.4)
			Avoidance and management of known features, recorded sites should be avoided by all stringing activities	Cultural Heritage Management Plan
			Development of a heritage site development plan that address access protocols for safe access to burial sites	Cultural Heritage Management Plan
			Contractors, Subcontractors, and employees should be sensitised to the procedures that must be followed in case of a discovery and the potential presence of archaeological resources that may be discovered during land-clearance and mechanical excavation activities	Cultural Heritage Management Plan
	CH2 - Impact of the project on places of worship/ sacred sites and monuments (operation phase)		Measures relating to impact CH1 also applicable – i.e., Impact of the project on recorded cemeteries/ burial sites during construction and operation.	As per impact CH1
	CH3 - Impact of the project on heritage resources (operation phase)		As above.	As above

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	CH4 - Impact of the project on recorded cemeteries/ burial sites (operation phase)		As above.	As above
	CH5 - Impact of the project on places of worship/ sacred sites and monuments (operation phase)		As above.	As above
	CH6 - Impact of the project on heritage resources (operation phase)		As above.	As above
Community members' human rights (Refer to Volume 1, Section 6.5.3, Tables 6.66 to 6.72)	HR1.1 - Land and ecosystem service use (pre-construction/construction phase)	• Implement and Monitor Resettlement Plans • Engage and Support Communities • Establish Effective Grievance Mechanisms	Ensure the project design is adapted to avoid any impacts on farming or grazing land.	Erosion and Soil Management Plan
			If avoidance is not possible, provide alternative land of the same or better carrying capacity and at the same travelling distance as the affected land.	LARF (Section 8), RAP
			If land is not available and cash compensation is preferred, this can also be considered, however, it needs to be implemented together with the necessary livelihood restoration measures since the PAP's livelihood might not change from traditional practices e.g. subsistence farming to another income-generating opportunity if they cannot find land elsewhere;	LARF (Section 8), RAP
			Compile and implement an International Finance Corporation Performance Standard (IFC PS) 1-compliant SEP, including a grievance mechanism.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Compile and implement an IFC PS5-compliant LARF.	LARF (Section 8)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Compiling an IFC-compliant RAP and LRP for any physical or economic displacement as determined after the implementation of the LARF.	LARF (Section 8), RAP
			Any farmland that is impacted by construction activities must be rehabilitated to the pre-construction condition or better. If this is not possible, replacement land must be provided to the affected farmers.	Rehabilitation and Revegetation Management Plan
			Determine if any of the existing agricultural projects, institutes or facilities, such as the PEDR, CarrinhoAgri (run by Grupo Carrinho Comercio Lda), Agricarrinho in the ECAs, CartAgri, MOSAP II, IDA, EDAs, agricultural cooperatives and associations, could be leveraged during the construction period, when the highest land-based impact is expected.	SEP (Section 7.4)
			Construction activities should be limited to demarcated areas and avoid farming or grazing land used by local communities	Erosion and Soil Management Plan
			Note that such land might not be very close to villages using it and it might not be apparent that it is used for grazing. This should be determined before site establishment	Erosion and Soil Management Plan
			Any impacts resulting from construction activities on farmland and resources, such as soil compaction due to vehicle traffic, hydrocarbon spills and water contamination, should be rehabilitated or cleared immediately after occurrence.	Rehabilitation and Revegetation Management Plan, EPRP (including Oil Spill Response) (Section 7.4)
			Consultation with sobas (local community/village traditional authority) and local municipal administrations will	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			be important to ensure that farmland is identified and avoided prior to site establishment.	
			Liaise with local law enforcement, police and/or other security entities on their strategies for managing ASM activities in the area.	SEP (Section 7.4), Security Management Plan (Section 7.4)
			Provide employment opportunities for unskilled labour from the PACs as far as possible.	Labour Management Plan (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness of the land that is in RNT's possession and that will be used for the transmission line (or ENDE's land for the distribution network)	SEP (Section 7.4)
			Establish and monitor conservation corridors	Biodiversity Action Plan (Section 7.4)
			Establish safe access routes to natural resource-use areas.	CHSS Management Plan (Section 7.4)
			All site establishment and vegetation clearing activities should be preceded by an opportunity given to villagers to harvest natural resources or materials they could use.	SEP (Section 7.4)
			No recreational hunting or fishing should take place by construction workers on- or off-duty.	Biodiversity Action Plan (Section 7.4)
			Vegetation clearing should be limited to the absolute minimum	Biodiversity Action Plan (Section 7.4)
			Hydrocarbon spills should be prevented as prescribed in the project ESMP.	Pollution Prevention and Abatement Management Plan
			Any construction activities should be restricted to the established and demarcated construction sites.	Stormwater Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Any construction activities should be restricted to the established and demarcated construction sites.	Traffic and Transportation Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Vehicle movement should be restricted to existing roads.	Vegetation and Land Clearance Management Plan
			Locations of medicinal plants should be identified prior to site establishment to ensure that they can be avoided or replanted	Biodiversity Action Plan (Section 7.4)
	HR1.2 - Unjust process and modality of land acquisition (pre-construction/construction phase)		Compile and implement an IFC-compliant LARF. The process should not only meet national standards, but also comply with GIIP, such as IFC PS5. If economic displacement is found to be unavoidable, compile and implement an IFC-compliant LRP.	LARF (Section 8), RAP
			Externally monitor the valuation and compensation process undertaken to determine which plots are affected and what kind of compensation is provided, especially if undertaken by government agents. This will ensure that current valuations are used (taking inflation into account if the latest published guidelines are pre-2024 or whichever year the compensation will take place)	LARF (Section 8), RAP
			Repeated planting of the same crops and decreasing rainfall are believed by local farmers to be the leading causes of the deterioration of fertile soil. If replacement land and livelihood restoration support are provided, the land should be of better quality and potential assistance or support for agricultural resources provided. PAPs/PAHs would then have access to resources that they normally do not,	LARF (Section 8), RAP

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			such as expensive fertiliser and other crop types or seeds to do rotational farming	
			Any livelihood restoration and transitional support must be accompanied by education and awareness raising on responsible and sustainable farming practices. There might be other cost-effective, waterwise and sustainable farming practices based on new technologies or research.	LARF (Section 8), RAP, EHS Training and Awareness Plan (Section 7.4)
			Any cash compensation should be provided along with relevant education on financial literacy and responsible spending.	LARF (Section 8), RAP
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used in awareness and education sessions on sustainable farming and financial literacy as part of transitional support and livelihood restoration. Communicating in Umbundu and Nganguela is very important to ensure that women and the elderly (who are identified as vulnerable groups in this project) who do not understand Portuguese are also empowered to undertake sustainable farming.	SEP (Section 7.4)
			Avoid any form of physical displacement, resettlement, or relocation. If it can absolutely not be avoided, it should be limited as far as possible and mitigated proportionally.	LARF (Section 8), RAP
			Compile and implement an IFC-compliant LARF. The process should not only meet national standards, but also comply with GIIP, such as IFC PS5. If physical displacement is found to be	LARF (Section 8), RAP

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			unavoidable. Compile and implement an IFC-compliant RAP and LRP	
			Externally monitor the valuation and compensation process undertaken to determine which households and their structures (as well as communally owned and used structures such as mills) are affected and what kind of compensation is provided, especially if undertaken by government agents. This will ensure that current valuations are used (taking inflation into account if the latest published guidelines are pre-2024 or whichever year the compensation will take place).	LARF (Section 8), RAP
			Externally monitor the physical relocation process to ensure that GIIP, IFC PS5, and RAP requirements are adequately implemented and periodically reviewed.	LARF (Section 8), RAP
			Any changes to residential locations should be accompanied by security of tenure.	LARF (Section 8), RAP
			The necessary support should be provided to the vulnerable elderly and disabled during any movements to new replacement houses or locations. This includes not only physical transportation of them and their possessions, but also assistance with construction or souring of replacement housing	LARF (Section 8), RAP
			Counselling and training on house maintenance and the management of household budgets should be provided.	LARF (Section 8), RAP
	HR1.3 - Unjust labour practices and marginalisation in the community (construction phase)		Where local skill sets are available, the project should aim to employ these persons as far as practicable. Skills databases can be obtained from local municipal administrations.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Include financial literacy awareness and education in toolbox talks, inductions, and other passive awareness media such as posters in dining and ablution areas.	EHS Training and Awareness Plan (Section 7.4)
			Ensure that the main construction contractor has a preferential recruitment policy in place that requires a certain number of local employees from within all six affected municipalities, not just the three beneficiary municipalities.	Labour Management Plan (Section 7.4)
			Establish a mobile labour desk prior to the construction phase, so that potential workers residing in the villages, and not just the municipal urban centres, also get a fair chance to apply through a single channel.	Labour Management Plan (Section 7.4)
			Awareness raising of application opportunities should be done beforehand with the support of local municipal administrators and sobas to ensure that applicants can prepare the relevant documents.	Labour Management Plan (Section 7.4)
			Where possible, designate employment opportunities for women and disabled persons employees from within all six affected municipalities, not just the three beneficiary municipalities.	Labour Management Plan (Section 7.4)
			Ensure compliance with IFC PS 2 (Labour and Working Conditions) and the relevant ILO conventions where women, disabled, and migrant (internally displaced) workers are recruited and employed in any component of the project.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Create awareness among contactors' employees on the importance of inclusivity and non-discrimination in the workplace. This could be done through visual media and toolbox talks on site, and other passive awareness media such as posters in dining and ablution areas	Labour Management Plan (Section 7.4)
			Establish a mobile labour desk prior to the construction phase, so that potential workers residing in the villages, and not just the municipal urban centres, can all get a fair chance to apply through a single channel.	Labour Management Plan (Section 7.4)
			Awareness raising of application opportunities should be done beforehand with the support of local municipal administrators and sobas to ensure that applicants can prepare the relevant documents. Capacity building with municipal administrators and sobas on the importance of inclusivity and non-discrimination might be necessary to ensure true support.	Labour Management Plan (Section 7.4)
			Ensure that, when any engagements related to employment opportunities and financial management take place, all adult members of the household are present. Females might be preparing agricultural fields, harvesting, collecting water, washing clothes, or bathing during normal working hours when these engagements are conducted.	SEP (Section 7.4)
			Any wage payments should be provided along with relevant education on financial literacy and responsible spending.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used in workplaces, awareness and education sessions on inclusion and financial literacy. Communicating in Umbundu and Nganguela is very important to ensure that women who do not understand Portuguese know their rights as employees.	SEP (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
	HR1.4 - CHSS impacts (construction phase)		Consult with government and other companies about the best platforms and initiatives to discuss and contribute to mitigation of the adverse impacts of influx.	SEP (Section 7.4), Labour Management Plan (Section 7.4)
			Develop a local employment strategy and work with contractors and suppliers to ensure its effective implementation.	Labour Management Plan (Section 7.4)
			Carefully manage the implementation and communication about jobs and procurement opportunities with the support of local leadership to minimise risks of conflict and manage expectations.	Labour Management Plan (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness of the land that is in RNT's possession and that will be used for the transmission line (or ENDE's land for the distribution network).	SEP (Section 7.4)
			Construction and no-entry areas should be clearly marked prior to site establishment and maintained once substations are constructed, to ensure that no unauthorised entry takes place which can lead to safety risks.	OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Construct new roads which could be used safely by villagers (i.e., with fenced walking side paths) outside of any buffer areas required by the biodiversity-related mitigation measures.	CHSS Management Plan (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness and education of the physical project components. This could include awareness posters or other print media, or community meetings with presentations on the safety of non-ionising radiation emitted by substations in the form of Extremely Low Frequency electromagnetic radiation.	SEP (Section 7.4)
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used, the former language being very important to ensure that women and the elderly (who are identified as vulnerable groups in this project) who do not understand Portuguese are also equally informed.	SEP (Section 7.4)
			Ensure that the siting of the substations is as far as possible and within the land in RNT's possession, from established villages and community activities such as agriculture.	CHSS Management Plan (Section 7.4)
			Ensure that the CHSS plan included in contract documents of the main contractor and that it is implemented.	CHSS Management Plan (Section 7.4)
			Continually conduct risk assessments and comply with the relevant H&S measures to ensure that the site and any hazards are access-controlled and isolated.	OHS Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Require contractor personnel to drive at appropriate speed limits and enforce this where possible.	Traffic and Transportation Management Plan (Section 7.4)
			Include community safety in inductions and toolbox talks, along with the usual OHS measures.	OHS Management Plan (Section 7.4)
			Consult the relevant municipal or provincial traffic administrations for the relevant support e.g. place speed limit signage and limit road access.	Traffic and Transportation Management Plan (Section 7.4)
			The contractor must publicise, implement and evaluate a grievance mechanism so that PAPs who are affected by construction activities (e.g. loss of livestock due to a speeding truck) can report incidents. The grievance mechanism allows the grievance to be investigated and closed out timeously in a systematic and proactive way. This will also help to identify trends of areas that need improvement.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			The grievance mechanism must be accessible by all PAC members, including vulnerable groups such as the elderly, illiterate, disabled, and women. PAC members must be able to raise grievances through a variety of platforms to ensure that it is widely accessible, but all grievances must be recorded by the CLO or similar role player. This might include visits to the villages to hear and record any complaints or grievances. As explained in the SEP and grievance mechanism that has been prepared as part of this project's ESIA, complaints might be cleared up before they turn into grievances if managed proactively.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			All mitigation and monitoring measures in the Air Quality, Noise, and Hydrology Impact Assessments must be taken into consideration by the contractor, along with the ESMP	As per Air Quality, Noise and Surface Water impacts
			Highlight potential nuisance impacts during the stakeholder engagements to ensure that there is awareness and understanding of the temporary nature of the impacts among the PACs.	SEP (Section 7.4)
	HR1.5 - CHSS impact (operation phase)		Ensure that the CHSS plan is implemented by the transmission and distribution line operators.	CHSS Management Plan (Section 7.4)
			Continually conduct risk assessments and comply with the relevant H&S measures to ensure that the site and any hazards are access-controlled and isolated when conducting maintenance activities;	OHS Management Plan (Section 7.4)
			Consult the relevant local municipal administrations when maintenance activities are being conducted.	SEP (Section 7.4)
			Consider including participatory monitoring by the community members if anything out of place is observed along the powerlines.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Conduct stakeholder engagement prior to site establishment to ensure that there is widespread awareness and education of the physical project components. This could include awareness posters or other print media, or community meetings with presentations on the safety of non-ionising radiation emitted by substations in the form of Extremely Low Frequency electromagnetic radiation;	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			The operators of the transmission and distribution lines must publicise, implement and evaluate a grievance mechanism so that PAPs who are located close to the transmission and distribution lines and substations can report incidents. The grievance mechanism allows the grievance to be investigated and closed out timeously in a systematic and proactive way. This will also help to identify trends of areas that need improvement;	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			The grievance mechanism must be accessible by all PAC members, including vulnerable groups such as the elderly, illiterate, disabled, and women. PAC members must be able to raise grievances through a variety of platforms to ensure that it is widely accessible, but all grievances must be recorded by a CLO or similar role player appointed by the operator of the transmission and distribution lines and substations. This might include visits to the villages to hear and record any complaints or grievances. As explained in the SEP and grievance mechanism that has been prepared as part of this project's ESIA, complaints might be cleared up before they turn into grievances if managed proactively;	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Visuals and simple text in Umbundu, Nganguela and Portuguese should be used, the former language being very important to ensure that women and the elderly (who are identified as vulnerable groups in this project) who do not understand Portuguese are also equally informed;	SEP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			No-entry areas should be clearly marked and maintained once substations are constructed, to ensure that no unauthorised entry takes place which can lead to safety risks;	OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)
			Construct new roads which could be used safely by villagers (i.e., with fenced walking side paths) outside of any buffer areas required by the biodiversity-related mitigation measures;	CHSS Management Plan (Section 7.4)
			Ensure that the siting of the substations is as far as possible and within the land in RNT's possession, from established villages and community activities such as agriculture;	CHSS Management Plan (Section 7.4)
			Continually conduct risk assessments and comply with the relevant H&S measures to ensure that the site and any hazards are access-controlled and isolated;	OHS Management Plan (Section 7.4)
			Require personnel to drive at appropriate speed limits and enforce this where possible;	Traffic and Transportation Management Plan (Section 7.4)
			Include community safety in employee training, along with the usual OHS measures;	OHS Management Plan (Section 7.4)
			Consult the relevant municipal or provincial traffic administrations for the relevant support e.g. place speed limit signage and limit road access; and	Traffic and Transportation Management Plan (Section 7.4)
			All long-term mitigation and monitoring measures in the Air Quality, Noise, and Hydrology Impact Assessments must be taken into consideration by the contractor, along with the ESMP.	As per Air Quality, Noise and Surface Water impacts

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	HR1.6 - Violations of rights to freedom of opinion, expression, association and assembly (all phases)		Ensure that agreements with the appointed security company include the following: • When hiring security personnel, a reasonable effort must have been made to screen them for past abuses • Security personnel need to be properly trained in the use of force and, most importantly, appropriate conduct towards villagers • Severe penalties/disciplinary action should be taken against any security personnel involved in theft or abuse • A code of conduct must be developed and enforced for the security personnel • The code of conduct must be consistent with the UN Code of Conduct for Law Enforcement Officials, the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, and the VPSHR • All workers are to be informed about the roles and responsibilities of the security personnel • A requirement to train security personnel on VPSHR and GBVH	CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)
	HR1.7 - Reduced access to information, consultation and participation (all phases)		Measures relating to impact HR1.6 also applicable – i.e., - Violations of rights to freedom of opinion, expression, association and assembly during all phases	As per impact HR1.6

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
Women's rights (Refer to Volume 1, Section 6.5.3, Tables 6.73 to 6.74)	HR2.1 - Discrimination against women in the workplace (all phases)	• Promote Non-Discrimination and Equal Opportunities • Develop Comprehensive Strategies for Women's Advancement • Enhance Educational and Training Opportunities	Create awareness about non-discrimination and more opportunities for women to be recruited and advance	Labour Management Plan (Section 7.4)
			For more serious risks or impacts related to harassment or GBV, implement an internal employee grievance mechanism, such as a hotline that can be used to report issues or incidents.	Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)
			Policies to address equality, opportunity, diversity and inclusion should be in place and implemented by both employers on this project, PAK Yatirim and RNT.	Labour Management Plan (Section 7.4)
			To enhance women's participation and advancement in the workforce there is a need for greater investment in educational opportunities for girls to increase the number of qualified female graduates entering the job market.	Labour Management Plan (Section 7.4)
			More specialised training opportunities could be provided for women already in the workforce to help them progress into supervisory and management positions.	Labour Management Plan (Section 7.4)
			Develop a comprehensive long-term strategy for the education, training, recruitment, and advancement of women in the workforce, and encourage contractors and suppliers to adopt similar strategies. Ensure that local employment initiatives include specific measures to target women in the community.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Prioritise non-discrimination and gender equality in ongoing engagement, monitoring, and auditing processes with contractors and suppliers.	Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)
			Ensure that those who manage the grievance mechanisms both internally and externally are prepared to receive complaints related to inappropriate behaviour, harassment or other gender-based issues.	Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)
	HR 2.2 - Reduced safety and access to resources (construction phase)		Create awareness about non-discrimination and more opportunities for women to be recruited and advance.	Labour Management Plan (Section 7.4)
			For more serious risks or impacts related to harassment or GBV, implement an internal employee grievance mechanism, such as a hotline that can be used to report issues or incidents.	Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4)
			Provide ongoing training on freedom from harassment and GBV for both employees and contractor workers, especially security personnel.	Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4), Security Management Plan (Section 7.4)
			Undertake ongoing stakeholder engagement with women in the community to manage potential impacts, increase their participation in the project (e.g. through participatory monitoring or any social investment projects), and ensure ongoing strengthening of accessibility and trust in the community grievance mechanism.	SEP (Section 7.4), Grievance Mechanism (Section 7.4)
			Ensure that those who manage the external grievance mechanism are prepared to receive complaints related to inappropriate behaviour, harassment or other gender-based issues associated	Labour Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4),

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			with the project such as construction workers and security forces.	Security Management Plan (Section 7.4)
Artisanal, small-scale mining (Refer to Volume 1, Section 6.5.3, Tables 6.75 to 6.77)	HR3.1 - Child Labour (all phases)	• Use Leverage to Prevent and Mitigate Child Labour and Unsafe Conditions • Enhance Security and Training Protocols • Work with ASM associations to improve safe working conditions • Engage and Educate Stakeholders	Under the UNGPs, the project is not required to provide for remediation of child labour impacts itself, but is expected to use its leverage to prevent and mitigate those impacts.	Labour Management Plan (Section 7.4)
			The project can contribute to a variety of initiatives to prevent, mitigate and remediate the impacts of child labour with the support of ASM associations and Civil Society Organizations (CSOs). This can include: • raising awareness about child labour, H&S in ASM • specific training and measures related to children's rights for security forces • supporting CSOs that provide shelter and education for orphans who could be involved in ASM activities • supporting CSOs that have initiatives to prevent and remediate child labour in ASM • supporting holiday programmes for school-children to keep them out of ASM activities during school holidays	SEP (Section 7.4), Security Management Plan (Section 7.4)
	HR3.2 - Inadequate OHS standards (all phases)		Under the UNGPs, the project is not required to provide for remediation of impacts related to unsafe and unhealthy working conditions itself, but is expected to use its leverage to prevent and mitigate those impacts.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			The project can contribute to a variety of initiatives to improve H&S awareness amongst the artisanal miners: • support CSOs that have initiatives to raise awareness and promote safe and healthy working conditions • support alternative livelihood projects for artisanal miners that would provide safer and healthier working conditions • work with ASM associations to improve the safe and healthy working conditions of their members, the use of PPE and access to medical services	SEP (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Implementing access restrictions could be viewed as an additional measure to prevent ASM activities within the project area. This step would help mitigate H&S risks that could arise if ASM were allowed unrestricted access.	CHSS Management Plan (Section 7.4)
			While the project could pursue the enhancement of H&S standards, there are notable limitations regarding the number of individuals that can be effectively reached. These constraints underscore the importance of establishing formalised ASM areas with access controls. Additionally, it is important to acknowledge that certain artisanal miners may be resistant to H&S measures due to various reasons, including hardened attitudes, fatalism, or desperation.	SEP (Section 7.4), CHSS Management Plan (Section 7.4)
	HR3.3 - Interactions with security forces (all phases)		For any private security forces hired: • Provide training on the use of force	CHSS Management Plan (Section 7.4), GBVH Prevention and Response Plan (Section 7.4), EHS Training and Awareness Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			• Implement reporting protocols for incidents involving the use of force • Conduct due diligence assessments of any prior human rights allegations • Provide training on interactions with children • Provide training on VPSHR and GBVH • Include relevant UNGP clauses in their contracts/agreements	(Section 7.4), Security Management Plan (Section 7.4)
			Provide first aid and medical attention to injured people	OHS Management Plan (Section 7.4)
			Involve community leaders (and artisanal miners if possible) in human rights training to ensure a comprehensive understanding of the importance and universality of human rights, thus promoting a level playing field	SEP (Section 7.4)
			Engage in discussions with relevant authorities regarding the regular rotation of public security forces to reduce opportunities for collusion. Such a rotational system would require the need for ongoing engagement and training on UNGP and security standards, protocols, and human rights expectations of the project with the relevant public security forces.	SEP (Section 7.4), CHSS Management Plan (Section 7.4), Security Management Plan (Section 7.4)
			Establish, join or support a working group on CHSS.	CHSS Management Plan (Section 7.4)
Worker rights (Refer to Volume 1, Section 6.5.3, Tables 6.78 to 6.83)	HR4.1 - Discrimination of PAK Yatirim, RNT, contractor and supplier workers (construction/operation phase)	• Support Workers' Rights and Fair Employment Practices • Prevent Forced Labour and Modern Slavery	Conduct due diligence on contractors and suppliers, including their subscription or acknowledgement of workers' rights aspects in their policies.	Labour Management Plan (Section 7.4)
			Include prohibitions on all forms of unfair or illegal discrimination based on race,	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
		• Combat Child Labour • Promote and Ensure Non-Discrimination and Inclusivity	nationality, religion, gender, age, sexual orientation, disability, ancestry, social origin, trade union membership, political belief or any other potential bias in contracts and agreements with contractors and suppliers.	
			Enterprise development programs could be done with local contractors where capacity can be built on non-discrimination.	Labour Management Plan (Section 7.4)
			Where possible, hire local contractors and suppliers.	Labour Management Plan (Section 7.4)
			Be mindful of appointing people and contractors that employ mostly women in “gendered” roles such as cleaning, and not in other activities of the project.	Labour Management Plan (Section 7.4)
			Any assistance that is provided to local communities should not be assumed to also benefit the Khoi San groups, as they face widespread discrimination and exclusion. Any such benefits should be provided in a separate forum (e.g., mobile) and in a location that is distant from Bantu communities.	SEP (Section 7.4)
			Where employment opportunities are advertised, especially local employment of semi-skilled and unskilled labour, care should be taken not to discriminate against Khoi San applicants. Consider informing Khoi San people of potential temporary employment opportunities in a separate forum as above and in the !Kung language spoken by them.	Labour Management Plan (Section 7.4), SEP (Section 7.4)
			Where Khoi San applicants are successful in obtaining even temporary employment, the occurrence of workplace discrimination, harassment	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			and bullying should be monitored closely.	
			Create awareness among contactors' employees on the importance of inclusivity and non-discrimination in the workplace. This could be done through visual media and toolbox talks on site, and other passive awareness media such as posters in dining and ablution areas.	Labour Management Plan (Section 7.4)
			Awareness raising of application opportunities should be done beforehand with the support of local municipal administrators and sobas to ensure that applicants can prepare the relevant documents. Capacity building with municipal administrators and sobas on the importance of inclusivity and non-discrimination might be necessary to ensure true support.	Labour Management Plan (Section 7.4)
			Conduct labour audits of contractors and suppliers.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
	HR4.2 - Lack of freedom of association (construction/operation phase)		Leverage any existing relationships with unions to support freedom of association for workers to reduce the risk of the project contributing to human rights impacts associated with freedom of association.	Labour Management Plan (Section 7.4)
			Conduct due diligence on contractors and suppliers, including their views on freedom of association and collective bargaining in their policies.	Labour Management Plan (Section 7.4)
			Enterprise development programs could be done with local contractors where capacity can be built on freedom of association, collective bargaining and other workers' rights, management	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			capacity, human resource management, providing written employee contracts, long hours and insufficient rest days or holidays, monthly salaries beneath the minimum wage and lack of benefits, inadequate PPE, and delays in payment of salaries.	
			Be mindful of the potential unwillingness of contractor employees to report grievances for fear of losing their employment. Contractor management should reinforce positive messaging about the role of labour-related grievance mechanisms as part of due diligence and continuous improvement while providing strong and credible assurances about non-retaliation for raising concerns.	Labour Management Plan (Section 7.4)
			Conduct labour audits of contractors and suppliers.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
	HR4.3 - Unjust and unfavourable working conditions (construction/operation phase)		Provide onsite oversight and supervision into working conditions to ensure that adequate water and lunchtimes are provided, that PPE is used correctly, and so on.	OHS Management Plan (Section 7.4)
			Conduct due diligence on contractors and suppliers, including their views on commitments to offer fair remuneration, working hours and working conditions to their employees.	Labour Management Plan (Section 7.4)
			Enterprise development programs could be done with local contractors where capacity can be built on just and favourable working conditions standards and other worker's rights, management capacity, human resource management, providing written employee contracts, long hours and insufficient rest days or	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			holidays, monthly salaries beneath the minimum wage and lack of benefits, inadequate PPE; and delays in payment of salaries.	
			Ensure that payments of contractors or suppliers are done within reasonable timeframes. If timeframes can be shortened to 14 days, it would allow small local contractors who often have little cash flow to be able to pay wages on time.	Labour Management Plan (Section 7.4)
			Ensure that procurement processes take due consideration of, not only the cheapest contractors or suppliers, but also the costs required to provide workers with decent working conditions.	Labour Management Plan (Section 7.4)
			Conduct labour audits on contractors and suppliers.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
	HR4.4 - Unsafe and unhealthy working conditions (construction/operation phase)		Conduct due diligence on contractors and suppliers, including their commitments to H&S in their policies.	Labour Management Plan (Section 7.4)
			Enforce, at PAK Yatirim and RNT, zero tolerance for fatalities, sound H&S planning, and the appropriate use of PPE and include such aspects in contracts and agreements with contractors and suppliers.	OHS Management Plan (Section 7.4)
			Enterprise development programs could be done with local contractors where capacity can be built on H&S, management capacity, human resource management, providing written employee contracts, long hours and insufficient rest days or holidays, monthly salaries beneath the minimum wage and lack of benefits, inadequate PPE, and delays in payment of salaries.	Labour Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Ensure that working conditions that PAK Yatirim and RNT have direct control over, are decent so as not to contribute to H&S issues experienced by contractor and supplier employees.	OHS Management Plan (Section 7.4)
	HR4.5 - Forced labour and modern slavery (construction/operation phase)		Conduct due diligence on contractors and suppliers, including their views on forced labour and modern slavery for instance, in their policies.	Labour Management Plan (Section 7.4)
			Include prohibitions on all forms of forced labour and modern slavery in contracts and agreements with contractors and suppliers.	Labour Management Plan (Section 7.4)
			Enterprise development programs could be done with local contractors where capacity can be built on forced labour, modern slavery and other worker's rights, management capacity, and human resource management.	Labour Management Plan (Section 7.4)
			Conduct labour audits of contractors and suppliers.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Request goods and services providers to disclose supply chain practices.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Collaborate with local communities, non-governmental organisations, and governments to ensure responsible practices through local sourcing where possible.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Partner with organisations that certify ethical sourcing where possible (e.g., Rainforest Alliance, Fair Labour Association).	SEP (Section 7.4), Contractor Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	HR4.6 - Child labour (construction/operation phase)		Conduct due diligence on contractors and suppliers, including their acknowledgement of child labour in their policies.	Labour Management Plan (Section 7.4)
			Include prohibitions on all forms of child labour in contracts and agreements with contractors and suppliers.	Labour Management Plan (Section 7.4)
			Enterprise development programs could be done with local contractors where capacity can be built on child labour.	Labour Management Plan (Section 7.4)
			Conduct labour audits of contractors and suppliers.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Request goods and services providers to disclose supply chain practices.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Collaborate with local communities, non-governmental organisations, and governments to ensure responsible practices through local sourcing where possible.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Partner with organisations that certify ethical sourcing where possible (e.g., Rainforest Alliance, Fair Labour Association).	SEP (Section 7.4), Contractor Management Plan (Section 7.4)
	HR4.7 - Human rights abuses of migrant workers (construction phase)		Provide onsite oversight and supervision into working conditions and workplace practices to ensure that migrant workers are treated fairly and are not subjected to discriminatory practices.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Ensure migrant workers are provided with safe, adequate and hygienic accommodation that complies with international standards, including access to clean water, sanitation, and proper ventilation.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			Conduct due diligence on contractors and suppliers, including their views on hiring and remuneration of migrant workers in their policies.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Create awareness among contactors' employees on the importance of inclusivity and non-discrimination in the workplace. This could be done through visual media and toolbox talks on site, and other passive awareness media such as posters in dining and ablution areas.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Be mindful of potential unwillingness of migrant workers to report grievances for fear of losing their jobs or deportation. Contractor management should reinforce positive messaging about the role of labour-related grievance mechanisms as part of due diligence and continuous improvement while providing strong and credible assurances about non-retaliation for raising concerns.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Conduct labour audits of contractors and suppliers.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
			Ensure that working conditions that PAK and RNT have direct control over, are decent, so as not to contribute to H&S issues.	Labour Management Plan (Section 7.4), Contractor Management Plan (Section 7.4)
Impacts due to demining of landmines (Refer to Volume 1, Section 6.6, Table 6-84)	DM1 - High-risk environmental and social impacts due to demining activities, including safety risks, habitat disturbance, and contamination (Pre-construction / construction)	• Ensure safety of Project personnel, local communities and the local environment • Create awareness of risks associated with UXOs.	Use certified contractors with proven experience to ensure best practices and safety standards are maintained throughout demining operations.	Contractor Management Plan (Section 7.4), OHS Management Plan (Section 7.4)
			Conduct training and awareness programs with local communities to inform them about demining activities,	EHS Training and Awareness Plan (Section 7.4), OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			associated risks, and safety protocols to minimise accidents.	
			Carry out comprehensive surveys to accurately identify hazardous areas before demining, reducing the risk of unintended exposure to landmines.	OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)
			Implement safety zones around active demining sites and restrict access to unauthorised personnel to prevent accidents.	OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)
			Ensure emergency response teams and medical support are available on-site during demining activities to provide immediate assistance in case of incidents.	EPRP (Section 7.4), OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)
			Implement rehabilitation measures, such as re-vegetation, to restore disturbed areas and reduce erosion after demining is completed.	Rehabilitation and Revegetation Management Plan
			Monitor demining progress, incidents, and the effectiveness of safety measures, allowing for continuous improvement.	OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)
Impact of upstream and downstream services (Refer to Volume 1, Section 6.7, Tables 6-85 and 6-86)	SC1 - Environmental and social impacts from international and local supply chains, including emissions, resource extraction, and safety risks from hazardous material transport	• Implement and adhere to an effective supply chain strategy. • Promote best practice strategies and measures. • Ensure suppliers and contractors align to best practice in terms of supply chain management. • Mitigate impacts beyond the Project area of	Enhance Angolan supplier capacity to reduce reliance on imports from international destinations, thereby lowering emissions linked to transportation and supporting national, regional and local economies.	Contractors Management Plan (Section 7.4)
			Ensure all suppliers comply with GIIP to minimise environmental and safety risks.	Contractors Management Plan (Section 7.4)
			Conduct assessments of potential suppliers to evaluate their EHS and social compliance and mitigate risks before engagement.	Contractors Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
		influence as far as practical.	Develop and implement training programmes and conduct regular monitoring of suppliers to ensure adherence to environmental and social standards.	Contractors Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Enforce strict labour standards within contracts to ensure that all suppliers adhere to ethical labour practices, including fair wages, safe working conditions, and reasonable working hours, aligning with the Project's ethical standards.	Contractors Management Plan (Section 7.4), Labour Management Plan (Section 7.4)
			Encourage procurement from national, regional, and local suppliers to boost economic benefits within Angola, fostering job creation and enhancing local supply chains.	Contractors Management Plan (Section 7.4), Labour Management Plan (Section 7.4)
			Develop and implement strict safety protocols for transporting hazardous materials, including clear signage, driver training, and emergency response plans, to safeguard community health and safety during material transport.	OHS Management Plan (Section 7.4), CHSS Management Plan (Section 7.4)
	SC2 - Environmental and social impacts from improper waste management, potential contamination, and exposure to hazardous substances.		Implement secure storage, labelling, and certified disposal of hazardous waste to prevent environmental contamination.	Hazardous Materials Management Plan
			Prioritise recycling of materials such as metals and concrete to reduce the volume of waste sent to landfills.	Waste Management Plan, Resource Use Efficiency Management Plan
			Engage with local communities near waste storage and disposal sites to raise awareness of potential risks and ensure safety measures are in place.	SEP, CHSS Management Plan (Section 7.4), EHS Training and Awareness Plan (Section 7.4)
			Encourage the development of local waste management capacities by investing in training and certification programs for local companies, where	Waste Management Plan (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			feasible, enabling them to handle various waste streams safely.	
			Where feasible, prioritise contracts with local waste management service providers, even on a smaller scale, to foster local economic development and build a more sustainable and self-reliant waste management system.	Waste Management Plan (Section 7.4)
			Maintain detailed records of all waste handling, transport, and disposal activities to ensure regulatory compliance and accountability.	Waste Management Plan (Section 7.4)
Major Accidents Risk Assessment (MARA) – Major Hazards (Refer to Volume 6 Addendum Section 3.2)	ND1 – Natural Disasters – Flooding (Major accident risk: Flooding of substations and infrastructure) (construction / operation)	• Evaluate the Project's vulnerability to major accidents arising from hazards. • Present measures to prevent, manage or respond to risks. • Enhance Project resilience and safety throughout the lifecycle.	Ensure proper site drainage during land clearing and construction activities to prevent localised flooding.	Stormwater Management Plan
			Conduct regular inspections to identify water accumulation near construction areas.	Stormwater Management Plan
			Store construction materials on elevated platforms to minimise water damage.	Stormwater Management Plan
			Install appropriately designed drainage systems and flood barriers at substations.	Stormwater Management Plan
			Ensure substations have an appropriate foundation and use flood-resistant materials in design.	Stormwater Management Plan
			Ensure the Emergency Preparedness and Response Plan addresses flooding scenarios.	EPRP (Section 7.4)
	ND2 – Natural Disasters – Landslides (Major accident risk: Damage to infrastructure and risks to communities from		Conduct detailed geotechnical assessments of slopes near project infrastructure.	n/a
			Reinforce high-risk areas using appropriate engineering solutions (e.g., retaining walls, slope stabilisation).	Erosion and Soil Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	landslides) (construction / operation)		Regularly monitor slopes for early signs of instability using geotechnical instruments.	Erosion and Soil Management Plan
			Develop an emergency evacuation plan for nearby communities.	EPRP (Section 7.4)
	FR1 – Fire hazards (Major accident risk: Equipment or bushfires near powerlines) (operation)		Maintain vegetation clearance near powerlines and substations.	Vegetation and Land Clearance Management Plan
			Install firebreaks around critical infrastructure.	Vegetation and Land Clearance Management Plan
			Provide fire safety training for workers and strategically placed fire-fighting equipment (e.g. fire extinguishers).	EHS Training and Awareness Plan, EPRP (Section 7.4)
	ER1 – Electrical hazards (Major accident risk: Electrocution incidents during maintenance) (operation)		Provide regular electrical safety training, emphasising PPE and lockout/tagout protocols.	EHS Training and Awareness Plan, EPRP, OHS Management Plan (Section 7.4)
			Conduct routine maintenance of electrical infrastructure to prevent hazards.	Maintenance Management Plan
			Implement OHS management and emergency response plans for electrical incidents.	OHS Management Plan, EPRP (Section 7.4)
	SR1 – Hazardous material transport (Major accident risk: Spillage of insulating oil during transport and handling) (operation / decommissioning)		Use certified contractors and secure containers for hazardous material transport and handling.	Hazardous Materials Management Plan
			Inspect vehicles and packaging before transportation.	Hazardous Materials Management Plan
			Develop a spill response plan with containment and communication protocols.	EPRP (Section 7.4)
	DS1 – Disruption of services (Major accident risk: Power outages affecting critical services		Implement a preventative maintenance program for substations and transmission infrastructure to minimise failures.	Maintenance Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	such as residential, industrial, and healthcare facilities) (operation)		Develop and maintain an emergency response plan specifically addressing power outages, including backup power solutions for critical facilities.	EPRP (Section 7.4)
			Ensure redundant power supply systems (e.g., emergency generators or alternate grids) for healthcare and industrial operations.	EPRP (Section 7.4)
			Establish clear communication protocols with affected communities and key stakeholders during service disruptions.	EPRP, SEP (Section 7.4)
			Conduct periodic system reliability audits and simulations to assess infrastructure resilience under emergency scenarios.	EPRP (Section 7.4)
Waste Management (Refer to Volume 6 Addendum Section 3.3)	WM1 – Waste Handling and Disposal - Soil and water contamination due to improper disposal of hazardous materials (construction)	• Manage and reduce waste related impacts • Minimise/prevent hazardous waste entering the environment • Collaborate with waste management/disposal contactors and authorities to ensure best practice requirements are met • Ensure safe management of hazardous materials/waste	Implement a Waste Management Plan (WMP) for segregation, storage, and safe disposal of hazardous waste.	WMP (Section 7.4), Hazardous Materials Management Plan
			Establish dedicated storage areas with spill-proof containment for hazardous materials.	WMP (Section 7.4), Hazardous Materials Management Plan
			Contract licensed hazardous waste disposal service providers.	WMP (Section 7.4), Hazardous Materials Management Plan
			Provide spill kits and conduct training on emergency spill response for all workers.	WMP, EPRP (Section 7.4), Hazardous Materials Management Plan
			Conduct regular inspections of waste handling processes to ensure compliance with protocols.	WMP (Section 7.4), Hazardous Materials Management Plan
			Collaborate with local authorities to identify and upgrade existing formalised waste facilities in main towns to accommodate Project-generated hazardous waste.	WMP, SEP (Section 7.4), Hazardous Materials Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
	WM2 - Construction waste generation and handling - Habitat degradation and visual pollution due to accumulation of construction waste (construction)		Provide dedicated bins for recyclable, organic, and general waste at strategic locations.	WMP (Section 7.4), Hazardous Materials Management Plan
			Engage certified waste contractors for the removal and recycling of construction debris.	WMP (Section 7.4), Hazardous Materials Management Plan
			Establish temporary waste storage areas at construction camps and ensure proper disposal procedures.	WMP (Section 7.4), Hazardous Materials Management Plan
			Include waste management practices in worker training sessions.	WMP, EHS Training and Awareness Plan (Section 7.4), Hazardous Materials Management Plan
			Explore opportunities to integrate Project waste into upgraded municipal waste facilities where feasible.	WMP (Section 7.4)
			Construction waste, including scrap metal, timber, and packaging materials, will be segregated at source for recycling.	WMP (Section 7.4)
			Hazardous waste, such as solvents and batteries, will be collected and stored securely before disposal by certified waste handlers.	WMP (Section 7.4), Hazardous Materials Management Plan
	WM3 - Air pollution from burning of waste at construction sites (construction)		Prohibit open burning of waste on-site and ensure safe transportation to certified disposal facilities.	WMP (Section 7.4)
			Regularly collect and segregate waste to avoid accumulation that could lead to unauthorized burning.	WMP (Section 7.4)
			Monitor air quality around construction sites to ensure compliance with permissible emission standards.	WMP (Section 7.4), Air Quality Management Plan
			Engage with local waste management authorities to identify and utilise	SEP, WMP (Section 7.4)

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			formalised waste treatment solutions, reducing the need for open burning.	
	WM4 - Risk of spillage during transport of hazardous waste (operation)		Ensure hazardous material transport complies with regulatory requirements and uses certified contractors.	WMP (Section 7.4), Hazardous Materials Management Plan
			Inspect vehicles for leak-proof integrity prior to each transport operation.	WMP (Section 7.4), Hazardous Materials Management Plan
			Develop an emergency response plan for addressing spills during transportation.	EPRP, WMP (Section 7.4), Hazardous Materials Management Plan
			Maintain a log of all transported hazardous materials for monitoring and compliance.	WMP (Section 7.4), Hazardous Materials Management Plan
			Collaborate with waste disposal service providers to ensure the use of upgraded, compliant facilities for the handling and disposal of hazardous waste.	WMP (Section 7.4), Hazardous Materials Management Plan
			Special protocols must be established for managing hazardous materials, including storing them in spill-proof containers and ensuring safe transport to licensed disposal facilities.	WMP (Section 7.4), Hazardous Materials Management Plan
Natural resources consumption (Refer to Volume 6 Addendum Section 3.4)	NR1 - Strain on local water resources due to high consumption for construction and domestic use (construction)	• Encourage resource efficiency through sustainable practices • Promote the efficient use of sustainable materials • Ensure that natural resource consumption does not adversely harm the surrounding environment	Conduct a water demand assessment to plan resource allocation efficiently.	Resource Use Efficiency Management Plan
			Use water-saving technologies for construction processes, such as recycling water for dust suppression.	Resource Use Efficiency Management Plan
			Establish agreements with local authorities to secure water resources without disrupting community supply.	Resource Use Efficiency Management Plan
			Monitor and report water usage during all project phases.	Resource Use Efficiency Management Plan
			Surface water abstraction for construction activities such as concrete	Resource Use Efficiency Management Plan

Aspect	Impact & Project Phase	Objective/s	Management measure	Recommended management plans or procedures to implement measures
			mixing and dust suppression must follow sustainable withdrawal rates.	
			Water abstraction volumes will be monitored to avoid over-extraction.	Resource Use Efficiency Management Plan
			Water recycling practices will be incorporated, particularly for concrete batching and dust suppression, to reduce the demand for freshwater abstraction.	Resource Use Efficiency Management Plan
	NR2 - Depletion of sand and gravel resources leading to habitat degradation (construction)		Source materials only from certified suppliers who meet sustainability standards.	Resource Use Efficiency Management Plan
			Reuse excavated materials from the project site wherever feasible.	Resource Use Efficiency Management Plan
			Monitor material usage to ensure compliance with environmental regulations.	Resource Use Efficiency Management Plan
			Restore quarry sites post-extraction to prevent habitat loss and erosion.	Rehabilitation and Revegetation Management Plan
	NR3 - Ecological degradation from unregulated resource extraction (construction)		Conduct environmental impact assessments for all borrow pit sites.	Soil and Erosion Control Management Plan
			Implement ecological restoration measures for disturbed areas.	Rehabilitation and Revegetation Management Plan
			Limit extraction activities to pre-approved areas with minimal ecological sensitivity.	Soil and Erosion Control Management Plan, Resource Use Efficiency Management Plan
			Engage independent auditors to review compliance with sustainability practices.	SEP (Section 7.4)

7.4 Specific management plans and procedures

This section outlines the suite of specific management plans and procedures that have been developed for the Project to assist in implementing the ESMP, namely:

- Stakeholder Engagement Plan (SEP) (Section 7.4.1);
- Grievance Management Procedure (Section 7.4.2);
- Environmental, Health and Safety (EHS) Training and Awareness Plan (Section 7.4.3);
- Biodiversity Management Plan (BMP) (including an Avifauna Monitoring Programme) (Section 7.4.4);
- Emergency Preparedness and Response Plan (EPRP) (including Oil Spill Response) (Section 7.4.5);
- Waste Management Plan (WMP) (Section 7.4.6);
- Labour Management Plan (LMP) (Section 7.4.7);
- Contractors Management Plan (CMP) (Section 7.4.8);
- Traffic and Transportation Management Plan (Section □);
- Cultural Heritage Management Plan (CHMP) (including a Chance Find Procedure) (Section 7.4.10);
- Community Health, Safety and Security (CHSS) Management Plan (Section 7.4.11);
- Occupational Health and Safety (OHS) Management Plan (Section 7.4.12);
- Security Management Plan (Section 7.4.13); and
- Gender-Based Violence and Harassment (GBVH) Prevention and Response Plan (Section 7.4.14).

In alignment with the overarching ESMP, a C-ESMP shall be prepared and implemented during the construction phase, ensuring detailed management of construction-specific impacts. Similarly, an O-ESMP shall guide environmental and social performance during the operational phase, addressing ongoing and residual risks and impacts.

7.4.1 Stakeholder Engagement Plan

The SEP serves as a guide for all SE activities undertaken during the ESIA process as well as subsequent phases of the project lifecycle. This section provides the SEP scope, stakeholder engagement action plan and grievance mechanism.

The full SEP is presented in Volume 3, Appendix G.

Scope of the SEP

As stakeholder engagement will be an ongoing process throughout the Project lifecycle, a phased approach has been adopted to plan for ongoing consultations with stakeholders starting with ESIA through to operation phase and beyond to decommissioning. The SEP has been developed for the:

1. ESIA process (immediate- to short-term stakeholder engagements);
2. Pre-construction phase overseen by PAK Yatirim and RNT (short-term);
3. Construction phase overseen by PAK Yatirim (short- to medium-term); and
4. Operational phase (medium- to long-term) overseen by RNT under the MINEA.

Although the SEP does not specifically cover stakeholder engagements during the decommissioning phase, it is envisaged that these longer-term activities will be overseen by RNT. These engagement considerations will be planned as the Project nears the end of if life and the SEP updated as part of its regular review process.

The SEP establishes the engagement standards, protocols and activities that will be undertaken during the ESIA process. It covers engagement with stakeholders affected by Project activities, including impacted communities, local authorities (e.g. communes and municipal administrations) responsible for these communities as well as stakeholders with an interest in the Project, such as provincial

government authorities and departments, Civil Society Organization (CSOs), local businesses and suppliers in the area.

Stakeholder engagement action plan

Table 7-3 presents the action plan for stakeholder engagement from the commencement of pre/construction activities through to operation. For each Project phase, the action plan identifies what engagement activities need to occur and which stakeholders should be engaged. It includes the frequency of the engagement and the associated methods (i.e., how the engagement will occur) that consider the needs of vulnerable people. The action plan also considers the logistics involved in the engagements and the key personnel responsible for carrying them out.

It is important to note that a separate SEP (Resettlement SEP or “RSEP”) would be required if any displacement occurs as a result of the Project, including physical resettlement and economic (livelihood) impacts. Such an RSEP is discussed in the LARF that has been developed as part of the ESIA.

Table 7-3: Stakeholder engagement action plan for the pre-construction, construction and operational phases

Engagement	Stakeholders to engage	Method/s of engagement	Frequency	Logistics / deliverables	Responsible
Pre-construction					
Present key findings from the ESIA process including the outcomes of the specialist studies, impacts assessed, project benefits, LRP/RAP, cultural heritage/ sacred areas, ecosystem services, gender and design, disclosure of the Emergency Preparedness and Response Plan, traffic and cumulative impacts	• PACs • Traditional authorities • Municipal and Commune government authorities • Regulatory authorities	• In-person community meetings • Open houses • Telecons/ virtual meetings with government authorities	• Once-off for impact assessment outcomes • Follow-up engagements might be required for refinement of management plans	• Meeting agenda • Project presentation • Posters and maps displaying information and visuals from ESIA and all management plans • Meeting minutes • Visuals and simple text in Umbundu, Nganguela and Portuguese	• PAK Yatirim
• Project presentation including OHL alignment route, Project timing and safety and security considerations • Publicise the grievance mechanism • Publicise management plans relevant to external stakeholders such as the Waste Management Plan	• PACs • Traditional authorities • Municipal and Commune government authorities • Regulatory authorities	• In-person community meetings • External stakeholder workshops • Awareness posters • Telecons/ virtual meetings with government authorities	Once-off	• Meeting agenda which allows time for raising grievances and providing feedback on progressing or closed-out grievances • Project presentation • Meeting minutes • Information leaflets on grievance mechanism • Visuals and simple text in Umbundu, Nganguela and Portuguese	• PAK Yatirim • Contractor
Identify farmland and community resources to avoid during construction	• Municipal and Commune government authorities • Traditional authorities	• In-person meetings with traditional authorities • Emails, phone calls, SMS and/or telecons/virtual meetings with local government authorities where possible	Once-off prior to site establishment	• Meeting agenda • Presentation • Maps displaying proposed OHL route alignment and construction footprint • Meeting minutes • Visuals and simple text in Umbundu, Nganguela and Portuguese	• PAK Yatirim • Contractor

Engagement	Stakeholders to engage	Method/s of engagement	Frequency	Logistics / deliverables	Responsible
Determine locations of lighting in municipal centres	• Women	• Focus group discussions in local languages	Once-off	• Meeting agenda • Presentation • Maps and visuals to suggest where night lighting is best placed • Visuals and simple text in Umbundu, Nganguela and Portuguese	• Pak Yatirim • RNT
Identify locations for site establishment to maintain access to resources (water, land and forests)	• Sobas • Municipal and Commune government authorities	• Focus group discussions in local languages	Once-off per municipal area	• Meeting agenda • Presentation • Maps and visuals to discuss where sites could be best placed • Visuals and simple text in Umbundu, Nganguela and Portuguese	• Pak Yatirim • Contractor
Identify sacred sites which should be avoided during construction	• Sobas • Municipal and Commune government authorities	• Focus group discussions in local languages	Once-off per municipal area	• Site visit • Meeting agenda • Presentation • Maps showing where suspected sacred sites are	• Pak Yatirim • Contractor
Identify any existing agricultural projects, institutes or facilities which could be leveraged during the construction period, when the highest land-based impact is expected	• Agricultural projects, institutes or facilities in AoI • Municipal and Commune government authorities	Emails, phone calls, SMS and/or telecons/virtual meetings	As needed	List of existing agricultural projects, institutes, or facilities to be leveraged	PAK Yatirim
Identify strategies for managing ASM activities in the AoI	• National Police • Provincial, Municipal and Commune government authorities	• Emails, phone calls, SMS and/or telecons/ virtual meetings	Once-off	ASM management strategies	Contractor

Engagement	Stakeholders to engage	Method/s of engagement	Frequency	Logistics / deliverables	Responsible
Determine engagement structures to be followed for consultations with San Groups (if needed)	• Municipal and Commune government authorities • MASFAMU	• Emails, phone calls, SMS and/or telecons/ virtual meetings	Once-off	San Group engagement structures	• PAK Yatirim • Contractor
Obtain local skills and SMME databases to determine local skill sets available for construction activities	Municipal and Commune government authorities	Emails, phone calls, SMS and/or telecons/virtual meetings	Once-off	Local skills and SMME databases	Contractor
• Communicate employment and local procurement opportunities that will be available to PACs during construction • Identify suitable advertisement methods to ensure widespread dissemination	• Municipal and Commune government authorities • Traditional authorities	• In-person meetings with traditional authorities • Emails, phone calls, SMS and/or telecons/ virtual meetings	Once-off, prior to site establishment to ensure that applicants can prepare the relevant documents	• Meeting agenda • Presentation • Meeting minutes	Contractor
Sexual health awareness and education to abate the impacts of unplanned pregnancies which could arise due to the influx of construction workers	PACs	• Passive awareness media (e.g. posters and pamphlets) • Focused engagements with San women (if needed)	Once-off	• Awareness/ educational posters and / or pamphlets • Visuals and simple text in Umbundu, Nganguela and Portuguese should be used	• PAK Yatirim • Contractor
Receive external communications	Stakeholders in AoI	• In-person community meetings • Emails, phone calls, SMS and/or telecons/ virtual meetings with government authorities • Suggestion box • Grievance mechanism	Ongoing	• External communication (such as comments, feedback, and questions) should be taken down in minutes or registers during in-person meetings	• Pak Yatirim • Contractor
Construction Phase					
• Notify and continually inform stakeholders of	Stakeholders in AoI	• In-person community meetings	• Monthly in the first six	• Meeting agenda which allows time for raising	Contractor

Engagement	Stakeholders to engage	Method/s of engagement	Frequency	Logistics / deliverables	Responsible
planned construction activities, progress and changes • Receive external communications (suggestions, comments, complaints, grievances) from stakeholders • Communicate the importance of the Project in the long term • Update stakeholders on waste management practices associated with construction		• Emails, phone calls, SMS and/or telecons/ virtual meetings with government authorities • Suggestion box • Grievance mechanism	months, then quarterly until construction is completed • Suggestion boxes to be checked daily	grievances and providing feedback on progressing or closed-out grievances • Project progress presentation • Meeting minutes • Visuals and simple text in Umbundu, Nganguela and Portuguese should be used • External communication (such as comments, feedback, and questions) should be taken down in minutes or registers during in-person meetings	
Formal project updates	• Provincial, Municipal and commune authorities • Representatives of PACs • Selected CSOs • Stakeholders in AoI	• Hardcopy newsletter • Email and website newsletter	Every six months	Project newsletter available in hard copy and online	• Pak Yatirim • Contractor
• Workshop the Grievance Mechanism	• Provincial, Municipal and commune authorities • Representatives of PACs • Selected CSOs	• External workshop to facilitate understanding and awareness of the Grievance Mechanism	Once-off	• Workshop agenda and presentation • Minutes from the workshop • Public awareness campaign strategy to publicise the Grievance Mechanism • Visuals and simple text in Umbundu, Nganguela and Portuguese should be used	• Community Liaison Officer (CLO) • Stakeholder Engagement Manager (SEM)

Engagement	Stakeholders to engage	Method/s of engagement	Frequency	Logistics / deliverables	Responsible
• Publicise the Grievance Mechanism	Stakeholders in AoI	Public awareness campaigns	Throughout construction phase	• Print media such as posters • Visuals and simple text in Umbundu, Nganguela and Portuguese should be used • Face-to-face engagements with CLO	• CLO • SEM
• Advertise local procurement and job opportunities	Stakeholders in AoI with priority given to PACs	• Print media such as posters • Radio	As needed	• Radio advertisements, printed posters • Visuals and simple text in Umbundu, Nganguela and Portuguese should be used	Contractor
• Involve stakeholders in Monitoring and Evaluation (M&E) activities to determine whether SEP and Grievance Mechanism is functioning appropriately	Representatives of PACs, traditional authorities, local government, CSOs	• Telecons/ virtual meetings • In-person meetings if required	Refer to Resources and Responsibilities defined in Section 8 of the full SEP	M&E Committee	• CLO • SEM
• Consult the relevant municipal or provincial traffic administrations for the relevant support e.g. place speed limit signage and limit road access	Municipal and/or Provincial traffic administrations	Emails, phone calls, SMS and/or telecons/ virtual meetings	As needed	Relevant traffic signage (e.g. speed limit signage and road access limits)	Contractor
Explain status of project and provide information about operation phase	• Provincial, Municipal and commune authorities • Representatives of PACs • Selected CSOs • Stakeholders in AoI	In-person meetings	Once-off, three months before operational phase commences	• Meeting agenda • Presentation • Meeting minutes	• Pak Yatirim • RNT

Engagement	Stakeholders to engage	Method/s of engagement	Frequency	Logistics / deliverables	Responsible
Operational Phase					
• Notify and continually inform stakeholders of new activities along the OHL route including maintenance activities • Receive external communications (suggestions, comments, complaints, grievances) from stakeholders • Provide relevant waste management information to stakeholders	Stakeholders in the AoI	• Telecons/ virtual meetings • In-person meetings if required • Grievance mechanism • Suggestion boxes (if project changes are required, such as expansions, infrastructure relocations, or removals)	As needed	• Meeting agenda and presentation • Minutes of meeting • Visuals and simple text in Umbundu, Nganguela and Portuguese should be used • External communication (such as comments, feedback, and questions) should be taken down in minutes or registers during in-person meetings	• RNT • MINEA
• Publicise Grievance Mechanism	Stakeholders in the AoI	Public awareness campaigns	• As needed • Periodically to remind SHs of its ongoing availability	• Print media (such as posters) • Visuals and simple text in Umbundu, Nganguela and Portuguese should be used	• RNT • MINEA
Involve stakeholders in M&E activities to: • Determine whether SEP and Grievance Mechanism are functioning appropriately • Participate in monitoring and observations for anything out of place along the powerlines	Representatives of PACs, traditional authorities, local government, CSOs	• Telecons/ virtual meetings • In-person meetings if required	Refer to Resources and Responsibilities defined in Section 8 of the full SEP	M&E Committee	• RNT • MINEA
• Communicate local procurement and job opportunities	• PACs • Traditional authorities • Municipal and Commune government authorities	• Print media such as posters • Radio • Website	As needed	Radio advertisements, printed posters and RNT website	• RNT • MINEA

7.4.2 Grievance management

Effective grievance management is essential for maintaining a constructive dialogue with Project stakeholders and interested parties. It ensures that the negative environmental and social impacts and risks to the Project are addressed timeously, promptly and effectively. Monitoring and evaluation of the performance of a Grievance Mechanism will lead to proactive (instead of reactive) impact management, and should, eventually, lead to a reduction in repeat grievances. The objectives of a Grievance Mechanism are to:

- Provide stakeholders with a fair and transparent process to submit Project-related grievances;
- Allow stakeholders to obtain a resolution and remediation to their grievances without financial cost or fear of retaliation;
- Agree on suitable and mutually acceptable remedial actions through dialogue and negotiation with complainants;
- Swiftly implement remedial actions to minimise unwanted impacts and prevent escalation of the source of the grievance;
- Acknowledge receipt of grievances and keep complainants abreast of progress in their resolution;
- Ensure that grievances are registered, logged, recorded and tracked in a systematic and trackable fashion; and
- Monitor trends in grievances to assess the effectiveness of the Project's environmental and social management plans (of which this SEP is one) and their implementation, to make the required changes or improvements where needed.

A separate Grievance Mechanism should be established if any displacement occurs as a result of the Project, including physical resettlement and economic (livelihood) impacts. Such a Grievance Mechanism is discussed in the LARF that has been prepared as part of this Project ESIA.

Publicising the grievance mechanism

A Grievance Mechanism can only be effective if external stakeholders understand the purpose and limits thereof, how it works, and how they can access it. Similarly, internal stakeholders who are involved in the implementation of the mechanism and the resolution of grievances should understand how it functions.

In order to ensure that internal and external stakeholders are aware of the Grievance Mechanism and how it functions, it is recommended that workshops and awareness campaigns are conducted as described below:

- **Internal stakeholder workshops**: The objective of these workshops is to build staff members' awareness of the Mechanism, thus fostering internal understanding and ownership thereof, and to ensure that the required support for the grievance management process is provided. The workshops should be held with on-site Project staff members (e.g., Community Liaison Officer [CLO] and contractors during the construction stage);
- **External stakeholder workshops**: These workshops should be held with relevant Provincial, Municipal and commune authorities and representatives of directly and indirectly impacted communities and selected CSOs. This will not only facilitate understanding and awareness of the Grievance Mechanism, but will also leverage these key stakeholders' standing to support the sharing and understanding thereof with impacted communities; and
- **Community awareness campaigns**: During the abovementioned workshop, a strategy for raising awareness about the Grievance Mechanism should be developed to establish the most effective way of building awareness, understanding and acceptance of the procedure.

Grievance management process

This Grievance Mechanism is informed by IFC PS1, EP 6, and the UNGPs Principle III (GP III). It takes into account the presence of vulnerable groups (such as those with low levels of literacy) and prefers

in-person interaction with complainants using Portuguese and Umbundu/Nganguela to ensure that decisions and outcomes are thoroughly understood.

During construction and operation, CLOs will be key to collecting and recording the grievances. It is anticipated that the RNT personnel will assume this function during the operational phase of the Project. The process has eleven steps, outlined in Figure 7-4 and described in Table 7-4. Additional details for the categorisation and prioritisation of grievances (among others) are provided in the SEP, Volume 3, Appendix G.

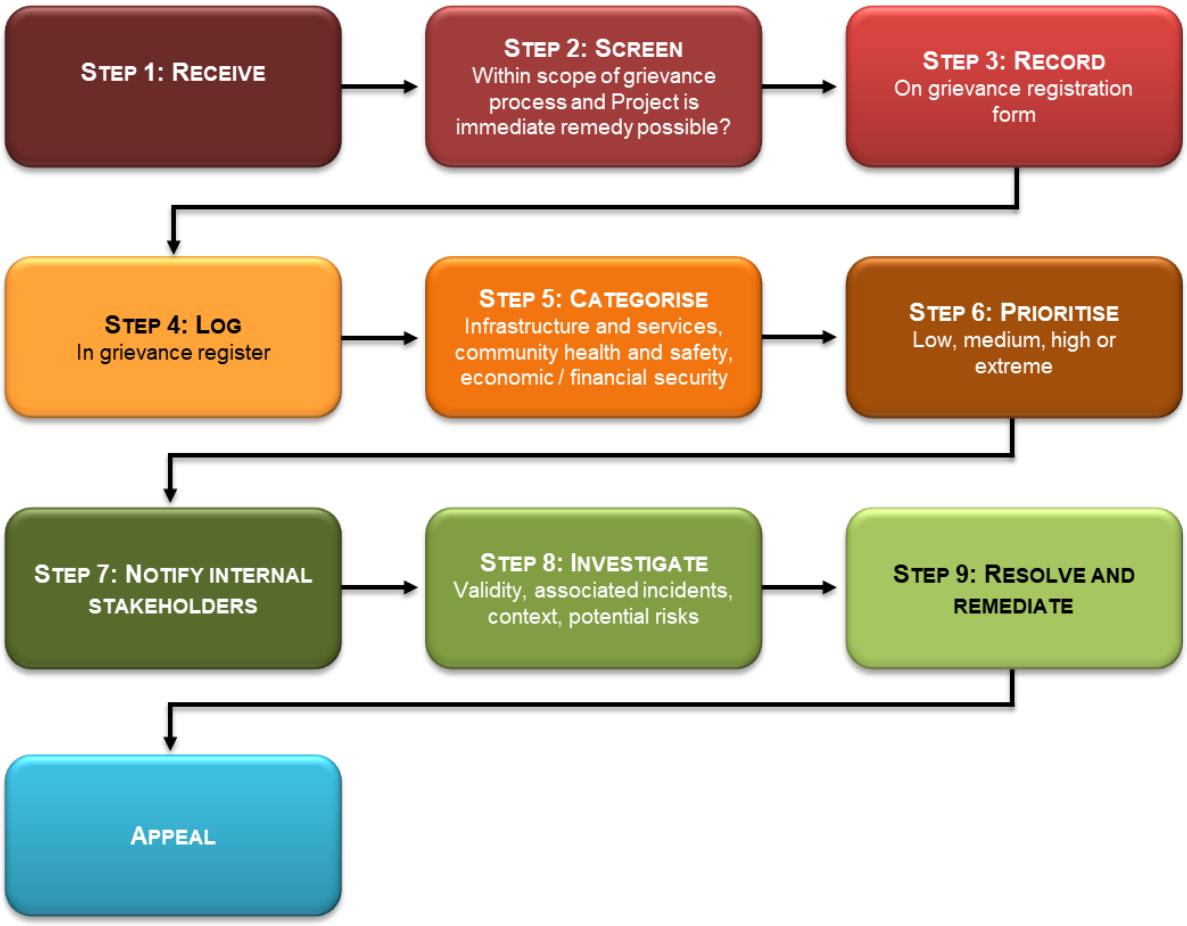

Figure 7-4: Grievance management process

Unless specified otherwise, the actions in Table 7-4 are taken by the CLO.

Table 7-4: Grievance management steps

Step	Actions
1. Receive grievance	CLO receives grievances: • in person on site • in person at meetings • via a toll-free telephone hotline

2. Screen grievance	• Screen grievance as inside or outside Project and Grievance Mechanism scopes
	• **If inside scope,** follow *Step 3* onwards
	• **If outside scope:**
	  ○ Close out grievance through verbal discussion with complainant
	  ○ Direct complainant to more appropriate channel
	• Log grievance in grievance register

3. Record grievance	• Record grievance on grievance registration form or grievance close-out form if it can be resolved immediately • Let complainant and witness sign or fingerprint form • Verbally explain next steps to complainant • Give copy of completed grievance registration form to complainant • Scan and save form on secure cloud-based platform • File hardcopy at Project office

4. Log grievance	• Log grievance in grievance register within twelve hours of being recorded
	• If related to near misses, substantial or urgent social, environmental and/or security risks:
	  ○ Flag immediately to the relevant department(s)
	  ○ Log in grievance register within two hours of it being recorded

5. Categorise grievance	Categorise grievance on grievance register, and registration and close-out form as: • *infrastructure and services* • *community health and safety* • *economic/financial* • *security*

6. Prioritise grievance	• Prioritise grievance on grievance register, and registration and close-out form as Low, Moderate, High or Extreme
	• Take note of resolution times of each level:
	  ○ **Low (1)**: Low-risk level issues with little impact and immediate or short-term consequences. Should be responded to within **fourteen (14) days**
	  ○ **Moderate (2)**: Medium-risk level issues with a moderate impact and medium-term consequences. Should be responded to within **seven (7) days**

Step	Actions	
	○ **High (3)**: High-risk level and impact, and long-term consequences. Includes security, community health and safety (H&S) grievances. Should be responded to within **24 hours** ○ **Extreme (4)**: Issues with an extreme risk level, substantial impact, and long-term to permanent consequences, including security, community H&S grievances, near-miss incidents, injury, criminal activity, death, protests, riots, and natural disasters. Should be addressed and flagged with management within **two hours** of occurring • If extreme, report to management within two hours	
7. Notify internal stakeholders	• CLO reports grievances to Stakeholder Engagement Manager (SEM) daily • SEM reports urgent grievances to management	
8. Investigate grievance	• Investigate grievance within timeframe assigned in earlier step to determine: ○ Validity ○ Associated incidents ○ Context (e.g., Project, community, political, economic) ○ Potential risks • Record findings from investigations in: ○ Grievance register ○ Grievance investigation report • Submit report to SEM and management (if required)	
9. Resolve grievance	**Invalid grievance:** • Draft response letter with reasons for invalidity • Let SEM sign letter • Discuss letter contents verbally with complainant and witness • Complete close-out form • Provide hardcopy of form to complainant • Complainant signs or fingerprints form • Scan digital copy • Upload to secure cloud-based storage • File hardcopy on site • Log issuance of response letter in grievance register	**Valid grievance:** • Grievances should be responded to within the time periods specified in step 6 above, based on the priority level i.e. 14 days for low-risk grievances, 7 days for moderate-risk grievances, 24 hours for high-risk grievances or two hours for extreme-risk grievances • Grievance Resolution Committee (GRC) reviews grievance and investigation results • GRC proposes remediation measures such as: ○ Rehabilitation ○ Restoration ○ Compensation • Document remediation in response letter • Submit to complainant and explain verbally with witness present • If satisfied, complainant signs close-out form and CLO stores copies as above: ○ Log issuance of response letter in grievance register ○ Track remediation ○ Assess effectiveness of remediation • If not satisfied, engage complainant to determine reasons for dissatisfaction:

Step	Actions	
		○ Appeal brought to Grievance Appeal Committee (GAC) ○ All steps under "Valid grievance" above are followed, but GRC is replaced by GAC ○ If still not satisfied, advise that there is no further appeal process ○ Advise complainant to seek redress through other channels ○ Record this outcome in grievance register and report to GRC and GAC
Ancillary steps to be followed periodically:		
10. Review and evaluation of Grievance Mechanism	• Request feedback from stakeholders quarterly in year one • Record • Request feedback from stakeholders quarterly in year two onwards • Record	
11. Reporting	• CLO to compile weekly, monthly, quarterly and annual grievance reports on: ○ number, categories and priority levels of grievances ○ number of closed-out, in progress and unresolved grievances ○ remediation measures ○ analysis of trends ○ recommendations • Submit to SEM • SEM to incorporate grievance reports to management	

Note: Appendices available in full SEP

7.4.3 Environmental, Health and Safety Training and Awareness Plan

Purpose and objectives

The EHS Training and Awareness Plan describes the manner in which the company intends informing its employees and other key stakeholders of any environmental, health, safety and social risks. These risks may arise from work activities and need to be dealt with to avoid pollution, damage or injury/loss of life. In alignment with applicable standards such as the IFC Performance Standards, this plan ensures that all training is aligned with good international industry practice and integrates both preventative and corrective measures.

Training is an essential aspect of this plan to ensure compliance with good industry practice and mitigate risks throughout the project lifecycle. EHS conditions are embedded in operational contracts, making it mandatory for both staff and contractors to comply with safety protocols. This includes preventing environmental pollution and degradation through the implementation of effective management practices.

Specific training on topics such as workers' rights, gender-based violence and harassment, community health, and security issues should be introduced as the workforce composition and on-site risks become clearer. This ensures that training remains relevant and tailored to actual project needs, making it more effective.

EHS conditions are included in any operational contracts, thereby making staff and contractors aware of the potential environmental, health, safety and social risks and impacts associated with the Project and the necessity to prevent, for example, environmental pollution and degradation by the implementing effective management practices.

The objectives of the EHS Training and Awareness Plan include:

- Ensuring compliance with applicable standards, including the IFC Performance Standards, to prevent accidents, injuries, and health risks through comprehensive safety training;
- Ensuring health and safety in terms of preventing accidents and injuries by providing comprehensive safety training;
- Promoting environmental protection by educating employees and stakeholders on ways to minimise environmental impacts;
- Enhancing community relations by fostering positive relationships with local communities and key stakeholders;
- Ensuring the integration of social risks and impacts, including those related to land acquisition and community health, in the training program; and
- Maintaining quality standards through adherence to quality standards and practices throughout the Project.

The scope of the EHS Training and Awareness Plan includes training for all Project personnel, including contractors and subcontractors, awareness programs for local communities and other key stakeholders, and quality assurance and control measures related to EHS.

The following principles should apply to EHS training:

- All personnel, including contractors and subcontractors, must undergo general EHS induction training, with additional training for specific risks in line with all applicable standards (refer to Volume 1, Section 3);
- A suitably qualified and experienced professional must be tasked to coordinate the implementation of the ESMP within the context of an existing management system;
- The ESMP coordinator should identify the EHS, training requirements for all personnel and contractors;
- Specialised training programs must be developed for high-risk activities, ensuring alignment with international safety standards and Angolan environmental regulations; and

- Training is regularly evaluated and updated to improve its effectiveness and outcome.

Awareness and competency

General awareness training should be conducted as follows:

- All new personnel will undergo induction training covering environmental, social, health, and safety risks. After this training, personnel should be required to complete the competency test and the level of competency assessed by the relevant department. Re-testing or induction will be undertaken during inspections and/or audits and/or as necessary and renewed on an annual basis;
- Competency assessments, using practical tests and questionnaires, must be mandatory for key positions with the potential to impact the environment or community health, ensuring alignment with applicable standards, including IFC Performance Standard 2 on labour and working conditions; and
- All personnel performing tasks which can cause significant or major environmental or social impacts should be competent on the basis of training, education and/or experience. This applies to, but is not limited to, supervisor level and above.

EHS issues training should be addressed as follows:

- Induction on EHS issues for all employees starting to work on the Project; and
- EHS awareness programs tailored to local communities and stakeholders will focus on the project-specific issues and risks, including community health and safety, environmental concerns, and social impacts, as outlined in the IFC Performance Standards on environmental and social sustainability.

Roles and responsibilities

- Project Manager: Oversee the implementation of the training plan and ensure compliance with national regulations and international standards such as IFC Performance Standards;
- EHS Coordinator: Develop and deliver EHS training programmes;
- Site Supervisors: Ensure that all personnel adhere to EHS standards on-site; and
- Community Liaison Officer: Manage community engagement and address concerns.

Effectiveness of training

In order to improve effectiveness, training activities need to consider the following:

- Clear communication of the consequences of non-compliance with operational procedures, particularly the potential impacts on health, safety, and the environment, as emphasised in applicable standards including the IFC Performance Standards;
- Training must be relevant to the specific activities of each employee, ensuring that risks are communicated effectively; and
- Generate awareness among employees and stakeholders of the broader social and environmental impacts of the Project, with emphasis on human rights, labour standards, and environmental stewardship.

Focal content of training plan

The focal content of the EHS Training and Awareness Plan is presented in Table 7-5.

Table 7-5: Focal content of training plan

Topic	Description
Social and Environmental Programme	
Project Basic Environmental Issues	Introduction to key environmental concerns related to the Project and PAK Yatirim's policies.
Biodiversity Protection	Training and awareness raising of biodiversity protection in line with the BMP.
Emergency Preparedness and Response	Training on how to prepare for and respond to emergencies effectively as per the EPRP.

Topic	Description
Laying out and Checking the State of Extinguishers	Instructions on the proper placement and maintenance of fire extinguishers as per the Fire Risk and Prevention Management Plan.
Identification and Use of Dangerous Products	Guidelines on recognising and safely handling hazardous materials as per the Hazardous Materials Management Plan.
Communication Management (Plan, Procedures)	Training on effective communication strategies and procedural adherence.
Code of Conduct	Overview of the Project's code of conduct and expected behaviours.
Gender-based violence and harassment	Awareness of GBVH in terms of prevention and protection.
Workers' rights	Awareness of labour laws and encouraging the rights that workers have.
Cleaning and Tidiness of the Workplace	Best practices for maintaining a clean and orderly work environment.
Detection and Reporting of Non-Conformities	How to identify and report deviations from standards or procedures.
Management of Environmental Accidents	Procedures for handling environmental incidents and minimising impacts.
Waste Management	Proper disposal and management of waste materials as per the Waste Management Plan.
Measures to Prevent Environmental Impacts	Strategies to mitigate impacts on traffic, noise, air quality, and watercourses.
Storage of Dangerous Products	Safe storage practices for hazardous substances as per the hazardous Materials Management Plan.
Protection of Local Heritage (Cultural Finds)	Training on preserving and respecting cultural and historical artifacts encountered during construction as per the Cultural Heritage Management Plan and Chance Find Procedure.
Quality Training Programme	
Project Quality Basics	Introduction to quality policies, responsibilities, and standards.
Cleanliness and Tidiness of the Workplace	Emphasis on maintaining an organised work environment to uphold quality standards.
Detection and Reporting of Non-Conformities	Identifying and reporting quality issues to ensure continuous improvement.
Understanding of Monitoring & Measuring Equipment Labels	Training on the proper use and interpretation of equipment labels.
Understanding and Use of Maintenance Log	How to maintain and utilise logs for tracking equipment maintenance.
Materials Reception Process	Procedures for receiving and inspecting materials to ensure they meet project specifications.
Health and Safety Training Programme	
Health and Safety Plan	Overview of the project's health and safety policies and procedures and ensure alignment to the OHS Management Plan.
First Aid	Basic first aid training to handle minor injuries and emergencies until professional help arrives.
Emergency Preparedness and Response	Preparing for and responding to emergencies, including evacuation procedures as per the EPRP.

Topic	Description
Disease Prevention	Education on preventing sexually transmitted diseases, diseases transmitted by mosquitoes and other vectors, and contagious diseases.
Working at Height	Safety measures and protocols for working at elevated heights.
Electrical Risk	Training on the hazards associated with electrical work and how to mitigate them.
Risks and Preventive Measures During Assembly Work	Identification of risks during assembly operations and corresponding preventive measures.
Driving Machinery	Safe operation of machinery and heavy equipment and general safe driving behaviour.
Road Safety	Best practices for ensuring safety on and around project roadways.
Fire Risk and Prevention	Training and awareness raising on the risk and danger of fires whether bush fires or electrical or infrastructure or vehicle fires in line with the Fire Risk and Prevention Management Plan.
Community EHS Awareness Raising *(in line with the CHSS)*	
Environmental Risks	Transparency of potential environmental risks associated with construction and operation such as dust, hydrology, biodiversity and noise.
Health and Safety Risks	Awareness raising of potential health and safety risks associated with project activities, construction and operation such as electrocution and machinery operation.
Road Safety	Understanding traffic risks associated with an increase of construction vehicles on local roads.
Labour Opportunities	Transparency on potential employment opportunities for locals and the application process.
Land and Resettlement	Continuous engagement and awareness raising with potential PAPs and other key stakeholders on land rights aspects. Awareness raising on sustainable farming and land management should be included for PAPs.

Monitoring, recording and evaluation

A key aspect of the EHS Training and Awareness Plan is monitoring and evaluation to gauge the effectiveness of training and engagement. Aspects of monitoring, recording and evaluation include:

- All training sessions will be formally documented, with attendance records, topics covered, and participant feedback recorded, ensuring alignment with applicable standards including IFC Performance Standard 1;
- Regular assessments of training effectiveness must be conducted using feedback from participants, tests, and performance evaluations;
- Training outcomes and lessons learned must be integrated into ongoing Project operations to ensure continuous improvement and compliance with evolving best practices; and
- Community feedback and grievances must be monitored and incorporated to improve awareness-raising efforts and stakeholder engagement on EHS risks.

This EHS Training and Awareness Plan ensures that all employees, contractors, and community stakeholders are equipped with the necessary knowledge and skills to manage risks effectively, promoting safety, environmental stewardship, and social responsibility throughout the Project, and is fully aligned with applicable standards including the IFC Performance Standards.

7.4.4 Biodiversity Management Plan

The main objectives for the BMP are to utilise the existing biodiversity baseline and monitoring data to identify biodiversity management actions, potential further monitoring surveys, evaluation programmes and aspects that need to be prioritised to enhance biodiversity conservation. According to IFC-PS6 both a Biodiversity Management Plan (BMP) and BAPs are necessary based on the conducted biodiversity and Critical Habitat Assessment (CHA). This BMP recognises the biodiversity value of the habitats within the study area as “valuable biodiversity assets” which need to be protected and managed to avoid further loss and impacts to the receiving environment.

The standalone BMP document and Avifauna Monitoring Programme can be found in Volume 3, Appendix L.

Purpose of the BMP

The BMP was prepared to utilise the existing biodiversity baseline and monitoring data to identify biodiversity management actions, potential further monitoring surveys, evaluation programmes and aspects that need to be prioritised to enhance biodiversity conservation. This BMP sets out a framework and action plan for the management of biodiversity aspects within the Project area. The actions in the BMP should be integrated into all planning phases of the proposed Project to ensure biodiversity aspects are effectively managed to ensure the persistence of healthy, functioning and representative ecosystems and associated services to benefit both present and future generations.

As with the ESMP for the Project, the BMP is important to note that this is a live document which may require amendments/updates based on site conditions, data gathered and unprecedented situations. Any amendments must be undertaken by an external suitably qualified biodiversity specialist. An independent auditor should assess all internal documentation annually and submit the findings to the relevant authorities.

Factors that will need to be considered with respect to the implementation of this BMP include the following:

- Alignment with emergency action plans, e.g. rehabilitation strategy, implementation programme;
- Identification and liaison with stakeholders and neighbouring properties;
- Obtaining all the relevant authorisations and permits where required; and
- Ensuring available budget and manpower for the implementation, management and maintenance of the BMP.

BMP management unit

The BMP is set out according to the priority ranking, which are represented in relation to management units identified within the Project area. The management units are:

- MU1 – Miombo Woodland Habitat;
- MU2 – Secondary Woodland Habitat;
- MU3 – Freshwater Habitat; and
- MU4 – Transformed Habitat.

The action plans for the Project area are prioritised as follows:

PRIORITY RANK	COLOUR
CRITICAL ACTIONS	
IMPORTANT	
LOW PRIORITY	

BMP implementation and monitoring

Factors that will need to be considered with respect to implementation include:

- Integration into existing institutional policy and management systems, including the Project-wide ESMP;
- Alignment with the applicable emergency preparedness response plans, e.g. fire prevention plan, the rehabilitation plan and/or rehabilitation strategy and implementation programme;
- Identification and liaison with stakeholders and neighbouring properties, especially with respect to a weed / invader and erosion control action plans; and
- Available budget and manpower for implementation, management and maintenance.

It is also important that monitoring of the BMPs be carried out to determine the effectivity of plans, and to justify the costs and the allocation of time and manpower to such an exercise. Biodiversity monitoring should therefore continue to ascertain any changes to the PES and / or species composition that may indicate new emerging trends or potential problems that need to be delt with accordingly.

The integration of biodiversity principles and the actions being undertaken by the Project proponent and contractors should also be implemented into the training and environmental education of personnel. Training and awareness plans could include general aspects, such as the importance of biodiversity, and could extend to specialist training in the rehabilitation and stabilisation of wetland areas.

Table 7-6 to Table 7-8 presents the BMPs for the Project, indicating critical activities and key performance indicators that should be implemented for critical, important and low priority activities pertaining to biodiversity management of the Project.

Table 7-6: BMP for critical activities pertaining to the proposed Projects

No.	OBJECTIVE	ACTION	ACTIVITIES	KEY PERFORMANCE INDICATOR (KPI)	APPLICABLE MANAGEMENT UNIT	RESPONSIBLE PERSON / DEPARTMENT	TARGET DATE
CRITICAL ACTIVITIES							
1	Alien Plant Control	Implement the AIP Control Plan	• Identify priority areas for AIP control; • Appoint a certified contractor; • Monitor AIP control activities and success rates; and • Ensure that the appropriate control methods are being used, notably when chemicals are being used in close proximity to the freshwater habitat.	• AIPs are being controlled and removed from target areas. Any regrowth is being suitably dealt with; • Appropriate methodologies are being implemented; and • AIP abundances in the study area are reducing.	MU1 MU2 MU3 MU4	SHEQ	To be confirmed by SHEQ Manager
2	Access roads and operational areas to be monitored for erosion and edge effects.	Minimise loss of sensitive habitat, floral and faunal SCC in the areas surrounding the operational footprint. Monitor and minimise erosion and other edge effects.	• Where erosion is taking place, erosion control measures are to be put in place to minimise further loss of soil and habitat; and • Monitor natural areas adjacent the proposed footprint areas for edge effects / impacts. Where such impacts are identified, appropriate rectification actions are to be taken.	• Areas of erosion have been identified and suitable management actions put in place; • Mitigation measures as stipulated in specialist reports are being implemented and adhered to; • Disturbed areas have been rehabilitated and are being monitored for vegetation regrowth and erosion activities; and • No footprint creep is occurring into the surrounding natural areas.	MU1 MU2 MU3 MU4	SHEQ	To be confirmed by SHEQ Manager
3	Monitor plant survival and establishment of any floral SCC that have been relocated (if any).	Monthly monitoring (or as needed) of relocated / planted floral SCC, noting plant establishment and health.	• For the first year relocated plants must be monitored and success or failure noted; • Failure of plant species / none-survivability must be noted and investigated to try to ascertain why the failure occurred (incorrect removal / planting methods, unsuitable relocation site, damage to plant during relocation activities or fires etc).	• Relocated / planted floral species have established in new locality; and • New growth is visible and survivability has been confirmed.	MU1 MU2 MU4	SHEQ	To be confirmed by SHEQ Manager
4	Monitor avifaunal collision with powerline infrastructure and / or electrification	Implement an avifaunal monitoring program.	• Installation of Bird Flight Diverters along the conductors, at a maximum distance of 20 m, and placed alternately from one conductor to the other. • These flags can be double-signalling spirals and of bright and visible colours; Other alternative Bird Flight Diverters are rotating or ribbon fireflies • The tension cables of up to 120 cm on each side of the support posts and sub-stations must be covered; they can be flexible cables, or self-vulcanizing tapes, for example. • Anti-landing and anti-nesting devices must be installed on top of the posts.	• Ensure mitigation measures as stipulated in specialist reports are being implemented and adhered to; • Appropriate methodologies are being implemented; and • Possible avifaunal collisions in the study area are reducing.	MU1 MU2 MU3 MU4	SHEQ	To be confirmed by SHEQ Manager
5	Monitor for raptor nests within a 500m buffer around the Proposed power line and associated infrastructure.	Implement raptor nest monitoring.	• Monitoring for raptor nest must be implemented before construction is implemented; • Nest must be marked with GPS coordinates; • The marked nesting sites must be used to inform the proposed powerline layout and if the nesting site cannot be avoided, nesting sites must be avoided during the breeding season or the proposed powerline alignment should be amended.	• Ensure mitigation measures as stipulated in specialist reports are being implemented and adhered to; and • Appropriate methodologies are being implemented.	MU1 MU2 MU3 MU4	SHEQ	To be confirmed by SHEQ Manager

No.	OBJECTIVE	ACTION	ACTIVITIES	KEY PERFORMANCE INDICATOR (KPI)	APPLICABLE MANAGEMENT UNIT	RESPONSIBLE PERSON / DEPARTMENT	TARGET DATE
6	Monitor for soil and/or water contamination.	Routine inspections of active construction areas for hydrocarbon (fuels and oils) and other chemical leaks emanating from construction vehicles and equipment.	• Soil contamination near wate resources can lead to contamination of the resource and impact on the dependent biodiversity. • No servicing or refuelling of vehicles and equipment must take place near any freshwater resources during all phases of the proposed development. Designated workshop/service areas must be established that are suitable bunded and protected to avoid contaminants being transported toward surface water resources during rainfall events or when accidental spills occur. • Construction vehicles and equipment must be inspected daily for any fluid leaks. Should fluid leaks be detected, the vehicle or piece of equipment must be removed from the site and repaired. • Soil spill kits should be readily available at all active construction sites so that chemical and/or hydrocarbon spills can be cleaned and removed from site before contamination of the surrounding habitat occurs. • Any significant spills near a wate resources should trigger an emergency cleanup response and implementation of a water quality monitoring regime to be implemented until monitoring data indicates no further persistence of deleterious impacts to the freshwater habitat units. • Biological monitoring and chemical analysis of the water resource that may have been impacted should be implemented immediately following a spill event, and then monthly thereafter until data indicate that no further impacting features are being imposed.	• Mitigation measures as stipulated in specialist reports are being implemented and adhered to. • All contaminated soils must be contained and removed from the site, with disposal being implemented at a registered disposal site. • Accidental spillages that have impacted freshwater resources must be monitored for deleterious impacts. Biological and chemical analysis of the water resource must be undertaken until data indicate that variables have returned to the pre-incident status.	MU3, but generally applicable	SHEQ	To be confirmed by SHEQ Manager

Table 7-7: BMP for important activities pertaining to the proposed Project.

No.	OBJECTIVE	ACTION	ACTIVITIES	KEY PERFORMANCEINDICATOR (KPI)	APPLICABLE MANAGEMENT UNIT	RESPONSIBLE PERSON / DEPARTMENT	TARGET DATE
IMPORTANT ACTIVITIES							
1	To ensure any erosion resulting from operational and maintenance related activities, is controlled.	Eroded areas are to be monitored, controlled and rehabilitated whilst any new aeras of erosion must be remedied.	• Identify possible activities which are causing erosion (poor stormwater management, increased hard surfaces and water runoff etc); • Berms, soil traps, hessian curtains, brush packing and stormwater management must be implemented to managed eroding areas; and • Rehabilitate areas where earthworks or vegetation clearing has taken place to prevent further erosion.	• Monitoring of current erosion areas and new ones is being undertaken; • Eroded areas are being managed and rehabilitated; and • Bare areas prone to erosion have been reseeded and monitored as per the rehabilitation and closure plan prior to erosive activities occurring.	MU1 MU3 MU4 MU5	SHEQ	To be confirmed by SHEQ Manager
2	Continued rehabilitation of disturbed areas. Continued AIP control.	Continue to monitor and manage rehabilitated areas. Continue to monitor and manage AIPs.	• Rehabilitate areas previously disturbed by construction related disturbances and activities; ○ Monitor rehabilitated sites annually. • Edge effects and footprint creep relating to the proposed project activities needs to be strictly managed; • Continue with the comprehensive alien vegetation monitoring and control program which should: ○ Identify priority areas; ○ Identify priority species to control in consultation with relevant stakeholders; and ○ Removal and control of alien plant species.	• AIP control plan I in place; • Compile an alien vegetation control programme and implement during construction phase; and • Recommendations to better manage rehabilitation activities have been provided.	MU2 MU3 MU4 MU5	SHEQ	To be confirmed by SHEQ Manager

Table 7-8: BMP for low priority activities pertaining to the proposed Project

No.	OBJECTIVE	ACTION	ACTIVITIES	KEY PERFORMANCE INDICATOR (KPI)	APPLICABLE MANAGEMENT UNIT	RESPONSIBLE PERSON / DEPARTMENT	TARGET DATE
LOW PRIORITY ACTIVITIES							
1	Ensure wildlife conflict management measures are in place, notably pertaining to venomous snakes.	Educate and train all staff as to the biodiversity of the study area and the region. Educate staff about proper processes when dealing with wildlife.	• Develop a training and information session for all project employees regarding the biodiversity of the receiving environment; and • Educate staff members about venomous snakes in the area and the correct procedures to follow should they contact any of these species occur.	• Nominated personnel have been sent on specialist snake handling courses; and • Procedures to follow should a venomous snake be encountered in the study area are in place.	MU1-5	SHEQ	To be confirmed by SHEQ Manager
2	Suitable resources and literature available to staff to better understand the biodiversity and freshwater systems associated with the study area.	Ensure that the necessary faunal and floral literature and information on important habitats, species and the overall biodiversity of the proposed Project is available to staff.	• Ensure suitable literature is available and updated when needed; and • Available information should be easily available to staff members.	• All information pertaining to the biodiversity associated with the proposed Project is easily accessible through in various formats.	MU1-5	SHEQ	To be confirmed by SHEQ Manager

Avifaunal monitoring programme

The avifaunal monitoring programme was developed as a result of biodiversity specialist studies identifying potential risks to avifauna in the immediate project area due to the types of habitat units, identified species and the nature of the project.

The focus of the avifaunal monitoring programme is based on where the proposed OHL intersects habitats with increased importance for avifauna and focusses on species counts, nesting sites (notably raptors), bird fatalities and the functioning of the bird flappers/diverters. Two avifaunal SCC's have been identified in the Project area, *Terathopius ecaudatus* (Bateleur eagle) and *Trigonoceps occipitalis* (White-headed Vulture). The monitoring is suggested to take place on a monthly basis during the construction phase as well as for the first year of the operational phase. Following the 1st year of operational monitoring, monitoring events can be reduced to quarterly or bi-annually depending on the initial monitoring results. Following the 2nd and 3rd year of monitoring, new recommendations can be made by the specialist in terms of suitable monitoring frequency based on the data collected. Prior to the start of the construction phase, it is recommended that a suitable specialist takes part in the final route walkdown in order to identify any nests which may be at risk.

Table 7-9 presents a high-level avifaunal monitoring programme with the standalone programme included in Volume 3, Appendix L.

Table 7-9: Avifaunal monitoring programme for all project phases

Impact	Management Outcome	Management Actions	Monitoring		
			Methods	Frequency	Responsibility
Pre-Construction Phase					
Destruction / disturbance of raptor nests	Prevent unnecessary displacement of raptors and destruction or abandoning of nests leading to mortality of chicks.	• Prior to the construction phase, a walkdown must be undertaken; • During the walkdown and micro-sighting of the footprints, if any raptor nests are observed, the locations need to be duly recorded; and • Should any raptors, notably *Terathopius ecaudatus* (Bateleur eagle) and *Trigonoceps occipitalis* (White-headed Vulture), be found nesting in the proposed route, or within 500m of the proposed route, construction plans need to be duly updated to ensure that these areas are avoided during the breeding season. Active nests are not to be disturbed during breeding season and should be given a 500m exclusion buffer until after the breeding season. Construction/vegetation clearance activities must continue in a different locality until such a time that it is feasible to return to the area (post-breeding).	• Walk-through by specialist. • Actively search for raptor nests. • Mark any nests found with GPS. • Identify the species the nest belong to. • If possible, check if the nest has eggs or chicks without disturbing the active nest. • Record active / inactive nests for future comparison.	Once off, no longer than a month prior to the commencement of construction.	Avifaunal specialist
Construction Phase					
Displacement of avifaunal species	Prevent unnecessary displacement of avifauna by ensuring that contractors are aware of the requirements of the Environmental Management Programme (EMPr.)	• Should any raptors, notably *Terathopius ecaudatus* (Bateleur eagle) and *Trigonoceps occipitalis* (White-headed Vulture), be found nesting in a large tree along/adjacent to the route, all activities in the vicinity are to be stopped until the fledgling has left the nest. Active nests are not to be disturbed during breeding season and should be given	• Report and record any noncompliance to nest avoidance/impacts. • Record avifaunal species observed within monitoring points. • Record active and non-active nests previously identified, as	Monthly for as long as the construction phase lasts.	Avifaunal specialist / suitably qualified ECO

Impact	Management Outcome	Management Actions	Monitoring		
			Methods	**Frequency**	**Responsibility**
		a 500m exclusion buffer until after the breeding season. Construction/vegetation clearance activities must continue at a different locality until such a time that it is feasible to return to the area (post breeding); and • The EMPr must detail how construction activities must be conducted and the timing of such activities according to a scheduled construction plan. All contractors are to adhere to the EMPr and should apply good environmental practice during construction.	well as any new nests that are observed. • Record observed flight paths of large avifauna, including estimated height of flight paths. • Record active / inactive nests.		
Mortality due to collision with the overhead powerline		• Where the OHL traverses freshwater habitats, bird-flappers / diverters should be installed on the powerline to minimise bird strike risks as these areas are considered to be high traffic/flights paths. • Bird flappers / diverters should be fitted along the entire length of the OHL. Should the pre-construction avifaunal monitoring however indicate that certain areas are not high frequency avifaunal areas/ flight paths, then the placement of such bird flappers in areas can be reconsidered based on the additional monitoring data; • All pylons / electrical infrastructure must be fitted with anti-perching/nesting devices to deter species from using these structures for nest construction/perching – notably larger raptors.	• Assess bird flapper installations for functionality and that they are in a working order. • Record any bird carcasses observed around newly erected pylons / powerlines.	Monthly until construction is complete.	Avifaunal specialist / suitably qualified ECO
Operational Phase					

Impact	Management Outcome	Management Actions	Monitoring		
			Methods	**Frequency**	**Responsibility**
Mortality due to collision with the overhead powerline Mortality of avifauna due to electrocution on the collector substation infrastructure	Reduction of avian electrocution and collision with OHL mortality.	• Bird-flappers / diverters are to be replaced as and when needed should they become dislodged from the powerline. These devices should be part of the regular inspection activities undertaken for the OHL; • Ensure the insulated covering on the support / tension cables is intact to minimise the risk of electrocution; • Inspect and maintain anti-perching/nesting devices fitted; • Monitor the electrocution mortality within the collector substation or on pylons; • Monitor bird fatalities due to collisions with OHL.	• Record avifaunal species observed within monitoring points. • Record avifaunal fatalities due to collisions or electrocutions. • Inspection of bird flappers and insulated covers. • Inspect anti-nesting devices installed. • Note flight paths and height of large bird species to better inform mitigation measures.	For the first year, this should happen monthly. Thereafter depending on the outcome of the results quarterly or bi-annually.	Avifaunal specialist / suitably qualified ECO
Decommissioning Phase					
Displacement due to disturbance	Prevent unnecessary displacement of avifauna by ensuring that contractors are aware of the requirements of the EMPr.	• Should any decommissioning activities be located near to known raptor nests, such activities are to only take place during none breeding periods to ensure nesting activities are not disturbed; • Make sure to check for bird nests on the poles and towers of the OHL before decommissioning it. Nests observed must be destroyed just after the breeding season.	• Monitor known nesting sites around the OHL to ensure decommissioning activities do not disturb these species. • All decommissioning activities should take place out of the breeding season. • Record any nests that need located on pylons that need to be destroyed. • Record active / inactive nests.	Monthly for as long as the decommissioning phase lasts.	Avifaunal specialist / suitably qualified ECO

7.4.5 Emergency preparedness and response plan

This EPRP is developed to address potential emergencies that may arise during the construction and operation phases of the Project, including OHLs and substations. The primary aim of the EPRP is to ensure the safety of all personnel involved in the project, minimise environmental impacts, and ensure a swift response to any incident. The EPRP is designed to be a foundational document, which should be tailored to the specific characteristics of the project, adhering to local regulations and identified risks. In alignment with IFC Performance Standards, the EPRP also includes provisions for handling landmine demining incidents, oil spills, the safety risk of fires to project infrastructure and surrounding communities, and potential infrastructure failures. Regular reviews and drills are essential to validate the effectiveness of the plan.

To ensure a holistic approach to emergency management, the EPRP is closely linked with other relevant management plans, including the Community Health, Safety, and Security (CHSS) Management Plan, the Traffic and Transportation Management Plan, the Waste Management Plan, and the Occupational Health and Safety (OHS) Management Plan. These interconnections ensure consistency and integration across all project phases and functional areas. Specific references to these plans are incorporated into emergency response procedures to enhance coordination and effectiveness. The EPRP also addresses the assessment of major accident risks across all project phases, with particular emphasis on occupational health and safety (OHS) and community health, safety, and security (CHSS).

The EPRP requires mandatory consultation with national and local emergency services and authorities to define and agree upon roles and responsibilities in emergency response. This includes engagement with the police, fire departments, health services, and relevant government agencies. Agreements must cover responsibilities for joint drills, resource mobilisation, communication protocols, and coordination during emergencies. These consultations will also ensure alignment with local and national emergency response frameworks.

The EPRP must undergo annual reviews to incorporate feedback from drills, lessons learned from actual incidents, updates to regulatory requirements, and stakeholder input. These reviews must also ensure that agreements with national emergency services remain current and effective. The EPRP should also be updated prior to construction in line with the Security Management Plan updates, major accidents and unplanned events risk assessment results. Table 7-10 presents details and procedures of the EPRP.

Table 7-10: Foundation EPRP for the Project

Aspect	Phase	Description

Responsibility	All Phases	• The responsibility of the EPRP resides with the specific proponent at each respective phase:
		  ○ The proponent and contractor (including sub-contractors) will be responsible for incorporating the EPRP during construction
		  ○ The owner and operator of the OHL and substations will be responsible during all phases from operation onwards
		• Consultations are required with emergency services and authorities to agree on roles and responsibilities in the context of emergency response

Risk Assessment	All Phases	• A comprehensive risk assessment should be conducted to determine risk that the EPRP should consider. This risk assessment should be project-wide and cover all project phases. This should include specific consideration of risks related to landmine demining, oil spills, fire hazards, and critical infrastructure failures

Aspect	Phase	Description
		• Consideration needs to be made to major accidents risk during the risk assessment for all project phases
Regulatory and Policy Framework	All Phases	• Compliance of the EPRP to any applicable national or local regulations is required • The EPRP should adhere to any applicable international guidance such as the IFC EHS Guidelines, IFC Performance Standards and applicable IFC Guidance Notes. Applicable ISO Standards such as ISO 21110:2019, ISO 14001:2015 and ISO 45001:2018 should be considered. The EPRP must address environmental and social risks per IFC Performance Standards, including managing risks related to fire, oil spills, hazardous materials, and community safety
Emergency Contact Information	All Phases	• Emergency Services: Dial (Police - 113, Fire – 114, Ambulance – 112/116) • Project Emergency Contact: [Insert Project Emergency Contact Name and Number] and include alternative contacts
Types of Emergencies	Construction	• Electrical Hazards: o Types: Exposed wires, electrical shorts, improperly installed equipment o Response: Immediately shut down power sources, use insulated tools, report to the project safety officer, and arrange for electrical inspections • Fire on Construction Site: o Types: Fires from flammable materials, equipment malfunction, welding sparks, lightning o Response: Use fire extinguishers, activate the fire alarm system, evacuate the area, contact emergency services, and account for all personnel • Structural Failures (e.g., Tower Collapse): o Types: Tower collapse, failure of temporary structures like scaffolding o Response: Evacuate the area, assess and stabilise the structure if possible, report the incident to the emergency response team, and arrange for structural engineers • Chemical Spills: o Types: Spills of fuel, lubricants, or other hazardous materials o Response: Use appropriate spill kits, contain and clean up the spill, ventilate the area, inform the environmental safety officer, and report to local authorities if necessary • Medical Emergencies: o Types: Injuries (e.g., cuts, fractures), heatstroke, or other health issues o Response: Provide immediate first aid, call for medical assistance, transport the injured to the nearest health facility, and document the incident • Security Incidents: o Types: Theft, vandalism, unauthorised access, community unrest, violence, conflict o Response: Alert security personnel, lock down the area if necessary (in certain instances, evacuations may be necessary at the discretion of authorities), report to the police and other relevant authorities, and review CCTV footage if available • Major accidents: o Types: Electrocution, falls, equipment failure, environmental hazards o Response: Include major accidents in any risk assessment for all project phases, implement emergency medical

Aspect	Phase	Description
		response in the case of major accident occurring, provide first aid if required, call for medical assistance, transport injured to nearest health facility, document the accident in terms of cause and outcome and lessons learned, report on accidents • Disease/sickness incidents: o Types: Regional and global pandemics, vector-related diseases, communicable diseases o Response: Apply responses appropriate to the specific incident as per the CHSS and OHS management plans, communicate with health authorities and seek emergency medical assistance. Implement quarantine protocols if required and as guided by health authorities • UXO-related incidents: o Types: Explosions, identifying UXOs, injuries o Response: Implement CHSS and OHS management plan specific measures and the specific emergency response to UXO incidents, contact emergency services (medical, fire, police) restrict access to the danger areas, contact demining experts and the national demining authority
	Operation	• Electrical System Failures: o Types: Transformer failures, line faults, breaker trips o Response: Isolate the faulted section, notify the control room, perform necessary repairs, and restore power in phases to avoid further issues • Fire at Substations: o Types: Fires from electrical faults, equipment overheating o Response: Activate fire suppression systems, evacuate the area, contact the fire department, and isolate affected electrical circuits • Natural Disasters (e.g., Earthquakes, Flooding): o Types: Earthquakes, flooding, severe storms o Response: Secure facilities, Implement protocols for emergency evacuations and follow evacuation plans, assess damage, and coordinate with local emergency services for recovery • Power Outages: o Types: Local or widespread outages due to equipment failure or external factors o Response: Investigate the cause, use backup power systems if available, inform affected customers, and restore service as soon as possible • Security Threats: o Types: Sabotage, terrorist threats, unauthorised access, violence, conflict, community unrest o Response: Implement emergency security protocols, notify local authorities, increase surveillance, and follow evacuation or lockdown procedures as needed • Major accidents: o Types: Electrocution, falls, equipment failure, environmental hazards o Response: Include major accidents in any risk assessment for all project phases, implement emergency medical response in the case of major accident occurring, provide first aid if required, call for medical assistance, transport injured to nearest health facility, document the accident in terms of cause and outcome and lessons learned, report on accidents

Aspect	Phase	Description

Emergency Response Team	Construction and Operation	• Appoint and continuously train a dedicated emergency response team for both phases. Team members must clearly understand their roles and responsibilities and could include:
		  ○ Team Leader: Oversees the response, coordinates with emergency services, and communicates with management
		  ○ Safety Officer: Monitors safety conditions, conducts risk assessments, and ensures compliance with safety protocols
		  ○ Medical Responders: Provide first aid and coordinate medical evacuations
		  ○ Fire Safety Officers: Manage fire suppression efforts and coordinate with fire departments
		  ○ Security Personnel: Handle security incidents and manage access control
		  ○ Communication Officers: Ensure effective communication between team members, emergency services, and affected parties
		• Training of emergency response personnel should include:
		  ○ Initial Training: Comprehensive training on emergency protocols, equipment usage, and first aid
		  ○ Ongoing Training: Regular drills and refresher courses to keep skills current
		  ○ Specialised Training: For handling specific emergencies (e.g., chemical spills, electrical faults)

Evacuation Procedures	Construction	• Establish clearly marked evacuation routes and assembly points using highly visible signage including emergency lighting where required • Conduct regular evacuation drills (quarterly however the frequency can be increased during high-rick periods) and evaluate the performance of these drills • Designate personnel to assist with evacuation, focusing on ensuring safety in remote or elevated work areas and dedicated assistance to personnel with disabilities or special needs
	Operation	• Develop specific evacuation procedures for substations and control rooms including steps for deactivating equipment • Ensure that evacuation routes are always accessible and clearly marked with highly visible signage and emergency lighting in line with emergency lighting standards and a specific lighting management plan • Periodically conduct evacuation drills and exercises
First Aid and Medical Assistance	Construction	• Set up well-equipped first aid stations along the project route • Train designated first aid responders among construction personnel and provide on-going refresher training • Prepare first aid responders for major accidents that have a higher possibility of occurring • Provide construction vehicles with essential first aid kits
	Operation	• Ensure that all operational staff are trained in basic first aid and CPR and provide on-going refresher training • Maintain training records and certifications • Equip substations with fully stocked first aid kits and regularly inspect these • Prepare first aid responders for major accidents that have a higher possibility of occurring
Fire Safety	Construction and Operation	• Install and maintain appropriate fire detection and suppression systems, particularly in substations and near transformer areas and test these systems regularly

Aspect	Phase	Description
		• Conduct regular fire safety training and drills and maintain performance records • Appoint fire wardens with appropriate training to oversee key project areas
Communication Plan	Construction and Operation	• Establish a clear communication protocol for reporting and managing emergencies • Set up an incident command centre for effective coordination during emergencies • Ensure robust and reliable communication tools are available and operational and backup systems in case of failures
Stakeholder Engagement	Construction and Operation	• Identify key internal and external stakeholders who could be affected by emergency situations and ensure that clear communication lines are developed and maintained • Provide clear signage for stakeholders on procedures to follow in the event of an emergency and who to contact to report situations i.e. fires, line breaks • Ensure reporting/communication lines to local and national authorities are maintained • Provide key stakeholders with information about emergency events (occurrences and responses) through notice boards or flyers • Disclose the EPRP and its procedures, protocols and commitments to stakeholders and local communities
Electrical and Safety Equipment	Construction and Operation	• Regularly inspect and maintain all electrical safety equipment and address maintenance issues promptly in line with a specific Maintenance Management Plan • Keep a sufficient supply of safety gear (PPE) and emergency repair materials and ensure personnel are trained on the use of such equipment • Ensure backup power solutions are available for critical systems, especially in substations, and regularly test these systems
Security Measures	Construction and Operation	• Implement strict access control to construction sites and substations and monitor access • Monitor sites with CCTV, security personnel and schedule regular patrols • Conduct security awareness and response drills
Training and Awareness	Construction and Operation	• Continuously educate and train staff on emergency response protocols and ensure certifications are valid • Use educational programs, regular safety meetings and initiatives to reinforce safety culture
Review and Revision	All Phases	• Review and update the EPRP annually to incorporate new safety standards, changes in regulations and feedback from drills and/or emergency situations by adopting a lessons learned approach • Maintain documentation of reviews and monitoring of performance

Emergency response for landmine demining incidents

Landmine encounters during construction activities could lead to severe injury, fatalities, or damage to equipment and infrastructure. The following response procedure is recommended:

- Identification: If any suspected landmines or unexploded ordnance (UXO) are discovered, immediately halt all activities within a 300-meter radius;
- Alert: Contact the project emergency response team and demining experts. Notify local authorities and international demining organisations;

- Evacuation: Evacuate all non-essential personnel from the area, establishing a perimeter with clearly marked no-entry zones;
- Specialist Intervention: Call certified demining professionals to assess, neutralise, and remove the landmine/UXO;
- Clearance Certification: Resume work only after a certified demining team declares the area safe;
- Medical Response: In case of an explosion or injury, immediately provide first aid, evacuate injured personnel to the nearest medical facility, and inform emergency services; and
- Incident Reporting: Log and report the incident to relevant authorities, including project management and local government.

Emergency response to fires (construction and operation phases)

Fires caused by flammable materials, electrical faults, or environmental conditions (e.g., dry vegetation near powerlines) pose significant threats to infrastructure and nearby communities. The following response procedure is recommended:

- Detection: Ensure early detection through fire alarms and continuous monitoring of high-risk areas, including OHLs, substations, and construction sites;
- Evacuation: Activate emergency alarms and follow evacuation routes. Evacuate personnel to designated assembly points away from the fire hazard;
- Containment: Fire wardens or trained personnel should use fire extinguishers or fire suppression systems (in substations). If necessary, firefighters should be called to contain the blaze;
- Emergency Communication: Immediately notify emergency services (fire department) and activate the incident command centre. Inform local authorities and nearby communities of the threat if the fire could spread;
- Infrastructure Shutdown: Isolate electrical circuits in substations and transmission lines in the affected area to prevent further damage or electrical hazards;
- Community Safety: Coordinate with local community leaders to evacuate nearby residents if the fire risks spreading into inhabited areas;
- Recovery: Once the fire is extinguished, assess the damage to infrastructure and personnel. Initiate repairs to critical systems and resume operations only after safety inspections; and
- Documentation: Record all fire incidents in the emergency log, detailing causes, responses, and lessons learned.

Infrastructure failure (e.g., tower collapse, substation malfunction)

Structural failures during construction or operation could lead to power outages, hazards to human life, or environmental contamination. The following response procedure is recommended:

- Initial Alert: If a tower or substation collapses or malfunctions, immediately alert the emergency response team and evacuate the vicinity;
- Area Security: Isolate and secure the area to prevent unauthorised access or accidental harm;
- Assess and Stabilise: Conduct an initial visual assessment, ensuring no one is trapped or injured. Deploy structural engineers to assess the cause of the failure and provide a stabilisation plan;
- Electrical Shutdown: Isolate the affected portion of the electrical network to prevent further damage or hazards;
- Public Notification: Inform communities and local authorities of any interruptions in service or potential risks associated with infrastructure failure;
- Repair: Mobilise repair crews once the site is safe and stabilise the structure or system. Prioritise repairs to minimise disruptions to service; and
- Post-Incident Review: After resolving the incident, conduct a full investigation into the cause of the failure and update safety protocols and designs to prevent recurrence.

Emergency response to hazardous chemical spills (fuel, lubricants and other hazardous materials)

Spills during transportation or storage of chemicals can contaminate the environment, affect worker health, and damage equipment. The following response procedure is recommended:

- Initial Alert: Upon detecting a spill of hazardous chemicals, immediately notify the emergency response team and cordon off the affected area;
- Containment: Use chemical spill containment kits (absorbent materials, barriers) to prevent the chemical from spreading into nearby water sources, soil, or populated areas;
- Evacuation: Evacuate personnel from the immediate area, ensuring safety from harmful fumes or hazardous contact;
- Specialised Cleanup: Deploy trained hazardous materials (HAZMAT) personnel to safely remove and neutralise the spill, following environmental safety guidelines;
- Environmental Monitoring: After containment, conduct soil and water testing to ensure there is no lasting contamination;
- Reporting: Report the spill to environmental authorities and log the incident, outlining response measures and potential environmental impacts; and
- Medical Assistance: For any personnel affected by the spill (e.g., chemical burns, inhalation), provide immediate medical aid and transport to a hospital for further care.

Emergency response to oil spills

Oil spills during storage, transport, or use of machinery can lead to environmental contamination, particularly soil and water pollution, as well as pose a fire risk. The following response procedure is recommended:

- Initial Alert: Immediately notify the emergency response team upon detection of an oil spill. Evacuate non-essential personnel from the affected area;
- Containment: Use oil spill containment kits, such as absorbent pads, booms, and barriers, to contain the spill and prevent it from spreading to water bodies or other sensitive environments. Place oil barriers near drainage systems to stop further contamination;
- Evacuation: If the spill is extensive or poses a fire risk, evacuate the area, ensuring personnel are moved to a safe distance;
- Oil Recovery: Deploy specialised oil recovery systems (e.g., skimmers or vacuum trucks) to recover spilled oil from soil or water. Ensure the recovered oil is safely stored and later disposed of or treated per Angolan environmental regulations;
- Fire Safety: If there is a fire risk due to the presence of oil, ensure fire suppression systems and fire extinguishers are readily available. Call the fire department if the situation escalates;
- Environmental Monitoring: After containment, test surrounding soil and water sources for contamination. Implement remediation procedures if contamination is detected;
- Incident Reporting: Report the oil spill to environmental authorities, log the details of the incident, and document the containment and cleanup measures taken; and
- Long-Term Remediation: In the case of significant spills, implement long-term remediation measures such as soil excavation, bioremediation, or water treatment to restore the affected area to its original state.

Natural disasters (e.g. earthquakes, flooding, severe storms)

Natural disasters pose unpredictable risks, potentially damaging infrastructure, increasing the likelihood of major accidents occurring and endangering both personnel and surrounding communities. The following response procedure is recommended:

- Monitoring: Utilise weather, seismic monitoring and reporting systems to detect/identify/predict potential natural disasters in advance;
- Evacuation and Shelter: Follow pre-established evacuation protocols for all personnel. Direct them to safe locations or shelters outside of high-risk areas;

- Securing Infrastructure: Shut down electrical systems and secure equipment to prevent further damage during earthquakes or flooding;
- Communication: Notify local communities, stakeholders, and authorities about the disaster and potential risks to infrastructure;
- Post-Disaster Assessment: After the event, assess damage to critical infrastructure such as towers, substations, and access roads. Mobilise repair teams immediately where necessary; and
- Emergency Services Coordination: Coordinate with local emergency services for disaster relief, ensuring access to the project area for rescue or recovery operations.

Power outages

Local or widespread power outages due to equipment failure or external factors. The following response procedure is recommended:

- Identify Cause: The control room must isolate the faulted section and assess the cause of the power outage;
- Communication: Immediately notify affected communities and stakeholders about the outage and estimated repair time;
- Backup Systems: Activate backup power systems where available, particularly for critical infrastructure like substations and control centres;
- Repairs: Dispatch repair teams to the site of the fault to restore power; and
- Notification of Restoration: Once power is restored, inform stakeholders and document the outage for future reference.

Security threats (sabotage, unauthorised access and terrorist threats)

Security breaches pose threats to personnel safety and critical infrastructure integrity. The following response procedure is recommended:

- Immediate Lockdown: Initiate lockdown procedures if unauthorised access, sabotage and/or terrorist threat is detected, securing all sensitive areas;
- Evacuation: Evacuate non-essential personnel and ensure safety protocols are in place for those in critical areas;
- Alert Authorities: Notify local law enforcement and security teams immediately for assistance;
- Surveillance Review: Review CCTV footage to determine the nature of the threat and identify suspects; and
- Recovery and Prevention: After the incident, review security protocols, implement additional safeguards, and conduct a full investigation to prevent future occurrences.

Traffic accidents

Traffic accidents involving project vehicles or related to project activities pose significant risks to both personnel and local communities. The following response procedure is recommended, in alignment with the Traffic and Transportation Management Plan:

- Ensure Safety at the Scene: Immediately secure the accident area to prevent further harm. Move any vehicles to the side of the road if possible, and set up warning signs or cones to alert oncoming traffic;
- Medical Assistance: Check for injuries and provide first aid if necessary. Call emergency medical services for serious injuries and transport victims to the nearest healthcare facility;
- Notify Authorities: Contact local police and other relevant authorities to report the accident and ensure proper documentation;
- Communication: Notify the project control room and stakeholders about the accident, including the status of personnel and potential delays due to road closures or disruptions;
- Accident Investigation: A project representative, such as the EHS Coordinator, should attend the scene to gather information, take photos, and document details of the accident for internal records and future investigation;

- Repairs and Road Clearance: If project vehicles are involved, arrange for towing services and vehicle repair. Ensure the road is cleared of debris or hazardous materials as soon as possible to restore safe traffic conditions;
- Reporting: Report the accident internally following the project's incident reporting procedures, including an assessment of the causes and corrective actions to prevent future accidents. Document the incident for future reference and compliance with the Traffic and Transportation Management Plan; and
- Community and Stakeholder Notification: If the accident affects local communities or causes delays, notify affected stakeholders about the incident and provide updates on road conditions and any potential project-related traffic disruptions.

7.4.6 Waste management plan

The Project will generate various types of waste during its construction, operation, and decommissioning phases. Appropriate waste management is crucial to minimise environmental impacts and comply with relevant national and international environmental standards (as described in Section 3). A dedicated WMP has been prepared to address all waste streams arising from the Project. The objectives of this WMP includes:

- Ensuring compliance with international and national waste management standards;
- Allow for the development of practical and effective methods to treating, managing and disposing of waste;
- Encouraging the application of the waste management control hierarchy of "Prevent, Reduce, Reuse and Recycle"; and
- Implementing proactive measures to reduce waste production at all stages of the Project lifecycle.

This standalone plan is presented in Volume 3, Appendix M and a summary of the WMP is outlined below.

Responsibilities

The general responsibilities associated with the WMP are presented in detail in Appendix M and include the responsibilities of general management, the EHS manager, workers, suppliers and contractors, and waste management companies. These responsibilities are directly linked to those identified in the Environmental and Social Management Plan (ESMP), ensuring alignment across all management plans.

Construction phase

During the construction phase, contractors will implement the WMP to minimise and control waste. Waste will be separated at the source, deposited in containers, compacted, and stored in paved areas. Once sufficient volume of waste is collected at waste management areas in construction camp locations, waste will be collected by certified contractors to be disposed of in certified waste disposal sites identified prior to the start of construction activities. If incineration is considered as a solution for the treatment of waste, efforts will be made to minimise chemicals listed in Annex C of the Stockholm Convention to prevent the formation of unintentional Persistent Organic Pollutants (POPs).

There will be four construction camps in total, each with a footprint of 5 000 m^2 within close proximity to the planned substation locations. The siting of the construction camps, and the waste management areas contained within, will take cognisance of no-go and sensitive areas identified in the ESIA and will be decommissioned and rehabilitated once construction activities have concluded. Continuous site cleanup and waste management will be prioritised.

The Contractor's Environmental, Health, and Safety (EHS) Manager will supervise waste segregation and storage at all designated waste management areas. The EHS Manager will ensure compliance with segregation protocols, monitor waste storage practices, and conduct regular inspections.

The typical types of waste generated during the construction and their recommended management are presented in Table 7-11.

Table 7-11: Typical waste generated during construction

Type of Waste	Description	Management Strategies
Construction and Demolition	Concrete rubble, metal scraps, timber, vegetation, packaging, excess materials	Recycle/reuse materials on-site. Metal scraps to recycling facilities. Soil/rubble for landscaping/backfilling.
Hazardous Waste	Oils, lubricants, broken filters, treated wood, aerosol cans, tyres, paints, batteries, electronic waste	Collect separately, dispose/treat at licensed facilities to prevent contamination.
Domestic Waste	Food waste, cans, packaging from construction camps	Reduce, recycle, and dispose of the remainder at licensed municipal facilities.

Wastewater management during construction

Domestic wastewater from kitchens, sanitation, and laundry, along with wastewater from equipment and vehicle maintenance, will be managed using temporary treatment facilities, oil/water separators, and proper disposal methods which meet discharge standards. Reuse of wastewater where possible is encouraged to avoid discharge. Wastewater from construction activities such as concrete mixing will be managed in sedimentation ponds to settle out any suspended solids before being discharged in line with acceptable limits of wastewater discharge. Refer to Volume 3, Appendix M for detailed wastewater sources and management measures.

Non-hazardous waste management during construction

Non-hazardous waste, including excess fill materials, scrap wood and metals, and small concrete spills and plastic packaging, will be segregated, compacted, and stored until collected by a certified waste management company. Biodegradable waste from canteens can be utilised in organic composting is the quality is acceptable. The majority of non-hazardous waste can be accumulated in dedicated containers to then be collected by certified waste management companies for recycling purposes. Refer to Volume 3, Appendix M for detailed non-hazardous waste sources and management measures.

Hazardous waste management during construction

Hazardous waste, such as contaminated soils, oily rags, used oil filters, spill cleanup materials, pesticides, preservatives and paints, used tyres and electrical equipment, will be managed in accordance with strict disposal protocols to prevent environmental contamination. Only certified hazardous waste management contractors should be utilised for disposal and recycling.

The Contractor will ascertain whether licensed disposal sites are operated to acceptable standards by:

- Requesting and reviewing licenses and permits for third-party waste disposal facilities;
- Conducting due diligence audits or site inspections to verify compliance with national and international standards; and
- Requiring waste disposal certificates and compliance documentation for each hazardous waste consignment.

Refer to Volume 3, Appendix M for detailed hazardous waste sources and management measures.

Operation phase

During the operation phase, typical waste will include maintenance waste such as used oils, filters, and worn-out parts, which will be managed with strict disposal protocols to prevent contamination. If

incineration is considered as part of the waste treatment process during the operation phase, efforts will be made to minimise chemicals listed in Annex C of the Stockholm Convention.

Disposal should be through certified waste management contractors only. Domestic waste from operational staff and facility maintenance will be handled through reduction, reuse, and recycling strategies, with residual waste disposed of at approved municipal sites. Wastewater from substation maintenance and cooling systems will be collected, treated, and, where feasible, recycled to meet environmental standards. Non-hazardous waste, such as plastic packaging, paper, cardboard, and scrap metal from maintenance activities, will be managed through certified waste companies. Table 7-12 outlines various types of hazardous waste generated during the operation phase, their origins, and their final destinations for disposal or recycling. Refer to Volume 3, Appendix M for detailed waste sources and management measures during operation phase.

Table 7-12: Hazardous waste management during operation

Code	Waste Description	Origin of Waste	Destination
16 06 01	Lead/nickel-cadmium batteries and accumulators	Vehicles, heavy equipment	Battery recycling
15 01 10	Plastic packaging with hazardous substances	Maintenance activities	Returned to supplier or other identified options
16 01 07	Oil filters	Maintenance of equipment and vehicles	Oil drainage and filter recycling
20 01 35	Electrical/electronic equipment	Maintenance activities	Certified recycling company
17 06 03	Insulating oils/gases (e.g., PCB, SF_6)	Maintenance activities	Certified recycling company

Waste management procedures

The proponent and contractors will monitor, control, and document waste generation and disposal, adhering to the WMP's guidelines and reporting requirements. Measures to reduce waste production shall include:

- Implement the waste hierarchy of Prevent, Reduce, Reuse, and Recycle as a guiding principle;
- Adopt procurement strategies to reduce packaging waste by sourcing materials in bulk and selecting suppliers with take-back programs;
- Use durable and reusable materials where possible, such as prefabricated components to minimise waste generation onsite; and
- Monitor material inventories to avoid over-ordering and maximise the reuse of offcuts and surplus materials.

Health, safety and risk management

General health and safety risk considerations have been identified as part of the WMP and include aspects regarding pesticide use, general safety practices and OHS training. Pesticide use should be guided by pest management strategies and plans incorporating specific health and safety precautions for pesticide use. General safety practices should include specific and appropriate use of PPE, knowledge of use of first aid kits and spill kits which are readily available, health insurance for workers, and dedicated EHS officers tracking incidents and activities. OHS training should include regular awareness and training of workers to EHS risks and hazards in the workplace as well as dedicated training of responsible individuals such as EHS officers and medical response individuals.

Monitoring and reporting

In order to measure the environmental performance, reporting criteria are established so that information is collected at operations level and analysed through an incident reporting, inspection and auditing process.

The Project proponent will generate a Waste Manifest to send the waste from the source and copies will be kept by the EHS area. The Waste Manifest can be divided into three parts:

- Part 1 - is filled in by the Waste Producer;
- Part 2 - is completed by the sender of the waste; and
- Part 3 - is filled in by the person receiving the waste.

Contractors will monitor, control and keep up-to-date records of the waste generated, including copies of the delivery certificates provided by the waste management subcontractor responsible for disposal or transport, describing its origin, quantity and type of waste, if applicable.

Article 9(g) (Presidential Decree no. 190/12) states that an exhaustive record will be kept annually of the origin, quantities and types of waste handled, transported, treated, recovered or disposed of, and that it will be kept for five (5) years. A Waste Tracking Register will be kept at Proponent offices.

Article 11(2) (Presidential Decree no. 190/12) stipulates that all entities responsible for waste management must immediately inform MINAMB of the occurrence of any cases of accidental waste spillages, through their competent bodies.

To centralise and standardise all performance tracking activities, the following framework will be implemented:

- Performance Indicators (KPIs):
  - Amount of waste generated, categorised by type;
  - Percentage of waste recycled, reused, or composted;
  - Compliance rates for the disposal of hazardous waste;
- Monitoring Plan:
  - Waste management performance will be evaluated through regular site audits, inspections, and waste tracking registers;
  - Monitoring activities will include:
    - Monthly inspections to identify any deviations or non-compliances;
    - Quarterly audits conducted by the EHS Manager to verify implementation of the WMP and ensure corrective actions are implemented;
- Reporting Requirements:
  - Contractors will submit monthly waste reports detailing waste quantities, types, and disposal destinations; and
  - The Project proponent will prepare annual waste summaries for internal review and, where required, for reporting to external stakeholders and regulatory authorities.

This comprehensive monitoring and reporting framework ensures transparency, accountability, and continual improvement of waste management practices throughout the Project lifecycle.

WMP review

The WMP is valid for a period of four (4) years (in accordance with Article 7(1) of Presidential Decree no. 190/12, Waste Management Regulations) from the date of its approval. The WMP must be revised and submitted to the National Waste Agency at least ninety (90) days before its expiry date, whenever there are substantial changes to the plan submitted. These substantial changes may include:

- In the design or operation of the installation (reason for this update);
- On the type of chemical products to be handled;

- The type of waste to be handled and treated; and
- The type of gases emitted or monitoring procedures.

If the government amends the Presidential Decree no. 190/12, the Project proponent will have to review and adapt the measures and procedures included in the WMP to the new legal requirements.

Link to Emergency Preparedness and Response Plan (EPRP)

This WMP is directly linked to the Emergency Preparedness and Response Plan (EPRP) presented in Volume 2, Section 7.4.5. Procedures for addressing waste-related incidents, including hazardous waste spills or leaks, are outlined in the EPRP. Emergency response protocols include:

- Immediate containment and cleanup of spills;
- Notification of emergency response teams and certified disposal facilities; and
- Contact information for emergency teams and hazardous waste contractors is maintained in the EPRP.

Link to Stakeholder Engagement Plan (SEP)

The WMP is aligned with the Stakeholder Engagement Plan (SEP), which outlines strategies for engaging stakeholders and local communities. Key elements include:

- Communicating waste management plans to stakeholders and affected communities;
- Engaging communities regarding potential impacts and mitigation measures; and
- Providing updates on waste management activities through community meetings or information sessions.

Continuous improvement

To ensure the WMP remains effective, a process of continuous improvement will be established:

- Feedback Mechanism: A feedback mechanism will be provided to workers, stakeholders, and the community through the Project's Grievance Management Procedure;
- Review and Update: The WMP will be regularly reviewed and updated based on performance data, regulatory changes, and lessons learned during implementation; and
- Public Awareness Programs: Initiatives will be developed to raise awareness among local communities about proper waste management practices, particularly if public lands or facilities are affected.

7.4.7 Labour management plan

The Labour Management Plan for the Project establishes the terms and conditions of employment, outlining the requirements and procedures that workers must follow during the construction and operation phases. This plan aims to ensure the welfare, rights, and safety of all workers involved in the project.

Employment terms and conditions

- Direct Hiring: Workers will be directly hired by the project management team and will include positions such as project managers, engineers, security personnel, environmental and social technicians, topographers, mechanics, electricians, plumbers, stonemasons, and other necessary roles; and
- Local Recruitment: Recruitment will primarily occur in the regions along the powerline route, contributing to the social and economic development of these areas. Hiring through intermediate companies will comply with local legislation and contracts will ensure the respect of human and workers' rights (i.e., prohibition of forced and child labour).

Training and development

A comprehensive training schedule should be developed, focusing on various areas relevant to the environmental, social, health, and safety aspects of the Project (in line with the EHS Training and Awareness Plan):

- First Aid Response: Training workers in basic first aid to ensure quick and effective response to accidents;
- Environmental Emergency Response: Procedures for responding to oil spills and other environmental emergencies using the appropriate emergency kits;
- Health Awareness: Education on endemic diseases (e.g., malaria and dengue) and preventive measures;
- Safety Training: Proper use of safety equipment and adherence to health and work safety protocols;
- Environmental Management: Good practices for minimising environmental impacts during construction and operation;
- Project Management: Skills development in project management to enhance efficiency and effectiveness; and
- Disciplinary Actions and Anti-Corruption Training: Information on disciplinary actions and penalties, along with anti-bribery and anti-corruption training, to be provided during the induction process before the start of employment.

This schedule will be alignment with commitments related to the WMP, EPRP as well as the EHS Training and Awareness Plan.

Worker welfare and rights

- Contracts and Legal Compliance: All employment contracts will be in line with local labour laws and international standards, ensuring fair treatment and rights for workers;
- Grievance Mechanism: A formal Workers Grievance Mechanism will be developed and implemented, providing all workers with an accessible and confidential platform to raise concerns and grievances related to their employment conditions. This mechanism will:
    - Ensure Accessibility: Be available to all workers, regardless of their role or employment type (direct or subcontracted);
    - Confidentiality: Safeguard the confidentiality of workers who raise complaints;
    - Resolution Process: Define clear timelines for receiving, addressing, and resolving grievances;
    - Non-Retaliation: Guarantee that workers can use the mechanism without fear of retaliation;
    - Awareness and Training: Include training sessions for workers and management on how to use and respond to the grievance mechanism; and
- Fair Remuneration: Workers will receive fair wages and benefits as per industry standards and local regulations.

This LMP is designed as a guide to create a safe, respectful, and fair working environment for all employees involved in the project, ensuring compliance with local and international labour standards and contributing positively to the local communities.

Workers grievance mechanism

A dedicated Workers Grievance Mechanism will be established to address any complaints or concerns raised by workers during both the construction and operation phases of the project. This mechanism will operate as a key component of the Labour Management Plan to ensure worker rights are respected and disputes are resolved efficiently and fairly. Key features of the mechanism must include:

- Accessibility: Workers will be informed of the grievance mechanism during the induction process, and it will be accessible through various channels, including physical submission boxes, a hotline, and email;

- Process Transparency: The mechanism will include defined steps for lodging, reviewing, and resolving grievances, with regular communication to the complainant regarding the status of their grievance;
- Management Oversight: A dedicated Grievance Officer will oversee the process, ensure timely resolution of complaints, and report outcomes to project management;
- Documentation: All grievances will be logged, along with actions taken, to enable tracking and reporting; and
- Periodic Review: The grievance mechanism will be periodically reviewed to incorporate feedback from workers and improve its effectiveness.

Commitments for collective dismissals and retrenchment

Collective Dismissals: If collective dismissals become necessary during the operational phase, the Project will comply with IFC PS2 requirements by developing a Retrenchment Plan to ensure fair treatment and transparency. This plan should cover:

- Engagement with workers and representatives;
- Clear and fair criteria for dismissal;
- Support measures (severance, skills training, and job placement assistance); and
- Monitoring and reporting mechanisms.

Workers subject to retrenchment will have access to the grievance mechanism to voice concerns about the retrenchment process, ensuring transparency and fairness.

Worker's accommodation

Develop a construction phase Workers Accommodation Management Plan in line with IFC and EBRD Guidance Note on workers' accommodation. This must be developed in line with the development of the C-ESMP.

Workers' Human Rights impact prevention

The Project will comply with IFC PS2 requirements, ILO standards and the following measures provided in the HRIA prepared for this project:

- Prevention of discrimination of Pak, RNT, contractor and supplier workers:
    - Conduct due diligence on contractors and suppliers, including their subscription or acknowledgement of workers' rights aspects in their policies;
    - Include prohibitions on all forms of unfair or illegal discrimination based on race, nationality, religion, gender, age, sexual orientation, disability, ancestry, social origin, trade union membership, political belief or any other potential bias in contracts and agreements with contractors and suppliers;
    - Enterprise development programs could be done with local contractors where capacity can be built on non-discrimination;
    - Where possible, hire local contractors and suppliers;
    - Be mindful of appointing people and contractors that employ mostly women in "gendered" roles such as cleaning, and not in other activities of the project;
    - Any assistance that is provided to local communities should not be assumed to also benefit the Khoi San groups, as they face widespread discrimination and exclusion. Any such benefits should be provided in a separate forum (e.g., mobile) and in a location that is distant from Bantu communities;
    - Where employment opportunities are advertised, especially local employment of semi-skilled and unskilled labour, care should be taken not to discriminate against Khoi San applicants. Consider informing Khoi San people of potential temporary employment opportunities in a separate forum as above and in the !Kung language spoken by them;
    - Where Khoi San applicants are successful in obtaining even temporary employment, the occurrence of workplace discrimination, harassment and bullying should be monitored closely;

  - Create awareness among contactors' employees on the importance of inclusivity and non-discrimination in the workplace. This could be done through visual media and toolbox talks on site, and other passive awareness media such as posters in dining and ablution areas;
  - Awareness raising of application opportunities should be done beforehand with the support of local municipal administrators and sobas to ensure that applicants can prepare the relevant documents. Capacity building with municipal administrators and sobas on the importance of inclusivity and non-discrimination might be necessary to ensure true support;
  - Conduct labour audits of contractors and suppliers;
- Encouraging freedom of association:
  - Leverage any existing relationships with unions to support freedom of association for workers to reduce the risk of the project contributing to human rights impacts associated with freedom of association;
  - Conduct due diligence on contractors and suppliers, including their views on freedom of association and collective bargaining in their policies;
  - Enterprise development programs could be done with local contractors where capacity can be built on freedom of association, collective bargaining and other workers' rights, management capacity, human resource management, providing written employee contracts, long hours and insufficient rest days or holidays, monthly salaries beneath the minimum wage and lack of benefits, inadequate PPE, and delays in payment of salaries;
  - Be mindful of the potential unwillingness of contractor employees to report grievances for fear of losing their employment. Contractor management should reinforce positive messaging about the role of labour-related grievance mechanisms as part of due diligence and continuous improvement while providing strong and credible assurances about non-retaliation for raising concerns;
  - Conduct labour audits of contractors and suppliers;
- Prevention of unjust and unfavourable working conditions:
  - Provide onsite oversight and supervision into working conditions to ensure that adequate water and lunchtimes are provided, that PPE is used correctly, amongst others;
  - Conduct due diligence on contractors and suppliers, including their views on commitments to offer fair remuneration, working hours and working conditions to their employees;
  - Enterprise development programs could be done with local contractors where capacity can be built on just and favourable working conditions standards and other worker's rights, management capacity, human resource management, providing written employee contracts, long hours and insufficient rest days or holidays, monthly salaries beneath the minimum wage and lack of benefits, inadequate PPE; and delays in payment of salaries;
  - Ensure that payments of contractors or suppliers are done within reasonable timeframes. If timeframes can be shortened to 14 days, it would allow small local contractors who often have little cash flow to be able to pay wages on time;
  - Ensure that procurement processes take due consideration of, not only the cheapest contractors or suppliers, but also the costs required to provide workers with decent working conditions;
  - Conduct labour audits of contractors and suppliers;
- Providing safe and healthy working conditions:
  - Conduct due diligence on contractors and suppliers, including their commitments to H&S in their policies;
  - Enforce, at Pak and RNT, zero tolerance for fatalities, sound H&S planning, and the appropriate use of PPE and include such aspects in contracts and agreements with contractors and suppliers;
  - Enterprise development programs could be done with local contractors where capacity can be built on H&S, management capacity, human resource management, providing written employee contracts, long hours and insufficient rest days or holidays, monthly salaries beneath the minimum wage and lack of benefits, inadequate PPE, and delays in payment of salaries;
  - Ensure that working conditions that Pak and RNT have direct control over, are decent so as not to contribute to H&S issues experienced by contractor and supplier employees;
  - Conduct labour audits of contractors and suppliers;
- Prevention of forced labour and modern slavery:

- Conduct due diligence on contractors and suppliers, including their views on forced labour and modern slavery for instance, in their policies;
- Include prohibitions on all forms of forced labour and modern slavery in contracts and agreements with contractors and suppliers;
- Enterprise development programs could be done with local contractors where capacity can be built on forced labour, modern slavery and other worker's rights, management capacity, and human resource management;
- Conduct labour audits of contractors and suppliers;

- Prevention of child labour:
  - Conduct due diligence on contractors and suppliers, including their acknowledgement of child labour in their policies;
  - Include prohibitions on all forms of child labour in contracts and agreements with contractors and suppliers;
  - Enterprise development programs could be done with local contractors where capacity can be built on child labour; and
  - Conduct labour audits of contractors and suppliers.

Worker welfare and monitoring

- Monitoring of PAK Yatirim and subcontractor worker welfare shall be conducted through regular labour audits and inspections to ensure compliance with national legislation, international standards (IFC PS2), and contractual obligations;
- Audits will include verification of worker accommodation conditions, wage payments, fair treatment, availability of grievance mechanisms, and provision of adequate PPE and health and safety standards;
- PAK Yatirim's Environmental, Health, and Safety (EHS) Manager will oversee the monitoring activities and provide regular reports to project management;
- Subcontractors will be required to submit monthly welfare reports detailing worker conditions and corrective actions taken, if applicable; and
- Results from the labour welfare audits shall inform the ESMP's overall monitoring and reporting framework to ensure transparency and accountability across project phases.

7.4.8 Contractors' management plan

The Contractors Management Plan for the Project establishes guidelines and responsibilities for implementing and monitoring the plan, ensuring compliance with environmental, safety, and legal standards. This plan outlines the conditions to be included in contracts with subcontractors and the documentation required before hiring.

Contract conditions

Contracts with subcontractors will include specific conditions that must be accepted, such as:

- Environmental, Health and Safety (EHS) and energy standards: Compliance with project-specific standards and guidelines to ensure consistent compliance with EHS requirements;
- Occupational risk prevention: Information and legal obligations regarding the prevention of occupational risks;
- Environmental and Social (E&S) Obligations: Explicit requirements for subcontractors to adhere to the Project's E&S standards, including waste management, biodiversity preservation, and social engagement protocols;
- Penalties for non-compliance: Penalties for non-compliance or omissions related to contract terms;
- Disciplinary Actions and Anti-Corruption Training: Information on disciplinary actions and penalties, along with anti-bribery and anti-corruption training, will be included in contracts and provided during the induction process before subcontractors commence work; and
- Workers Grievance Mechanism: Subcontractors will be required to implement or participate in a Workers Grievance Mechanism aligned with project standards. This mechanism will provide

workers with an accessible and confidential platform to raise concerns, ensuring fair treatment and resolution.

Required documentation

Subcontractors must present the following documents before being hired:

- Administrative Documents: e.g. tax number and bank account certificate;
- Personal Documents: e.g. identity card, occupational health certificate and driving license; and
- Vehicle/Equipment Documents: e.g. vehicle identification and compulsory insurance.

Monitoring and Compliance

To ensure compliance with the Contractors Management Plan, the following monitoring procedures in Table 7-13 should be implemented:

Table 7-13: Contractor monitoring procedures

Aspect	Description
Inspections	A minimum of one inspection will be conducted every 825 hours of work by production subcontractors, including verification of E&S compliance.
Health and safety coordination meetings	At least one health and safety coordination meeting with contractors will be held every month, incorporating E&S performance reviews as a standing agenda item.
Verification of implementation	Monitoring the effectiveness of preventive measures through: • Minutes of meeting sessions with subcontractors; • Inspections and hours worked, included in the monthly Health and Safety report; • Compliance with E&S obligations and documentation of corrective actions; • Grievance Mechanism Reports, including a log of complaints and resolutions; and • Machine operator authorisation records.

Responsibilities

- Project manager and site supervisors: Responsible for ensuring sub-contractors adhere to grievance-related obligations outlined in their contracts, as well as other conditions and requirements (including environmental and social related) outlined in their contracts;
- Health and safety officers: Conduct regular inspections and coordinate monthly health and safety meetings and review grievance records;
- Compliance officers: Verify the effectiveness of grievance resolution processes and the preventive measures through documentation and reporting; and
- Environmental Officers: Monitor contractors' compliance with environmental standards, including waste management, resource conservation, and biodiversity protocols, and provide periodic feedback.

Auditing requirements

- Internal audits: Conduct biannual internal audits to assess contractors' adherence to E&S obligations and contractual requirements;
- External audits: Engage third-party auditors annually to independently verify compliance with EHS and E&S standards and identify areas for improvement; and
- Reporting: Document audit findings, corrective actions, and implementation timelines in quarterly compliance reports.

Prevention measures

The plan should include prevention measures to mitigate risks and ensure safe and environmentally responsible operations, such as:

- Regular Training: Subcontractors and their workers will receive training on grievance mechanisms, environmental standards, safety protocols, E&S obligations, and occupational risk prevention as per the EHS Training and Awareness Plan;
- Compliance Checks: Frequent checks and audits to ensure adherence to contract terms and legal requirements, and E&S standards; and
- Communication: Maintaining open lines of communication with subcontractors to address any issues or concerns promptly.

This Contractors Management Plan aims to ensure that all subcontractors working on the Project comply with high standards of environmental, safety, and operational good practice.

Workers grievance mechanism

Subcontractors must develop or participate in a workers grievance mechanism that meets the Project's standards. This mechanism must:

- Ensure Accessibility: Be available to all workers, including subcontracted personnel, and communicated effectively during induction;
- Maintain Confidentiality: Safeguard workers' confidentiality and protect them from retaliation;
- Define Resolution Process: Include clear steps for lodging, reviewing, and resolving grievances within defined timeframes;
- Document Outcomes: Keep detailed logs of complaints, resolutions, and any corrective actions taken; and
- Periodic Review: Be reviewed regularly as part of the monitoring and auditing processes to ensure effectiveness and alignment with project commitments.

7.4.9 Traffic and transportation management plan

This plan is designed to minimise traffic disruption, environmental impacts, and prevent harm to workers and local communities during construction and operation. The plan aligns with IFC Performance Standard 4 (Community Health, Safety, and Security) and IFC Performance Standard 1 (Assessment and Management of Environmental and Social Risks and Impacts), which emphasises emergency preparedness and response to ensure comprehensive transportation management and accident response procedures. during construction. It outlines the responsibilities and measures to be implemented to ensure safe and efficient transportation management. Descriptions of safety and preventative measures are outlined in Table 7-14, which should be applied in conjunction with other relevant plans, including the EPRP, SEP and EHS training and awareness plan. The traffic and transport management plan should be updated by the contractor prior to the construction phase with site-specific traffic management measures.

Importantly, it is noted that in many parts of the Project area, there are no stop signs or traffic lights (robots), which increases the risks associated with traffic management, particularly in populated areas. Additionally, children are especially vulnerable to traffic accidents, as they may be present on or near roads without proper supervision or safe pedestrian infrastructure. The plan considers these factors and additional safeguards must be implemented to protect children and other vulnerable groups in the communities.

Table 7-14: Traffic and transportation safety and preventative measures

Measure	Description
Key recommended measures	
Scheduled deliveries	Schedule deliveries during off-peak traffic times to reduce traffic congestion and minimise risks to local residents and commuters, ensuring that critical routes are not overloaded.
Alternative access	Provide temporary alternative access routes for local communities where construction and/or operation activities obstruct existing access, with clear signage to prevent confusion.
Vehicle maintenance	Implement a strict preventive maintenance program for the fleet of vehicles and machinery, with documented maintenance records to ensure safe operation and reduce breakdowns.
Speed limits	Enforce speed limits: maximum of 40 km/h in populated areas and 20 km/h on construction and operational sites, and additional speed control measures in high-risk zones.
Dust control	Use water or other approved methods to control dust on transport routes, reducing the health impacts on local communities and minimising environmental damage.
Covered trucks	Ensure all trucks carrying loose materials (sand, soil, etc.) are securely covered with tarpaulins to prevent dust and debris from affecting nearby areas.
Highway code compliance	Ensure drivers comply with local traffic laws, as per Decree-Law No. 5/08, to reduce the risk of accidents and improve safety on public roads. Given the absence of traffic signs and signals, drivers must exercise additional caution, particularly in high-pedestrian areas.
General training	Conduct regular road safety training and awareness campaigns for workers to emphasise adherence to traffic rules, defensive driving, and hazard identification. Include focussing on risks in rural communities such as children and roaming animals and specific training on hit and run incidents being not tolerated and what to do in such a situation.
Community information	Engage with local communities by providing timely information on construction vehicle routes, safety risks, and mitigation measures to reduce community disruptions. Local community engagement should also include a level of awareness training on risks and what to do in the case of traffic-related incidents.
Signposting	Clearly mark access points to construction/operational sites with appropriate signage that meets safety standards and does not obstruct or confuse local traffic.
Driver fatigue management	Ensure drivers adhere to proper shift schedules, including adequate rest periods, to mitigate risks related to driver fatigue and maintain alertness.
Third-party injury response	Provide immediate medical assistance for any third-party injuries caused by construction vehicles, including transport to health centres and covering medical costs.
Road safety compliance	Adhere to minimum road safety standards, such as a maximum of 500 km/route/driver/day, no driving past 18:00, and scheduled breaks to ensure driver safety.
Alcohol testing	Schedule regular and random alcohol tests for all drivers to ensure sobriety and compliance with road safety standards.
First aid and medical	Ensure all construction vehicles have essential first aid kits readily available and identify nearest medical facilities and access to medical response particularly in more remote areas.
Communication	Identify most effective methods for communication between construction vehicles and emergency response authorities. This may include identifying areas of signal loss and use of alternatives such as radios.
Additional recommended measures	
Road maintenance and repair plan	Develop and implement a road maintenance plan, ensuring that roads impacted by construction are regularly inspected, repaired, and maintained. Maintenance activities on access roads should avoid preventing accessibility and use of these

Measure	Description
	roads and therefore avoiding major disruptions to public transport. This will require prior planning and stakeholder engagement or communication with communities and authorities.
Operational restrictions	Limit construction/operational vehicle movements during peak traffic hours and avoid routing through congested or sensitive areas such as schools and hospitals.
Regular monitoring and reporting	Conduct ongoing monitoring of traffic conditions, vehicle performance, and accidents, reporting any findings in monthly safety reports.

Emergency response procedures for traffic accidents or incidents involving community members

Immediate Incident Response:

- Stop Operations and Ensure Safety: Immediately stop all vehicle operations involved in the accident or incident. Hit and run incidents will not be tolerated. Secure the area to prevent further harm, and ensure no additional risks are posed to the community or workers;
- Notify Emergency Services: Call (phone or radio if required) local emergency services (ambulance, police) immediately to report the incident and provide accurate location and details; and
- First Aid Administration: If trained personnel are on-site, administer first aid to injured parties until professional medical services arrive. All construction sites must have first aid kits readily available. Essential first aid kits should also be included in all construction vehicles due to the remoteness of the project access roads to allow for rapid response.

Transport and Medical Assistance:

- Transport to Nearest Health Facility: If needed, transport injured community members or workers to the nearest health centre or hospital using Project vehicles. The Project must cover all medical expenses related to the incident; and
- Communication with Family/Community: Notify the family or community leaders of the injured individuals and keep them informed of the status and medical care being provided.

Incident Reporting and Documentation:

- Document the Incident: The site supervisor or Project manager must document the details of the accident, including the time, location, circumstances, and any injuries or damages. Photos and witness statements should be collected when possible;
- Submit Incident Report: Submit a detailed incident report to the Project's compliance officer and health and safety team. The report must be included in the monthly safety monitoring report and reviewed for preventive measures; and
- Notify Regulatory Authorities: In accordance with local laws and IFC PS1 requirements, notify the relevant regulatory authorities of the incident and provide any requested documentation or follow-up reports.

Community Engagement and Communication:

- Engage with Affected Communities: Ensure continuous communication with the affected community members, including providing updates on the injured person's status, any corrective actions taken, and compensation or support as needed; and
- Follow-Up Engagement: Maintain engagement with local communities to ensure they are informed of any changes to traffic routes, safety improvements, or enhanced preventive measures following the incident.

Post-Incident Review and Preventive Measures:

- Root Cause Analysis: Conduct a thorough investigation of the incident to determine its root cause and identify any gaps in training, traffic management, or operational procedures;
- Implement Corrective Actions: Based on the investigation's findings, implement necessary corrective measures such as changes to routes, additional driver training, or enhanced community awareness programs;

- Update Emergency Preparedness Plan: Regularly update the emergency preparedness and response plan based on lessons learned from incidents, ensuring all staff and community members are familiar with the new measures; and
- Periodic Drills and Simulations: Conduct emergency response drills and simulations involving both workers and local communities to ensure preparedness in case of future incidents.

Responsibilities

- Project manager and site supervisors: Ensure all traffic and transportation measures are implemented, reviewed regularly, and adapted as needed;
- Health and safety officers: Conduct regular training sessions for drivers and workers, conduct road safety inspections, and ensure adherence to safety measures; and
- Compliance officers: Monitor compliance with the Traffic and Transportation Management Plan, report on accidents and incidents, and ensure that any issues are resolved in accordance with IFC standards.

7.4.10 Cultural heritage management plan

The CHMP is required for the Project for the protection and preservation of cultural heritage, palaeontological and archaeological resources both known and unknown across the project area.

Purpose and objectives

The CHMP aims to ensure the management and/or mitigation measures encapsulated in the CHMP at a minimum maintain the cultural significance of the identified and potential heritage resources and greater cultural landscape in the project area. The overall purpose of the CHMP is:

- To provide a framework for ensuring a balance between legislative requirements, development and economic opportunities and non-renewable heritage resources in the project area;
- Ensuring long term protection of the heritage resources and the heritage record of the area through conservation, management, and maintenance of heritage resources;
- To provide a framework for the long-term monitoring of heritage resources in the project area; and
- To provide a dynamic plan for heritage conservation that aligns with any potential changes in activities.

The goals of the CHMP for the Project are to ensure the following:

- Increased general heritage awareness at the Gove-Chipindo-Cuvango-Jamba Transmission Line Project;
- The long-term conservation of heritage resources and the archaeological record of the area through an open and transparent process;
- A balanced approach between development, conservation, and utilisation; and
- Easy, clear guidelines on cost effective maintenance and management of heritage resources in the project area.

The objectives of the CHMP for the Project include:

- To ensure the conservation of the various heritage resources in a sustainable manner;
- To define management responsibilities for the identified heritage resources;
- To provide clear management actions for the different sites and chance finds; and
- To provide a management framework to monitor and define the success of the CHMP.

Scope

This CHMP applies to all contractors engaged in activities on behalf of the Project, related to construction of the powerline and additional infrastructure (substations, transformers and access roads) activities including the construction camps that are built to accommodate the construction workforce during this time.

Regulatory and policy framework

The CHMP is drafted in line with both national and international requirements and guidelines (refer to Section 3), including:

- Angola's heritage legislation centres on preserving cultural and natural heritage. The key law is Law No. 14/05 (Heritage Law), which establishes guidelines for the protection, conservation, and promotion of Angola's historical, cultural, and natural heritage. Key provisions include:
  - Heritage Classification: Cultural and natural assets can be classified as national heritage;
  - Preservation: Strict rules govern restoration, maintenance, and use of heritage sites;
  - State Role: The government is responsible for inventorying and managing heritage;
  - Public Involvement: Communities are encouraged to participate in safeguarding heritage;
  - Penalties: Fines and sanctions apply for damage to heritage sites; and
- IFC Performance Standard (PS) 8: Cultural Heritage.

In Angola, the protection of cultural heritage is overseen by various institutions at both the national and provincial levels. Key organisations include:

- Ministry of Culture: This is the primary government body responsible for cultural heritage, promoting, preserving, and protecting Angola's cultural assets;
- Institute for Cultural Heritage (Instituto Patrimonial Cultural): This institute operates under the Ministry of Culture and is specifically focused on the documentation, conservation, and promotion of cultural heritage sites and practices; and
- National Institute of Historical Heritage: A part of the broader cultural heritage framework, this institute focuses on historical landmarks, archaeological sites, and the preservation of historically significant materials.

At the provincial level, local cultural offices typically operate under the guidance of the Ministry of Culture, ensuring that heritage policies are implemented, and cultural assets are preserved in local communities.

Cultural heritage baseline and interpretation

The cultural heritage baseline and identified sites are detailed in Section 4.9 of Volume 1 and should be considered when implementing the CHMP. The range of heritage resources that could be affected by the Project were categorised as follows: Category 1 – tangible cultural heritage (archaeological and paleontological resources); Category 2 – tangible cultural heritage with strong intangible elements (burial sites/ places of worship occur in the larger area); and Category 3 – intangible cultural heritage with a less well-defined tangible component (sites that may be used for music making, dance, storytelling, and other rituals). There are no known nationally or internationally designated sites or Critical Cultural Heritage or sites that meet IFC criteria as non-replicable have been identified within the Project area.

Table 7-15 presents the determined cultural heritage significance of identified and recorded sites in the Project area that should be considered at all phases of the Project.

Table 7-15: Determined cultural heritage significance of recorded sites

Municipality	Heritage Feature	Significance	Coordinates
Jamba	Jamba Municipal cemetery	High (Social) Significance	S 14°42'30.44664" E 16°2'28.64436"
Cuvango	Cemetery, Tchicunho village	High (Social) Significance	S 13°58'59.26296" E 16°1'5.9106"
	Vila parish church	High Significance	S 14° 27' 57.708" E 16° 17' 29.688"

Municipality	Heritage Feature	Significance	Coordinates
	Father Ernesto Lecont historical monument	High Significance	S 14° 27' 51.696" E 16° 17' 34.008"
Chipindo	Catholic Mission of Sangueve	High Significance	S 13°53'18.19968" E 15°50'4.54812"
	Municipal Cemetery	High (Social) Significance	S 13°49'14.24496" E 15°46'47.90208"

Cultural heritage management actions

Pre-construction survey

A pre-construction survey of impact areas including access roads, construction camps and pylon positions must be conducted prior to construction. This walk down study must identify and report on any heritage resources that might occur within the final footprint of the Project and include recommendations for any mitigation measures that may need to be implemented prior to construction. Reporting must include the following:

- A GIS file that records the nature and extent of each site and preliminary categorisation;
- The condition of each site;
- Recommended mitigation measures for each recorded site; and
- The results must be included in the heritage register for the Project.

Cultural heritage awareness

It is important to ensure that all employees and contractors working on the Project are aware of the applicable heritage legislation and the significance of archaeological sites (dating to the Stone Age and Iron Age), historical sites, grave sites and places of worship. It is recommended that this is communicated during induction training for employees and contractors as well as through notices placed in strategic places, highlighting the IFC PS 8. Heritage sites should be indicated on development plans and avoided by all Project activities. Existing infrastructure (access roads) should be used.

Access

The recorded cemeteries and recorded places of worship/ monuments are located in proximity to development area. To give effect to the IFC Performance Standard 8 requirement to safeguard the cultural significance of burial grounds and graves through sustainable use, the developer will implement actions that enable access to the burial sites for living heritage purposes with the development and implementation of a requisite access protocol for grave sites during construction and operation of the Project.

Social consultation

Social consultation with affected communities must be included as a condition of authorisation to identify known heritage sites, burial sites and sacred sites which should be avoided during construction.

Cultural heritage management

The developer is ultimately responsible for managing heritage resources in the Project area in a legally compliant and socially responsible manner. Generally, the designated Project representative (e.g. Environmental Control Officer (ECO)) takes responsibility for the day-to-day management and monitoring of heritage resources or a suitably qualified person will be appointed to do so. The

responsible party must ensure that all actions and planned development that might have an impact (indirectly or directly) on heritage resources are subject to the requirements and guidelines in this CHMP. Responsibilities for executing cultural heritage management measures are presented in Table 7-16 unless otherwise agreed and until the appropriate sign-off or permits are in place, work in affected locations cannot commence.

Table 7-16: Responsibility by type of management measure

Measure	Responsible for Taking the Action	Responsible for Project Approval and / or Monitoring
Pre-construction survey of final impact areas.	Developer, contractor and project archaeologist.	ECO Project archaeologist
Avoidance (including in-situ conservation)	ECO Developer and their contractors	ECO Developer Construction team Archaeologists (where needed as described for monitoring of implementation)
Access (either constraints or provision of access)		
Physical protection from damage		
Destruction	Developer and their contractors	Developer
Excavation	Developer and their contractors	Developer
Chance Find Procedure and Monitoring (during all activities)	ECO Developer and their contractors	ECO Developer

Tangible cultural heritage

Management measures for tangible cultural heritage sites to be implemented as a minimum, include:

- Prior to construction activities conduct in situ conservation of the recorded heritage sites as detailed in the Heritage Impact Assessment (including sites situated outside of but in proximity to the Project);
- Incorporate the results of the pre-construction survey into the heritage register and the required management measures into the CHMP; and
- Implement the Chance Find Procedure for the Project.

Control measures to be implemented, include:

- Construction crews receive professional training on and sees types of expected heritage sites/ archaeological materials from known/ recorded sites; and
- Implement the Chance Find Procedure for the Project.

The guiding principle throughout construction is for contractors to avoid impacting tangible cultural heritage wherever practicable. In cases where impact to tangible cultural heritage is unavoidable, general management measures must be implemented, including:

- Access to tangible cultural heritage is maintained where feasible subject to any overriding health, safety, and security considerations. Following completion of the pre-construction survey detailed plans must be submitted for maintenance of access or rationale for full or partial removal of access for all known cultural heritage for approval by the developer;
- Plans also consider whether proposed access arrangements could lead to increased opportunities for collection of cultural heritage artefacts by outside parties, which is avoided where possible. Agreements with affected communities on access are documented and signed by the appropriate community leader, contractors and the developer; and
- Collection of cultural heritage artefacts is prohibited. Any cultural heritage artefacts found by workers are left in situ and reported to the worksite supervisor or ECO as required by the Chance Finds Procedure.

Intangible cultural heritage

In some instances, measures described for intangible cultural heritage naturally overlap with those for tangible cultural heritage, for example, where an intangible practice is associated with a tangible site. In these cases, measures for tangible and intangible cultural heritage must be considered in a coordinated manner.

The guiding principle throughout construction is for contractors to avoid impacting intangible cultural heritage wherever practicable.

In cases where impact to intangible cultural heritage is unavoidable, control measures must be implemented, including:

- Access to intangible cultural heritage is maintained where this is feasible subject to any overriding health, safety, and security considerations. Following completion of the pre-construction survey the results and detailed plans for maintenance of access or rationale for full or partial removal of access for all known cultural heritage for must be submitted to the developer. Agreements with affected communities on access must be documented and signed by the appropriate community leader (facilitated by the social team);
- Where avoidance of impact on practices or practical means to maintain access for intangible practices is not possible, possibilities must be identified and examined to determine the appropriateness and willingness of the practitioners of intangible practices to relocate those practices and any associated tangible sites to a location that is not impacted by the Project. This includes identifying any stakeholders that can be considered representative of practitioners such as Village Council;
- The developer must reach an agreement with practitioners (or their representative) on any feasible relocation measures and procedures to be implemented, including the need for any associated ceremonies or rituals and the associated roles and responsibilities, schedule and required funding for these activities;
- In order to retain the sense of place, noisy equipment (e.g. electricity generators) should be sited with consideration to the presence of sensitive receptors wherever possible. Acoustic mitigation in the form of insulation (e.g. the use of ‘silent generators’, screens or bunds) is deployed when necessary;
- Where possible new access roads will be constructed a minimum of 100 m away from sensitive receptors (places of worship/ graves); and
- Construction activities close to places of worship will be kept to a minimum.

Chance Find Procedure

The following procedural guidelines must be considered in the event that previously unknown fossils, heritage resources or burial grounds and graves are exposed or found during the life of the Project.

In Angola, the protection of cultural heritage is overseen by various institutions at both the national and provincial levels and any Chance Finds should be reported to the provincial governments namely (Provincial Government of Huila (Governo Provincial da Huíla) or the Provincial Directorate of Culture, Tourism, Youth, and Sports (Direcção Provincial da Cultura, Turismo, Juventude e Desportos) Huamba/ Provincial Directorate of Culture Huila) depending on the location of the Chance Find, and on a national level the Ministry of Culture, National Institute of Historical Heritage and Institute for Cultural Heritage.

Initial Identification and/or Exposure (Chance Find)

If during the construction, operations, or closure phases of this Project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, find any artefact of cultural significance, this person must cease work at the site of the find. They must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. The following steps and legal requirements and reporting structure must be observed:

- A project archaeologist should be appointed for the Project;

- The person or group (identifier) who identified or exposed the heritage resource or burial ground must cease all activity in the immediate vicinity of the site;
- The identifier must immediately inform the senior on-site Manager of the discovery;
- The senior on-site Manager must make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area and ensure that the site is secured and control access; and
- The senior on-site Manager will inform the ECO and Health and Safety officer of the chance find and its immediate impact on operations. The ECO will then contact the Project archaeologist.

Heritage resources and fossils

In the event that previously unidentified heritage resources are identified and/or exposed during construction or operation of the Project, the following steps must be implemented subsequent to those outlined above:

- The Project archaeologist must be notified of the discovery;
- The Project archaeologist will visit the site for a field-based assessment of the finds and appropriate mitigation measures will then be presented to the client;
- Should the specialist conclude that the find is a heritage resource protected in terms of legislation, they must inform the relevant authority of their discovery; and
- Based on the comments received from the authorities, the Project archaeologist will provide the developer with a Site Incident Report outlining the processes followed and the way forward.

Burials and graves

In the event that previously unidentified burial grounds and graves are identified and/or exposed during construction or operation of the Project, the following steps must be implemented subsequent to those outlined above:

- The Project archaeologist must immediately be notified of the discovery in order to take the required further steps:
  - The local police, traditional authority and heritage authority should be notified;
  - The Project archaeologist will inspect the exposed burial and determine in consultation with the relevant authorities if any additional graves may exist in the vicinity as well as the temporal context of the remains, i.e.:
    - Forensic;
    - recent or historical; or
    - archaeological; and
- Should the specialist conclude that the find is a heritage resource protected in terms of legislation, the lead consultant must notify the authorities following the Chance Find Procedure as outlined above.

Assumptions

The Chance Find Procedures presented here are aligned with good international industry practice requirements for the accidental discovery of heritage resources and burial grounds and graves guided by Angolan national legislation. Based on the definitions provided within this document and the proposed lines of communication, the developer will be able to mitigate the accidental discovery of heritage resources and burial grounds and graves throughout the various phases of the Project.

The Project archaeologist will be available to assist with the recommendation of mitigation for the accidental discovery of heritage resources and burial grounds and graves and to liaise with the relevant authorities.

Ground disturbance during reinstatement

Any decompaction/ripping or other ground disturbance activities required during reinstatement must be planned to avoid any cultural heritage feature that has been preserved in situ.

Monitoring and review

Site monitoring should be conducted by an experienced archaeologist or heritage specialist, however day-to-day monitoring can be conducted by the ECO. The ECO or other responsible Project persons should be trained along the following lines:

- Induction training: Responsible staff identified by the developer should attend a short course on heritage management and identification of heritage resources (aligned to EHS Training and Awareness Plan); and
- Site monitoring and watching brief: As most heritage resources occur below surface, all earth-moving activities need to be routinely monitored in case of accidental discoveries. The greatest potential impacts are the initial soil removal and subsequent earthworks during construction. The ECO should monitor all such activities daily. If any heritage resources are found, the chance finds procedure must be followed as outlined above.

The CHMP should be reviewed and revised on a regular basis throughout the construction phase based on changes to Project layout and processes, personnel and role changes, cultural heritage findings through chance find and any changes to Angolan national regulations or good international industry practice guidelines.

A heritage specialist should assess any material change to the conceptual layout plan as part of the change management procedure for the Project. Monitoring requirements are provided in Table 7-17.

Table 7-17: Cultural heritage monitoring requirements

Heritage Monitoring					
Aspect	**Area**	**Responsible for monitoring and measuring**	**Frequency**	**Proactive or reactive measurement**	**Method**
Known Cemeteries	All	ECO	Daily – During Construction Monthly – first year Yearly thereafter	Proactively	• Compare current conditions with recorded baseline conditions; • Status quo will be recorded through photographs; • Results will be maintained; and • Results will be reported in the progress reporting.
Known Places of Worship / Monuments	All	ECO	Daily – During Construction Monthly – first year Yearly thereafter	Proactively	• Compare current conditions with recorded baseline conditions; • Status quo will be recorded through photographs; • Results will be maintained; and • Results will be reported in the progress reporting.
Clearing activities and Excavations	All	Environmental Officer	Weekly – during construction phase Bi Weekly – During quarry excavations	Proactively	• If risks are manifested (accidental discovery of heritage resources) the chance find procedure should be implemented: 1. Cease all works immediately; 2. Report incident to the EHS Manager; 3. Contact an archaeologist to inspect the site; 4. Report incident to the competent authority; and 5. Employ reasonable mitigation measures in accordance with the requirements of the relevant authorities. • Only recommence operations once impacts have been mitigated.

7.4.11 Community health, safety and security management plan

Introduction

This CHSS management plan is required in terms Angolan legislation as well as applicable international standards. It is acknowledged that Project activities, equipment and infrastructure can increase community exposure to CHSS impacts. This plan aims to outline the Project proponent and contractors' responsibility to avoid or minimise these impacts, with particular attention to vulnerable groups.

The main objectives of the CHSS management plan are to:

- Anticipate and avoid adverse impacts on the health and safety of the affected community during the project life from both routine and non-routine circumstances and put measures in place to manage these impacts; and
- Ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to the Affected Communities.

The full CHSS management plan is available in Volume 3, Appendix N. The plan is informed by the Angola's unique safety and security factors (e.g. decades of civil war, ASMs and unexploded ordinance) and health challenges (e.g. prevalence of malaria, high child mortality rates and constrained basic services). The plan also considers the management of risks of major accidents related to the project that specifically affect communities. The CHSS management plan should be read in conjunction with the EPRP (Section 7.4.5) in this regard.

CHSS Management Plan

Table 7-18 provides the potential risks and impacts of the proposed Project activities on community health, safety and security, and the related avoidance and mitigation measures and responsibilities.

Table 7-18: CHSS management plan

Topic	Risk / Impact to community	Risk / Impact to project	Control (Mitigation) measures	Responsibility
1a: Communicable Diseases (Living environment)	• Increased burden of disease in community resulting from increased population (workforce and in-migration) and crowded accommodation (community and camps) • Increased number of occupants per room, mixing of occupants (children / elderly / adults) with different vulnerabilities) • Transfer of disease from workforce to community • Increased demand on local community health services • Diminished quality of health care and treatment for local communities as existing limited capacities are overwhelmed	• Increased burden of disease in workforce, resulting in increased demand on project health services and reduced productivity • Reputation damage • Community resentment	• Implement TB prevention and control program with medical confirmation of TB status before assignment • Provide worker education on TB and its prevention to enable workers to take knowledge into community • Medical clearance required for return to work for all employees and contractors diagnosed with TB • Adhere to appropriate worker accommodation design and capacity	RNT and Contractor
1b: Communicable Diseases (Vaccine preventable diseases)	• Potential increase in measles, mumps, rubella, chicken pox, pneumococcal pneumonia, influenza, typhoid outbreaks in the community related to population influx or the introduction of personnel who are not immunised • Increased burden of disease in community • Increased demand on local community health services • Diminished quality of health care and treatment for local communities as existing, limited capacity is overwhelmed	• Increased burden of disease in workforce, resulting in increased demand on project health services and reduced productivity • Reputation damage • Community resentment	• Define and implement pre-employment medical requirements (per minimum health requirements for project) • Require immunisation for transferable diseases for project workers focused on higher risk profiles (e.g., kitchen staff)	RNT and Contractor

Topic	Risk / Impact to community	Risk / Impact to project	Control (Mitigation) measures	Responsibility
1c: Communicable Diseases (Sexually transmitted)	• Movement of high-risk / high-prevalence groups into rural settings (e.g., truck drivers) • Men with money mixing with vulnerable women • Transfer of disease from in-migrants and workforce to community • Increased burden of disease in community • Increased demand on local community health services • Diminished quality of health care and treatment for local communities as existing, limited capacity is overwhelmed	• Increased burden of disease in workforce leading to increased demand on project health services and reduced productivity • Reputation damage • Community resentment	• Developing HIV and STI management programs for the workforce; encouraging widespread availability and social marketing of condoms in the workplace • Operate a closed camp policy for expatriates, third country nationals and the local workforce to limit exposure of impacted communities to the project workforce, and therefore to potential communicable diseases and potential transmission • Worker education to focus attention on the prevention, identification, and treatment of curable STIs • Maintain voluntary counselling, testing, and referral testing for HIV consistent with local laws	Contractor
2: Vector- related diseases (Malaria, dengue, and other vector related diseases)	• Open water sources are created and/or enlarged, because of construction activities and storage of plant, materials and equipment, with the potential for increased mosquito breeding sites • Potential exposure to water-borne, water-based, water-related and vector-borne diseases • Increased burden of disease in community • Increased demand on local community health services • Diminished quality of health care and treatment for local communities as existing, limited capacity is overwhelmed	• Increased burden of disease in workforce, resulting in increased demand on project health services and reduced productivity • Reputation damage • Community resentment	• Develop vector-breeding source reduction procedures at near- and on-shore activities, specifically around earthworks, camps and where goods from international origin is stored. Consider the appropriate storage / cover of goods or, where this cannot be avoided, drainage or application of larvicide • Maintain and expand good housekeeping and waste management on all project sites to prevent the creation of potential vector breeding sites • Provide information for training of workers in malaria awareness so they can take knowledge back to communities • Provide bed nets to workers for take home use • Provide a vector control and dengue management program with case definitions, diagnostics at work sites etc. • Educate workers about reducing dengue risks in the home	RNT

Topic	Risk / Impact to community	Risk / Impact to project	Control (Mitigation) measures	Responsibility
3: Soil, water, and sanitation related diseases	• Depletion of quantity and quality of local water supplies due to project demand, impacting community drinking, bathing and laundry water supplies, and increasing water-related diseases • Increase in faecal-oral diseases resulting from open defecation by the workforce • Over-burdening existing services and systems leading to community water- related outbreaks (e.g., cholera) in nearby communities or worker populations • project waste could create fly breeding sites, increasing rates of eye infections and fly / sanitation related diarrheal diseases • Contamination of soil and water by project wastes	• Increased burden of disease in workforce leading to increased demand on project health services and reduced productivity • Reputation damage • Community resentment • Compensation claims	• Ensure that project facilities design consider the development of adequate and appropriate sewerage treatment facilities (in both capacity and number) for the management of sewerage and wastewater generated by project infrastructure • Operate and monitor sewage treatment plants according to design capacity • Ensure adequate number of appropriate mobile sanitation facilities in all work areas. Associated with code of conduct and sanctions for non- conformance • Evaluate opportunities to develop an effective surveillance system to monitor the impacts of water and sanitation conditions, in partnership with the local authorities • Conduct Information / Education / Communication (IEC) campaigns in the workforce on proper water use, hygiene, and sanitation • Provide training/education for workers on how to avoid and manage skin diseases • Provide treatment for skin diseases for workers at site clinics	Contractor
4: Accidents and injuries	• Increased road traffic and associated risk of accidents and injuries (livestock and people) • Injury and death to people and animals • Damage to property and community assets • Major accidents in relation to electrocution, equipment failures, environmental hazards and hazardous	• Community resentment • Reputation damage • Work disruption due to blockages and stoppages Lost productivity • Legal and compensation claims • Legal and compensation claims • Damage to reputation • Community resentment	• Ensure drivers successfully complete the project driving safety requirements and possess a valid driver's license for Angola • Develop and implement fitness for work programs for drivers and personnel operating mobile equipment and machinery including vessels operating in the near shore area • Develop community road safety initiatives. Adapt and refine these as	Contractor

Topic	Risk / Impact to community	Risk / Impact to project	Control (Mitigation) measures	Responsibility
	materials		required to ensure they remain relevant and address risks • Create awareness raising with communities on the risks of major accidents • Implement road safety awareness and education programs for impacted communities, including school programs • Set speed limits and monitor driver behaviour • Developing and effectively communicating a policy for the management of emergencies or accidents in the community as a direct result of the project's activities. This will be developed as part of the project's community safety and security management plans and Emergency Response Plan • Provide PPE to employees, based on risks associated with each activity • Develop and implement workplace illness/injuries compensation fund in accordance with the national laws and good international industry practice • Develop and implement a Traffic and Transport Management Plan	
5: Exposure to potentially hazardous materials and UXOs	• Releases to air, soil, groundwater, and surface water of potentially hazardous materials • Used / discarded hazardous materials containers could be used for rainwater catchment in local communities • Community exposure to insecticides used for malaria control activities within project premises via	• Breach of Duty-of-care • Legal claims and claims for compensation • Reputation damage • Community resentment • Blockages and stoppages • Legal claims and claims for compensation	• Implement environmental monitoring programs (air emissions, noise, water, etc.) • Ensure the development and implementation of effective waste management so the communities do not use project-related discarded containers that may have contained hazardous materials for collecting of water or storage of water or related domestic products • Ensure that pest control activities and associated selection of insecticides for	Contractor

Topic	Risk / Impact to community	Risk / Impact to project	Control (Mitigation) measures	Responsibility
	air, soil and water routes • Explosion of UXO		malaria control and other pest control activities conform to national programs and policies • Implement measures to avoid spills affecting communities, as defined in the Emergency Preparedness Plan • Undertake a risk assessment on all hazardous chemical substances on site and determine the specific human health risks that may potentially result from exposure to a product or by product of a process or emission • Undertake a risk assessment for UXOs prior to starting work in an area	
6. Violence	• Mixing of cultural groups in project camps could contribute to cross cultural violence within communities • Opening of roadways creating in-migration of different cultural groups with potential to disrupt social cohesion • Increased income by some community members disrupting social cohesion, increasing drug and alcohol use and increasing violence • Sudden influx of cash into a barter-based economy	• Workforce disharmony • Reduced productivity • Enhanced risk of accidents and incidents	• Manage cross cultural issues at work camps for other country nationals and Angolan ethnic groups • Conduct worker education on cultural sensitivity, violence, contraband and harassment etc. • Establish system to monitor violence at the community level • Develop a GBVH Prevention and Response Plan • Training all Project and contract workers on GBVH	Contractor
7. Conflict	• Abandonment of local communities • Regional destabilisation • Threat to well-being of local residents	• Hostility and suspicion directed at project by impacted communities • Need for increased security measures • Loss of confidence by residents and regional government	• Evaluate opportunities to work with local authorities on security intelligence and addressing the risk of acts of terrorism in the area • Provide training on and require all personnel to sign a Code of Conduct and Ethics	RNT

Topic	Risk / Impact to community	Risk / Impact to project	Control (Mitigation) measures	Responsibility
8. Security	• Inappropriate use of force by security • Absence of government support when needed • Human Rights abuses • Failure to identify security risks to communities and to employees	• Loss of trust and support of local communities • Potential radicalisation of residents directed at project • Reputational risk for project and sponsors • Legal claims and claims for compensation	• Train security contractors on the Voluntary Principles of Security and Human Rights • Include Code of Conduct and Ethics and GBVH in induction • Audit the performance of security providers • Ensure regular training on human rights • Initiate and maintain effective community engagement on security arrangements • Record and track any security incidents due to the use of inappropriate, disproportionate, or unlawful use of force • Ensure that community members have access to the grievance mechanism and know they can lodge any security issue through it	RNT
9. Emergency preparedness and response	• Spills, leaks and other accidental releases from project facilities or project-related activities (transport) resulting in community safety-related risks and impacts (e.g., contamination of water supplies, soil contamination, etc.) • Major accidents as a result of project related risks such electrocution and equipment failures (refer to EPRP Section 7.4.5)	• Damage to project assets • Lost opportunity to contain impact • Loss of business continuity • Failure to maintain schedule and costs • Potential to impact on license to operate • Reputation damage • Community resentment • Blockages and stoppages • Claims for compensation	• Identify emergency scenarios and develop emergency preparedness and response plans with allocation of responsibilities to local communities and authorities, (where appropriate) • Develop a documented agreement with the provincial and local district authorities regarding the management of emergencies and incidents in both the communities and project facilities that may affect the health of communities and / or the project workforce. This includes interface requirements as well as clearly defined roles and responsibilities for all stakeholders • Develop appropriate emergency preparedness and response capabilities • Develop specific stakeholder engagement plan based on consultation and participation with government and communities regarding the nature and	Contractor

Topic	Risk / Impact to community	Risk / Impact to project	Control (Mitigation) measures	Responsibility
			potential consequences of the risks • Create awareness raising with communities on the risks of major accidents and how to prepare for and respond to these incidents	
10. Infrastructure and equipment design and safety	• Failure of containment or retention structures (e.g., bunds, dam, pond etc.), stockpile, reclaimed areas etc. leading to safety risks for communities or harm to resources on which they depend (e.g., groundwater) • Injury or accident to community members, project employees or livestock resulting from project-related transport • Dust generation from transport impacting air quality and causing nuisance impacts for communities • Contamination of water supplies (e.g., dust on roofs used as catchments for water tanks)	• Community resentment • Blockages and stoppages • Claims for compensation • Damage to reputation	• Adopt appropriate design standards • Check and maintain bunding, containment structures, and surface conditions; monitor for leaks, loss of integrity etc. • Civil works designed and maintained with water and stormwater management in mind, including sediment traps and other erosion control measures as appropriate • Optimise road transport requirements including consideration for logistics management (minimisation of vehicle movements etc.) • Implement speed restrictions for project and contractor vehicles • Establish and maintain community grievance process • To the extent possible, provide access for pedestrians and vehicles in areas where pedestrians and project vehicles mix including but not limited to alternative temporary pathways and roads to ensure ongoing access to major community assets	Contractor

7.4.12 Occupational health and safety management plan

The Occupational Health and Safety (OHS) Management Plan applies to the construction and operational phases of the Project. The main purpose of the plan is to ensure that zero harm is committed to employees, contractors, suppliers and the public during Project activities. To meet this overall objective, the OHS management plan:

- Describes the generic controls that will be implemented to mitigate construction and operational impacts that could impact the overall safety performance of the Project and the safety of the public;
- Describes the health and safety organisation and communication structure; and
- Describes the audit and review process for health and safety.

The Project includes multiple simultaneous operations (SIMOPs) such as construction activities, electrical installations, equipment handling, and maintenance work, requiring effective management to ensure safety, efficiency, and coordination. Key risks associated with SIMOPs include collision hazards, electrical hazards, confined space operations, fire and explosion risks, and environmental hazards. To mitigate these risks, procedures like daily coordination meetings, a centralised communication system, SIMOPs safety checklists, exclusion zones, and emergency response coordination are essential. A comprehensive training and monitoring framework is crucial, focusing on hazard recognition, safe coordination of overlapping tasks, and adherence to communication protocols, including:

- Implementing a detailed SIMOPs training programme for all workers, supervisors, and contractors;
- Conducting pre-task briefings at the start of each shift and periodic refresher training sessions;
- Assigning dedicated SIMOPs safety officers for real-time monitoring of operations; and
- Performing regular audits and inspections to verify compliance and identify improvements.

Documenting and analysing incidents or near misses to update training materials and enhance procedures.

The full OHS management plan is provided in Volume 3, Appendix P.

Maintaining the safety of personnel by avoiding key workplace hazards requires the implementation of a range of occupational health and safety mitigation measures as outlined in Table 7-19. These protocols broadly align with Angolan national laws and applicable international standards. The Project proponent and contractor/s must keep Project personnel informed of health and safety measures and designate a responsible team to oversee their implementation.

It should be noted that the mitigation measures listed in Table 7-19 are supplementary and do not replace the requirements mandated by Angolan legislation, specifically the General Labour Law (Law No. 7/15 of June 15th) and the Occupational Health and Safety System (Decree No. 31/94 of May 31).

Table 7-19: OHS hazards, mitigation measures and responsibilities

Hazard category	Specific hazard	Causes	Measures to mitigate risk	Responsible party	Frequency of training/inspection	Consequences
General OHS						
Fall Hazards	Falling from heights or into trenches	Inadequate fall protection measures, unstable working surfaces, lack of training	• Safety training for workers • Use of PPE like safety harnesses, hard hats, safety shoes • Implementation of signage and protective barriers • First Aid supplies and training • Regular equipment inspection	Safety Manager	Monthly training; Daily inspections	Injury, disability, or death due to falls
Impact Hazards	Projection of rocks or falling objects	Loose or unsecured materials, improper handling or storage of materials	• Safety training for workers • Use of PPE like hard hats, protective glasses, reflective vests • Maintain First Aid supplies	Project Supervisor	Monthly training; Regular inspections	Injuries from impact, which can be severe or fatal, including head trauma
Lifting Hazards	Slips, trips and falls	Wet or uneven surfaces, cluttered work areas, inadequate lighting	• Training on safe lifting and moving techniques • Mechanical aids for lifting • Define spaces for tool and equipment storage • First Aid supplies maintained	Health and Safety Officer	Biannual training	Sprains, strains, broken bones, other musculoskeletal injuries
	Musculoskeletal injuries from lifting	Improper lifting techniques, lifting too much weight, repetitive motion				Chronic back pain, hernias, long-term disability
Traffic Hazards	Injuries from vehicle circulation	Poor site layout, inadequate signage, lack of pedestrian pathways	• Define and delineate road access routes • Use of PPE like reflective vests • First Aid readiness • Procedures for road accident response, including notifying EHS Manager and Police, victim management, and accident investigation	Traffic Coordinator	Annual training; After incident	Vehicle-related injuries can range from minor to fatal, including crush injuries and traumatic injuries
Noise Exposure	Hearing impairment or loss	Prolonged exposure to high decibel levels, lack of personal protective equipment	• Provision of sound-blocking earmuffs for operators of loud equipment • Locate rights-of-way away from human receptors • Regular monitoring and supervision of noise levels	Environmental Health and Safety Officer Design and Engineering Contractor	Before job commencement; Regularly, During detailed design phase	Temporary or permanent hearing loss
	Irritation by near-by residents	Proximity of noisy operations to residential areas				Noise nuisance to nearby residences
Air Quality Hazards	Exposure to dust and air pollution	Excavation activities, inadequate dust control measures, prevailing winds	• Use of personal protective equipment such as safety glasses and masks • Shorter excavation sections when possible • Frequent irrigation of construction sites • Periodic medical examinations and indoor air quality monitoring	Environmental Health Officer	Before construction; Monthly reviews	Respiratory issues, chronic lung conditions, aggravated asthma
Chemical Exposure Hazards	Exposure to various chemicals	Inadequate handling procedures, spills, lack of training in chemical use	• Use of personal protective equipment such as safety glasses, masks, and protective gloves • Maintain First Aid supplies	Safety Supervisor	Initial and annual training	Chemical burns, poisoning, respiratory problems, long-term health effects
Machinery Operation Hazards	Operation of heavy machinery	Inadequate training, poor maintenance of machinery, operator error	• Provide safety training for operators • Closely monitor machinery operations • Restrict work areas to trained workers • Regular equipment check-ups • Maintain First Aid supplies	Equipment Manager	Prior to equipment use; Regularly	Crushing, amputation, other severe bodily injuries
Minor Accidents	Scrapes, cuts, abrasions	Improper use of tools, lack of protective gear, inadequate safety protocols	• Treat through first aid • Stop work to seek treatment for any injury • Provide First Aid boxes in all operational areas	First Aid Officer	Immediate response	Minor wounds, infections if untreated

Hazard category	Specific hazard	Causes	Measures to mitigate risk	Responsible party	Frequency of training/inspection	Consequences
Medical Emergencies	Serious injuries or health cases	Accidents, inadequate response to initial injuries, lack of emergency preparedness	• Administer first aid immediately • Inform management about medical emergencies • Assess the situation for further risks • Contact nearest medical centre for serious injuries • Ensure all staff know emergency procedures	Health Services Coordinator	Emergency response training	Depending on the injury, consequences can range from temporary impairment to fatal outcomes
Electrocution Hazards	Electrical safety risks	• Faulty electrical equipment, improper installation, lack of grounding • Induced voltages not considered during design phase	• Establish safety perimeter around high-voltage areas • Label and isolate exposed wires • Restrict electrical work to qualified technicians • Require PPE for electrical work • Ensure presence of a trained first aider • Conduct earthing surveys and resistivity tests at early stages • Ensure adequate earthing and lightning protection • Install signs and barrier • Implement isolation procedures during commissioning and operation phases • Address induced voltages during design phase • Conduct risk assessments prior to work on power lines to ensure local grounding	Electrical Safety Manager, Design and Engineering Contractor	Before electrical work; Continuously During detailed design phase	Burns, cardiac arrest, long-term health effects, death
	Insulation failure	• Poor design and configuration of the insulation systems • Use of improper insulation materials	• Ensure proper insulation coordination design including considerations for voltage levels, impulse withstand voltages, power frequency withstand voltage, pollution levels, overvoltage protection, clearances and creepage distances during the design phase of the project; • Selection of appropriate insulation materials, • Ensure regular testing and maintenance			
Exhaustion and Dehydration	Physical stress from harsh conditions	High temperatures, insufficient breaks, inadequate hydration facilities	• Provide adequate drinking water • Create balanced work schedules • Supervise workers to prevent heat stress and dehydration • Open communication for feedback on working conditions	HR Manager	Daily during high temperatures	Heatstroke, dehydration, decreased mental function leading to further accidents
Land Mine Risks	Risk of land mine accidents	Unresolved conflicts, inadequate clearing operations, poor mapping of hazardous areas	• Conduct a comprehensive demining campaign before construction • Clearly mark demined areas and maintain First Aid supplies • Transport victims of land mine accidents to nearest hospital • Immediate notification of management in case of death	Security and Safety Officer	Before construction; As needed	Severe injuries, amputation, death
Exposure to Magnetic Fields	Risk of high EMF exposure	Utility workers having higher exposure to magnetic fields than limits provided by the ICNIRP due to working in close proximity to power lines	• Conduct exposure level surveys • Use personal monitors during working activities • Train workers in identifying EMF levels and hazards • Limit access to trained workers	Electrical Safety Manager Design and Engineering Contractor Shift Supervisor	During detailed design, during construction and commissioning, as needed during operation	Possible association between EMF exposure and health issues like cancer (U.S. National Institute of Environmental Health Sciences 2002)

Hazard category	Specific hazard	Causes	Measures to mitigate risk	Responsible party	Frequency of training/inspection	Consequences
			• Establish safety zones for high EMF area when compared to the ICNIRP limits • Limit exposure time through rotation • Use shielding materials • Increase distance from sources where possible			
Explosion Risks	Potential risk from electrical explosions	Faulty or aged equipment, poor maintenance, insufficient fault level ratings	• Ensure fault level requirements are addressed during design • Conduct short circuit tests during FAT • Torque and mark nuts and bolts as per FAT results • Compile and follow OEM maintenance procedures	Design and Engineering Contractor Installation Contractor Electrical Supervisor Equipment Manufacturer Maintenance Manager	During detailed design, during factory and site acceptance tests, construction and commissioning, as needed during operation	Injuries, fatalities, equipment damage
Environmental risks	Potential risks of reptile/snake or arachnid bites Exposure to flooding	Wildlife on the powerline route Extreme weather events	Employees and contractors should be aware of their surroundings at all times and avoid encounters with wildlife. Necessary precautions and prophylactics should be taken to avoid contracting insect born diseases. In the event of a snake bite, the employee should be taken to the closest hospital for diagnosis and treatment immediately. Employees and contractors to be aware of extreme weather events and take necessary precautions.	Design and Engineering Contractor Security and Safety Officer	During construction and commissioning, as needed during operation	Injuries, fatalities
Vector-related diseases (Malaria, dengue, and other vector related diseases)	Open water sources are created and/or enlarged, because of construction activities and storage of plant, materials and equipment, with the potential for increased mosquito breeding sites Potential exposure to water-borne, water-based, water-related and vector-borne diseases Increased burden of disease in community Increased demand on local community health services Diminished quality of health care and treatment for local communities as existing, limited capacity is overwhelmed	Increased burden of disease in workforce, resulting in increased demand for project health services and reduced productivity Reputation damage Community resentment	• Develop vector-breeding source reduction procedures at near- and on-shore activities, specifically around earthworks, camps and where goods from international origin is stored. Consider the appropriate storage / cover of goods or, where this cannot be avoided, drainage or application of larvicide • Maintain and expand good housekeeping and waste management on all project sites to prevent the creation of potential vector breeding sites • Provide information for training of workers in malaria awareness so they can take knowledge back to communities • Provide bed nets to workers for take home use • Provide a vector control and dengue management program with case definitions, diagnostics at work sites etc. • Educate workers about reducing dengue risks in the home	Design and Engineering Contractor Security and Safety Officer	During construction and commissioning, as needed during operation	Illness and fatalities
Handling incidents	Any unforeseen incident	Hazards involved in erecting power lines Electrical hazards associated with rigging and moving loads by ground personnel	All incidents will be handled in accordance with the Incidents and Emergency Response Plan, detailed in Section 7.3.5 of the ESPM	Electrical Safety Manager Security Manager	During construction, commissioning and operation	Injuries, fatalities to perpetrators; equipment damage
Vandalism and Theft	Lack of security measures	Poor site security, lack of surveillance, remote location	• Construct barriers or security fences where possible • Install warning signs (high voltage equipment) • Regular security patrols, especially in remote areas	Electrical Safety Manager Security Manager	During construction, commissioning and operation	Injuries, fatalities to perpetrators; equipment damage

Hazard category	Specific hazard	Causes	Measures to mitigate risk	Responsible party	Frequency of training/inspection	Consequences
Aviation Obstruction	Very high towers close to airports and lack of clear markings on overhead power lines	Inadequate planning, failure to mark hazards for aviation, poor coordination with aviation authorities	• Coordinate with Aviation Authorities on clearances • Design and install as per Aviation Authority recommendations • Avoid siting near airports and outside known flight paths • Install beacon balls and light beacons on lines and towers	Desing and Engineering Contractor Installation Contractor Angolan Aviation Authority	During detailed design and construction phases	Injuries, fatalities, damage to electrical and aviation infrastructure
SIMOPs						
Collision Hazards	Machinery collisions during simultaneous operations	Overlapping use of heavy machinery, lack of coordination and communication	• Daily coordination meetings between teams • Centralised communication system • Use of spotters and visual signals • Exclusion zones around machinery • Emergency response procedures	Site Supervisor	Daily inspections; Monthly training	Injuries, vehicle damage, operational delays
Electrical Hazards	Electrocution from working near live equipment	Simultaneous electrical work and other construction tasks, inadequate communication and separation	• Clear communication on energised areas • Isolation of live electrical components • Use of exclusion zones around live equipment • PPE for electrical work (insulated gloves, boots)	Electrical Safety Officer	Weekly inspections; Safety briefings	Electric shock, burns, fatalities
Confined Space Hazards	Overcrowding in confined workspaces	Multiple teams working in confined spaces without coordination	• Limit personnel working in confined spaces • Implement access controls for confined areas • Use of ventilation systems where applicable • Simultaneous task scheduling to avoid congestion	Confined Space Coordinator	Continuous monitoring; Monthly training	Slips, trips, falls, respiratory issues, injuries
Fire and Explosion Hazards	Fire or explosion from concurrent use of flammable materials	Lack of separation between activities involving flammable materials and other operations	• Separation of flammable material storage and use areas • Fire extinguishers on-site and fire watch in high-risk areas • Enforce “No Smoking” policy in sensitive areas • Emergency response plan	Safety Manager	Quarterly fire drills; Weekly inspections	Fire damage, injuries, fatalities, environmental contamination
Environmental Hazards	Environmental damage from simultaneous operations	Concurrent activities near sensitive areas (e.g., wetlands), spills, or accidental material discharge	• Create buffer zones around environmentally sensitive areas • Use spill containment systems • Monitor high-risk areas for potential environmental impacts • Regular environmental audits	Environmental Officer	Daily inspections; Environmental audits	Soil contamination, water pollution, habitat disruption
Communication Failures	Poor coordination leading to accidents	Lack of clear communication protocols between teams	• Centralised communication system for all teams • Use of radios and signalling methods for real-time updates • Daily SIMOPs briefings to align activities and address potential overlaps	SIMOPs Coordinator	Daily inspections; Monthly training	Accidents, operational inefficiencies, delays
Access and Egress Hazards	Restricted or blocked access to emergency exits	Overlapping construction activities blocking or obstructing exits	• Predefine and clearly mark access and egress routes • Monitor site for blocked paths during concurrent operations • Ensure emergency exits are free from obstruction at all times	Safety Manager	Daily inspections; Emergency drills	Delayed response to emergencies, risk of injury or fatality

7.4.13 Security management plan

The Security Management Plan outlines the strategies, measures and requirements to ensure the safety and security of personnel, project assets, communities and the environment. This plan needs to be read in conjunction with EPRP, CHSS, SEP and the Grievance Mechanism (Section 7.4). A specific Construction Security Management Plan should be developed by the contractor prior to the construction phase based on this general approach to the Security Management Plan outline here. The Construction Security Management Plan should include all relevant security personnel management measures as presented in the ESIA (Volume 1) and ESMP (Section 7.3).

Purpose and objectives

The purpose of the Security Management Plan is designed to guide the developers' and contractors' actions during construction and operation of the Project in protecting against and mitigating risks of a security (including human rights) nature that could threaten communities, employees, facilities, and ability to operate, as well as the reputation of the developer and its associated operations.

The objectives are to ensure the protection of communities and vulnerable groups against human rights abuses and exploitation, upholding human rights values, ensuring the safety of employees, facilities and assets by providing for a safe environment, and to manage reputational risk.

Policies and standards

The Security Management Plan draws on multiple polices, standards and guidelines embedded in the national regulatory framework, GIIP requirements and corporate guidelines including:

- National laws and regulations related to security and enforcement;
- IFC PS4 on Community Health, Safety and Security and IFC Guidance Note 4 for IFC PS4;
- The Voluntary Principles on Security and Human Rights (VPSHR); and
- Corporate policies and standards (e.g PAK and RNT) addressing security and human rights.

Security measures and strategies

The key security measures and strategies contained in the Security Management Plan include:

- Assessment of security risks -
    - Conduct a comprehensive security risk assessment (IFC provides guidance for security-based risk assessments) to identify potential threats to the community and operations. These include both internal and external risks that should be conducted prior to the commencement of construction activities and ideally before contractors arrive on site;
    - Engage with local communities and key stakeholders (in line with the SEP) to understand their security concerns and perceptions;
    - Regularly update the risk assessment to reflect changing conditions as the Project progresses through construction and into operation;
- Implementation of management strategies -
    - Code of Conduct: A Code of Conduct for security personnel will be developed to provide implementable guidance and should align to any existing security policies as well as international standards and principles;
    - Proactive strategies: Security risk management should be proactive where possible rather than reactive based on outcomes of the risk assessment based on the operation;
    - Security approach: Provide detail on physical security measures such as fencing, lighting (as per the Lighting Management Plan), equipment, access control barriers and surveillance cameras;
    - Operating procedures: Detail security procedures regarding patrolling and surveillance, incident response, information and communication, firearms safety, and access control and construction camps and substations;

  - Supervision and control: Identify management structures, lines of control, communication and reporting, security responsibility (Security Chief (Social Affairs)) and coordination with communities and local authorities;
  - Training: Provide regular technical and proficient training (as per the EHS Training and Awareness Plan) which is aligned to GIIP standards on the use of force, proper conduct, rules of engagement, weapons training (as applicable) and general EHS training. All third-party security providers should adhere to this training plan. PAK should update the HSE Plan (PY-ANG-PM-PRO-00009.p01 / 00/01.07.2024) to include security personnel training aspects prior to the construction phase;
- Managing private security responsibly -
  - Procurement and vetting: Ensure that all security personnel, whether private or public, contracted or directly employed, are thoroughly vetted for past human rights abuses as part of the procurement process and in line with Angolan national labour laws;
  - Training: Aligned to the EHS Training and Awareness Plan, provide regular training on human rights, the use of force, and the Voluntary Principles (VPSHR);
  - Conduct: Establish a code of conduct for security personnel that emphasises respect for human rights and the appropriate use of force as per international best practice and corporate policies and standards;
- Public security forces -
  - Utilisation: Public security forces may be used and would need to be managed in a manner that aligns to international standards and principles (VPSHR);
  - Collaboration: Engage with public security forces to ensure their actions are consistent with human rights principles;
  - Memorandum of Understanding (MoU): Develop MoU with public security forces outlining expectations and responsibilities regarding human rights;
- Incident management -
  - Incident reporting: Establish a clear process for reporting and documenting security incidents and communicating these incidents to appropriate responsible persons;
  - Investigation: Investigate all allegations of human rights abuses and security incidents promptly and thoroughly; and
  - Remediation: Implement corrective actions and provide remedies for any harm caused while being transparent with key stakeholders concerned.

Community engagement

Engagement with the community or other relevant stakeholders on security and human rights matters is an integral part of the Security Management Plan in line with GIIP. The community engagement approach should be aligned to the Project SEP and Grievance Mechanism. Key aspects to community engagement include but are not limited to:

- Stakeholder consultation: Regularly consult with local communities and stakeholders about security measures and their impacts and ensure full transparency on applicable security and human rights aspects; and
- Grievance mechanism: Establish a grievance mechanism that is aligned to the Grievance Mechanism and SEP for the Project, for communities to raise concerns about security practices and encourage reporting if incidents timeously.

Monitoring, evaluation and revision

- Performance indicators: Develop indicators (incidents, complaints, response times, etc.) to monitor the effectiveness of security measures and respect for human rights;
- Regular reviews: Conduct regular reviews and audits of security practices to ensure compliance with IFC PS4, VPSHR and other applicable standards;
- Stakeholder feedback: Use feedback from stakeholders and incident investigations to continuously improve security practices; and
- Training updates: Regularly update training programs (including those aligned to the EHS Training and Awareness Plan) to reflect new insights and best practices.

7.4.14 Gender-based violence and harassment prevention and response plan

The Project is a significant infrastructure development and as such has the potential to bring considerable benefits to communities. However, it may also lead to unintended negative social impacts, including Gender-Based Violence and Harassment (GBVH). Given the scale and location of the Project, a comprehensive approach to managing social risks is essential, particularly those associated with GBVH.

A GBVH Prevention and Response Plan has been developed to proactively identify, prevent, and address GBVH risks throughout the Project's lifecycle—specifically during the construction and operational phases. Through this plan, the wellbeing of communities affected by the Project, its workforce, and other stakeholders can be assured. The GBVH Prevention and Response Plan outlines:

- The specific GBVH risks to employees (particularly women), contractors, and project-affected communities;
- Prevention measures and guidelines for effective grievance mechanisms;
- The capacity and resources required for an effective response to GBVH cases, underpinned by a survivor-centred approach; and
- A monitoring framework with key performance indicators (KPIs) to assess the effectiveness of these initiatives.

The full GBVH Prevention and Response Plan is provided in Volume 3, Appendix Q.

GBVH risks in the Project area are heightened due to the rural setting, potential economic displacement, and the potential influx of a largely male workforce. The GBVH Prevention and Response Plan outlines specific risks associated with the Project and the proposed mitigation strategies, including:

- Influx of workers: Implementing strict hiring practices, a code of conduct, and gender-segregated accommodations;
- Disruption of community dynamics: Continuous stakeholder engagement and gender-sensitive monitoring;
- Land acquisition and resettlement: Transparent and inclusive processes with tailored support for vulnerable groups;
- Transportation: Planning routes to avoid high-risk areas and ensuring staff training in GBVH awareness;
- Sex work and substance abuse: Enforcing codes of conduct prohibiting these activities and partnering with local organisations for alternative livelihoods; and
- Modern slavery and trafficking: Anti-trafficking policies for contractors and engagement with local civil society.

A monitoring framework will track the effectiveness of GBVH prevention and response initiatives using KPIs. Regular audits and evaluations will ensure that the strategies remain context-specific and responsive to evolving risks. The Project proponent and contractor(s) must keep personnel informed of GBVH measures and designate responsible teams to oversee their implementation. Compliance with Angolan legislation, such as the General Labour Law (Law No. 7/15) as well as GIIP standards, is crucial. These supplementary mitigation measures do not replace legal requirements but rather complement them to ensure a robust approach to GBVH risk management.

7.4.15 Reporting, auditing and review

Checking and, if necessary, implementing corrective action, is a key component of the ESMP management cycle as it ensures that:

- ESMP management activities are being implemented effectively; and
- Desired outcomes are being achieved.

Mandatory reports

During the construction and operation phases of the Project a number of reports are required, which are listed below.

Routine progress reports

- Routine progress reports are required during the construction phase to provide updates on construction related health and safety incidents (both occupational and community), grievances and updates to any management measures, if required;
- These routine progress reports should be built into contractor requirements; and
- The frequency of reporting should be monthly during the construction phase.

Periodical supervision reports

- Periodical supervision reports be undertaken by site and general managers and report on major incidents (OHS and CHSS), risks and additional management measures to address these risks, grievance management and human rights related issues; and
- The frequency of these reports should be quarterly at a minimum during construction and quarterly or bi-annually during operation.

Monitoring programme reporting

- Monitoring programme reports include reporting on monitoring measures as stipulated in the environmental and social monitoring programme (Table 7-21) and may include monitoring purposes/objectives, results and mitigation measures; and
- The frequency of monitoring programme reports should be monthly during construction (unless stipulated differently in the monitoring programme) and annually, at a minimum, during operation, and again, monthly during decommissioning if required.

Ad hoc reports

- Additional reporting may be required on an ad hoc basis such as performance relating to international standards alignment, particularly around human rights, employment equality and security engagement (ASM risks and crime).

Inspections and auditing

A pragmatic site inspection regime should be developed for all Project phase that allows for potential environmental and safety transgressions to be proactively identified and mitigated.

Internal and external audits should be carried out as follows:

- Internal audits: Where the monitoring data and the inspection reports highlight problems, an internal audit should be used by PAK Yatirim to ascertain the source of the problem and to define action to prevent its recurrence. The three key areas for audit are facilities (are they operating properly?), project procedures (are they properly designed and implemented?), and finally, contractor's environmental and safety performance; and
- External audits: The external auditing regime should address the requirements of national legal requirements as well as the international standards and guidelines of lender institutions (where applicable). Legal compliance audits should verify independent monitoring and ESMP implementation:
    - Internal and external ESMP audits should be aligned with relevant auditing procedures of the Project proponent. The timetables for these audits will be driven by discipline leads and align with the established ESMS and legal compliance criteria.

Corrective action

There are several mechanisms for implementing corrective action during the construction, operational and decommissioning phases. Mechanisms to address transgressions include:

- Verbal instruction (in the event of minor transgressions from established procedure, usually following a site inspection);
- Written instruction (identifying source/s of problems, usually following an audit); and

- Contract notice (following possible breach of contract).

Reporting and management review

Audit findings should be structured into instructive reporting that provides information to all required parties on environmental and safety performance, together with clearly defined corrective action where this is seen to be required. Both the monitoring and inspections are reported on continuously. Within the reporting structure it is necessary to create a review function that continuously assesses the reporting and prescribes any necessary corrective action. Reporting should include the provision of information on the environmental and safety performance to external stakeholders and surrounding communities.

PAK Yatirim should undertake a formal management review of the ESMP at defined intervals during the construction phase. These reviews will be carried out by RNT during the operation phase of the Project. The purpose of the management review is for management to determine the environmental management performance during the preceding period and to propose measures for improving that performance to ensure compliance and drive continuous improvement.

Stakeholder liaison and engagement

Throughout the Project, ongoing liaison should be maintained with authorities and communities alike to ensure the following:

- Timeous advance warning of any Project activities that may have some adverse impact on surrounding communities, e.g. site clearing and blasting; and
- Ongoing feedback on the environmental and safety performance of the project.

The SEP developed for the Project will provide an important framework for these interactions (refer to Volume 3, Appendix G).

7.5 Guidance for site-specific management plans

A number of management plans are referenced in Table 7-20 and should be developed based on final design specifications, including for undefined Project components such as borrow pits, temporary facilities, and route modifications. These plans must be finalised prior to the commencement of construction activities to ensure site-specific implementation of the ESMP.

This includes the Construction Environmental and Social Management Plan (C-ESMP) for the construction phase and the Operational Environmental and Social Management Plan (O-ESMP) for operation, which shall detail the implementation of mitigation measures specific to the respective phases and ensure compliance with the standards outlined in the ESMP.

Table 7-20 provides detailed frameworks to guide the development of the site-specific management plans.

Table 7-20: Additional management plans required for ESMP implementation during construction and operation phases

Management plan	Framework / guidelines	Applicable phase	Responsibility
Air Quality and Dust Control Management Plan	**1. Introduction** • Purpose: The aim of the Air Quality and Dust Control Management Plan is to prevent, reduce, and control air quality impacts associated with the project, minimise dust emissions and manage their impact effectively throughout all project phases and ensure protection of public health and environmental quality in accordance with Angolan regulations and international standards • Scope: The plan will cover all project phases, construction, operation, maintenance, and decommissioning for the HV, MV and LV powerlines, substations and construction camps • Geographic Description: The plan should include a geographic delineation of areas facing direct and indirect impacts to air quality as well as identify areas where there are sensitive receptors and highlight areas where dust generation occurs **2. Regulatory and Policy Framework** • National Legislation: The plan should meet any relevant Angolan legislation, which includes provisions on air quality and dust management and any other specific municipal or regional guidelines. Refer to Volume 1, Section 3 of the ESIA • International Guidelines: The plan should align to the IFC Performance Standards and reference the IFC EHS Guidelines. It should also align to the World Health Organization (WHO) air quality guidelines (2021) and the recommended limits for particulate matter (PM10, PM2.5) and other pollutants (O3, NO2, SO2 and CO) to protect human health. Applicable protection guidelines and requirements as per the ILO code of practice for the protection workers against noise and vibration in the working environment (ILO Recommendation 156 – Working Environment (Air Pollution, Noise and Vibration)) • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP applicable to air quality and dust control as referenced in Section 7.3 and Table 7-2, including but not limited to: o Avoid construction activities during very dry and windy conditions particularly vegetation and land clearance o Utilising dust suppression methods on active working areas of bare soil including cleared areas and access roads o Applying controls on the amount of earth-moving activities occurring and limiting speed of vehicles o Utilising existing natural barriers and fencing with barriers to limit the amount of fugitive dust and other pollutants from construction sites / camps o Implement regular air quality monitoring during construction to identify potential air pollution issues and enable timely corrective measures o Maintain vegetation or revegetate bare areas to reduce potential windblown dust emissions o Enclosing any soil stockpiles (topsoil or construction materials) with temporary fencing and covers to prevent windblown dust emissions **3. Air Quality and Dust Baseline Assessment** • Baseline Data Collection: o Methodology: Description of sampling locations, duration, and frequency. Identification of representative locations around the project site for dust monitoring o Instruments: Details should be provided on air quality measurement equipment (e.g., particulate matter sensors, gas analysers, dust fallout gauges). Describe how long and how often baseline data will be collected o Quality Assurance: Regular calibration and validation procedures for instruments and equipment. Procedures to be developed to ensure accuracy and reliability of collected data • Key Parameters: o Major pollutants of concern: PM10, PM2.5, NO2, SO2, CO, VOCs. Measures of particulate matter concentrations to be taken at regular intervals. Specific parameters relevant to the region's environmental conditions should be included o Dust Fall: Collection of total dust fall using dust deposition gauges • Existing Conditions: o Historical Data: Review of existing air quality data and historical dust levels o Environmental Setting: Consideration of local topography, land use, and prevailing weather conditions o Identification of sensitive receptors (residential areas, schools, hospitals) **4. Impact Assessment and Mitigation measures** • Pre-construction o Pre-construction survey: Conduct a pre-construction air quality survey to confirm anticipated baselines • Construction Phase: o Sources of gaseous emissions and other pollutants: Construction machinery and vehicles, generators and other applicable construction related equipment and activities o Sources of Dust: Earthworks such as excavation, grading, and trenching activities. Material handling such as loading, unloading, and transportation of construction materials. Movement of construction vehicles and machinery on unpaved roads o Impact on Receptors: Evaluation of potential impacts on nearby sensitive receptors (e.g., residential areas, communities and ecosystems) o Dust Control: Regular application of water sprays to control dust on active construction areas and access roads. Application of chemical dust suppressants to reduce dust emissions. Use of covered haul trucks and regular maintenance and surfacing of unpaved roads. Installation of barriers or screens to minimise wind-blown dust and use of stabilisers or cover materials to prevent dust from exposed soil o Equipment and Vehicle Management: Use of Low-emission machinery which undergo regular servicing of vehicles to reduce emissions. Use of equipment designed to minimise dust generation. Optimised routes and schedules to reduce dust and emissions	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility

	• Operation Phase:
	  ○ Sources of Emissions: Substation equipment (e.g., cooling systems). Regular operation and maintenance activities
	  ○ Sources of Dust: Dust generated from routine operation of equipment and machinery and periodic maintenance activities. Dust generated during repair and upkeep of infrastructure
	  ○ Continuous Monitoring: Regular assessments of air quality and associated long term impacts. Evaluation of dust levels through ongoing monitoring during operation and maintenance
	  ○ Emission controls: Implementation of air pollution control devices (e.g., air filtration/scrubbers). Regular maintenance of equipment to minimise emissions. Continuous air quality monitoring at key locations. Use of low-emission tools and equipment. Minimisation of maintenance activity duration and frequency
	  ○ Dust controls: Implementation of best practices to minimise dust during routine operations. Regular maintenance of equipment to prevent dust emissions. Continuous monitoring of dust levels and adjustment of control measures as necessary. Use of low-dust equipment and methods during maintenance work. Application of dust suppressants during maintenance activities to control emissions
	• Decommissioning Phase:
	  ○ Sources of Emissions: Dismantling of equipment and infrastructure
	  ○ Sources of Dust: Dust from removal of structures and site cleanup
	  ○ Monitoring of short-term and long-term impacts on air quality during decommissioning should be undertaken, including analysis of dust generation and its impact on air quality
	  ○ Controlled Dismantling: Use of water or other dust control methods during dismantling operations. Proper management of dust from demolition activities
	  ○ Waste Management: Proper handling of demolition debris to minimise dust and emissions. Proper handling and disposal of waste materials. Implementation of recycling practices to reduce dust from waste materials
	5. Monitoring and Reporting
	• Monitoring Plan:
	  ○ Monitoring commitment: The contractor and proponent need to commit to monitoring during both the construction and operation phases respectively
	  ○ Frequency: Define the frequency such as daily, weekly, or monthly monitoring schedules based on activity levels and monitor regularly in those intervals
	  ○ Parameters: Ensure that all identified pollutants are monitored and compared to relevant standards
	  ○ Methods: Define appropriate measurement techniques and data recording procedures for emissions and dust generation
	  ○ Compliance Checks: Verify that management practices adhere to the Air Quality and Dust Control Management Plan and regulatory requirements
	• Reporting:
	  ○ Documentation: Maintain comprehensive records of air quality management activities, dust control measures, and monitoring results. Submit regular reports to regulatory authorities and project stakeholders, including any incidents of non-compliance or air quality degradation
	  ○ Incident Reporting: Report any significant incidents or deviations from the Air Quality and Dust Control Management Plan promptly, including corrective actions taken
	6. Emergency Response Plan
	• Contingency Measures:
	  ○ Unexpected Incidents: Procedures for addressing accidental or unforeseen air quality issues such as actions to control and mitigate spills or emissions should be put into place. Procedures for rapid response to high dust levels or control failures such as increased watering or additional dust suppressants will also need to be take into consideration and included in the management plan
	  ○ Roles and responsibilities of emergency response personnel will need to be clearly defined
	• Communication Plan:
	  ○ Contact Information: A list of key contacts for emergencies should be kept on hand
	  ○ Protocols: Procedures for notifying stakeholders and authorities of any incidents will need to be developed
	  ○ Training: Regular training for staff on emergency response should be conducted to ensure that everyone will know how to react in an emergency situation
	7. Public Engagement and Communication
	• Stakeholder Involvement:
	  ○ Engagement Strategies: Establish methods for engaging with local communities and stakeholders in line with the Project SEP
	  ○ Consultations: Hold regular meetings and consultations with affected parties
	• Public Awareness:
	  ○ Educational Campaigns: Provide information to stakeholders on the importance of dust control and the project impacts on air quality
	  ○ Feedback Channels: Ensure that mechanisms for the public to provide feedback and report on air quality and dust-related issues are in place
	8. Review and Revision
	• Revision Process:
	  ○ Regular Reviews: Establish a schedule for regular reviews of the management plan, including updates based on new information, regulatory changes, or project modifications. Identify specific triggers that would prompt an immediate review of the management plan, such as significant environmental incidents or changes in project scope. Implement a structured process for revising the plan, including consultation with stakeholders and obtaining necessary approvals		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	○ Continuous Improvement: Collect feedback from monitoring, inspections, and stakeholder engagement to identify areas for improvement. Incorporate lessons learned from project experience and industry best practices into the plan to enhance its effectiveness **9. Appendices** • Append any applicable documents.		
Noise and Vibration Management Plan	**1. Introduction** • Purpose: The objective of the Noise and Vibration Management Plan (NVMP) is to minimise noise and vibration impacts that may arise from activities during the construction, operation and decommissioning of the powerline and substations • Scope: The NVMP is applicable to all project-influenced areas (the entire OHL route, substations, transformers and construction camps) and identified sensitive receptors, during the construction, operational (including maintenance) and decommissioning phases • Regulatory and Policy Framework: Reference applicable local regulations relevant to noise and vibration management. Refer to Volume 1, Section 3 of the ESIA • International Guidelines and Standards: Align to applicable international guidelines and standards for best practice such as the requirements set out in the IFC EHS Guidelines: General EHS Guidelines (2007) for environmental, OHS and CHSS. Applicable protection guidelines and requirements as per the ILO code of practice for the protection workers against noise and vibration in the working environment (ILO Recommendation 156 – Working Environment (Air Pollution, Noise and Vibration)) • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP applicable to noise and vibration as referenced in Section 7.3 and Table 7-2, including but not limited to: ○ Ensuring that applicable noise limits (as per noise specialist recommendations, national regulations and international standards) are adhered to in terms of the use of noisy machinery and equipment during the respective project phases relevant to residential and rural areas ○ Utilising of these noisy machinery and equipment (which exceed the noise limits) only during peak noise hours during the day ○ Ground vibration and air pressure level must be monitored during construction **2. Project Description** • Overview: Provide a brief description of the powerline and substations project, including key locations and components • Timeline: Outline the project phases and duration, including construction, commissioning, and operational phases • Stakeholders: Identify key stakeholders, including local communities, regulatory bodies, and contractors **3. Noise and Vibration Baseline Assessment** • Baseline Surveys: Describe the methodology for conducting baseline noise and vibration surveys in the project area • Data Collection: Specify locations, times, and equipment used for monitoring existing noise and vibration levels • Analysis: Analyse baseline data to identify sensitive receptors and potential impact zones **4. Impact Assessment** • Construction Phase: Evaluate the potential noise and vibration impacts from construction activities such as earthmoving, pile driving, and machinery operation • Operational Phase: Assess the noise and vibration impacts from the operation of the powerline and substations • Decommissioning phase: Evaluate potential noise and vibration impacts from decommissioning related activities such as machinery operation • Sensitive Receptors: Identify residential areas, schools, hospitals, and other sensitive locations that may be affected **5. Mitigation Measures** • Construction Mitigation: ○ Use of quieter machinery and equipment ○ Implementation of noise barriers and vibration dampening techniques ○ Scheduling of high-impact activities during less sensitive times ○ Maintenance and regular inspection of equipment to ensure optimal performance • Operational Mitigation: ○ Design considerations to minimise noise (e.g., sound insulation for substations) ○ Regular maintenance of equipment to prevent excessive noise ○ Use of noise-reducing technologies **6. Monitoring and Reporting** • Monitoring Programme: Develop a noise monitoring programme for regular noise and vibration monitoring during both construction and operational phases. This can extend to the decommissioning phase as well. The monitoring programme should be aligned to specialist recommendations and best practice such as IFC EHS Guidelines • Reporting: Establish procedures for reporting monitoring results and any exceedances of acceptable noise and vibration levels as per national and international noise and vibration limits • Record Keeping: Maintain records of monitoring results, complaints, and mitigation measures taken **7. Community Engagement** • Public Consultation: Engage with local communities to inform them about potential noise and vibration impacts and mitigation measures • Grievance and Feedback Mechanism: Provide channels for the community to raise concerns or complaints regarding noise and vibration	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	• Information Dissemination: Regularly update the community on project progress and any changes to noise and vibration management practices **8. Training and Awareness** • Training Program: Implement training for construction workers and operational staff on noise and vibration management practices • Awareness Campaign: Promote awareness about the importance of noise and vibration management among all project personnel **9. Emergency Response** • Response Plan: Develop an emergency response plan for handling incidents related to excessive noise or vibration • Contact Information: Provide contact details for key personnel responsible for managing noise and vibration issues **10. Review and Improvement** • Plan Review: Regularly review and update the NVMP to reflect changes in project scope or regulatory requirements • Performance Evaluation: Assess the effectiveness of the NVMP and identify areas for improvement • Lessons Learned: Document lessons learned and incorporate them into future projects **11. Appendices** • Append any applicable documents		
Stormwater Management Plan	**1. Introduction** • Purpose: The purpose of the Stormwater Management Plan (SWMP) is to ensure that clean and dirty water are adequately separated, by diverting clean water away from dirty substations areas, and ensuring that dirty water from the substations is captured, contained and managed appropriately. Protect water quality by reducing pollution from stormwater runoff, control the volume and rate of stormwater runoff to prevent flooding and erosion, and preserve natural hydrological conditions as much as possible. To ensure that stormwater management is integrated into all phases of the project, from construction through to decommissioning • Environmental Context: Describe the environmental setting, including climate, rainfall patterns, and the potential impacts on local water resources **2. Regulatory and Policy Framework** • National laws and Regulations: List the applicable Angolan regulations and national standards relevant to stormwater management. Refer to Volume 1, Section 3 of the ESIA • International guidelines: Fulfil the IFC EHS Guidelines (2007) that apply to projects that have either direct or indirect discharge of process wastewater, wastewater from utility operations or stormwater to the environment. Optional best practice guidelines that could be considered include the ISO 24536:2019 for service activities relating to drinking water supply, wastewater and stormwater systems • Permitting Requirements: Detail the necessary permits and approvals from local and national authorities with regards to stormwater management • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP applicable to stormwater management as referenced in Section 7.3 and Table 7-2, including but limited to: o Ensuring stormwater management measures take account of potential extreme rainfall events to prevent flooding and damage to key infrastructure particularly hazardous materials storage/management areas o Ensuring substations and transformers are adequately bunded and service areas are roofed as well to prevent the transportation of pollutants into the surrounding environment o Contractor laydown areas and material storage facilities must remain within the designated contractor camp and batching plant footprint o Suitable drainage must be utilised along the hardstand areas to ensure that water does not pond on the hardstand or does not drain in a concentrated manner into the freshwater systems o Adequate stormwater management must be incorporated into the design of the substation infrastructure in order to prevent erosion and the associated sedimentation of the freshwater habitat o Regular inspections of all stormwater infrastructure must be conducted. During the inspection, data must be recorded and kept for the purposes of tracking and reporting o Any construction activities should be restricted to the established and demarcated construction sites **3. Project Phases** • Project Description: Provide an overview of the powerline route, substation locations, and general topography of the project area. Provide a description of each project phase in terms of stormwater management: o Construction Phase: Description of activities including site clearing, grading, and construction of powerlines and substations. Implement erosion and sediment control measures to prevent soil erosion and manage sedimentation. Temporary Drainage Systems: Installing temporary drainage systems to manage stormwater during construction. Ensure proper handling of construction material and implement good waste management practices to prevent pollution of water resources o Operation and Maintenance Phase: Outline of operational activities and their potential impact on stormwater. Design and implement permanent stormwater infrastructure. Put in place planned maintenance schedules and regular inspections within the facilities to assess the conditions, detect early malfunctions, and integrity degradations of stormwater infrastructure including vegetation management. Establish and implement maintenance management procedure which will address the steps to be taken when there are issues identified during inspections and when upgrades and repairs are required o Decommissioning Phase: Outline activities involved in dismantling the powerline and substations, including site rehabilitation. Include in the rehabilitation and revegetation management plan, how stormwater infrastructure will be safely dismantled and which stormwater infrastructure will need to remain to maintain natural drainage or if new infrastructure will be required to restore natural drainage and hydrology	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	4. Site Assessment • Baseline Hydrological Study: Conduct a study of the existing hydrological conditions, including drainage patterns, soil types, and existing water bodies • Vulnerability Assessment: Identify areas prone to erosion, flooding, or sediment transport **5. Stormwater Management Objectives** • Erosion Control: Prevent soil erosion during and after construction activities • Water Quality Protection: Ensure that stormwater runoff does not contaminate local water bodies by transporting pollutants from construction areas and project infrastructure • Flood Prevention: Manage stormwater to prevent localised flooding and damage to infrastructure • Sustainable Drainage: Incorporate sustainable drainage systems to mimic natural water management **6. Stormwater Control Measures** • During Construction: o Silt Fencing and Sediment Traps: Install along construction sites to prevent sediment runoff o Temporary Drainage Channels: Construct temporary channels to divert clean stormwater away from construction areas o Stabilisation of Exposed Soils: Use mulching, matting, or hydroseeding on exposed soils. This could include concurrent revegetation of exposed soils where possible in line with the Rehabilitation and Revegetation Management Plan • During Operation and Maintenance: o Permanent Drainage Systems: Design and implement drainage systems that handle runoff during the operation phase o Vegetative Swales and Buffer Strips: Establish to filter runoff and promote infiltration o Retention/Detention Ponds: Build to manage peak runoff and improve water quality o Routine Inspections: Regularly inspect stormwater control measures for damage or clogging o Vegetation Management: Maintain vegetation in swales, ponds, and buffer strips o Erosion Repair: Promptly repair any erosion issues detected during inspections in line with the Rehabilitation and Revegetation Management Plan and the Erosion and Soil Management Plan • During Decommissioning: o Deconstruction and Soil Stabilisation: Carefully dismantle structures, stabilising soils immediately after removal o Site Rehabilitation: Restore natural drainage patterns and re-vegetate disturbed areas in line with the Rehabilitation and Revegetation Management Plan **7. Monitoring and Reporting** • Construction Phase: o Monitoring: Schedule regular inspections of stormwater control measures, especially after heavy rainfall events o Documentation and Reporting: Keep records of inspections, incidents, and corrective actions • Operational and Maintenance Phase: o Monitoring: Ongoing testing and monitoring of stormwater systems, water quality and erosion in the project area and associated watercourses. Ensure regular inspections and maintenance logs to ensure stormwater systems functionality. Comprehensive documentation of the stormwater management plan, including designs, calculations, and management strategies. The stormwater management plan to be formally reviewed at regular intervals and as needed o Monitoring Reports: Preparation and submission of reports analysing monitoring data and outlining any required actions as may be required by the Angolan regulations and any other compliance reporting related to stormwater management, including stakeholders • Decommissioning Phase: o Final monitoring: Post-decommissioning monitoring to ensure site is stable, free from pollution, and successfully rehabilitated o Long-term monitoring: A plan for periodic inspections to ensure the site natural drainage remains post-decommissioning o Reporting: Establish a reporting schedule for submission to regulatory authorities, detailing findings from monitoring and any corrective actions taken if required by the Angolan regulations **8. Emergency Response Plan** • Flood Response: Outline procedures for responding to unexpected flooding or breaches in stormwater controls • Contingency Planning: Plans for addressing unforeseen events or failures in the stormwater management system • Spill Response: Procedures for handling chemical spills or other pollutants that could enter the stormwater system **9. Stakeholder Engagement and Communication** • Public Consultation: Engaging with local communities, especially during the planning and decommissioning phases. Keeping stakeholders informed about the project's environmental management efforts with regards to stormwater management. **10. Review and Revision** • Plan Review: o Review Schedule: Establish a schedule for regular reviews of the SWMP to ensure it remains relevant and effective o Update Procedures: Implement procedures for updating the plan based on new information, regulatory changes, or project modifications • Continuous Improvement:		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	○ Feedback Mechanisms: Use feedback from monitoring, inspections, and stakeholder engagement to identify areas for improvement. Incorporate lessons learned and best practices into the SWMP to enhance its effectiveness **11. Roles and Responsibilities** • Project Manager: Oversee the implementation of the stormwater management plan across all phases • Environmental Officer: Responsible for day-to-day monitoring and ensuring compliance with the plan • Construction and Maintenance Crews: Implement stormwater control measures as outlined in the plan • Regulatory Liaison: Maintain communication with regulatory bodies and ensure timely reporting **12. Appendices** • Maps and Site Plans: Include detailed maps showing the project area, stormwater control locations, and drainage patterns • Technical Specifications: Provide detailed designs for stormwater control measures • Monitoring and Inspection Forms: Templates for procedures, recording monitoring data, inspections, and incidents • Append any other applicable documents		
Vegetation and Land Clearance Management Plan	**1. Introduction** • Purpose: The aim of the Vegetation and Land Clearance Management Plan (VCLMP) is to minimise the environmental impacts of vegetation and land clearance, ensure compliance with relevant environmental regulations, promote sustainability and ecological restoration, and enhance project efficiency while reducing adverse effects on ecosystems • Scope: This plan covers all project phases, construction, operation, maintenance, and decommissioning for the HV, MV and LV powerlines, substations and construction camps. It should include procedures that guide land preparation, vegetation removal, and site preparation, ongoing maintenance and management of cleared areas, regular upkeep and management to ensure continued compliance and effectiveness and restoration of land and vegetation post-decommissioning • Geographic Description: Provide an overview of the geographic area and specific sites for powerline infrastructure and substations, the length of powerlines, number of substations, and total area affected and the key features of the project such as construction methods and expected operational life **2. Regulatory and Policy Framework** • National Laws and Regulations: The plan should meet any relevant Angolan legislation and any specific municipal or regional guidelines on land and vegetation management. Refer to Volume 1, Section 3 of the ESIA • International Standards: The plan should align to the IFC Performance Standards, including PS1 (Assessment and Management of Environmental and Social Risks and Impacts), PS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources). It should also reference applicable international guidelines such as the IFC Environmental, Health, and Safety (EHS) Guidelines and ISO 14001:2015 for environmental management • Environmental and Social Impact Assessments: The plan should reference the findings of the ESIA with specific mention to the potential impacts on vegetation, soil erosion, and biodiversity identified and the specific measures recommended for managing and mitigating them • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP applicable to vegetation and land clearance as referenced in Section 7.3 and Table 7-2, including but not limited to: ○ Removal of vegetation must be restricted to what is necessary and should remain within the approved development footprint which should be clearly demarcated ○ Vegetation clearance below the OHL is to be limited to only that which is needed, excessive vegetation clearance is to be avoided ○ No additional clearing of vegetation beyond that which is needed for maintenance activities is to be undertaken ○ Minimise vegetation clearing where possible, especially at construction camps, along access roads, around laydown areas and the project site ○ Locations of medicinal plants should be identified prior to site establishment to ensure that they can be avoided or replanted ○ Vehicle movement should be restricted to existing roads **3. Vegetation and Land Clearance Management Strategy** • Objectives and goals: ○ Preservation of Biodiversity: Avoid disturbance to sensitive and protected species and habitats ○ Erosion Control: Prevent soil erosion and degradation through proper management practices ○ Sustainable Practices: Utilise best practices in land management to promote long-term ecological and soil health • Vegetation Management: ○ Pre-Clearance Survey: Identify vegetation types, species diversity, and any endangered or protected species ○ Data Collection: Document locations, health, and size of vegetation ○ Habitat Mapping: Create maps highlighting sensitive and critical habitats • Clearance Procedures: ○ Mechanical Clearance: Use of machinery (e.g., bulldozers, mulchers) with minimal soil disturbance ○ Manual Clearance: Use Hand tools for areas with high ecological sensitivity ○ Avoidance Measures: Implement techniques to protect non-target species and areas of high ecological value ○ Timing: Avoid clearance during critical periods such as nesting seasons or flowering periods • Replanting and Restoration (aligned to the Rehabilitation and Revegetation Management Plan):	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	○ Species Selection: Use native plant species that are adapted to the local environment ○ Restoration Techniques: Techniques for replanting, soil stabilisation, and habitat enhancement ○ Monitoring: Regular monitoring of restoration sites to ensure successful reestablishment of vegetation • Land Clearance Procedures: ○ Clearing: Remove vegetation and debris while minimising soil disturbance. Avoid clearing riparian vegetation where possible ○ Grading: Levelling and preparing the site for construction, ensuring proper drainage ○ Soil Management: Protect and manage topsoil to prevent erosion and degradation • Erosion Control Measures (aligned to the Erosion and Soil Management Plan): ○ Install silt fences to capture sediment and prevent runoff ○ Create sediment basins to collect and manage runoff ○ Establish temporary or permanent vegetation cover to stabilise the soil ○ Regularly inspect and maintain erosion control measures to ensure that they are working efficiently **4. Environmental Management and Monitoring** • Environmental Management: ○ Minimise Footprint: Restrict clearance activities to the minimum necessary area ○ Avoid Sensitive Areas: Implement measures to avoid or mitigate impacts on sensitive or protected areas • Compliance Monitoring: ○ Inspection Schedule: Develop a schedule for regular inspections of vegetation and land clearance activities ○ Compliance Checks: Verify adherence to the VLCMP and relevant regulations • Monitoring and Reporting: ○ Frequency: Conduct inspections at key stages of the project (pre-clearance, during construction, post-clearance) ○ Inspection Checklist: Develop checklists to assess compliance and effectiveness of management measures ○ Documentation: Maintain detailed records of land clearance activities, environmental impacts, and restoration efforts ○ Reporting Frequency: Submit regular reports to regulatory authorities and stakeholders as required ○ Incident Reporting: Report any incidents of non-compliance or environmental damage promptly **5. Stakeholder Engagement** • Community Involvement: ○ Information Dissemination: Provide information to local communities about land clearance activities and potential impacts ○ Feedback Mechanisms: Establish channels for receiving and addressing community concerns and feedback • Consultation with Environmental Experts: ○ Expert Consultation: Engage with environmental consultants and experts to review and refine land and vegetation management practices. Incorporate expert recommendations and best practices into the VLCMP **6. Training and Capacity Building** • Training Programs: ○ Training: Develop training materials on environmental management, vegetation clearance techniques, and compliance requirements. Target project staff, contractors, and other relevant personnel • Capacity Building: ○ Workshops and Seminars: Organise workshops and seminars to build capacity in environmental management and land restoration ○ Knowledge Sharing: Facilitate knowledge sharing and continuous learning among project stakeholders **7. Emergency Response** • Contingency Planning: ○ Emergency Scenarios: Develop contingency plans for potential environmental emergencies, such as accidental spills or extreme weather events. Establish protocols for rapid response and mitigation • Response Procedures: ○ Emergency Contacts: Keep a regularly updated list of contacts for emergency response teams, regulatory authorities, and environmental specialists ○ Action Plans: Develop detailed action plans for managing specific types of environmental incidents **8. Decommissioning** • Decommissioning Plan: ○ Removal Procedures: Outline procedures for safely removing powerlines and substations, minimising environmental impacts ○ Land Restoration: Implement measures to restore land and vegetation to pre-project conditions or better • Post-Decommissioning Monitoring: ○ Monitoring Program: Develop a monitoring program to assess the success of land restoration efforts. Conduct long-term follow-up to ensure that decommissioned areas recover and stabilise		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	9. Review and Revision • Plan Review: o Review Schedule: Establish a schedule for regular reviews of the VLCMP to ensure it remains relevant and effective o Update Procedures: Implement procedures for updating the plan based on new information, regulatory changes, or project modifications • Continuous Improvement: o Feedback Mechanisms: Use feedback from monitoring, inspections, and stakeholder engagement to identify areas for improvement. Incorporate lessons learned and best practices into the VLCMP to enhance its effectiveness **10. Appendices** • Append any applicable documents		
Pollution Prevention and Abatement Management Plan	**1. Introduction** • Purpose: To minimise pollution and environmental impacts associated with the construction, operation, maintenance, and decommissioning of powerlines and substations. This plan aims to prevent pollution, support environmental sustainability, and ensure compliance with legal and environmental standards • Scope: Applies to all phases of the project, including site preparation, construction, operation, maintenance, and decommissioning of HV, MV, and LV powerlines, substations, transformers, and construction camps. Addresses pollution prevention and control measures across all these activities **2. Regulatory and Policy Framework** • National Laws and Regulations: o Angolan Legislation: Adhere to relevant legislation, which establish standards and procedures for controlling pollution from various sources and other applicable municipal or regional guidelines. Refer to Volume 1, Section 3 of the ESIA • International Standards: o IFC Performance Standards: Ensure compliance with PS1 (Assessment and Management of Environmental and Social Risks and Impacts) and PS3 (Resource Efficiency and Pollution Prevention). In addition, adhere to guidelines for pollution control provided in the IFC EHS Guidelines (2007) o ISO 14001:2015: Implementation of environmental management systems standards which includes effective pollution prevention and environmental performance improvement o World Bank Environmental and Social Standards (ESS): Implementation of applicable standards for environmental and social risk management • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for pollution prevention and abatement and referenced in Section 7.3 and Table 7-2, including but not limited to: o Contamination prevention measures for potential pollution risks should be implemented by all contractors and onsite construction crews o Design of infrastructure should be environmentally and structurally sound and all possible precautions taken to prevent contamination of surface and resources present o Hydrocarbon spills should be prevented as prescribed in the Project ESMP and Oil Spill Response in the EPRP o Conduct regular inspections both visually and utilising leak-detection equipment where potential pollution risks are identified in line with the Maintenance Management Plan **3. Pollution Prevention Strategy** • Objectives and Goals: o Pollution Prevention: Minimise release of pollutants into the environment. The plan will do this by putting procedures in place that will control emissions of pollutant, prevent contamination of water resources. avoid soil degradation, reduce waste generation and promote recycling, safeguard local wildlife and habitats and ensure safety for workers and communities o Sustainability: Ensure long-term environmental sustainability and resource efficiency. Meet local and international regulatory requirements • Pollution Assessment: o Baseline Data Collection: Gather data on existing environmental conditions including air and water quality, soil contamination, and biodiversity o Impact Identification: Identify potential pollution sources from construction, operation, and maintenance activities • Risk Assessment: o Risk Identification: Determine risks associated with pollutants such as chemicals, waste, and emissions o Vulnerability Analysis: Assess environmental sensitivity and potential impact of identified risks o Impact Analysis: Evaluate potential effects on air quality, water resources, and soil • Project Standards: o Project standards document: A Project Standards Document should be developed to support both the construction and operational ESMPs, ensuring alignment with World Bank EHS guidelines and national pollution control standards **4. Pollution Abatement Measures** • Construction Phase: o Site Preparation: Implement erosion control erosion and stabilisation techniques and use sediment traps where necessary. Manage stormwater runoff, and ensure wastewater is separated from clean water as per the Stormwater Management Plan o Waste Management: Implement the Waste Management Plan for debris, hazardous materials, and recycling to ensure safe handling and disposal of waste so as to not pose a pollution risk o Air and Noise: Implement emission reduction strategies aligned to the Air Quality and Dust Control Management Plan and the Noise and Vibration	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	Management Plan. Use appropriate dust suppression techniques and noise barriers as described in the Project ESMP ○ Spill Prevention: Use proper storage and handling practices for fuels and chemicals to prevent spills. Install containment systems and implement measures in line with the Oil Spill Response in the EPRP which includes preventative measures • Operational Phase: ○ Emission Control: Regularly monitor emissions from substations and associated equipment. Ensure that equipment is regularly maintained ○ Resource Efficiency: Optimise energy and material use and minimise waste in line with the Resource use Efficiency Management Plan ○ Infrastructure Inspection: Regularly check and maintain pollution control systems ○ Preventive Maintenance: Regularly service equipment to prevent leaks and make use of eco-friendly products. Regularly inspect infrastructure and monitor environmental conditions in line with the Maintenance Management Plan • Decommissioning Phase: ○ Site Cleanup: Follow best practices for dismantling infrastructure and site restoration. Address any contamination issues during site restoration ○ Waste Disposal: Properly handle and dispose of decommissioned materials in line with the Waste Management Plan ○ Site Rehabilitation: Restore the site, including regrading and revegetation in line with the Rehabilitation and Revegetation Management Plan **5. Environmental Management and Monitoring** • Monitoring: ○ Monitoring Protocols: Develop protocols for inspecting pollution control measures and ensuring compliance ○ Sampling Schedule: Establish a rigorous schedule for environmental sampling and monitoring. Regularly monitor air and surface water quality parameters (as identified during baseline studies and as per national requirements and international guidelines), track waste handling and disposal practices and monitor impacts on local flora and fauna ○ Audit Procedures: Conduct periodic audits to ensure adherence to this plan • Reporting: ○ Record Keeping: Maintain detailed records of monitoring and compliance activities. Document environmental performance and incidents ○ Regulatory Reporting: Submit regular reports to authorities, detailing environmental performance and incidents ○ Incident Reporting: Immediate reporting of significant pollution incidents and corrective actions taken **6. Stakeholder Engagement** • Community Involvement: ○ Public Meetings: Inform local communities about pollution prevention practices and potential impacts ○ Educational Materials: Distribute materials to raise awareness about pollution and the project ○ Feedback Mechanisms: Provide channels for community feedback and address concerns. Regularly disclose information on environmental performance ○ Grievance Procedures: Establish a formal process for resolving community grievances related to pollution • Expert Consultation: ○ Environmental Consultants: Engage experts to review and enhance pollution management strategies **7. Training and Capacity Building** • Training Programs: ○ Pollution Prevention: Educate staff on pollution control measures and best practices ○ Emergency Response: Train on procedures for managing pollution incidents ○ Contractor Training: Ensure contractors understand and adhere to pollution prevention practices • Capacity Building: ○ Workshops: Organise sessions on advanced pollution control techniques and emerging technologies. Educate staff on environmental policies and pollution prevention ○ Knowledge Sharing: Facilitate discussions on lessons learned and best practices. Inform local communities about environmental protection measures **8. Emergency Response** • Contingency Planning: ○ Pollution Incidents: Develop plans for managing pollution events, including chemical spills and leaks. Create detailed plans for containment, cleanup, and remediation of pollution incidents ○ Response Procedures: Establish and train emergency response teams for pollution incidents and ensure that any necessary equipment is stocked **9. Decommissioning** • Removal Procedures: ○ Infrastructure Dismantling: Carefully remove infrastructure to minimise environmental impact ○ Waste Management: Ensure proper disposal of all waste materials • Site Restoration: ○ Regrading and Rehabilitation: Restore natural site conditions and support ecological recovery ○ Post-Decommissioning Monitoring: Continue to monitor environmental conditions to assess recovery and address residual impacts. Provide reports on		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	decommissioning activities and environmental restoration efforts **10. Review and Revision** • Revision Process: o Regular Reviews: Schedule regular reviews of the plan, incorporating new information and regulatory updates. Identify conditions that necessitate immediate updates to the plan o Continuous Improvement: Use feedback and lessons learned to refine and improve the plan on a regular basis and apply current best practice **11. Appendices** • Append any applicable documents		
Hazardous Materials Management Plan	**1. Introduction** • Purpose: To ensure safe handling, storage, and disposal of hazardous materials; minimise environmental contamination, risks to human health and property damage; and comply with Angolan regulatory requirements and World bank EHS with regards to the handling, storage, and use of any quantity of hazardous materials. Hazardous Materials Management Plan (HMMP) should encapsulate the safe management of hazardous materials across all phases of the powerline and substation project • Scope: Outline the phases covered by the HMMP - construction, operation, maintenance, and decommissioning. The HMMP should apply to the Project powerlines and substations operations, including contractors and visitors when involved in controlled activities involving hazardous materials in one or more of their forms (solid, liquid or gas), which may have the potential to lead to harm to people, the environment or community (all stakeholders), either in an incident involving loss of control or in normal, controlled activities (e.g. storage, handling, production, transport, recycling and disposal) **2. Regulatory and Policy Framework** • National Laws and Local Regulations: List relevant Angolan laws and international standards related to hazardous materials management • Permitting Requirements: Detail the necessary permits, approvals, and compliance obligations from local and national authorities • International guidelines and standards: Apply international guidance, standards and requirements in terms of hazardous materials management as per the IFC EHS Guidelines (2007) General EHS Guidelines and comply with the Basel, Bamako, Rotterdam and Stockholm Conventions and the Montreal Protocol • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for hazardous materials management and referenced in Section 7.3 and Table 7-2, including but not limited to: o Store all hazardous materials in enclosed buildings and containers as specified in the Materials Safety Data Sheet (MSDS). These storage facilities should incorporate adequate stormwater management measures in line with the Stormwater Management Plan o Hazardous material containers should be clearly marked/identified in terms of the MSDS and the United Nations Globally Harmonized System (GHS) of classification and labelling of chemicals (2021) and these should be included in all EHS training in terms of risks o No dumping of hazardous materials/waste is prohibited under any circumstance o Accidental spills of hazardous materials/waste should be immediately cleaned up (as per the Oil Spill Response in the EPRP) and the contaminated waste/soil should be disposed of through hazardous waste disposal methods and registered disposal facilities in line with the Waste Management Plan o Cement waste should be considered as a hazardous material and disposed of as such in line with the Waste Management Plan **3. Project Phases** • Project Description: Provide an overview of the project, including the powerline route, substation locations, and general activities involved and describe each project phase in terms of hazardous materials: o Construction Phase: Description of activities that involve the use, storage, and disposal of hazardous materials o Operation Phase: Outline operational activities where hazardous materials are used or generated o Maintenance Phase: Regular and emergency maintenance procedures that may involve hazardous materials o Decommissioning Phase: Activities involved in dismantling the powerline and substations, including the handling of hazardous materials **4. Hazard Identification and Risk Assessment** • Inventory of Hazardous Materials: List all hazardous materials expected to be used or encountered in each project phase (e.g., fuels, oils, solvents, chemicals, PCB-containing equipment). The classification, labelling, and safety data sheets of the hazardous materials to be used should be in accordance with the United Nations GHS of classification and labelling of chemicals (2021) • Risk Assessment: Evaluate the potential risks associated with the storage, handling, transportation, and disposal of these materials, considering factors like toxicity, flammability, and environmental impact • Sensitive Receptors: Identify nearby communities, water bodies, and ecological zones that could be impacted by hazardous materials **5. Hazardous Materials Management Procedures** • At every phase of the project, opportunities should be explored for utilising non-hazardous materials in place of hazardous ones where possible • During Construction: o Storage and Handling: Outline best practices for the safe storage and handling of hazardous materials, including containment, labelling, and segregation o Spill Prevention and Control: Procedures for preventing spills, including secondary containment, spill kits, and employee training o Waste Management: Identify methods for the safe disposal of hazardous waste, including transportation to certified disposal and/or recycling facilities • During Operation: o Material Use and Monitoring: Safe usage procedures and continuous monitoring to detect leaks or spills, including regularly assessing risks associated with the use of hazardous materials during operation	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	○ Inspection and Maintenance: Regular inspections and maintenance of equipment and storage facilities ○ Inventory Management: Procedures for tracking the use and storage of hazardous materials, including Material Safety Data Sheets (MSDS), and maintaining an up-to-date inventory of hazardous materials ○ Waste Management: Establish and implement procedures for the safe handling and disposal of hazardous waste, including transportation to certified disposal and/or recycling facilities • During Maintenance: ○ Handling of Hazardous Materials: Safe procedures for handling hazardous materials during routine and emergency maintenance activities ○ Emergency Repairs: Protocols for handling hazardous materials during unplanned repairs or emergencies ○ Waste Handling: Procedures for the disposal of waste materials generated during maintenance in line with the Waste Management Plan • During Decommissioning: ○ Dismantling and Disposal: Safe removal and disposal of hazardous materials from decommissioned equipment and structures ○ Site Cleanup and Remediation: Procedures for cleaning up contaminated sites, including soil remediation and groundwater protection. Ensure that the site is free of hazardous materials and safe for future use **6. Emergency Response Plan (in line with the Project EPRP)** • Emergency Response Procedures: Detailed response protocols for hazardous material spills, leaks, or accidents, including immediate actions, containment, and cleanup • Communication Plan: Protocols for notifying authorities, emergency services, and the public in the event of a hazardous materials incident • Training and Drills: Regular training and emergency drills for employees to ensure readiness in case of an incident • First Aid and Medical Treatment: Guidelines for providing first aid and medical treatment to those exposed to hazardous materials **7. Training and Awareness** • Employee Training: Regular training sessions for employees on the safe handling, storage, and disposal of hazardous materials, including the use of personal protective equipment (PPE) • Competency Assessment: Ensure that workers handling hazardous materials are certified and competent. Regular assessment of worker competency in hazardous materials management practices • Safety Protocols: Clear instructions on safety protocols for dealing with hazardous materials • Awareness Programs: Initiatives to raise awareness among workers and local communities about the potential risks associated with hazardous materials involved in the project **8. Monitoring, Reporting, and Record-Keeping** • Monitoring: Regular monitoring of hazardous materials usage, storage conditions, and waste management practices • Review: Regularly review and update the HMMP to incorporate new regulations, technologies, and lessons learned from incidents • Revision: Revise the HMMP as and when necessary to include changes in the project, regulations and to incorporate current best practice • Incident Reporting: Document and report all incidents involving hazardous materials, near misses, and deviations from the HMMP • Record-Keeping: Maintain detailed records of hazardous materials management plan, inventories, procedures, training sessions, risk assessments, inspections, incidents, and waste disposal activities • Compliance Auditing: Regular internal and external audits to ensure compliance with the HMMP and regulatory requirements. Comply with reporting obligations to regulatory authorities and internal stakeholders • Stakeholder Engagement and Communication • Public Consultation: Engage with local communities to inform them about potential hazards and safety measures • Transparency: Provide general information to the potentially affected community on the nature and extent of project operations, and the prevention and control measures in place to ensure no effects to human health as a result of hazardous materials **9. Roles and Responsibilities** • Project Manager: Overall responsibility for the implementation and compliance with the HMMP • Environmental, Health, and Safety (EHS) Officer: Daily management of hazardous materials, monitoring compliance, and reporting • Site Supervisors: Ensure that all workers follow the HMMP during their daily tasks • Emergency Response Team: Specialised team trained to handle hazardous material incidents • Liaison: Maintain communication with regulatory bodies and ensure timely reporting, including communication with local communities **10. Appendices** • Inventory of Hazardous Materials: Detailed list of all hazardous materials with their properties and risks • Material Safety Data Sheets (MSDS): Provide MSDS for all hazardous materials used in the project • Emergency Contact List: Contact information for key personnel and emergency services • Inspection and Monitoring Forms: Templates for recording inspections, monitoring data, and incident reports • Append any other applicable documents		

Management plan	Framework / guidelines	Applicable phase	Responsibility
Resource Use Efficiency Management Plan	**1. Introduction** • Purpose: This Resource Use Efficiency Management Plan (RUEMP) outlines strategies to optimise the use of resources during the construction and operation of the powerline and substation project in Angola. It aims to minimise environmental impact, reduce waste, and ensure sustainable practices are integrated throughout the project lifecycle • Scope: The RUEMP covers resource use management in terms of energy, water, materials, and waste. It applies to both construction and operational phases of the powerline and substation project • Objectives: Optimise the use of resources to reduce operational costs and environmental impact. Ensure compliance with local and international environmental regulations. Promote sustainable practices in construction and operation activities • Regulatory framework: Align to applicable local and national regulations and strategies as well as international best practice guidance and standards such as the IFC EHS Guidelines (2007) • ESMP Requirements: The plan should align to applicable requirements and measures listed in the Project ESMP regarding resource use and as referenced in Section 7.3 and Table 7-2 **2. Resource Use Efficiency Strategies** • Energy Management: o Energy Efficiency Measures: Implement energy-efficient equipment and machinery. Use renewable energy sources where feasible (e.g., solar panels for site offices). Conduct regular energy audits to identify and address inefficiencies o Monitoring and Reporting: Install energy meters to track usage and identify areas for improvement. Prepare periodic energy consumption reports and review them to develop further efficiency strategies • Water Management: o Water Conservation Practices: Implement rainwater harvesting systems for non-potable uses. Use water-efficient fixtures and equipment. Develop and enforce guidelines for minimising water usage on site o Water recycling and reuse strategies: Implement strategies to recycle and reuse water used during construction and operation phases where possible such as greywater recycling, closed-loop systems to reuse process water and treatment and filtration technologies to treat wastewater for reuse o Evaluate the efficiency of water reuse systems regularly to identify improvements in line with international best practices o Wastewater Management: Install treatment facilities for wastewater generated during construction. Ensure that wastewater discharge meets regulatory standards o Monitoring and Reporting: Regularly monitor water usage and wastewater discharge. Maintain records and generate reports to track performance and improvements • Materials Management: o Sustainable Sourcing: Source materials from suppliers who follow sustainable practices. Prioritise the use of recycled and locally available materials to reduce transportation impacts o Efficient Use of Materials: Implement a materials management plan to reduce waste and improve resource use efficiency. Use technology to optimise material cutting and reduce offcuts o Inventory and Waste Management: Maintain an accurate inventory to avoid over-purchasing and stockpiling. Implement a waste segregation system to facilitate recycling and proper disposal • Waste Management: o Waste Minimisation: Design and implement practices to reduce waste generation, such as just-in-time delivery and lean construction techniques. Educate workers on best practices for reducing waste o Waste Disposal and Recycling: Develop a waste management plan detailing recycling, reuse, and disposal methods. Partner with local waste management services to ensure proper handling and disposal of waste o Monitoring and Reporting: Track waste generation and disposal methods. Prepare and review waste management reports to identify areas for improvement • Emissions Management o GHG Emission reduction guidelines: ▪ Prioritise the use of energy-efficient equipment and machinery to reduce fuel consumption and associated emissions ▪ Transition to renewable energy sources (e.g., solar power) where feasible to minimize reliance on fossil fuels ▪ Implement measures to reduce SF6 emissions from electrical equipment by conducting regular leak detection and maintenance ▪ Encourage the adoption of low-carbon construction methods, including optimising material use to reduce embodied carbon ▪ Track and reduce transportation-related emissions by: • Promoting the use of shared transport systems for workers • Sourcing materials locally to minimise transport distances o Monitoring and Reporting: ▪ Monitor GHG emissions associated with resource use through regular energy audits and emissions inventories ▪ Define GHG reduction targets (time-bound and measurable) aligned with international best practices ▪ Report GHG emission performance in line with project KPIs and applicable regulatory requirements		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	3. Implementation and Responsibilities • Project Team Responsibilities: o Project Manager: Oversee the implementation of the RUEMP and ensure compliance with strategies o Site Engineer: Monitor resource use and implement efficiency measures on-site o Environmental Officer: Conduct regular audits and ensure adherence to environmental regulations • Training and Awareness: o Provide training to all project staff on resource efficiency practices and the importance of sustainability o Conduct regular workshops to reinforce the importance of resource management and share best practices • Communication: o Establish a communication plan to inform stakeholders of resource management efforts and performance o Regularly update stakeholders on progress and improvements related to resource use efficiency **4. Monitoring, Evaluation, and Reporting** • Monitoring: o Implement systems for real-time monitoring of energy, water, and materials use o Conduct regular site inspections to ensure adherence to the RUEMP • Evaluation: o Predefined targets and benchmarks: ▪ Establish measurable and time-bound targets prior to the construction phase to guide resource use efficiency ▪ Develop benchmarks for resource consumption (e.g., water, energy) based on: • Project-specific requirements; • International standards, such as the IFC EHS Guidelines; • Comparative performance data from similar projects. o Key Performance Indicators (KPIs): ▪ To track and evaluate performance in resource efficiency, the following KPIs will be adopted: • Water Efficiency: Percentage of water recycled and reused onsite; Reduction in overall water consumption compared to baseline projections • Energy Efficiency: Reduction in energy consumption per operational output; Percentage of renewable energy used onsite • Material Efficiency: Percentage of materials reused or recycled; Reduction in material waste generated. • Climate Change Performance Indicators: Reduction in total GHG emissions (measured in CO_2 equivalent) compared to baseline levels; Percentage of energy sourced from renewable sources; Reduction in fuel consumption for machinery, transport, and operations; Reduction in SF6 leakage rates for electrical infrastructure o Evaluate the efficacy of water recycling and reuse strategies and improve where required in terms of international best practice o Identify and address any deviations from the plan • Reporting: o Prepare and submit periodic reports detailing resource use, efficiency measures, and improvements o Use reports to review performance and update the RUEMP as necessary **5. Review and Continuous Improvement** • Plan Review: o Regularly review the RUEMP to ensure its relevance and effectiveness o Incorporate feedback from audits, monitoring reports, and stakeholder input • Continuous Improvement: o Identify opportunities for enhancing resource use efficiency o Implement improvements based on lessons learned and technological advancements **6. Compliance and Regulation** • Legal Compliance o Ensure all practices comply with Angolan environmental regulations and international standards through internal and external auditing if required o Keep up-to-date with changes in regulations and adjust the RUEMP accordingly • Certification and Standards o Seek certification from relevant environmental standards (e.g., ISO 14001) to demonstrate commitment to resource efficiency **7. Appendices** • Append any applicable documents		
Erosion and Soil Management Plan	**1. Introduction** • Purpose: To prevent and manage soil erosion and degradation, ensuring the protection and sustainability of soil resources throughout all phases of the	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	project • Scope: This plan covers all project phases including construction, operation, maintenance, and decommissioning for the HV, MV and LV powerlines, substations, transformers and construction camps. It should include activities such as land clearing, excavation, grading, initial site preparation, ongoing site management, monitoring, maintenance of erosion control measures, regular upkeep of erosion control structures and soil management practices and restoration of land and soil to pre-project conditions or improved states, including removal of infrastructure and stabilisation of disturbed areas • Geographic Description: The plan should provide an overview of specific geographic locations, including coordinates and descriptions of powerline routes and substation sites, the length of powerlines, number of substations, and total land area affected and details about construction methods, expected operational life, and the nature of site disturbances **2. Regulatory and Policy Framework** • National Laws and Local Regulations: The plan must comply with relevant local and other applicable local guidelines. Refer to Volume 1, Section 3 of the ESIA • International Standards: The plan will need to meet IFC Performance Standards, PS1 Assessment and Management of Environmental and Social Risks and Impacts – Requirements for identifying and managing environmental impacts and PS3 Resource Efficiency and Pollution Prevention – Guidelines for managing resource use and minimising pollution. It should also reference applicable international guidelines such as the IFC Environmental, Health, and Safety (EHS) Guidelines and ISO 14001:2015 for environmental management • ESIA Findings: The plan should reference the findings of the ESIA with specific mention to the potential impacts on soil erosion and degradation due to project actives and the associated recommended actions and best practices for mitigating these impacts It should also include any specific soil management strategies identified by specialists • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for erosion and soil management and referenced in Section 7.3 and Table 7-2, including but not limited to: o Clearing of land must kept to a minimum and should only take place immediately prior to the start of construction activities o Land clearing should be avoided during December and January when heavy rainfalls are most likely to occur o Infrastructure footprint areas should be clearly demarcated to avoid unnecessary disturbance of adjacent soils o Where possible the pylons should be located outside actively cultivated plots to ensure that the agricultural activities remain uninterrupted during all Project phases o Access roads should be aligned to the existing roads as far as practically possible to avoid further potential impacts on agricultural soils through unnecessary soil disturbance o Uncontrolled construction vehicle and heavy machinery/equipment movement should be limited to the Project construction and operational areas to avoid unnecessary compaction of adjacent soils including for maintenance activities o Temporary erosion control measures should be used to protect the disturbed soils during the construction phase until adequate vegetation has established o Monitoring of erosion should occur after every major rainstorm until such a time that vegetation has fully established. Any erosion should be captured and recorded and reported during the ECO site visit o Construction activities, especially those taking place near freshwater habitats, should ideally be undertaken in the dry season to limit impacts such as erosion and increased sediment runoff into the freshwater habitats o Avoid placement of pylons or construction activities within 10m of the delineated edge of freshwater systems to minimise loss of vegetation and erosion o During excavation activities, the topsoil and vegetation must be stockpiled separately from other material outside of the delineated freshwater system. Soil layers should not be mixed when stockpiling and excess soil as a result of bulking should be spread on around the immediate disturbed area to encourage revegetation and avoid long-term stockpiling o All exposed excavated soil stockpiles should be protected from wind using suitable geo-textile or by not stockpiling more than 3 m tall and removing or infilling of stockpiled soils o Erosion arising as a consequence of the development of surface infrastructure must be remedied immediately and included as part of an ongoing Rehabilitation and Revegetation Management Plan o Ensure the project design is adapted to avoid any impacts on farming or grazing land **3. Erosion and Soil Management Strategy** • Objectives and Goals: o Soil Protection: Ensure soil health and prevent degradation o Erosion Control: Implement effective measures to manage and control erosion o Sustainable Land Use: Promote practices that maintain soil integrity and support ecological balance • Pre-Construction Soil Survey: o Pre-Construction Survey: Detailed survey of soil types, textures, structures, and properties across the project area o Data Collection: Collect samples and perform field and laboratory analysis to assess soil erodibility and stability o Mapping: Create soil maps indicating areas of high erosion risk and sensitivity • Topsoil Management: o Stripping: Remove topsoil before construction begins and store it separately o Soil Storage: Protect stockpiled topsoil from erosion and contamination by covering with tarps or using erosion control fabrics (geo-textiles). Store soil in designated areas with proper containment to prevent runoff and erosion. Implement measures to stabilise stockpiles, such as using barriers and		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	vegetative cover. Avoid stockpiling greater than 3 m tall to minimise erosion potential • Soil Stabilisation: o Mulching: Apply organic or synthetic mulch to cover exposed soil surfaces and reduce erosion o Matting: Use erosion control mats or blankets on slopes and disturbed areas to provide immediate stabilisation o Seeding/revegetation: Plant native plants/grasses to enhance soil structure and reduce erosion. Revegetation should be conducted in line with the Rehabilitation and Revegetation Management Plan o Monitoring: Regularly check the effectiveness of stabilisation techniques and adjust as needed • Erosion Control Measures: o Construction Phase: Limit the extent of land clearing and grading to reduce soil exposure. Clear land in phases to prevent large areas from being exposed simultaneously. Install erosion control structures such as silt fences around construction sites to capture sediment and prevent runoff, sediment basins to capture and treat runoff before it leaves the site and berms and swales to direct and manage surface water flow. Ensure proper grading to direct runoff away from sensitive areas and prevent erosion and install drainage systems to manage stormwater and reduce erosion risk o Operational Phase: Conduct regular inspections of erosion control structures and soil stabilisation measures. Perform necessary repairs and upgrades to maintain effectiveness. Use detention ponds to manage and control runoff, reducing erosion potential. Maintain vegetative buffers around water bodies and sensitive areas to protect soil o Monitoring: Develop a monitoring plan to track erosion and soil conditions regularly. Adjust erosion control measures based on monitoring results and changing conditions. Ensure that vegetation used for erosion control is healthy and effectively stabilising soil. Replant or supplement vegetation as needed to maintain coverage o Decommissioning: Carefully remove project infrastructure while minimising soil disturbance. Implement measures to restore land to pre-project conditions, including regrading and replanting. Apply final cover materials and vegetation to stabilise soil and prevent erosion. Monitor restored areas to ensure successful stabilisation and recovery **4. Environmental Management and Monitoring** • Environmental Management: o Minimise Disturbance: Reduce land disturbance and avoid unnecessary soil exposure o Sustainable Practices: Implement sustainable soil management practices and utilise appropriate erosion control materials • Monitoring: o Inspection: Develop protocols for regular inspections of erosion control measures and soil management practices. Conduct inspections before, during, and after construction, as well as at regular intervals during operation and maintenance. Develop detailed checklists for assessing erosion control measures, soil conditions, and effectiveness o Compliance Checks: Verify that soil management practices adhere to the Erosion and Soil Management Plan and regulatory requirements • Reporting: o Documentation: Maintain comprehensive records of soil management activities, erosion control measures, and monitoring results. Submit regular reports to regulatory authorities and project stakeholders, including any incidents of non-compliance or soil degradation o Incident Reporting: Report any significant incidents or deviations from the Erosion and Soil Management Plan promptly, including corrective actions taken **5. Stakeholder Engagement** • Information Dissemination: o Public Meetings: Hold public meetings to inform local communities about soil and erosion management practices o Educational Materials: Provide brochures, fact sheets, and other materials to raise awareness o Feedback Mechanisms: Establish hotlines and conduct surveys to gather community feedback and address concerns related to soil and erosion management • Expert Consultation: o Soil Scientists and Erosion Specialists: Consult with experts to review and refine soil management practices and erosion control strategies. Incorporate expert recommendations into the ESMP to ensure effective management and compliance with best practices **6. Training and Capacity Building** • Training Programs: o Soil Management: Develop training on soil handling, stabilisation techniques, and best practices o Erosion Control: Provide training on erosion control measures, including installation and maintenance of control structures o Project Staff: Train project managers, engineers, and field personnel involved in soil and erosion management o Contractors: Ensure that contractors are trained on relevant soil management and erosion control practices • Capacity Building: o Technical Workshops: Organise workshops on advanced soil management techniques and erosion control technologies. Facilitate seminars and forums to share knowledge and experiences among project stakeholders **7. Emergency Response** (in line with the Project EPRP) • Contingency Planning for Emergency Scenarios: o Severe Erosion Events: Plan for severe erosion events, such as those caused by heavy rainfall or flooding		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	○ Sedimentation Issues: Address potential issues related to sedimentation impacting water bodies and nearby communities • Preparedness Measures: ○ Response Teams: Establish and train response teams for managing soil-related emergencies ○ Emergency Supplies: Stockpile materials and equipment for rapid deployment during emergencies • Response Procedures: ○ Emergency Contacts: Maintain a list of emergency contacts, including response teams, regulatory authorities, and soil management experts ○ Incident Response: Develop detailed action plans for addressing specific types of soil and erosion incidents, including containment and remediation measures **8. Decommissioning** • Removal Procedures: ○ Careful Dismantling: Dismantle project infrastructure carefully to minimise soil disturbance and erosion ○ Waste Management: Properly manage and dispose of waste materials to prevent soil contamination in line with the Waste Management Plan • Land Restoration: ○ Regrading and Replanting: Regrade land to restore natural contours and stabilise soil. Replant native vegetation to enhance soil stability and support ecological recovery as per the Rehabilitation and Revegetation Management Plan • Monitoring Program: ○ Long-Term Monitoring: Implement a monitoring program to assess the effectiveness of land restoration and soil stabilisation efforts. Conduct follow-up inspections at regular intervals to ensure continued success **9. Review and Revision** • Revision Process: ○ Regular Reviews: Establish a schedule for regular reviews of the plan, including updates based on regulatory updates and any new information that will affect the plans efficiency. Identify triggers for review, such as significant changes in project scope or regulatory updates. Implement a process for revising the plan, including stakeholder consultation and regulatory approvals ○ Continuous Improvement: Collect feedback from monitoring, inspections, and stakeholder engagement to identify areas for improvement. Incorporate lessons learned from project experience and industry best practices into the ESMP to enhance effectiveness. **10. Appendices** • Append any applicable documents.		
Alien Invasive Plant Control Plan	**1. Introduction** • Purpose: To prevent the introduction and spread of alien and invasive plant (AIP) species, manage and eradicate existing AIP within the powerlines and substations project areas, restore native vegetation and support biodiversity, and comply with Angolan legal and regulatory requirements related to AIP management. The AIP Control Plan must provide a comprehensive structure for managing alien and invasive plant species throughout the lifecycle of the powerline and substation project • Project Background: Brief description of the project, including location, scale, and timeline • Legal and Policy Framework: Summarise relevant national legislation, international conventions, and industry best practices regarding the control of alien and invasive plants in Angola. In terms of international guidelines and standards, align to the IFC PS6: Biodiversity Conservation and Sustainable Natural Resource Management and its Guidance Note 6 (2007). Refer to Volume 1, Section 3 of the ESIA • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for AIP control and referenced in Section 7.3 and Table 7-2, including but not limited to: ○ Avoid disposing of construction rubble or cleared AIPs outside of demarcated areas and should ideally be taken to a registered waste disposal facility to be disposed of correctly and avoid spreading AIP vegetation ○ No chemical control of AIPs is permitted within the 32 m buffer of any Freshwater Habitat unless it has been approved as safe for use in wetlands, and the application of herbicide should only be carried out by suitably trained personnel ○ Conduct regular monitoring and control measures of AIPs throughout all project phases and in particular, in revegetation areas and construction areas. Any evidence of AIP should be noted and removed immediately and disposed of correctly ○ Manage the spread of AIPs and monitoring project perimeters for AIP proliferation and prevent spread into surrounding natural areas ○ No AIPs may be donated to the local communities to limit spread ○ The OHL servitude must be monitored for alien and invasive vegetation encroachment and all alien vegetation/weeds must be removed according to a suitable alien vegetation control plan. Annual follow up should be undertaken for at least 3 years post-construction **2. Objectives** • Prevention: Minimise the introduction and proliferation of AIP species during all phases of the project • Control and Eradication: Implement measures to control and, where possible, eradicate existing AIP within the project area • Restoration: Promote the restoration of native vegetation in areas disturbed by project activities **3. Roles and Responsibilities** • Ensure roles and responsibilities are clearly defined in terms of actions, reporting and revision and are aligned to ESMP responsibilities	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	4. Baseline Survey and Risk Assessment • Identification and inventory/database of AIP: Conduct detailed surveys and use available databases to identify and document existing AIP species within the project area • Assessment of Invasion Pathways: Identify potential pathways for the introduction of AIP, such as the movement of soils, construction materials, vehicles, and personnel. Use GIS tools to create detailed maps of AIP distribution • Impact Assessment: Evaluate the potential ecological and economic impacts of AIP on local ecosystems and communities. Evaluate the potential risk of invasion based on species characteristics, site conditions, and project activities. Prioritise species and areas for control based on the risk they pose to the environment and biodiversity **5. Control Measures** • Pre-Construction Phase: o Site Assessment: Conduct a baseline survey to identify and map existing AIP in the project area before construction begins o Biosecurity Protocols: Implement measures to prevent the introduction of AIP such as inspection and cleaning vehicles, equipment, and materials (particularly imported materials) before moving to the project site o Training and Awareness: Provide training for project personnel on the identification and management of AIP • Construction Phase: o Site Monitoring: Regularly monitor for the presence of AIP, especially in disturbed areas to detect new infestations early o Site Access and Control: Limit access to areas with known AIP and implement strict control measures to prevent their spread o Control Actions: Implement physical, chemical, biological, or cultural control measures as necessary, following best practices and environmental guidelines. If AIPs are removed, they should be disposed of correctly and through registered waste disposal facilities to avoid spread from cuttings and seeds o Topsoil Management: Minimise soil disturbance to prevent the spread of AIP through soil in line with the Vegetation and Land Clearance Management Plan o Waste Management: Ensure proper disposal of plant material and soil to prevent the spread of AIP. This should be done through registered waste disposal facilities and in line with the Waste Management Plan • Operation and Maintenance Phase: o Ongoing Monitoring: Continue regular monitoring and control efforts, focusing on areas with high invasion risks such as revegetated areas, previous construction areas and project perimeters o Vegetation Management: Maintain native vegetation and manage AIP along the powerline corridor and around substations in line with the Maintenance Management Plan o Incident Reporting: Establish a clear process for reporting sightings of AIP and incidents related to their management o Training and Awareness: Ensure maintenance staff are trained to identify and manage AIP. • Decommissioning Phase: o Site Rehabilitation: Restore disturbed areas to their natural state, prioritising the re-establishment of native vegetation in line with the Rehabilitation and Revegetation Management Plan o Final Survey: Conduct a final survey to assess the effectiveness of control measures and ensure no AIP remain o Post-Decommissioning Monitoring: Monitor the site post-decommissioning to ensure that AIP do not re-establish **6. Monitoring and Adaptive Management** • Monitoring Plan: Outline the frequency and methods of monitoring the presence and spread of AIP species throughout the project lifecycle • Reporting: Establish a reporting protocol for documenting the presence of AIP and the effectiveness of control measures • Adaptive Management: Implement an adaptive management approach, adjusting control strategies based on monitoring results and changing conditions. Incorporate lessons learned into the ongoing management plan to improve outcomes. Develop contingency plans for new invasions or unexpected challenges **7. Training and Capacity Building** • Identification Skills: Train staff to identify alien and invasive plant species accurately • Control Techniques: Provide training on the use of mechanical, chemical, and biological control methods • Contractor Training: Ensure all contractors are aware of AIP risks and management protocols **8. Stakeholder Engagement and Communication (as per the Project SEP)** • Stakeholder Involvement: Engage local communities, landowners, and relevant stakeholders in the planning and implementation of AIP control measures in line with the Project SEP • Collaboration: Work with local conservation groups, government agencies, and other stakeholders to support AIP management • Community Engagement: Engage local communities in AIP management and associated risks through education and involvement in control activities • Regular Updates: Provide regular updates to stakeholders on the progress of AIP control and restoration efforts **9. Documentation and reporting** • Plan Documentation: Maintain a comprehensive AIP Control Plan, including all protocols, risk assessments, and control measures • Reporting Requirements: Fulfil all reporting obligations to regulatory authorities and internal stakeholders • Incident Documentation: Record and report all incidents related to AIP management, including near misses and control successes		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	10. Continuous Improvement and Auditing • Internal Audits: Conduct regular internal audits to assess compliance with the AIP Control Plan and the effectiveness of control measures • External Audits: Periodically engage third-party auditors to review and validate the AIP species management practices • Continuous Improvement: Set a schedule for the periodic review and update of the AIP Control Plan to incorporate new technologies, scientific knowledge, regulations, lessons learned, and best practices • Adaptive Management: Ensure the plan is flexible enough to adapt to changing conditions and new AIP species threats **11. Appendices** • List of Identified Alien and Invasive Plant Species in the Project Area • Biosecurity Protocols • Monitoring and Reporting Templates • Training Materials and Resources • Append any other applicable documents		
Rehabilitation and Revegetation Management Plan	**1. Introduction** • Purpose: To restore and rehabilitate disturbed land and ecosystems impacted by the construction, operation, maintenance, and decommissioning of powerlines and substations. This plan aims to ensure effective revegetation, support ecological recovery, and comply with environmental regulations • Scope: This plan addresses all phases of the project including site preparation, construction, operation, maintenance, and decommissioning of HV, MV, and LV powerlines, substations, transformers, and associated construction camps. It encompasses land restoration, soil stabilisation, revegetation, and long-term site management **2. Regulatory and Policy Framework** • National Laws and Regulations: o Angolan Legislation: Compliance with relevant laws which outline requirements for post-project land restoration and environmental impact management, and other applicable municipal or regional guidelines for land rehabilitation and revegetation. Refer to Volume 1, Section 3 in the ESIA. • International Standards: o IFC Performance Standards: Adherence to PS1 (Assessment and Management of Environmental and Social Risks and Impacts) and PS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources). In addition, adhere to guidelines for pollution control provided in the IFC Environmental, Health, and Safety (EHS) Guidelines o ISO 14001:2015: Implementation of environmental management systems standards focusing on rehabilitation and revegetation • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for rehabilitation and revegetation and referenced in Section 7.3 and Table 7-2, including but not limited to: o Rehabilitation of cleared areas must take place as soon as construction activities have been concluded o Revegetate disturbed and bare soil areas with an indigenous / native grass mix, to re-establish a protective cover, in order to minimise soil erosion and dust emissions o Where possible, revegetation of disturbed, non-active cleared areas must take place within 1 month of completing the construction phase and should be implemented in a phased manner o Avoid soil sealing and ensure that a vegetation layer is maintained (where possible). In this regard, use of indigenous plants from the reference vegetation type is recommended for best biodiversity outcomes o Disturbed areas are to be rehabilitated to a similar state as that of pre-disturbance conditions. Where this is not possible due to operational and maintenance requirements, it is recommended that at a minimum a suitable herbaceous layer is maintained within the footprint of the proposed Project to ensure that no erosion occurs o Monitor the success of rehabilitation efforts of disturbed areas seasonally and control AIP proliferation o Rehabilitation measures in line with this plan should promote habitat reinstatement in disturbed sites and allow for increased habitat connectivity during the operation and maintenance phase of the project o Vegetation which is suitable for use in reinstatement may be temporarily stockpiled, outside of delineated freshwater systems until rehabilitation activities can commence o During excavation activities, the topsoil and vegetation must be stockpiled separately from other material outside of the delineated freshwater system o Rehabilitation activities should be overseen by a suitably qualified ECO with freshwater and biodiversity resource management experience. The ECO must sign off the rehabilitation before the relevant contractors leave site o Ensure that soils are replaced in the correct layers, ripped and re-reprofiled, and that vegetation is restored to a point where succession will lead to the same conditions as the pre-construction state as a minimum o The construction areas should regularly be inspected for AIP species which might have established due to the construction activity related disturbances o Disturbances within the footprint area should be limited to what is essential for long-term maintenance in line with the mitigation measures presented herein o Plant indigenous vegetation around the OHL corridors and the substations in areas that were disturbed to reduce the visible impact of infrastructure **3. Rehabilitation and Revegetation Strategy** • Objectives and Goals: o Ecosystem Recovery: Restore disturbed areas to a stable and productive ecological state. Minimise soil erosion and stabilise disturbed soils. Re-	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	establish native vegetation and promote biodiversity. Ensure that revegetation efforts support local wildlife and ecological processes ○ Sustainability: Promote long-term ecological health and sustainability through effective revegetation. Implement a monitoring program to track the success of rehabilitation and revegetation efforts. Maintain and adjust rehabilitation strategies based on monitoring results ○ Baseline Data Collection: Gather data on existing vegetation, soil quality, and ecosystem conditions before project initiation. Conduct surveys to identify sensitive areas and plan for their protection. Implement soil conservation measures such as erosion control blankets and silt fences to minimise soil loss • Rehabilitation and Revegetation Measures: ○ Buffer Zones: Establish buffer zones around sensitive areas to minimise disturbance ○ Preventative Measures: Limit land disturbance to areas that will be immediately rehabilitated. Implement measures to prevent soil and vegetation damage from operational activities. Quickly address any damage to vegetation or soil caused by operational activities ○ Weed and Pest Control: Manage invasive species and pests that threaten revegetation efforts ○ Soil Conditioning: Apply soil amendments if necessary to support plant growth ○ Soil Stabilisation: Implement soil stabilisation techniques such as mulching, erosion control blankets, and terracing ○ Soil Improvement: Amend soil with organic matter and nutrients to support plant growth. Test soil for nutrient levels and amend with compost or fertilizers as needed. Adjust soil pH to suit plant requirements ○ Revegetation: Choose native plant species suited to local conditions for revegetation efforts. Use appropriate planting methods including seeding, direct planting, and transplanting. Regularly monitor and maintain vegetation around operational areas to ensure it is healthy and stable ○ Maintenance: Regularly water and care for newly planted vegetation, and control invasive species. Monitor vegetation growth, soil stability, and overall site recovery. Adjust rehabilitation strategies based on monitoring results and site conditions ○ Soil Reconditioning: Recondition disturbed soils to prepare for revegetation **4. Environmental Management and Monitoring** • Monitoring: ○ Monitoring Protocols: Develop detailed protocols for tracking rehabilitation progress and revegetation success. Conduct periodic inspections to assess the condition of rehabilitated and revegetated areas. Establish a schedule for regular site inspections, vegetation surveys, and soil assessments. Use indicators such as vegetation cover, soil stability, and species diversity to evaluate rehabilitation success ○ Audit Procedures: Conduct periodic audits to ensure compliance with the plan and identify areas for improvement • Reporting: ○ Record Keeping: Maintain detailed records of rehabilitation activities, monitoring results, and maintenance actions ○ Regulatory Reporting: Submit regular reports to regulatory authorities and stakeholders, including updates on rehabilitation progress and any issues encountered **5. Stakeholder Engagement (as per the Project SEP)** • Community Involvement: ○ Public Meetings: Organise meetings to inform local communities about rehabilitation and revegetation efforts and their benefits. Raise awareness about the importance of rehabilitation and revegetation ○ Local Knowledge: Engage local communities in revegetation efforts and incorporate traditional knowledge where applicable ○ Feedback Mechanisms: Implement mechanisms for receiving and addressing community feedback and concerns related to site rehabilitation. Establish a formal process for resolving community grievances related to rehabilitation and revegetation ○ Information Sharing: Disclose information about rehabilitation and revegetation efforts through reports, meetings, and other communication methods • Expert Consultation: ○ Environmental Consultants: Engage with environmental consultants and specialists to review and refine rehabilitation strategies **6. Training and Capacity Building** • Training Programs: ○ Rehabilitation Practices: Provide training on soil stabilisation, plant selection, and revegetation techniques ○ Maintenance and Monitoring: Train staff onsite maintenance, monitoring procedures, and adaptive management practices. Educate staff on monitoring and reporting procedures ○ Contractor Training: Ensure contractors are trained in best practices for site rehabilitation and revegetation • Capacity Building: ○ Workshops and Seminars: Organise workshops on advanced rehabilitation techniques and successful case studies ○ Knowledge Sharing: Facilitate sessions on lessons learned and best practices for effective site restoration **7. Decommissioning** • Removal Procedures: ○ Infrastructure Removal: Carefully dismantle infrastructure to minimise environmental impact and facilitate rehabilitation ○ Waste Management: Properly handle and dispose of decommissioned materials to prevent contamination and facilitate site recovery in line with the Waste Management Plan • Site Restoration: ○ Regrading and Rehabilitation: Regrade and restore natural site conditions, focusing on soil stabilisation and vegetation recovery		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	○ Post-Decommissioning Monitoring: Continue monitoring site conditions to ensure effective rehabilitation and identify any residual issues ○ Reporting: Provide reports on decommissioning activities, site restoration efforts, and long-term environmental recovery **8. Review and Revision** • Revision Process: ○ Regular Reviews: Establish a schedule for reviewing and updating the RRMP based on new information, regulatory changes, or project modifications ○ Trigger Events: Identify specific triggers that require immediate review of the RRMP, such as significant environmental incidents or project scope changes ○ Continuous Improvement: Use feedback from monitoring, inspections, and stakeholder engagement to refine and improve the RRMP **9. Appendices** • Append any applicable documents		
Fire Risk and Prevention Management Plan	**1. Introduction** • Purpose of the Plan: The objectives of the Fire Risk and Prevention Management Plan are to identify and manage risks associated with fires (man-made, natural or accidental), provide management measures and controls, and create awareness of these risks to prevent fires from causing damage or harm to project-related property, communities and the natural environment • Scope: This plan covers all project phases including construction, operation, maintenance and decommissioning (decommissioning scope similar as construction) for the HV, MV and LV powerlines, substations and construction camps. This plan should accompany the EPRP which should both reflect measures to reduce fire risk and manage the extent of damage • Regulatory Compliance: The plan should meet both any relevant Angolan legislation, requirements and standards as well as applicable international standards and guidelines such as the IFC EHS Guidelines: General EHS Guidelines for OHS providing guidance on fire precautions and risk management for OHS and CHSS. Refer to Volume 1, Section 3 of the ESIA • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP applicable to fire risk and prevention as referenced in Section 7.3 and Table 7-2, including but not limited to: ○ Training and awareness raising around fire risks and prevention ○ Basic fire combatting and prevention training as part of OHS training ○ Strict controls on the use of open fires for cooking and other uses in defined safe areas in construction camps ○ Ensure substations are fitted with a fire suppression system which is regularly maintained **2. Fire Risk Assessment** • Site Analysis: ○ Environmental Conditions: Detail local climate, vegetation, and topography ○ Infrastructure Layout: Document the layout of powerlines, substations, access roads, and nearby structures • Identification of Fire Hazards: ○ Construction Phase Hazards: Identify potential fire hazards during construction (e.g., welding, electrical equipment) ○ Operational Phase Hazards: Assess risks associated with ongoing operations (e.g., electrical faults, flammable materials) ○ Decommissioning Phase Hazards: Identify and assess any applicable fire hazards associated with decommissioning activities (e.g., machinery and equipment operation) • Risk Evaluation: ○ Risk Matrix: Develop a risk matrix to evaluate the probability and impact of identified hazards ○ Risk Prioritisation: Prioritise risks based on their potential severity and likelihood **3. Fire Prevention Strategies** • Construction Phase: ○ Hot Work Permits: Implement a permit system for activities like welding and cutting ○ Fire-Resistant Materials: Specify use of fire-resistant materials and construction practices ○ Temporary Firebreaks: Establish temporary firebreaks and clearance zones around construction-related sites such as the construction camps. These firebreaks should not be located outside of the area assessed for the project in terms of vegetation impacts ○ Environmental Conditions: Identify weather and environmental related conditions which are more conducive for fires such as dry and windy conditions and stop or avoid construction activities that may pose fire-related risks ○ Designated Fire and Smoking Safe Zones: If fires are required for cooking etc., these should be restricted to designated “safe zones” within construction camps. Smoking should also be restricted to these zones as to prevent negligent or accidental fires. No illicit fires must be allowed under any circumstance • Operational Phase: ○ Regular Inspections: Schedule and conduct routine inspections of electrical systems and equipment and fire detection and protection systems ○ Vegetation Management: Implement vegetation management practices (aligned to the Vegetation and Land Clearance Management Plan and the BMP) and to create defensible space around the substations and transformers. Ensure that vegetation is also maintained beneath the powerline in line with the Maintenance Management Plan ○ Fire Detection Systems: Install and maintain fire detection and alarm systems in substations. These alarm systems should be both visual and audible	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	across the facility in question ○ Fire Suppression Systems: Ensure substations are fitted with adequate fire suppression systems that can extinguish electrical fires and ensure that these are regularly inspected and maintained. If these are automated systems, manual backup systems are also required **4. Fire Response Plan** • Emergency Procedures (should align to the EPRP): ○ Alarm and Evacuation Procedures: Outline procedures for alarm activation and evacuation of personnel and details of safe gathering points. Clear signage or evacuation routes and emergency exit doors is required ○ Communication Protocols: Define communication channels and protocols during a fire emergency aligned to the communication protocols or the EPRP • Firefighting Resources: ○ On-Site Firefighting Equipment: Adequate firefighting and fire suppression equipment should be made readily accessible to relevant personnel and appropriate signage should be visible to ensure ease of access to equipment during an emergency ○ Training: Provide training for personnel in the use of firefighting equipment, type of fires (i.e. veldfires or electrical or chemical fires) and their dangers and emergency procedures • Coordination with Local Authorities: ○ Establish protocols for coordination with local fire services and emergency response teams **5. Maintenance and Training** • Regular Maintenance: ○ Equipment Maintenance: Schedule and document regular maintenance of firefighting equipment and safety systems in line with the Maintenance Management Plan ○ System Testing: Regularly test fire detection and suppression systems • Personnel Training: ○ Fire Safety Training: Conduct periodic fire safety training for all personnel ○ Emergency Response Drills: Organise and document emergency response drills and simulations **6. Stakeholder Engagement and Awareness (as per the Project SEP)** • Engagement and Transparency: ○ Engage with local communities and other key stakeholders on fire risks and prevention strategies or actions ○ Disclose fire related risks and issues as a result of the Project • Awareness Raising (as per the EHS Training and Awareness Plan): ○ Create awareness among local communities and stakeholders on fire risks and dangers as well as measures to reduce the risk and prevent fires ○ Encourage reporting of fires and present clear reporting channels **7. Documentation and Record Keeping** • Records Management: ○ Incident Reports: Maintain detailed records of any fire incidents or near-misses ○ Compliance Records: Document compliance with regulations and standards • Plan Review and Updates: ○ Regular Review: Schedule regular reviews of the Fire Risk and Prevention Management Plan ○ Updates: Update the plan based on changes in operations, regulations, or after incidents **8. Implementation and Monitoring** • Responsibilities: ○ Designated Personnel: Assign specific roles and responsibilities for fire risk management and emergency response • Monitoring and Evaluation: ○ Performance Indicators: Establish performance indicators to monitor the effectiveness of the fire prevention measures ○ Continuous Improvement: Implement a process for continuous improvement based on monitoring results, feedback and advancements in best practice **9. Appendices** • Append any applicable documents		
Flood Management Plan	**1. Introduction** • Purpose: The objectives of the Flood Management Plan are to ensure safety, protect infrastructure, and minimise environmental impact while ensuring it meets IFC standards for risk management and environmental sustainability and aligns to international best practices • Scope: This plan covers all project phases including construction, operation, maintenance, and decommissioning for the HV, MV and LV powerlines, substations, transformers and construction camps particularly project areas within the 1;100 year floodline or near or within watercourses • Location Map: Include a map showing project site, flood-prone areas, adjacent water bodies and the 1:100 year floodline **2. Regulatory and Policy Framework** • National Laws and Local Regulations: The plan should meet any relevant Angolan legislation, requirements and standards regarding flood management such	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	as the Technical Guidelines from the Ministry of Environment and the National Water Directorate. Refer to Volume 1, Section 3 of the ESIA • International Standards: The plan should also reference applicable international standards such as the IFC EHS Guidelines, ISO 14001:2015 for environmental management and the World Bank guidelines • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for flood management and referenced in Section 7.3 and Table 7-2, including but not limited to: o Adhere to conservative offsets from the stream centrelines. If pylons and infrastructure are required to be placed within these offsets, detailed surveys and floodline calculations will be required at the crossings o Ensure all substations are located outside of the 1:100 year flood line **3. Flood Risk Assessment** • Site Assessment: o Topography: Detailed topographical survey to understand natural drainage patterns and elevation levels o Hydrology: Analyse local hydrological data including rainfall patterns, river flows, and catchment areas. Incorporate IFC recommendations for understanding flood risks o Historical Flood Data: Compile historical records of flooding events, including their frequency, duration, and impact o Flood Hazard Mapping: Develop flood hazard maps using appropriate modelling techniques o Flood Zones: Identify and map various flood zones based on historical data and predictive models o Risk Zones: Classify areas based on flood risk (e.g., high, medium, low) • Flood Risk Analysis: o Scenario Modelling: Implement flood scenario modelling to simulate different flood scenarios (e.g., 100-year flood, extreme weather events) o Infrastructure Vulnerability: Assess the vulnerability of powerline towers, substations, and related infrastructure to flooding to ensure resilience o Impact Assessment: Evaluate potential impacts on project operations, surrounding communities, and ecosystems **4. Flood Prevention and Mitigation Measures** • Design Considerations: o Site Layout: Design the site layout to minimise flood risks, adhering to IFC guidelines for sustainable and resilient design. Avoid infrastructure placement within the 1:100 year floodline where possible (particularly transformers and substations) o Elevation: Infrastructure should be designed with adequate elevation above the highest recorded flood level in line with the 1:100 year floodline o Flood Resilience: Incorporate flood-resistant designs for key components, including elevated substation platforms, flood barriers and sealed enclosures o Drainage Solutions: Develop comprehensive drainage systems, including ditches, culverts, retention and diversion channels, to manage stormwater runoff o Materials: Select flood-resistant construction materials and techniques (e.g., concrete, weatherproof coatings) • Construction Phase: o Construction Schedule: Avoid construction during rainy seasons or periods of high flood risk o Erosion Control: Implement erosion control measures such as silt fences and sediment traps to prevent soil runoff into waterways o Temporary Flood Protection: Deploy temporary measures like sandbags or barriers during construction to minimise risk and protect vulnerable areas • Flood Barriers: o Permanent Barriers: Install permanent barriers, levees, or floodwalls where needed based on flood risk analysis o Removable Barriers: Provide removable barriers for areas requiring temporary protection during extreme events **5. Operational Flood Management** • Monitoring and Early Warning Systems: o Flood Forecasting: Integrate with national or local flood forecasting services to receive timely warnings. Ensure that the flood forecasting systems and early warning technologies utilised complies with IFC Standards and aligns with international best practice measures o On-site Monitoring: Set up flood gauges and sensors at critical locations to monitor water levels and rainfall o Data Integration: Use GIS to integrate and analyse data from various sources to support decision-making • Emergency Response Plan (in line with the EPRP): o Evacuation Procedures: Define evacuation routes, assembly points, and procedures for workers and site personnel at the substations o Emergency Contacts: Maintain an updated a list of contact details for local emergency services, flood response teams, and key project contacts ensuring readiness in the case of a flood event o Communication Plan: Establish communication protocols for alerting stakeholders and coordinating with authorities aligning with IFC standards for stakeholder engagement and information dissemination • Operational Adjustments: o Flood Response Protocols: Implement protocols for adjusting operations during flood events (e.g., shutting down equipment, securing sensitive areas) to maintain operational resilience o Incident Logs: Keep detailed logs of flood events, responses, and impacts for future reference		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	6. Maintenance and Inspection • Routine Inspections: o Infrastructure Checks: Conduct regular inspections of powerlines, substations, and flood protection measures to detect and address flood damage o Drainage Maintenance: Ensure that drainage systems are functioning properly, free from debris, regularly inspected and maintained • Maintenance Schedule: o Preventive Maintenance: Develop a preventive maintenance schedule for infrastructure and flood management systems o Emergency Repairs: Establish procedures for rapid repair of flood-damaged infrastructure • Record Keeping: o Inspection Reports: Maintain detailed records of inspections, including findings and maintenance activities taken o Maintenance Logs: Document all maintenance activities, including dates, tasks performed, and any issues encountered **7. Flood Management after Decommissioning** • Decommissioning Plan: o Site Restoration: Develop a site restoration plan, considering potential flood risks and environmental impacts o Infrastructure Removal: Plan for the safe removal of powerline and substation infrastructure, ensuring minimal disruption to the site and surrounding environment o Impact Evaluation: Assess any residual impacts of decommissioning on flood risk and environmental conditions o Final Flood Risk Assessment: Update flood risk assessments to reflect changes in land use or site conditions post-decommissioning **8. Documentation and Reporting** • Reporting Procedures: o Comprehensive Records: Maintain detailed records of the flood management plan, including risk assessments, design documents and modifications, and maintenance logs o Incident Reporting: Establish a system for documenting and reporting flood incidents, including causes, impacts, and responses o Regulatory Reporting: Ensure compliance with both local regulations and IFC reporting requirements, including submission of necessary documentation to authorities **9. Stakeholder Engagement** (as per the Project SEP) • Stakeholder Consultation: o Public Awareness: Educate local communities about flood risks and the measures in place to mitigate them o Feedback Mechanisms: Provide channels for community feedback and address concerns related to flood management o Regular Meetings: Hold regular consultations with local authorities, environmental organisations, and other stakeholders to discuss flood management practices and concerns o Collaboration: Work collaboratively with stakeholders to enhance flood management strategies, address flood-related issues and improve management practices **10. Review and Revision** • Plan Review: o Regular Updates: Periodically review and update the flood management plan to incorporate new data, technologies, and regulatory changes o Audit and Evaluation: Conduct regular audits and evaluations of flood management practices and their effectiveness • Lessons Learned: o Post-Event Analysis: Analyse lessons learned from flood events and management practices. Incorporate improvements into the flood management plan in line with IFC recommendations for adaptive management o Best Practices: Apply industry best practices and innovations to enhance flood management strategies **11. Appendices** • Append any applicable documents		
Maintenance Management Plan	**1. Introduction** • Purpose: The purpose of this Maintenance Management Plan is to establish procedures and guidelines for the effective maintenance of the powerline and substation infrastructure throughout its lifecycle. This plan aims to ensure the reliable and safe operation of the electrical system while extending the lifespan of assets and complying with relevant regulations and guidelines • Project Overview: Description of the powerline and substation project, including location, capacity, and key components. Summary of construction and operational phases • Scope: The Maintenance Management Plan includes preventive, corrective, and predictive maintenance for powerlines and substations during the construction phase and predominantly the operation phase of the Project. It also includes describing routine inspections, emergency repairs, and long-term asset management while complying with safety and regulatory requirements and best practice standards • Regulatory and Policy Framework: The plan should adhere to applicable national laws, policies and regulations (such as OHS and labour regulations) as well as international best practice guidelines and standards. In terms of international guidelines and standards, apply requirements and guidelines from the IFC EHS Guidelines: Electrical Power Transmission and Distribution particularly around maintenance of rights-of-way and OHS requirements during maintenance activities. Refer to Volume 1, Section 3 of the ESIA	Construction and operation	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility

	• ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for maintenance management and referenced in Section 7.3 and Table 7-2 including but not limited to:
	  ○ Regular maintenance of the substations specifically the arc quenchers (breakers) must be undertaken to limit the potential for gas leaks
	  ○ Maintenance vehicles should be checked for oil leaks prior to commencement of maintenance activities
	  ○ Regular inspections (and repair when necessary) of construction plant
	  ○ Erosion gullies repaired immediately
	  ○ Maintenance activities must ensure that floral SCC and protected flora (where present outside of the footprint areas) will not be adversely impacted
	  ○ As far as possible, maintenance activities, notably for areas around freshwater habitats, should be planned for during the dry season to avoid excess water runoff., sedimentation and erosion
	  ○ Disturbances within the footprint area should be limited to what is essential for long-term maintenance
	  ○ Carry out leak detection bi-annually, both visually and with suitable gas leak detection equipment/testing
	  ○ Scheduled maintenance and inspection routines ensure that equipment is in optimal condition, reducing the likelihood of leaks and emissions
	  ○ Make sure project site is kept neat and tidy (ensure all litter and any maintenance waste is removed)
	  ○ The long-term functioning and maintenance of the powerlines and substations must be sustained to ensure that it benefits the PACs permanently
	  ○ Consult the relevant local municipal administrations when maintenance activities are being conducted
	2. Maintenance Strategy
	• Maintenance Objectives:
	  ○ Ensure reliability and availability of power supply
	  ○ Minimise downtime, prevent equipment failures and extend asset life
	  ○ Comply with safety, environmental and other regulatory standards such as the IFC EHS Guidelines and any applicable national regulations
	• Types of Maintenance:
	  ○ Preventive Maintenance: Scheduled activities to avoid equipment breakdowns, including inspections, lubrication, and parts replacement where necessary
	  ○ Corrective Maintenance: Repairs conducted after equipment failure or malfunction to be done in a timeous manner to avoid prolonged downtime
	  ○ Predictive Maintenance: Use of condition-monitoring tools and techniques to predict potential failures and address them proactively
	• Maintenance Schedule:
	  ○ Define schedules for routine inspections, servicing, and replacements. Routine inspections could be as often as daily and can also be on an ad hoc basis. Operational checks and testing could be as often as weekly to identify any potential faults
	  ○ Include timelines for major overhauls and component upgrades. A database on parts details, inspection evidence, manufacturers guidance on component life-spans and observed faults for particular components should be maintained
	3. Organisational Structure
	• Roles and Responsibilities:
	  ○ Maintenance Manager: Oversees all maintenance activities, ensures adherence to the Maintenance Management Plan. Develop and update maintenance schedules and procedures
	  ○ Field Technicians: Execute routine maintenance tasks and repairs. Report maintenance activities and issues to the Maintenance Manager
	  ○ Safety Officers: Ensure safety protocols are followed during maintenance activities and conduct safety training
	  ○ Support Staff: Handle administrative tasks, record-keeping, and documentation. Coordinate procurement of spare parts and maintenance supplies
	• Training and Development:
	  ○ Define training requirements for maintenance personnel and conduct onboarding training for all maintenance staff on procedures, safety, and equipment
	  ○ Outline ongoing training programs to keep skills up-to-date with technological advancements
	4. Maintenance Procedures
	• Inspection Procedures:
	  ○ Detailed procedures for visual inspections, functional testing, and condition monitoring. Visual inspections involve checking for visible signs of wear, damage, or other issues. Functional testing includes verifying equipment performance against operational standards. Condition monitoring includes using sensors and diagnostic tools to assess equipment health
	  ○ Checklists and documentation requirements
	• Repair Procedures:
	  ○ Standardised repair processes for different types of failures and including for emergency and scheduled repairs as well as component replacement
	  ○ Guidelines for emergency response and repairs in line with the EPRP
	• Documentation and Reporting:
	  ○ Procedures for recording maintenance activities, inspections, and repairs
	  ○ Reporting format for incidents, outages, and maintenance outcomes
	5. Safety and Compliance
	• Safety Protocols:		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	○ Safety procedures and protective measures for maintenance activities should be in line with OHS requirements for the Project ○ Personal protective equipment (PPE) requirements • Regulatory Compliance: ○ Ensure adherence to local regulations (applicable OHS and labour regulations) and international standards (IFC EHS Guidelines: General EHS Guidelines for OHS and Electrical Power Transmission and Distribution) ○ Procedures for environmental protection and sustainability • Emergency Response (in line with the EPRP): ○ Emergency procedures for equipment failures, accidents, and natural disasters ○ Contact information for emergency services and key personnel **6. Asset Management** • Inventory Management: ○ Tracking and management of spare parts and equipment ○ Reorder levels and procurement processes • Lifecycle Management: ○ Strategies for asset lifecycle management, including upgrades and replacements ○ Planning for future needs and expansion • Performance Monitoring: ○ Key performance indicators (KPIs) for maintenance effectiveness ○ Regular review and analysis of maintenance performance **7. Budget and Resources** • Budget Planning: ○ Allocation of budget for maintenance activities, including labour, materials, and equipment ○ Cost control measures and financial tracking • Resource Allocation: ○ Adequate staffing and resource allocation for maintenance tasks ○ Tools and equipment needed for maintenance activities • Cost Management: ○ Procedures for tracking and managing maintenance costs ○ Cost-benefit analysis for major maintenance projects 8. **Continuous Improvement** • Performance Review: ○ Regular review of maintenance performance and effectiveness ○ Identification of areas for improvement • Feedback Mechanism: ○ Procedures for collecting feedback from maintenance personnel and stakeholders ○ Implementation of improvements based on feedback and performance reviews • Best Practices: ○ Adoption of industry best practices and innovations in maintenance management ○ Regular updates to the Maintenance Management Plan based on new technologies and methodologies **9. Documentation and Record Keeping** • Maintenance Records: ○ Comprehensive documentation of all maintenance activities, including dates, details, and outcomes ○ Storage and retrieval procedures for maintenance records • Plan Updates: ○ Regular updates and revisions to the Maintenance Management Plan ○ Procedures for incorporating changes and communicating updates to relevant personnel • Audits and Inspections: ○ Schedule and procedures for internal and external audits of maintenance practices ○ Corrective actions based on audit findings **10. Appendices** • Append any applicable documents.		

Management plan	Framework / guidelines	Applicable phase	Responsibility
Groundwater Management Plan	**1. Introduction** • Purpose: To safeguard groundwater resources from contamination and overuse during all project phases, ensuring environmental protection and regulatory compliance. The plan will assist to prevent groundwater contamination, support sustainable water use, and fulfil legal and environmental obligations • Scope: This plan covers all project phases including construction, operation, maintenance, and decommissioning for the HV, MV and LV powerlines, substations, transformers and construction camps. It covers site preparation, excavation, and other construction activities impacting groundwater, ongoing management and monitoring of groundwater resources, regular upkeep of groundwater management measures and addresses groundwater management during site restoration and infrastructure removal • Geographic Description: The plan should include detailed geographic information about the powerline routes and substations, including GPS coordinates and maps, the length of powerlines, number of substations, and total affected land area and key construction methods, operational activities, and potential interactions with groundwater **2. Regulatory and Policy Framework** • National Laws and Regulations: The plan should meet any relevant Angolan legislation and any other specific municipal or regional guidelines applicable to groundwater management. Refer to Volume 1, Section 3 of the ESIA • International Standards: The plan should align to the IFC Performance Standards, specifically, PS1 (Assessment and Management of Environmental and Social Risks and Impacts) which requires that a risk assessment and appropriated management is implemented for identified environmental impacts, including groundwater impacts and PS3 (Resource Efficiency and Pollution Prevention) which addresses resource management and pollution control practices relevant to groundwater management. It should also reference applicable international guidelines such as the IFC Environmental, Health, and Safety (EHS) Guidelines and ISO 14001:2015 for environmental management • ESIA Findings: The plan should reference the findings of the ESIA with specific mention to the identified groundwater impacts and the mitigation measures that should be implemented to address them including any groundwater protection measures suggested by specialists • ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for groundwater management and referenced in Section 7.3 and Table 7-2: o Hydrocensus to be undertaken to identify sensitive receptors o Groundwater level and quality monitoring **3. Groundwater Management Strategy** • Objectives and Goals: o Groundwater Protection: Prevent contamination and depletion of groundwater resources o Sustainability: Ensure the sustainable use and management of groundwater o Compliance: Adhere to local and international regulations and standards • Groundwater Assessment: o Hydrogeological Mapping: Conduct mapping to identify aquifers, recharge areas, and groundwater flow patterns o Baseline Data Collection: Gather data on existing groundwater quality and quantity, including physical, chemical, and biological parameters o Monitoring Wells: Install monitoring wells at strategic locations to measure groundwater levels and quality. Monitor key parameters such as pH, turbidity, nitrate, heavy metals, and volatile organic compounds (VOCs) • Risk Assessment: o Risk Identification: Identify potential sources of contamination such as chemical storage, waste disposal, and construction activities o Vulnerability Analysis: Assess the vulnerability of groundwater resources based on local hydrogeological conditions o Impact Analysis: Evaluate the potential for contamination and impacts on groundwater quality and quantity. Assess the potential impact on groundwater levels and the water table due to excavation and other project activities • Groundwater Protection Measures: o Construction Phase: Design and implement effective drainage systems to control runoff and prevent contamination. Include features such as silt traps and sediment basins. Install containment systems for hazardous materials and chemicals, including secondary containment for fuel storage and handling. Implement an Oil Spill Response (within the Project EPRP) to manage potential spills of hazardous substances. Use erosion control measures such as sediment fences, temporary mulching, and diversion ditches to minimise soil erosion and sediment runoff. Properly manage and dispose of construction waste to prevent contamination of groundwater. Use designated waste storage and disposal facilities o Operational Phase: Conduct routine groundwater sampling to monitor quality and detect any potential contamination early. Analyse samples for contaminants of concern for trends in groundwater quality and quantity to identify any emerging issues. Measure groundwater levels periodically to assess any changes due to project operations. Regularly inspect groundwater protection infrastructure, such as drainage systems and containment areas, to ensure they are functioning properly. Address any issues with groundwater protection measures promptly. Perform repairs or upgrades as necessary. Regularly review the effectiveness of groundwater management practices and adapt them based on monitoring results and evolving project needs o Decommissioning Phase: Carefully dismantle project infrastructure to minimise groundwater disturbance. Follow best practices for the removal of equipment and materials. Implement measures to rehabilitate the site, including regrading, restoring vegetation, and stabilising disturbed areas. Establish a post-decommissioning monitoring program to assess the recovery of groundwater conditions and ensure that any contamination is addressed. Provide regular reports on the status of groundwater recovery and any residual impacts **4. Environmental Management and Monitoring** • Environmental Management: o Minimise Impact: Implement best practices to minimise groundwater impact, such as reducing chemical use, improving waste management, and using	Construction, operation and decommissioning	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	environmentally friendly construction materials ○ Resource Efficiency: Optimise the use of groundwater and other resources through conservation measures and efficient technologies ○ Monitoring: Develop detailed protocols for inspecting groundwater management measures and ensuring compliance with the GWMP and regulatory requirements. Establish a rigorous schedule for groundwater sampling, including frequency and locations based on risk assessment and regulatory requirements. Include comprehensive parameters in monitoring programs, such as groundwater chemistry, flow rates, and pollutant levels. Conduct periodic audits to verify adherence to groundwater management practices and regulations ○ Reporting: Maintain detailed records of all groundwater management activities, including monitoring results, maintenance actions, and compliance checks. Submit regular reports to regulatory authorities and stakeholders, detailing groundwater quality, any incidents, and corrective actions taken. Immediately report significant groundwater contamination incidents or deviations from the Groundwater Management Plan to relevant authorities and provide detailed incident reports **5. Stakeholder Engagement (as per the Project SEP)** • Community Involvement: ○ Public Meetings: Organise public meetings to inform local communities about groundwater management practices and potential impacts ○ Educational Materials: Distribute educational materials, such as brochures and fact sheets, to raise awareness about groundwater protection and project impacts ○ Feedback Mechanisms: Implement mechanisms for receiving and addressing community feedback and concerns related to groundwater management ○ Grievance Procedures: Develop a formal grievance procedure for addressing community concerns and resolving issues related to groundwater • Expert Consultation: ○ Hydrogeologists and Environmental Consultants: Engage with hydrogeologists and environmental consultants to review and refine groundwater management strategies and practices. Incorporate expert recommendations to enhance the effectiveness of groundwater protection measures and ensure compliance with industry best practices **6. Training and Capacity Building (as per the EHS Training and Awareness Plan)** • Training Programs: ○ Groundwater Management: Provide training on groundwater management practices, including monitoring techniques, protection measures, and emergency response ○ Emergency Response: Train staff on emergency response procedures for managing groundwater contamination incidents, including spill response and remediation ○ Project Staff: Train project managers, engineers, and field personnel involved in groundwater management and protection ○ Contractors: Ensure that contractors are trained on groundwater protection practices and comply with the Groundwater Management Plan • Capacity Building: ○ Workshops and Seminars: Organise workshops on advanced groundwater management techniques, emerging technologies, and best practices. Facilitate knowledge-sharing sessions among project stakeholders, including lessons learned and successful case studies **7. Emergency Response** • Contingency Planning in Emergency Scenarios: ○ Contamination Events: Develop contingency plans for potential contamination events, such as chemical spills or leaks, and their impact on groundwater ○ Water Table Fluctuations: Address potential emergencies related to significant fluctuations in groundwater levels due to project activities • Response Procedures: ○ Emergency Response Teams: Establish and train dedicated emergency response teams for managing groundwater contamination incidents and other emergencies ○ Response Equipment: Stockpile necessary equipment and materials, such as spill kits and containment barriers, for rapid response ○ Emergency Contacts: Maintain an updated contact list of emergency response teams, regulatory authorities, and groundwater experts for quick access during incidents ○ Action Plans: Develop detailed action plans for responding to specific types of groundwater contamination incidents, including containment, cleanup, and remediation procedures **8. Decommissioning** • Removal Procedures: ○ Infrastructure Removal: Carefully dismantle project infrastructure, including powerline poles, substations, and associated facilities, to minimise soil and groundwater disturbance ○ Waste Management: Properly manage and dispose of all waste materials, including hazardous waste, to prevent contamination of groundwater • Site Restoration: ○ Regrading and Rehabilitation: Regrade the site to restore natural contours and stabilise soil. Implement vegetation planting to support ecological recovery and enhance groundwater recharge ○ Post-Decommissioning Monitoring: Continue monitoring groundwater quality and levels to ensure that restoration efforts are effective and that groundwater conditions return to baseline or improved levels. Implement a long-term monitoring program to track groundwater quality and quantity over time. Adjust monitoring frequency and parameters based on observed conditions ○ Reporting: Provide periodic reports on groundwater conditions and the effectiveness of decommissioning and restoration efforts		

Management plan	Framework / guidelines	Applicable phase	Responsibility

	9. Reporting and documentation
	• Reporting Procedures:
	  ○ Comprehensive Records: Maintain detailed records of the Groundwater Management Plan, including risk and impact assessments, design documents and modifications, and maintenance logs
	  ○ Incident Reporting: Establish a system for documenting and reporting groundwater contamination / deterioration incidents, including causes, impacts, and responses
	  ○ Regulatory Reporting: Ensure compliance with both national regulations and IFC reporting requirements, including submission of necessary documentation to authorities
	10. Review and Revision
	• Revision Process:
	  ○ Regular Reviews: Establish a schedule for regular reviews of the Groundwater Management Plan, including updates based on new information, regulatory changes, or project modifications. Identify specific triggers that would prompt an immediate review of this plan, such as significant environmental incidents or changes in project scope. Implement a structured process for revising the Groundwater Management Plan, including consultation with stakeholders and obtaining necessary approvals
	  ○ Continuous Improvement: Collect feedback from monitoring, inspections, and stakeholder engagement to identify areas for improvement. Incorporate lessons learned from project experience and industry best practices into the Groundwater Management Plan to enhance its effectiveness
	11. Appendices
	• Append any applicable documents		

Blast Management Plan (if required)	**1. Introduction**
	• Purpose: To outline the procedures and protocols for managing blasting operations during the construction of the powerline and substation in Angola. To ensure safety, compliance with regulations, and minimise environmental and community impact
	• Scope: This plan covers all aspects of blasting operations including planning, execution, monitoring, and post-blast activities
	• Objectives: Ensure safety of personnel and the public. Protect property and the environment. Comply with local regulations and standards. Manage risks effectively
	2. Regulatory and Environmental Requirements
	• National Laws and Local Regulations: Identify and list applicable Angolan regulations and standards for blasting operations. Obtain necessary permits and approvals from local authorities. Refer to Volume 1, Section 3 of the ESIA
	• International Standards: Apply IFC EHS Guidelines: Mining related guidance particularly concerning blasting guidelines and mitigating impacts along with other guidance such as IFC EHS Guidelines: Construction Materials Extraction. Observe the International Society of Explosives Engineers (ISEE) blasting guidelines/requirements if applicable
	• Environmental Considerations: Assess potential environmental impacts including noise, vibration, dust, and potential for habitat disruption. Develop mitigation measures to minimise environmental impacts
	• ESMP requirements: The plan should align to requirements and measures as listed in the Project ESMP for blasting and referenced in Section 7.3 and Table 7-2, including but not limited to:
	  ○ If required, no blasting should be conducted within 500m from any residential area
	  ○ Safe blasting techniques must be used during a blast
	  ○ Blast design to be conducted before a blast
	  ○ Ground vibration and/or air pressure levels must be monitored
	3. Blasting Plan
	• Blast Design: Detail the blasting techniques and materials to be used. Develop a blasting schedule including timing and frequency
	• Blast Area Preparation: Define and mark the blast area. Establish exclusion zones and safety perimeters. Ensure access roads and pathways are clear and safe
	• Blast Notification: Notify local communities, authorities, and stakeholders in advance of blasting activities. Provide information on expected dates, times, and potential impacts
	4. Safety Procedures
	• Personnel Training: Ensure all personnel involved in blasting are properly trained and certified. Conduct regular safety drills and refresher courses
	• Safety Equipment: Provide and maintain appropriate PPE for all personnel. Ensure the availability of first aid kits and emergency response equipment
	• Emergency Response Plan: Develop and communicate an emergency response plan. Include procedures for dealing with misfires, accidental detonations, and other emergencies
	5. Blast Execution
	• Pre-Blast Checks: Conduct a thorough inspection of the blast area and equipment before each blast. Verify all safety measures are in place and functional
	• Blasting Procedure: Follow the blast design and procedures precisely. Use electronic or remote detonation systems where possible to enhance safety
	• Post-Blast Inspection: Conduct a post-blast inspection to assess the results and check for any issues. Clear debris and secure the area as necessary
	6. Monitoring and Reporting
	• Monitoring: Implement monitoring systems for vibrations, noise, and dust levels. Use real-time data to adjust blasting procedures if necessary
		Construction	Contractor and proponent

Management plan	Framework / guidelines	Applicable phase	Responsibility
	• Reporting: Document all blasting activities, including times, locations, and any incidents. Report any significant issues or deviations from the plan to relevant authorities and stakeholders **7. Community Engagement** • Public Communication: Maintain open lines of communication with the local community. Address concerns and provide updates on blasting activities • Feedback Mechanism: Establish a system for receiving and addressing community feedback and complaints. Use feedback to improve blasting practices and minimise impact **8. Documentation and Record-Keeping** • Blast Records: Maintain detailed records of all blasting operations. Include permits, design documents, safety inspections, and monitoring data • Plan Review and Updates: Regularly review and update the blast management plan to reflect changes in regulations, project scope, or operational practices **9. Review and revision** • Regular Reviews: Establish a schedule for regular reviews of the Blast Management Plan during construction, including updates based on new information, regulatory changes, or project modifications. Identify specific triggers that would prompt an immediate review of this plan, such as significant environmental or health and safety incidents or changes in project scope. Implement a structured process for revising the Blast Management Plan, including consultation with stakeholders and obtaining necessary approvals • Continuous Improvement: Collect feedback from monitoring, inspections, and stakeholder engagement to identify areas for improvement. Incorporate lessons learned from project experience and industry best practices into the Blast Management Plan to enhance its effectiveness **10. Appendices** • Append any applicable documents		
Lighting Management Plan	**1. Introduction** • Objective: To establish guidelines for the design, installation, and management of lighting systems for the Project to ensure occupational health and safety, efficiency, and minimal environmental impact or visual disturbance • Scope: This plan covers all phases of the project, including construction, operation, and maintenance of the HV, MV and LV powerlines, substations and transformers • ESMP Requirements: The plan should align to requirements and measures as listed in the Project ESMP for lighting and visual impacts and referenced in Section 7.3 and Table 7-2, including but not limited to: o Ensure lighting design avoids excessive lighting pollution such as lighting being directed inwards to the site or working areas o Align to OHS requirements in terms of lighting design and illumination particularly in terms of emergency management and the health and safety of employees and nearby communities **2. Regulatory Compliance** • National Laws and Local Regulations: Identify and comply with all relevant local, national, and international lighting regulations, including safety standards, energy efficiency requirements, and environmental protection laws. Refer to Volume 1, Section 3 of the ESIA • International Guidelines: Adhere to international guidelines and standards on lighting design and management such as the IFC EHS Guidelines: General EHS Guidelines for OHS. These include lighting design and illumination guidelines. The IFC also offers guidance notes on EHS and OHS best practice guidance **3. Lighting Design Principles** • Safety and Security: o Illumination Levels: Ensure that lighting levels meet the necessary requirements for safe operations and reduced shadows and glare, particularly in high-risk areas like substations, access roads, and construction sites aligned with workplace illumination guidelines from the IFC EHS Guidelines: General EHS Guidelines for OHS • Energy efficiency: o Energy efficient technology: Use energy-efficient LED lighting fixtures, smart lighting controls, motion sensors and timers to minimise power consumption and reduce greenhouse gas emissions • Minimisation of light pollution: o Directional and low-glare lighting: Use directional lighting fixtures that focus light on specific areas, reducing light spillover, minimising skyglow and use of low-glare fixtures to reduce visual disturbance to communities • Wildlife protection: o Shielded lighting: Use fully shielded lighting fixtures to minimise the impact on nocturnal wildlife, particularly birds and bats that may be disturbed by artificial light o Light colour temperature: Use lighting with a warm colour temperature to reduce the impact on wildlife and the night environment **4. Construction phase lighting management** • Temporary lighting: o Placement: Position temporary construction lighting to illuminate work areas effectively (face inwards to work areas) while minimising light spillover to surrounding areas o Timing: Restrict the use of temporary lighting to active work hours and turn off or dim lights during non-working hours to conserve energy and reduce environmental impact and visual disturbance • Safety considerations: o Night work: Ensure adequate lighting for any night-time construction activities, focusing on high-risk areas such as excavation sites, access roads, and	Construction and operation phases	Contractor, proponent and operator

Management plan	Framework / guidelines	Applicable phase	Responsibility
	equipment storage areas ○ Emergency lighting: Provide emergency lighting in key areas to ensure safe evacuation and response in case of an incident • Wildlife considerations: ○ Sensitive areas: Identify and minimise lighting near sensitive habitats, such as wetlands, rivers, and forests, to protect local wildlife ○ Monitoring: Monitor the impact of construction lighting on wildlife, particularly during breeding or migration seasons, and adjust lighting practices as needed **5. Operational phase lighting management** • Permanent lighting: ○ Substation lighting: Install permanent lighting at the substation that ensures safety and security while minimising environmental impact (face inwards to operation areas) and use low foot lighting where possible or deemed safe to do so to avoid excessive light pollution ○ Access point lighting: Provide lighting at key intersections or access points leading to key infrastructure such as substations, while minimising light pollution • Security lighting: ○ Motion-activated lights: Use motion-activated lighting for security purposes to reduce energy use and minimise disturbance to the surrounding environment ○ Infrared lighting: Consider the use of infrared lighting for security cameras to avoid unnecessary visible light emissions • Maintenance lighting: ○ Task-specific lighting: Provide portable, task-specific lighting for maintenance activities that can be directed where needed, reducing the need for widespread lighting **6. Monitoring and maintenance** • Lighting audits: ○ Regular inspections: Conduct regular lighting audits to assess the performance and impact of the lighting system, ensuring compliance with safety and environmental standards ○ Adjustment and optimisation: Adjust lighting levels and settings based on audit findings to optimise energy use and reduce light pollution • Maintenance schedule: ○ Fixture maintenance: Implement a maintenance schedule for all lighting fixtures, ensuring they are clean, functional, and properly aimed ○ Replacement of bulbs: Replace bulbs and lighting fixtures with more efficient or wildlife-friendly options as technology advances **7. Environmental and social considerations** • Community impact: ○ Consultation: Engage with local communities to address concerns related to lighting, such as light intrusion or skyglow, and incorporate their feedback into the lighting management plan ○ Grievance mechanism: Establish a grievance mechanism for community members to report lighting-related issues, ensuring timely response and resolution • Cultural and aesthetic consideration: ○ Visual impact: Design lighting to minimise the visual impact on culturally or aesthetically significant landscapes, particularly in areas visible from public viewpoints or residential areas by facing lighting inwards and maintain existing vegetation if practical to mask lighting • Wildlife monitoring: ○ Impact monitoring: Regularly monitor the impact of operational lighting on local wildlife, particularly nocturnal species, and make adjustments as necessary to mitigate any negative effects **8. Emergency lighting plan** • Backup power supply: ○ Uninterrupted power supply (UPS): Equip critical lighting systems with a UPS to ensure continuous operation during power outages, particularly in safety-critical areas • Emergency lighting fixtures: ○ Placement: Install emergency lighting in key areas, such as exit routes, control rooms, and substations, to ensure visibility and safe evacuation during emergencies in line with IFC EHS Guidelines: General EHS Guidelines for OHS emergency lighting requirements ○ Regular testing: Regularly test emergency lighting systems to ensure they function correctly in the event of an outage **9. Reporting and documentation** • Lighting performance reports: ○ Periodic reporting: Prepare periodic reports on the performance of the lighting system, including energy consumption, maintenance activities, and compliance with regulatory requirements ○ Incident reports: Document any incidents related to lighting, such as wildlife disturbances or community complaints, and the actions taken to address them • Documentation of changes: ○ As-built documentation: Maintain up to date as-built documentation of the lighting systems, including any modifications made during construction or		

Management plan	Framework / guidelines	Applicable phase	Responsibility
	operation **10. Continuous improvement** • Review and update: o Annual review: Conduct an annual review of the lighting management plan to assess its effectiveness and identify areas for improvement o Incorporating feedback: Incorporate feedback from lighting audits, community consultations, and environmental monitoring into updates of the plan • Innovation and best practices: o Technology upgrades: Stay informed about advances in lighting technology and consider upgrading to more efficient or environmentally friendly options o Learning from experience: Apply lessons learned from the project and other similar projects to continuously improve lighting management practices **11. Appendices** • Append any applicable documents		

7.6 Environmental and social monitoring programme

Provisional environmental and social variables that are to be monitored during all Project phases are set out in this section. Monitoring results must be structured and presented for review on an ongoing basis so that if objectives and targets are not met, corrective action can be taken. Monitoring during construction and operation phases shall be governed by the C-ESMP and O-ESMP, which shall provide phase-specific monitoring protocols and adaptive management strategies to address emerging issues effectively.

7.6.1 Monitoring principles

The full environmental and social monitoring programme and chosen indicators will need to fulfil the following requirements:

1. Gathering specific information to allow for meaningful interpretation covering the material potential impacts;
2. Ensuring that indicators are measurable and auditable so results can be verified;
3. Tailoring monitoring to ensure that it is relevant to specific receptors potentially impacted within the Project area of influence; and
4. Ensuring that monitoring activities are time-bound with a clear schedule of monitoring activities.

7.6.2 Responsibilities for implementation

Overall reporting on the monitoring programme should be the responsibility of PAK Yatirim and RNT. This will be informed by monitoring reports prepared by specialists. Table 7-21 presents relevant responsibilities related to the implementation and oversight of the ESMP and its management. It should be noted that the positions therein are for guidance purposes and the realistic position may differ and responsibilities may overlap slightly.

7.6.3 Monitoring measures, frequency and responsibilities

A number of monitoring measures have been identified during the specialist studies and impact assessment and are presented in Table 7-21. The table indicates the responsible party and frequency of proposed monitoring activities.

Table 7-21: Monitoring programme for biophysical and socio-economic aspects

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
Bio-Physical					
Climate Change (Refer to Volume 1, Section 6.4.1, Tables 6.10 – 6.12)	CC1 - Increased runoff and erosion	As per Table 7-2	Construction	Contractor	During construction
		As per Table 7-2	Construction		During construction
		As per Table 7-2	Construction		During construction
	CC2 – Increased possibility of landslides near Chipindo due to the geomorphic changes associated with land clearance and if large, cleared areas are left unvegetated.	As per Table 7-2	Construction	Contractor	During construction
	CC3 - Temperatures exceed the designed operational limits of the equipment.	As per Table 7-2	Operation	Proponent	Continuously
		As per Table 7-2	Operation		Continuously
	CC4 - Increased staff heat stress, demand for cooling and associated increase in GHG emissions	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Operation	Proponent	Monthly / As and when required
		As per Table 7-2	Construction/Operation	Contractor / Proponent	As and when required
		As per Table 7-2	Construction/Operation		As and when required
	CC5 - Uncontrolled release of hazardous materials or waste to surrounding environment could occur should the hazardous storage facilities flood	As per Table 7-2	Construction/Operation	Contractor / Proponent	Once off
		As per Table 7-2	Construction/Operation		Continuously
	CC6 - Failure of wastewater treatment facilities to contain increased volumes of contaminated water may result in overflow of contaminated water to the environment	As per Table 7-2	Construction/Operation	Contractor / Proponent	Once off
		As per Table 7-2	Construction/Operation		Monthly / As and when required
	CC7 - Operational disruptions or damage to project infrastructure due to flooding, lightning, or high winds	As per Table 7-2	Operation	Proponent	As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	CC8 - Operational disruptions or damage to project infrastructure due to lightning	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	CC9 - Operational disruptions or damage to project infrastructure due to high windspeeds.	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	CC10 - Increased prevalence or intensity of fires due to the extended dry period	As per Table 7-2	Construction/Operation	Contractor / Proponent	As and when required
	CC11 – Increased possibility of landslides near Chipindo due to moderate-high landslide susceptibility.	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	CC12 - Increased prevalence of vector borne diseases due to higher temperatures and rainfall in certain months	As per Table 7-2	Construction/Operation	Contractor / Proponent	Monthly / As and when required
		As per Table 7-2	Construction/Operation		As and when required
	CC13 - Disruption of transportation routes due to offsite/ remote flooding related infrastructure damage	As per Table 7-2	Construction/Operation	Contractor / Proponent	As and when required
		As per Table 7-2	Operation	Proponent	As and when required
	CC14 – Health and safety risks to staff associated with flooding	As per Table 7-2	Construction/Operation	Contractor / Proponent	As and when required
	CC15 - Use of SF^6 as quencher for the substations given its high global warming potential	As per Table 7-2	Operation	Proponent	Monthly / As and when required
	CC16 - Increasing the availability of electricity resulting in a reduction in the use of non-renewable fuels	As per Table 7-2	Operation		As and when required
	CC17 - GHG impacts resulting from SF_6 emissions from substations	As per Table 7-2	Decommissioning		Once off
Soils, land use and land capability (Refer to Volume 1, Section 6.4.2, Tables 6.13 – 6.14)	SLU1 - Loss of high potential agricultural resources and land use resulting from placement of infrastructure on arable and cultivated fields	As per Table 7-2	Construction	Contractor	During construction
		As per Table 7-2	Construction		During construction
		As per Table 7-2	Construction		During construction
		As per Table 7-2	Construction		During construction

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Project lifespan
		As per Table 7-2	Construction/Operation		As and when required
		As per Table 7-2	Construction	Contractor	During construction
		As per Table 7-2	Construction		During construction
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Project lifespan / During construction
		As per Table 7-2	Construction/Operation		Project lifespan / During construction
		As per Table 7-2	Construction/Operation		Project lifespan / During construction
		As per Table 7-2	Construction	Contractor	During construction
	SLU2 - Soil erosion resulting from footprint clearing and excavation activities	As per Table 7-2	Operation	Proponent	Weekly / As and when required
	SLU3 - Soil compaction due to movement of construction vehicles of good potential agricultural soils	As per Table 7-2	Operation		Continuously
	SLU4 - Soil contamination because of spillage of hydrocarbons	As per Table 7-2	Operation		As and when required
	SLU5 - Loss of high potential agricultural resources and land use resulting from placement of infrastructure on arable and cultivated fields during operation	As per Table 7-2	Operation		As and when required
	SLU6 - Soil erosion resulting from vegetation clearing/ maintenance	As per Table 7-2	Operation		As and when required
	SLU7 - Soil compaction due to movement of vehicles of good potential agricultural soils during operation	As per Table 7-2	Operation		As and when required
	SLU8 - Soil contamination because of spillage of hydrocarbons during operation	As per Table 7-2	Operation		As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
Water resources (Refer to Volume 1, Section 6.4.3, Tables 6.15 – 6.16)	SW1 - Siltation of river systems, local disturbance to riverbanks and channels	As per Table 7-2	Construction	Contractor	During construction / As and when required
	SW2 - Indirect siltation of river systems	As per Table 7-2	Construction	Contractor	As and when required
	SW3 - Hydrocarbon pollution	As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		Once off
	SW4 - River pollution from effluent	As per Table 7-2	Construction	Contractor	Once off
		As per Table 7-2	Construction	Contractor / Proponent	As and when required
	SW5/6 - Hydrocarbon pollution	As per Table 7-2	Operation	Proponent	Once off
	SW7 - Siltation of river systems	As per Table 7-2	Operation	Proponent	As and when required
	SW8 - Siltation of river systems during pylon foundation scouring	As per Table 7-2	Operation		Once off
	SW9 - Increase in flood level	As per Table 7-2	Operation		As and when required
Hydrogeology (Refer to Volume 1, Section 6.4.3, Table 6.17)	GW1 - Impact on community wells and available groundwater resources	As per Table 7-2	Construction	Contractor	Once off
		As per Table 7-2			Monthly
	GW2 - Potential alteration or deterioration in groundwater quality	As per Table 7-2			As and when required
		As per Table 7-2			As and when required
		As per Table 7-2			Monthly
Biodiversity (Floral) (Refer to Volume 1, Section 6.4.4, Tables 6.18 – 6.21)	BFL1 - Loss of floral habitat and species diversity (Construction)	As per Table 7-2	Construction	Contractor / Proponent	Annually
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Once off

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Once off
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Every 3 years
		As per Table 7-2	Operation	Proponent	Continuously
		As per Table 7-2	Operation		Once off
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Monthly
		As per Table 7-2	Operation		Annually
		As per Table 7-2	Operation		Annually
		As per Table 7-2	Operation		Annually
	BFL2 - Loss of floral SCC	As per Table 7-2	Construction/Operation	Contractor / Proponent	Bi-Annually
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Annually
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
	BFL3 - Loss of floral habitat and species diversity (Operation)	As per Table 7-2	Operation	Proponent	Continuously
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Once off

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	All	Contractor / Proponent	Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Once off
		As per Table 7-2	All		Once off
		As per Table 7-2	All		Continuously
	BLF4 - Loss of floral SCC (Operation)	As per Table 7-2	All		Continuously
		As per Table 7-2	All		Every 3 years
	BLF5 - Floral habitat fragmentation	As per Table 7-2	Construction	Contractor / Proponent	As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
	BFL6 – Floral habitat fragmentation (specific to Decommissioning)	As per Table 7-2	Decommissioning	Contractor / Proponent	As and when required
Biodiversity (Faunal) (Refer to Volume 1, Section 6.4.4, Tables 6.22 – 6.23)	BFA1 - Loss of faunal habitat and species diversity	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Once off
		As per Table 7-2	All	Contractor / Proponent	As and when required
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Weekly (construction) / Monthly (operation)
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction	Contractor	As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		As and when required
		As per Table 7-2	Construction/Operation		As and when required
		As per Table 7-2	Construction/Operation		As and when required
		As per Table 7-2	Operation	Proponent	Continuously
		As per Table 7-2	Operation		Continuously
	BFA2 - Loss of potential faunal SCC	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	BFA3 - Habitat fragmentation	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	BFA4 - Avifaunal Collisions with Overhead Powerlines – Miombo Woodland and Freshwater Habitats	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	BFA5 - Avifaunal Collisions with Overhead Powerlines – Secondary Miombo Woodland and Transformed Habitats	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	BFA6 -Loss of faunal habitat and species diversity (Operation)	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	BFA7 - Loss of potential faunal SCC	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	BFA8 - Habitat fragmentation	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	BFA9 – Avifaunal and bat Collisions with Overhead Powerlines – Miombo Woodland and Freshwater Habitats	As per Table 7-2	Operation	Contractor / Proponent	As and when required
	BFA10 – Avifaunal and bat Collisions with Overhead Powerlines – Secondary Miombo Woodland and Transformed Habitats	As per Table 7-2	Operation	Contractor / Proponent	As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
Freshwater ecosystems (Refer to Volume 1, Section 6.4.5, Tables 6.24 – 6.26)	FE1 - Removal of vegetation leading to increased bare areas and changes in runoff in the landscape; and smothering of freshwater habitat due to dust generated from cleared areas	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
	FE2 - Increased bare areas and changes in runoff in the landscape; generation of dust in the cleared areas and miscellaneous activities by construction personnel	As per Table 7-2	Construction	Contractor	As and when required
	FE3 - Smothering of freshwater habitat due to dust generated from cleared areas; increase in bare areas including changes in runoff patterns in the landscape; proliferation of alien and invasive species within the freshwater habitat; increased erosion and sedimentation of the freshwater systems; alteration of surface water quality from concrete casting; and disturbance to aquatic biota	As per Table 7-2	Construction	Contractor	Once off
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Once off
	FE4 - Increased soil erosion and formation of preferential flow paths in the landscape; sedimentation of the freshwater system due to disturbance in the landscape resulting in changes in the instream substrate; smothering of freshwater habitat due to dust generated from cleared areas; changes in flow, pattern and timing due to increased impermeable surfaces; loss	As per Table 7-2	Construction	Contractor	As and when required
		As per Table 7-2	Construction		Once off
		As per Table 7-2	Construction		Once off
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	of foraging and breeding habitat and faunal migratory corridors; and proliferation of alien and invasive species within the freshwater habitat	As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
	FE5 - Potential temporary in-channel diversion of the freshwater crossing to allow for excavations for road crossing to take place; loss of freshwater habitat and ecological structure resulting in impacts on biota; altered runoff patterns and alteration to flow patterns, leading to increased erosion and sedimentation of the freshwater system; disturbances of soils leading to increased alien vegetation proliferation, and in turn to further altered riverine habitat; and increased risk of pollution of surface water.	As per Table 7-2	Construction	Contractor	As and when required
	FE6 - Changes in flow, pattern and timing due to increased impermeable surfaces; and altered drainage patterns, potentially leading to the formation of preferential flow paths and/or concentrated flows	As per Table 7-2	Operation	Proponent	Once off
		As per Table 7-2	Operation		As and when required
		As per Table 7-2	Operation		As and when required
	FE7 - Increased impermeable surfaces due to the presence of surface infrastructure (substations) leading to changes in runoff in the landscape	As per Table 7-2	Operation	Proponent	As and when required
		As per Table 7-2	Operation		As and when required
		As per Table 7-2	Operation		As and when required
		As per Table 7-2	Operation		As and when required
	FE8 - Impact Summary: Altered timing and pattern of flows within the catchment; change in freshwater hydroperiod and changes in flood	As per Table 7-2	Operation	Proponent	As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	peaks; and Potential desiccation of downstream reaches of freshwater ecosystems due to blocked culverts.				
	FE9 - Soil erosion and sedimentation of freshwater due to disturbance in the landscape; Increase in bare areas including changes in runoff patterns in the landscape; proliferation of alien and invasive species within the freshwater habitat; and disturbance to aquatic biota.	As per Table 7-2	Decommissioning	Proponent	As and when required
Air quality (Refer to Volume 1, Section 6.4.6, Tables 6.27 – 6.29)	AQ1 - Addition of excess dust and gaseous emissions to ambient air quality	As per Table 7-2	Construction	Contractor	As and when required
		As per Table 7-2	Construction		Weekly
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Weekly
		As per Table 7-2	Construction		Once off
		As per Table 7-2	Construction		Once off
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction	Contractor	As and when required
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	AQ2 - Addition of excess dust and gaseous emissions to ambient air quality	As per Table 7-2	Operation	Proponent	Bi-annually
		As per Table 7-2	Operation		Monthly
		As per Table 7-2	Operation		As and when required
		As per Table 7-2	Operation		As and when required
		As per Table 7-2	Operation		As and when required
		As per Table 7-2	Operation		As and when required
	AQ3 - Potential emission of SF_6 from transformers and substation switchgears	As per Table 7-2	Operation		As and when required
	AQ4 - Potential emission of SF_6 from transformers and substation switchgears	As per Table 7-2	Decommissioning		As and when required
Noise (Refer to Volume 1, Section 6.4.7, Tables 6.30 – 6.32)	N1 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities (Construction)	As per Table 7-2	All	Contractor / Proponent	Continuously
		As per Table 7-2	All		As and when required
	N2 - Increase in the ground vibration and/or air pressure levels at the residential areas in that the ground vibration level of 12.5mm/s and/or air pressure levels of 140dB is exceeded during blasting - if required	As per Table 7-2	Construction	Contractor	Continuously (during blasting)
		As per Table 7-2	Construction		Continuously (during blasting)
		As per Table 7-2	Construction		Continuously (during blasting)
		As per Table 7-2	Construction		Continuously (during blasting)
	N3 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities.	As per Table 7-2	Construction	Contractor	As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	N4 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities.	As per Table 7-2	Construction	Contractor	As and when required
	N5 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities	As per Table 7-2	Operation	Proponent	As and when required
	N6 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities	As per Table 7-2	Operation	Proponent	As and when required
	N7 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during maintenance activities.	As per Table 7-2	Operation	Proponent	As and when required
	N8 - Increase in the noise levels at the residential areas in that the prevailing ambient noise levels are exceeded during the above activities	As per Table 7-2	Decommissioning	Proponent	As and when required
Visual (Refer to Volume 1, Section 6.4.8, Tables 6.34 – 6.36)	V1 - Negative visual impact on local surrounding areas	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		As and when required
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		As and when required
	V2 - Visual impact of medium significance. Impacts are expected to be felt at a local scale	As per Table 7-2	Construction	Contractor	As and when required
	V3 - Significance of visual impact expected to be high at a local extent.	As per Table 7-2	Operation	Proponent	As and when required

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	V5 - During decommissioning the visual impact significance is expected to be low	As per Table 7-2	Operation		As and when required
		As per Table 7-2	Operation		As and when required
	V6 - Decommissioning the substations is expected to significantly reduce the visual impact.	As per Table 7-2	Decommissioning	Proponent	Once off
		As per Table 7-2	Decommissioning		Once off
Social Impacts					
Land and resource acquisition (Refer to Volume 1, Section 6.5.1, Tables 6.37 to 6.45, and Addendum Section 3)	SE1.1 - Reduced income-earning opportunities due to a loss of, or access to, farming or grazing land or access to such land	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE1.2 - Increased food insecurity due to loss of farming or grazing land or access to such land	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE1.3 - Reduced income-earning opportunities for artisanal miners due to the loss of available artisanal mining areas	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE1.4 - Disruption of access in and between communities and sites used by Khoi San people due to the presence of the transmission and distribution powerlines and substations	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE1.5 - Altering the sense of place of community members and Khoi San	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	people due to the presence of the transmission line	As per Table 7-2	Construction/Operation		Continuously
	SE1.6 - Underpayment as part of economic displacement compensation conducted by state entities	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE1.7 - Undercompensating physically displaced PAH/PAPs	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE1.8 - Increased gender marginalisation and vulnerability resulting from compensation payments to mostly male household heads	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE1.9 - Reduced community and Khoi San ecosystem services as a result of construction activities	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE1.10 - Reduced resource accessibility by IPs	As per Table 7-2	Construction	Contractor / Proponent	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
Culture and religion (Refer to Volume 1, Section 6.5.1, Tables 6.46 to 6.47)	SE2.1 - Cultural heritage disturbance due to disruption of access to gravesites	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE2.2 - Discrimination or inadvertent exclusion of indigenous peoples (Khoi San) in consultation processes (for work opportunities or general project awareness)	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
Employment (Refer to Volume 1, Section 6.5.1, Tables 6.48 to 6.51)	SE3.1 - Improved household incomes and livelihoods as a result of temporary employment opportunities	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
	SE3.2 - Increased gender marginalisation and vulnerability as a result of temporary employment opportunities	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
	SE3.3 - Increase in social pathologies as a result of migrant worker influx and increased spending power	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
	SE3.4 - Increase in the local economy as a result of increased income and spending by temporary workers/contractors	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
Health, safety and security (Refer to Volume 1, Section 6.5.1, Tables 6.52 to 6.58, and Addendum Section 3)	SE4.1 - Increased safety hazards and accidents to community members, Khoi San, and livestock due to unfenced project infrastructure, unsafe access routes or speeding heavy vehicles	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
	SE4.2 - Safety hazards and accidents to people and livestock	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
	SE4.3 - Nuisance impacts due to air, water and noise pollution	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	SE4.4 - Increased vulnerability of villagers due to harassment or tension between construction and security workers, and community members	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
	SE4.5 - Increased vulnerability of artisanal miners due to abuse by security, law enforcement and/or local police	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE4.6 - Improved community safety after removal of UXOs from project construction footprint (pre-construction)	As per Table 7-2	Pre-construction / construction	Contractor	As and when needed
		As per Table 7-2	Pre-construction / construction		As and when needed
	SE4.7 - Safety risk to community and personnel during removal of UXOs in project footprint (pre-construction)	As per Table 7-2	Pre-construction / construction	Contractor	As and when needed
		As per Table 7-2	Pre-construction / construction		As and when needed
	SE4.8 - Unfair distribution of electricity	As per Table 7-2	Operation	Proponent	Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
	SE4.9 - Perceived preferential project benefits	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE4.10 - ASM restrictions and consequent safety risks	As per Table 7-2	Construction	Proponent	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
	SE4.11 - Restriction of traditional agricultural practices	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
Socio-economic development (Refer to Volume 1, Section 6.5.1, Tables 6.59 to 6.60, and the Addendum in Volume 6)	SE5.1 - Improved access to electricity due to presence of transmission and distribution lines	As per Table 7-2	Operation	Proponent	Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
	SE5.2 - Downstream economic development	As per Table 7-2	Operation	Proponent	Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	SE5.3 - Dissatisfaction due to unfulfilled expectations	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	SE5.4 - Opportunity for economic participation by Indigenous Peoples	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
Cultural heritage (Refer to Volume 1, Section 6.5.2, Tables 6.61 to 6.62)	CH1 - Impact of the project on recorded cemeteries/ burial sites	As per Table 7-2	Pre-construction / construction	Contractor	Once off
	CH2 - Impact of the project on places of worship/ sacred sites and monuments	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
	CH3 - Impact of the project on heritage resources	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Pre-construction / construction	Contractor	Once off

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	CH4 - Impact of the project on recorded cemeteries/ burial sites	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
	CH5 - Impact of the project on places of worship/ sacred sites and monuments	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
	CH6 - Impact of the project on heritage resources	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
Community members' human rights (Refer to Volume 1, Section 6.5.3, Tables 6.66 to 6.72)	HR1.1 - Land and ecosystem service use	As per Table 7-2	Pre-construction / construction	Contractor	Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
	HR1.2 - Unjust process and modality of land acquisition	As per Table 7-2	Pre-construction / construction	Contractor	Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
		As per Table 7-2	Pre-construction / construction		Continuously
	HR1.3 - Unjust labour practices and marginalisation in the community	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction		Continuously
	HR1.4 - CHSS impacts	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Operation	Proponent	Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
		As per Table 7-2	Operation		Continuously
	HR1.5 - Violations of rights to freedom of opinion, expression, association and assembly	As per Table 7-2	All	Contractor / Proponent	Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	HR1.6 - Reduced access to information, consultation and participation	As per Table 7-2	All	Contractor / Proponent	Continuously
Women's rights (Refer to Volume 1, Section 6.5.3, Tables 6.73 to 6.74)	HR2.1 Discrimination against women in the workplace	As per Table 7-2	All	Contractor / Proponent	Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
	HR2.2Reduced safety and access to resources	As per Table 7-2	Construction	Contractor	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
Artisanal, small-scale mining (Refer to Volume 1, Section 6.5.3, Tables 6.75 to 6.77)	HR3.1 - Child Labour	As per Table 7-2	All	Contractor / Proponent	Continuously
		As per Table 7-2	All		Continuously
	HR3.2 - Inadequate OHS standards	As per Table 7-2	All	Contractor / Proponent	Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
	HR3.3 - Interactions with security forces	As per Table 7-2	All	Contractor / Proponent	Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	All		Continuously
		As per Table 7-2	Construction/Operation		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
Worker rights (Refer to Volume 1, Section 6.5.3, Tables 6.78 to 6.83)	HR4.1 - Discrimination of PAK Yatirim, RNT, contractor and supplier workers	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	HR4.2 - Lack of freedom of association	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	HR4.3 - Unjust and unfavourable working conditions	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	HR4.4 - Unsafe and unhealthy working conditions	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	HR4.5 - Forced labour and modern slavery	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	HR4.6 - Child labour	As per Table 7-2	Construction/Operation	Contractor / Proponent	Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
		As per Table 7-2	Construction/Operation		Continuously
	HR 4.7 - Human rights abuses of migrant workers	As per Table 7-2	Construction	Contractor / Proponent	Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
		As per Table 7-2	Construction		Continuously
Impacts due to demining of landmines (Refer to Volume 1, Section 6.6, Table 6-84)	DM1 - High-risk environmental and social impacts due to demining activities, including safety risks, habitat disturbance, and contamination (Pre-construction / construction)	As per Table 7-2	Pre-construction / Construction	Contractor / Proponent	Continuously
Impact of upstream and downstream services (Refer to Volume 1, Section 6.7, Tables 6-85 and 6-86)	SC1 - Environmental and social impacts from international and local supply chains, including emissions, resource extraction, and safety risks from hazardous material transport	As per Table 7-2	Construction	Contractor / Proponent	Continuously
	SC2 – Environmental and social impacts from improper waste management, potential contamination, and exposure to hazardous substances	As per Table 7-2	Construction		Continuously
Major Accidents Risk Assessment (MARA)	ND1 – Natural Disasters – Flooding (Major accident risk: Flooding of	As per Table 7-2	Construction / Operation	Contractor / Proponent	Continuously
		As per Table 7-2			Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
– Major Hazards (Refer to Volume 6 Addendum Section 3.2)	substations and infrastructure) (construction / operation)	As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	ND2 – Natural Disasters – Landslides (Major accident risk: Damage to infrastructure and risks to communities from landslides) (construction / operation)	As per Table 7-2	Construction / Operation		Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	FR1 – Fire hazards (Major accident risk: Equipment or bushfires near powerlines) (operation)	As per Table 7-2	Operation		Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	ER1 – Electrical hazards (Major accident risk: Electrocution incidents during maintenance) (operation)	As per Table 7-2	Operation		Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	SR1 – Hazardous material transport (Major accident risk: Spillage of insulating oil during transport and handling) (operation / decommissioning)	As per Table 7-2	Operation / Decommissioning		Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	DS1 – Disruption of services (Major accident risk: Power outages affecting critical services such as residential, industrial, and healthcare facilities) (operation)	As per Table 7-2	Operation		Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
Waste Management (Refer to Volume 6 Addendum Section 3.3)	WM1 – Waste Handling and Disposal - Soil and water contamination due to improper disposal of hazardous materials (construction)	As per Table 7-2	Construction	Contractor / Proponent	Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	WM2 - Construction waste generation and handling - Habitat degradation and visual pollution due to accumulation of construction waste (construction)	As per Table 7-2	Construction		Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	WM3 - Air pollution from burning of waste at construction sites (construction)	As per Table 7-2	Construction		Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	WM4 - Risk of spillage during transport of hazardous waste (operation)	As per Table 7-2	Operation		Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
Natural resources consumption (Refer to Volume 6 Addendum Section 3.4)	NR1 - Strain on local water resources due to high consumption for construction and domestic use (construction)	As per Table 7-2	Construction	Contractor / Proponent	Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2	Construction		Continuously

Aspect	Impact	Management measure	Project Phase	Responsibility	Frequency
	NR2 - Depletion of sand and gravel resources leading to habitat degradation (construction)	As per Table 7-2		Contractor / Proponent	Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
	NR3 - Ecological degradation from unregulated resource extraction (construction)	As per Table 7-2	Construction	Contractor / Proponent	Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously
		As per Table 7-2			Continuously

8 Land Acquisition and Resettlement Framework

A LARF forms a first phase of the land acquisition process. It provides an overview of the objectives, principles, policies, procedures, and organisational arrangements for dealing with land access and resettlement for the project.

The LARF also considers national legislation as well as international policies and standards. The latter includes the IFC Performance standard (PS) 5 and the IFC Handbook (2023) on land acquisition and involuntary resettlement. The standalone LARF document can be seen in Volume 3, Appendix O.

8.1 Land requirement

The anticipated maximum land take for the project is around 1 782.7 ha during the construction phase, and a maximum of around 247 ha during the operation phase. It is important to note that not all construction areas will be required at the same time. The impact of the construction works will be progressive as this sequential work is completed on consecutive lineal progress.

Although the OHL route alignment and substation locations was informed by high-level desktop and site screening to avoid sensitive environmental and social features, physical and economic resettlement is not completely avoidable.

8.2 Estimated Physical and Economic Displacement

The initial site visit in February 2024 revealed that physical relocation might not be necessary for the project, mainly due to the sparse population in the area. These observations suggest that by changing the OHL route and adjusting pylon placement, physical displacement can be nearly eliminated.

It was however observed that a number of pylons may be placed inside maize fields, which will result in economic displacement. It is important to consider that certain crops, like cassava, require around a year to reach harvest readiness. Farmers should still be compensated for the loss, even if the plants are not fully mature. Farming activities can be practiced under the powerline during operations, as long as safe clearances and building restrictions are followed.

However, the reconnaissance site visit was limited in its extent and detail and was used mainly to identify key considerations for the subsequent studies. There, a spatial analysis was also undertaken to determine a preliminary quantification of the houses / structures, as well as agricultural fields that may be affected by the proposed project. The following buffer sizes were applied to the proposed infrastructure:

- 220kV HV (100m buffer);
- MV60 kV (36m buffer); and
- Substations (3ha buffer).

In total, based on the conservative buffers, there could be 699 hectares of farmland and 1,518 houses or structures affected. This total can be broken down further as follows:

- From sub-station and MV Lines:
  - Grove Hydro Dam: No impact;
  - Chipindo: 0.33 ha of land and 342 buildings;
  - Cuvango: 235.28 ha of land and 432 buildings;
  - Jambo: 0.95 ha of land and 326 buildings; and
- From HV Lines:
  - 462.57 ha of farmland and 418 houses / structure.

8.3 Optimisation

As part of the ESIA and detailed engineering design works, PAK Yatirim will continue to optimise the alignment and placement of infrastructure with the goal of avoiding physical resettlement, and minimising economic displacement through:

- Spatial analysis in the AoI; and
- Stakeholder engagement with municipalities, community leaders and PAPs.

8.4 Resettlement Planning

Should physical resettlement be required, a detailed planning and implementation program should be developed, as illustrated below in Figure 8-1.

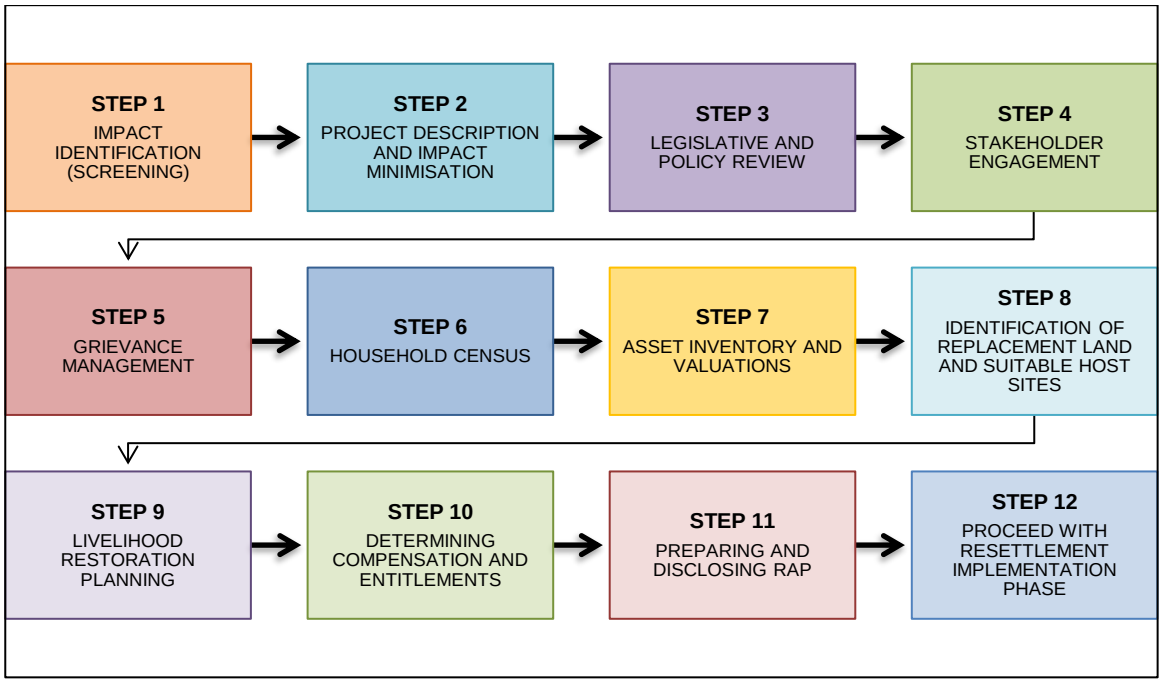

Figure 8-1: Key components of the resettlement process

8.5 Livelihood Restoration

The Project is expected to have an impact (albeit mostly temporary) on people's livelihoods. It will therefore be required to compile a LRP. The aspect of deforestation should also be considered.

The LRP will detail all aspects of livelihood restoration, and include core projects with detailed scopes of work, implementation arrangements, and monitoring and evaluation criteria. The LRP will contain criteria for the selection of project options, as well as vulnerability criteria and arrangements for project selection by vulnerable groups.

There are several rural development agencies / programmes in Angola that RNT could partner for the LRP.

9 Conclusions and Recommendations

9.1 Conclusions

A number of key conclusions can be drawn from ESIA process, and are presented below:

- The Gove-Chipindo-Cuvango-Jamba Transmission Line Project (*referred to as the Cassinga Electric Power Supply Project during the ESIA and stakeholder engagement*) represents a significant leap forward in Angola's energy infrastructure development. The project is poised to significantly enhance the electric power distribution network in Huíla Province, catalysing economic development and improving the livelihoods of the Angolan people, meeting the growing energy demands of the region and ensuring the interconnection of Gove Hydroelectric Power Plant to the Project and the future OHL 220 kV interconnection to Cuchi/Menongue;
- The ESIA has been developed in fulfilment of the requirements of the Angolan Ministry of Environment's Presidential Decree No. 278/22 and other pertinent national legislation as well as GIIP, notably standards and guidelines set out in the IFC, EPs, ILO, OECD and UN;
- The Project has been officially registered with the MINAMB (Protocol No. 5792017244) and is categorised as a Category B project;
- The Project area contains a number of biophysical features (e.g. arable soils, Miombo woodlands, rivers and streams and air quality) and socio-economic characteristics (e.g. subsistence livelihoods, under-developed social infrastructure and services and cultural heritage) that could potentially be impacted by construction and operation activities;
- The Critical Habitat (CH) Assessment recognises that while definitive CH presence cannot be confirmed at this stage, the Miombo, Secondary Miombo Woodland and Freshwater Habitats are precautionarily listed as Critical Habitat due to limited site-specific data and the region being largely unstudied. Consequently, a Biodiversity Action Plan (BAP) is not required at this stage. However, future pre-construction monitoring studies and walkdowns will be conducted to gather additional data and reassess CH status as necessary;
- Based on the specialist studies, Project activities are likely to give rise to a number of environmental and social impacts throughout all phases (i.e. construction, operation and decommissioning). Several benefits are also likely to arise from the Project, which could potentially improve livelihoods and quality of life through local development;
- The impact assessment indicates that the identified biophysical and socio-economic impacts can mainly be reduced to low or moderate significance, after the implementation of management measures. These include impacts relating to hydrology, biodiversity, visual and socio-economic aspects. Visual impacts will remain high due to the long-term aesthetic effect of the OHLs. A number of the socio-economic impacts are assessed to be positive due to the provision of power to communities in need;
- It is anticipated that the Project could result in a number of direct and indirect cumulative impacts on valued environmental aspects, including freshwater ecosystems and watercourses, Miombo habitats, road infrastructure and traffic and cultural heritage. The Project can potentially catalyse a number of socio-economic benefits that present opportunities for longer-term cumulative development outcomes;
- The Project proponent and contractors will need to take account of environmental and social risks that may present challenges, notably those related to climate change and human rights. Climate change induced risks should be carefully considered in the design, construction and operation of the Project. In addition, careful attention should be given to human rights such as labour practices and treatment of project affected people during the Project lifecycle;
- The ESMP covers information on the management and/or mitigation measures that should be taken into consideration to address environmental and social impacts during all phases of the Project. The ESMP outlines the systems, management plans and procedures that are applicable to the Project, which include a biodiversity management plan, waste management plan, cultural heritage management plan, resettlement policy framework and stakeholder engagement plan and grievance mechanism, and others;
- Recommendations have been made for additional Project-specific execution management plans and procedures that are essential for implementing the ESMP and should be developed before the commencement of construction activities; and

- The implementation of the management and monitoring plans will ensure that mitigation measures are effectively applied to reduce the effect of identified impacts during all Project phases Consistent and ongoing management and monitoring will ensure that environmental regulatory requirements are upheld in order to mitigate any lasting effects on the environmental quality of the population residing in the surrounding areas. By applying the ESMP and study recommendation, the Project proponent will be able to align with GIIP requirements.

9.2 Recommendations

A number of recommendations which have been discussed in the body of the ESIA and are summarised below:

- The Project EPC in cooperation with RNT should develop, formalise and implement an ESMS for the project as a whole. The ESMP should form part of the management system. Where necessary, specific management plans and procedures should be revised and updated to reflect changing Project needs and contexts;
- To align with IFC PS6 requirements, the Project has implemented a Biodiversity Management Plan (BMP) and a No Net Loss (NNL) Strategy Framework to mitigate biodiversity risks, guide conservation actions, and ensure appropriate habitat management. Should further data confirm the presence of CH-qualifying species, the BMP and NNL Strategy should be adapted accordingly to incorporate necessary offsetting or enhanced mitigation measures;
- Before commencing the construction phase, PAK Yatirim should develop and implement that Project-specific execution management plans and procedures. Framework guidelines for developing these plans are outlined in Section 7.5. These plans should be reviewed and updated as necessary, and relevant plans should be adopted by RNT during the operation phase;
- It is recommended that a Grievance Resolution Committee be established for the Project. This will allow for the various priority levels of grievances to be investigated in the required timeframes during the Project lifecycle. This committee should comprise all the relevant department heads (e.g. safety, health, environment, social and risk), site manager/s, general/operations manager/s;
- It is recommended that a Grievance Approval Committee be established for grievances that are escalated for review and resolution. Reputable and independent external stakeholders could be included in this GAC as required to impartially facilitate the resolution of grievances;
- In the likely event of physical resettlement, a detailed planning and implementation programme will need to be developed. The first step would be to identify impacts. This would be followed by project description and impact mitigation. A legislative policy review would be followed by stakeholder engagement, and the establishment of a grievance mechanism. A household census, asset inventory and identification and replacement of plan would follow. Where appropriate, livelihood restoration planning and determining compensation would take place. A RAP would be prepared and disclosed, and finally the resettlement implementation phase would take place;
- The Waste Management Plan prepared for the Project must, once approved, be implemented to ensure that all waste streams are suitably managed to avoid impacts on the environment and human health;
- There will need to be ongoing engagement with identified stakeholders during life of the Project. This stakeholder engagement process should be guided by the SEP that has been developed for the Project. The SEP includes methods of engagement, communication channels and timelines for interactions. The SEP must be to be updated on an annual basis to ensure that it reflects changes in the stakeholder landscape;
- A separate SEP (Resettlement SEP or “RSEP”) would be required if any displacement occurs as a result of the Project, including physical resettlement and economic (livelihood) impacts. Such an RSEP is discussed in the LARF that has been developed as part of the ESIA; and
- A separate Grievance Mechanism should be established if any displacement occurs as a result of the Project, including physical resettlement and economic (livelihood) impacts. Such a Grievance Mechanism is discussed in the LARF that has been prepared as part of this Project ESIA.

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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