

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
(ESMP) FOR THE CONSTRUCTION OF LOW AND MEDIUM
VOLTAGE LINES FOR PRODUCTIVE USERS IN RWANDA.



Submitted to:

Energy Development Corporation Limited (EDCL)

Electricity Access Roll-Out Programme (EARP)

Rwanda Electricity Sector Strengthening Project (RESSP)

By



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EXECUTIVE SUMMARY

The Government of Rwanda (GoR) through the Ministry of Infrastructure (MININFRA) has proposed for funding under World Bank IDA, the Rwanda Electricity Sector Strengthening project (RESSP) which is in line with NST1 (National Strategies for Transformation) for the energy sector. The RESSP will allow the Government of Rwanda to achieve and expand upon result from Electricity Access Rollout Programme EARP which continues to construct the backbone of the power supply system to rural areas and will align generation capacity and demand to achieve an efficient tariff. EARP is being implemented within the framework of a Sector Wide Approach (SWAP) to encompass all donors active in the sector under one common sector investment program. The aim of RESSP is to increase Access to Electricity and to Strengthen the Capacity in Electricity Sector aiming to improve the performance of the electricity sector institution.

This project will focus on subprojects of productive users and will cover 57 individual productive uses such as: Milk Collection Centers (MCC), Water Pumping Stations (WPS), Health Facilities, Administrative offices and Schools which are distributed in 15 districts of Rwanda namely: Gakenke, Gatsibo, Huye, Kamonyi, Kayonza, Kirehe, Muhanga, Musanze, Ngoma, Ngororero, Nyagatare, Rubavu, Ruhango, Rutsiro and Rwamagana.

This Environmental and Social Management Plan (ESMP) is prepared in relation to the above project to comply with national legislation and international environmental and social standards related to energy projects.

The ESMP was prepared by Mr. KABANDA Philbert, a Registered EIA Lead Expert (RAPEP/EA/021/2018) under the Rwanda Association of Professional Environmental Practitioners (RAPEP) and a Certified Property Valuer (RC/IRPV/169/2018) under the Institute of Real Properties Valuers of Rwanda (IRPV) with vast experience in similar projects.

The aims and objectives of ESMP is to inform the process of decision-making by identifying the potentially significant environmental effects and risks of development projects on a short term and to promote sustainable development by ensuring that development projects do not undermine critical resource and ecological functions or the wellbeing, lifestyle and livelihood of the communities and people who depend on them.

The ESMP evaluated the project in view of the potential impacts (both negative and positive) related to the construction of the low and medium voltage lines for productive uses in the 15 Districts of Rwanda. The ESMP has been prepared on the basis of field surveys, site visits and desk studies including; review of key documents relevant to the environmental legislative and policy frameworks for Rwanda, identification of potential adverse impacts and recommendation of an Environmental and Management and Monitoring Plan.

Special attention has been given to the management of site installation, vegetation clearing, affected people and properties compensation, site clearing, impacts on the vegetation, soil, ground and surface water, air quality, human nuisance, dust generation increase, flora and fauna, wastes generation and cultural heritage.

In addition, this ESMP indicates, the positive impacts of the project that are encouraging and dwell mainly on socio-economic improvements, electricity supply, employment, wealth creation, affordability of construction materials and affordability of medical insurance and education for the employed workers.

Negative impacts include crops and trees losses, soil pollution, disruption of natural drainage, water pollution due to construction in water front structures, construction spoil disposal and waste disposal; increase in water demands, increase in noise, air pollution in the vicinity of construction corridor.

Furthermore, the ESMP proposes the measures to mitigate the identified negative impacts and enhance the positive ones which proposed. An environmental and social monitoring plan indicating the mitigation measures, procedure to be followed, the responsible parties to implement these measures and likely cost of implementing each of these mitigation measures have all been included in this plan.

The ESMP concludes that the negative impacts caused by the construction of the low and medium voltage lines are limited to the Right of Way (RoW) where the activities are planned and can be mitigated, minimized or managed.

The ESMP further recommends that the environmental and social monitoring is implemented and a qualified environmentalist is tasked to ensure compliance of the ESMP implementation.

Further, the ESMP provides recommendation in relation to compensation process and timing, inventory of properties, to recruiting an environmental and social specialist to monitor the ESMP implementation, various training, awareness, tool box meetings and sensitization programme, excavated soil management, noise generated by the project activities, waste management, incidents recording, GRM records and establishment of a Grievance Redress Mechanism committee, gender related requirements and child abuse or exploitation.

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LIST OF ABBREVIATIONS

AP:	Angle Point
BP:	Bank Policy
CAE:	Child Abuse and Exploitation
CBD:	Central Business District
CEC:	Century Engineering Contractors
DbA:	Decibel
EDCL:	Energy Development Corporation Limited
EACCCP:	EAC Climate Change Policy
EIA:	Environmental Impact Assessment
EDPRS:	Economic Development and Poverty Reduction Strategy
EARP:	Electricity Access Roll-Out Programme
ESF:	Environmental and Social Framework
ESS:	Environmental and Social Standards
ESMP:	Environmental and Social Management Plan
EPC:	Engineering, Procurement and Construction
EA:	Environmental Assessment
ECOSAN:	Ecological Sanitation
GBV:	Gender Based Violence
GoR:	Government of Rwanda
GRC:	Grievance Redress Committee
IDA:	International Development Agency
IRPV:	Institute of Real Properties Valuers
kV:	Kilo-Volt
MCC:	Milk Collection Center
MININFRA:	Ministry of Infrastructure
NST:	National Strategy for Transformation
PAP:	Project Affected People
STD:	Sexually Transmitted Diseases
RwF:	Rwanda Franc
RAP:	Resettlement Action Plan

RAPEP:	Rwanda Association of Professional Environmental Practitioners
REMA:	Rwanda Environmental Management Authority
RDB:	Rwanda Development Board
RBS:	Rwanda Bureaus of Standards
RESSP:	Rwanda Electricity Sector Strengthening Project
RPF:	Resettlement Policy Framework
RoW:	Right-of-Way
SDG:	Sustainable Development Goals
SWAP:	Sector Wide Approach
USD:	United States Dollar
ToR:	Terms of Reference
WASAC:	Water and Sanitation Corporation
WPS:	Water Pumping Station

CHAP I: INTRODUCTION

1.1 General introduction

In Rwanda like in many other countries reducing the burden of environmental impacts is necessary if development is to become sustainable. As resources become limited, environmental impacts are becoming more complex, and as a result, ESMP is of ever increasing importance as a tool for development decision-making and projects implementation.

In practice, ESMP is applied primarily to prevent or minimize the adverse effects of major development projects. It is also used as a planning tool to promote sustainable development by integrating environmental considerations into a wide range of proposed actions. Most notably, the use of policies and plans to focus on the highest levels of decision making and take care of the environment in considering development alternatives and options.

More limited forms of ESMP can be used to ensure that smaller scale projects, conform to appropriate environmental and social standards or site and design criteria.

The aims and objectives of ESMP can be divided into two categories.

- The immediate aim (short term) of an ESMP is to inform the process of decision-making by identifying the potentially significant environmental effects and risks of projects development and implementation.
- The ultimate aim (long term) of an ESMP is to promote sustainable development by ensuring that development projects do not undermine critical resource and ecological functions or the wellbeing, lifestyle and livelihood of the communities and people who depend on them.

Rwanda like any other global player and a signatory of a number of International environmental treaties and protocols has embarked on actions to protect, preserve and improve the quality of the environment and ensure sustainable resources utilization. The protection and safeguarding of environment has become an important concern in Rwanda. Key environmental challenges concern; deforestation, soil erosion, misuse of wetlands and poor liquid and solid waste management associated with negative impacts on human and biodiversity thus a hindrance to sustainable development of the country.

This trend of events has led to the reform of environmental policies, legal and institutional framework aimed at safeguarding the environment, an indication of government concerns to awaken the minds of the public to the dangers of environmental degradation. This will promote and enhance the wellbeing of the present and future generations.

Realizing the magnitude of the problem, the Government of Rwanda has got on reforming strong environmental policies, legal and institutional instruments to safeguard the present and future generation to ensure sustainable development basing on Vision 2050.

1.2 Contractor presentation

The contractor is Century Engineering Contractors Limited (CEC Ltd) and is a subsidiary of EPC Africa Group which is based in Kigali. CEC Ltd is specialized in High Voltage Transmission Lines Construction and rendering technical services to the energy and infrastructure sector in Africa. The Group focuses in engineering, procurement, Construction, power generation, transmission and distribution.

The Company combined Vision and Mission are to build affordable Energy and Tele-Communication infrastructures to all corners of the Livable Environment on the African Continent.

CEC Ltd has vast experience in the following core activities: Construction Project Management, Compliance & Quality control, Project Supervision, Turnkey project, Conceptual and preliminary design, leading in health, safety and environmental performance, Delivering on our promises & client vision and Systems re-engineering review and audit.

1.3 Environmental and Social Expert presentation

The Environmental and Social Expert, Mr. KABANDA Philbert a is Registered EIA Lead Expert (RAPEP/EA/021/2018) under the Rwanda Association of Professional Environmental Practitioners (RAPEP) and a Certified Property Valuer (RC/IRPV/169/2018) under the Institute of Real Properties Valuers of Rwanda (IRPV). He has a bachelor's degree in Civil Engineering and Environmental Technology and a Master's degree in Environmental Planning and Management with more than 16 years of experience in various sectors. Recent similar assignments include Environmental and Social, health and Safety Assessment for electrification projects, irrigation projects, Urban development plants, roads, buildings, energy, agriculture, mining, hydropower, Environmental Audit for mining projects, hydropower plants construction and irrigation projects.

1.4 Objective of the study

1.4.1 General Objective

The ESMP was conducted in order to examine, analyse and assess the proposed low and medium voltage lines construction for productive uses so that the lines construction is implemented in an environmentally sound and sustainable manner. The immediate aim of ESMP is to inform the process of decision making by identifying the potentially significant environmental effects and risks of development projects. The ultimate (long term) aim of ESMP is to promote sustainable development by ensuring that development projects do not undermine critical resource and ecological functions or the wellbeing, lifestyle and livelihood of the communities and people who depend on them.

The general objective of this study is to carry out a comprehensive ESMP study for the construction of low and medium voltage lines in 15 Districts of Rwanda project that will guide environmental, social compliance process during construction and operation phases.

1.4.2 Specific objectives

The specific objectives of the study are the following:

1. Assess how environmental and social baseline conditions would be altered by the proposed low and medium voltage lines construction project;
2. To detect the effects of the project on the neighboring environment such as the water bodies, the soil, the people, the infrastructure, the fauna, the flora and the atmosphere;
3. To propose mitigation measures and alternatives measures where it is noticed that adverse effect may occur;
4. To set up an Environmental and Social Management and Monitoring Plan that will govern all activities of the project for the better protection of the environment.

1.5 Approach and methodology

In general, the ESMP was prepared by first reviewing of all existing information on the project area including its surroundings, review of existing project documents, review of the relevant policies, laws and regulations of Rwanda. Upon reviewing the existing information on this project area, a detailed analysis of the area was carried out through site visits, interviews with current workers and local authority. The aim of the site visit was to assess the surrounding environment (physical and human) of the proposed low and medium voltage lines.

After collecting the data from the site visits, an analysis done to assess activities under the low and medium voltage lines direct, indirect and cumulative impacts. These impacts were then weighed on their significance based on whether they are direct or indirect, their frequency,

whether they were reversible or irreversible, time of occurrence, among others. It is those impact activities that were considered in establishing mitigation measures and eventually the environmental and social management and monitoring plan.

1.6 Responsibility

The Environmental Assessment Practitioner is to provide the technical expertise on:

- i. Identification of potential impacts of the project,
- ii. Impacts mitigation and management options and legal framework.
- iii. Development of the ESMP with the content below:
 - Introduction and background
 - Project description
 - Institutional and legal framework
 - Institutional framework for the implementation & Monitoring of ESMP
 - Describe the project impacts and its mitigation measures:
 - Environmental impacts
 - Social impacts
 - Training plan
 - Mitigation measures, Management and monitoring plan.
 - Estimated cost of ESMP implementation
 - Roles and responsibilities of each institution

CHAP II: INSTITUTIONAL, LEGISLATIVE AND POLICY FRAMEWORKS

The ESMP considers the national policies, laws and strategies guidelines and World Bank Environmental and Social Framework related to Environmental and Social Safeguards consideration which are the main tools to assist in implementing the ESMP and monitoring parameters to ensure the distribution lines are constructed in compliance with the mentioned laws, policies and guidelines as detailed below:

2.1 National Policies

Policy, Plan, Strategy	Objective	Relevance
Rwanda Vision 2050	The main objective of Vision 2050 to ensure high standards of living for all Rwandans. In five main areas of: Quality of Life, Modern Infrastructure and livelihoods, Transformation for prosperity, Values for Vision 2050 and International cooperation and positioning.	The implementation of this project will contribute in achieving the main objective of Vision 2050 by providing electricity and job opportunities for quality of life, modern infrastructure and transformation for prosperity in the project areas.
National Strategy for Transformation (NST 1) 2017 - 2024	NST 1 is the implementation instrument for the remainder of Vision 2020 and for the first four years of Vision 2050 to provide the foundation and vehicle towards Vision 2050 through specifically economic and social transformation.	The implementation of this project will contribute to achieve NST1 objectives by providing electricity and employment opportunities hence contributing to economic and social transformation.
Rwanda Vision 2020, revised 2012	To build a nation in which pressure on natural resources, particularly on land, water, biomass and biodiversity, has significantly been reduced and the process of environmental pollution and	During implementation of this project the contractor and local communities will be sensitized to efficiently manage natural resources and environment as stipulated in the Rwanda Vision 2020.

Policy, Plan, Strategy	Objective	Relevance
	degradation has been reversed	
National Environment and Climate Change Policy, 2019.	The main objective of the National Environment and Climate Change Policy is to make Rwanda a nation that has a clean and healthy environment, resilient to climate variability and change that supports a high quality of life for its society.	The project implementation will comply with this policy by ensuring health and safety standard on environment and climate change; only approved quarries and sand pits will be used and ensure restoration plan are implemented at the end of the project implementation.
Energy Policy 2004	The policy states that electricity needs to be made reliable and affordable to customers with very low demand, for lighting and limited domestic purposes. A system of threshold pricing for rural areas and industries could, therefore, be considered. In the new emerging energy market, prices have to be monitored, and predictable as well as transparent mechanisms established for necessary adjustments.	This project will contribute to achieve the goals of this policy by providing affordable electricity in rural and remote areas of the country.
National Land Policy, 2004	The overall objective of the national land policy is to establish a land tenure system that guarantees tenure security for all Rwandans and give guidance to the necessary land reforms with a view to good management and rational use of national land resources.	Basing on this land policy, the implementation of this project will respect mechanisms which guarantee land tenure security. Where not possible, fair compensation will be provided.

Policy, Plan, Strategy	Objective	Relevance
National Health Policy, 2016	One of the objectives of Rwanda Health Sector Policy is to improve the quality of life and demand for services in the control of disease. The policy identifies the most common illnesses as a result of unhealthy living or working environment.	This project will contribute to the improvement of the quality of life through provision of electricity and other related services for disease control such as health centers. The project will comply with this policy by ensuring health safety and the good working conditions and implement awareness programme on Covid 19, HIV Aids, STD, Malaria and Ebola to workers.
National sanitation policy, 2016	The policy provides for decentralization in line with the national decentralization policy, institutional aspects, integrated watershed management, monitoring and assessment and participatory approach to water and sanitation among other sectoral reforms in Rwanda	As part of the project, the construction of the Water Pumping Stations will significantly contribute to the improvement of sanitation conditions.
National Policy for water resources management, 2011	The water policy aims at fair and sustainable access to water, improvement of the management of water resources, etc. through reforestation , water catchments areas and water collection	The project will comply with this policy by installing proper and appropriate Water Pumping Stations in the designated areas of the project.
National Biodiversity Strategy and Action Plan, 2016	This strategy defines the objectives and priorities for the conservation and sustainable management of biodiversity. The plan includes hillsides and wetlands and protected areas as some of the	This project falls under the objectives of this policy for the conservation and sustainable management of biodiversity by avoiding the use of wetlands and any other protected areas.

Policy, Plan, Strategy	Objective	Relevance
	areas that need to be conserved.	
Urbanization and Rural Settlement Sector Strategy 2013 - 2018	The Urbanization and Rural Settlement Sector encompasses social, economic and environmental activities. It has relevance to both, urban and rural areas. According to policies of Rwanda, access to a decent housing and favourable living conditions is a fundamental right for all citizens.	The project is in line with the action plan as the management of ongoing urbanization requires the establishment of infrastructures for development planning, zoning and urban renewal, with the provision of adequate infrastructure facilities such as low and medium voltage lines.
Rwanda Biodiversity Policy, 2011	The goal of this Policy is therefore: To conserve Rwanda's biological diversity, to sustain the integrity, health and productivity of its ecosystems and ecological processes, whilst providing lasting development benefits to the nation through the ecologically sustainable, socially equitable, and economically efficient use of biological resources.	This project will comply with this policy by avoiding destruction of natural and resources through avoidance and minimization of vegetation clearance (habitat destruction).
National Urbanization Policy, 2015	One of its objective is: Improvement of the living conditions of the population in existing precarious neighbourhoods, and restructuration and equipment of those neighbourhood's with basic infrastructure, and secure land tenure status.	The project will improve the living conditions of the population by providing basic infrastructure such low and medium voltage lines hence electricity.
National	It aims at providing a framework	This policy will govern the project

Policy, Plan, Strategy	Objective	Relevance
Occupational Safety and Health Strategy, 2019	for coordination of OSH activities among public, private, employees organizations and civil society institutions	implementation by establishing safety and health standards at workplace and ensure compliance with occupational safety and health standards.
Environmental Health Policy, 2008	The overall objective of the Environmental Health Policy is provision of adequate environmental health services to all Rwandans with their active participation.	This project will comply with this policy by providing good environmental, social, health and safe working conditions to workers and neighbouring residents.
National Strategy for Climate Change and Low Carbon Development, 2011	This Strategy is the first attempt at plotting a climate resilient and low carbon development pathway for Rwanda. It is the start of a continuous process which is described in the Enabling Pillars and it will be implemented through the Programmes of Action	This project will contribute to the achievement of the goals by achieving socio-economic development (electricity) that is resilient to economic, social and environmental shocks related to population growth and climate change.
National Sanitation Policy, 2016.	The policy mission is to promote, plan, build and operate services in a sustainable, efficient and equitable manner. Specific policy objectives are formulated in a way to be directly used for strategic planning and monitoring	The project will implement integrated solid waste management in ways that are protective to human health and the environment. All wastes shall be separated, collected and disposed off by registered companies and dumped at well gazetted dumping sites.

2.2 Legislative Framework

Law/Regulation /Order	Objective	Relevance
The Constitution of the Republic of Rwanda, 2003 as revised in 2015	The Constitution is clear on the right to property that it will not be encroached upon except in public interest and in accordance with the provisions of the law. The constitution specifies that everyone has the right to live in a clean and healthy environment and everyone has the duty to protect, safeguard and promote the environment.	This project will comply with the Constitution by implementation of applicable laws (Laws on Expropriation, labour, and Environment) and will ensure socio-economic development and comply with environmental laws.
Law on Environment, 2018	This Law determines modalities for protecting, conserving and promoting the environment.	Given the nature of this project and based on this law, the project activities are classified under this project that must undergo an Environmental Assessment to ensure the protection, conservation and promotion of the environment.
Law n°21/2011 of 23/06/2011 governing electricity in Rwanda	This Law governs activities of electric power production, transmission, distribution and trading within or outside the national territory of the Republic of Rwanda.	This project shall comply with this law by ensuring all required licencing for power production, transmission and distribution are acquired.
Law N°49/2018 of 13/08/2018 determining the use and management of	This Law determines the use and management of water resources in Rwanda. This law governs both natural and artificial water and their boundaries and provides guiding principles.	This project will comply with this law by the protection and rational use of water resources which constitute the obligations of each and every person and project. In

Law/Regulation /Order	Objective	Relevance
water resources in Rwanda		addition as stipulated in the law, the project will avoid dumping, spilling or depositing anything that may pollute water resources.
National Land Law, 2013	This Law determines modalities of allocating, acquisition, transfer, use and management of land in Rwanda. It also establishes the principles applicable to rights recognized over all lands situated on Rwanda's national territory and all rights united or incorporated with land, whether naturally or artificially.	Since the project will affect lands and hence and compensation, based on this law is relevant to the project. Land in Rwanda is allocated or leased to individual evidenced by a certificate of land registration. The project will ensure rights on lands are considered.
Law N° 13/2014 of 20/05/2014 on Mining and Quarry Operations	This Law determines mining and quarry exploitation in Rwanda and caters for activities relating to quarry licence application, transfer of quarry licences, rights and responsibilities of the holder of a quarry licence, relinquishment of a quarry licence area and Cancellation of a quarry licence.	Quarries and sand pits will be required as construction materials. This law will be enforced during project implementation by ensuring quarries are approved by the Districts and restoration plans are provided and implemented at the end of the project.
Law relating to expropriation in the public interests, 2015	This Law determines procedures relating to expropriation in the public interest.	Since the project is in the public interest, this law will be applied during compensation exercise of the people affected by the project.
Law Regulating Labor in Rwanda, 2009	This law applies employment relations based on employment contract, apprentices, interns, self-employed person, informal sector, occupational health and safety and	The project will abide by good conducive working conditions during the implementation of the project. Labour law will be used to ensure good working conditions

Law/Regulation /Order	Objective	Relevance
	the right to form trade unions and employers' associations.	and wellness. All forms of discrimination will be avoided during recruitment of workers.
Law governing the preservation of air quality and prevention of air pollution in Rwanda, 2016	This Law determines modalities for preservation of air quality and prevention of air pollution in Rwanda.	As per this law, the project will implement measures aimed at the preservation of air quality as well as all elements or activities likely to affect air quality or pollute the atmosphere in the project areas by watering in dry season where necessary and ensure the use of equipment with low gas emissions.
Law governing biodiversity in Rwanda, 2013	This Law determines modalities for management and conservation of biological diversity within Rwanda.	The management and conservation of biological diversity in the project areas will be considered during the project implementation where necessary by implementing the ESMP and monitoring plan of this report.
Ministerial Order determining the list of prohibited plains to constructions, 2005	This Order determines the list of plains on which construction is prohibited and stipulated that whenever appropriate studies establish the need for other plains not on this list to be protected from construction, the Minister in charge of Environment may order that construction to be prohibited on those plains.	The project will comply with this ministerial order by not approving any construction on the areas provided on the list of prohibited plains to construction. The site visit did not however find any plain in proposed areas.
Ministerial order No 007/2008 of	The Ministerial order provides a lists of protected animal and plant species and their classifications as	The project will comply by this ministerial order by ensuring not to disturb or kill protected animals

Law/Regulation /Order	Objective	Relevance
<p>15/08/2008 establishing the list of protected animal and plant species</p>	<p>mammals, birds, reptiles for animals and corresponding scientific names for both the protected animals and plants</p>	<p>and plants. The assessment did not show the existence protected fauna in the project area.</p>
<p>Ministerial order relating to the requirements and procedure for environmental impact Assessment (EIA), 2018</p>	<p>The order defines the Environmental Impact study as a systematic way of identifying environmental, social and economic impacts of a project before a decision of its acceptance is made. The order specifies the application and review procedure and schedule.</p>	<p>In this report, the assessment has considered identifying environmental, social and economic impacts of all activities of the project before taking decision to comply with this ministerial order.</p>
<p>Ministerial Order determining modalities of establishing and functioning of occupational health and safety committees, 2012</p>	<p>This Order determines modalities of establishing and functioning of occupational health and safety committees.</p>	<p>As a good practice, health and safety will be given a priority by ensuring regular toolbox meetings on health and safety during construction. Health and safety committees will be established and governed by this ministerial order during project implementation.</p>
<p>Ministerial Order determining conditions for occupational</p>	<p>This Order determine the general and specific rules and regulations relating to health and safety at workplace in order to secure the safety, health and welfare of</p>	<p>As a good practice, health and safety will be given a priority by ensure regular toolbox meetings on health and safety during construction. Health and safety</p>

Law/Regulation /Order	Objective	Relevance
health and safety, 2012	persons at work and protect them against risks to safety and health arising from work	committees will be established and governed by this ministerial order during project implementation.
Rwanda building control regulation, 2012	The Building Control Regulations is a nationally recognized document, which will serve as a standard reference for the regulation of building design and construction.	The project is classified as a building project hence will be in compliance with the Rwanda building control regulation

2.3 International Legislative Framework

Rwanda is a signatory to a number of conventions on sustainable development and is member of various bilateral and multilateral organizations amongst those that have an impact to this project include:

- i. Our common future or Brundtland report to the World Commission on Environment and Development, 1987
- ii. United Nations Framework Convention on Climate Change, 1992 Sustainable Development Goals (MDGs), 2017
- iii. Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1998
- iv. EAC Climate Change Policy (EACCCP), 2010

2.4 World Bank Environmental and Social Framework (ESF)

Environmental and Social Standard	Yes	No	Objective	Relevance
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	[X]	[]	ESS1 sets out the Borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing	<p>The Project triggers this policy because although there is justification for the proposed low and medium voltage lines, there are also environmental and social risks and impacts associated with the construction and operation and maintenance of the distribution lines. ESS1 requires an Environmental Assessment (EA) of projects proposed for WB financing to ensure that they are environmentally sound and sustainable, and thus to improve decision making.</p> <p>It is in this regard that this ESMP helps to establish a detailed Environmental and Social Management Plan that will provide guidelines for environmental stewardship of the construction and operational phases of the Project.</p>

Environmental and Social Standard	Yes	No	Objective	Relevance
ESS 2: Labour and Working Conditions	[X]	[]	ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth.	The Project triggers this policy because the implementation of the proposed project will utilize people in the day to day working on to the projects and this persons need to be treated according the Labour law where the work conditions must meet the required standards.
ESS 3: Resource Efficiency and Pollution Prevention and Management	[X]	[]	ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels	The activities of the Project will trigger this policy as the proposed low and medium voltage lines will require the use various resources which need to be used efficiently while at the same time preventing the pollution of their sources amongst others. The resources include air, water, vegetation and land.
ESS 4: Community Health and Safety	[X]	[]	ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular	The activities of the Project will trigger this standard as the proposed project will be located in areas which are occupied by people thus health and security risks of the people and workers will be affected.

Environmental and Social Standard	Yes	No	Objective	Relevance
			circumstances, may be vulnerable.	
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	[X]	[]	ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition ¹ or restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood), ³ or both.	The activities of the Project will trigger this policy as the medium voltage lines construction will affect some properties located in areas where people are conducting mostly farming activities, livestock and residence. However, due to the nature of the project, there shall be no involuntary resettlement.
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	[X]	[]	ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development.	This standard will be triggered as the line route shall pass through marshlands and forests and poor management of living natural resources may lead to environmental and ecosystem degradation.

Environmental and Social Standard	Yes	No	Objective	Relevance
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ESS7 applies to a distinct social and cultural group	Not triggered
ESS 8: Cultural Heritage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future.	Although the Project line route will not affect any cultural heritage, this standard may be triggered as there are probabilities of chance find during construction. A Chance Find Procedure is proposed in the following chapters.
ESS 9: Financial Intermediaries	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ESS9 recognizes that strong domestic capital and financial markets and access to finance are important for economic development, growth and poverty reduction.	Not triggered
ESS 10: Stakeholder Engagement and Information Disclosure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ESS10 recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international	The activities of the Project will trigger this policy as the low and medium voltage lines will be implemented where people are located and they will be involved. Various consultation meetings have been carried previously by the client with Project Affected persons, the Districts and Sectors officials and other relevant staff of the key

Environmental and Social Standard	Yes	No	Objective	Relevance
			practice.	implementing partners. Given the elapsed time since the ESIA consultations were carried out, the Contractor shall carry other consultations to updates the PAPs and stakeholders on the project phasing and implementation.

CHAP III. PROJECT DESCRIPTION AND COMPONENTS

The low and medium voltage lines for productive uses in Rwanda will focus on subprojects of productive users and will cover 57 individual productive uses such as: Milk Collection Centers (MCC), Water Pumping Stations (WPS), Health Facilities, Administrative offices and Schools which are distributed in 4 Provinces (Eastern, Southern, Northern and Western) covering 15 districts namely: Gakenke, Gatsibo, Huye, Kamonyi, Kayonza, Kirehe, Muhanga, Musanze, Ngoma, Ngororero, Nyagatare, Rubavu, Ruhango, Rutsiro and Rwamagana. The details of the description and components are detailed in the paragraphs below.

3.1 Eastern Province

3.1.1 Location

In the Eastern Province, the project shall be implemented in 6 districts of Gatsibo (Rugarama and Kageyo Sectors), Kayonza (Ndego and Mwiri Sectors), Kirehe (Mpanga, Kigarama and Nasho Sectors), Nyagatare (Rwimiyaga and Karangazi Sectors), Ngoma (Mutenderi Sector) and Rwamagana (Kigabiro and Mwirire Sectors).

3.1.2 Subprojects

In the Eastern Province, the project shall be comprised of the following sub projects:

- 1 Cell office
- 1 Primary School
- 1 Sector Office
- 8 Water Pumping Stations
- 4 Health Centers
- 2 Health Posts
- 1 Milk Collection Center

3.2 Southern Province

3.2.1 Location

In the Southern Province, the project shall be implemented in 4 districts of Kamonyi (Kayumbu, Mugina, Nyamiyaga, Rukoma, Rugarika and Kayenzi Sectors), Muhanga (Kabacuzi, Rugendabari, Kibangu, Kiyumba, Nyamabuye and Rongi Sectors), Huye (Rwaniro and Mbazi Sectors) and Ruhango (Kinihira Sector).

3.2.2 Subprojects

In the Southern Province, the project shall be comprised of the following sub projects:

- 13 Secondary Schools
- 2 Water Pumping Stations
- 3 Health Centers
- 2 Health Posts
- 1 Primary School
- 2 Sector Office
- 1 Milk Collection Center

3.3 Northern Province

3.3.1 Location

In the Northern Province, the project shall be implemented in 2 districts of Musanze (Gataraga, Cyuve, Shingiro and Gacaca Sectors) and Gakenke (Minazi, Busengo, Minazi, Mugunga and Rusasa Sectors).

3.3.2 Subprojects

In the Northern Province, the project shall be comprised of the following sub projects:

- 6 Cell Offices
- 1 Secondary School
- 2 Water Pumping Stations

3.4 Western Province

3.4.1 Location

In the Western Province, the project shall be implemented in 2 districts of Ngororero (Muhanda and Matyazo), Rubavu (Kanzenze Sector) and Rutsiro (Murunda and Gihango Sectors).

3.4.2 Subprojects

In the Western Province, the project shall be comprised of the following sub projects:

- 1 Milk Collection
- 2 Secondary Schools
- 2 Health Centers

...

CHAP IV: PROJECT ACTIVITIES AND PHASES

The project shall have different activities which shall be carried out in for different phases namely pre-construction, construction, operation and decommissioning phases. The activities of the project include but not limited to:

- Site clearance and earthworks
- Excavation to remove unsuitable materials
- Electrical cables laying
- Backfilling the excavated cable trenches with approved materials as specified
- Pole election for the overhead lines
- Cables stringing
- Power lines testing
- House connections
- Commissioning

4.1 Preconstruction investigations

The pre-construction phase will start with detailed investigation of the site's biological and physical characteristics in order to minimize any unforeseen adverse impacts during the project cycle. This phase also entails mobilization of labor force, equipment as well as acquisition of various permits as required by the law.

The main activities to be involved in the pre-construction phase include:

- Line surveys;
- Maps reproduction and approval
- Geo-technical investigation (soil test) where applicable;
- Materials sourcing and location
- Materials analysis including soil, stones and sand tests;
- Mobilization of the labor and equipment's
- Permit acquisition if necessary

4.2 Construction phase

4.2.1 Staff recruitment

As one of the positive impacts of the project, there shall be job creation and employment recruited from the local communities both skilled and unskilled. It is anticipated that at least

450 employees shall be recruited in the 15 districts. It is proposed that at least 30% of the employees shall be women and no child shall be given any job as per national laws.

4.2.2 Site installation

Manpower will be used to clear the project site and holes excavation and trucks and other machinery will be used to transport materials and personnel to the project sites. The indicated place where excavation will take place for the overhead lines will be rehabilitated and restored almost to its initial state where possible.

4.2.3 Materials sourcing and transport

Construction materials such as stones, aggregates, sand and cement and other equipment's (cross arms, cables, stubs, transformers, wires, poles and PPEs.) will be transported by trucks to the construction sites where possible, and in remote areas, manpower will be used to transport these materials and PPEs and appropriate equipment provided to the manpower.

4.2.4 Storage facilities

The project is expected to have different storage sites for materials. The selection of the location will be made based on the availability of adequate land for establishing the storage site, including parking areas, stores and easy access to working site and an appropriate distance from environmental sensitive areas. Some of the materials from borrow pits like sand and stones will be used directly after delivery and as such no piling up is expected. Cement will be stored in separate storage rooms. Fuel and oil will be stored in a well designated area and no maintenance shall be allowed on site to avoid oil spillage.

All storage facilities will be properly made to avoid any soil/ water contamination or environmental pollution. To minimize air pollution from trucks' exhaust fumes, the contractor shall order bulky materials.

4.2.5 Excavation for foundations

Excavation works for foundations will be manually carried out to prepare the pole holes and the excavated soil will be re-used to backfill the excavated holes after pole election. Excavated soil shall be backfilled and compacted as quick as possible to avoid soil erosion especially during rainy seasons.

4.2.6 Construction debris

All construction debris wastes or debris arising from completion of construction works shall be collected, transported and disposed off at well designated and approved by the districts as dumping sites.

4.2.7 Landscaping

At the construction completion the contractor shall improve the aesthetic value or visual quality of the site and will be required to restore the damaged areas to almost its initial state before construction activities. The landscaping will include tree planting, backfilling and vegetating of abandoned quarry sites and borrow pits where applicable.

4.3 Operation phase

The operation phase shall consist of power distribution and maintenance of the lines when deemed necessary. No major activities are expected to be carried out during the operation phase. Maintenance will include replacement of old and/ or damaged materials, activities which are considered not to be harmful to the environment. During this phase, workers shall be equipped with appropriate PPPEs and all generated wastes collected and disposed off at well designated dumping sites and approved by the districts. During line maintenance i.e. bush clearing, the workers shall avoid to damage crops in the line route and the trees cut down shall be left with the neighbouring communities and PAPs.

CHAP V: IDENTIFICATION, ANALYSIS AND MITIGATION OF THE ANTICIPATED IMPACTS

5.1 Potential impacts.

This chapter outlines the potential negative and positive impacts that will be associated with the project. An impact is any change to the existing condition of the environment caused by human activity or an external influence. Impacts therefore may be positive (beneficial) or negative (adverse). They may also be direct or indirect, long-term or short-term, and extensive or local in effect. The weight of each impact is described in terms of the following significance factors:

- Type: biological, physical, social, economic, etc.
- Nature: Direct, indirect, cumulative, synergetic
- Magnitude: Impacts can vary in terms of their consequences
- Extent: localized, regional, transboundary, global
- Timing: Maybe felt immediately or may not be evident for sometime
- Duration: the impacts may range from short term to permanent impacts
- Uncertainty: impacts can vary in both likelihoods and consequences of occurrence
- Reversibility: some impacts maybe reversible or can be rehabilitated upon decommissioning of the project while others maybe irreversible.

Some impact mitigations measures have already been addressed in the proactive design and other mitigations can only be guaranteed through active, responsible management, helped by following the guidelines in the project ESMP. The impacts will be related to activities to be carried out during construction phase of the project. For the operation phase the major the issues are the key impacts include energy consumption, atmospheric emissions and noise. Closure and decommissioning phase impacts of the project are also highlighted. The impacts of the project during each its life cycle stages (construction, operation and decommissioning) can be categorized into: impacts on the biophysical environment impacts and socio-economic impacts.

5.2 Impact Identification and Analysis

5.2.1 Sources of Impacts

The possible impacts associated with this project mainly emanate from site activities, products, by-products and outputs. These are related to the following:

- a) Contractor/staff activities at the site.
- b) Vegetation clearing

- c) Soil erosion
- d) Noise from the construction and operation of the low and medium voltage lines
- e) Air Emissions from vehicles traffic and excavation activities
- f) Effluent discharge from the toilets.
- g) Solid waste from maintenance activities.
- h) Diseases spread
- i) Fire hazards
- j) Gender Based Violence
- k) Visual and landscape impacts from the project structure.

5.2.2 Analysis of the Impacts:

The methodology which has been adopted to evaluate the significance of the impacts is the semi-qualitative one. The technique used to undertake the analysis covered the following aspects: level of the impacts, the magnitude, and significance of the impact where each type of impact categories of insignificant, minor, moderate, severe and critical need to be defined precisely. Thus the impacts were reviewed based on four critical factors which were considered when assessing the significance of impacts, these were:

- a) Relationship of the impacts to temporal scales;
- b) Relationship of the impacts to spatial scales;
- c) The severity/benefits from the impacts; and
- d) The likelihood of the impacts occurring.

5.3 Positive Impacts.

The positive impacts are beneficial and will thus not require any mitigation. These are mainly supported by the fact that the location of the site is secured. Most of the clients need a secured place for them to focus well on their work. It's however the management and monitoring plan which shall ensure their sustainability. These include but not limited to the following:

- 1) Access to electricity
- 2) Creation of employment opportunities
- 3) Increased business opportunities.
- 4) Revenue to Government and the Districts
- 5) Improved Infrastructure
- 6) On job trainings

5.4 Adverse/Negative Impacts

The negative impacts can be divided into those that will directly come from the constructional, operational and maintenance activities and those that will be due to socio-economic issues or decommissioning.

CHAPTER VI: IMPACTS MITIGATION AND MONITORING

6.1 Introduction:

This chapter highlights the necessary mitigation measures that will be adopted to prevent or minimize significant negative environmental and social impacts associated with the activities the project during its construction, operation and decommissioning phases. Some impact mitigation has already been addressed in the proactive design and other mitigations and Environmental Impact Assessment can only be guaranteed through active, responsible management, helped by following the guidelines in the project ESMP.

6.2 Mitigation for the anticipated Negative Impacts.

6.2.1 Impacts on vegetation clearing and fauna

The vegetation within the construction corridor is directly affected by removing plants, cutting down shrubs and felling trees. Plants growing on areas set aside for storing building materials will also be affected. Access to poles sites by vehicles and equipment will cause more destruction of vegetation. The avifauna is going to be affected to minor extent as the RoW shall be chosen through trees are not habitat to birds where possible.

These impacts shall be minimized and mitigated as follows:

- Avoid as much as possible the cut of large trees which serve as habitat cover for birds,
- Compensation shall be paid for felled trees to the owner
- Determinate necessary storage area on a site that does not require clearing;
- Measures for landscape are equally available
- All woody vegetation cleared on the RoW is made available to villagers for use as construction materials or firewood,
- Bush clearing should be avoided where possible and/ or minimized especially during poles construction and access
- No hunting shall be allowed by the workers or residents as prohibited by national regulations.
- During stringing people shall be informed and proper communication equipment and techniques used.
- At the decommissioning phase, the right of way shall be rehabilitated to almost its initial state before project implementation.

6.2.2 Land use and tenure

During the construction phase of the low and medium voltage lines, there will have serious impact on land use and land tenure. This is one of the critical negative impacts of this project because of the sensitivity of the issue, and the lack of available replacement land to mitigate this impact. A majority of the proposed line route is located in rural area and shall therefore potentially affect cultivated land, trees and forestry resources.

The low and medium voltage lines construction will not affect land:

- These low and medium voltage lines with poles will not require any permanent acquisition of land as their owner will continue to use their lands.
- Line construction. This will require access for heavy machinery that will damage cultivated land. During the construction phase, human activities will be disturbed;
- The right of way. The electric low and medium voltage lines will require a right of way of 12 meters (6 meters on either side of the line). Houses located in this area will not be affected. Similarly, trees planted on that route will need to be cut and shall not be replanted after construction phase. Other crops will be destroyed during the construction phase but can be re-established afterward the construction phase.

As mitigation measures related to negative impacts due to land use and tenure the following measures and requirements have to be given a priority and adopted prior to project commencement:

- (i) Compensation. affected properties shall be compensated according to the legislation in place in Rwanda:
 - Identification of all the Persons Affected by the Project (PAP) with a participatory census.
 - In order to have access permission to private land, the Contractor assisted by local authorities shall carry out awareness and sensitization meetings on a regular basis.
 - Ensure affected properties are estimated at market price,
 - The compensation of affected people and properties should be completed prior to commencement of all works,
 - Engagement of the PAPs about compensation measures.
 - Permission of the farmers to cultivate in the RoW after the construction with the limit of not planting trees but with full permission to cultivate short crops like: beans, potatoes, maize, vegetables, etc.
- (ii) For cultural resources, the line route has been selected to avoid cultural heritage such as genocide memorial. Should there be any other significant resource on the line route

identified during the census, it will require an engagement with the local population and authorities about the best appropriate measure.

6.2.3 Extraction and use of building materials

Good and efficient use of the natural resources will be the key to reduced impacts on the use of the extracted raw materials. This will be achieved through:

- The contractor will source building materials such as sand, ballast and hard core from registered quarry and sand mining firms.
- The contractor will only order for what will be required through accurate budgeting and estimation of actual construction requirements. This will ensure that materials are not extracted or purchased in excessive quantities.
- The contractor will ensure that wastage, damage or loss (through run-off, wind, etc.) of materials at the construction site is kept minimal, as these would lead to additional demand for and extraction or purchase materials.
- The contractor shall consider reuse of building materials and use of recycled building materials. This will lead to reduction in the amount of raw materials extracted from natural resources as well as reducing impacts at the extraction site.

6.2.4 Minimize the effects of noise emitted from the project activities.

Significance of noise impacts depends on whether the project would increase noise levels above the existing ambient levels by introducing new sources of noise. Other construction site noises may be difficult to control. However, these are expected to be temporal and limited to the construction period. Preferred noise levels in residential areas as per IFC Occupational, Health and Safety Guidelines that is 55 dB (A) from 7h – 22h day time and 45 dB (A) at night time should be observed. in order to reduce negative impacts on surroundings.

Noise impacts would be considered significant if the project would result in the following:

- Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels.
- A substantial permanent increase in ambient noise levels (more than five dBA) in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

- Although blasting is not planned to be used, any blasting shall not be allowed without permission from the district authorities and EDCL and any social, economic and environmental consequence or damage shall be borne/ paid by the contractor.

The contractor shall put in place several measures that will mitigate noise pollution arising during the construction phase of the medium voltage lines. The following noise-suppression techniques will be employed to minimize the impact of temporary construction noise at the project site.

- Construction works should be done during the day when people are away and also the outside environment is also noisy. This should be restricted between 7.00 am and 6.00pm.
- Install portable barriers to shield compressors and other small stationary equipment where necessary.
- Use quiet equipment (i.e. equipment designed with noise control elements).
- Co-ordinate with relevant agencies regarding all construction activities in the residential areas.
- Limit pick-up trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible.
- Heavy machinery and vehicles to be used by the project will be in good condition and emitting low noise levels.

6.2.5 Air quality:

Controlling dust is useful in minimizing nuisance conditions. It is recommended that a standard set of feasible dust control measures be implemented for all construction activities. Emissions of other contaminants (NO_x, CO₂, SO_x, and diesel related PM₁₀) that would occur in the exhaust from heavy equipment and trucks are also included. The contractor is committed to implementing measures that shall reduce air quality impacts associated with construction. All personnel working on the project will be trained prior to starting construction on methods for minimizing air quality impacts during construction.

Dust emissions will be controlled by the following measures:

- Watering all active excavated and construction areas as and when necessary to lay dust.
- Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.

- Pave, apply water when necessary, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction site.
- Burning of wastes shall be avoided on site.

6.2.6 Exhaust emission:

The exhaust emissions impacts will be greater in areas where the materials are sourced and at the construction site as a result of frequent gunning of vehicle engines, frequent vehicle turning and slow vehicle movement in the loading and offloading areas. These emissions have the potential to compromise the local air quality and contribute to global warming, acid rain, and local health problems and thus needs to be minimized.

In order to control exhaust emissions, the following measures shall be implemented during construction period:

- Proper planning of transportation of materials to ensure that vehicle fills are increased in order to reduce the number of trips done or the number of vehicles on the road.
- Equipment shall be properly tuned and maintained.
- All trucks and vehicles shall have a valid Vehicle Inspection Certificate.

6.2.7 Oil spills.

It is important to note that oil/grease spills can occur at construction or camp sites and in most areas that make use of petroleum products for running of equipment and machinery. Such products contain detrimental elements to the environment. They contain such heavy metals as mercury, lead, and sulphur among others. Though this may not be common a major threat, it is wise to control and observe the little that could occur especially during maintenance of the involved equipment and machinery (generator).

Some of the proposed mitigation measures include:

- All machinery must be keenly observed not to leak oils on the ground. This can be affected through regular maintenance of the machinery.
- Maintenance must be carried out in a designated area (protected service bays) and where oils are completely restrained from reaching the ground. Such areas should be covered to avoid storm from carrying away oils into the soil or water systems.
- All oil products and materials should be stored at well designated stores. They should be handled appropriately to avoid spills and leaks.
- Oil spill kits will be kept on site and all oils and fuels will be removed from the site for proper reuse/recycling or disposal as appropriate.

6.2.8 Minimization of water use

As noted the project will use water from the WASAC supply which supplies water countrywide thus there will be need to make sure that conservation measures are put in place to ensure maximum resource utilization.

This can be done by amongst others having the following measures:

- Pressure on the water supply will be reduced at maximum, all rainwater shall be harvested where possible like camp site and site offices and be used for cleaning or gardening activities;
- The project will optimize the quantity of water used for different needs i.e. ensure conservative use of water during construction to avoid wastage,
- The contractor shall ensure that water is used efficiently at the site by sensitizing construction staff to avoid irresponsible water usage.
- Any water leaks through damaged pipes and faulty taps will be fixed promptly by qualified staff and the cost shall be borne by the Contractor.

6.2.9 Solid waste generation.

The project is expected to generate enormous amounts of solid waste during its construction phase. The bulk of the solid waste generated during the operation of the project will consist of paper, plastic, glass, metal, textile, wood and organic wastes. Such wastes can be injurious to the environment through blockage of drainage systems, choking of water bodies downstream and negative impacts on animal and human. Some of these waste materials especially the plastic/polythene which is not biodegradable may cause long-term injurious effects to the environment.

Even the biodegradable ones such as organic wastes may be injurious to the environment because as they decompose, they produce methane gas, a powerful greenhouse gas known to contribute to global warming. The following mitigation measures will be implemented:

- Put in place proper house-keeping and implement wastes management hierarchy (avoid, reduce, reuse and recycle).

6.2.10 Gender Based Violence and Child Abuse/Exploitation

Given the big number of workers during the construction of the low and medium voltage lines, there likely violence based on gender and child abuse within the project area. The following measures will address (GBV) and Child Abuse and Exploitation (CAE) issues:

- GBV and CAE awareness meeting shall be organized prior to commencement of the works and once in a month to all workers.
- Defaulters shall be informally and formally warned and strict sanctions (loss of employment, reported to competent authorities) shall be applied to defaulters
- A GBV and CAE committee composed of the project manager, the contractor's environmental and social specialist, the human resources of the contractor and women representative at the sector level.

Grievances on site: given the size of the project, there likely grievances and complaints from workers and neighbouring communities and if not solved may lead to conflicts and increase social problems. The following measures will be implemented:

A Grievance Redress Committee shall be formed and composed by local authorities at each sector and composed of sector community development officer, affected people, women and youth representative and contractor's environmental and social specialist.

6.2.11 Impacts on gender and vulnerable people

Negative gender impacts would arise from discrimination in hiring construction workers if preference is given to men who are perceived to be stronger and more resilient lines construction could also result into constrained access to homes, gardens, water sources, places of worship and schools, especially for women, children, elderly and disabled people. Temporary bridges improvised to abate this impact are often inadequate and unsafe for use by vulnerable people. The following measures will be applied to address this:

- Ensure positive discrimination in job allocation to lines construction workers whereby women and vulnerable people are given priority and to tasks they would do best, based on their potential.
- Where access to private property or public resources/ places is severed, the contractor should provide safe temporary access that is both gender-friendly and usable by disabled persons.
- Workplace environment including tools and fixtures should be gender-friendly.

6.2.12 Soil erosion

Due to the kind of project activities, there is a high risk of soil erosion. The following measures are proposed:

- Revegetation shall be done during and at the decommissioning phase

- Areas highly prone to erosion shall be identified and protected during construction,
- Excavated soil shall not be exposed for a long time especially during rainy seasons
- Backfilling should be applied after excavation to reduce soil erosion

6.2.13 Casual labour payment

To avoid any complaint and delay on payment of casual labour, the contractor shall ensure the workers/employees are paid on an agreed date (weekly, bi-weekly or monthly) and full payment is provided on time. The contractor or/ and the subcontractor shall comply with the national labour law.

6.2.14 Impacts on existing infrastructures

The contractor shall ensure by all means avoid to destroy existing infrastructures (water pipelines, electrical cables, public lighting, road and fiber optic). The contractor shall contact the infrastructure owner whenever there is a risk of damaging the infrastructures.

6.2.15 Impacts due to human excreta

To avoid any impacts on the environment and human health, mobile Ecosan Toilets shall be provided on-site and regularly maintained. Since the project activities are not static, these mobile Ecosan toilets are more convenient

CHAP VII: ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

7.1 General Introduction

The client and contractor of the proposed project acknowledges the fact that the proposed project activities will have some impacts on the biophysical environment, and socio economic wellbeing of the local residents. Thus, the main focus will be on reducing the negative impacts and maximizing the positive impacts associated with the project activities through a programme of continuous improvement.

The main aim of ESMP is to protect and enhance the existing environment of the project area. The purpose of this ESMP is to establish actions required to prevent, mitigate, and control possible negative impacts of the project on the environment, and to analyze steps that could be taken with regard to it.

In this regard the Expert developed an ESMP to aid the proponent in managing significant environmental impacts associated with the project. The ESMP outlines a plan of action to be instituted by the project to ensure that environmental quality is maintained and improved throughout the life of the project through a program of continuous improvement.

This project bears the potential for a number of negative impacts on the environment. However, if proper environmental and social management procedures are in place and adhered to then there would be very minimal negative impact of concern emanating from it.

The ESMP addresses all the anticipated impacts of the project, locations of impacts, mitigation measures, cost, responsible person/institution and monitoring measures. Plans are essential and shall be undertaken in various phases of the project cycle

7.2 Responsibilities for ESMP implementation

7.2.1 Role of the Contractor

Implementation: CEC Ltd will implement and ensure that the mitigation measures in the ESMP are to be followed during construction of the low and medium voltage lines. The contractor will undertake regular monitoring of all the activities occurring at the project site to ensure compliance with to the ESMP. Contractor will have an environmental, and social as part of the team specifically responsible for the implementation and reporting on the proposed mitigation measures in the ESMP. The contractor in conjunction with sector authorities shall be responsible for organising meeting and sensitization and awareness programmes on GBV,

CAE, Covid 19, HIV Aids, STD and condoms provision on site prior and during project implementation.

7.2.2. Role of the Supervisor

The role of the supervision mission shall be to determine if the contractor carries out the project activities in conformity with environmental and social safeguards specialist, the supervision of the implementation of the mitigation plan, supervision of the monitoring plan, review the reports submitted by the contractor, regularly reports on any non-compliance in relation to the ESMP, national laws and international standards, to recommend appropriate risk management strategies to the contractor, in charge of overall management of the project in relation to environmental and social safeguards specialist and to identify problems as they arise during the project implementation in relation to environmental and social safeguards specialist for compliance. Regular and monthly reporting on ESMP implementation to the client.

7.2.3 Role of the Client

EDCL shall be the overall project coordination at national level and funds allocation for the project of the medium voltage lines construction project. EDCL shall also be responsible for overseeing the ESMP implementation through their Environmental and Social Safeguards specialists under the project management department. Inspection on site to ensure ESMP compliance

7.2.4 Role of MININFRA

The Ministry of Infrastructures which is the ministry in charge of energy sector will be the project executing Ministry with the key role of developing and maintaining sustainable power generation and distribution facilities. It has also a big role in coordinating the key stakeholders involved with lines construction and in general develop policies and guidelines and laws related to energy generation and distribution.

7.2.5 Role of REMA:

General monitoring and inspection visits. As the lead agency responsible for the protection of the environment in Rwanda, REMA will undertake environmental audits to ensure that the project proponent enforces the ESMP and other environmental regulations. REMA will also conduct monitoring visits to verify if there are any emerging environmental issues arising from the projects activities that were not anticipated by the ESMP.

7.2.6 Role of Local Authorities.

During the construction of the low and medium voltage lines, local authorities will be in position to undertake visits to assess compliance with the ESMP through a district environmental officer. The local authorities will also ensure that the development is in line with the proposed country development plan, the District's master plan and the goals of the district development Plans.

They will also have the role of approving the necessary construction permits and approve valuation forms and ensuring that documentation in regard to the development are all in order. The district shall have a key in assisting the contractors through census, public consultation in relation to assets inventory of affected assets and properties.

7.3 Environmental and Social Management and Monitoring Plan

This environmental and social management and monitoring plan is made as part of the whole ESMP for the construction of the low and medium voltage lines. It is intended to ensure that all the environmental and social management issues outlined in the ESMP are addressed through a comprehensive and proper environmental and social management and monitoring programme.

This environmental and social management and monitoring plan aims at:

- Defining the mitigation monitoring and execution requirements associated with the construction of the low and medium voltage lines,
- Defining the process to be used to identify and execute mitigation actions related to the low and medium voltage lines construction,
- Ensuring that the mitigation measures proposed in the ESMP are incorporated in the low and medium voltage lines construction specifications and duly implemented.
- Ensuring that any other impacts that may arise can be identified and appropriate mitigation measures are taken.
- Establishing roles and responsibilities and implementing procedures for effective execution of the mitigation process.
- Finally cost estimations of what the mitigation measures shall require.

The Environmental and Social Management and Monitoring Plan for the construction of the low and medium voltage lines in the 15 Districts in Rwanda are given according to the proposed mitigation measures mentioned in previous chapter.

Table 1: The Management and Monitoring Plan for the construction camp site, storage and offices

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Storage of materials including hazardous materials	The contractor to ensure the storage of materials are located in the designated stores and separated from other non-hazardous materials. Where necessary, provide impervious floors.	Separate storage with impervious floor	Weekly	Contractor's environmentalist	Before construction of the camp site, offices and storage	30,000,000
Storage materials are exposed and accessible by unauthorized people and workers	The storage area is well designated, demarcated and fenced. The access of unauthorized people should be controlled and warning sign installed.	Storage demarcated and fenced	Weekly	Contractor's environmentalist	Before construction of the camp site, offices and storage	Included in the cost above.

ESMP FOR THE CONSTRUCTION OF LOW AND MEDIUM VOLTAGE LINES FOR PRODUCTIVE USES

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Poor camp site, offices and storage rehabilitation at the end of construction	The site shall be vegetated, reseeded, at almost at its natural state and all waste removed from the site	Trees and grasses planted.	During and after construction works	Contractor's environmentalist	At the end of the construction works.	3,000,000

Table 2: The Management and Monitoring Plan for Environmental Training and Awareness

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Environmental, social requirements noncompliance due to lack of knowledge and awareness	Training, awareness programme and tool box meetings on environmental, social management shall be organized regularly for the workers, site foreman, equipment operators and truck drivers.	Reports of training, awareness programme and tool box meetings	Monthly	Contractor's environmentalist	During the construction works.	Provided in the contract budget for HS Officer

Table 3: The Management and Monitoring Plan for impacts due to vegetation clearing monitoring

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impacts related to vegetation clearing, removing of trees. People will have their properties destroyed	Compensation shall be paid for felled trees to the owner. Determinate necessary storage area on a site that does not require clearing; Avoid as much as possible the cut of large trees Measures for landscape are equally available All woody vegetation cleared on the RoW is made available to villagers for use as construction materials or firewood	Proof of compensation Landscaping plan available Wood wastes are availed to initial owners	Weekly	Contractor's environmentalist	During the construction works.	To be estimated at a later stage during construction.

Table 5: The Management and Monitoring Plan for impacts on land use and tenure

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Crops and assets are affected or destroyed	Identification of all the Persons Affected by the Project (PAP) with a participatory census and inventory of affected assets carried out and compensation paid prior to commencement of the construction works.	Proof of compensation	Weekly	Contractor's environmentalist	Before commencement of the construction works.	To be estimated at a later stage during construction
	Ensure affected properties are estimated at market price, Engagement of the PAPs about compensation measures and support for their reinstallation; Permission of the farmers to cultivate in the RoW after the construction with the limit of not planting trees but with full permission to cultivate	Compensation report provided prior to commencement of works Farmers cultivate the compensated plots	Weekly	Contractor's environmentalist	Before commencement and during the construction works.	No cost applied

Table 6: The Management and Monitoring Plan for impacts due to extraction and use of building materials

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impacts to natural resources due to the extraction and use of raw construction materials related to unauthorized extraction and dumping, excessive wastes	<p>The contractor will source building materials such as sand, ballast and hard core from registered quarry and sand mining firms.</p> <p>The contractor will only order for what will be required through accurate budgeting and estimation of actual construction requirements. This will ensure that materials are not extracted or purchased in excessive quantities.</p>	<p>District License for quarry and sand mining</p> <p>No excessive materials on site</p> <p>Excessive wastes reused</p>	Weekly	Contractors environmentalist	During the construction works.	No budget as these materials will be outsourced from local suppliers.

	<p>The contractor will ensure that wastage, damage or loss (through run-off, wind, etc.) of materials at the construction site is kept minimal, as these would lead to additional demand for and extraction or purchase materials.</p> <p>The contractor shall consider reuse of building materials and use of recycled building materials. This will lead to reduction in the amount of raw materials extracted from natural resources as well as reducing impacts at the extraction site</p>					
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Table 7: The Management and Monitoring Plan for erosion control

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impacts due to noise emitted from line construction	Construction works should be done during the day when people are away and also the outside environment is also noisy. This should be restricted between 7.00 am and 6.00pm. Use quiet equipment (i.e. equipment designed with noise control elements).	Complaints from residents Portable barriers installed	Weekly	Contractor's environmentalist	During the construction works.	No budget required
	Co-ordinate with relevant agencies regarding all construction activities in the residential areas. Limit pick-up trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible. Heavy machinery and vehicles to be used by the project will be in good condition and emitting low noise levels.	Vehicles inspection Certificates				No budget required

Table 8: The Management and Monitoring Plan for impacts on air quality

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Dust pollution due to excavation works, materials transport and construction activities affecting the quality of air	Watering all active excavated and construction areas as and when necessary to lay dust. Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard. Pave, apply water when necessary, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction site.	Hauling covers available for all trucks Number of watering times in dry season	Weekly	Contractor's environmentalist	During the construction works.	15,000,000

Table 9: The Management and Monitoring Plan for soil pollution

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impact of soil pollution due oil spills	<p>All machinery must be keenly observed not to leak oils on the ground. This can be affected through regular maintenance of the machinery.</p> <p>Maintenance must be carried out in a designated area (protected service bays) and where oils are completely restrained from reaching the ground. Such areas should be covered to avoid storm from carrying away oils into the soil or water systems.</p> <p>All oil products and materials should be stored at well designated stores. They should be handled appropriately to avoid spills and leaks.</p> <p>Oil spill kits will be kept on site and all oils and fuels will be removed from the site for proper reuse/recycling or disposal as appropriate.</p>	<p>Vehicle inspection certificates available</p> <p>Designated maintenance area provided</p> <p>Store for oil with impervious floor constructed</p>	Weekly	Contractor	During the construction works.	750,000

Table 10: The Management and Monitoring Plan for impacts on water use

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impacts due to excessive water usage from the national utility	<p>Pressure on the water supply will be reduced at maximum, all rainwater shall be harvested where possible like camp site and site offices and be used for cleaning or gardening activities;</p> <p>The project will optimize the quantity of water used for different needs i.e. ensure conservative use of water during construction to avoid wastage,</p> <p>The contractor shall ensure that water is used efficiently at the site by sensitizing construction staff to avoid irresponsible water usage.</p> <p>Any water leaks through damaged pipes and faulty taps will be fixed promptly by qualified staff.</p>	Rainwater gutters and collection tanks installed	Monthly	Contractor' environmentalist	During the construction works.	Provided in the contract budget

Table 11: The Management and Monitoring Plan for solid waste management

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impacts of wastes generated on site to the soil, air and human health	Put in place proper house-keeping and implement wastes management hierarchy (avoid, reduce, reuse and recycle) Develop and enforce waste management procedures Install dustbins or receptacles and apply wastes sorting at source Dispose of wastes at a recognized landfill or dump site approved by Districts A Licensed Company by RURA shall be contracted to collect and dispose off all generated wastes from sites	Waste hierarchy observed on site Refuse bins installed on site Waste sorted on site	Weekly	Contractor's environmentalist	During the construction works.	4,500,000

Table 12: The Management and Monitoring Plan for Gender based Violence and Child Abuse and Exploitation

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impacts due to gender based violence and child abuse/exploitation due to lack of awareness	<p>GBV and CAE awareness meeting shall be organized prior to commencement of the works and once in a month to all workers.</p> <p>Defaulters shall be informally and formally warned and strict sanctions (loss of employment, reported to competent authorities) shall be applied to defaulters</p> <p>A GBV and CAE committee composed of the project manager, the contractor’s environmental and social specialist, the human resources of the contractor and women representative at the cell level.</p>	<p>GRC, GBV and CAE committee in place</p> <p>Awareness meeting reports</p>	Monthly	Contractor’s environmentalist	During the construction works.	3,000,000

Table 13: The Management and Monitoring Plan for Gender and disabled discrimination

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impacts on gender and people with disabilities due to discrimination during recruitment, hiring and work	<p>Ensure positive discrimination in job allocation to distribution lines construction workers whereby women are given priority (at least 30 %) and to tasks they would do best, based on their potential.</p> <p>Where access to private property or public resources/ places is severed, the contractor should provide safe temporary access that is both gender-friendly and usable by disabled persons. In this regard, temporary culverts instead of wood planks would be more appropriate.</p> <p>Workplace environment including tools and fixtures should be gender-friendly.</p>	<p>Recruitment report</p> <p>Field observation</p>	Monthly	Contractor's environmentalist	During the construction works.	1,500,000

Table 14: The Management and Monitoring Plan for Corona Virus, HIV Aids and STD transmission

Impacts	Proposed mitigation/remarks	Indicator	Frequency	Responsible	Time	Cost (RwF)
Impacts on human health: , HIV Aids and STD transmission to workers and neighboring Communities.	Provision of condoms in convenient and visible places such as toilets and storage. Awareness on, HIV Aids and STD prevention through tool box meetings on a regular basis.	Condom present on site Awareness programme report	Weekly Monthly	Contractor's HS officer	During the construction works.	150,000 / month

<p>Impacts on human health: Corona virus transmission to workers and neighboring Communities.</p>	<p>Awareness on COVID 19, prevention through tool box meetings on a regular basis. And enforcement of the following:</p> <ul style="list-style-type: none"> ✓ Regular wash of hands using hand sanitizer or alcoholic mix; ✓ Avoid shaking hands; ✓ Observe social distancing of at least 1 meter; ✓ Always wear a clean and appropriate mask. 	<p>Awareness programme report</p>	<p>Weekly</p>	<p>Contractor's HS officer</p>	<p>During the construction works.</p>	<p>Provided above</p>
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CHAP VIII TRAINING AND AWARENESS PLAN

Training and site specific are very important in order to ensure proper ESMP implementation and monitoring. The training and awareness plan aim at equipping the staff and workers involved in the construction of the low and medium voltage lines for productive uses in Rwanda in the 15 Districts with required skills related to activities with environmental and social potential high negative impacts.

These trainings and awareness programme shall be provided by the Contractors' environmental and social expert or a consultant recruited particularly for this task.

The proposed table below shows the training/ awareness title, the proposed trainee, schedule, responsible and related estimated cost.

TITLE	TRAINEE	SCHEDULE	RESPONSIBLE	COST (RWF)
Grievance Redress Mechanism and roles of the GRM Committee	Grievance Redress Committee	Once a month (Election for the entire project)	Contractor	1,500,000
Corona Virus, HIV Aids, STD, Malaria prevention and testing programme	All workers	Once in a month	Contractor	1,500,000
Gender Based Violence and Child Abuse Prevention	All workers	Once in a month	Contractor	750,000
Tool box programme for newly recruited workers	Recruited workers	Weekly	Contractor	No cost as it part of HS responsibilities

CHAP IX: GRIEVANCE REDRESS MECHANISM

9.1 Process of grievance redress

Grievance mechanisms provide a formal avenue for affected groups or stakeholders to engage with the project implementers or owners on issues of concern or unaddressed impacts. Grievances are any complaints or suggestions about the way a project is being implemented. Such a project for productive use in 15 Districts of Rwanda shall have a range of potential adverse impacts to people and the environment in general, identifying grievances and ensuring timely resolution is very necessary.

In the event that, during project implementation, there are perceived issues of unfairness, error or misapplication of the procedures by which the project will be implemented, it is essential that everyone affected has the opportunity to raise their concerns, and have them listened to, investigated and, if found to be correct, there is appropriate redress. In order to achieve this, the project has designed a process for lodging grievances.

Table 15: Grievance Redress Process

Process	Description	Time frame	Other information
Identification of grievance	✓ Face to face; phone; letter received by the GRC at sector level.	1 Day	Phone number of one of the GRC member
Grievance assessed and logged	✓ Significance assessed and grievance recorded or logged (i.e. in a log book)	Same Day 1	✓ Significance criteria: Level 1 –one off event; ✓ Level 2 – complaint is widespread or repeated; ✓ Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESIA provisions or any other official document
Grievance is acknowledged	✓ Acknowledgement of grievance through appropriate medium	1 Day	

Process	Description	Time frame	Other information
Development of response	<ul style="list-style-type: none"> ✓ Grievance assigned to the GRC for resolution ✓ Response development with input from GRC members 	2 – 3 Days	
Response signed off	<ul style="list-style-type: none"> ✓ Redress action approved by the GRC 	1 Day	Any member of the GRC to sign off
Implementation and communication of response	<ul style="list-style-type: none"> ✓ Redress action implemented and update of progress on resolution communicated to complainant 	1 -2 Days	
Complaints Response	<ul style="list-style-type: none"> ✓ Redress action recorded in grievance log book ✓ Confirm with complainant that grievance can be closed or determine what follow up is necessary 	1 Day	
Close grievance	<ul style="list-style-type: none"> ✓ Record final sign off of grievance ✓ If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party arbitration or resort to court of law. 	1 Day	Final sign off on by the GRC at sector level

9.2 Establishment of Grievance Redress Committees

Each Cell r in the project area shall have a Grievance Redress Committee (GRC) established for the purpose of handling grievances related to environmental and social concerns or any other issue. The GRCs will be ad hoc institutions established primarily for the subproject in each Cell. It is proposed that the GRC shall comprise of:

- a) Project Affected Persons representative
- b) Environmental and Social Officer from the District
- c) Executive Secretary of each Cell
- d) Social Officer at the Cell r level
- e) Environmental and Social Specialist of the Contractor
- f) Women representative
- g) Youth Representative

This GRC shall freely elect the Chairperson, who will be the one to call for meetings whenever there is a grievance, and the secretary; who will be in charge of taking minutes, recording the grievance and keep the grievance logbook. A template of a grievance redress log form can be found in Annex 2.

CHAP X: CONCLUSION AND RECOMMENDATIONS

10.1 Conclusion

The ESMP identified and highlighted a number of issues pertaining to the proposed low and medium voltage lines construction for productive uses in 15 Districts of Rwanda. The issues/impacts have been assessed and described in some detail to gain an adequate understanding of possible environmental effects of the proposed project during construction and mitigation measures in response to negative aspects have been proposed.

The Environmental Management Mitigation / Monitoring provides way forward for in relation to negative impacts mitigation, monitoring indicators, frequency of monitoring, responsible for monitoring and costs estimates.

The consultant is recommending that the Contractor assign an environmental and social expert to undertake the monitoring of the mitigation measures for the low and medium voltage lines in the 15 Districts during the implementation of the project.

Given the nature and location of the project and sub-projects, the conclusion is that the potential impacts associated with the proposed project are of a nature and extent that can be reduced, limited and eliminated in most of the cases by the application of the proposed appropriate mitigation measures in this ESMP with some recommendations.

10.2. Recommendations

It is recommended based on the ESMP for the construction of the low and medium voltage lines for productive uses in the 15 Districts of Rwanda, the contractor is responsible but not limited to the following recommendations:

1. The inventory and compensation of the affected properties and crops should also be done prior to commencement of the distribution lines construction,
2. Assign the implementation of the ESMP and other tools to a registered and qualified environmental and social specialist to ensure compliance;
3. The contractor shall comply with this ESMP any other documents and requirements in compliance with national and international environmental and social safeguards laws and policies,
4. Training, awareness, tool box meetings and awareness campaigns on Covid 19, HIV

- Aids and STD prevention, GBV and environmental management are organized,
5. Provide condoms regularly and placed at convenient and accessible points including toilets,
 6. Excavated soils should be used for backfilling or else transported with other wastes to designated dump sites while trucks are covered,
 7. To avoid dust pollution, excavations should be done after watering the areas and dust masks provided to implicated workers;
 8. Noisy activities shall be carried out during working hours when people are at work;
 9. Refuse bins to be installed at strategic positions to avoid accumulation of wastes a housekeeping team shall be appointed to regularly monitor the waste management
 10. A Grievance Redress Committee shall be formed to record and solve grievances on site and register them in a logbook.
 11. Women should be given priority while recruiting or hiring workers especially the casual labour,
 12. The contractor should not employ children and should comply with the national labour law.
 13. Bush clearing should be avoided where possible and/ or minimized especially during poles installation,
 14. No hunting shall be allowed by the workers or residents as prohibited by national regulations.
 15. During stringing people shall be informed and proper communication equipments and techniques used.
 16. In order to have access permission to private land / properties, the Contractor assisted by local authorities shall carry out awareness and sensitization meetings on a regular basis,
 17. At the decommissioning phase, the camp site and storage be rehabilitated to almost its initial state before project implementation,
 18. Burning of wastes shall be avoided on site,
 19. Transport of workers shall not be mixed with transport of materials at the same time,
 20. Proper sign posts (men at work, limit speed, big trucks crossing) shall be provided at all road crossings, residential area and where activities are taking place,
 21. Areas highly prone to erosion shall be identified and protected during construction,
 22. Excavated soil shall not be exposed for a long time especially during rainy seasons
 23. Backfilling should be applied after excavation to reduce soil erosion

24. The contractor shall ensure by all means avoid to destroy existing infrastructures (water pipelines, electrical cables, public lighting, road and fiber optic). The contractor shall contact the infrastructure owner whenever there is a risk of damaging the infrastructures.
25. Mobile toilets like ECOSAN shall be provided at strategic points during project implementation and ensure there a cleaner on full time basis to clean them.
26. All workers shall have valid medical insurance “mutuelle de santé” prior to commencement of construction works,
27. The contractor shall have valid insurance certificates of the project activities, vehicles and equipments
28. Although blasting is not planned to be used, any blasting shall not be allowed without permission from the district authorities and EDCL and any social, economic and environmental consequence or damage shall be borne/ paid by the contractor;
29. The contractor shall ensure waste segregation prior to their disposal;
30. Dispose of wastes at a recognized dumping sites / landfill approved by the districts;
31. Whenever there are scaffolding works or any work at height, workers should be provided with good safety harnesses and proper signage provided at that area to warn workers and residents on the work, taking place,
32. Copies of this ESMP should be availed in the contractor’s offices at all time.

ANNEXES

Annex 1: Checklist for monitoring

Check list for the construction camp site, storage and offices

Impacts	Indicator	Frequency	Time
Storage of materials including hazardous materials	Separate storage with impervious floor	Weekly	Before construction of the camp site, storage and offices
Storage materials are exposed and accessible by unauthorized people and workers	Storage demarcated and fenced	Weekly	During construction works of the lines
Poor handling of hazardous materials	Staff trained	Monthly Daily	During the construction of the low and medium voltage lines
Poor camp site rehabilitation at the end of construction	Trees and grasses planted.	During and after construction works	At the end of the construction works.

Check list for Environmental Training and Awareness

Impacts	Indicator	Frequency	Time
Environmental, social requirements noncompliance due to lack of knowledge and awareness	Reports of training, awareness programme and tool box meetings	Monthly	During the construction works.

Check list for impacts due to vegetation clearing Monitoring

Impacts	Indicator	Frequency	Time
Impacts related vegetation clearing, removing of trees. People will have their properties destroyed	Proof of compensation Landscaping plan available Wood wastes are availed to initial owners	Weekly	During the construction works.

Checklist for impacts on land use and tenure

Impacts	Indicator	Frequency	Time
Crops and assets are affected or destroyed	Proof of payment to affected people for their properties	Weekly	Before commencement of the construction works.
PAPs are not compensated prior to commencement of works Farmers are not allowed to cultivate on their land low height crops	Compensation report provided prior to commencement of works Farmers cultivate the compensated plots	Weekly	Prior to the commencement of works During construction

Check list for impacts due to extraction and use of building materials

Impacts	Indicator	Frequency	Time
Impacts to natural resources due to the extraction and use of raw construction materials related to unauthorized extraction and dumping, excessive wastes	District License for quarry and sand mining No excessive materials on site Excessive wastes reused	Weekly	During the construction works.

Check list for noise control

Impacts	Indicator	Frequency	Time
Impacts due to noise emitted from line construction	Complaints from residents	Weekly	During the construction works.
	Portable barriers installed		
	Vehicles inspection Certificates	Monthly	

Check list for impacts on air quality

Impacts	Indicator	Frequency	Time
Dust pollution due to excavation works affecting the quality of air	Hauling covers available for all trucks Number of watering times in dry season	Weekly	During the construction works.
Air pollution from exhaust fumes from trucks and other equipment	Number of maintenance of trucks and equipment Vehicle inspection certificate available	Weekly	

Check list for soil pollution

Impacts	Indicator	Frequency	Time
Impact of soil pollution due oil spills	Designated maintenance area provided Store for oil with impervious floor constructed	Weekly	During the construction works.

Checklist for impacts on water use

Impacts	Indicator	Frequency	Time
Impacts due to excessive water usage from the national utility	Rainwater gutters and collection tanks installed at the camp site, storage and offices	Monthly	During the construction works.

Checklist for solid waste management

Impacts	Indicator	Frequency	Time
Impacts of wastes generated on site to the soil, air and human health	Waste hierarchy observed on site Refuse bins installed on site Waste sorted on site	Weekly	During the construction works.

Checklist for Gender based Violence and Child Abuse and Exploitation

Impacts	Indicator	Frequency	Time
Impacts due to gender based violence and child abuse/ exploitation due to lack of awareness	GRC, GBV and CAE committee in place Awareness meeting reports	Monthly	During the construction works.

Check list for Gender and disabled discrimination

Impacts	Indicator	Frequency	Time
Impacts on gender and people with disabilities due to discrimination during recruitment, hiring and work	Recruitment report Field observation	Monthly	During the construction works.

Check list for STD and HIV Aids Prevention and condom provision on Site

Impacts	Indicator	Frequency	Time
Covid 19, STD and HIV Aids transmission to workers or neighboring communities	Condom provided on site Awareness on Covid 19, STD and HIV Aids prevention repots	Weekly Monthly	During the construction works.

Annex 2: GRM Logbook

PROJECT:	District	Sector	Cell	Village
Grievance number:			
Name recorder:.....	of the		Title:..... ..	
Date: / /				
Complainant Names:		Signature of Complainant..... Date: / /		
Province	District	Sector	Cell	Village
Details of Complaint:				

Grievance Clouse Out

Grievance number:

Define immediate action required:

Define Long term action required (If necessary):

Corrective action plan taken	Due date

Responsible party (Filled in and signed by the complainant when she/he receives compensation or file closed):
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Complainant Name:Date: .../...../..... Signature.....

Responsible Grievance Redress Committee			
1.	Title.....	Name.....Date.../...../.....	Signature.....
2.	Title	Name.....Date.../...../.....	Signature.....
3.	Title	Name.....Date.../...../.....	Signature.....

Annex 3: Project locations and details

Number	Name	Village	Cell	Sector	District	MV Length in Km	LV Length in (m)	Tfo Size in KVA
1	Bweru Mcc	Gatovu	Bugarura	Muhanda	Ngororero	3.67	44	100
2	GS Mataba	Buhoro	Ngoma	Nyamiyaga	Kamonyi	3.62	56	50
3	GS KABERE	Murunyinya	Gaseke	Kayumbu	Kamonyi	1.09	24	50
4	PHS TX NYANKOBWA WPS	Kamarashavu	Kankobwa	Mpanga	Kirehe	2.07	100	100
5	PH TX NTARUKA HC	Rwamuhigi	Ntaruka	Nasho	Kirehe	3.58	36	100
6	TX NASHO HC	Agasasa	Nasho	Mpanga	Kirehe	5.10	82	100
7	PH TX KIGARAMA HC	Gatari	Nyakerera	Kigarama	Kirehe	9.43	253	100
8	Migina MCC	Migina	Migina	Mwiri	Kayonza	9.14	34	100
9	WPS Migera	Migera	Migera	Mwiri	Kayonza	6.84	47	100
10	GS St Isidore	Mparo	Mugina	Mugina	Kamonyi	1.95	17	100
11	Rugalika WPS	Mibirizi	Kigese	Rugalika	Kamonyi	0.78	19	100
12	GS Bugora	Nyarusave	Bugoba	Rukoma	Kamonyi	2.17	78	50
13	GS Gifumba	Kirebe	Gifumba	Nyamabuye	Muhanga	2.17	104	100
14	GS Rongi	Mugwato	Nyamirambo	Rongi	Muhanga	7.77	49	50
15	Murehe GS	Gasharu	Gasagara	Rongi	Muhanga	1.08	39	50
16	Ngoma (Kabacuzi) HC	Cyambari	Ngoma	Kabacuzi	Muhanga	2.36	9	100
17	Gitega HC	Kaziba	Gitega	Kibangu	Muhanga	1.18	19	100
18	GASOVU HC	Ntonde	Kanyana	Rugendabari	Muhanga	4.25	24	100
19	Budende HC	Karambi	Budende	Kiyumba	Muhanga	1.87	99	100
20	RONGI SECTOR OFFICE	Mugwato	Nyamirambo	Rongi	Muhanga	0.59	26	50
21	GS Nyamiyaga SS	Nyamiyaga	Gasharu	Rongi	Muhanga	0.91	20	50
22	College Notre Dame Ntarabana SS	Ntarabana	Nyamirambo	Rongi	Muhanga	3.60	23	50

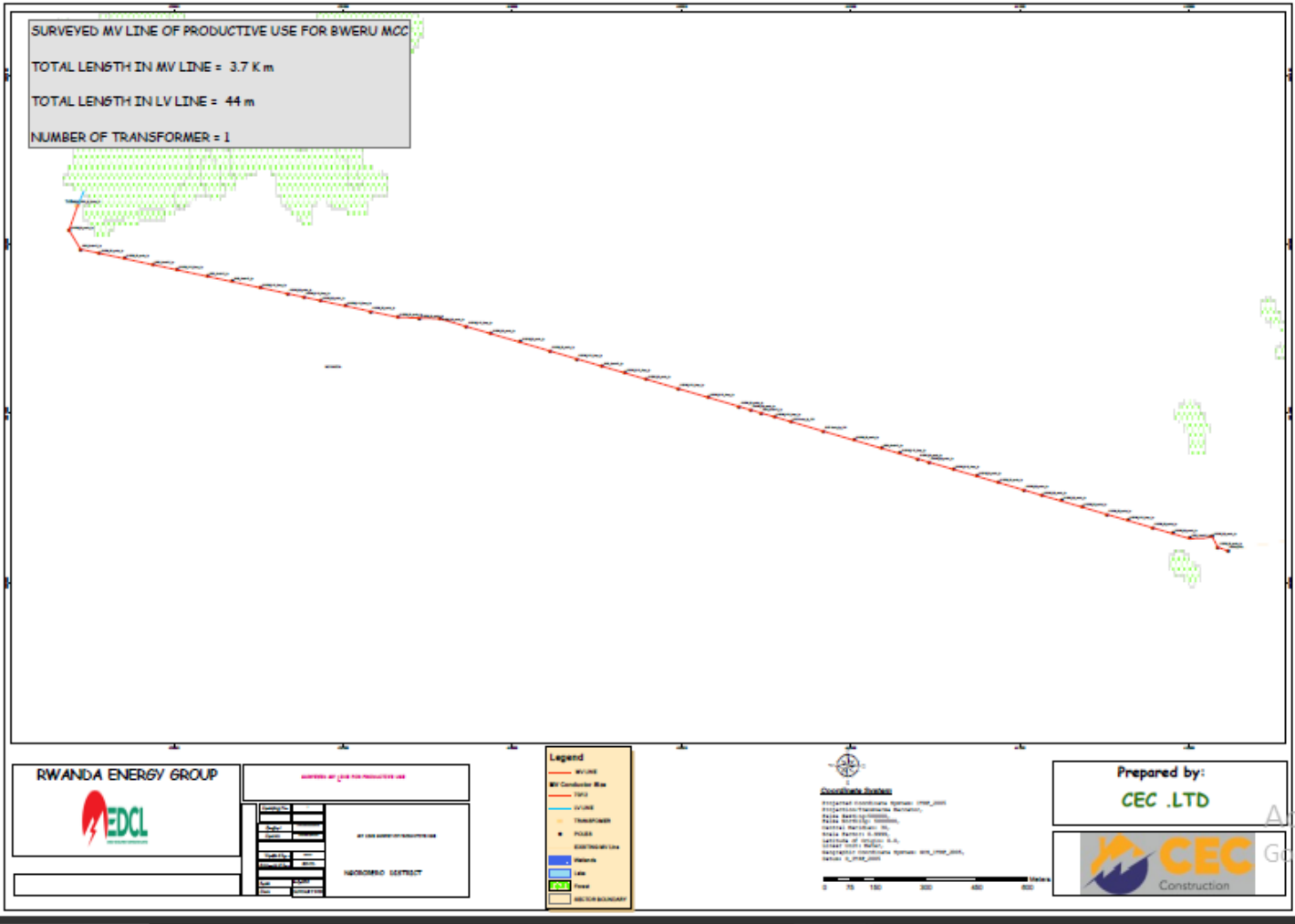
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23	Kageyo Sector Office	Rukira	Nyagisozi	Kageyo	Gatsibo	4.77	3	50
24	BURAMBA H.C	Musasa	Buramba	Kabacuzi	Muhanga	3.19	48	100
25	NDEGO HC	Gasabo	Kiyovu	Ndego	Kayonza	0.31	25	100
26	Matunguru Cell	Akabasanza	Matunguru	Rugarama	Gatsibo	0.42	6	50
27	GS Matunguru	Nyabagendwa	Matunguru	Rugarama	Gatsibo	1.51	46	50
28	Nyagashanga Trf	Bwera	Nyagashanga	Karangazi	Nyagatare	4.45	20	100
29	GAKAGATI Trf	Gakagati	Rutungu	Rwimiyaga	Nyagatare	3.60	38	100
30	GS Gitinda	Kayange	Cyanya	Cyuve	Musanze	3.17	65	50
31	Rungu Cell	Kampande	Rungu	Gataraga	Musanze	2.07	36	50
32	Gasakuza WPS	Karwasa	Karwasa	Gacaca	Musanze	0.71	5	100
33	Birambo Cell	Birambo	Birambo	Busengo	Gakenke	0.18	9	50
34	Gahinga Cell	Gahinga	Gahinga	Mugunga	Gakenke	0.58	22	50
35	GS Nyamirango	Nyamirango	Nyamirango	Kanzenze	Rubavu	0.77	32	50
36	HC Karumbi	Kirwa	Kirwa	Murunda	Rutsiro	3.33	18	100
37	Health Center	Ruhingo	Ruhingo	Gihango	Rutsiro	3.69	18	100
38	GS Nyarutovu	Muyunzwe	Muyunzwe	Kinihira	Ruhango	0.76	19	50
39	GS Rwaniro	Gatwaro	Gatwaro	Rwaniro	Huye	3.56	13	50
40	GS MWULIRE	Mwulire	Mwulire	Mbazi	Huye	0.64	35	50
41	Trf Kamonyi	Kamonyi	Kamonyi	Rusasa	GAKenke	2.88	39	100
42	GS BURAMBA SS	Musasa	Buramba	Kabacuzi	Muhanga	0.04	30	50
43	Kigabiro WPS	Bwiza	Bwiza	Kigabiro	Rwamagana	1.11	8	100
44	Nyakarambi Trf	Rubimba	Rubimba	Gahara	Kirehe	0.58	5	100
45	Trf Mutenderi	Mutenderi	Mutenderi	Mutenderi	Ngoma	1.15	13	100
46	Minazi WPS	Munyana	Munyana	Minazi	Gakenke	0.76	16	100
47	GS Kavumu	Binana	Binana	Matyazo	Ngororero	1.00	54	50
48	Mataba WPS	Kayenzi	Kayenzi	Kayenzi	Kamonyi	0.08	6	100
49	GS Nyarusave	Rugarama	Mwirute	Rukoma	Kamonyi	0.04	13	50

ESMP FOR THE CONSTRUCTION OF LOW AND MEDIUM VOLTAGE LINES FOR PRODUCTIVE USES

50	Kageyo MCC	Sebasengo	Kageyo	Mwiri	Kayonza	0.02	29	50
51	GS KIRWA CATHOLIQUE	Ntjamena	Kibaga	Rugendabari	Muhanga	0.65	18	50
52	BIYANGA W.P.S	Agatare	Nyagisozi	Kageyo	Gatsibo	1.22	23	100
53	Kibangu Sector	Nkondo	Gitega	Kibangu	Muhanga	5.00	18	50

Annex 4: Sample Location Maps



Annex 5: Chance Find Procedure

Purpose of the chance find procedure

The chance find procedure is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project design, construction or operation. A Chance Find Procedure, is a process that prevents chance finds from being disturbed until an assessment by a competent specialist is made and actions consistent with the requirements are implemented.

Responsibility

EDCL as the implementation institution is responsible for siting and designing the project to avoid significant damage to cultural heritage. When the proposed location of a project is in areas where cultural heritage is expected to be found, either during construction or operations, the contractor will implement chance find procedures established through the Social and Environmental Assessment. The contractor will not disturb any chance finds further until an Assessment by a competent specialist is made and actions consistent with the requirements of this Performance Standard are identified.

Scope of the chance find procedure

This procedure will be applicable to all activities conducted by the personnel, including contractors for the project that have the potential to uncover a heritage item/site. The procedure details the actions to be taken when a previously unidentified and potential heritage item/site is found during construction activities. Procedure outlines the roles and responsibilities and the response times required from both project staff, and any relevant heritage authority.

Induction/Training

All personnel, especially those working on earth movements and excavations, are to be inducted on the identification of potential heritage items/sites and the relevant actions for them with regards to this procedure during the Project induction and regular toolbox talks.

Chance find procedure

If any person/worker under the project discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

- 1) Stop all works in the vicinity of the find, until a solution is found for the preservation of these artefacts, or advice from the relevant authorities is obtained especially the Institute of National Museums of Rwanda (INMR);
- 2) Immediately notify the foreman. The foreman will then notify the Site engineer and the Environment Officer of the contractor;
- 3) Record details in Incident Report and take photos of the find;
- 4) Delineate the discovered site or area; secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities take over;
- 5) Preliminary evaluation of the findings by archaeologists. The archaeologist must make a rapid assessment of the site or find to determine its importance. Based on this assessment the appropriate strategy can be implemented. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage such as aesthetic, historic, scientific or research, social and economic values of the find;
- 6) Sites of minor significance (such as isolated or unclear features, and isolated finds) should be recorded immediately by the archaeologist, thus causing a minimum disruption to the work schedule of the Contractor. The results of all archaeological work must be reported to the INMR, once completed.
- 7) In case of significant find the INMR, will be informed immediately and in writing within 7 days from the find,
- 8) The onsite archaeologist provides INMR with photos, other information as relevant for identification and assessment of the significance of heritage items.
- 9) The INMR will investigate the fact and provide response in writing.
- 10) Decisions on how to handle the finding shall be taken by the responsible authorities which is INMR . This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
- 11) Construction works could resume only after permission is granted from the responsible authorities.

- 12) In case no response received, this will be considered as authorization to proceed with suspended construction works.

One of the main requirements of the procedure is record keeping. All finds must be registered. Photolog, copies of communication with decision making authorities, conclusions and recommendations/guidance, implementation reports are kept.

Additional information: Management options for archaeological site

- *Site avoidance.* If the boundaries of the site have been delineated attempt must be made to redesign the proposed development to avoid the site. (The fastest and most cost-effective management option);
- *Mitigation.* If it is not feasible to avoid the site through redesign, it will be necessary to sample it using data collection program prior to its loss. This could include surface collection and/or excavation. (The most expensive and time-consuming management option.)
- *Site Protection.* It may be possible to protect the site through the installation of barriers during the time of the development and/or possibly for a longer term. This could include the erection of high visibility fencing around the site or covering the site area with a geotextile and then capping it with fill. The exact prescription would be site-specific.

Management of replicable and non-replicable heritage

Different approaches for the finds apply to replicable and non-replicable heritage.

Replicable heritage

Where tangible cultural heritage that is replicable (Replicable cultural heritage is defined as tangible forms of cultural heritage that can themselves be moved to another location or that can be replaced by a similar structure or natural features to which the cultural values can be transferred by appropriate measures. Archaeological or historical sites may be considered replicable where the particular eras and cultural values they represent are well represented by other sites and/or structures.) and not critical is encountered, mitigation measures will be applied.

The mitigation hierarchy is as follows:

- a) Avoidance;
- b) Minimization of adverse impacts and implementation of restoration measures, in situ;
- c) Restoration of the functionality of the cultural heritage, in a different location; Permanent removal of historical and archaeological artefacts and structures;
- d) Compensation of loss - where minimization of adverse impacts and restoration not feasible.

Non-replicable heritage

Most cultural heritage is best protected by in situ preservation, since removal is likely to result in irreparable damage or even destruction of the cultural heritage.

Nonreplicable cultural heritage (Nonreplicable cultural heritage may relate to the social, economic, cultural, environmental, and climatic conditions of past peoples, their evolving ecologies, adaptive strategies, and early forms of environmental management, where the (i) cultural heritage is unique or relatively unique for the period it represents, or (ii) cultural heritage is unique or relatively unique in linking several periods in the same site. Examples of non-replicable cultural heritage may include an ancient city or temple, or a site unique in the period that it represents.) must not be removed unless all of the following conditions are met:

- a) There are no technically or financially feasible alternatives to removal;
- b) The overall benefits of the project conclusively outweigh the anticipated cultural heritage loss from removal; and Any removal of cultural heritage must be conducted using the best available technique advised by relevant authority and supervised by archaeologist.

Human Remains Management Options

The handling of human remains believed to be archaeological in nature requires communication according to the same procedure described above.

There are two possible courses of action:

- a) Avoid. The development project is redesigned to completely avoid the found remains. An assessment should be made as to whether the remains may be

affected by residual or accumulative impacts associated with the development, and properly addressed by a comprehensive management plan.

- b) Exhume. Exhumation of the remains in a manner considered appropriate by decision makers. This will involve the predetermination of a site suitable for the reburial of the remains. Certain procedures may need to be followed before development activities can recommence in the area of the discovery.

EMERGENCY CONTACTS

INSTITUTE OF NATIONAL MUSEUMS OF RWANDA (INMR)

Address : KN 90 St2, Kigali

Telephone : 0730 741 09

Email: info@museum.gov.rw

Website: www.museum.gov.rw

Annex 6: CEC environmental, social, health and safety policy

CEC Construction

Environmental, Health, Safety, Social and Wellness Policy, Construction Phase

CEC Construction, its investors and contractors aim to deliver quality, safe services. We are committed to providing a safe, healthy and clean worksite which drives health and safety as a primary concern through strong leadership and proactive participation throughout the workforce. We aim to build lasting and mutually beneficial relationships and to advance our reputation as a leading Company in Rwanda, by striving to constantly build our capacity to achieve international best standards in environmental, social and health and safety protection. To achieve these aims, we shall adhere to the following:

Environmental

- Compliance with all local and national environmental rules and regulations.
- Assessment and management of all environmental impacts and risks, including but not limited to:
 - Air quality, water use, energy use, noise pollution, habitat destruction, waste and hazardous materials management and prevention of soil erosion.
- We explicitly aim to protect the integrity of protected ecosystems in our sites.
- Management of environmental impacts through the setting of realistic targets for environmental performance and through the systematic tracking and reporting of environmental performance.
- Sourcing of raw materials from sustainable suppliers, wherever possible, as well as the incorporation of energy and water-efficient measures, as well as waste recycling and reuse measures in project design and execution, wherever possible.
- Protection of local flora wherever possible, and the replanting of indigenous species of trees, grass, flowers and shrubs on completion of construction activities.

Social and Wellness

- Fair labour practices including, at a minimum, full compliance with the Rwanda Labour Code, as relates to, for example, labour relations, minimum wages and employee benefits.
- Zero tolerance of:

- Human rights abuses, including child (under 16 years of age) and forced labour; GBV and SEA,
- Discriminatory practices on the basis of, for example, gender, race, nationality, culture, religion or disability; and/or
- Genocide ideologies.
- Protect the health and wellness of our workforce, neighbours and community by providing:
 - A sufficient number of clean, sanitary and appropriate sanitation and hand wash facilities;
 - Sufficient supply of easily accessible clean and safe drinking water;
 - Appropriate rest and cloakroom facilities for our workers;
 - Basic awareness training on communicable diseases (such as Covid 19, HIV, TB, malaria and Ebola) and non-communicable diseases (such as malnutrition, diabetes and hypertension) to our workforce;
 - Strict protection measures of the water resources surrounding our site.
- Maintain and manage a formal employee grievance procedure.
- Provide and maintain formal mechanisms to engage with neighbours, community members and other project stakeholders to build lasting partnerships and foster constructive and mutually beneficial relationships.
- Sourcing of materials from local, small and micro enterprise (SME) suppliers, wherever possible, to support and foster local economic development.

Occupational Health and Safety

- Compliance with all relevant local and national health and safety laws, as an absolute minimum.
- Provide appropriate equipment and necessary training for the protection of our workforce, including basic health and safety training for all developer, contractor and sub-contractor employees on site and prohibiting any untrained worker from performing hazardous tasks.
- Maintain and manage an effective procedure to track and improve health and safety performance throughout the site, including the tracking and mitigation of all near misses, incidents and minor and major injuries. This includes defining targets for OHS performance, explicitly, zero fatalities and zero major injuries.

- Making risk identification everyone's responsibility and encouraging site-wide proactive participation in OHS through the strict enforcement of disciplinary measures, as well as the maintenance of an effective reward system for OHS best practice.
- Constant reinforcement of the primacy of safety on site by formally trained, full-time OHS Officers, who are also responsible for the daily and ongoing identification and mitigation of OHS risks and hazards.
- Maintain a detailed and appropriate emergency response procedure and all ensure all workers and visitors to site are adequately informed on the details of the plan, as well as ensure that all necessary safety and warning signs and emergency response equipment are provided and maintained throughout the site.