Eswatini Electricity Company

Environmental and Social Impact Assessment (ESIA) Report and Environmental and Social Management Plan (ESMP)

(DRAFT Report based on preliminary survey, to be updated during the feasibility studies and detailed design)

NETWORK ACCESS AND REINFORCEMENT PROJECT (NRAP)

29 APRIL 2019

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LIST OF ABBREVIATIONS

CERC	Contingent Emergency Response Component
EEA	Eswatini Environmental Authority
EEC	Eswatini Electricity Company
EHS	Environmental, Health and Safety
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
FAO	Food and Agricultural Organization of United Nations
GIIP	Good International Industry Practice
GoKE	Government of the Kingdom of Eswatini
GRM	Grievance Redress Mechanism
MNRE	Ministry of Natural Resources and Energy
NGO	Non-Governmental Organization
NOSA	National Occupational Safety Association
OH&S	Occupational Health and Safety
PAP	Project Affected People
QMS	Quality Management System
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SHERQ	Safety Health Environment Risk and Quality unit
WHO	World Health Organization

EXECUTIVE SUMMARY

This draft Environmental and Social Impact Assessment (ESIA) has been prepared for Eswatini Electricity Company (EEC) Project which is funded by the World Bank through the Network Reinforcement and Access Project (NRAP) to be implemented by the Eswatini Energy Company (EEC).

The proposed project supports the Government of the Kingdom of Eswatini's (GoKE) goal of providing access to modern energy to all by 2022 as stated in the National Energy Policy. The project will target the Shiselweni region of Eswatini and strengthen the electricity network to improve the quality and reliability of service and increase access to electricity. The project has three components: (i) Reinforcement of expansion of the transmission and distribution network; (ii) Increasing electricity access; and (iii) Analytical support and capacity building.

Through the Ministry of Natural Resources and Energy (MNRE), the proposed project supports Government of the Kingdom of Eswatini's goal to provide universal access to electricity by 2022. Shiselweni Region remains the poorest of the four regions in the country with high poverty indices[1]. 67.2 percent of the region's population live below the poverty line with 21.1 percent described as living in extreme poverty[2].

The proposed project will strengthen the electricity network in the Shiselweni region to improve the reliability of service and increase access to electricity for domestic and productive uses by:

1) Reducing transmission system interruptions in the region.
2) Reducing distribution system interruptions in the region.
3) Increasing the number of households provided with electricity in the region.
4) Reducing the high technical system losses that are inherent with low voltage transmission systems.

The Project is also expected to support proposed future developments in Shiselweni, such as large-scale agriculture and bulk water supply. Adequate and reliable power has potential to engender private sector entrepreneurial activities, most particularly in agriculture.

Purpose of the Environmental and Social Impact Assessment (ESIA)

The construction of electricity transmission and distribution lines and sub stations is associated will likely be associated with adverse environmental and social risks and impacts. In line with the Eswatini's Environmental Impact Assessment (EIA) laws and regulations, and the World Bank Environmental and Social Framework (ESF), an Environmental and Social Impact (ESIA) assessment is required to anticipate and identify the adverse environmental and social risks likely to occur and develop cost effective and feasible mitigation measures by applying the mitigation hierarchy.

Project Description

Component 1. Reinforcement of the Transmission and Distribution Grid:

The objective of this component is to strengthen the transmission and rural energy networks for social and economic development.

Subcomponent 1a. Reinforcement of the Southern Transmission Grid

[1] Eswatini Household Income and Expenditure Survey 2016/17 – Key findings report

[2] Extreme poverty is defined as living below minimum energy requirement for maintaining a healthy lifestyle and carrying out light physical activity

Sub Component 1a will finance the construction of ≈90km of 132 kV transmission line from Nhlangano II to Lavumisa with 2 new 20MVA 132/11kV 20MVA substations at Matsanjeni and Lavumisa, and expansion works at the existing 132/66/11kV Nhlangano II substation, and the 11kV Hluthi switching station that will be converted into a 20MVA 132/11kV substation. It will cover the electrical, civil and electromechanical works, switchgear, and protection and control equipment.

This sub-component will also finance the procurement of an owner's engineer that will support the Project Implementation Unit (PIU) with: (a) overall project management and supervision including procurement, design, contract management; and (b) supervision and monitoring of the implementation of the ESMPs and RAPs as needed. This subcomponent will also provide a program of capacity-building activities to support the design compliance with fiduciary, gender, Monitoring and Evaluation (M&E), procurement, and environmental and social standards requirements. Training will be provided for EEC staff, project stakeholders, and consultations with relevant community groups.

Subcomponent 1b. Distribution network reinforcement

The subcomponent will finance various activities to link the new 132kV substations to the distribution network, reinforce weak segments of the distribution network and install control equipment in key segments of the network. Activities will include construction of 11kV feeders, increased automation (for example, through remote circuit breakers), installation of switchgear to allow network reconfiguration, conductor upgrades, installation of capacitor banks, and expansion of transformation capacity.

Component 2. Electricity access expansion

The component will support GoKE's program for rural electrification by financing an estimated 8,000 household connections through the Rural Electrification Program (REP). It will be implemented by EEC's Rural Electrification Unit focusing on the Shiselweni region and will help reduce the outstanding backlog of connection applications. The component will finance the cost of works up to the customer interface including metering but excludes internal wiring which is the contribution that the customer makes towards the program.

WORLD BANK ENVIRONMENTAL AND SOCIAL STANDARDS (ESSs)

The Project will apply relevant World Bank Environmental and Social Standards (ESSs) to protect against adverse impacts on the bio-physical and social environments. The following ESSs are relevant to the project:

Table 0-1. Applicable Environmental and Social Standards

ESS	Description
ESS 1.	Assessment and Management of Environmental and Social Risks and Impacts
ESS 2.	Labor and Working Conditions
ESS 3.	Resource Efficiency and Pollution Prevention and Management
ESS 4.	Community Health and Safety
ESS 5.	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
ESS 6.	Biodiversity Conservation and Sustainable Management of Living Natural Resources
ESS 8.	Cultural Heritage
ESS 10.	Stakeholder Engagement and Information Disclosure.

Project Activities
The design, construction and operation activities associated with the project are described below to the possible extent known and based on the preliminary survey report. Additional activities will be included during the preparation of the detailed design report.

Pre-construction Phase Activities

a) **Detailed Study Design: -** EEC has procured a consulting firm to prepare a detailed design of the proposed project which may vary albeit not significantly from the feasibility study design currently under preparation and will equally update this draft ESIA report to detailed design ESIA.

b) **Acquisition of Right of Way:** Prior to commencement of construction activities, the contractor will have to possess the Right of Way (ROW), through a site hand over which will be facilitated by EEC where the sub stations are to be located and transmission and distribution lines pass.

c) **Obtaining Necessary Permitting Requirements:** A number of environmental and social permitting requirements will be required to be obtained by contractor for this project as per the statutes of the Government of Eswatini before the construction commences.

Construction Phase Activities
Key activities during the construction stage including equipment and construction material is presented to the extent known and is subject to change depending on final methodology that will be adopted by the contractor. Activities during the construction will include among others: -

Box 0-1. Construction Activities

- Clearing and grubbing
- Excavations
- Mounting
- Installation of electricity poles and lines
- Civil works
- Mechanical works
- Electrical works

Operation Phase (Transmission and Distribution Lines and Sub Stations)
Once constructed, the proposed project (sub stations and transmission and distribution lines) will be operated year-round, 24 hours a day, transmitting electricity to the Shiselweni region. EEC will ensure on-going maintenance from time to time, in conformance with transmission line maintenance processes. The maintenance will include: -

Box 0-2. Maintenance Aspects

- Routine maintenance
- Structure maintenance
- Environmental maintenance
- Emergency works
- Property Management
- Network and assets management

Materials and Construction Equipment

The following equipment and materials will be required for use during the construction phase of the transmission and distribution lines and sub stations. The actual quantities and type of machinery and materials will be determined during the preparation of detailed design and will be reflected in the comprehensive ESIA. It is expected that construction materials like cement, concrete, gravel, water, aggregate etc. will be sourced from local suppliers and will not require the need for opening up material sites (quarries, borrow pits etc.) to source the same.

Table 0-2. Material and Equipment

Equipment	**Source**
Trucks	Local and international suppliers
Excavators	Local and international suppliers
Cranes	Local and international suppliers
Cable drum	Local and international suppliers
Reel and tensioner	Local and international suppliers
Materials	
Cement	Local suppliers
Sand	Local suppliers
Concrete	Local suppliers
Aggregate	Local suppliers
Counterpoise wires	International suppliers
Cables	International suppliers
Voltage transformers	International suppliers
Current transformers	International suppliers
Power transformers	International suppliers
Surge arresters	International suppliers
Breaks	International suppliers
Switches	International suppliers
BED buses	International suppliers

POSITIVE IMPACTS

Employment/Job Creation

The construction of the transmission and distribution lines and substations including operation and maintenance activities provide employment opportunities–directly and indirectly–to skilled as well as unskilled manpower primarily to local manpower. Routine and periodic maintenance activities during the operation phase would generate direct employment not necessarily to the local communities but to the staff of EEC.

Business Growth

The construction of the transmission and distribution lines and sub stations will require materials and equipment which will be sourced locally and internationally and will in-effect boost the local business enterprises through supply of locally available materials and equipment. Electricity is a significant trigger of economic growth and establishment of small and micro-enterprises by the local communities. Businesses are likely to increase and operate even late in the night due to presence of lighting hence spur economic growth.

Security

Presence of electricity will be of beneficial impact to the local communities in terms of general security as a result of lighting.

Education and Health Facilities
The educational and health facilities in the project areas will be connected to the electricity and this will improve the quality of services.

ADVERSE IMPACTS

The potential negative impacts during construction are generally short-term, temporary and reversible which can be reduced or eliminated by known mitigation measures. Many of the impacts will only occur at active construction sites during the construction stage. The key social risks and impacts associated with the project are associated with the construction labor management, loss of assets, private land and restriction to land use, potential impacts on GBV, community health and safety risks during construction phase of the project.

Table 0-3: Summary of Negative Impacts and Mitigation Measures

Environmental	
Terrestrial Habitat Alteration	**Mitigation Measures**
Construction Right of Way	• Site transmission and distribution rights-of-way, access roads, lines, towers, and substations through use of existing utility and transport corridors for transmission and distribution, and existing roads and tracks for access roads, whenever possible; • Installation of transmission lines above existing vegetation to avoid land clearing; • Revegetation of disturbed areas with native plant species; • Management of construction site activities as described in relevant sections of the General EHS Guidelines.
Right-of-way maintenance	• Implementation of an integrated vegetation management approach (IVM). The selective removal of tall-growing tree species and the encouragement of low-growing grasses and shrubs is the common approach to vegetation management in transmission line rights-of-way. Alternative vegetation management techniques should be selected based on environmental and site considerations including potential impacts to non-target, endangered and threatened species; • Removal of invasive plant species, whenever possible, cultivating native plant species; • Observing manufacturer machinery and equipment guidelines, procedures with regard to noise, and oil spill prevention and emergency response; • Avoiding use of machinery in the vicinity of watercourses
Forest Fires	• Monitoring right-of-way vegetation according to fire risk; • Removing blowdown and other high-hazard fuel accumulations; • Time thinning, slashing, and other maintenance activities to avoid forest fire seasons; • Disposal of maintenance slash by truck or controlled burning. Controlled burning should adhere to applicable burning regulations, fire suppression equipment requirements, and typically must be monitored by a fire watcher; • Establishing a network of fuel breaks of less flammable materials or cleared land to slow progress of fires and allow firefighting access.

Avian collisions and electrocution	• Maintaining 1.5 meter (60-inch) spacing between energized components and grounded hardware or, where spacing is not feasible, covering energized parts and hardware; • Retrofitting existing transmission or distribution systems by installing elevated perches, insulating jumper loops, placing obstructive perch deterrents (e.g. insulated" V's"), changing the location of conductors, and / or using raptor hoods; • Installing visibility enhancement objects such as marker balls, bird deterrents, or diverters.
Aquatic Habitat Alteration	**Mitigation Measures**
	• Minimizing clearing and disruption to riparian vegetation; • Management of construction site activities as described in the relevant sections of the General EHS Guidelines.
Electric and Magnetic Fields	**Mitigation Measures**
	• Evaluate potential exposure to the public against the reference levels developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). Average and peak exposure levels should remain below the ICNIRP recommendation for General Public Exposure; • Consider siting new facilities so as to avoid or minimize exposure to the public. Installation of transmission lines or other high voltage equipment above or adjacent to residential properties or other locations intended for highly frequent human occupancy, (e.g. schools or offices), should be avoided; • If EMF levels are confirmed or expected to be above the recommended exposure limits, application of engineering techniques should be considered to reduce the EMF produced by power lines, substations, or transformers. Examples of these techniques include: o Shielding with specific metal alloys o Burying transmission lines o Increasing height of transmission towers o Modifications to size, spacing, and configuration of conductors
Hazardous Materials	**Mitigation Measures**
Insulating Oils and Fuels	• Disposal of hazardous materials in accordance with the waste management regulations
Occupational Health and Safety	
Live Power Lines	**Mitigation Measures**

	• Only allow trained and certified workers to install, maintain, or repair electrical equipment;
	• Deactivating and properly grounding live power distribution lines before work is performed on, or in close proximity, to the lines;
	• Ensuring that live-wire work is conducted by trained workers with strict adherence to specific safety and insulation standards. Qualified or trained employees working on transmission or distribution systems should be able to achieve the following:
	  o Distinguish live parts from other parts of the electrical system
	  o Determine the voltage of live parts
	  o Understand the minimum approach distances outlined for specific live line voltages
	  o Ensure proper use of special safety equipment and procedures when working near or on exposed energized parts of an electrical system
	• Workers should not approach an exposed energized or conductive part even if properly trained unless:
	  o The worker is properly insulated from the energized part with gloves or other approved insulation; or,
	  o The energized part is properly insulated from the worker and any other conductive object; or,
	  o The worker is properly isolated and insulated from any other conductive object (live-line work).
	• Where maintenance and operation is required within minimum setback distances, specific training, safety measures, personal safety devices, and other precautions should be defined in a health and safety plan. (Table 2 in Section 2.2 provides recommended minimum safety setbacks for workers);
	• Workers not directly associated with power transmission and distribution activities who are operating around power lines or power substations should adhere to local legislation, standards, and guidelines relating to minimum approach distances for excavations, tools, vehicles, pruning, and other activities;
	• Minimum hot stick distances may only be reduced provided that the distance remaining is greater than the distance between the energized part and a grounded surface.

Working at height	**Mitigation Measures**

	• Test structures for integrity prior to undertaking work; • Implementation of a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers, among others; • Establishment of criteria for use of 100 percent fall protection (typically when working over 2 meters above the working surface, but sometimes extended to 7 meters, depending on the activity). The fall protection system should be appropriate for the tower structure and necessary movements, including ascent, descent, and moving from point to point; • Installation of fixtures on tower components to facilitate the use of fall protection systems; • Provision of an adequate work-positioning device system for workers. Connectors on positioning systems should be compatible with the tower components to which they are attached; • Hoisting equipment should be properly rated and maintained and hoist operators properly trained; • Safety belts should be of not less than 16 millimeters (mm) (5/8 inch) two-in-one nylon or material of equivalent strength. Rope safety belts should be replaced before signs of aging or fraying of fibers become evident; • When operating power tools at height, workers should use a second (backup) safety strap; • Signs and other obstructions should be removed from poles or structures prior to undertaking work; • An approved tool bag should be used for raising or lowering tools or materials to workers on structures.
Electric and Magnetic Fields	**Mitigation Measures**
	• Identify potential exposure levels in the workplace, including surveys of exposure levels in new projects and the use of personal monitors during working activities; • Train workers in the identification of occupational EMF levels and hazards; • Establish and identify safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure, limiting access to properly trained workers; • Implement action plans to address potential or confirmed exposure levels that exceed reference occupational exposure levels developed by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP), and the Institute of Electrical and Electronics Engineers (IEEE). Personal exposure monitoring equipment should be set to warn of exposure levels that are below occupational exposure reference levels (e.g. 50 percent). Action plans to address occupational exposure may include limiting exposure time through work rotation, increasing the distance between the source and the worker, when feasible, or the use of shielding materials.
Community Health and Safety	

Electrocution	Mitigation Measures
	• Use signs, barriers (e.g. locks on doors, use of gates, use of steel posts surrounding transmission towers, particularly in urban areas), and education / public outreach to prevent public contact with potentially dangerous equipment; • Surround conducting objects (e.g. fences or other metallic structures) installed near power lines, to prevent shock.
Electromagnetic Interference	**Mitigation Measures**
	• Create emission line rights-of- way and conductor bundles to ensure radio reception at the outside limits remains normal.
Visual Amenity	**Mitigation Measures**
	• Extensive public consultation during the planning of power line and power line right-of-way locations; • Accurate assessment of changes in property values due to power line proximity; • Siting power lines, and designing substations, with due consideration to landscape views and important environmental and community features; • Location of high-voltage transmission and distribution lines in less populated areas, where possible; • Burying transmission or distribution lines when power must be transported through dense residential or commercial areas.
Noise	**Mitigation Measures**
Spread of infectious diseases & accidents induced by project activities	• Measures to mitigate this impact may be addressed during project planning stages to locate rights-of-way away from human receptors, to the extent possible. Use of noise barriers or noise canceling acoustic devices should be considered as necessary. • Roll out of an awareness campaign on HIV/AIDS, GBV, VAC, Road Safety, malaria prevention, sanitation; • Communication through community liaisons when stringing activities will take place to ensure children are not playing in the work area; • Project sites to be marked off with fencing and signage to prevent people from entering the dangerous sites;
Social Impacts and Risks	
Labor Conditions	**Mitigation Measures**
	• Develop and Implement Labor Management Procedures (LMP) and subsequent Labor Management Plans • Establish and implement a Workers Grievance Redress Mechanism
Labor Influx	**Mitigation Measures**
	• GBV, HIV/AIDS, Child protection training/awareness campaign for contractor, sub-contractors and communities (and HIV/health); • EWSC's gender policy and action plan; • Provisions for handling of GBV in the GRM • Development and implementation of a stakeholder engagement plan (SEP)

	• Development and Implementation of a Project Grievance Mechanism (GM) • Bidding documents to reflect the findings of the ESIA, and the requirements of the ESMP, to cater for GBV and overall ESHS risks
Land Acquisition, Involuntary Displacement and Restrictions on land use	**Mitigation Measures**
	• Development of a Resettlement Policy Framework (RPF) • Development of subsequent Resettlement Action Plan(s) (RAP) and/or Livelihood Restoration Plans (LRP)

ESMP Implementation

For an effective integration of environmental and social standards into the project implementation the Contractor will need to adopt this ESMP and prepare a comprehensive Construction Environment and Social Management Plan (C-ESMP) that will provide the key reference point for compliance. The environmental supervision will also adopt the C-ESMP.

RPF and site specific RAP implementation

A Resettlement Policy Framework has been prepared by the EEC to guide routing options, designs and preparation of site specific RAP/ARAP. Surveyors will be provided training to prioritize avoidance and minimization of impact. The social officer in EEC will be overall responsible for preparation of RAP with support of consultants and close consultation with Chief's Royal council members and project affected. Activities that will cause physical displacement and/or economic displacement shall not commence prior to completion of resettlement and compensation payment. Disbursement of compensation and resettlement assistance completion report shall be condition of site handing over to the contractor.

Stakeholder Engagement Plan implementation

EEC has prepared a Stakeholder Engagement Plan proportional to the nature and scale of the project impacts and risks and will be updating the same from time to time. The community Liaison Officers shall be engaged by the project to liaison with the local stakeholders and project affected community. Main stakeholders have been identified in the SEP and need for their engagement throughout the project cycle has been outlined. The ESIA and RPF further details out the enhanced requirement to engage with the project affected during preparation and implementation of ESIA/ESMP and RAP. The project specific Grievance Mechanism has also been detailed out based on existing EEC procedures and within the legal and cultural framework with no cost to the project affected. The GRM will be further enhanced based on the findings of the comprehensive ESIA and detailed designs.

EEC Project Implementation Unit

A Project Implementation Unit (PIU) will be established within EEC with full time qualified environmental and social standards specialists who will provide environmental and social standards support on the implementation of the Project ESMP, RAP and other mitigation plans and to ensure compliance and support corrective action. The Client (EEC) already has two (2) competent environmental specialists, and Occupational and Health and Safety officers. A Social Specialist is currently being recruited by EEC and will be in place before project effectiveness. The social Specialist along with the Community Liaisons Officers (CLOs) to be engaged by EEC will ensure that project affected participate in the project and their concerns are addressed and impacts are mitigated as per E&S standards.

Project Supervision Engineer
The Project Supervision Engineer will be charged with the responsibilities of supervision, review of site reports, preparation of monthly progress reports, prepare and issue appropriate instructions to the Contractor and monitor ESMP implementation.

Contractor
The Contractor will internalize the ESMP/C-ESMP, prepare monthly progress reports and implement instructions issued by the Supervision Consultant. The Contractor will also undertake ESIA Studies for sites outside the project zone and seek appropriate EAA Licenses. The Contractor, therefore, will engage qualified Environmentalist and Social Experts on full time basis to interpret the C-ESMP and advice on the implementation of the same, as well to the Counterpart Personnel for the Supervision Expert. The full Contractor's Team will comprise of the key staff cadres as specified in the Bidding Document. Contractor shall also have Labour management Plan, code of conduct and complaint mechanism as per Labour Management procedures of EEC.

Eswatini Environment Authority
The Eswatini Environment Authority (EAA) is responsible for ensuring environmental compliance in the country and will undertake surveillance on the project implementation and review compliance performance based on the supervision monitoring reports.

1 INTRODUCTION

1.1 Background

1. The Government of the Kingdom of Eswatini intends to apply for a loan from the World Bank's International Bank for Reconstruction and Development (IBRD) to finance the proposed Network Reinforcement and Access Project (NRAP), hereinafter referred to as "the Project".

1.2 Purpose of the Environmental and Social Impact Assessment

2. As part of preparation for the Project, and according to the Environmental Audit, Assessment and Review Regulations (2000), Eswatini Electricity Company (EEC) has submitted a project brief underlining an outline of the proposed project institutions to the Eswatini Environment Authority (EEA). In conformance with the Regulations, EEC submitted a project brief to Eswatini Environmental Authority (EAA) and the proposed Project was assigned as a Category II project by EEA (See Appendix B)

3. The purpose of preparing this draft Environmental and Social Assessment for (activities associated with construction and operation of transmission line, sub stations, distribution lines and connections) is to meet the requirements of the Environmental and Social Framework (ESF) directive of the World Bank[3] which indicates the need to prepare draft environmental and social assessments before appraisal of the Project. The preliminary assessment is meant to give an understanding of the level of environmental and social risks and impacts and how they will be mitigated.

4. Concurrent to carrying out this preliminary ESIA, EEC has prepared and will disclose a Resettlement Policy Framework (RPF), a Stakeholder Engagement Plan (SEP), and a Labor Management Procedure (LMP).

5. Currently, EEC is procuring the services of a suitably qualified Environmental and Social consulting firm to undertake a comprehensive Environmental and Social Impact Assessment (ESIA) in accordance with the Eswatini Environment Act No. 5 of 2002, the World Bank Environmental and Social Framework (ESF)[4], the World Bank Group General Environmental, Health and Safety (EHS) Guidelines, and the World Bank Group EHS guidelines for Electric

[3] Paragraph 4, Section IX of the directive states that:
"Where the ESRC for the Project is High Risk or Substantial Risk, draft documentation may include the instruments that have been identified by the Borrower in accordance with the methods and tools set out in ESS1, Annex 1 and the other ESSs (such as an ESIA, ESMP, ES Audit, ESMF, Resettlement Plan or Indigenous Peoples Plan). As relevant, the draft documentation includes the following information:

- *a description of the Project and the proposed Project activities;*
- *the rationale for the Project;*
- *the key results of the scoping of the Project;*
- *the aspects of the Borrower's ES Framework that will be utilized in the Project (including where relevant, the permitting requirements of the Borrower);*
- *information regarding the environmental and social baseline, including information on data gaps, the significance of these gaps for decision-making and how these gaps will be addressed;*
- *the nature of the potential risks and Impacts of the Project, together with an assessment of their significance;*
- *methods of mitigation in line with the mitigation hierarchy;*
- *the way in which the impacts of the Project and the implementation of mitigation measures will be monitored."*

[4] http://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf

Power Transmission and Distribution[5]. The ESIA will be prepared concurrently with the detail design preparation for the Project in order to inform the detailed design.

1.3 **Rationale for the project**

6. The proposed project supports the Government of the Kingdom of Eswatini's goal of providing access to modern energy to all by 2022 as stated in the National Energy Policy. The project will target the Shiselweni region of Eswatini and strengthen the electricity network to improve the quality and reliability of service and increase access to electricity. The project has three components: (i) Reinforcement of expansion of the transmission and distribution network; (ii) Increasing electricity access; and (iii) Analytical support and capacity building.

7. Through the Ministry of Natural Resources and Energy (MNRE), the proposed project supports Government of the Kingdom of Eswatini's (GoKE) goal to provide universal access to electricity by 2022.

8. Shiselweni Region remains the poorest of the four regions in the country with high poverty indices[6]: 67.2 percent of the region's population live below the poverty line with 21.1 percent described as living in extreme poverty[7].

9. The multiple-indicator cluster survey conducted in 2014 identified Shiselweni Region as the region with the lowest electricity access rate amongst the four regions at 48 percent. This reduces the potential for economic growth. In the 2016/17 fiscal year, EEC processed 3,622 quotations for electricity connections from the Shiselweni Region, the lowest across the four regions.

10. The existing network has limited capacity to reliably deliver the power needed to meet current and potential future demand. Currently, Shiselweni is served by an 11kV distribution network that runs from the bulk supply point at Nhlangano II substation to Lavumisa, approximately 90km away. This is the longest 11kV feeder in the Kingdom and its long length and current load in the region result in poor quality of service characterized by low voltages, frequent power outages and increased technical losses. The proposed project will strengthen the electricity network in the Shiselweni region to improve the reliability of service and increase access to electricity for domestic and productive uses, by:

1. Reducing transmission system interruptions in the region.
2. Reducing distribution system interruptions in the region.
3. Increasing the number of households provided with electricity in the region.
4. Reducing the high technical system losses that are inherent with low voltage transmission systems.

The Project is also expected to support proposed future developments in Shiselweni, such as large-scale agriculture and bulk water supply. Adequate and reliable power has potential to engender private sector entrepreneurial activities, most particularly in agriculture. Despite its high poverty level, the Shiselweni region has the highest share of households with agricultural land (81 percent) which indicates prospects for a vibrant agricultural economy.

[5] https://www.ifc.org/wps/wcm/connect/66b56e00488657eeb36af36a6515bb18/Final%2B-%2BElectric%2BTransmission%2Band%2BDistribution.pdf?MOD=AJPERES&id=1323162154847

[6] Eswatini Household Income and Expenditure Survey 2016/17 – Key findings report

[7] Extreme poverty is defined as living below minimum energy requirement for maintaining a healthy lifestyle and carrying out light physical activity

2 PROJECT DESCRIPTION AND ACTIVITIES

11. The Network Access and Reinforcement Programme (NRAP) will comprise four (4) components:

2.1 Component 1. Reinforcement of the Transmission and Distribution Grid.

12. The objective of this component is to strengthen the transmission and rural networks for social and economic development.

2.1.1 Subcomponent 1a. Reinforcement of the Southern Transmission Grid

13. Subcomponent 1a will finance:

Component 1a will finance the construction of ≈90km of 132 kV transmission line from Nhlangano II to Lavumisa with 2 new 20MVA 132/11kV 20MVA substations at Matsanjeni and Lavumisa, and expansion works at the existing 132/66/11kV Nhlangano II substation, and the 11kV Hluthi switching station that will be converted into a 20MVA 132/11kV substation. The network in the region is currently operated at 11kV which limits the ability to deliver power and the long lines result in low voltages that suppress the utilization of appliances. The low voltages, small conductor sizes and loading on the lines result in high technical losses. This sub-component will help EEC improve its network to support growing demand in the region. It will cover the electrical, civil and electromechanical works, switchgear, and protection and control equipment. Specific activities are:-

a. Construction of Nhlangano II-Hluthi-Matsanjeni-Lavumisa 132kV transmission line (≈90km) with associated communication, OPGW, metering, and SCADA;
b. Construction of a 132kV line bay and associated works at Nhlangano II substation
c. Expansion and conversion of Hluthi 11kV switching station to a 20MVA 132/11kV substation
d. Construction of 20MVA 132/11kV substations at Mhlosheni, Hluthi and Lavumisa.

The project was selected as the most viable option to address the constraints based on a preliminary study by EEC that assessed the technical viability of strengthening the 66kV network. EEC has completed a preliminary project note based on in-house analysis which provides a strong rationale for the project. Detailed feasibility studies are being undertaken to determine the final, design, line routing and cost estimates.

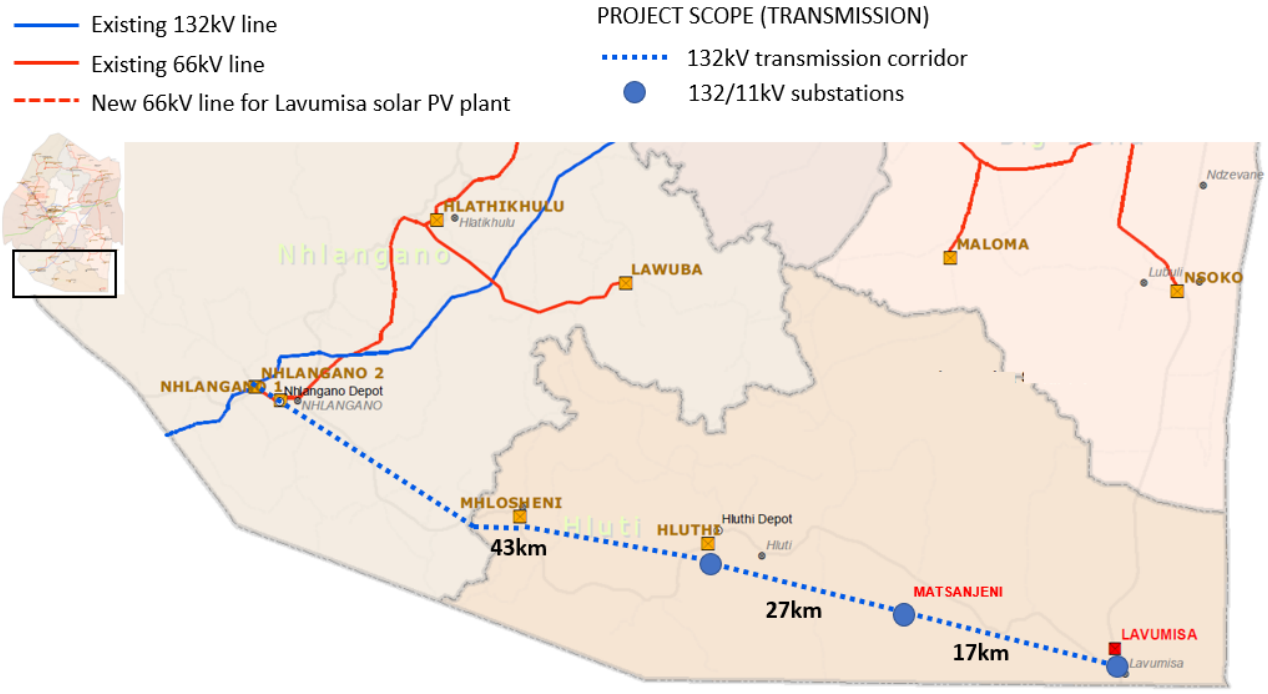
This sub-component will also finance the procurement of an owner's engineer that will support the Project Implementation Unit (PIU) with: (a) overall project management and supervision including procurement, design, contract management; and (b) supervision and monitoring of the implementation of the ESMP and RAPs as needed. This subcomponent will also provide a program of capacity-building activities to support the design compliance with fiduciary, gender, M&E, procurement, and environmental and social standards requirements. Training will be provided for EEC staff, project stakeholders, and consultations with relevant community groups.

2.1.2 Subcomponent 1b. Distribution network reinforcement

14. The subcomponent will finance various activities to link the new 132kV substations to the distribution network, reinforce weak segments of the distribution network and install control equipment in key segments of the network. It will be implemented through EEC based on the utility's network expansion plan and distribution system performance analysis. Activities will include construction of 11kV feeders, increased automation (for example, through remote circuit breakers), installation of switchgear to allow network

reconfiguration, conductor upgrades, installation of capacitor banks, and expansion of transformation capacity.

Figure 2-1. Map of project area with proposed transmission line scope



2.2 Component 2. Electricity access expansion

15. The component will support GoKE's program for rural electrification by financing an estimated 8,000 household connections through the Rural Electrification Program (REP). It will be implemented by EEC's Rural Electrification Unit focusing on the Shiselweni region and will help reduce the outstanding backlog of connection applications. Beneficiaries will include households and micro-small enterprises (MSEs) in rural areas of the Shiselweni region. The component will finance the cost of works up to the customer interface including metering but excludes internal wiring which is the contribution that the customer makes towards the program.

2.3 Component 3. Analytical Support and Capacity Building

16. This component will finance technical assistance (TA) to: (i) enhance electrification planning capacity, considering GoKE's stated capacity of reaching universal access in the short-term; and (ii) support the development of a policy and regulatory environment that will engender private sector participation in off-grid electrification and renewable energy generation. The following subcomponents are envisaged:

i) Geospatial electrification planning platform.
ii) Operationalization of the rural electrification fund (REF).
iii) Competitive and transparent framework for procurement of renewable energy generation.

2.4 Description of the proposed 132 kV transmission line

17. EEC proposes to use 132kV steel monopole structures for the proposed transmission line, running within a 30-meter-wide servitude. EEC has used steel monopoles for existing

comparable lines. Transmission monopoles are used as a replacement for lattice type towers (see **Figure 2-2**). Their advantages are:

- 70% smaller footprint than lattice towers, which makes them particularly suitable for narrow easement corridors such as in urban areas
- More aesthetic than lattice towers
- Faster and safer mechanised erection
- Less susceptible to failure during severe wind storms

Figure 2-2. Example of steel monopole versus lattice tower transmission lines

2.4.1 Route Alignment of the proposed 132 kV transmission line

18. **Annex C** provides maps of the preliminary proposed transmission line alignment. This is based on the preliminary survey report of tentative alignment. However, further confirmation of the alignment shall be based on analysis of alternatives as part of feasibility study and exact footing of the final alignment shall be determined as part of the Design report and further informed by the comprehensive ESIA report.

2.5 Description of the proposed substations

2.5.1 Line Bay at Nhlangano II Substation

19. The Project will fund the extension of the existing substation to accommodate a new line bay for the 132kV transmission line at Nhlangano II Substation. The proposed 20-meter extension would be to the south-west for a total of 1259 m².

2.5.2 Hluti Substation

20. This is an existing switchyard that requires a complete reconstruction.

2.5.3 Matsanjeni Substation

21. This is a new substation alongside MR11.

2.5.4 Lavumisa substation

22. This is a new substation.

2.6 Description of the proposed distribution network enhancement

23. The distribution network enhancement entails numerous activities to link the new 132/11kV substations to the distribution network, reinforce weak segments of the distribution network and install control equipment in key segments of the network. Specific activities will include, amongst others: (i) construction of new feeders; (ii) upgrade of distribution lines; (iii) installation of remotely controlled reclosers; and (iv) installation of transformers. The exact locations and numbers will be determined through the detailed design study. A preliminary list of project activities have been identified by EEC and will be finalized based on in-house detailed design that shall be undertaken once the designs for Component 1a have been finalized.

2.7 Description of the electricity access expansion

24. This program for rural electrification will finance an estimated 8,000 household connections through the Rural Electrification Program (REP). The component will be implemented by EEC's Rural Electrification Unit focusing on the Shiselweni region and will fund all costs up to the customer interface unit including the necessary medium voltage and low voltage (11kV and 0.4kV) network, service drop, meter and breaker for group schemes approved by the MNRE. Customers will be responsible for household wiring and payment of the connection fee. Consumers pay an administration and connection fee of approximately E450 to EEC (approximately US$30) before a connection is made.

25. MNRE estimates that 15-20% of applicants under the group scheme in its program are unable to afford the cost of household wiring which is estimated to be a minimum of E1,500 (US$100). There is therefore an option for EEC to provide a "ready board" – an integrated consumer interface unit that includes metering and power outlets of a total rating of 20A – which eliminates the need to complete household wiring. Connection costs have not been identified as a significant barrier to access but MNRE intends to undertake an assessment to understand the magnitude of the challenge and evaluate the usage patterns of poor households.

26. The group schemes to be funded will be drawn from the backlog of applications in the Shiselweni region. Each group application is issued a unique ID. These ID numbers will be used to track progress towards the project's progress. MNRE will verify data submitted with the application and assess readiness of the scheme for connection as one of the criteria in reviewing applications. Readiness is assessed by the number of households that have completed internal wiring. A 70 percent threshold is considered for readiness.

2.8 Project activities for the construction of transmission lines and sub stations

Specifications for the proposed transmission lines and substations will be determined and become more clearer in terms of actual route and locations of sub stations after the completion of detailed design which will be informed by the comprehensive ESIA report.

The construction of the proposed 132 kV 90 kms long transmission line and 4 sub stations will however consist of the following activities albeit with some changes envisaged from detailed design namely:

27. Pre-Construction Phase

a) **Detailed Study Design: -** EEC is procuring the services of a consulting firm who will prepare a detailed design of the proposed project which may vary albeit not significantly from the preliminary project note (prepared in-house by EEC). The detailed design will be

prepared in parallel with the final comprehensive ESIA report for this project in order to inform the detailed design report.

b) **Comprehensive ESIA Report: -** This draft preliminary ESIA report will be updated on the basis of the feasibility studies and detailed design. The ESIA will be submitted to the Eswatini Environment Authority (EAA) for approval as per the regulations of the country and at the same time submitted to the Bank for clearance. This draft ESIA recognizes that there are certain gaps that can only be addressed during the preparation of detailed design report.

c) **Acquisition of Right of Way: -** Prior to commencement of construction activities, the contractor will have to possess the Right of Way (ROW), through a site hand over which will be facilitated by EEC where the transmission passes and where sub stations will be located. There is a likelihood that the construction of the sub stations and electricity lines will lead to physical and economic displacement since some sections of the proposed alignment as determined by preliminary routing is likely to be on private land. A Resettlement Policy Framework (RPF) has been prepared for the project and Resettlement Action Plan (RAP) will be prepared based on the detailed design which will show the exact route of the electricity lines and location of sub stations. The RAP will ensure that all the displaced persons (physical and or economical) will be compensated in accordance with the ESS 5 and Eswatini's compensation guidelines including livelihood restoration as needed. Construction activities will not commence until all Project Affected Households (PAHs) based on the RAP are compensated in accordance with ESS5.

d) **Obtaining Necessary Permitting Requirements: -** A number of environmental and social permitting requirements will be required to be obtained for this project as per the statutes of the Eswatini's Government before the construction commences. They include among others:-

- Environmental Impact Assessment License issued by Eswatini Environment Authority.

28. Construction Phase (Transmission Lines)

a) Transmission Corridor Clearing: - Once the project receives its final permits, construction crews will begin clearing or trimming the transmission corridor where necessary. This includes clearing trees and brush to provide construction crews and their equipment safe access to the work site and enough clearance for the reliable operation of the line. When construction is complete, disturbed areas will be restored. Native shrubs and ground cover are allowed to regrow. To meet electric industry vegetation clearance standards, species of trees deemed non-compatible for transmission corridors must be permanently removed. These are trees that could become tall enough to grow or fall into the high-voltage transmission lines. Vegetation clearing will be done (where required) in accordance with the EEC standards and host country Environmental Management Act 2002.

b) Structure Foundation Installation: -The next step in the construction process is to drill foundations for the new transmission structures. The workers carefully set aside the topsoil, which will be reused. This involves drilling holes, which are then typically filled with concrete for structure foundations. Drilling operations occur for a few days at each new structure location. Once drilling is complete, a steel rebar cage is placed in each hole and concrete is poured to create a secure foundation for the new steel or lattice structure. Concrete trucks are

used to deliver the concrete mix for the foundations. During excavation for the foundations that will stabilize the tower, pumping may be required to remove the water and dry the site. The size of the excavation site depends on the type of soil and the type of tower. Anchors depend on the type of tower installed.

c) New Structure Installation: - Once the foundation is cured, transmission structure installation can begin. Steel poles often come in sections that are assembled on or near the foundation. Cranes and/or bucket trucks are used to lift the poles and set them into position on the foundations. Construction crews will assemble or "lace" lattice structures at the site. The structure components are delivered to the transmission corridor well in advance of this installation process. Generally, it takes one to three days to assemble and erect each new structure. After installation, the structure is grounded for safety purposes.

d) Wire Stringing: -With the new structures in place, the next step is to install the wire ("conductor"). The wire-stringing operation requires equipment at each end of the section that is being strung. Wire is pulled between these "pulling sites" through stringing blocks (pulleys) at each structure. These pulling sites are set up at various intervals along the transmission corridor, typically one to three miles apart. Specific pulling sites are determined close to the time the stringing activity takes place. Once the wire is strung, the stringing blocks are removed and the wire clipped into its final hardware attachment. Helicopters may be used during wire stringing operations.

e) Restoration: -When construction is complete, disturbed areas will be restored and will entail among others.

- removing all the debris and waste
- levelling the ground
- dismantling the temporary accesses (roads, bridges, culverts)
- repairing any infrastructure that was damaged during the work (roads, fences, etc.)
- seeding or planting whenever necessary based on the characteristics of the site (shoreline, wetland, etc.) Native shrubs and ground cover are allowed to regrow.

29. Construction Phase (Sub Stations)

a) Establish the work zone: - Before carrying out any work, it the contractor will establish the work zone and fence it off to ensure the safety of the access points. Then, notices of work and site tags are installed to keep citizens informed throughout the construction period. Throughout the project, site supervisors ensure that all the actions undertaken meet environmental, health and safety and quality standards.

b) Prepare Sub Station Site: - During this phase, any trees growing in the work zone are cut down. Then, the ground is levelled and earthwork is carried out. The construction team prepares the work site by carefully setting aside the topsoil, which will be reused.

c) Excavate and Lay Foundation: -At this step, workers excavate the site, build the formwork, install the reinforcements and pour the concrete. In addition to laying the foundations, all the underground concrete structures, such as the recovery basin will be built.

d) Install the grounding grid: - The grounding grid is installed to ensure the safety of people and the equipment. Buried underground, the grid redirects the fault current.

e) Build the command building: -The command building houses the control and protection equipment and will have permanent technical staff on site since most are maintained by mobile teams.

f) Backfill the foundations and substation yard: - Once the foundations have been laid, we backfill them and level the yard with granular material (sand, gravel, rock, etc.) that is adapted to the site.

g) Assemble the steel structure: - Once the concrete is set, steel structures are assembled to support the electrical equipment. Other structures will support the control building.

h) Install the electrical equipment: - Once the framework is built, there will be installation of the equipment on the foundations and steel structures. The different types of equipment that will be installed will include: -

- Voltage transformers
- Current transformers
- Power transformers
- Surge arresters
- Breaks
- Switches
- BED buses

i) Landscape and carry out the final inspection: -The project ends with landscaping: trees are planted, mounds of earth created and more work if necessary including earthworks. Demobilization of the site and carrying out the final inspection to wrap up the project. Only the operating equipment is left at the substation.

30. Operation Phase (Transmission and Distribution Lines and Sub Stations)
Once constructed, the proposed project (sub stations and transmission and distribution lines) will be operated year-round, 24 hours a day, transmitting electricity to the Shiselweni region.

EEC will ensure on-going maintenance from time to time, in conformance with transmission line maintenance processes. The maintenance will include: -

Box 2-0. Maintenance Aspects

- Routine maintenance
- Structure maintenance
- Environmental maintenance
- Emergency works
- Property Management
- Network and assets management

31. Materials and Construction Equipment
The following equipment and materials will be required for use during the construction phase of the transmission line and sub stations. The actual quantities and type of machinery and materials will be determined during the preparation of detailed design and bid documents and will be reflected in the comprehensive ESIA. It is expected that construction materials like cement, concrete, gravel, water, aggregate etc. will be sourced from local suppliers and will

not require the need for opening up material sites (quarries, borrow pits etc.). Other equipment including machinery, electrical wires etc. will be sourced locally or internationally.

Table 2-1. Material and Equipment

Equipment	**Source**
Trucks	Local and international suppliers
Excavators	Local and international suppliers
Cranes	Local and international suppliers
Cable drum	Local and international suppliers
Reel and tensioner	Local and international suppliers
Materials	
Cement	Local suppliers
Sand	Local suppliers
Concrete	Local suppliers
Aggregate	Local suppliers
Counterpoise wires	International suppliers
Cables	International suppliers
Voltage transformers	International suppliers
Current transformers	International suppliers
Power transformers	International suppliers
Surge arresters	International suppliers
Breaks	International suppliers
Switches	International suppliers
BED buses	International suppliers

2.9 Schedule for implementation and Workforce

32. Construction for the project is planned to be implemented over a period of 3 years (36 months).

33. The construction of sub stations and installation of transmission lines generally require human labor/Workforce who will be instrumental in among others: -
    - Excavation works associated with construction of sub stations
    - Excavation works associated with construction of transmission lines
    - Installation works (electrical and mechanical) associated with sub stations including testing and commissioning
    - Installation works (electrical) associated with transmission structures including commissioning
    - Operation and maintenance of sub stations and transmission lines

The number of workers who will be involved in the construction of the project will be determined during the detailed design phase which will include tender documents complete with number of workers, associated skill sets and whether they will be foreign or local. These statistics will be included in the comprehensive ESIA report and impacts associated with workers specifically with respect to ESS2 and ESS 4 will be evaluated in detail.

3 LEGAL, REGULATORY AND INSTITUTIONAL FRAMEWORK

34. This chapter identifies the applicable lender requirements and national standards. The ESIA will conform to the Eswatini's legislative and regulatory framework and in line with ESS for IPF and Environmental, Health and Safety (EHS) Guidelines (2007). For the majority of disciplines, where there is a difference between national Eswatini's standards and World Bank ESS, the Bank ESS will prevail.

35. The management and mitigation of the environmental and social impacts experienced during construction and operation is the Government of the Kingdom of Eswatini (GKOE) is governed by environmental and social legislations, regulations and institutions. It is of utmost importance that this project is constructed and implemented in compliance with all relevant environmental legislation regulations and institutions. It is of utmost importance that this project is constructed and implemented in compliance with all relevant environmental legislation. The environmental legislative framework and components for GKOE can best be unpacked and summarised as follows.

3.1 The Constitution of the Kingdom of Swaziland Act

36. The Constitution of the Kingdom of Eswatini Act, 2005 (Act No: 001 of 2005) in section 210 declares all land, minerals and water as national resources. The section also obliges the State to in the interest of the present and future generations, to protect and make rational use of its land, mineral and water resources as well as its fauna and flora, and shall take appropriate measures to conserve and improve the environment. In terms of section 216(1) every person has the responsibility to promote the protection of the environment and section 216(3) obliges the State to ensure a holistic and comprehensive approach to environmental preservation and shall put in place an appropriate environmental regulatory framework.

37. Chapter 13 of the new constitution requires the establishment within five years of a single countrywide system of local government, to allow people at sub-national and local level to progressively take control of their own affairs. Local governments shall be organized and administered through democratic means. The introduction of the new constitution coincides with the government's decentralization policy and implementation strategy. The new constitution specifically articulates its position on property and compensation in Section 19 (1) states that "a person has the right to own property alone or in association with others." Furthermore, the in 19(2b) the constitution states that no one should be deprived of property ownership and in cases of public interest or safety owners shall be duly compensated.

3.2 The Environmental Management Act No 5 of 2002

38. The stated purpose of the Environment Management Act, 5 of 2002 (s4) is to provide for and promote the enhancement, protection and conservation of the environment and where appropriate, the sustainable management of natural resources.

39. The Act goes further and establishes guiding environmental principles in section 5 and in section 6(1) obliges any person or body exercising powers or functions or making decisions under this Act shall give effect to the purpose of this Act and the principles. Section 6(2) obliges any Cabinet Minister, Government Officer or other person exercising a public function that is likely to affect the protection, conservation or enhancement of the environment or the sustainable management of natural resources to in the course of exercising that public function apply and provide for these principles in exercising that public function. In section 9 the Eswatini Environment Authority is established and its functions is listed in section 12(2) and includes amongst others –
    - to administer licences issued under the Act in accordance with the provisions of the Act;
    - to review environmental impact assessment reports and strategic environmental assessments reports;
    - to facilitate public involvement in decision making concerning the environment including establishing procedures to facilitate the submission of comments on licence applications under this Act; Section 32(1) states that no person shall undertake any project that may have an effect on the environment without the written approval of the Authority, or in the case of a review, of the Minister, and except in accordance with any conditions imposed in that approval.
40. The various subsections of section 32 establish the process that needs to be followed in obtaining approval to undertake a project which may have an impact on the environment. The section also prescribes the content of the various reports required and the process that needs to be followed by the SEA in advising the Minister on such an application.

41. Section 33 provides for the Minister responsible for environmental affairs to make regulations for the better administration of amongst others environmental impact assessments and may prescribe inter alia –
    - Categories of projects that may have an impact on the environment;
    - Procedural requirements for public hearings;
    - Information be included in environmental impact assessment reports and comprehensive mitigation plans;
    - Administration fees for applications.

3.2.1 The Principles of the Environmental Management Act

42. In achieving the purpose of this Act, the following principles shall be applied:
    - The environment is the common heritage of present and future generations;
    - Adverse effects should be prevented and minimised through long term integrated planning and the coordination, integration and co-operation of efforts, which consider the entire environment as a whole entity;
    - The precautionary principle, which requires that where there is a risk of serious or irreversible adverse effects occurring, a lack of scientific certainty should not prevent or impair the taking of precautionary measures to protect the environment;
    - The polluter pays principle, which requires that those causing adverse effects shall be required to pay the full social and environmental costs of avoiding, mitigating, and/or remedying those adverse effects;
    - The generation of waste should be minimised wherever practicable;
    - Waste should, in order of priority, be re-used, recycled, recovered and disposed of safely in a manner that avoids creating adverse effects or if this is not practicable, is least likely to cause adverse effects;

- Non-renewable natural resources should only be used prudently, taking into account the consequences for the present and future generations; and
- Renewable resources and ecosystems should only be used in a manner that is sustainable and does not prejudice their viability and integrity.

3.2.2 The Environmental Audit, Assessment and Review Regulations, 2000.

These regulations issued under the Swaziland Environmental Authority Act, 1992 and Environmental Management Act, 2002; underline processes that must be taken for any proposed project in order to predict and evaluate likely environmental impacts under studies such as the ESIA. An Environmental Compliance Certificate (ECC) is issued by the SEA when all the necessary environmental documentation has been submitted and approved by the authority for a proposed project.

43. The assumption underlying the issuance of an ECC is that the proposed project is not likely to cause unacceptable environmental impacts and that the proponent will manage the construction and operation of the project in accordance with an approved comprehensive mitigation plan. In Swaziland, the term 'project' is defined as: "a plan, operation, undertaking, construction, development, change in land use or other entity, or alteration which may not be implemented without a permit, licence, consent or approval from an authorising agency."

There are several other important permits and licences required in terms of other environmental legislation in Eswatini relating to environmental issues.

3.3 Other applicable legislation

3.3.1 The Natural Resources Act no 25 of 1968

44. A Natural Resources Board (NRB) was established by this Act. The Act provides for the conservation and improvement of natural resources. The Act also covers matters related to health concerns and the prevention of soil erosion during landscaping and excavation of site works, protection of water sources, public streams, disposal and control of storm water, sewage and other bio-hazardous effluents. The NRB is empowered in terms of this Act to order the conservation of natural resources, and such orders may relate to:

    - The construction and maintenance of soil conservation works;
    - The preservation and protection of the source, course or banks of rivers and streams;
    - The control of water including storm water; and
    - The control or prohibition of the burning of grass.

It is important, particularly because of the size of the project, that both the Minister responsible and the NRB pay attention to the project at the design, construction and operation phases to see to it that provisions of the Act are not violated.

3.3.2 Water Act of 2003

45. The Water Act provides for the protection and management of water resources. Section 34 stipulates that it shall not be necessary for a person or community to obtain a permit for the use of water for primary purposes. As the water likely to be used in construction, such as compacting and dust suppression is not a primary use the project may be required to apply for a water permit. Section 81 stipulates that a person shall not alter or divert a water course without permission from the Water Apportionment Board (or River Basin Authority where one is in place in the river basin concerned).

46. As this Act may be relevant to the project in case water is required for construction, a water permit will be applied for, consisting of a management report providing the following:
    - Project description;
    - Project background;
    - Baseline environmental and Social aspects;
    - List of river and stream crossing impacted by the project (these include the co-ordinates and information relevant for each crossing);
    - Technical design of crossing;
    - Motivation for the project;
    - Risk assessment and mitigation measures to prevent or reduce the impact; and
    - Rehabilitation plan.

Once the report is completed and finalised it will be submitted to the Eswatini National Water Authority for approval.

3.3.3 The Flora Protection Act of 1958

47. This Act promotes the conservation and protection of certain plants, through the use of a Schedule, trees, shrubs and vegetation and any living or dead portion of plants from destruction. If any protected flora exists in the project area and is likely to be cut or uprooted, this requires a permit from the Ministry of Agriculture and Co-operatives (MOAC). Very few protected plants or trees will be affected by the project, and every measure should be undertaken to protect these plants if possible.

3.3.4 The Public Health Act of 1969

48. Swaziland Public Health concerns, and ways of dealing with them, have been expressed in the principal legislation: the Public Health Act 5 of 1969. The Act defines the Authority for prescribing and enforcing preventative and remedial measures for the protection of public health in Swaziland. However, in recent years there has been increasing concern expressed by the environmental health officials, health officers and others that the Act fails to provide the back-up required to control risks to public health, and that it fails to meet the present day environmental health needs. The Act is relevant in view of the fact that the project activities may lead to public health risks during construction and operation.

3.3.5 The National Trust Commission Act of 1972

49. This Act provides for the operation of cultural institutions and the proclamation of national parks, monuments and related matters. This Act grants the National Trust Commission powers to proclaim national parks and monuments. It can acquire or alienate movable and immovable property subject to this Act with the approval of the Deputy Prime Minister. Section 25 states that " The Minister may make recommendations in the national interest to proclaim: as a national monument, any area of land having a distinctive or beautiful scenery or geological formation, or any area of land containing rare or distinctive or beautiful flora or fauna or any area of land containing objects of archaeological, historical, or scientific interest or valley or any waterfall, cave, grotto, avenue of trees, old building, or another place or object whether natural or constructed by man of aesthetic, historical, archaeological, sacred, or religious value or interest." The Act is relevant in view of the fact that during construction, excavation activities may lead to chance find of cultural resources.

3.3.6 Human Settlements Authority Act of 1988

50. The act established the Human Settlements Authority and its objects and functions. It provides policy support to Government and the orderly development of human settlements by allowing for and outlining procedures for the establishment of Human Settlements. It also makes provision for the development of human settlement development plans, the revocation or modification of development plans and finance mechanisms for the supply and maintenance of improved shelter and infrastructure.

3.3.7 Town Planning Act of 1961

51. This act makes provision for the preparation and carrying out of town planning schemes in declared urban areas. It establishes the Town Planning Board, its functions, powers and duties. It authorizes the preparation of town planning schemes, the approval of schemes, variation of schemes, enforcement of schemes and compensation for injurious affection.

3.3.8 Urban Government Act of 1969

52. This Act provides the basis for the establishment of local authorities in Swaziland as a primary legal instrument defining the parameters under which city councils conduct their affairs. The act outlines the duties and powers of Councils; makes provision for meetings of Councils and Committees, Management Committees and staff; designates towns, land, streets and public places; and the administration and audit of Council accounts.

3.3.9 Factories, Machinery and Construction Works Act of 1972

53. The act deals with the regulation of working conditions and the use of machinery at factories and construction sites. Section 19 requires the reporting of accidents in the workplace and therefore any accident during the project is to be formally reported. Section 20 requires that safety devices not be interfered with, that employees shall use safety equipment provided and that no persons shall do anything that places their own safety and that of others at risk.

3.3.10 Plant Control Act of 1981

54. This act is concerned with the prevention of plant disease. It controls the import and export of plants. It also controls the registration of nurseries and regulates the sale of plants through control of nurseries. The use of plants for rehabilitation falls under these controls.

3.3.11 The Forests Preservation Act no 28 of 1910

55. This Act protects indigenous timber land. The Minister of Agriculture has to grant permission for clearing and cultivating any government or Swazi National Land within 30 yards of an area in which indigenous vegetation is growing. Thus any person who recklessly sets fire to any indigenous or brushwood is deemed to be guilty of an offence. The Act is relevant in view of the fact that the project activities may involve clearing of vegetation during construction and also during operation through maintenance of the wayleaves.

3.3.12 Workmen's Compensation Act of 1983

56. The Act provides for the compensation and medical treatment of workmen who suffer injury or contract work-related diseases in the course of their employment. Relevant to this project is section 25 which requires the employer to be insured against liability for work-related injuries.

3.3.13 Occupational Safety and Health Act of 2001

57. The Occupational Safety and Health Act provides for the safety and health of persons at work and at the workplace, and for the protection of persons other than those at the workplace against hazards to safety and health arising from work activities. Relevant aspects of this act are section 9 which stipulates the duties of the employer to ensure safe and healthy working conditions, make employees aware of the hazards of the workplace, provide personal protective equipment, provide training and supervision of employees, prevent exposure of non-employees to hazards arising from the works; section 11 which stipulates the duties of the employee to cooperate and follow the instructions of the employer, use equipment and safety devices provided by the employer, report accidents and unsafe conditions to the employer; section 28 which requires the employer to record and report minor and major accidents and dangerous occurrences to the Labour Inspector.

3.3.14 Acquisition of Property Act, 1961

58. This Act provides the authorization and procedures for compulsory real property acquisition for public purposes and provides for settlement of compensation through the establishment of a Board of Assessment. The Act states that structures affected by acquisition identified by the Ministry of Housing and Urban Development (MHUD). After identification of the properties, an independent valuation is sought then based upon the outcome, residents in affected areas are invited to negotiate with the GoKE on an individual basis. Once agreement is reached the residents are compensated prior to relocation. In cases where the resident cannot reach agreement with the offered compensation, the Minister of Housing requests convening of the Board of Assessment which is constituted by the Chief Justice who appoints a judge to be the chair of the Board. Once established, the Minister gazettes the announcement on the Board of Assessment by legal notice. The decision on compensation by the Board of Assessment will be legally binding for the Ministry and the resident.

3.3.15 Land Survey Act, 1961

59. The act provides for the survey of land and matters incidental thereto. It deals with interpretation including the definition of diagram, general plan, lot, owner, registration and township. It deals with matters relating to the Surveyor-General and Surveyors, surveys and resurveys, beacons and boundaries.

3.3.16 Deeds Registry Act, 1968

60. This Act consolidates and amends the laws in force in Swaziland relating to the Registration of Deeds. It establishes the Deeds Registry, appointment, duties and powers of the Registrar. It deals with the registration of land including transfers, substituted title deeds and endorsements and covers; change of title by endorsement; townships including requirements in case of subdivisions of land into lots, transfer of township, extension of boundaries of an existing township. It further deals with bonds including execution, cession, transfer and registration of notarial bonds; the rights in immovable property and antenuptial contract.

3.3.17 National Housing Board Act, 1988

61. The act deals with the establishment of the Swaziland National Housing Board (SNHB) and includes provisions to purchase or by other means acquire and by sale, mortgage or lease, dispose of any movable or immovable property. It details the objects and functions of the Board which subject to the provisions of the Human Settlements Authority Act are to provide affordable housing generally in Swaziland and to take over such housing schemes as the government may determine. The SNHB make loans for acquisition of property and construction of housing or housing schemes.

3.4 Regulations

3.4.1 Building Operations Regulations of 1969

62. The regulations control building activities and the safety of buildings. Regulation 54 requires a person carrying out building work to minimize any public nuisance such as noise, dust and unsightliness caused by the work. This is relevant to the project in terms of potential noise and dust.

3.4.2 Environmental Audit, Assessment and Review Regulations of 2000

63. Under the SEA the Environmental Audit, Assessment and Review Regulations, 2000 have been issued which regulate the EIA process and place requirements on reporting techniques. Three categories of project are assigned by the Authority, having due regard to environmental sensitivity. Category 1 is the least impactive and requires little study. Category 3 projects are deemed to have "significant adverse impacts whose scale extent and significance cannot be determined without in-depth study". The project under review has been assigned a Category 2 in accordance with these regulations. The depth of study and reporting format are in accordance with the regulations.

3.4.3 Factories, Machinery and Construction Works Regulations of 1974

64. The regulations control health and safety working conditions and the use of machinery at factories and construction works. Regulation 9 requires that machinery be kept in good and safe working condition and used safely which is relevant to construction vehicles and other equipment; Regulation15 requires the training and supervision of inexperienced personnel using machinery which is relevant to the machine operators; Regulation 151 requires that hearing protection be provided and used in noise zones which is relevant for operators of noisy machinery (above 85 decibels); Regulation 152 requires that no person under the influence of alcohol be permitted into the workplace.

3.4.4 Standard Building Regulations of 1969

65. These regulations provide for the control of building activities and the safety of buildings. Relevant to this project is Regulation 70 which stipulates that no lavatory or pit latrine shall be constructed within 30.5 m of any water source. This is relevant with regard to temporary toilets for the construction camp site.

3.4.5 Swaziland Building (Grade II) Regulations of 1966

66. These regulations provide for the control of building activities and the safety of buildings. Of relevance to this project is Regulation 11 which stipulates that no person shall dump or dispose of any debris or rubbish except at such places and in such a manner as may be appointed by the local authority. This is relevant with respect to the disposal of any rubble arising from the removal of existing structures such as culverts.

3.4.6 Waste Regulations of 2000

67. The Waste Regulations control the collection, transport, sorting, recovery, treatment, storage and disposal of waste collection and disposal of waste. Waste generation is anticipated during this project and hence the relevance of these Regulations.

3.4.7 Water Pollution Control Regulations of 2010

68. The regulations control the discharge of effluents exceeding acceptable effluent standards for the preservation of water quality. If any person intentionally or negligently discharges potentially polluting substances into a water body above acceptable standards, that person will be guilty of an offence. Activities during establishment and operation that may cause pollution will be subjected to these regulations. This is particularly pertinent given the potential disposal of waterborne wastes.

3.4.8 Workmen's Compensation Regulations of 1983

69. These Regulations control the reporting of workplace accidents and work-related diseases, the provision and payment of medical treatment of injured employees and the compensation of such employees.

3.4.9 MHUD Resettlement Policy & Guidelines 1994

70. The MHUD Resettlement Policy and Implementation Guidelines were drawn up in 1994. The key objectives of the policy are:
    - Involuntary resettlement should be avoided or minimised, exploring all designs and alternative mechanisms to permit residents to remain;
    - Where 10 or more households are affected, a resettlement plan is required to be approved, which should consider the needs of vulnerable groups;
    - Affected persons shall have their previous standard of living restored, and shall be no worse off;
    - The costs of resettlement shall be borne neither by those displaced nor the host community;
    - Those affected shall be compensated prior to moving for immovable assets, loss of income or livelihood, losses arising from disturbance, etc.;
    - Although the policy and guidelines focus on physical relocation, the rules apply to any loss of land or assets.

3.4.10 Gender equity

71. Since 2000, a series of significant legislation relating to gender equity in Swaziland has come into being including the new constitution. The situation may be summarized as follows:
    - Under the UDP a 99-Year Lease was introduced which provided equal access to land regardless of gender;
    - The Constitution of the Kingdom of Swaziland (2005), as well as protecting fundamental rights of all citizens (Section 14), specifically enshrines the rights of women (Section 28) to equal treatment, political, economic and social opportunities and commits the Government to enhancing their welfare, and provides for equal access to land irrespective of gender (Section 211). Furthermore, according to Section 28 (3) women may not be compelled to undergo or uphold any custom "to which she is in conscience opposed.
    - The Gender Unit in the Ministry of Home Affairs has identified Constitutionalism and Law Reform as a priority and they have drafted a Program of Action with the assistance of UNDP. Currently the Constitution has two provisions explicitly stating the

protection from gender discrimination and inequality before the law based on gender. Sections 14 and 28 enshrine gender equality reforms and redress previous legislation such as the Marriage Act of 1964, the Deeds Registry Act of 1938 and the Intestate Succession Act of 1953 and other inheritance laws.

3.5 Institutional Framework

3.5.1 Eswatini Environmental Authority

72. The key institutions involved in the management of environmental impact assessments (EIA) are the Eswatini Environment Authority (EEA) and the Ministry of Economic Planning and Development (MEPD). The EEA, created by an Act of Parliament in 1992, is directed by a management board that sets policy priorities. The format, protocols and procedures of the authority are set out in detail in the First Schedule of the Act. The authority has initiated a process by means of which it would become an autonomous body operating outside of government, but would still largely depend on government funding. This process has been finalised with the enactment of the Environmental Management Act No. 5 of 2002 which establishes EEA as a body corporate with perpetual succession to be successor to the Swaziland Environment Authority established under the Eswatini Environment Authority Act No. 15 of 1992. The main functions of the EEA are to:
    - Establish standards and guidelines relating to the pollution of water, land and air as well as those relating to noise and other forms of environmental pollution.
    - Develop, in cooperation with other government authorities, economic measures to encourage environmentally sound and sustainable activities.
    - Promote training and education programmes in the field of the environment to create national awareness of environmental issues.
    - Ensure the observance of proper environmental and social standards in the planning and execution of all development projects, including those already in existence, that are likely to interfere with the quality of the environment.
    - Initiate measures for the coordination and enforcement of environmental protection legislation.

3.5.2 EIA procedural framework in Eswatini for new projects

Screening

73. The First Schedule of the Environmental Audit, Assessment and Review Regulations (EAARR) contains lists of projects divided into three categories, depending on the likely impact on the environment. It is up to the EEA to determine whether a proposed project will have any significant impacts on the environment and to determine into which category the project falls. This is known as a screening exercise. When assigning projects to Category 1, 2 or 3, EEA will consider whether the proposed site is in or near an environmentally sensitive area. Generally, proposed projects which are located in (completely or partially) or near an environmentally sensitive area may merit more detailed environmental studies and review than might have been the case if a location was elsewhere.

74. Not all environmentally sensitive areas have statutory or non-statutory forms of designation and protection. Some types of habitat, for example wetlands, may have no protection and be used as a resource by local people. Such habitats should be considered environmentally sensitive because, inter alia, they are rare, unusual or endangered and/or they provide a useful environmental service to local communities, and perhaps, the nation as a whole. Examples of such environmentally sensitive areas are:
    - Indigenous forests
    - Wetlands
    - Semi-arid areas and zones prone to desertification
    - Areas/habitats which contain or support populations or rare or endangered species
    - Water catchments containing major sources of public water supply
    - Zones prone to flooding or other hazardous events
    - Zones with high incidences of natural or manmade erosion processes
    - Areas of historical and archaeological interest
    - Areas of cultural or religious significance (e.g. burial grounds, topographic features)
    - Degraded areas which are subject to existing or proposed rehabilitation measures
    - Areas used extensively for recreation and aesthetic reasons
    - Zones of high biological diversity.

75. In assigning a proposed project to Category 1, 2 or 3, designated and no designated environmentally sensitive areas should be taken into account to the fullest extent possible.

76. Category 1 projects are those which are unlikely to cause any significant impact on the environment, and therefore do not require an EIA. The types of projects which may be allocated to Category 1 include, for example, small scale commercial buildings, small-scale social infrastructure projects such as rural clinics, and remote (non-intrusive) prospecting for groundwater, minerals and hydrocarbons. If the EEA is satisfied that the project falls under Category 1, an Environmental Compliance Certificate (ECC) will be issued and the project can proceed.

77. Category 2 projects are those that could have some significant adverse environmental impacts, but whose scale and magnitude is relatively easy to predict without having to do a detailed EIA. Such projects require an Initial Environmental Evaluation (IEE) (not a full EIA) and a Comprehensive Mitigation Plan (CMP). The types of projects which may be allocated to Category 2 include: medium-scale agro-industries, rural electrification projects, renewable energy production, tourism infrastructure, rural water supply and sanitation.

78. Category 3 projects are those that are likely to have significant adverse impacts on the environment. A scoping report and an in-depth EIA study is therefore required to adequately predict the scale and magnitude of the impacts of these projects on the environment, together with an appropriate Comprehensive Mitigation Plan (CMP). Typical Category 3 projects include dams and reservoirs, large scale irrigation and flood control schemes, mining projects, resettlement schemes, thermal and hydropower schemes.

79. The proposed project constitutes a Category 2 project.

3.6 World Bank Environmental and Social Framework

80. The Environmental and Social Standards (ESS) set out the requirements for Borrowers relating to the identification and assessment of environmental and social risks and impacts associated with projects supported by the Bank through Investment Project Financing (IPF).

81. The ten Environmental and Social Standards (ESSs) establish the standards that the Borrower and the project will meet through the project life cycle, as follows: -

- **ESS 1**. Assessment and Management of Environmental and Social Risks and Impacts
- **ESS 2**. Labor and Working Conditions
- **ESS 3**. Resource Efficiency and Pollution Prevention and Management
- **ESS 4**. Community Health and Safety
- **ESS 5**. Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- **ESS 6**. Biodiversity Conservation and Sustainable Management of Living Natural Resources
- **ESS 7**. Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities
- **ESS 8**. Cultural Heritage
- **ESS 9**. Financial Intermediaries
- **ESS 10**. Stakeholder Engagement and Information Disclosure.

82. ESS7 is not relevant to the Project currently as there are no identified vulnerable or marginalized groups with identities and aspirations that are distinct from mainstream groups as defined under ESS7.

83. ESS9 is not relevant to the project as the project will not use financial intermediaries as an instrument for channeling funds to the beneficiary communities in the project area of influence.

84. In line with ESS1, EEC will prepare an ESIA and ESMP for Subcomponent 1a of the Project, and a generic ESMP for the distribution activities under Subcomponent 1b and electricity connections under Component 2. In line with ESS2 and 4, EEC has prepared Labour management Procedures. Also to fulfill the requirements of ESS 5, EEC has prepared Resettlement Policy Framework to guide preparation of RAPs at design stage and an stakeholder engagement plan is prepared to fulfill the requirements of ESS 10.

3.7 Environment, Health and Safety Guidelines

85. The World Bank Group Environment, Health and Safety (EHS) guidelines[8] are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). They define acceptable pollution prevention and abatement measures and emission levels in World Bank financed projects.

86. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them.

[8] A complete list of industry-sector guidelines can be found at: www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines.

87. The application of the Guidelines to existing facilities may involve the establishment of site-specific targets with an appropriate timetable for achieving them. The environmental assessment process may recommend alternative (higher or lower) levels or measures, which, if acceptable to the World Bank, become project- or site-specific requirements.

88. If less stringent levels or measures than those provided in the EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels is protective of human health and the environment. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent.

89. The Project will apply the General Guidelines, including (i) Environmental, (ii) Occupational Health and Safety, (iii) Community Health and Safety, and (iv) Construction and Decommissioning, as well as the Guidelines for Electricity Transmission and Distribution.

Box. 3-1 General EHS Guidelines

1**. Environmental**
1.1 Air Emissions and Ambient Air Quality
1.2 Energy Conservation
1.3 Wastewater and Ambient Water Quality
1.4 Water Conservation
1.5 Hazardous Materials Management
1.6 Waste Management
1.7 Noise
1.8 Contaminated Land

2. **Occupational Health and Safety**
2.1 General Facility Design and Operation
2.2 Communication and Training
2.3 Physical Hazards
2.4 Chemical Hazards
2.5 Biological Hazards
2.6 Radiological Hazards
2.7 Personal Protective Equipment (PPE)
2.8 Special Hazard Environments
2.9 Monitoring

3. **Community Health and Safety**
3.1 Water Quality and Availability
3.2 Structural Safety of Project Infrastructure
3.3 Life and Fire Safety (L&FS)
3.4 Traffic Safety
3.5 Transport of Hazardous Materials
3.6 Disease Prevention
3.7 Emergency Preparedness and Response

4. **Construction and Decommissioning**
4.1 Environment

4.2 Occupational Health and Safety
4.3 Community Health and Safety

3.8 International agreements and treaties signed by GoKE

Eswatini is a signatory to international agreement and treaties which are relevant to this project and are mentioned below.

Convention on International Trade Against Endangered Species (CITES)
The Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

United Nations Convention on Biological Diversity (UNCBD)
The purpose of this convention is to ensure the conservation and sustainable use of biodiversity. Eswatini signed the convention on 5th June 1992 and ratified the same on 26th July 1992. The Eswatini Environment Authority (EAA) is the National Focal Point to this Convention. The provisions of this Convention have been integrated in many laws of Eswatini.

The Ramsar Convention for the conservation and sustainable utilization of wetlands
The Ramsar Convention (formally known as the Convention on Wetlands of International Importance, especially as Waterfowl Habitat) is an international treaty for the conservation and sustainable utilization of wetlands, recognizing the fundamental ecological functions of wetlands and their economic, cultural, scientific, and recreational value.

Vienna Convention on the Protection of the Ozone Layer
This was an Intergovernmental negotiation for an international agreement to phase out ozone depleting substances concluded in March 1985 which saw the adoption of the Vienna Convention for the Protection of the Ozone Layer. This Convention encourages intergovernmental cooperation on research, systematic observation of the ozone layer, monitoring of CFC production, and the exchange of information.

The 1992 United Nations Framework Convention on Climate Change (UNFCCC)
The primary purpose of the convention is to establish methods to minimize global warming and in particular the emission of the greenhouse gases. The UNFCCC was adopted on 9th May 1992 and came into force on 21st March 1994. The Convention has been ratified by 189 states. Eswatini ratified the Convention on 30th August1994. EEA is the focal point for the Convention.

Convention on the Rights of the Child
The Convention on the Rights of the Child (CRC), 1989 is the most comprehensive compilation of international legal standards for the protection of the human rights of children. The CRC is also the most widely ratified international human rights treaty, ratified by all countries in the world, with the exception of two.

The Convention acknowledges children as individuals with rights and responsibilities

according to their age and development (rather than the property of their parents or as victims), as well as members of a family and community. Underlying the Convention are four main principles: non-discrimination, the best interests of the child, the right to life, survival and development and the right to participation.

Convention on the Elimination of all forms of Discrimination against Women

The Convention on the Elimination of all forms of Discrimination against Women (CEDAW) places explicit obligations on states to protect women and girls from sexual exploitation and abuse. Universal Declaration of Human Rights (Article 7), the UN Charter (Articles 1, 13, 55, and 76) and the International Covenant on Civil and Political Rights (Article 24) reaffirm the freedoms and rights of all children, including internally displaced children.

International Labour Organization

The International Labour Organization (ILO) is built on the constitutional principle that universal and lasting peace can be established only if it is based upon social justice. The ILO has generated such hallmarks of industrial society as the eight-hour working day, maternity protection, child-labour laws, and a range of policies which promote workplace safety and peaceful industrial relations.

The key ILO Conventions applicable to the proposed road project include:

- To promote and realize standards, and fundamental principles and rights at work.
- To create greater opportunities for women and men to secure decent employment.
- To enhance the coverage and effectiveness of social protection for all.
- To strengthen tripartism and social dialogue.

The key ILO Conventions applicable to the proposed road project include:

1. Equal Remuneration Convention (1951) (No. 100) - Calls for equal pay and benefits for men and women for work of equal value.
2. Discrimination (Employment and Occupation) Convention (1958) (No. 111) - Calls for a national policy to eliminate discrimination in access to employment, training, and working conditions, on grounds of race, colour, sex, religion, political opinion, national extraction or social origin, and to promote equality of opportunity and treatment.
3. Minimum Age Convention (1973) (No. 138) - Aims at the abolition of child labour, stipulating that the minimum age for admission to employment shall not be less than the age of completion of compulsory schooling.
4. Worst Forms of Child Labour Convention (1999) (No. 182) - Calls for immediate and effective measures to secure the prohibition and elimination of the worst forms of child labour which include slavery and similar practices, forced recruitment for use in armed conflict, use in prostitution and pornography, any illicit activity, as well as work which is likely to harm the health, safety, and morals of children.

3.8.1 Comparison table of ESF objectives and national requirements

90. The following table matches the relevant World Bank's 8 Environmental and Social Standards with the relevant laws and regulation of the Kingdom.

Table 3-1. Comparative Analysis of Applicable ESSs and Eswatini's National Regulations

ESF Objectives	National Laws and Requirements	Gaps	Recommended Action
ESS 1 Assessment and Management of Environmental and Social Risks and Impacts			
• To identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.	**Environmental Management Act No 5 of 2002** provides for subjecting proposed projects to Environmental and Social Impact Assessment (ESIA) studies as a mechanism for identifying, evaluating and managing environmental and social impacts of projects. **The Environmental Audit, Assessment and Review Regulations, 2000,** issued under the Eswatini Environmental Authority Act, 1992, and the Environmental Management Act, 2002, underline processes that must be taken for any proposed project in order to predict and evaluate likely environmental impacts under studies such as the ESIA. **Section 32 of the Environmental Management Act, 2002** emphasizes that no person shall undertake any project that may have a detrimental effect on the environment without the written approval of the EEA.	No significant gaps between Performance Standard 1 and the various national laws.	Apply national laws
• To adopt a mitigation hierarchy approach to: i) Anticipate and avoid risks and impacts; ii) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; iii) Once risks and impacts have been minimized or reduced, mitigate; and iv) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.	**Environmental Management Act No 5 of 2002** provides for subjecting proposed projects to Environmental and Social Impact Assessment (ESIA) studies as a mechanism for identifying, evaluating and managing environmental and social impacts of projects. **The Environmental Audit, Assessment and Review Regulations, 2000,** issued under the Eswatini Environmental Authority Act, 1992, and the Environmental Management Act, 2002, underline processes that must be taken for any proposed project in order to predict and evaluate likely environmental impacts under studies such as the ESIA. These include scoping, screening, impact identification using hierarchical process, mitigation etc. **The EAARR 2000** provide for categorization of projects based on risk factors i.e. category 1, 2 and 3. Section 32 of the Environmental Management Act, 2002 emphasizes that no person shall undertake any project that may have a detrimental effect on the environment without the written approval of the EEA.	No significant gaps between ESS 1 and the various national laws	Apply national laws

	The legal framework and regulations do not provide for offset mechanism as a compensation.		
• To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.	National laws and regulations do not address the risk that adverse impacts will fall on disadvantaged on vulnerable people.		Apply ESS1 with respect to this requirement which is not a requirement in Eswatini's statutory regulations
• To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.	Eswatini Government has in place relevant environmental and social institutions, regulations, laws, systems and procedures that support sustainable development through ensuring assessment, development and implementation of projects in a sustainable manner. These include:- **Institutions:-** • Eswatini Environmental Agency (Refer to section xx on roles including systems). **Laws, Regulations and Procedures:** • The Environmental Audit, Assessment and Review Regulations, 2000 • Environmental Management Act No 5 of 2002 • Waste Regulations of 2000 • Water Pollution Control Regulations of 2010 • **The Air Pollution Control Regulations, 2010,** provide for the control of air emissions during project implementation.	The Project will rely on National laws and regulations supplemented by measures defined in the full ESIA.	Apply either of the two due to insignificant differences.
• To promote improved environmental and social performance, in ways which		The Project in itself is an opportunity for EEC to strengthen its environmental	Apply ESS1 with respect to this requirement

recognize and enhance Borrower capacity.		and social management systems.	
ESS 2 Labor and Working Conditions			
• To promote safety and health at work	**1. The Occupational Health and Safety Act, 2001** This Act provides for the safety and health of both employees and the public, especially during the construction phase of proposed projects, and specifies processes to be undertaken in order to ensure that safe and health practices are adhered to and implemented at work. **2. Factories, Machinery and Construction Works Act, 1972** The Act provides for the protection of workers' health from harmful effects such as fumes, dust, excessive noise and other harmful impacts. This is applicable to contractors as well.	No significant gaps between ESS 2 requirement and the various national laws	Apply national laws
• To promote safety and health at work.	**The Occupational Safety and Health Act 9, 2001** • This Act provide for the safety and health of persons at work and at the workplace and for the protection of persons other than persons at the workplace against hazards to safety and health arising out of or in connection with the activities of persons in the workplace and to provide for other matters incidental thereto. • **S.9** – entrusts the employer to ensure the safety and health of all its employees, and also to; • Mitigate risks of exposure to danger of its workforce; • Provide personal protective clothing or equipment to employees exposed to wet, dusty, noisy or any conditions that might expose the employees to harsh or dangerous conditions; • Train its workers to perform their work in order to avoid exposure to danger or injury; and • Inform employees of any known hazards or disease associated with the work. **The Factories, Machinery and Construction Works Act 17, 1972** • This legislation provides for the registration of factories and the regulations of working conditions and the use of machinery at factories, construction works and other premises and for matters incidental thereto • The Act mandates the office of the Labour Commissioner to monitor and inspect any working environment or structure to determine its suitability.	No significant gaps between ESS 2 requirement and the various national laws	Apply national laws

	• The office of the Labour Commissioner is also required to investigate incident or accident involving any person injured in connection with the activities of the employer. **The Workman's Compensation Act 7, 1983** • It provides for the compensation and medical treatment of workmen who suffer injury or contract diseases in the course of their employment. • The scope of its application extends to not an injury or accident that occurs within the workplace but also while the employee is travelling by reasonable means and within any reasonable route between the workplace and his place of residence • In terms of the Act, Workman is any person who has entered into the works under the contract of service or of apprenticeship or of traineeship whether the contract is express or implied, is oral or in writing whether the remuneration is calculated by time or work done.		
• To promote the fair treatment, non-discrimination and equal opportunity of project workers.	**The Employment Act 5/1980** • **S29** – prohibits employers from discriminating against any person on grounds of race, colour, religion, marital status, sex, national origin, tribal or clan extraction, political affiliation or social status. • **S30** – makes it an offence to discriminate against any person as envisaged in **S29**. Such employer if found guilty shall be liable on conviction to a fine not exceeding E3,000.00 or imprisonment not exceeding 1 year or both. • **S96** – mandates employers to accord female employees the same treatment as their male counterparts in the workplace and also pay them 'equal pay for equal work'.	No significant gaps between ESS 2 requirement and the various national laws	Apply national laws
• To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.	**The Employment Act 5/1980** • **S29** – prohibits employers from discriminating against any person on grounds of race, colour, religion, marital status, sex, national origin, tribal or clan extraction, political affiliation or social status. • **S30** – makes it an offence to discriminate against any person as envisaged in **S29**. Such employer if found guilty shall be liable on conviction to a fine not exceeding E3,000.00 or imprisonment not exceeding 1 year or both. **S96** – mandates employers to accord female employees the same treatment as their male counterparts in the workplace and also pay them 'equal pay for equal work'.	No significant gaps between ESS 2 requirement and the various national laws	Apply national laws

	The Occupational Safety and Health Act 9, 2001 • This Act provide for the safety and health of persons at work and at the workplace and for the protection of persons other than persons at the workplace against hazards to safety and health arising out of or in connection with the activities of persons in the workplace and to provide for other matters incidental thereto. **The Workman's Compensation Act 7, 1983** • It provides for the compensation and medical treatment of workmen who suffer injury or contract diseases in the course of their employment. • The scope of its application extends to not an injury or accident that occurs within the workplace but also while the employee is travelling by reasonable means and within any reasonable route between the workplace and his place of residence In terms of the Act, Workman is any person who has entered into the works under the contract of service or of apprenticeship or of traineeship whether the contract is express or implied, is oral or in writing whether the remuneration is calculated by time or work done.		
• To prevent the use of all forms of forced labor and child labor.	**The Employment Act 5, 1980 (Part XIV) – Forced Labour** • **S144** – prohibits all works or service which is extracted from any person under the threat of any penalty and for which the said person has not offered himself voluntarily. • **S147** – states that, if any person acting in an official capacity coerces any person under his charge, that person shall be held personally liable and shall be liable to a fine not exceeding E3,000.00, or imprisonment not exceeding one year or both. The Country ratified both the ILO Minimum of Age Convention (C138) and the ILO Worst Forms of Child Labour Convention (C182) in 2002. It also signed the African Charter on the Rights and Welfare of the Child in 1992 but has not yet ratified it. **The Employment Act 1980** • **S97** – Prohibits the employment of children below the age of 15. **The Children's Protection and welfare Act 6, 2012**	No significant gaps between ESS 2 requirement and the various national laws	Apply national laws

	• **S234** – Minimum age of engagement for children is 15 • **S236** – children below the age of 18 cannot be engaged in any form of hazardous employment • **S248** – any person who employs under age children I liable on conviction to a minimum fine of E100,000.00 or 5 years' imprisonment or both for a first offender. For a second offender, it is imprisonment of not less than 10 years.		
• To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.	The country has ratified the numerous ILO Conventions aimed at ensuring that member states do protect the notion of collective bargaining. These Conventions include; ILO Convention 87 on Freedom of Association and Protection of the Right to Organize and the ILO Convention 98 on the Right to Organize and Collective Bargaining. Section 32 (2) of **The Constitution of Eswatini, 2005** on the Rights of Workers, guarantees all workers of their right to freely form, join or not join a trade union for the promotion and protection of the economic interest of that worker; and collective bargaining and representation. The Industrial Relations Act 2000 (as amended) was enacted to give effect to the collective bargaining, amongst other purposes. Section 4 (c) to (e) of the Act allows for the collective negotiation of terms and conditions of employment. Part 4 of **The Industrial Relations Act 2000 (as amended)** deals with the registration and/or formation of Employee, Staff and Employer Organizations, Federations and International Organizations. In terms of S. 26 (3) of the Act a minimum of six employees can form a trade union by obtaining a Certificate of Registration through the office of the Labour Commissioner (S.27). Once registered, a trade union can recruit any employees who falls within its bargaining unit with that particular employer. S.42 (9) states that once the union has recruited more than fifty percent of the employees in respect of which it seeks recognition, the union can then apply for recognition with the employer. The employer is obliged to recognize the trade union if it meets the required threshold. If, however the union membership is below the threshold the employer is not obliged to recognize the union but can exercise its discretion. Once a union is recognized, it has the right to bargain or negotiate for and on behalf of its members and also to represent them at the workplace.	No significant gaps between ESS 2 requirement and the various national laws	Apply national laws
• To provide project workers with accessible	In implementing an effective dispute management system consideration must be given to the disputed resulting from the following: 1. Disciplinary action	• No significant gaps between ESS 2	• Apply national laws

means to raise workplace concerns.	2. Individual grievances 3. Collective grievances 4. Negotiation of collective grievances **1. <u>Disciplinary Procedure</u>** **The Code of Good Practice: Resolution of Disputes at the Workplace** which is in terms of **S109** of **The Industrial Relations Act 2000(as amended)** at Clause 4.2 requires employers to establish a fair and effective disciplinary procedure in the workplace, which should be in line with Clause 11 (Fair Procedure). The procedure is as follows: a) Conduct an investigation to determine whether there are grounds for a hearing to be held; b) If a hearing is to be held, the employer is to notify the employee of the allegations using a form and language that the employee can understand; c) The employee is to be given reasonable time to prepare for the hearing and to be represented by a fellow employee or a union representative; d) The employee must be given an opportunity to respond to the allegations, question the witnesses of the employer and to lead witnesses; e) If an employee fails to attend the hearing the employer may proceed in with the hearing in the absence of the employee; f) The hearing must be held and concluded within a reasonable time and is to be chaired by an impartial representative; g) A dismissed employee must be given the reasons for dismissal and the right to refer the dispute concerning the fairness of the dismissal to the Conciliation, Mediation and Arbitration Commission (CMAC). **2. <u>Individual Grievance Procedure</u>** **Clause 4.3** requires every employer to have a Formal Grievance Procedure which should be known and explained to the employee. The Code recommends that such procedure should at least: a) Specify to whom the employee should lodge the grievance; b) Make reference to time frames to allow the grievance to be dealt with expeditiously c) Allow the person to refer the grievance to a more senior level within the organization, if it is not resolved at the lowest level. d) If a grievance is not resolved the employee has the right to lode a dispute with CMAC.	requirement and the various national laws	

	3. <u>Collective Grievances and Disputes resulting from the negotiations of Collective agreements</u> **Clause 4.4** and **4.5** of the Code deals with the handling of collective grievances as raised by the employees. This procedure is usually contained in the Recognition Agreement the parties sign from the onset. What is common to these disputes is that in the event the parties fail to resolve the dispute, either can lodge a dispute with CMAC and subsequently the Industrial Court.		
ESS 3 Resource Efficiency and Pollution Prevention and Management			
• To promote the sustainable use of resources, including energy, water and raw materials.	The Constitution of the Kingdom of Eswatini Act, 2005 (Act No: 001 of 2005) obliges the State to in the interest of the present and future generations, to protect and make rational use of its land, mineral and water resources as well as its fauna and flora, and shall take appropriate measures to conserve and improve the environment. In terms of section 216(1) every person has the responsibility to promote the protection of the environment and section 216(3) obliges the State to ensure a holistic and comprehensive approach to environmental preservation and shall put in place an appropriate environmental regulatory framework. **The Environmental Management Act, 2002,** provides and promotes the enhancement, protection and conservation of the environment, as well as sustainable management of natural resources. The Flora Protection Act of 1958 provide for the sustainable management and utilization of floral resources. The Forests Preservation Act no 28 of 1910 provide for the sustainable management and utilization of forest resources. **The Water Act, 2003,** provides for the sustainable use and management of water resources in the country as well as for the control of pollution.		
• To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution	The Environmental Audit, Assessment and Review Regulations, 2000 requires ESIA studies to be conducted as a mechanism for identification of adverse impacts on projects on the human health and environment and requires the determination of mitigation measures (avoid, minimize, mitigate, compensate) when such impacts are identified.	No significant gaps between ESS 3 requirement and the various national laws	Apply national laws

from project activities.	Waste Regulations of 2000 provide the regulatory measures for waste management in order to minimize pollution from project activities. Water Pollution Control Regulations of 2001 provide for measures geared towards minimising pollution of water by project activities by establishing standards. **The Air Pollution Control Regulations, 2001,** provide for the control of air emissions during project implementation.		
• To avoid or minimize project-related emissions of short and long-lived climate pollutants.	**Ozone Depleting Substance Regulations, 2003,** provide for the elimination and avoidance of products that deplete the ozone layer. Eswatini does not have regulations regarding Green House Gases	Significant gaps between ESS 3 requirement and the various national laws as appertains to emission prevention from climate related pollutants.	Apply ESS 3 requirements
• To avoid or minimize generation of hazardous and non-hazardous waste.	**The Waste Regulations, 2000,** under the Environmental Management Act, provide for the management of solid and liquid waste disposal. They emphasize on the appropriate handling, transportation, treatment and final disposal of waste. **The Building Act, 1969,** underlines the prohibition of illegal structures and requires the removal and disposal of all waste materials in an appropriate manner during project implementation.	No significant gaps between ESS 3 requirement and the various national laws	Apply national laws
• To minimize and manage the risks and impacts associated with pesticide use.	Eswatini has no specific regulations governing use and management of pesticide wastes. However, the waste management regulations, 2000 include hazardous wastes.		Apply ESS 3 requirements.
ESS 4 Community Health and Safety			
• To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project lifecycle from both routine and non-routine circumstances.	**The Public Health Act, 1969,** provides for the establishment of processes to ensure public health at all phases of a project. It also provides for steps to take should there be any incident from the project affecting the public and lays out responsibilities for actions to be taken. **The Occupational Health and Safety Act, 2001,** provides for the safety and health of both employees and the public, especially during the construction phase of proposed projects, and specifies processes to be	No significant gaps between ESS 4 requirement and the various national laws	Apply national laws

	undertaken in order to ensure that safe and health practices are adhered to and implemented at work.		
• To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams.	National laws and regulations do not have specific provisions.	Significant gaps between ESS 4 requirement and the various national laws as appertains to promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure	Apply ESS 4 requirements.
• To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials.	**The Road Traffic Act, 2007,** provides for the compliance of all road users and for those organizations such as EEC conducting works on and/or along public roads. **The Waste Regulations, 2000,** under the Environmental Management Act, provide for the management of solid and liquid waste disposal. They emphasize on the appropriate handling, transportation, treatment and final disposal of waste. **The Public Health Act, 1969,** provides for the establishment of processes to ensure public health at all phases of a project. It also provides for steps to take should there be any incident from the project affecting the public and lays out responsibilities for actions to be taken.	No significant gaps between ESS 4 requirement and the various national laws	Apply national laws
• To have in place effective measures to address emergency events.	Eswatini does not have laws or regulations that specifically address emergency events	Significant gaps between ESS 4 requirement and the various national laws.	Apply ESS 4 requirements.
• To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.	Eswatini does not have laws or regulations specific to security personnel	Significant gaps between ESS 4 requirement and the various national laws.	Apply ESS 4 requirements.
ESS 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement			

ESS5: Para(10): Eligibility Classification • Persons who have formal legal rights to land or assets • Persons who do not have formal legal rights to land or assets, but have a claim to land or assets that is recognized or recognizable under national law; • Persons who have no recognizable legal right or claim to the land or assets they occupy or use.	• Section 211(3) of the Constitution notes that "a person shall not be deprived of land without the due process of the law and where a person is deprived, that person shall be entitled to prompt and adequate compensation… • Section 14 (1) (d) of the Constitution guarantees the right of all individuals the protection from deprivation of property without compensation. • Section (14) (1) (c) secures the right of individuals to protection of their property rights. • In as much as The Constitution does not specifically classify the different categories of eligibility of a person to be deprived of land without due process as required by ESS5 classification. Section 20(1) and (2) provides thus; • S.20(1) – all person are equal before and under the law in all spheres of political, social, economic and cultural life and in every other respect and shall enjoy equal protection of the law; Section 20(2) further states that for the avoidance of any doubt, a person shall not be discriminated against on the ground of gender, …, or social or economic standing…, age or disability.	All person are protected by the law regardless of their social or economic standing, age or disability so long as they occupy land earmarked for the proposed project.	Given that the National laws guarantees the protection of all occupiers of land to be affected by land acquisition, it is recommended that the EEC applies the National laws and ESS5 where the need arises. The more stringent will prevail.
• To avoid forced eviction	The Constitution of Swaziland 2005, on the protection and promotion of fundamental rights and freedoms of the individual guarantees protection from deprivation of property without compensation (S.14(e)) Section 211(3) of the Constitution notes that *"a person shall not be deprived of land without the due process of the law and where a person is deprived, that person shall be entitled to prompt and adequate compensation for any improvement on that land or loss consequent upon that deprivation unless otherwise provided by law."* S.54 of the Electricity Act, 2007 and S.3 of the Acquisition Act, 1961 requires consent from the property owner. If however the property owner does not consent due process is then followed.	There is a significant gap with respect to forced evictions. There are no laws or regulations protecting squatters or encroachers on government land and this provides an opportunity for the government to undertake forced evictions without due compensation as provided by ESS 5.	Apply ESS 5 requirements
• To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing	S.15 of the Acquisition Act identifies the factors that needs to be considered when determining compensation, namely: - a) market value of the property b) damages sustained by the person interested by severing of any land c) damages sustained by reason of the acquisition injuriously affecting any other property of the person	While the acquisition of property act applies to all PAPs affected by the proposed project with regards to the procedure for acquiring and compensation, it is silent on the issue of	Apply ESS 5 requirements

timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.	d) any reasonable expenses incidental to a change of residence or business as a consequence of the acquisition The factors listed in **S.15** of The Acquisition of Property Act 10, 1961 in essence requires that the person affected by the acquisition should be placed in a position he was had he not been affected by the move if not better **S.9 & 10** of the Acquisition of Property Act articulates the procedure for settlement of disputes for compensation by the Board of Assessment as appointed in terms of S.10.	allocation of land of equal production use or potential or with similar or improved services. It only mentions compensation in terms of monetary value. Also no transfer of Stamp duty is payable in respect of any transfer of title etc. is mentioned explicitly..	
• To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure.	The resettlement procedure will be done within the purview of the law in particular S.15 of the Acquisition of Property Act and the Constitution. All affected persons will be compensated fairly.	The national legislation does mention that a person shall not be discriminated however, does not explicitly requires that additional support shall be provided to address needs of vulnerable group or to improve their living conditions.	Apply ESS5 and work with local authorities and resettlement committees to address the needs of the vulnerable groups.
Loss of access to natural resources	There is no national legislation which deals with the loss of access to natural resources.	There is gap with ESS5	Apply ESS 5 requirements
• To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful	No legislative requirement for disclosure of resettlement Plan. Although the **The Environmental Audit, Assessment and Review Regulations, 2000 does require consultations of the ESIA and mitigation plans.**	There is gap with ESS5	Apply ESS 5 requirements

consultation, and the informed participation of those affected.			
ESS 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources			
• To protect and conserve biodiversity and habitats.	**The Constitution of the Kingdom of Swaziland Act, 2005,** provides that the country and all who reside in it shall protect and make rational use of its land, mineral, water resources as well as flora and fauna. It also underlines that appropriate measures to attain sustainable living through the conservation and enhancement of the environment. **The Environmental Management Act, 2002,** provides and promotes the enhancement, protection and conservation of the environment, as well as sustainable management of natural resources. **The Flora Protection Act, 2001,** provides for the protection of indigenous flora and encourages the eradication of alien and/or invasive plant species. **The Game Act, 2001,** provides for the protection of birds and mammals against any illegal and harmful activities, such as poaching. **The Plant Control Act, 1981,** provides for the control, movement and growth of plants.	No significant gaps between ESS 6 requirement and the various national laws	Apply national laws
• To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.	The **Environmental Management Act, 2002, PART II-Fundamental Purpose & Principles**, mentions the precautionary principle and the need to take into account the needs of the present and future generations.	No significant gaps between ESS 6 requirement and the various national laws	Apply national laws
• To promote the sustainable management of living natural resources.	**The Constitution of the Kingdom of Swaziland Act, 2005,** provides that the country and all who reside in it shall protect and make rational use of its land, mineral, water resources as well as flora and fauna. It also underlines	No significant gaps between ESS 6 requirement and the various national laws	Apply national laws

	that appropriate measures to attain sustainable living through the conservation and enhancement of the environment. **The Environmental Management Act, 2002,** provides and promotes the enhancement, protection and conservation of the environment, as well as sustainable management of natural resources. **The Flora Protection Act, 2001,** provides for the protection of indigenous flora and encourages the eradication of alien and/or invasive plant species. **The Game Act, 2001,** provides for the protection of birds and mammals against any illegal and harmful activities, such as poaching. The **Natural Resources Act, 1975,** promotes the conservation and improvement of all living natural resources within the country. **The Water Act, 2003,** provides for the sustainable use and management of water resources in the country as well as for the control of pollution. The Forests Preservation Act no 28 of 1910 provide for the sustainable management and utilization of forest resources.		
• To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.	Eswatini does not have requirements specific to supporting the livelihoods of local communities, and inclusive economic development.	Significant gaps between ESS 4 requirement and the various national laws.	Apply ESS 6 requirements.
ESS 7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities **NOT APPLICABLE**			

ESS 8 Cultural Heritage			
• To protect cultural heritage from the adverse impacts of project activities and support its preservation.	**The National Trust Commission Act, 1972,** provides for the operation of cultural institutions and the proclamation of national parks, monuments and matters incidental thereto. The Swaziland National Trust Commission is the parastatal organisation responsible for the conservation of nature and the cultural heritage of the Kingdom of Swaziland. **Environmental Management Act No 5 of 2002** provides for subjecting proposed projects to Environmental and Social Impact Assessment (ESIA) studies as a mechanism for identifying, evaluating and managing environmental and social impacts of projects. This includes cultural resources. **The Environmental Audit, Assessment and Review Regulations, 2000,** issued under the Eswatini Environmental Authority Act, 1992, and the Environmental Management Act, 2002, underline processes that must be taken for any proposed project in order to predict and evaluate likely environmental impacts under studies such as the ESIA. This includes cultural resources. Section 32 of the Environmental Management Act, 2002 emphasizes that no person shall undertake any project that may have a detrimental effect on the environment without the written approval of the EEA.	No significant gaps between ESS 6 requirement and the various national laws	Apply national laws
• To address cultural heritage as an integral aspect of sustainable development.	Eswatini does not have requirements specific to addressing cultural heritage as an integral aspect of sustainable development.	Significant gaps between ESS 8 requirement and the various national laws.	Apply ESS 8 requirements.
• To promote meaningful consultation with stakeholders regarding cultural heritage.	Eswatini does not have requirements specific to consultations regarding tangible or intangible cultural heritage.	Significant gaps between ESS 8 requirement and the various national laws.	Apply ESS 8 requirements.
• To promote the equitable sharing of	Eswatini does not have requirements specific to equitable benefit sharing from the use of cultural heritage	Significant gaps between ESS 8 requirement and the various national laws.	Apply ESS 8 requirements.

benefits from the use of cultural heritage.			
ESS 9 Financial Intermediaries **NOT APPLICABLE**			
ESS 10 Stakeholder Engagement and Information Disclosure			
• To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.	The Environmental Audit, Assessment and Review Regulations, 2000 requires stakeholder consultation during the ESIA preparation process. Specifically during the scoping phase, the proponent must conduct stakeholder consultation. The EAA also allows for public hearing during the EIA process , where - (a) after examining the IEE and/or EIA report and accompanying CMP for the proposed project, it is of the opinion that the project is of such a sensitive or significant nature that the public should have the opportunity to make submissions or comments at a public hearing; or (b) the public concern over the project is great and the number of written and substantiated objections exceeds ten." EAAR Regulations, sec. 12(1)	Significant gaps between ESS 10 requirement and the various national laws.	Apply ESS 10 requirements.
• To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.	There are no clear regulations on how to assess the level of stakeholder interest and support for a project.	Significant gaps between ESS 10 requirement and the various national laws.	Apply ESS 10 requirements.
• To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project lifecycle on	There are no clear regulations on how to provide means for effective and inclusive engagement with project-affected parties throughout the project lifecycle on issues that could potentially affect them.	Significant gaps between ESS 10 requirement and the various national laws.	Apply ESS 10 requirements.

issues that could potentially affect them.			
• To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.	EAAR Regulations, sec. 11(1). Provides for public notice of the availability of the EIA which must be published in the Government Gazette, on the Swaziland Broadcasting Service, and in a newspaper circulating in Swaziland twice a week and for two consecutive weeks. The EM Act and EAAR Regulations, sec. 11(1). Requires the Authority to distribute copies of the EIA and CMP to concerned and affected ministries, local authorities, parastatals, and non-governmental organizations. The Authority shall publish "a detailed statement of the decision for public inspection." EAAR Regulations, sec. (15)(6)(c) "Any person may request from the Minister, the Authority or any other organ of Government any information relating to the environment that is not available in the registry but that could reasonably assist that person in contributing to the enhancement, protection and conservation of the environment and the sustainable management of natural resources." EM Act, sec. 51	No significant gaps between ESS 10 requirement and the various national laws	Apply national laws
• To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances.	EAAR Regulations, sec. 12(2)The Authority shall "call upon any party who has an interest in the outcome of the public hearing, including the project proponent, the authorising agency, the commenting agency and any other person, to attend the public hearing or solicit in writing comments from other government agencies or offices with expertise or regulatory power over the proposed project."	No significant gaps between ESS 10 requirement and the various national laws	Apply national laws
• To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive	The Eswatini Environment Authority has a systematic approach to stakeholder engagement during the EIA process. See below:- EAAR Regulations, sec. 11(1). Provides for public notice of the availability of the EIA which must be published in the Government Gazette, on the Swaziland Broadcasting Service, and in a newspaper circulating in Swaziland twice a week and for two consecutive weeks.	No significant gaps between ESS 10 requirement and the various national laws during preparation phase. However, no explicit mention of stakeholder engagement during implementation/construction and operation phase.	Apply ESS 10

relationship with them, in particular project-affected parties.	The EM Act and EAAR Regulations, sec. 11(1). Requires the Authority to distribute copies of the EIA and CMP to concerned and affected ministries, local authorities, parastatals, and non-governmental organizations. The Authority shall publish "a detailed statement of the decision for public inspection." EAAR Regulations, sec. (15)(6)(c) "Any person may request from the Minister, the Authority or any other organ of Government any information relating to the environment that is not available in the registry but that could reasonably assist that person in contributing to the enhancement, protection and conservation of the environment and the sustainable management of natural resources." EM Act, sec. 51 EAAR Regulations, sec. 11(1). The Authority shall "invit[e] objections, comments or submissions from interested and affected persons. . . ." EAAR Regulations, sec. 11(1). EAAR Regulations, sec. 12(2)The Authority shall "call upon any party who has an interest in the outcome of the public hearing, including the project proponent, the authorising agency, the commenting agency and any other person, to attend the public hearing or solicit in writing comments from other government agencies or offices with expertise or regulatory power over the proposed project."		

4 ENVIRONMENTAL AND SOCIAL BASELINE

This chapter describes the project environmental and social baseline with respect to the bio-physical environment where the proposed Project route will traverse.

4.1 Project Location

91. The Kingdom of Eswatini is situated in the south-eastern part of Africa between 25° and 28° latitude south and 30° and 33° longitude east. The country covers a land area of 17,364 km2 and has an elevation range of 60-1,860 masl. The Kingdom of Eswatini is landlocked, bounded by the Republic of South Africa on the north, west and south and by Mozambique to the east (Figure 4-1).

92. The project will be implemented in the Shiselweni region, one of the four administrative regions of the Kingdom of Eswatini, located in the southern part of the country and bordered by the Lubombo and Manzini Regions.

Figure 4-1. Map of Swaziland showing Shiselweni Region.

4.2 Physical Environment

4.2.1 *Climate*

The overall climatic characterization of Eswatini is subtropical with summer rains and distinct seasons. Higher and lower physiographic zones show different climatic conditions, ranging from sub-humid and temperate in the Highveld to semi-arid and warm in the Lowveld. The mean annual rainfall ranges from 1,450 mm in the Highveld to 550 mm in the Lowveld, however substantial annual variations occur, leading to both drought and floods. Figure 4-2 below shows mean monthly rainfall for the stations Mbabane, Matsapha and Big Bend, representative for Highveld, Upper Middleveld and Eastern Lowveld respectively. Rainfall figures of the zones are overlapping, which is caused by the overall higher rainfall in the northern part of the country. Figure 4-3 below shows mean annual temperature. Shiselweni region falls within the Highveld from Nhlangano to Hluti averages 800-1200 mm of rainfall, with a wetter summer and dry winter. The Lowveld has semi-arid climatic conditions, averaging 200-600 mm with frequent periods of extreme drought. The Lowveld experiences hot summers with little rainfall, and mild winters.

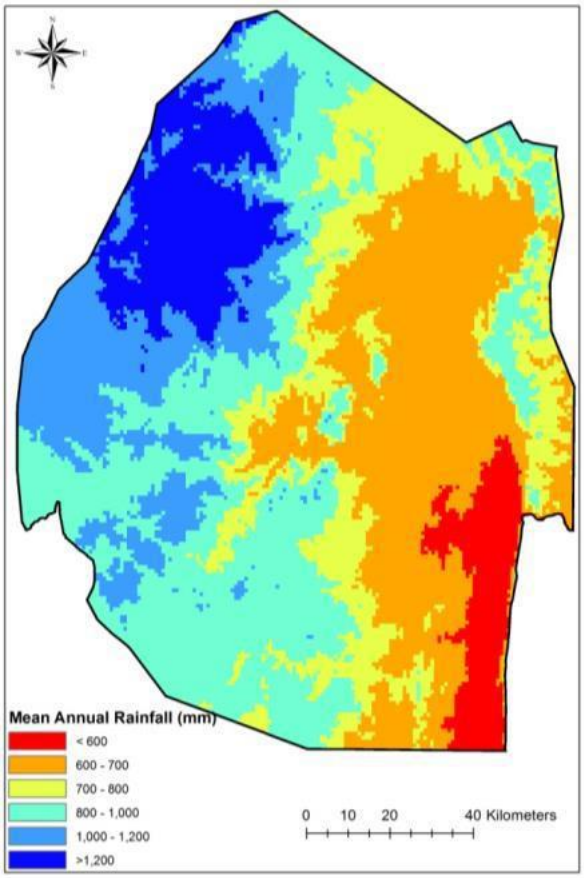


Figure 4-2.Distribution of mean annual rainfall

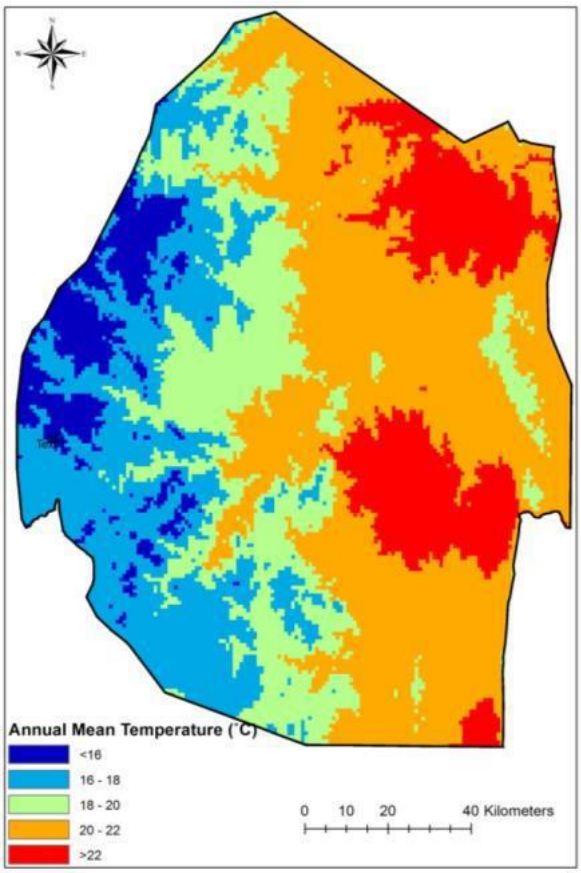


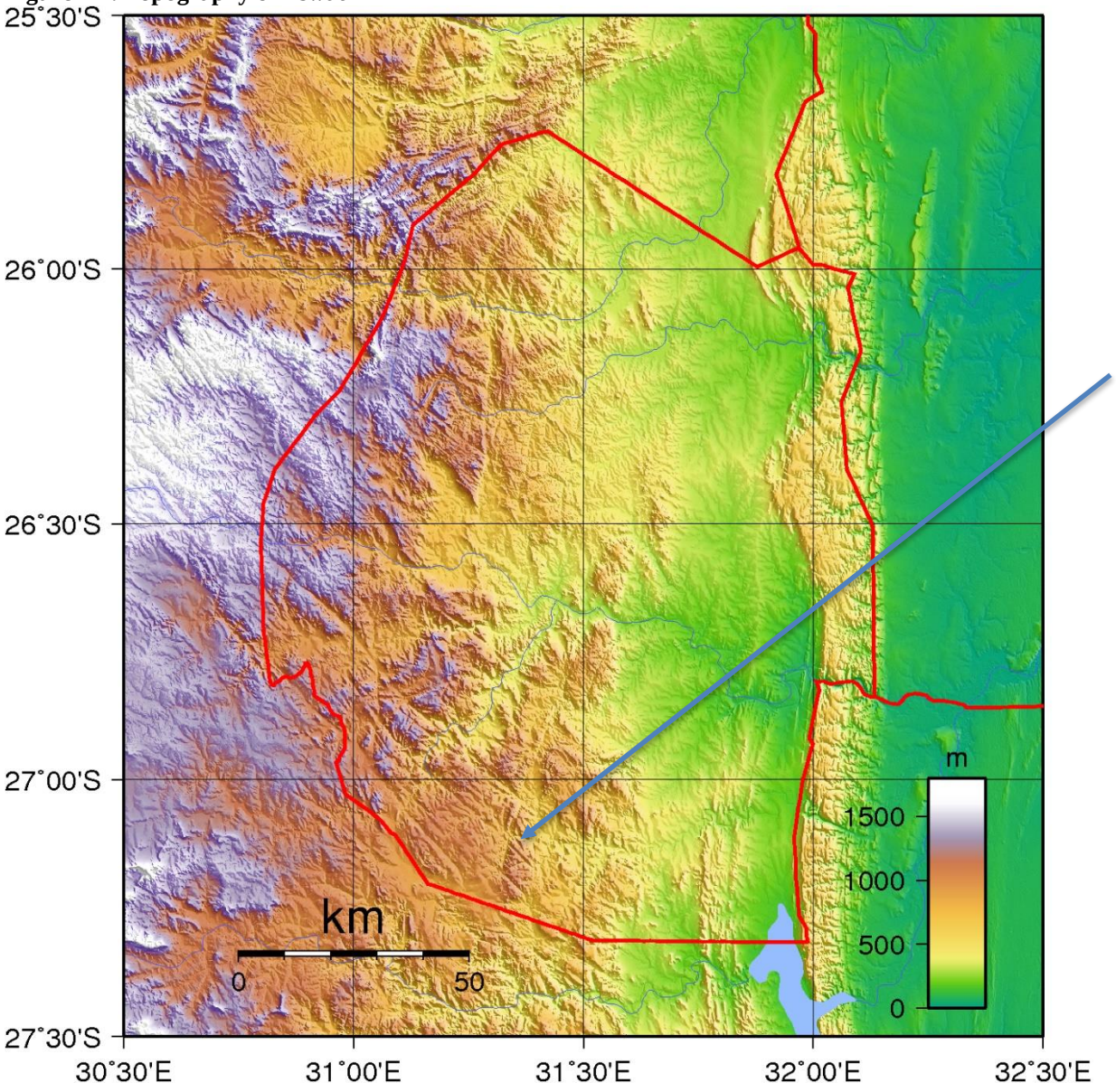
Figure 4-3. Distribution of mean annual temperature

4.2.2 Topography, geology and soils

93. Eswatini is oval shaped and bestrides the dissected edge of South African Plateau. The elevation of the country decreases from west to easterly direction. There are four main geographical regions running longitudinal north to south and these are (Microsoft Encarta Encyclopaedia, 2002 and Mwendera, 2003).

The western part of the Project area (Nhlangano to Hluthi) is mountainous due to the area being in the Highveld and Middle-veld physiographic regions, while the middle part from Siphambanweni to Matsanjeni consists of gentle sloping areas, and the eastern part, where Lavumisa is located, tends to be a low-lying area. The mountainous westernmost portion, the Highveld, has an average elevation of 900 m to 1400 m and in some places it reaches an altitude of more than 1800 m above sea level; The hilly central Middleveld has an elevation of 400-800 m; The eastern Lowveld is a rolling area that averages from 120 to 130 m above sea level; and The Lubombo Mountains bound the Lowveld on the east. Significant ridge areas are present in the region of the proposed project.

Figure 4-4. Topography of Eswatini



94. The geological map of Eswatini indicates that the geological setting of the project area is made up of 6 groups, the first being dominant in the area is the Nhlangano gneiss a granite gneiss reddish in the Nhlangano area while in Mkhondo Valley are Nhlangano outcrops of gneissoe veined at the margins, homogeneous with a plutonic aspect centrally. A few are folded malic dykes which are upright gneiss domes mantled mainly by Pongola and related rocks. Also characteristic of the area is a few of the Hlatikhulu granite (Htg), Mahamba

Gneiss (Mh gn) Mozaan Group (Mz) Mkhondo Valley (MVms) and Dolorite grabbo (do). The Hlatikhulu granite is coarse to medium-grained relicas and xenolithis common in some areas around Hlatikhulu in sheet like form fed from below by dykes and sheets- late pegmelites and mesocralic granite dykes. The Mahamba Gneiss is a semi pelitoc gametilerous gneiss which its correlation is uncertain. The Mozaan group is a basalt about 150m thick. Lastly is the dolorite grabbo and metegrabbo which is mostly dykes of various swarms and ages which a few may be proterozioc or karro.

95. The arrangement of the soil structure in the project area varies considerably. From Nhlangano to Qinisweni, there are three soil types. It is mostly deep red loam, very acidic soil. Some parts of the soil structure are orange loam, on a soft iron pan. It ranges from ferrisolic to ferralitic. Right after Qinisweni and up to Mantambe, the structure is generally ferralitic; beginning with a Highveld grey on orange which is gravely loam. There are also rock outcrops with stony ground (raw mineral soil) and grey loam on the thick stone line. Moving up to Makhondza area, just before Shiselweni 1, the soil arrangement is deep yellow, loam and very acidic. In some parts, this ferralitic structure is deep pale grey sand on clay. Masiphula area is represented by generally lithosolic rock. It is grey sandy on hard iron pan and shallow grey to sandy loam on hard rock. From Masiphula to Hluthi, the structure of the soil is mostly shallow grey to sandy loam on hard rock, with Highveld grey on orange which is gravely loam and deep red loam, very acidic. Hluthi to Siphambanweni has ferralitic soil which is slightly vertisolic. This gives the soil an acidic dark to deep dark brown clay structure with rock outcrops. It is in some parts marsh, with deep black clay and is calcareous.

96. The erosion hazard map indicates that soils in Nhlangano area fall between an erosion hazard category 2 and 4 with sub-factors s, r and e. This means the soils in the area are erodible, but at an intermediate rate with contributing factors of slope and rainfall. From Nhlangano town to Galile Primary, the slope is a major contributing factor to erosion. In the area with a steeper slope (such as St Florence Christian High Academy), there is greater erosion power. This area is also susceptible to rainfall erosivity. The flat areas are not susceptible to erosion by slope but during periods of high rainfall in January where most precipitation, the area is likely to experience erosion as a result of rainfall in disturbed areas that have not been rehabilitated. The erosion hazard category ranges from as low as 2 to a medium (3). Galile Primary area has a steep slope too with an erosion hazard category of 4 which is a high medium and soil erodibility due to the nature of the slope. Moving into Hluthi and up to Siphambanweni, the erosion hazard map shows that the soil has an erosion hazard category of 3 with soil erodibility due to slope.

4.2.3 Hydrology

97. Eswatini is drained by seven major river systems - the Komati, Mlumati, Mbuluzi, Lusutfu, Ngwavuma, Pongola and Lubombo (Figure 4-5). Several of these rivers rise in South Africa and all flow eventually to Mozambique.

98. The project area falls within the Usuthu River Basin. The main river flowing through Shiselweni is the Mkhondvo river, which is the source of water supply for the project. Its confluence with the Usuthu River is at Sidvokodvo. The figure below shows the main river basins of the country.

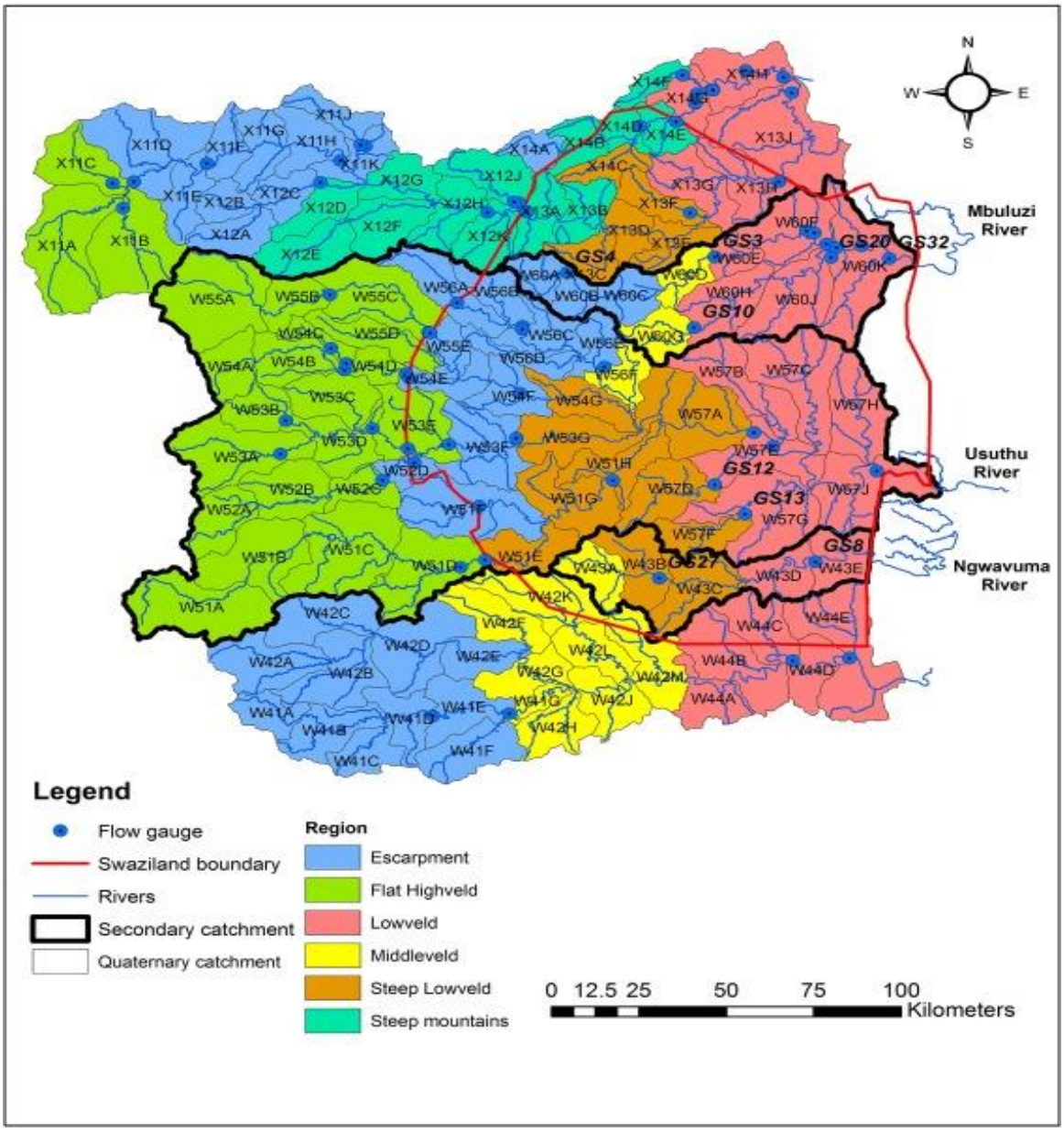


Figure 4-5. River basins in Swaziland

99. The main rivers in the Project area are the Ngwavuma and a small seasonal stream called Sitilo River. The Ngwavuma is a river rises in southwestern Eswatini and flows eastward. It is a tributary of the Pongola River. There are small streams in the project area including Mahosha, Mthongwane, ,Mantambe and Mdakane. The principal towns along the Ngwavuma are Nhlangano and Nsoko. The other streams found along the selected route are seasonal and have dried up. A small dam is found in close proximity to the servitude in the Matsanjeni built up area.

4.3 Biological Environment

4.3.1 Ecosystems

100. The four recognised ecosystems of Eswatini are (1) montane grasslands, (2) savanna-woodland mosaic, (3) forests, and (4) aquatic systems.

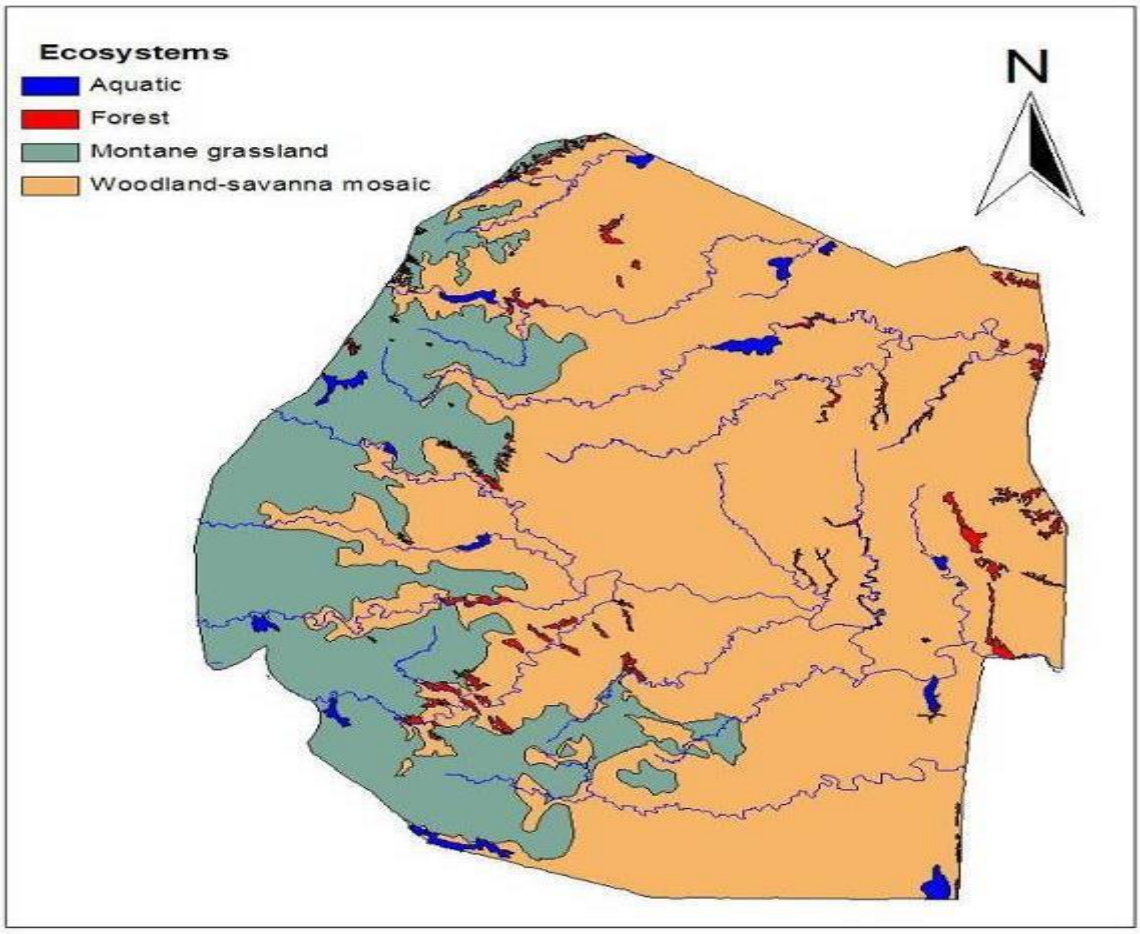


Figure 4-6. Ecosystems map of Eswatini

101. The savanna-woodland mosaic is the dominant ecosystem, covering the central and lower parts of the country, followed by the montane grasslands, predominantly occurring in the Highveld and the two other as minor zonal systems. The savanna ecosystem is currently the best protected (5%), while only 2% of each of the other three ecosystems is protected. Plants and animals are not uniformly distributed across the four ecosystems and species composition varies greatly between them. The Shisweleni region and project area falls within the savanna-woodland mosaic ecosystem.

4.3.2 Biodiversity

102. The Project is located in significantly modified natural habitats, including extensive rainfed farmland (much of which has been abandoned) and tree plantations, especially close to Nhlangano.

4.3.3 Flora

103. The vegetation of the area crossed by the Project is mainly secondary. It includes a mix of indigenous, alien and exotic plant species. The dominant indigenous trees include *Ficus sp.*, Blue berry trees, *Aloe Malothii*, *Acacia sp,* the marula tree, *Sclerocyrea birrea*, *Vengueria sp*, as well as grasslands with thorny bushveld tree species. The dominant exotic trees in the project area are: *Acacia mearnsii* (Black Wattle/ umtfolo wesilungu), *Eucalyptus sp*. (umgomu), Jacaranda trees and *Melia azedarach (*Umsilinga*)*. Dominant grass species include; *Digitaria sp, Eragrostis sp, panicum sp and Terminelia sp.alien.* Invasive species such as *Lantana camara* and *Chromolena odorata* are common in the project area and surroundings. Table 4-1 illustrates the floral species in the project route.

Table 4-1 Floral species in the project route.

Scientific name	***Common name***	***Siswati Name***	***Comment***
Syzygium cordatum	Water berry	*Umcozi*	*Indigenous*
Psidium guajava	guava	*Umgwava*	*Invasive*
Lantana Camara		*Emehlo akati*	*Alien invasive species*
Pinus sp.	Pine Tree	*Umtfolo*	*Alien invasive species*
Sclerochiton harveyanus	Blue-lips	*Mazabuka*	*Weed*
Lannea discolor	Live-long	*umnTfokolovu*	*Indigenous*
Ozoroa engleri R. & A.Fern	White Resin Tree	*imFuce lemhlophe*	*Indigenous*
Ozoroa sphaerocarpa R. & A.Fern	Currant Resin Tree	*imFuce lemnyama*	*Indigenous*
Rhus chirindensis Baker f. R. legatii	Red Currant	*inHlangushane lenkhulu*	*Indigenous*
Rhus pentheri Zahlbr. R. cuneata	Crow-berry	*inHlangushane, Sitsatsatsa*	*Indigenous*
Sclerocarya birrea	Marula	*umGanu*	*Indigenous*
Monanthotaxis caffra (Sond.)	Dwaba-berry	*siTitane, maSweleti, maSweti*	*Indigenous*
Carissa bispinosa (L.)	Num-num	*umVusankunzi, umBethankunzi*	*Indigenous*
Cussonia spicata	Cabbage Tree	*umSenge*	*Indigenous*
Chromolaena odorata (L.)	Riffid Weed, Paraffin Weed	*Sandanezwe*	
Vernonia myriantha	Eared Vernonia, Eared Bitter-tea, Blue Bitter-tea	*liNyatselo*	*Indigenous*
Kigelia africana	Sausage Tree	*umVongotsi*	*Indigenous*
Eucalyptus spp	Gum tree	*Gomu*	
Ricinus communis L	Castor Oil Bush	*umHlafutfo*	*Indigenous*
Pinus patula var. patula	Pine Tree	*Sipheshula*	*Indigenous*
Prunus persica	Peach	*uMpetjisi*	
Persea americana	Ovacado	*uMkotapeni*	
Englerophytum magalismontanum		*umnumbela*	*Indigenous*
Bidens bipinnata	Daisy	*Chuchuza*	
Alternanthera sessilis	Sessile joyweed	*Imbuya*	*Herb*
Corchorus argillicola	Jew's mallow	*Ligusha*	*Herb*
Pluchea bojeri	Sunflower	*Nukani, Shashasha*	*Herd*
Vangueria cyanescens	Kalahari wild-medlar	*Umntulwa*	*Indigenous*

104. The preliminary proposed route (based on feasibility study) avoids the rocky hill tops where the vegetation is denser. The proposed route will cut through plantation forests, but these are exotic species (plantation forests).

4.3.4 Fauna

105. There are 19 vertebrate species on the IUCN (2013) Globally Threatened Species list which are native to Eswatini. Of the 19 globally threatened vertebrate species, 6 are locally extinct in Eswatini. and 11 are found within Gazetted PAs. Of the 40 species of threatened plants recorded for Eswatini 29 occur within National PAs, a further 3 occur in Informal PAs and the balance except for one species (*Ficus sansibarica Warb.* ssp. *Sansibarica*) are found in potential new PAs.

106. A search of the available literature did not find any animal species on IUCN's Red data list in the area directly affected by the Project. This will be confirmed during preparation of the full ESIA. More generally, wildlife, particularly large mammals, is not abundant in the Project area, being limited according to locals to the occasional monkey and impala, which needs to be confirmed during by the full ESIA. Instead, areas not farmed are open rangeland used by cattle. Table 4-2 below shows the fauna species that are present in the region.

Table 4-2. Fauna species in Shiselweni region.

Species	Common name	SiSwati name
Chiroptera spp	Bats	Lilulwane
Lepus saxatilis	Scrub hare	Logwaja
Pronolagus crassicaudatus	Natal red rock rabbit	Logwaja
Cercopithecus mitis	Samango monkey	Ingobiyane
Chlorocebus pygerythrus	Vervet monkey	Ingobiyane
Papio ursinus	Chacma baboon	Imfene
Aethomys chrysophilus	Red veld rat	Ligundvwane
Aethomys ineptus	Tete veld rat	Ligundvwane
Aethomys namaquensis	Namaqua rock mouse	Ligundvwane
Sylvicapra grimmia	Common duiker	Impunzi
Poyntonophrynus fenoulheti	Northern Pygmy Toad	Sicoco
Schismaderma carens	Red Toad	sigogodvolo
Sclerophrys capensis	Raucous toad	sigogodvolo

107. Eswatini has 3 important bird areas according to BirdLife International, one of which is in Shiselwesi Region. Mahamba Mountain and Mahamba Gorge are located west of Nhlangano in Shiselweni Region. Mahamba Mountain is an area of high-altitude grassland, and Mahamba Gorge is the site of the largest Southern Bald Ibis, *Geronticus calvus*, colony in Swaziland. All are located outside of the Project's area of influence. The following map from http://birding.krugerpark.co.za/birding-in-kruger-migration-routes_images.html for Kruger National park in South Africa, which is next to Eswatini, shows that the project area is outside of the limit of the major bird migration flyways.

4.3.5 *Protected Areas*

108. The IUCN defines a Protected Area as "A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley 2008).

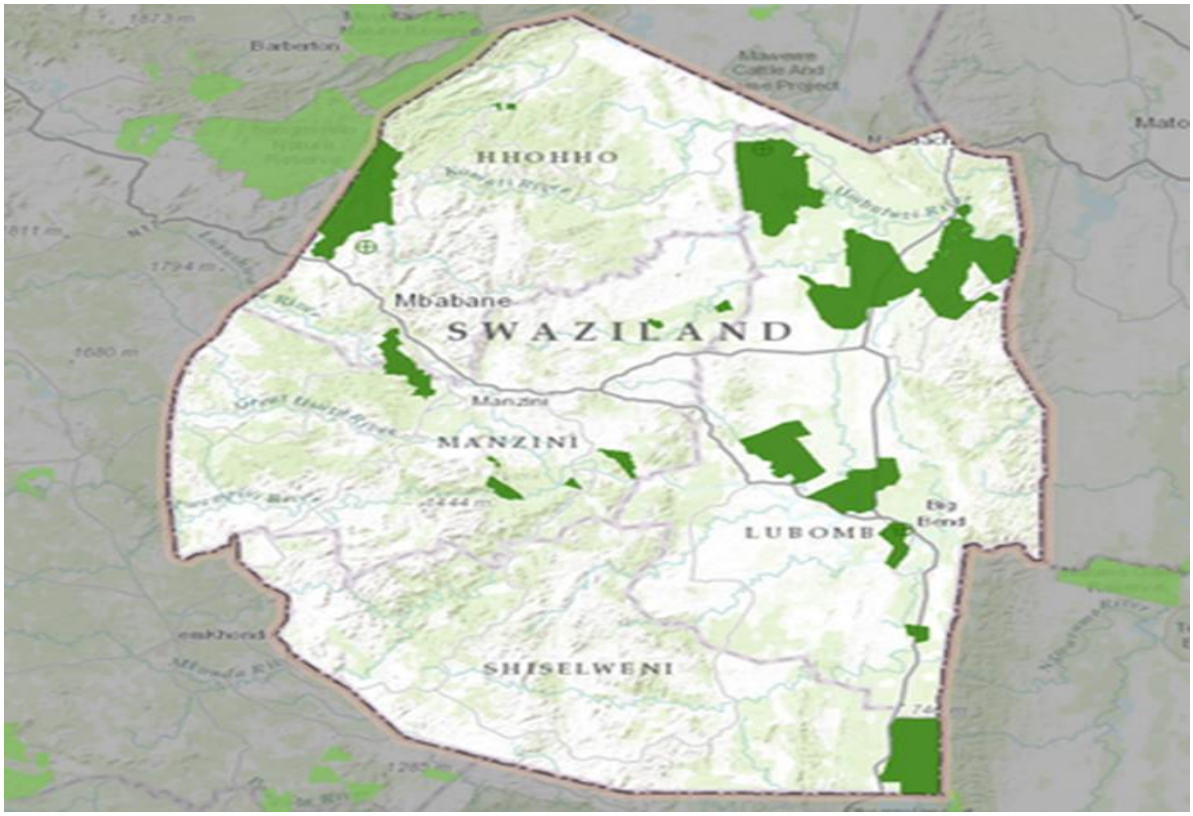
109. The six National PAs include Malolotja, Mlawula and Mantenga managed by the Swaziland National Trust Commission (SNTC) and Mlilwane, Hlane and Mkhaya managed by Big Game Parks (BGP). Mlilwane and Mantenga adjoin each other as do Hlane and Mlawula. By far the largest of these areas is the Hlane-Mlawula complex comprising 37,888 ha followed by Malolotja (16,292 ha) and Mkhaya (10,050 ha) and lastly the Mlilwane-Mantenga complex (5,300 ha). Together these areas comprise 69,530 ha i.e. 3.9% of the country, however, only 50,118 ha of these national PAs have been gazetted.

110. There are a number of Informal PAs in Swaziland which qualify as PAs in that they are conserved through "other effective means" but which are not gazetted under the SNTC, Game

or Flora Protection acts. The largest of these Informal PAs is IYSIS at just over 20,000 ha, with the Big Bend Conservancy, Jozini Big 6, Mhlosinga and Mbuluzi ranging from just over 13,000 ha to just over 2,300 ha respectively. Most of the other Informal PAs are under 1,500 ha in size, but together these areas comprise at least 46,977 ha i.e. 2.7% of the country.

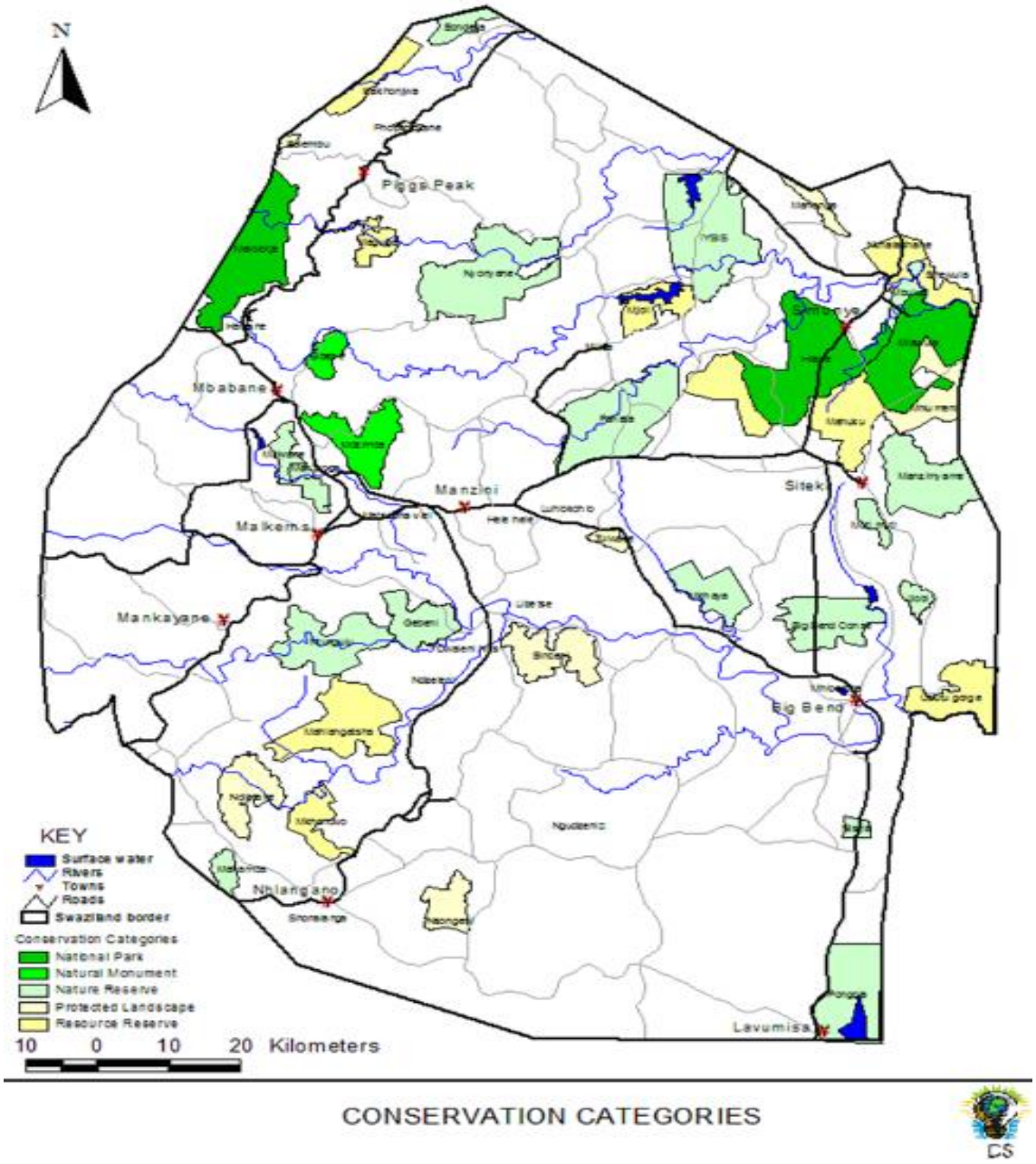
111. The Project area also does not include any existing protected area or ecological significant habitats.

Figure 3-7. Existing protected areas of Eswatini



112. The Project also does not include any area targeted for protection as indicated in the "A Preliminary Field Assessment of Protection Worthy Areas of Swaziland, Final Report", prepared by: K.G. Roques, June 2002, and "A Field Assessment Of Priority Protection Worthy Areas Of Swaziland, Makhonjwa, Manzimnyame, Sibebe And Nyonyane" compiled by K. Roques et al. July 2003.

Figure 4-8. Areas targeted for protection in Eswatini.



4.3.6 *Cultural Resources*

113. Along the proposed preliminary route there were no old buildings that qualify for national monument status as per the SNTC Act stipulations. Old buildings identified are not on the proposed route for the project. There were also no waterfalls, caves, rock art sites or anything else found along the proposed route that can stated to be of archaeological value or which deserves monument status.

4.4 Human Environment

114. The total population of the Shiselweni Region is estimated at 208 454 with 44 879 homesteads. The area targeted by the project for electrification covers six Tinkhundla centres, namely Somntongo, Sigwe, Shiselweni 1, Hosea, Zombodze and Matsanjeni. The preliminary

results from the 2017 population census indicate that 73 259 persons live in these six Tinkhundla centres, of which 39,018 are females, comprising 13 612 households.

115. Other than the town of Nhlangano, the population density is low and settlements are dispersed. Most other settlements border the MR11 road from Nhlangano to Lavumisa, with small industrial and commercial activities.

116. Agriculture is the main economic activity, but the volume of agricultural production is low, except for sugar cane production closer to Lavumisa.

4.4.1 Servitudes of existing transmission lines, sub stations and distribution network.

117. The project area is currently supplied by a 11kV line from the Nhlangano II substation to Lavumisa. The line route generally follows the MR8 road and MR11 road from Nhlangano to Lavumisa.

118. There is a distribution network with feeder lines and distribution lines that supply power to the homesteads, health facilities, commercial areas, schools, farms, and industries within the project area.

119. The expected Right-of-Way for the transmission line is 30 meters and the transmission towers will likely be installed at approximately 300 meters intervals depending on the terrain, routing and environmental and social considerations. Each tower will occupy a land footprint of approximately 22 square meters.

120. Work under the distribution network reinforcement will largely be on brownfield sites within the existing 11kV network

4.4.2 Land-use and ownership

121. The project area is largely rural, characterized by highveld landscape from Nhlangano to Hluti and the lowveld through to Lavumisa. The transmission line will cross communal land and smallholder farms whose land is used for grazing and subsistence farming under traditional governance. The area is rural in nature and the population density is low, with scattered settlements and homesteads. Therefore, while the transmission line traverses a significant distance, the relative impact is anticipated to be moderate. A large part of the Right-of-Way (RoW) for the transmission line is along land tenure categorised under Eswatini Nation Land, whilst the surrounding area is mostly designated for residential use and subsistence farming. Part of the proposed RoW traverses along banana plantations and is bordered by privately owned farms.

122. Commercial forests with pine trees are also found along the route. Most of the land within the RoW is degraded mainly due to overgrazing, making the area susceptible to soil erosion. The western part of the region (Nhlangano to Hluthi) is mountainous while the midwestern parts of the region (Siphambanweni to Matsenjeni) is characterized by a gentle sloping terrain and the eastern part, where the Lavumisa town is located, is a low lying area. Indigenous plant species such as Ficus, Aloe Malothii and grasslands with thorny bushveld trees dominate the project area. The main river along the route of the transmission line is the Ngwavuma River and a small seasonal stream called Sitilo River.

123. Livelihoods in the region are rural based, communities are small and dispersed. Non-farm income through male migration to neighboring South Africa is important, particularly to the mines, although South Africa's demand for migrant labor has declined over the past two decades. In this setting, where investments in infrastructure has been lower than in the other regions of Eswatini, the project is expected to impact on the ability to diversify livelihoods and bolster productive economic activities as a result of improved access to electricity.

124. The above description is based on the preliminary survey report of the proposed alignment of the transmission line. Further confirmation of the alignment shall be based on analysis of alternatives which will be undertaken as part of feasibility studies. The final alignment will be determined as part of the detail design, the alternative route analysis, the route alignment maps and the ESIA and associated ESMPs at the detail design.

4.4.3 Socioeconomic environment

125. The population in Shiselweni is estimated at 204,111 with 53 percent of females. The region is sparsely populated with a population density of 54 persons per square kilometer. The region is one of the poorest in the country with 67 percent of the population living below the poverty line and 21 percent living in extreme poverty. This manifests in various other forms including access to facilities. The multiple indicator cluster survey of 2014 shows that only 35 percent of those residing in Shiselweni region use piped water and the region has the highest percentage of households without water on premises (68 percent), followed by Lubombo region (51 percent). Electricity access in Shiselweni was reported at 48 percent.

126. Eswatini and English are the official languages in Eswatini. In addition to the official languages, residents also speak a number of other minority languages, including Afrikaans, Tsonga, and Zulu. Afrikaans is spoken by approximately 13,000 people in Swaziland. This language belongs to the Indo-European language family and is part of the Dutch subgroup. It developed from the language of Dutch settlers in South Africa and is often considered a creole language, having borrowed words from several languages, including German, Malay, Portuguese, and Khoisan. Tsonga is spoken by approximately 19,000 people in Swaziland. The language belongs to the Niger-Congo language family and is considered a Bantu language. It can be understood by speakers of both Tswa and Ronga. Tsonga is spoken by the Tsonga people. Zulu is the most widely used minority language in Swaziland, spoken by approximately 76,000 individuals. Like Tsonga, it also belongs to the Niger-Congo language family and Bantu subgroup. The language for disclosure of this documents and others will be undertaken in English. There would be no need to translate the documents since those that read the local language (siSwati) learn first to read in English and all newspapers in Eswatini are in English. However, the language used for community consultation is siSwati to ensure free flowing conversation and participation of those who cannot read and write. The means of communication in rural areas will be in siSwati and other languages as required. This will be achieved by engaging Community Liaison Officers from same community.

127. Agriculture is the dominant economic activity in the region. 65 percent of households nationally have agricultural land, with the percentage highest in the Shiselweni region (81 percent), followed by Lubombo region (72 percent) with the lowest in Hhohho and Manzini regions at 60 percent. Household ownership of farm animals/livestock is also highest in the Shiselweni region at 74 percent in Shiselweni region.

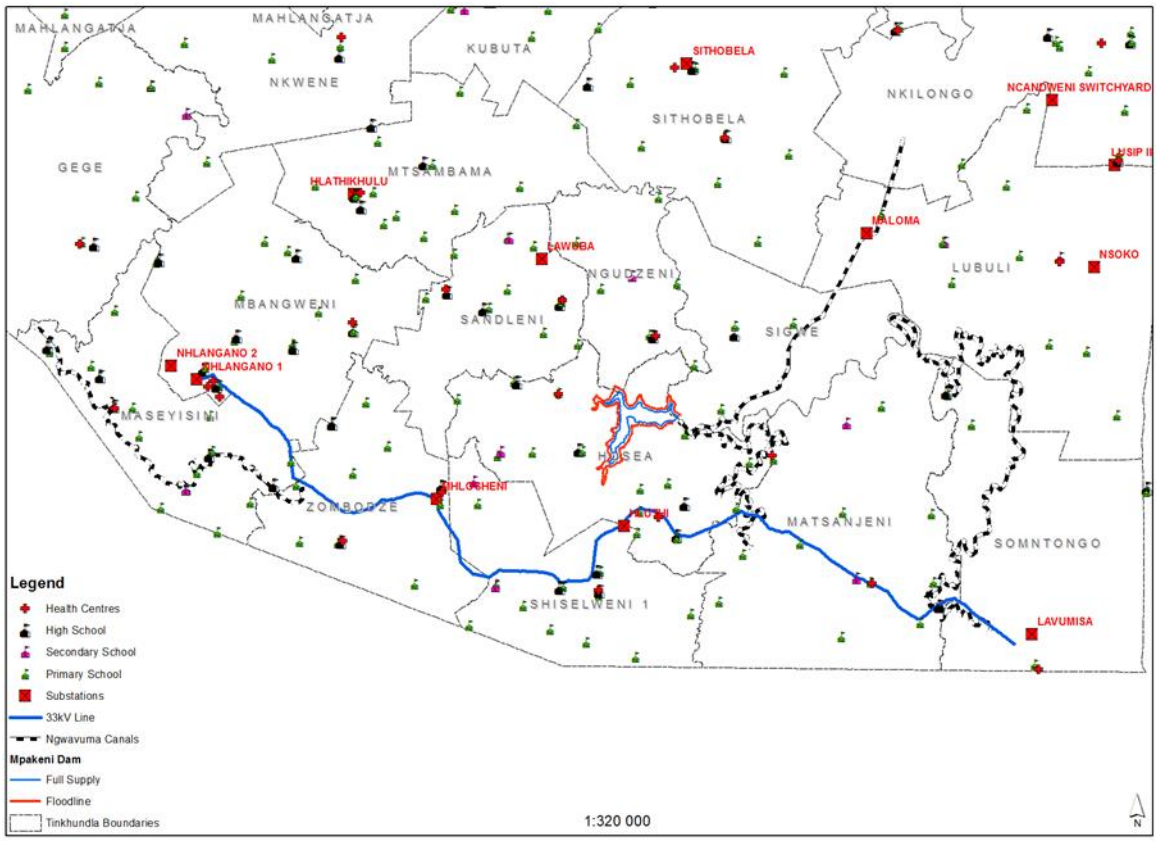
128. The human development index in Shiselweni has been growing at a compounded average rate of 0.9 percent from 2008 reaching 0.55 in 2017. However, this remains the lowest amongst the four regions with the Lubombo region at 0.57. Primary school completion rate for girls is in Eswatini is 94 percent while it is 88 percent for boys. The rate ranges from 79 percent in Shiselweni region to 95 percent in both Hhohho and Manzini regions.

129. The region is served by a hospital, two health centers and 18 clinics, all of which are electrified . 90 percent of women who gave birth in a health facility stayed 12 hours or more in the facility after delivery and the Shiselweni region has the highest percentage of women who stay 12 hours or more at 94 percent.

130. The selected route for the 132kV line traverses three towns namely Nhlangano, Hluti and, Lavumisa. It generally follows the MR11 road from Nhlangano which passes through homesteads on Swazi nation land and farm lands. The people on Swazi nation land are solely dependent on subsistence farming for crops and livestock. A smaller population of the rural community members work in the neighbouring towns, manufacturing industry and forest plantations in Nhlangano.

131. Small Industries and commercial entities characterise the Shiselweni region particularly the region's administrative town Nhlangano.. There are businesses activities along the identified route such as hammer mills, saloons, shops, fruit and vegetable markets. The map below shows some of the economic activities, health facilities and education areas within the project area which are largely scattered.

Figure4-8. Existing socioeconomic activities in and around the project area



132. Prevalence of Gender Based Violence (GBV) in Eswatini is high: nearly 50% of all women experience some form of GBV in their life time, the majority (1 in 3) before the age of 18. Eswatini also has one of the highest adult HIV/AIDS prevalence rates globally (27.4% in 2017). Government has taken proactive steps by having national legislations and ongoing programs on AIDs (Swaziland National Aids Program) and prevention of sexual and domestic violence.

133. Based on current conditions in the sector it is assessed that the risk of child or forced labor is negligible, and already managed through national legislation and EEC corporate requirement. The Children's Protection and Welfare Act of 2012 extends the provisions of Article 29 and other international instruments, that specifically address children's rights. However, the proportion of orphaned and vulnerable children is high across the country (75 percent in Lubombo region, 66 percent in Hhohho region, 70 percent in Manzini region and 73 percent in Shiselweni region).

134. It is not expected that the Shiselweni area will experience substantial labor influx. EEC's existing operational procedure is to mandate and localize the economic benefits and only allow for outside, including expatriate labor, where there is a requirement for special skills.

4.5. Existing waste disposal dumps and landfills

135. The Nhlangano- Lavumisa corridor has approved waste disposal waste facilities by the Eswatini Environment Authority. These are found within the Nhlangano town council and Lavumisa Town board. The Hluti area utilises waste pits for the disposal of waste.

5 ASSESSMENT OF POTENTIAL RISK AND IMPACTS

This chapter describes the potential impacts on the biophysical and socio-economic environments, which may occur due to the proposed activities. Impacts are identified and predicted based on the analysis of the information collected from the following: -

- Project information
- Baseline information

This section further outlines the methodology used to assess the significance of the potential environmental and social impacts identified. For each impact, the EXTENT (spatial scale), INTENSITY (size or degree scale) and DURATION (time scale) are described (Table 6). These criteria are used to ascertain the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the EIR represent the full range of plausible and pragmatic measures but does not necessarily imply that they should or will all be implemented. The decision as to which mitigation measures to implement lies with Swaziland Railway and ultimately with the SEA. The tables on the following pages show the scale used to assess these variables, and defines each of the rating categories.

5.1 Beneficial Impacts

5.2 Construction Phase

5.2.1.1 Employment/Job Creation

The construction of the transmission and distribution lines and substations including operation and maintenance activities provide employment opportunities–directly and indirectly–to skilled as well as unskilled manpower primarily to local manpower. During construction, the project will be beneficial through creation of employment opportunities for the local communities. The income, thus enhanced, of the local skilled and unskilled work force would also bring out a multiplier effect to other sectors of the economy.

5.2.1.2 Business Growth

The construction of the transmission and distribution lines and sub stations will require materials and equipment which will be sourced locally and internationally and will in-effect boost the local business enterprises through supply of locally available materials and equipment.

5.3 Operation Phase

5.3.1.1 Employment/Job Creation

Routine and periodic maintenance activities during the operation phase would generate direct employment not necessarily to the local communities but to the staff of EEC.

5.3.1.2 Security

Presence of electricity will be of beneficial impact to the local communities in terms of general security as a result of lighting especially for women and children.

5.3.1.3 Business Growth

Electricity is a significant trigger of economic growth and establishment of small and micro-enterprises by the local communities. Businesses are likely to increase and operate even late in the night due to presence of lighting hence spur economic growth.

5.3.1.4 Education and Health Facilities

The educational and health facilities in the project areas will be connected to the electricity and this will improve the quality of services, for example, health centers that have power may better store and receive medication and serve clients at late hours which may increase the number of people accessing the services provided by the health center, students can study in their homes when it is dark and attend evening classes which may increase the student enrollment rate and retention numbers.

5.3.1.5 *Gender and Children*

Access to modern energy services would go a long way towards alleviating the daily household burdens of women, giving them more time, improving their health and enhancing their livelihoods. The burden to gather fuel for cooking, heating, and lighting, falls primarily on women and children. This activity can, and often does, take women away from other, more economically profitable, opportunities such as employment or even farming. Children often must miss school to gather wood or farm waste to use for household fuel. When children are the orphaned heads of households, the burden is especially severe, as siblings take turns alternatively attending school versus gathering necessary fuel for the home. Furthermore, wood is increasingly scarce, forcing those who gather wood to spend more time, and traveling greater distances to collect it. Besides opportunity costs, many find themselves in danger at wood gathering sites.

5.4 Adverse Impacts

136. The following section presents the environmental impacts associated with the proposed project's planning, design, construction and operational phases, using the methodology developed by EEC. It is included for information, given that the full ESIA and ESMP will make use of this methodology. Identified impacts were evaluated in terms of their *spatial influence, duration, intensity, probability, direction, and significance*.

137. Identified impacts are both negative and positive and have different levels of significance, as indicated in 5-1 below, and have been assessed with close reference to the Environmental Audit and Assessment Review Regulations, 2000. The following table describes criteria used for evaluation.

Table 5-1 . Impact Evaluation Criteria

Evaluation Parameter	Description	Rating
Spatial Influence (SI)	**Low:** Within the project site	1
	Medium: Widespread impact beyond site boundary; Local	2
	High: Impact widespread far beyond site boundary; Regional/national	3
Duration	**Low:** Quickly reversible, less than project life, short term (0-5 years)	1
	Medium: Reversible over time; medium term to life of project (5-15 years)	2
	High: Beyond closure; permanent; irreplaceable or irretrievable commitment of resources	3
Intensity	**Low:** Minor deterioration, nuisance or irritation, minor change in species/habitat/diversity or resource or very little quality deterioration; very little improvement	1

	Medium: Moderate deterioration, discomfort, Partial loss of habitat/biodiversity/resource or slight or alteration; moderate improvement	2
	High: Substantial deterioration, death, illness or injury, loss of habitat/diversity or resource, severe alteration or disturbance important processes; severe improvement	3
Probability	**Low:** Unlikely; low likelihood; No known risk or vulnerability to natural or induced hazards. Unlikely; low likelihood; Seldom No known risk or vulnerability to natural or induced hazards.	1
	Medium: Possible, distinct possibility, frequent Low to medium risk or vulnerability to natural or induced hazards.	2
	High: Definite (regardless of prevention measures), highly likely, continuous high risk or vulnerability to natural or induced hazards.	3
Significance	Deduced from the summation of the ratings with the range defined as follows: 4 and 6: Low (Green) 7 and 9: Medium (Yellow) 10 and 12: High (Red)	

5.5 Construction Phase

138. The construction of transmission and distribution lines and sub stations will lead to various bio-physical and socio-economic adverse impacts on the project area of influence. The EHS Guidelines for Electric Power Transmission and Distribution identify the following sector specific impacts:

Environmental

1) Terrestrial habitat alteration
- Construction of Right-of-Way
- Right-of-Way Maintenance impacts
- Forest Fires

2) Electric and magnetic fields
3) Hazardous materials
4) Insulating Oils and Fuels

Source: WBG EHS Guidelines

Occupational Health and Safety

- Live power lines
- Working at height on poles and structures
- Electric and magnetic fields
- Exposure to chemicals
- Labor Conditions

Source: WBG EHS Guidelines

Community Health and Safety

- Electrocution
- Electromagnetic interference
- Visual amenity
- Noise

- Road Safety & site accidents
- Spread of STDs

Source: WBG EHS Guidelines.

5.5.1 Air pollution from Construction Activities

139. The construction of the transmission and distribution lines and sub stations will entail the use of motorized machinery and vehicles which will lead to air pollution which will impact human health and the environment in general. Pollutants from motorised equipment during construction will include:

1. CO – Carbon monoxide;
2. HC – unburned hydrocarbons generated through combustion processes and fugitive fuel evaporation, including benzene, a known carcinogen;
3. CO2 - Carbon dioxide.
4. NOX– Nitrogen oxides including NO2 - nitrogen dioxide and NO – nitric oxide[9];
5. PM10 – fine particulate matter including soot/black;
6. Sulphur dioxide (SO2): SO2 is of concern because of its impacts on health and vegetation[10];

The above pollutants are of concern due to the adverse effects on human health and natural ecosystems they may have in the local environment.

140. EHS guidance[11], suggests that these pollutants are only likely to be significant where coal or heavy fuel oil are in use. As these fuels will not be used for the Project, significant impacts on air quality from these pollutants are therefore considered unlikely. Carbon monoxide will also arise from combustion but maintaining equipment in good working order and operating plant and equipment according to manufacturer specifications will maintain emissions of carbon monoxide at concentrations that will not result in significant impacts to air quality.

Construction Dust

Dust is defined as all particulate matter up to 75 μm in diameter and comprising both suspended and deposited dust, whereas PM10 is a mass fraction of airborne particles of diameter 10 μm or less. Dust and PM10 emissions arise from a number of sources, so both construction activities and emissions from vehicles associated with the construction site need to be considered.

Table 5-2. WB and WHO reference standards and guidelines for NOx PM, Sox.

Parameter	WHO Air Quality Guidelines
Sulphur Dioxide, SO2	20 μg/m^3
Nitrogen Oxides, NOx as NO2	200 μg/m^3 (1hr)
Suspended Particulate Matter	200 μg/m^3
PM10	100 μg/m^3
PM2.5	25 μg/m^3
Ozone	100 μg/m^3

5.5.2 Construction Air Emission Risks and Impacts

The main sources of air emissions from construction works on the Project and hence risks will

[9] NO_x includes NO_2 plus nitrous oxide NO and nitrogen oxide (N_2O) which convert to NO_2 over time in the atmosphere.

[10] In urban areas SO_2 can also be of concern because of corrosion of materials (building materials, monuments etc.), however this is not judged likely to be an issue given the rural nature of the Project location.

[11] WB PS (2008) Environmental, Health, and Safety Guidelines for Thermal Power Plants

be:

1. Dust emitted from excavation, earth moving, loading, handling and transportation of materials. Dust deposition from road traffic is not likely to be a more significant issue than exhaust emissions, as many of the roads used by construction vehicles are paved. The construction of the proposed transmission line and sub-station has the potential to cause emissions of dust Total Suspended Particles (TSP) from land clearing, earthworks, movement of vehicles over unpaved surfaces and roads, handling of friable materials etc. These sources have the potential to increase ambient concentrations of particulate matter, resulting in nuisance at nearby settlements and to affect crops and natural vegetation through dust deposition.

2. Emissions of combustion gases from construction machinery and the vehicles. Construction vehicles are generally fueled with diesel, and thus, SO2, PM, NOX, VOC and CO emissions are expected to occur along the route. In addition to these mobile source emissions, there will be also stationary emissions from the activities in the sub stations and maybe camp site (if decided). These emissions will be mostly due to power generations in diesel generators if used. Construction machinery and vehicles will mainly be diesel engines that can lead to emissions of nitrogen oxides and particulates. Most site equipment (bulldozers, diggers, etc.) can be considered as similar to medium or heavy-duty trucks. Vehicles are used for the transport of materials and equipment on and off site as well as carriage of personnel to and from site using minibuses and cars. Since the project construction phase duration will be 2 years long, air quality impact generated from these activities will not be static. Although the general terms of the construction of phases are similar, their application locations will follow each other. The quantities of motorized equipment (trucks, excavators) etc. remains unknown and will be determined by the detailed design. In addition, quantities of material to be loaded and unloaded, number and type of construction equipment and machinery all which are contributors to air emissions are also unknown and will be determined at a detailed design stage.

Risk Significance

This risk is considered moderate in significance, short term in nature (with respect to construction), cumulative in scope and highly likely to occur but mitigatable using construction best practices. A preliminary assessment of the proposed project route indicates that the electricity lines specifically transmission are likely to be located on the main highway and far from residential areas thus impacts emanating from construction likely to be low to moderate. The construction of distribution lines will be within residential areas and hence air pollution impacts from construction activities will be considered moderate in nature.

5.5.3 Noise Emission Risks and Impacts

There will be risks and impact of noise and vibration resulting from the construction equipment and machinery on people. Potential sources of noise and vibration during construction will include clearing and grubbing of the transmission corridor, excavations, earthmoving, construction traffic etc. World Bank Group General EHS Guidelines provide guidance on acceptable noise levels based on WHO standards and these are set out in Table 5-3.

Table 5-3. World Bank Group Noise Level Guidelines

	Maximum Allowable Ambient Noise Levels, LAeq,1hr, dBA Free field	
	Daytime	Night-time
	07:00 – 22:00	22:00 – 07:00
Residential, institutional, educational	55	45
Industrial, commercial	70	70

Sensitive Receptors

Along the project route, sensitive receptors are located and include towns and settlements. Sensitive receptors also include schools, hospitals which are likely to be affected by construction noise. A detailed analysis aimed at identification of such sensitive receptors including distance with respect to construction site/route will be undertaken during the detailed design and will definitively identify the noise related impacts of the project on sensitive receptors and in comparison with the WBG noise level guidelines. The Government of Eswatini does not have noise level guidelines.

The equipment used in construction will generate noise during construction of the transmission lines and sub stations and will adversely affect communities and fauna. Further impacts and risks associated with noise and vibration will emanate from the sub stations during operation and will impact adversely on human health.

Risk Significance

This risk is considered moderate in significance, short term in nature (with respect to construction risks), more intense in areas with sensitive receptors, localized in scope and highly likely to occur but mitigatable based on the noise environmental and social program to be developed by contractor. A preliminary assessment of the proposed project route indicates that the electricity lines specifically transmission are likely to be located on the main highway and far from residential areas thus noise impacts emanating from construction activities likely to be low to moderate. The construction of distribution lines will be within residential and commercial areas and hence air pollution impacts from construction activities will be considered moderate in nature.

5.5.4 Impacts and Risks on Surface Water Quality

Construction activities associated with the transmission and distribution lines as well as sub stations can have significant effects on the surface water resources along the proposed project route and good environmental management, including control of runoff, sediments, storage of fuels and good practice should be followed. There are watercourses present along the project route and which and have been described in chapter 4 which are likely to be close to the proposed transmission and electricity lines based on the preliminary route.

The potential risks of detrimental impacts on water quality will be higher where construction activities are close to surface water bodies or from the potential de-stabilisation of soils and channel banks that may lead to erosion and deposition of sediment into water bodies.

There may also be risks of pollution from the uncontrolled runoff or accidental spillage of fuels and lubricants, or from the inadequate or unsafe disposal of wastewater from construction sites. Below are risks and impacts on water that are likely to be encountered as a result of the project during the construction phase.

1. The construction of the project may cause temporary disturbances and negative effects on surface water resources. These negative impacts could increase without proper scheduling or programming of the works or particular activities. In other words, there are likely to be impacts of construction of the project on water quality where required mitigation activities are not implemented correctly.
2. Stockpile and other materials may enter rivers or any other surface water resources near to the Project sites where there are inadequate containment measures. Such surface runoff may carry sediments or harmful wastes and these may collect in rivers or any other surface water resources and therefore there will be negative impacts of leakage waters on water quality.
3. In addition, in the project sites there may be storage areas for chemicals, fuels, oils, etc., used for construction activities including refueling of vehicles. These materials must be stored according to the regulatory requirements, including the related regulation. Otherwise, there may be risk of leakage of all chemicals to the surface water resources, and so there may be impact on water quality.
4. In addition, all chemicals, fuels, oils etc. used for construction activities must be handled, transported and used according to related regulation and procedures. Otherwise there may be risk of spill of these by accidents etc. Therefore, there may be impact on water quality.

During the construction of the road, water will be required for several purposes including for use in the workers' accommodation camp (if determined), transmission line and sub-station construction process which requires water, cleaning of the vehicles and equipment, keeping down construction dust impacts among others.

The potential impacts and risk of the project relating to surface water supply are:

- Stresses on local water resources from construction water abstractions from surface and / or ground water; and
- Potential indirect effects from water demand caused by local population expansion due to in-migration.

Overall raw water supply requirements for the construction of will be very low and necessary during concrete mixing etc. Water for construction will be sourced from local suppliers and not from surface water bodies. It is important to understand that these abstractions may be distributed along the full length of the transmission line and so disaggregated data are more important when considering potential surface water impacts than the overall totals.

The main impacts will relate to the depletion of water resources for other users, either in terms of community or agricultural supplies, or the aquatic or riparian environment.

Risks Significance

The risk in terms of significance is considered **low** and in terms of duration **medium term** with respect to water needs for construction (managing dust and cleaning of machinery and equipment) in view of typical quantities required in such projects.

5.5.5 Solid and Liquid Waste Risks and Impacts

Improper waste management procedures or lack of mitigation measures during construction, phase of the Project may result in adverse environmental and social impacts on: -

- Storm water quality and thus water quality in the water bodies in project areas;
- Soil quality;

- Surface water quality;
- Ground water quality; and
- Ecological receptors or human health.

The different types of wastes and sources that are likely to be generated from the construction of the transmission lines, distribution lines and sub stations are described below.

a) Recyclable and Reusable Waste

The types of recyclable and reusable wastes to be generated on site during the construction period include among others: -

Box 5-1. Recyclable and reusable waste

1. Waste metal
2. Waste plastic
3. Waste cables
4. Waste glass
5. Waste paper (packaging material)
6. Clean containers, drums, bins etc.

b) Excavation Waste

The greatest volume of excavated material will arise from the construction activities of the Project during civil works associated with construction of the electricity lines and sub stations. The excavated materials will be re-used immediately as back fill material.

c) Waste Water

Water will be required for the construction works, dust suppression and washing of construction equipment. Waste water if discharged indiscriminately into the environment, will lead to risks and impacts on water bodies, soil, vegetation fisheries and even human health.

d) Hazardous Waste

The proposed project will generate hazardous wastes which may adverse impact on the local environment due to the handling, storage, transport and disposal. These include, oil, grease etc.

e) Waste Oil

During the construction period, waste oil will result from the maintenance of machines, equipment and construction vehicles. Direct and indirect disposal of waste oils to the receiving environment is likely to adversely impact on the environment and human health.

f) Waste Batteries and Accumulators

Waste batteries and accumulators if poorly disposed or discharged to the receiving environment can directly or indirectly damage human health and the environment. Waste battery and accumulators will be generated during construction period. Surface water bodies may be at risk as a result of indiscriminate solid and liquid waste disposal

Pollution of these rivers may adversely affect the flora and fauna, livestock and local communities that depend on these bodies as sources of water.

Without mitigation measures, it is anticipated that there will be potential major to moderate

adverse impacts during construction and moderate adverse impacts during the maintenance and operations periods.

Risks Significance

The risks are likely to be moderately low, short term (with respect to construction), localized to the specific water body, and unlikely to occur especially with the development of a waste management plan.

5.5.6 Traffic Impacts

Increased road traffic flows due to construction transport which may lead to temporary disruption of economic activities, including disruption of traffic and congestion. The construction of the transmission lines based on the preliminary routes are within the highway and the traffic is noted heavy and unlikely to be significantly disrupted.

Risks Significance

The risks are likely to be moderately low, short term (with respect to construction), localized and can be mitigated with development of a traffic management plan.

5.5.7 Landscape and Visual Risks and Impacts

The visual risk and impact assessment aim to identify the significance of the potential visual impacts of the proposed Project upon the site and surrounding area. Visual assessment is concerned with people's perception and response to changes in visual amenity. Along the proposed transmission and distribution lines, there are landscape and visual resources including forests, biodiversity, grasslands, ridgelines, water resources among others.

Sources of landscape and visual risks and impacts associated with the construction phase include: -

1. Clearing of vegetation for the electricity lines;
2. Movement of construction vehicles;
3. Erection of transmission and distribution lines

Risks Significance

The significance is low in nature and will be long term especially with respect to the transmission and distribution lines which will become permanent features on the route.

5.5.8 Labour and Working Condition Risks and Impacts

The construction of the transmission and distribution lines and sub stations will attract workers whose number cannot be estimated at this point until the detailed design is completed. The total work force is going to be skilled and unskilled and sourced from project locality and outside of locality including internationally (foreign). The actual number of workers will be determined by the contractor but may include among others; -

a) Engineers-Skilled Experts (civil, mechanical, electrical) etc.
b) Supervisors, Inspectors Foreman and Operators –Skilled Experts
c) Technicians (lab, inspectorate, welders, masons, steel fixers, drivers etc.)- –Skilled Experts
d) Unskilled-flagmen, diggers, trenches, cleaning, security, mixing, watering, help team,

Different risks/issues related to the employment of workers have been identified as potentially arising in association with the Project. These may relate to:

Box 5-2. Employment Risks

1. Indiscriminate Human Resources Policies and Procedures;
2. Indiscriminate Working Hours and Leave;
3. Indiscriminate Wages and Benefits;
4. Workers' Organization–Trades Unions, Freedom of Association and Collective Bargaining;
5. Non-Discrimination and Equal Opportunities;
6. Migrant labour/labor influx;
7. Retrenchment;
8. Grievances;
9. Child Labour;
10. Forced labour;
11. Occupational Health and Safety; and
12. Specific issues related to Workers Employed by Third Parties in the Supply Chain.

5.5.9 In-migration Risks and Impacts

Indirectly, results of the development activities might affect population growth. It is predicted that the following demographic processes will take place:

1. **In-migration:** People from other areas will move to the area in search of new opportunities post improvement of electricity access.
2. **Presence of temporary workers:** It is not expected that the Shiselweni area will experience substantial labor influx. EEC's existing operational procedure is to mandate and localize the economic benefits and only allow for outside, including expatriate labor, where there is a requirement for special skills. External workers,
   which will be few in numbers, will be accommodated at existing housing in the area which has been prior practice by EEC in similar projects. There will be no dedicated camps established for worker accommodation in the project.

Without mitigation, the primary impact of in-migration will be an increase in population, physical expansion of towns and villages, and informal development.

1. The potential for unplanned and uncontrolled growth could lead to issues surrounding safety, sanitation, and service delivery.

2. Where in-migrants compete directly against local people, especially for unskilled jobs, it may result in tension, and possible aggression, between job seekers within the affected areas, and the country more widely.

3. In-migration can also lead to negative social change and an erosion of cultural values, as migrants bring in different cultural norms and values and attitudes to traditional leadership systems.

4. An influx of in-migrants is likely to lead to an increase in communicable and vector-borne diseases such as malaria, TB, HIV/AIDS and sexually transmitted diseases, exacerbated by increased pressure on health care facilities and the possible introduction of new diseases.

5. Gender-Based Violence (GBV): An influx of in-migrants may also lead to Gender-Based Violence (GBV) and/or Sexual Exploitation and Abuse (SEA), although the project is not expected to have a large influx of workers, the in-migration may increase the demand for sex work or the risk of forced early marriage in a community where marriage to an employed man is seen as the best livelihood strategy for an adolescent girl. Furthermore, higher wages for workers in a community can lead to an increase in transactional sex. The risk of incidents of sex between laborers and minors, even when it is not transactional, can also increase.

6. The Project may create changes in the project affected communities and can cause shifts in power dynamics between the community members and within households. Male jealousy, a key driver of GBV, can be triggered by labor influx on a project when workers are believed to be interacting with community women. Hence, abusive behavior can occur not only between project-related staff and those living in and around the project site, but also within the homes of those affected by the project.

7. Potential resettlement for civil works may equally render women vulnerable to GBV.

8. Violence Against Children (VAC): Based on current conditions in the sector it is assessed that the risk of child or forced labor is negligible, and already managed through national legislation and EEC corporate requirement.

Risk Significance

The in-migration risks and associated impacts is considered to be moderate in significance and likely to occur but short terms in nature (construction phase). The risks especially with respect to GBV may occur in areas along the project with settlements or within close proximity to learning institutions. However, risks are avoidable and manageable by ensuring adherence to national legislations and EEC labour management procedures. Also sensitization program for community and workers will help deter unacceptable behavior.

5.5.10 Community Health and Safety Risks

ESS 4 outlines the following requirements in order to minimize impacts to community health, safety and security.

- Evaluation of the risks and impacts to the health and safety of the affected communities during the project life-cycle and will establish preventive and control measures and where applicable develop an action plan which is disclosed to stakeholders.
- Designing, constructing, operating, and decommissioning the structural elements or components of the project in accordance with Good International Industry Practice (GIIP), taking into consideration safety risks to third parties or affected communities.
- Avoiding or minimizing the potential for community exposure to hazardous materials and substances that may be released by the project.
- Avoiding or minimising the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups.

- Assisting and collaborate with the affected communities, local government agencies, and other relevant parties, in their preparations to respond effectively to emergency situations.
- Assessing risks posed by its security arrangements to those within and outside the project site.

Risk and impacts associated the construction has considered the following types of impacts:

- HIV/AIDS and Sexually Transmitted Infections (STIs) due to potential changes in demographics during operation phase, presence of a workforce and changes to socio-economic factors. The high HIV prevalence rates have a far-reaching adverse impact on the country's development. It is estimated that approximately 205,000 people live with HIV, associated annually with nearly 3,200 AIDS-related deaths, 9,143 new infections, as well as 130,000 Orphans and Vulnerable Children (OVC). Overall, the HIV prevalence rate was 27.2 percent in 2017- one of the highest in the world (female: 32.5 percent and male 20.4 percent), contributing to poor maternal and child health (MCH) outcomes, increased co-morbidities with TB (70 percent co-infection), cervical cancer and other non-communicable diseases (NCDs).
- Transmission of malaria which due to changes in the environment creating breeding grounds and due to in-migration;
- Impacts associated with water and sanitation in particular diarrheal diseases due to in-migration and decreased access to good quality water;
- Health impacts associated with hazardous materials and the handling of these materials appropriately to avoid non-routine events (such as spillages);
- Increased pressure on health care services due to in-migration, worker health care needs and changes to community safety;
- Impacts on community safety in particular road accidents due to increased traffic and accidents on site during excavation and stringing activities;

Risk Significance

The community health, safety and security risk significance is likely to be moderate in nature, short term in terms of duration (construction), and highly likely to occur. However, these risks are avoidable and can be minimized through the development of appropriate community health, safety and security management plans by the contractor. These risks would also be required to be managed during operation period by intensifying various ongoing Government programs in the Shiselweni region.

5.5.11 Land Acquisition and Involuntary Displacement Risks

This construction of the transmission and distribution lines and substation will lead to impacts and risks associated with loss of land or restrictions on land use and land-based livelihoods during construction. Potential impacts include: -

- Physical displacement;
- Economic displacement;

Of particular relevance in this is ESS 5: Land Acquisition, Restricted Access and Involuntary Resettlement. ESS 5 has the following objectives: -

Box 5-3. Land Acquisition and Involuntary Resettlement

- to avoid, and when avoidance is not possible, minimize displacement by exploring alternative project designs;

- to avoid forced eviction;
- to anticipate and avoid, or where avoidance is not possible, minimize adverse social and economic impacts from land acquisition or restrictions on land use by:
- providing compensation for loss of assets at replacement cost; and
- ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected.
- to improve, or restore, the livelihoods and standards of living of displaced persons; and
- to improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites.

Physical Displacement

- The relative length of transmission line and even shorter length of expected distribution line extensions, along with low dispersed population suggests a limited number of project affected persons.
- Efforts are made to avoid and minimise resettlement impact as part of preliminary surveying of possible transmission routes. The exact impact situation would be known at the design stage.
- More than half the preferred transmission route follows existing servitude. The construction of the sub stations will likely lead to land acquisition in cases where the sub stations are not located in GoKE land. The impact may be on title deed properties, commercial forests and occupiers of Swazi Nation land along the proposed servitude of 30 m which shall include impact on occupiers of existing RoW/Survitude. According to preliminary survey, the land requirements for the proposed 4 sub stations locations (subject to confirmations at design stage), are as follows:

- **Nhlangano Substation extension**

The substation sits on farm R/A/133. The extension will require the engagement of Shiselweni Forest Company for the additional land and wayleave acquisition. A limited number of *Acacia mearnsii* may have to be cut.

- **Hluti Substation**

The currently identified site is on a deforested hilltop. The land is under Manyiseni Royal Kraal.

- **Matsanjeni Substation**

The currently identified location sits on abandoned rainfed farmland on Swazi Nation Land. It will require engagement with the Mkonka Royal Kraal to acquire the land and subsequently RAP would require to be prepared.

- **Lavumisa substation**

The currently identified substation is on unused farmland. It sits on Swazi Nation land and will require the engagement of the Maplotini royal kraal to acquire the land and subsequently RAP would require to be prepared.

Economic Displacement

Permanent and temporary taking of land and restriction to land use in proposed servitude may reduce the ability to produce the crops, horticulture or construction of permanent structure may result in loss of income and loss of productive use of land and assets.

Risk Significance

The risk significance is moderate in view of the fact that the transmission line route is aligned to the existing ROW and some of the sub stations located in GoKE owned land. It is anticipated that the physical displacement shall be avoided and that main associated impact including livelihood disturbance would be manageable.

A Resettlement Policy Framework (RPF) has been prepared in view of the fact that detailed designs showing the exact alignment of the routes and location of sub stations is not completed. The RPF will provide guidance on subsequent preparation of site-specific Resettlement Action Plan for addressing displacement impacts.

5.5.12 Archaeology and Cultural Heritage Risks

Tangible features include archaeological sites, historic sites and monuments, traditional sacred sites and other places of importance. Impacts and risks addressed are:

- disturbance or damage to cultural heritage sites causing loss of cultural value or historical and scientific information about Eswatini's past and potential damage to local and national cultural identity;
- disruption of access to currently used cultural heritage sites;
- changes to the setting of cultural heritage sites which could inhibit spiritual or traditional practices and cause potential damage to local and national cultural identity and values;
- threats to cultural knowledge and activities causing potential loss of cultural identity and cohesion; and
- infringement of cultural norms, causing offence to local communities and possible exacerbation of social impacts and negative sentiment towards the Project.

There are no cultural sites already identified along the project route which may be adversely affected by the project. The significance of the impacts on undiscovered sites is impossible to assess precisely at this stage, as it will depend on the nature of each find and the degree of impact caused by the Project.

Risk Significance

The risk significance on the archeological and cultural sites already identified is low in nature due to avoidance of these sites, short term in terms of duration (construction). A Chance Find Procedure will be developed to address, and guide impacts associated with chance finds.

5.5.13 Supply Chain Impacts and Risk

The construction activities will entail engagement of contractors, sub-contractors and third-party entities which will form part of the supply chain. Risks include workers' health and safety for third party suppliers if third parties who engage these workers are not reputable and legitimate enterprises and lacking appropriate ESMS that will allow them to operate in a manner consistent with the requirements of ESS 2. Materials used in construction of the transmission and distribution lines will originate from various suppliers.

Risk Significance

The risk significance is considered moderate and short term in duration (construction phase only) likely to occur but mitigatable through inclusion of among others undertaking due diligence of suppliers, ensuring binding provisions in contractor contracts etc.

5.6 Operation Phase Impacts

During the operation phase of the project, there will be adverse impacts that will be experienced as a result of the project and they will be bio-physical and socio-economic in nature.

5.6.1 Impacts and Risks on Community Health and Safety

During the operation phase, there is likely to be impacts of the project on community health and safety. Communities are likely to be at risk from the following aspects: -

- **Electrocution-**This may occur through the access (illegal) of community members to live powerlines leading to electrocution that can result into injuries and or death.

Risk Significance

The risk significance is considered low but long term in nature (throughout project life) and low in severity.

- **Exposure to Hazard Materials and Wastes-**This may occur during the operation phase mainly from electrical equipment containing PCBs e.g. transformers and pesticides when used in treating the electricity poles or clearing vegetation to maintain ROW etc.

Risk Significance

The risk significance is considered low but long term in nature (throughout project life) and low in severity.

- **Electric and Magnetic Fields: -**During the operation phase, the public may be exposed to eclectic and electromagnetic fields.

5.6.2 Impacts and Risks on Vegetation/Fires

There will be impacts on vegetation especially when undertaking the maintenance of the transmission line ROW which may entail trimming and clearing of the tall growing vegetation. There may also be risks associated with forest fires as a result of the transmission line triggering fires.

5.6.3 Impacts on Avi-Fauna

Electricity transmission and distribution lines are known to adversely affect birdlife especially if the transmission and distribution line routes are along migratory corridors, foraging corridors or in critical habitats including nesting zones. These lines have been known to lead to electrocution of avi-fauna when not routed properly.

5.6.4 Hazardous Waste Risks and Impacts

- Waste oil will be generated due to periodical maintenance of the transformers and facilities in the sub stations. Oil used for the maintenance activities may contain PCBs or any other carcinogenic chemicals.
- Use of pesticides to control vegetation growth on the transmission and distribution lines could be hazardous in nature

Risk Significance

The risk significance is considered moderate but long term in nature (throughout project life) and moderate in severity.

5.6.5 Occupational Health and Safety Risks and Impacts

- **Electric and Magnetic Fields: -**During the operation phase, the workers at the substation and those working along the transmission lines during maintenance may be exposed to eclectic and electromagnetic fields.

Risk Significance

The risk significance is considered low but long term in nature (throughout project life) and low in severity.

5.6.6 Exclusion/Discrimination

- There is a risk that the vulnerable households such as those living under the poverty line, female-headed households, child headed households and the disabled are excluded from the power distribution networks and project benefits;
- Gender stereotypes may lead to women being excluded from discussions about energy plans and policies, resulting in the gender-blind energy planning of policies, financing and execution.

Risk Significance

The risk significance is considered High and long term in nature (throughout project life) and high severity.

5.7 Sensitivity of environmental and social impacts

Table 5-4: Summary of Negative Impacts

Water Supply Pipelines (Transmission and Distribution)				**Phase: Construction**
Issue	**Potential Impact**	**Impact Type and Rating**	**Extent**	**Duration**
Air pollution	Emissions from construction vehicles and equipment.	Direct, Minor	Local	Temporary
Noise pollution	Noise pollution from vehicles and construction equipment may cause nuisances to neighboring communities.	Direct, Minor	Local	Temporary
Water pollution	Water pollution may result from: i) accidental spillage of fuels, lubricants and other chemicals. ii) siltation of water courses from runoff	Direct, Minor	Local	Temporary

	laden with sediment and dust. iii) high suspended solids from soil eroded from trenches.			
Soil erosion and contamination	Site clearance of vegetation and excavation works using equipment may induce/accelerate soil erosion and siltation of water courses. Contamination may occur as a result of accidental or structural spillage of fuels, lubricant chemicals, sanitary wastewater, etc., as well as from leakage from inadequately protected solid waste storage facilities and sites. Soil may lose its fertility because of removal of topsoil.	Direct, Minor	Local	Temporary
Solid waste generation	Vegetation and soil from excavation, construction waste material and packaging material may produce moderate quantities of waste.	Direct, Minor	Local	Temporary
Impacts on flora and fauna	Removal of vegetation may lead to potential habitat loss of its associated fauna.	Direct, Minor	Local	Temporary
Occupational health and safety	Workers may be exposed to occupational health and safety hazards from project activities such as: accidents in excavations during trenching; working with equipment; working under noisy conditions, working in confined spaces; lifting of objects; storage, handling and use of dangerous substances and wastes.	Direct, Minor	Local	Temporary

	Workers may also be potentially exposed to HIV and other sexually transmitted diseases.			
Labor and Working Conditions	Indiscriminate Human Resources Policies and Procedures, working hours, wages, grievances, retrenchment, freedom of association, OHS, etc.	Direct, Moderate	Local	Temporary
Labor Influx	Unplanned/uncontrolled growth, community tensions, negative social changes and behaviors, exacerbation of GBV and increase in STDs	Direct, Moderate	Local	Temporary
Public health problems	Pools of stagnant water may be a source of water borne diseases especially if the trenches are left open (not back filled) over a long period of time.	Direct, Minor	Local	Temporary
Public Safety	Safety problems at the construction sites may arise from excavations, transportation, movement of equipment and stringing. Manually executed works expected to dominate the pipeline laying will take a longer construction time leading to prolonged safety risks such as falling into excavated areas.	Direct, Minor	Local	Temporary
Visual amenities	Laying of pipelines may have a negative impact on aesthetics of the surroundings such as the soils from the trenches that will be dumped along the trenches	Direct, Minor	Local	Temporary
Disturbance and interruption of commercial	Erecting of the transmission and distribution lines may	Direct, Minor	Local	Temporary

and social activities	cause traffic disruptions and congestion, resulting in temporary disturbance and interruption of commercial and social activities. It may also cause damage to infrastructure (roads, utility lines) and disruption of public services. During excavation works temporary access to land, property or business may lead to loss of wages/income.			
Land Acquisition and Involuntary Displacement Risks	The proposed expansion of the transmission and distribution lines will be on the Right of Way (ROW) in most cases but will also encroach on private land hence leading to displacement (physical). The construction of the sub stations will likely lead to land acquisition in cases where the sub stations are not located in GoKE land Restrictions to land use along proposed servitude will also lead to loss of access to natural resources and utilising full productive potential of land.	Direct, Moderate	Local	Permanent
Supply Chain	Risks include workers' health and safety for third party suppliers if third parties who engage these workers are not reputable and legitimate enterprises and lacking appropriate ESMS that will allow them to operate in a manner consistent with	Direct/Indirect, Moderate	Local/non-local	Temporary

	the requirements of ESS 2.			
Operation				
Water pollution	Water pollution may result from spillage of fuel and lubricants during maintenance; waste disposal along damaged lines may also cause pollution.	Direct, Minor	Local	Temporary
Noise pollution	Noise generated from vehicles used during maintenance or from motorized equipment in case they are used to pump the water can be a nuisance to sensitive receptors.	Direct, Minor	Local	Temporary
Air pollution	This could be in form of emissions from maintenance vehicles	Direct, Minor	Local	Temporary
Solid waste generation	Solid wastes may be produced by maintenance works, especially where sections of lines are replaced. Wastes will also emanate from the sub stations.	Direct, Minor	Local	Temporary
Soil erosion and contamination	Inspection and maintenance works may require clearance of sites of vegetation, as well as the execution of excavation works, possibly using equipment. This may induce or accelerate erosion.	Direct, Minor	Local	Temporary
Impacts on flora and fauna	Inspection and maintenance works may require the removal of the natural vegetation, leading to potential habitat loss of its associated fauna.	Direct, Minor	Local	Temporary
Occupational health and safety	Occupational health and safety problems may arise during maintenance of the lines.	Direct, Minor	Local	Temporary

	These may include: lifting of heavy and sharp objects and transportation of materials for maintenance, storage as well as handling and use of dangerous substances.			
Disturbance and interruption of commercial and social activities	Interference with commercial and social activities will be very low.	Direct, Minor	Limited	Temporary
Disturbance and interruption of commercial and social activities	Maintenance activities for the water distribution network may cause traffic disruptions and congestion, resulting in disturbance and interruption of commercial and social activities. Other infrastructure e.g. roads, sewer lines, drains may also be disrupted.	Direct, Minor	Limited	Temporary
Exclusion/Discrimination	There is a risk that the vulnerable households such as potential exclusion of those living under the poverty line, and vulnerable households, including female-headed households, and child headed households and the disabled are excluded from the power distribution networks and project benefits; Gender stereotypes may lead to women being excluded from discussions about energy plans and policies, resulting in the gender-blind energy planning of policies, financing and execution	Direct/Indirect	Limited	Temporary
Community Health & Safety	**Electrocution-**This may occur through the access (illegal) of community members to	Direct, Low	Local	Long term

	live powerlines leading to electrocution that can result into injuries and or death.			

6 MITIGATION MEASURES

6.1 Mitigation of construction activities

141. EEC will mitigate the environmental and social impacts associated with construction activities by:

i) including environmental and social clauses in all supply, installation/construction contracts
ii) ensuring that contractor personnel are familiar with these clauses
iii) preparing safety manuals or handbooks for contractors as required.

6.2 Mitigation of impacts specific to electric power transmission and distribution (based on the EHS Guidelines for Electric Power Transmission and Distribution)

EEC will ensure that the following mitigation measures are implemented, as necessary:

Table 6-1. Impact and Mitigation Measures

Environmental	
Construction Phase	
Terrestrial Habitat Alteration	**Mitigation Measures**
Construction Right of Way	• Site transmission and distribution rights-of-way, access roads, lines, towers, and substations to avoid critical habitat through use of existing utility and transport corridors for transmission and distribution, and existing roads and tracks for access roads, whenever possible; • Installation of transmission lines above existing vegetation to avoid land clearing; • Revegetation of disturbed areas with native plant species; • Management of construction site activities as described in relevant sections of the General EHS Guidelines.
Right-of-way maintenance	• Implementation of an integrated vegetation management approach (IVM). The selective removal of tall-growing tree species and the encouragement of low-growing grasses and shrubs is the common approach to vegetation management in transmission line rights-of-way. Alternative vegetation management techniques should be selected based on environmental and site considerations including potential impacts to non-target, endangered and threatened species; • Removal of invasive plant species, whenever possible, cultivating native plant species; • Observing manufacturer machinery and equipment guidelines, procedures with regard to noise, and oil spill prevention and emergency response; • Avoiding use of machinery in the vicinity of watercourses
Forest Fires	• Monitoring right-of-way vegetation according to fire risk; • Removing blowdown and other high-hazard fuel accumulations; • Time thinning, slashing, and other maintenance activities to avoid forest fire seasons; • Disposal of maintenance slash by truck or controlled burning. Controlled burning should adhere to applicable burning regulations, fire suppression equipment requirements, and typically must be monitored by a fire watcher; • Establishing a network of fuel breaks of less flammable materials or cleared land to slow progress of fires and allow firefighting access.

Avian collisions and electrocution	• Maintaining 1.5 meter (60-inch) spacing between energized components and grounded hardware or, where spacing is not feasible, covering energized parts and hardware; • Retrofitting existing transmission or distribution systems by installing elevated perches, insulating jumper loops, placing obstructive perch deterrents (e.g. insulated" V's"), changing the location of conductors, and / or using raptor hoods; • Installing visibility enhancement objects such as marker balls, bird deterrents, or diverters.
Aquatic Habitat Alteration	
	• Minimizing clearing and disruption to riparian vegetation; • Management of construction site activities as described in the relevant sections of the General EHS Guidelines.
Electric and Magnetic Fields	
	• Evaluate potential exposure to the public against the reference levels developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). Average and peak exposure levels should remain below the ICNIRP recommendation for General Public Exposure; • Consider siting new facilities so as to avoid or minimize exposure to the public. Installation of transmission lines or other high voltage equipment above or adjacent to residential properties or other locations intended for highly frequent human occupancy, (e.g. schools or offices), should be avoided; • If EMF levels are confirmed or expected to be above the recommended exposure limits, application of engineering techniques should be considered to reduce the EMF produced by power lines, substations, or transformers. Examples of these techniques include: o Shielding with specific metal alloys o Burying transmission lines o Increasing height of transmission towers o Modifications to size, spacing, and configuration of conductors
Hazardous Materials	
Insulating Oils and Fuels	• Disposal of hazardous materials in accordance with the waste management regulations
Occupational Health and Safety	
Live Power Lines	

	• Only allow trained and certified workers to install, maintain, or repair electrical equipment; • Deactivating and properly grounding live power distribution lines before work is performed on, or in close proximity, to the lines; • Ensuring that live-wire work is conducted by trained workers with strict adherence to specific safety and insulation standards. Qualified or trained employees working on transmission or distribution systems should be able to achieve the following: o Distinguish live parts from other parts of the electrical system o Determine the voltage of live parts o Understand the minimum approach distances outlined for specific live line voltages o Ensure proper use of special safety equipment and procedures when working near or on exposed energized parts of an electrical system • Workers should not approach an exposed energized or conductive part even if properly trained unless: o The worker is properly insulated from the energized part with gloves or other approved insulation; or, o The energized part is properly insulated from the worker and any other conductive object; or, o The worker is properly isolated and insulated from any other conductive object (live-line work). • Where maintenance and operation is required within minimum setback distances, specific training, safety measures, personal safety devices, and other precautions should be defined in a health and safety plan. (Table 2 in Section 2.2 provides recommended minimum safety setbacks for workers); • Workers not directly associated with power transmission and distribution activities who are operating around power lines or power substations should adhere to local legislation, standards, and guidelines relating to minimum approach distances for excavations, tools, vehicles, pruning, and other activities; • Minimum hot stick distances may only be reduced provided that the distance remaining is greater than the distance between the energized part and a grounded surface.
Working at height	

	• Test structures for integrity prior to undertaking work; • Implementation of a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers, among others; • Establishment of criteria for use of 100 percent fall protection (typically when working over 2 meters above the working surface, but sometimes extended to 7 meters, depending on the activity). The fall protection system should be appropriate for the tower structure and necessary movements, including ascent, descent, and moving from point to point; • Installation of fixtures on tower components to facilitate the use of fall protection systems; • Provision of an adequate work-positioning device system for workers. Connectors on positioning systems should be compatible with the tower components to which they are attached; • Hoisting equipment should be properly rated and maintained and hoist operators properly trained; • Safety belts should be of not less than 16 millimeters (mm) (5/8 inch) two-in-one nylon or material of equivalent strength. Rope safety belts should be replaced before signs of aging or fraying of fibers become evident; • When operating power tools at height, workers should use a second (backup) safety strap; • Signs and other obstructions should be removed from poles or structures prior to undertaking work; • An approved tool bag should be used for raising or lowering tools or materials to workers on structures.
Electric and Magnetic Fields	
	• Identify potential exposure levels in the workplace, including surveys of exposure levels in new projects and the use of personal monitors during working activities; • Train workers in the identification of occupational EMF levels and hazards; • Establish and identify safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure, limiting access to properly trained workers; • Implement action plans to address potential or confirmed exposure levels that exceed reference occupational exposure levels developed by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP), and the Institute of Electrical and Electronics Engineers (IEEE). Personal exposure monitoring equipment should be set to warn of exposure levels that are below occupational exposure reference levels (e.g. 50 percent). Action plans to address occupational exposure may include limiting exposure time through work rotation, increasing the distance between the source and the worker, when feasible, or the use of shielding materials.
Labor Conditions	• Develop and Implement Labor Management Procedures (LMP) and subsequent Labor Management Plans • Establish and implement a Workers Grievance Redress Mechanism

Labor Influx	• GBV, HIV/AIDS, Child protection training/awareness campaign for contractor, sub-contractors and communities (and HIV/health); • Provisions for handling of GBV in the GRM • Development and implementation of a stakeholder engagement plan (SEP) • Development and Implementation of a Project Grievance Mechanism (GM) • Bidding documents to reflect the findings of the ESIA, and the requirements of the ESMP, to cater for GBV and overall ESHS risks
Community Health and Safety	• Roll out of an awareness campaign on HIV/AIDS, GBV, VAC, Road Safety, malaria prevention, sanitation; • Communication through community liaisons when stringing activities will take place to ensure children are not playing in the work area; • Project sites to be marked off with fencing and signage to prevent people from entering the dangerous sites;
Land Acquisition and Involuntary Displacement & Restrictions on land use	• Development of a Resettlement Policy Framework (RPF) • Development of subsequent Resettlement Action Plans (RAPs) and/or Livelihood Restoration Plans (LRP)
Supply Chain	• Provision in Bidding documents and Contracts to comply with the LMP aligned with ESS2 • Regular monitoring and evaluation of supply chain ESS2 performance
Operation Phase	
Community Health and Safety	
Electrocution	
	• Use signs, barriers (e.g. locks on doors, use of gates, use of steel posts surrounding transmission towers, particularly in urban areas), and education / public outreach to prevent public contact with potentially dangerous equipment; • Surround conducting objects (e.g. fences or other metallic structures) installed near power lines, to prevent shock. • Tracking incidents & developing a direct response strategy
Electromagnetic Interference	
	• Create emission line rights-of- way and conductor bundles to ensure radio reception at the outside limits remains normal.
Visual Amenity	
	• Extensive public consultation during the planning of power line and power line right-of-way locations; • Accurate assessment of changes in property values due to power line proximity; • Siting power lines, and designing substations, with due consideration to landscape views and important environmental and community features; • Location of high-voltage transmission and distribution lines in less populated areas, where possible; • Burying transmission or distribution lines when power must be transported through dense residential or commercial areas.
Noise	

	• Measures to mitigate this impact may be addressed during project planning stages to locate rights-of-way away from human receptors, to the extent possible. Use of noise barriers or noise canceling acoustic devices should be considered as necessary.
Exclusion/Discrimination	• Project to prioritize provision of electricity networks to the most vulnerable groups of society and social infrastructures; • Application of non-discriminatory approach in energy policy and planning dialogue

Table 6-2. Environmental Social Management Plan (ESMP) for the Proposed 132kV Nhlangano-Lavumisa transmission line

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
1. Planning, Design and Construction phase								
1.1. Unauthorised land use The project route passes through private timber plantations belonging to Montigny. Unauthorised access and use of such part of the route would deem the company as an offender and liable to fines.	1	1	3	1	**6**	1.1 (a) Montigny and Tibiyo Takangwane will be approached and favourable negotiations between the two entities will take place 1.1 (b) There will be marked route pegs during construction that will guide the awarded contractor on appropriate route to take.	EEC	EEC
1.2. Impact on land use Some homesteads and fields are at close proximity to the 132kV transmission line servitude. The line construction phase could impact on the fields and farm lands.	1	1	1	1	**4**	(a) A census and asset survey will be undertaken as part of the ESIA and RAP to identify the eligible PAPs and determine the magnitude and significance of the land impact (b) Local Authorities of affected areas and land owners within the route (Nhlangano, Qinisweni, Hluti, Siphamphamnweni, Matsanjeni and Lavumisa) will be approached by the project manager and the social specialist within EEC, about the company's intensions and project scope. (c) All affected will be identified and compensated as per RPF and subsequent RAP/LRP (d) Stakeholder consultations will be undertaken in line with the SEP (e) A Grievance Mechanism will be implemented and monitored	EEC	EEC

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
						1.2 (b) Commercial forest farms, other farms and residential owners whose land is currently traversed by the existing 132 kV line and substations will be issued with notice of intents and consulted. two weeks prior to project commencement. There are standing way leave agreements with them.	EEC	EEC
1.3. Impact on Land 1.3.1 Flora and Fauna: Pedestrian and other project related activities may impact on sensitive communities of flora and fauna.	1	1	2	1	**5**	1.3.1 (a) The project preliminary route largely follows an existing servitude and is generally disturbed thus no sensitive flora and fauna are likely to be affected by the project. 1.3.1 (b) Disturbance of flora will be strictly limited to the servitude and areas of construction. Where removal of flora is unavoidable, clearances to the servitude will be observed and exposed surfaces stabilised/ or were possible re-vegetated. 1.3.1 (c) The survey team shall ensure that during the survey and tower pegging processes the tower to be established causes no damage to the habitat of existing communities.	EEC EEC EEC	EEC EEC EO EEC EO
	1	1	2	2	**6**	1.3.2 (a) The most preferable temporal routes will be considered prior to construction time after authorisation (Use of existing routes will be priority as far as possible) 1.3.2 (b) Access routes that may be established will be temporal and immediately rehabilitated and where possible revegetated.	Contractor Contractor	EEC EEC

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
1.3.2. Access routes: There are existing access roads to the proposed project route, however a few temporal access routes will have to be established on areas 1.3.3. Soil Erosion: Part of the route lies on a mountainous area	2	2	2	2	**8**	1.3.3 (a) The design of steel monopole structures takes into consideration high slopes and stability.	Contractor	EEC
2. Construction Phase								
2.1. Impact on Land 2.1.1. Soil erosion: The establishment of the steel monopole structures entails activities that will disrupt surface soils and lead to potential erosion by water and wind impacts especially by the higher slope areas (Mhlosheni and, Hluti)	2	2	2	2	**8**	2.1.1 (a) Disturbed area of natural vegetation will be rehabilitated immediately, while excavated holes as soon as possibly backfilled. 2.1.1 (b) Most of the construction works will be implemented during the dry season to prevent/ minimise erosion in high steep areas. 2.1.1 (c) The design of steel monopole structures takes into consideration high slopes and stability.	Contractor Contractor Contractor	EEC EO EEC EEC
	1	1	2	1	**5**	2.1.2 (a) In steep slopes, the removed top soil will be used to rehabilitate affected areas, in order to facilitate re-growth of species that grow in the area. 2.1.2 (b) Disturbance of flora will be strictly limited to the servitude and areas of construction. Where removal of flora is unavoidable, clearances to the servitude will be observed and exposed surfaces stabilised/ or were possible re-vegetated.	Contractor Contractor	EEC EEC

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
2.1.2 Flora and Fauna: Activities during construction and pedestrian related activities during project implementation may impact on sensitive communities of flora and fauna. (E.g. vegetation clearing leading to disturbance on fauna habitat).						2.1.2 (c) For birds: Monopole steel structures are less harmful to birds.		
2.2 Impact on Land use Homesteads or establishments with small-scale subsistence agricultural activities at close proximity to the servitude may be impacted during pole structure establishment.	1	1	1	1	**4**	2.2 (a) The footprint of the pole structure to be used for the proposed project is small i.e. no damage to agricultural activities is envisioned as the structures only demand localised impact of approximately 1m x 1m. 2.2 (b) If there is any affected crop land, it shall be negotiated and compensation as per the RPF and subsequent RAP/LRP	EEC EEC	EEC EO EEC EO
Establishments such as Montigny pole treatment facility and mill, as well as the forests next to the Nhlangano Casino and Qinisweni farms will be affected by the line construction	1	1	1	1	4	EEC will negotiate with Montigny and other private farm owners whose land and forests will be impacted by the line construction and compensate as per RPF.	EEC	EEC EO
2.3. Impact on Land Health	2	1	1	2	**6**	2.3.1 (a) Waste disposal receptacles will be made available on site. 2.3.1 (b) Disposal of waste will be in accordance with relevant legislative requirements.	EEC	EEC EO

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
2.3.1 Poor waste management: Waste generating is unavoidable during the construction stage; thus poor management can lead to poor land health and a nuisance to the environment. **2.3.2. Soil contamination:** Hazardous chemicals and other substances and can potentially spill on land and cause a negative impact.	1	1	1	2	**5**	2.3.2 (a) The storage of material and chemicals that can potentially leak into the ground will be controlled during project implementation. 2.3.2 (b) Machinery using hazardous chemicals must be routinely serviced to minimize leakages 2.3.2 (c) Spillages upon occurrence will be immediately contained and the contaminated land treated by hazmat service providers.	Contractor Contractor Contractor	EEC EO EEC EO EEC EO
2.4. Impact on water resources (ground & surface water**)** Infrastructure establishment may result in water contamination due to lack of sanitary facilities leading to sewage impacts, chemical spills and leakages and improper management of waste water.	1	1	1	1	**4**	2.4 (a) The project will ensure adequate sanitary facilities are provided for personnel during construction. 2.4 (b) The storage of material and chemicals that can potentially leak into the ground will be controlled during project implementation. 2.4 (c) Waste water will be directed into proper systems accordingly.	Contractor Contractor Contractor	EEC EO EEC EO EEC EO
2.5. Visual Impact The visual impact of the 132kV will depend on the nature of the receiving environment. In the higher terrains of the	2	3	1	2	**8**	-None proposed. Due to the extent of existing disturbance to the areas caused by current land uses, the project will cause insignificant visual impact.	-N/A	-N/A

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
route, the structures will hardly be seen while in the flat terrain visibility will be clear.								
Occupational Health & Safety						An OHS Management Plan will be developed and implemented	Contractor	ECC
Labor Conditions	2	2	1	2	**8**	Labour Management Procedures have been developed	ECC/Contractor	ECC
Labor Influx	1	2	2	2	**7**	a) GBV, HIV/AIDS, Child protection training/awareness campaign for contractor, sub-contractors and communities (and HIV/health); b) Provisions for handling of GBV in the GRM c) Development and implementation of a stakeholder engagement plan (SEP) d) Development and Implementation of a Project Grievance Mechanism (GM) e) Bidding documents to reflect the findings of the ESIA, and the requirements of the ESMP, to cater for GBV and overall ESHS risks	ECC/Contractor	ECC
2.6. Impact on Safety & Health (Sexually transmitted diseases, Incidents, Property theft and damage, Public safety and the safety of livestock) During construction activities, the influx of workers in the project area can lead to promiscuity (increase in HIV/AIDS, Sexual exploitation and favours) and property theft. Work activities like holes	3	3	3	2	**11**	2.6 (a) Task based hazards identification and risk assessment process, safety talk sessions or any platforms to discuss safety and health hazards will be conducted on site. 2.6 (b) The correct personnel protective equipment will be used by personnel on site. 2.6 (c) EEC raises awareness on the dangers of electricity and advices the general public against constructing establishments close to power lines of any nature.	Contractor Contractor EEC	EEC EEC EEC EO

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
excavation in preparation for power line establishment can cause harm to the surrounding community members as well as livestock. During project implementation workers will be faced with a number of day to day safety hazards.						2.6 (d) The project will engage specialised NGOs to sensitise local authorities community and contract workers , to (where practicable) advise land owners against promiscuity with construction site workers. 2.6 No camp sites shall be established. Contractors shall provide transport arrangement to bring workers to construction sites. 2.6 (f) Adequate signage will be place at close proximity to project vicinity in order to warn general public about works in progress. 2.6 (g) Dug holes will be as soon as possible backfilled to prevent harm on livestock. Where impracticable, such will be barricaded to prevent livestock from falling into pits. 2.6 (h) There must be a way for workers to wash their hands and toilet paper always available on site. 2.6 (i) There will be constant periodic monitoring of the project by the EEC Safety Health -Environment Security and Quality representatives to ensure that preventive and corrective actions required to address impacts are being followed on site. 2.6 (j) Signage indicating construction works, recommended PPE on site, authorised entry and speed limit indication will be available.	EEC Contractor Contractor Contractor Contractor EEC EO Contractor	EEC EO EEC EEC EEC EEC EEC

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
								EEC
2.7. Noise Impact It is likely that during construction activities such as vegetation clearing, vehicle movement, site personnel, an increase in noise in the affected areas is experienced.	1	1	1	2	**5**	2.7 (a) Local Authorities of affected areas and land owners within the route will be approached and made aware of project activities and scope before project implementation. 2.7 (b) Construction activities will take place between 7am and 5pm during the week and between 7am and 3pm on weekends. 2.7 (c) There will be no construction work at night. 2.7 (d) Machinery to be used on side is to be serviced regular to minimise noise impacts	EEC Contractor Contractor Contractor	EEC EO EEC EEC EEC
2.8. Impact on air quality (Dust) Dust generation during the construction phase is predicted due to the nature of activities (e.g. transporting of equipment, preparing land for pole establishment etc.).	1	1	1	2	**5**	2.8 (a) On dirt roads, frequent dust suppression methods will be implemented during the construction phase such as regular water spraying to keep dirt stay put.	Contractor	EEC
2.9. Archaeology and culture No archaeological features were evident during the basic assessment of the project route; however, the project keeps in mind the possible impacts that may arise during implementation.	2	1	2	2	**7**	2.9 (a) Local Authorities of affected areas and land owners within the route (Nhlangano, Mhlosheni, Qinisweni, Hluti, Matsanjeni and Lavumisa) will be approached by the project manager within EEC, about the company's intensions and project scope. During this time, a verbal consultation session on the knowledge of such sites along the route will be sort.	EEC	EEC EO

Potential Impacts:	Significance rating of Impact					Mitigation Measures to be applied	Implementing Responsibility & Monitoring	
	Spatial	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
						2.9 (b) Should there be a discovery of any archaeological feature e.g. graves, rock art and any other archaeological cultural objects during project implementation, activities will be immediately stopped. Local authority will be informed and such features avoided be work commences.	EEC	EEC EO
3. Operational Impacts								
3.1. Impact on Land **3.1.1 Flora** During maintenance activities, access roads being used might impact on the surrounding vegetation and thus the habits of fauna.	1	2	2	1	**6**	3.1.1. (a) Existing routes will be used for maintenance activities where ever possible.	EEC	EEC EO
3.1.2 Fauna Birds may collide with the established 132kV power line which may lead to their harm	2	3	2	3	**10**	3.1.2. (a) The power line design is such that harm on birds is considered and risk minimized.	Contractor	EEC
3.2. Impact of safety There is a potential risk of electrocution for both people and livestock	3	3	3	2	**11**	3.2 (a) EEC raises awareness on the dangers of electricity and advices the general public against constructing establishments close to power lines of any nature. 3.2 (b) The affected surrounding homesteads and community will be cautioned and educated about the dangers of high voltage electricity on both humans and livestock.	EEC EEC	EEC EO EEC EO

4. Positive Impacts								
Impacts	**Significance rating of Impact**					**Benefit of impact**	**Implementing Responsibility & Monitoring**	
	Spatial Influence	Duration	Intensity	Probability	Significance		Implementing Authority	Monitoring Authority
4.1. Improved power supply The proposed project aims to a establish 132kV steel monopole electricity power line.	3	3	3	3	**12**	4.1 (a) The stability of low maintenance of the steel monopole power line will decrease the existing power shortages in the Shiselweni region and thus power supply will be stable and reliable in this region	EEC	
4.2. Employment creation The project begins at Nhlangano, cuts through Hluti, Matsanjeni, and ends at Lavumisa.	2	1	2	2	**7**	4.2 (a) Job opportunities for locals will be presented.	Contractor	EEC
4.3. Increased revenue The project will present employment opportunities for Swazis, thus decreasing to some extend the unemployment ratio.	2	1	2	2	**7**	4.3 (a) The project will present employment opportunities for Swazis, thus decreasing to some extend the unemployment ratio**.** 4.3 (b) With reduced maintenance costs on the structure, EEC will get to save costs.	EEC	
4.4. Better development opportunities Increased stability of the power supply structure will decrease existing power shortages, attracting more interest for businesses to establish in the Shiselweni region.	3	3	2	2	**10**	4.4 (a) With less costs predicted to be spent on maintenance, EEC will be in a position to save costs and invest in more projects that seek to provide quality service delivery of electricity in the country, providing for better investment prospectus for the country.	EEC	

Table 6-3. Environmental Management Plan for the Nhlangano, Lavumisa, Hluti and Matsanjeni Substation Project

Potential Impacts:	Significance rating of Impact					Approach taken and Mitigation Measures to be applied	Implementing & Monitoring Responsibility	
	Spatial Influence	Duration	Intensity	Probability	Significanc		Implementing Authority	Monitoring Authority
Planning Phase								
1.1. Unauthorised land use a. The Nhlangano II substation will be extended requiring 20m extension from the existing substation area. The extension will require additional land which is currently used to grow wattle trees. b. The proposed Hluti Substation extension is on Swazi Nation land which was allocated by the local Chief to EEC. c. The proposed Hluti Substation extension is on Swazi Nation land which was allocated by the local Chief to EEC. The areas are located on privately owned land and Swazi nation land. plantations belonging to Montigny and farms belonging to Tibiyo TakaNgwane. Unauthorised access and use of such part of the route would deem the company as an offender and liable to fines.	1	1	3	1		1.1 (a) Montigny and Tibiyo Takangwane will be approached and favourable negotiations between the two entities will take place 1.1 (b) There will be marked route pegs during construction that will guide the awarded contractor on appropriate route to take.	EEC	EEC

Stakeholder grievances • Project affected parties, like the Weather Station which is at close proximity, may be disturbed by rehabilitation project during implementation.	2	1	1	1	**5**	**Avoid:** • Information such as project duration and scope of works must be shared with affected parties before works begin.	PO	EO
Construction Phase								
I**mpact on flora and fauna** • Pedestrian activities and other project related activities such as demolishing of existing structures and the removal of vegetation could cause disturbance to flora and fauna communities around the substation.	1	1	1	2	**5**	**Minimise:** • The project team will perform all project activities within the boundaries of the substation in order to prevent damage to surrounding area. **Rehabilitate:** • Appropriate landscaping using native plant species, will be implemented immediately after completing the project.	CO CO	EO EO
Impact on soil & water • Transformers to be dismantled on site may led to oil spills and soil contamination. • Hazardous chemicals and other substances and can potentially spill on land. • Degraded soil structure due to pedestrian activities and other project related activities.	1 1 1	1 1 1	2 2 2	1 1 2	**5** **5** **6**	**Avoid**: • All transformer establishments come with a containment bund to prevent oil leaks/spills from coming into contacting with the soil. **Minimise:** • Oil spill kits will be availed on site during the demolishing stage of the project to clean up spills and reduce impact on soil. • In case of spillages, minor spills will be cleaned up by contractor whilst major oil spillages will be remediated in accordance with EEC emergency preparedness plan for oil spillages. • The contractor will be taken through EEC emergency preparedness and response plans which include oil / chemical spill management. **Rehabilitate:** • Oil contaminated soil will be bio-remediated on site by contractor.	EO CO CO PO	None Applicable EO EO EO

Impact on Land Health • Poor waste management from workers on site may lead to negative impact on land health. • There is an old control room with an asbestos roofing that will be demolished and replaced. The poor management of asbestos may lead to land health issues and be a nuisance to the environment.	2 1	1 2	1 2	1 1	**5** **5**	**Avoid:** • Dismantled asbestos roofing will be handled by an EEA approved waste management services provider. Handling of asbestos shall be in accordance with the Waste Regulations, 2000 and EEC's internal procedure: *Guideline for the management of asbestos.* • Workers on site shall be inducted according to EEC's *Guideline for the management of asbestos.* • The asbestos roofing shall be wrapped, sealed and appropriately labelled to help avoid mismanagement of the asbestos. **Minimise:** • Waste disposal receptacles will be made available on site for workers. • Disposal of waste will be in accordance with relevant legislative, the Waste Regulations, 2000. • Construction rubble will be disposed in an area approved by the Piggs Peak town council • Dismantled infrastructure within the substation will be managed according to EEC's waste management procedure: *Safe handling of used transformers procedure, waste handling and disposal procedure, e-waste management and disposal procedure, used transformers and line waste collection procedure, CFL handling and disposal procedure.*	PO CO PO CO CO CO CO PO CO	EO EO EO EO EO EO EO
Impact on Safety and Health The infrastructure dismantled from the substation when not handled properly could lead to grave injury to personnel on site during project implementation.	1	1	2	3	**7**	**Avoid:** • Dismantled asbestos roofing will be handled by an EEA approved waste management services provider. Handling of asbestos shall be in accordance with the Waste Regulations, 2000	PO CO	EO

The poor handling of the asbestos roofing can lead to the material being disturbed and its fibres being inhaled by exposed people.	2	2	2	2	**8**	and EEC's internal procedure: *Guideline for the management of asbestos.* • Workers on site shall be inducted according to EEC's *Guideline for the management of asbestos.* • The asbestos roofing shall be wrapped, sealed and appropriately labelled to help avoid mismanagement of the asbestos. **Minimise:** • Task based hazards identification and risk assessment process, safety talk sessions or any platforms to discuss safety and health hazards will be conducted on site. • The correct personnel protective equipment will be used by personnel on site. • Adequate signage communicating risks and expected mitigation measures will be on site. • A billboard must be available on site to notify the public on the activities and project owners.	PO CO CO CO CO CO	EO EO EO EO EO EO
Public nuisance Noise: It is likely that due to project implementation vehicle movement, site personnel etc., an increase in noise in the affected project area and surrounding could be experienced. Visual impact: Odour and an unsightly environment from poor waste management may arise due to project implementation. Dust generation: Failure to control dust generation from the construction activities may also lead to public nuisance.	2 1 1	1 1 1	1 1 1	2 1 1	**6** **4** **4**	**Minimise:** • The project implementation activities will be undertaken from 7am to 5pm, Monday to Friday and 7am to 3pm on weekends. • There will be no night time activities, unless approved by the Town Board. • Roadworthy equipment will be used to minimise noise impacts. • Waste disposal receptacles will be made available on site for workers. These will be protected from rainfall. • Disposal of waste will be in accordance with relevant legislative, the Waste Regulations, 2000.	CO PO CO CO CO CO	EO EO EO EO EO EO

						• All material will be housed/ stored in appropriate facilities to prevent having an un-kept area. • Dust suppression mechanisms, like sprinkling water will be employed regularly to prevent nuisance and air pollution. • A billboard must be available on site to notify the public on the activities and project owners as well as vehicle speed limits. • The site will be kept tidy at ALL times. • Affected stakeholders like the weather station will be notified before works begin.	CO CO CO PO	EO EO EO EO
Impact on water resources (ground & surface water) • Lack of sanitary facilities on the site may lead to site personnel to use the environment to relieve themselves.	1	1	1	1	**4**	**Avoid:** • The existing establishment has a guard house with sanitary facilities. • Extra toilets depending on staff numbers, can be obtained for the project.	CO	EO
Operational Phase								
Public nuisance • Overgrown vegetation on the site may lead to a public nuisance issue, a breeding ground for snakes as well as increase fire risks for the area.	2	2	2	1	**7**	**Avoid:** • EEC has a substation maintenance plan whereby the respective department, Transmission-Switchgear, is mandated to ensure regular maintenance of the infrastructure. This includes grass cutting and general up keep.	PO	EO

7 CONSULTATIONS AND PUBLIC DISCLOSURE

7.1 Consultations

A Stakeholder Engagement Plan (SEP) has been developed for the project that seeks to define a technically and culturally appropriate approach to consultation and disclosure. The goal of this SEP is to improve and facilitate decision making and create an atmosphere of understanding that actively involves project-affected people and other stakeholders in a timely manner, and that these groups are provided sufficient opportunity to voice their opinions and concerns that may influence Project decisions. The SEP is a useful tool for managing communications between EEC and its stakeholders.

For the Transmission Line component only, there will be a need to communicate directly with owners of crops and fences who will be affected by clearance of the road reservation. It is it not possible to identify these individuals at this stage, but the Contractor will be responsible for preparing a communication plan to discuss potential impacts and agree timing for Transmission clearance activities. However, communication on the timing of works is a crucial component of minimizing impact to crop/fence owners.

A provisional list of affected communities has already been compiled based on the proposed sites and area of impact. The project affected communities will come from the following chiefdoms: Mampondweni under Chief Sibasani, Ngwenyameni under Chief Magoloza, Zikhoteni under Chief ZwideII, Hohhohho Emuva under Chief Salebona, Mabonabulawe under Chief Ndabankulu, Manyiseni under Chief Bhejisa, Manyiseni under Chief Bhejisa, Kwaluseni Mgamudze under Chief Tsekwane, Mchinsweni under Chief Mahange, Nkonka under Chief Gasa, Maplotini under Chief Tsekwane, Vimbizibuko under Chief Tsekwane.

7.2 Vulnerable Groups

It is likely that project-affected parties in the communities will include vulnerable /disadvantages groups. At this stage these groups have not yet been determined, however, they will be identified after the ESIA exercise.

7.3 Summary of initial consultations

Very initial round of consultation at the 12 Royal Kraal Level in the project area and Mbabane level with various relevant organizations including those active in labour, GBV and HIV aspects and Government Departments was carried out in March 2019. The objective was to introduce the project concept and seek early feedback on potential concerns, risks and procedures the project must consider. The table 7-1 below outlines the venue, date and number of participants engaged thus far during these very initial consultations (see appendix E), for list of consulted participants). Additional consultations will be undertaken during the comprehensive ESIA study.

Table 7-1. Date, Venue and Participants Consulted

Date	Venue	# of Participants
12th March 2019	Nsingizini Umphakatsi Chief SUSA II	9
13th March 2019	Royal Kraal Hhohlo Chief	12
13th March 2019	Ka-Hlophe Royal Kraal	30

14th March 2019	Mapoonasulwa Umphakatsi	14
15th March 2019	Regional Administration Office	4
15th March 2019	Esilawheni Endloumi Area	20
29th April 2019	Nkonka Royal Kraal, Matsanjeni	93
30th April 2019	Stakeholder Consultation at Mbabane	15
Total		**197**

The issues arising from the initial consultations include:-

Table 7-2. Issues and Response-Meeting Held with Chief's Royal Kraal Council

Issues	**Response**
Royal Kraal	
The Chief's Royal kraal Council Chairman welcomed the project with appreciation and requested EEC to implement this project without fail to address the current state of power supply.	This is noted and every effort will be made to expeditiously implement the project to address the power supply problem.
The meeting requested to know the timelines of the project implementation.	The project will continuously engage with the local communities and update on project timelines. Currently, the technical feasibility study/detailed design is about to be commissioned and one of the outputs will be timelines for procurement, construction commencement and completion and this will be communicated to the community members in advance.
How will the Community Liaison Officer be appointed and remunerated for work done?	Each Royal Kraal Council shall appoint one CLO and shall be paid by EEC for the duration of the Project
The Electricity Group Scheme, how will this be implemented?	EEC will work hand in hand with Ministry of Natural Resources and Energy in addressing affordable electricity connection and funding of these schemes and all concerns will be addressed during the continuous engagement during project implementation.
How will the project ensure equal employment opportunities for the local community members?	Opportunities shall be available for skilled and unskilled labor within the community, the awarded Contractor is expected to employment laborers along the Project corridor with the help of CLO. A Labour Recruitment Procedure will be developed by contractor with help of CLOs and local administration to guide recruitment.
Regional Administration Office	

We welcome the project and thank the EEC project team for the synoptic presentation of the project and emphasize the importance of the project to assist the Shiselwni region to drive its development agenda in line with Vision 2022 that was pronounced by His Majesty King Mswati III. We would like to state however that this project should not just end with the disclosure process but EEC must ensure that it moves to implementation as is expected of the Water Project along the same corridor.	This is very welcome and the advice made with respect to disclosure will be followed. Thank you for the support promised.
We pledge support to the project so that it succeeds and advise that since this is a national project the project be disclosed to all members of Local Government heading the different Tinkhundla Centres and we promise to play a pivotal role in ensuring that all Chiefs and Local Government Officials support the project and do not impede its progress.	This is very welcome and the advice made with respect to disclosure will be followed. Thank you for the support promised.

7.4 Disclosure

This stage focuses on disclosing and consulting on the draft results of the ESIA process. Within the overarching ESIA engagement objectives, the specific objectives for the ESIA phase are to:

- Provide feedback to the stakeholders on the draft impact assessment and associated management/mitigation measures
- Gather stakeholder input on the impact assessment and outlined mitigation and enhancement measures

Consultation and public participation are equally an integral part of the EIA process in Eswatini as applied to projects assigned to both medium and high risk under the environmental Audit, Assessment and Review Regulations.

As required by EAA, this draft Environmental and Social Impact Assessment (ESIA), as well as Resettlement Policy Framework (RPF) and Stakeholder Engagement Plan (SEP) have been disclosed in the EEC website and an advertisement was placed in the daily newspaper (Times of Swaziland, 23rd April 2019) informing the general public of the need to access and review the documents as part of stakeholder consultations. See appendix F.

8 MONITORING

142. The Safety Health Environment Risk and Quality (SHERQ) Unit will monitor the overall implementation of the ESMP[12] for Subcomponent 1a, as well as the timely preparation and clearance of simplified ESMPs for activities under Subcomponent 1b and Component 2. In particular, SHERQ will:

i) monitor the implementation of mitigation measures and the environmental and social performance of contractors;
ii) train of project staff, implementing partners, and contractors (list of persons, dates and places)

143. SHERQ will establish, maintain, and update a database of activities under Subcomponent 1b and Component 2. The database will include for each activity:

i) type of activity
ii) timeline
iii) supervision reports by SHERQ and focal points during implementation
iv) contractor reports
v) noncompliance by contractors
vi) cross references to the Grievance Mechanism's log of complaints.

144. SHERQ will also prepare:

i) quarterly reports summarizing monitoring results, to be included in the Project's Quarterly Reports to the World Bank
i) reports that aggregate and analyse monitoring results ahead of regular World Bank implementation support missions with EEC
ii) an annual evaluation of all environmental and social monitoring results, which will be submitted to the World Bank as part of overall project implementation reporting

8.1 Monitoring procedures (adapted from existing EEC procedures)

145. EEC is committed to a systematic approach for measuring and monitoring OH&S and environmental performance on a regular basis, as an integral part of the overall management systems.

146. Monitoring and measurement is conducted to ensure that there is adequate control on OH&S risks and significant environmental aspects safeguarding achievement of objectives, programmes and targets. Where applicable, the company will monitor performance indicators to ensure that environmental objectives and targets are achieved, and establish reactive measures of performance that monitor incidents and the performance of the OH&S management system.

a) The project manager must ensure that the ESMP is implemented by issuing the monitoring procedures to the contractors executing the Project and ensuring that it is available at the Project sites.
b) Project inspections are conducted as guided by the Project Inspection Checklist.

[12] Along with the ESMP, SHERQ will monitor the RAPs/ARAPs as well as the status of resolution of grievances/complaints. SHERQ will also evaluate that the livelihoods of PAPs were restored as per the RAPs/ARAPs.

c) Upon discovering that a condition is not being complied with, the responsible person may be allowed (by the inspector) to correct the deviation on site without noting the deviation. Follow up actions may be formally communicated and recorded on the Projects Inspection Checklist to be inspected for accordance during a follow up inspection.

d) For cases where deviations require formal communication or where a follow up visit identifies the same eccentricities, the observed deviations must be recorded on a Projects Deviation Report and issued to the responsible person. NOTE:
   - *A Projects deviation report is issued:*
     - *When a deviation is not consistent with the original requirement but not believed to present an immediate/significant threat to the environment or employee's safety and health; OR*
     - *When a deviation has not yet resulted in clearly identifiable environmental damage or has a potential for serious safety, health and social implications.*
   - *The Project Manager will issue a Nonconformance and preventive action report if a deviation has caused environmental, material/ equipment damage, resulted in a bad company image or has led to a disabling incident.*

e) The Project manager/contractor are responsible for ensuring that effective corrections and preventive actions against deviations are implemented. The deviation/nonconformance report issuer is responsible for verifying corrective measures and signing off the project deviation report as closed.

8.2 Monitoring of Contractors

147. SHERQ will conduct onsite visits of all Project sites at least once a month to monitor the implementation of ESMPs.

148. As part of their regular activities, SHERQ will monitor and document (including pictures) contractor environmental and social performance for all Project sites throughout construction. This will involve both spot check visits to work locations, and reviews of records kept by the contractor and of reports submitted by the contractor. The frequency of site visits should be commensurate with the magnitude of activities and their associated environmental and social impacts. Sites where serious accidents are recorded should be visited within one working day of the accident. Overall, each construction site should be visited at least once during implementation.

149. Each visit and interaction with a contractor should be documented in the database, including identification of contractor noncompliance, the significance of the non-compliance, and guidance provided on actions to be taken. SHERQ will follow up as needed to ensure timely resolution of issues of noncompliance with environmental and social clauses. This may include additional visits to the contractor's site or offices, further communications with contractor personnel, issuance of notices of deficiency or warnings to the contractor, and other actions as needed.

150. At any stage of construction or other work, if the contractor has not taken appropriate action to achieve compliance with the environmental and social clauses after repeated notices of violation and warnings of noncompliance, and significant environmental or social impacts are occurring or imminent, SHERQ should order the contractor to stop work until environmental and social performance is brought under control and up to acceptable standards.

8.3 Completion Reports

151. Upon completion of each ESMP, SHERQ will prepare a completion report, to identify any unresolved environmental or social, with recommended remedial action. This report will be shared with the Program Manager who will decide the way forward.

152. For activities with significant environmental or social impacts, the completion report might recommend periodic routine inspections/monitoring during operation of the facility by dedicated environmental and social specialists.

Table 8-1: Environment and Social Monitoring Indicators (Draft)

Project Activity/Aspect	Parameter	Indicator	Implementation Route/Plan	Institutional Responsibility Monitoring Responsibility	Frequency	Project Phase	Monitoring Cost Estimates USD
Impact of Flora	Visual Inspection	Bare soil Soil Erosion	ESMP	Contractor Project Manager/Supervising Engineer	Monthly	Construction and operation	Included in supervision scope and costs
Air emissions and quality of dust	TPS,SO_2,CO,H_2S,CO_2, Dust fallout	Bad Odour Use of PPE Health and Safety Plan in use Record of induction for workers Active dust suppression	ESMP	Contractor Supervising Engineer	Monthly	Construction and operation	Included in supervision scope and costs
Safeguarding community health and safety	Visual Inspection Incident and accident records	Induction training records Safety working procedure Maintenance of complaints log and resolution process; and Evidence of effective GM Photographs of appropriate fencing; and signage around site perimeter and where identified through risk assessment process.	SEP Project performance Grievance Mechanism	Contractor Supervising Engineer	Daily	Prior to and during Construction and operation	Included in supervision scope and costs
Safeguarding Worker Occupation Health and Safety	Health and safety records Visual inspection Active and passive monitoring	audits of PPE use, maintenance of disciplinary records, etc. Records of inductions, trainings & toolbox talks Good "housekeeping" on site	OHS Management system	Contractor Supervising Engineer	Daily	Construction and operation	Included in supervision Scope and costs

		Worker Grievance Records & resolution					
Labor Influx	Verification of records Consultations	Number of community complaints Frequency of consultations conducted Number of awareness campaigns conducted	ESMP/LMP/CoC	Contractor Supervising Engineer	Daily	Construction and operation	
Storage of hazardous materials and chemicals	Spillages Visual inspection	MSDS for all store Chemicals Functioning storage containers Chemical usage records	Waste Management Plan	Contractor Supervising Engineer	Monthly Audit Review	Construction	Included in supervision scope and costs
Traffic concerns	Visual inspection	Records of accidents involving project vehicles Banks men shall be used to direct vehicle traffic around construction sites and hazards during working hours (Health and Safety Plan). Plan approved by project manager barriers and signage	Traffic Management Plan	Contractor Supervising Engineer	Daily	Construction and operation	Included in supervision scope and costs
Public Awareness and Community perceptions	Community Consultations	Grievance management records & resolution process Evidence of Occurrence-Event report	SEP GM	Contractor Supervising Engineer	Monthly	Construction and operation	Included in supervision scope and costs
Noise	dB(A)	Measure included in design and procurement plans Hearing protection and PPE in use Record of equipment maintenance	ESMP	Contractor Supervising Engineer	Monthly	Construction and operation	Included in Supervision scope and Costs
Soil Erosion	Visual inspection	Bare soil Soil pillars	ESMP	Contractor Supervising Engineer	Weekly	Construction and operation	Included in Supervision scope and Cost

Solid waste management	Domestic refuse, metallic scraps,	Documented Approvals for placement of wastes,	Comprehensive waste management plan	Contractor Supervising Engineer	Daily	Construction and operation	Included in Supervision scope and Costs
Land Acquisition, displacement and restrictions on land use	Consultations Site Visits	Records of compensation completion & completion rate Progress on RAP/LRP implementation Compliance with RPF/RAP and national legislation	RPF RAP/LRP	ECC	Daily	Prior to and during Construction	Included in supervision scope and costs
Cultural Heritage	Visual inspection	Records of CFP activated	ESMP (Chance Finds Procedures)	Contractor Supervising Engineer	Daily	Prior to and during Construction	Included in supervision scope and costs
Supply Chain	Reporting	Bidding documents and Contracts Supply chain performance on ESS2 compliance	ESMP Bidding documents	Contractor Supervising Engineer	Weekly	Construction and Operation	Included in supervision scope and costs

8.4 ESMP IMPLEMENTATION

The kay actors responsible for implementing the ESMP are:

8.4.1 ESMP Implementation

For an effective integration of environmental and social environmental and social standards into the project implementation the Contractor will need to adopt this ESMP and prepare a comprehensive Construction Environment and Social Management Plan (C-ESMP) that will provide the key reference point for compliance. The environmental supervision will also adopt the C-ESMP.

8.4.2 EEC Project Implementation Unit

A Project Implementation Unit (PIU) will be established within EEC with full time qualified environmental and social standards specialists who will provide environmental and social standards support on the implementation of the Project ESMP to ensure compliance and support corrective action. The Client (EEC) already has two (2) competent environmental specialists, and Occupational and Health and Safety officers. A Social Specialist is currently being recruited by EEC and will be in place before project effectiveness.

8.4.3 Project Supervision Engineer

The Project Supervision Engineer will be charged with the responsibilities of supervision, review of site reports, preparation of monthly progress reports, prepare and issue appropriate instructions to the Contractor and monitor ESMP implementation.

8.4.4 Contractor

The Contractor will internalize the ESMP/C-ESMP, prepare monthly progress reports and implement instructions issued by the Supervision Consultant. The Contractor will also undertake ESIA Studies for sites outside the project zone and seek appropriate EAA Licenses. The Contractor, therefore, will engage qualified Environmentalist and Social Experts on full time basis to interpret the C-ESMP and advice on the implementation of the same, as well to the Counterpart Personnel for the Supervision Expert. The full Contractor's Team will comprise of the following key staff cadres as specified in the Bidding Document.

8.4.5 Eswatini Environment Authority

The Eswatini Environment Authority (EAA) is responsible for ensuring environmental compliance in the country and will undertake surveillance on the project implementation and review compliance performance based on the supervision monitoring reports.

9 APPENDIX

9.1 Annex A. Environmental and Social Clauses for Contractors

153. Most environmental and social impacts of NRAP during construction will result from activities directly under the control of contractors and thus will be mitigated directly by the same contractors. As a consequence, ensuring that contractors effectively mitigate construction related activities impacts is the core of the NRAP's Environmental and Social Management Plan. This will be done by ensuring that the environmental and social management of construction activities are mandatory parts of works contracts.

154. EEC will incorporate the following standardized environmental and social clauses in tender documentation and contract documents, so that potential bidders are aware of environmental and social performance requirements expected from them, are able to reflect that in their bids, and required to implement the clauses for the duration of the contract. EEC will enforce compliance by contractors with these clauses.

155. The clauses cover four issues:

i) Environment, Health and Safety (EHS)
ii) Environmental and social monitoring by contractor
iii) Environmental and social liabilities
iv) Grievance mechanism for workers

Environment, Health and Safety

156. Clauses for contractors which address environment, health and safety concerns

Purpose

157. The purpose of the environment, health and safety (EHS) clauses for contractors is to define minimum standards of practice acceptable to EEC and the World Bank. The clauses will be included in the bidding documents and contracts.

Contractor Environmental and Social Management Plan

158. Prior to start implementing the program, each contractor must prepare and submit a Contractor Environmental and Social Management Plan (CESMP) to EEC for acceptance. The CESMP will provide a detailed explanation of how the contractor will comply with the EHS clauses for contractors and demonstrate that sufficient funds are budgeted for that purpose and sufficient capacity is in place to oversee, monitor and report on CESMP performance. The CESMP must include specific mitigation measures based on the project's environmental and social management plan, the final design, the proposed work method statements, and the nature of the project site. The C-ESMP should include management plans that cover the following issues:

Gender based Violence

159. Contractors must address the risk of gender-based violence, through:

i) Mandatory and repeated training and awareness raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women;
ii) Informing workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted;
iii) Introducing a Worker Code of Conduct as part of the employment contract, and including sanctions for non-compliance (e.g., termination);
iv) Adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence.

Child Labor

160. Contractors must not employ workers below the age of 18.

Labor influx

161. Where contractors and labor come from outside the local area, contractors will need to maintain labor relation relations with local communities through labor codes of conduct.

Road

162. In order to carry out the construction works, EEC may close or divert certain specified roads, either permanently or temporarily. The Contractor should arrange diversions for providing alternative route for transport and/or pedestrians.

163. After breaking up, closing or otherwise interfering with any street or footpath to which the public has access, the Contractor shall make such arrangements as may be reasonably necessary so as to cause as little interference with the traffic in that street or footpath during implementation of the construction works as shall be reasonably practicable.

164. Wherever construction works interfere with existing public or private roads or other ways over which there is a public or private right of way for any traffic, the Contractor shall construct diversion ways wherever possible.

Movement of Trucks

165. The Contractor moving solid waste materials shall take strict measures to minimize littering of roads by ensuring that vehicles are licensed and loaded in such a manner as to prevent falling off or spilling of construction materials and by sheeting the sides and tops of all vehicles carrying mud, sand, other materials and debris. Construction materials should be brought from registered sources in the area and debris should be transferred to assigned places in landfills with documented confirmation.

Traffic Safety Measures

166. The Contractor shall provide, erect and maintain such traffic signs, road markings, barriers and traffic control signals and such other measures as may be necessary for ensuring traffic safety around construction sites.

167. The Contractor shall not commence any work that affects the public roads and highways until all traffic safety measures necessitated by the work are fully operational.

Access to Project Sites

168. The Contractor shall take all reasonable precautions to prevent or reduce any disturbance or inconvenience to the owners, tenants or occupiers of adjacent properties, and to the public generally. The Contractor shall maintain any existing right of way across the whole or part of the construction site and public and private access to adjoining frontages in a safe condition and to a standard not less than that pertaining at the commencement of the contract. If required, the Contractor shall provide acceptable alternative means of passage or access to the satisfaction of the persons affected.

Noise and Dust Control

169. The Contractor shall take all practicable measures to minimize nuisance from noise and dust caused by collection equipment. This includes:

- respecting normal working hours in or close to residential areas
- maintaining equipment in a good working order to minimize extraneous noise from equipment movement, as well as emissions or fumes from the equipment
- shutting down equipment when it is not directly in use
- using operational noise mufflers if needed
- providing a spray water when required to minimize the impact of dust
- limiting the speed of equipment used for waste collection.

Protection of the Existing Installations

170. The Contractor shall properly safeguard all buildings, structures, works, services or installations from harm, disturbance or deterioration during the concession period. The Contractor shall take all necessary measures required for the support and protection of all buildings, structures, pipes, cables, sewers and other apparatus during the construction period, and to repair any damage occurs in coordination with concerned authorities.

Protection of Trees and Other Vegetation

171. The Contractor shall avoid the loss of trees and damage to other vegetation wherever possible. Adverse effects on green cover within or in the vicinity of construction sites shall be minimized. The contractor will restore vegetative cover, where feasible.

Cultural Resources

172. The contractor will train construction crews and supervisors to spot potential archaeological finds. In the event of a potential find, the contractor will inform EEC who will in turn liaise with the National Museum, or a local university, for quick assessment and action.

Clean-up of Sites on Completion of Work

173. The contractor shall clean up all sites before starting and after completing the works to remove oil and waste properly in environmentally good practices and safe disposal following hygiene procedures.

Worker Health and Safety

174. To avoid work related accidents and injuries, the contractor will:

- Provide occupational health and safety training to all employees involved in works. Provide protective masks, helmet, overall and safety shoes, and safety goggles, as appropriate.
- Provide workers in high noise areas with earplugs or earmuffs.
- Ensure availability of first aid box.
- Provide employees with access to toilets and potable drinking water.
- Provide safety and occupational safety measures to workers with Personal Protection Equipment PPE when installing pumps to prevent accidents during replacement and installation and follow safety measures in installing submersible pump and cleaning the raiser pipes.
- Properly dispose of solid waste at designated permitted sites landfill allocated by the local authorities and cleaning funds; and attach the receipt of waste from the relevant landfill authority.
- Carry out all procedures to prevent leakage of generator oil into the site.
- Ensure that the head of the well is covered tightly.
- Provide secondary tank for oil and grease to avoid spills.

Site Construction Safety and Insurance

175. Further to enforcing the compliance of environmental management, contractors are responsible and liable of safety of site equipment, labor and daily workers attending to the construction site and safety of citizens for each project site, as mandatory measures.

Environmental and Social Monitoring by Contractors

176. EEC will require that contractors monitor, keep records and report on the following environmental and social issues for the project. The application of this requirement will be proportionate to the activities and to the size of the contract, in a manner acceptable to the World Bank:

- Safety: hours worked, recordable incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), first aid cases, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, and so forth).
- Environmental incidents and near misses: environmental incidents and high potential near misses and how they have been addressed, what is outstanding, and lessons learned.
- Major works: those undertaken and completed, progress against project schedule, and key work fronts (work areas).
- E&S requirements: noncompliance incidents with permits and national law (legal noncompliance), project commitments, or other E&S requirements.
- E&S inspections and audits: by contractor, engineer, or others, including authorities—to include date, inspector or auditor name, sites visited and records reviewed, major findings, and actions taken.
- Workers: number of workers, indication of origin (expatriate, local, nonlocal nationals), gender, age with evidence that no child labor is involved, and skill level (unskilled, skilled, supervisory, professional, management).
- Training on E&S issues: including dates, number of trainees, and topics.
- Footprint management: details of any work outside boundaries or major off-site impacts caused by ongoing construction—to include date, location, impacts, and actions taken.
- External stakeholder engagement: highlights, including formal and informal meetings, and information disclosure and dissemination—to include a breakdown of women and men consulted and themes coming from various stakeholder groups, including vulnerable groups (e.g., disabled, elderly, children, etc.).
- Details of any security risks: details of risks the contractor may be exposed to while performing its work—the threats may come from third parties external to the project.
- Worker grievances: details including occurrence date, grievance, and date submitted; actions taken and dates; resolution (if any) and date; and follow-up yet to be taken—grievances listed should include those received since the preceding report and those that were unresolved at the time of that report.
- External stakeholder grievances: grievance and date submitted, action(s) taken and date(s), resolution (if any) and date, and follow-up yet to be taken—grievances listed should include those received since the preceding report and those that were unresolved at the time of that report. Grievance data should be gender-disaggregated.
- Major changes to contractor's environmental and social practices.
- Deficiency and performance management: actions taken in response to previous notices of deficiency or observations regarding E&S performance and/or plans for actions to be taken—these should continue to be reported until EEC determines the issue is resolved satisfactorily.

Environmental and Social Liabilities of the Contractors

177. Contractors will be legally and financially accountable for any environmental or social damage or prejudice caused by their staff, and thus is expected to put in place controls and procedures to manage their environmental and social performance. A breakdown for the cost of noncompliance for each mitigation measure will be enclosed in the bidding documents. These will include:

- Mitigation measures to be included in the contract will be specified in the project ESMP
- Deductions for environmental noncompliance will be added as a clause in the Bill of Quantities (BOQ) section.
- Environmental penalties shall be calculated and deducted in each submitted invoice
- Any impact that is not properly mitigated will be the object of an environmental/social notice by EEC.
- For minor infringements and social complaints, an incident which causes temporary but reversible damage, the contractor will be given a notice to remedy the problem and restore the environment. No further actions will be taken if the project engineer confirms that restoration is done satisfactorily.
- For social notices, the project engineer will alert the contractor to remedy the social impact and to follow the issue until solved. If the contractor does not comply with the remediation request, work will be stopped and considered under no excused delay
- If the contractor hasn't remedied the environmental impact during the allotted time, the Project engineer will stop the work and give the contractor a notification indicating a financial penalty according to the non-complied mitigation measure that was specified in the bidding document.
- No further actions will be required if the project engineer sees that restoration is done satisfactorily. Otherwise, if Contractor hasn't remedied the situation within one day any additional days of stopping work will be considered no excused delay
- Environmental notifications issued by the Project engineer might include one or more environmental penalty
- In the event of repeated noncompliance totaling 5% of the contract value, the project engineer will bring the environmental and social notices and the deduction history to EEC procurement in order to take legal action.

Grievance Mechanism for Workers

178. Contractors will put in place a Grievance Mechanism for their workers that is proportionate to their workforce, according to the following principles:

- **Provision of information.** All workers should be informed about the grievance mechanism at the time they are hired, and details about how it operates should be easily available, for example, included in worker documentation or on notice boards.
- **Transparency of the process**. Workers must know to whom they can turn in the event of a grievance and the support and sources of advice that are available to them. All line and senior managers must be familiar with their organization's grievance procedure.

- **Keeping it up to date.** The process should be regularly reviewed and kept up to date, for example, by referencing any new statutory guidelines, changes in contracts or representation.
- **Confidentiality.** The process should ensure that a complaint is dealt with confidentially. While procedures may specify that complaints should first be made to the workers' line manager, there should also be the option of raising a grievance first with an alternative manager, for example, a human resource (personnel) manager.
- **Non-retribution.** Procedures should guarantee that any worker raising a complaint will not be subject to any reprisal.
- **Reasonable timescales.** Procedures should allow for time to investigate grievances fully but should aim for swift resolutions. The longer a grievance is allowed to continue, the harder it can be for both sides to get back to normal afterwards. Time limits should be set for each stage of the process, for example, a maximum time between a grievance being raised and the setting up of a meeting to investigate it.
- **Right of appeal**. A worker should have the right to appeal to EEC or national courts if he or she is not happy with the initial finding.
- **Right to be accompanied.** In any meetings or hearings, the worker should have the right to be accompanied by a colleague, friend or union representative.
- **Keeping records**. Written records should be kept at all stages. The initial complaint should be in writing if possible, along with the response, notes of any meetings and the findings and the reasons for the findings.
- **Relationship with collective agreements**. Grievance procedures should be consistent with any collective agreements.
- **Relationship with regulation.** Grievance processes should be compliant with the national employment code.

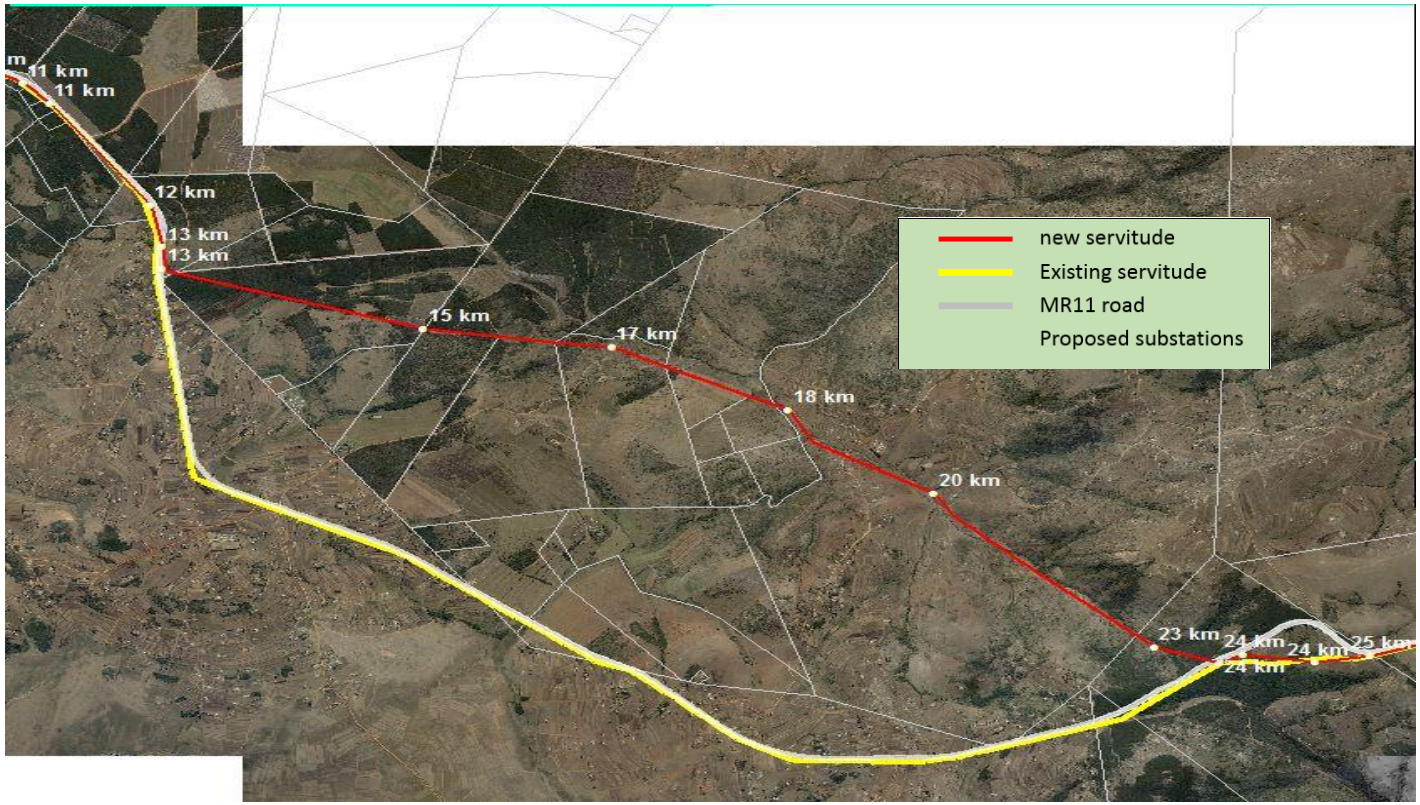
9.2 Appendix B. Letter of Categorization

9.3 Appendix C. Maps Showing Preliminary Routings and Locations

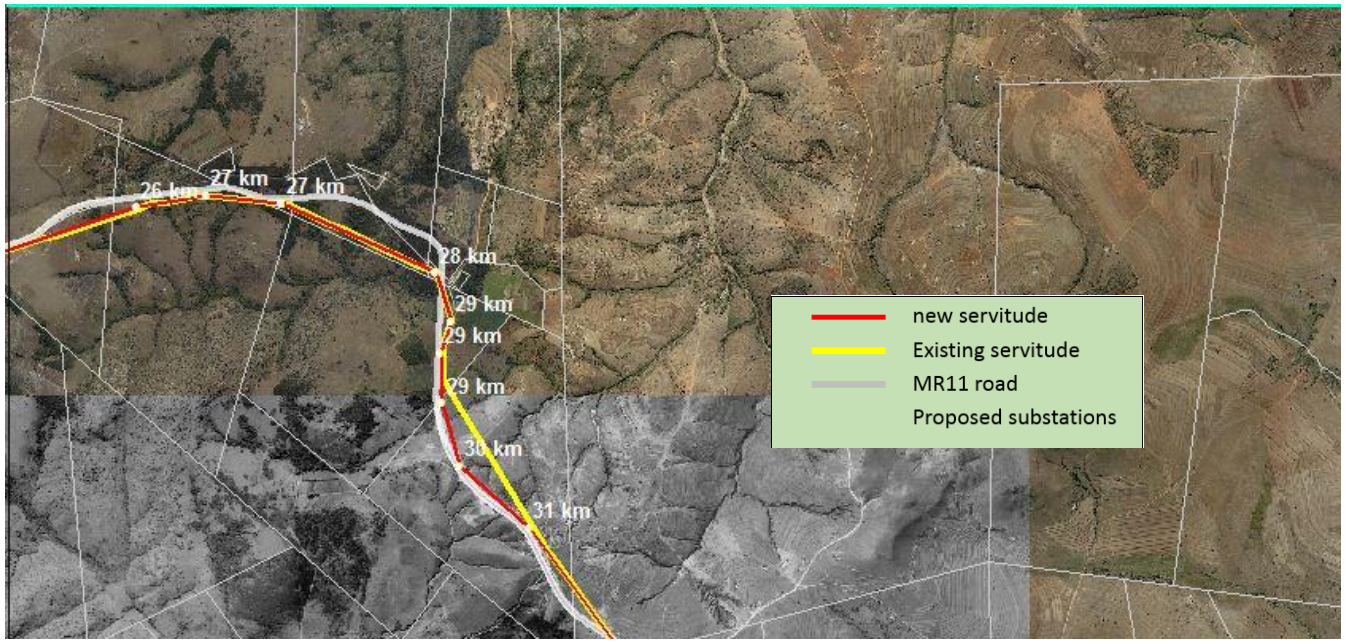
Figure 1. Km 0 to Km 10, including Nhlangano substation and Nhlangano town.

The powerline take-off from Nhlangano II substation. It will use the existing Nhlangano II - Nhlangano I 66kV Line servitude. The existing 66kV line structure will be replaced by a dual 132kV and 66kV configuration for approximately 4 km. It will then switch to the existing 11 kV servitude, as a dual 132kV and 11kV configuration, mainly along the MR11 road reserve.

Figure 2. Km 25 to Km 32.

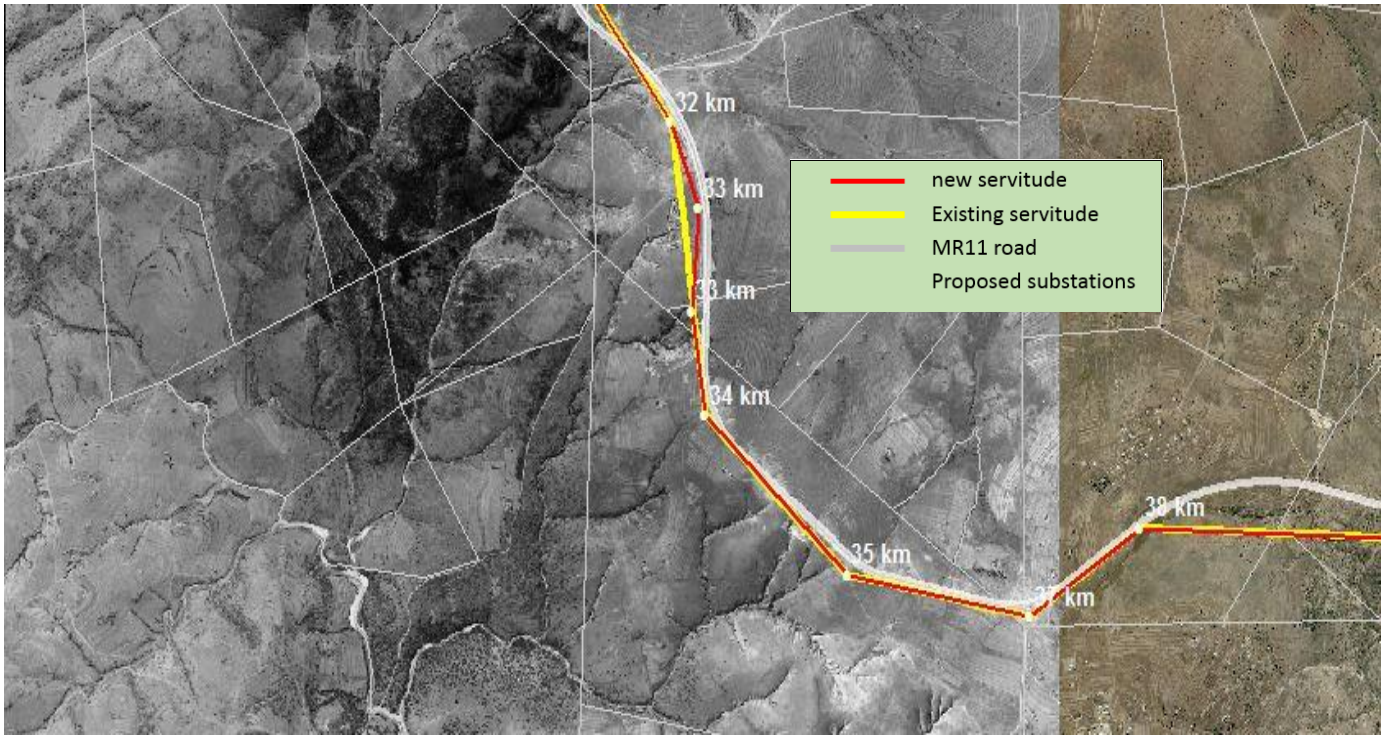


These sections deviate from the existing servitude running along MR11 for 11 km, mainly to reduce the number of bend point by creating a direct route that will reduce the line length and also avoid the development happening along MR11 on these sections.



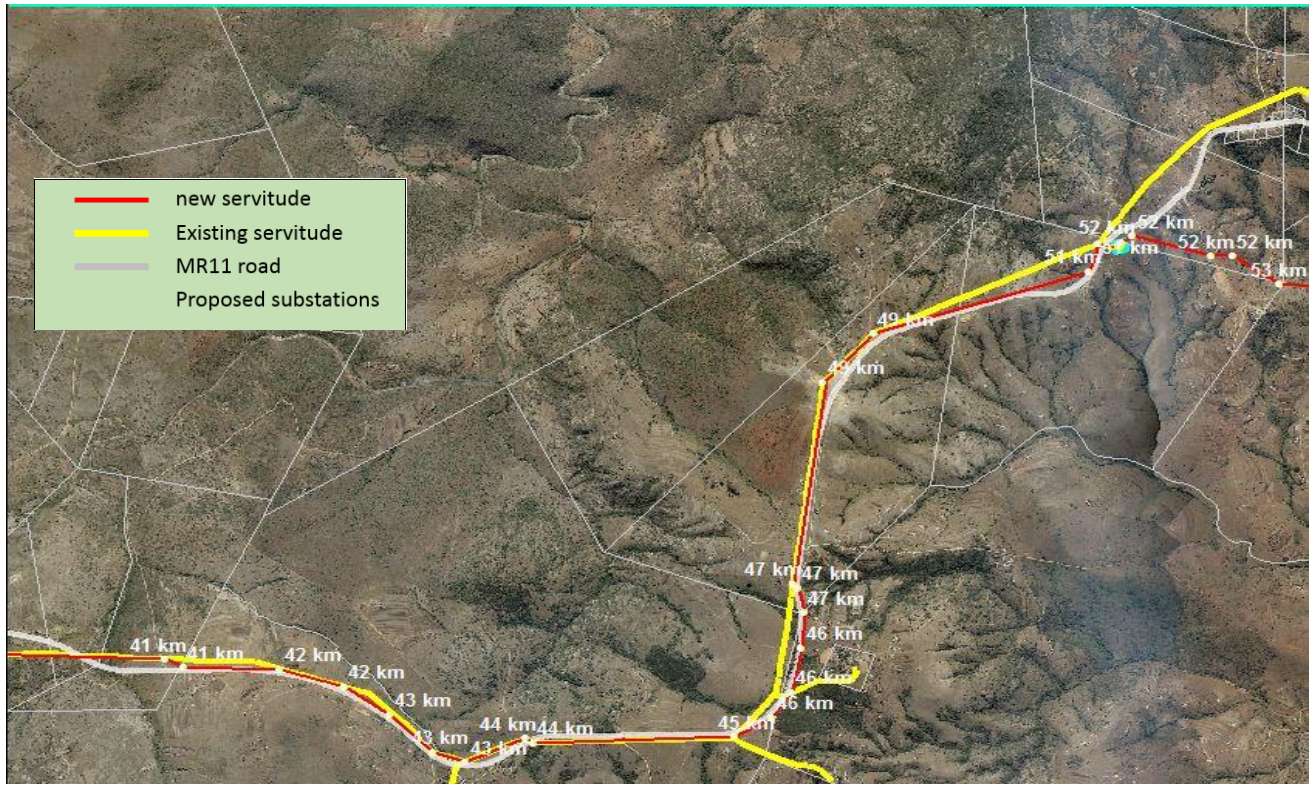
This section runs on existing 11kV servitude which is cutting through farms with cultivated fields.

Figure 4. Km 31 to 41



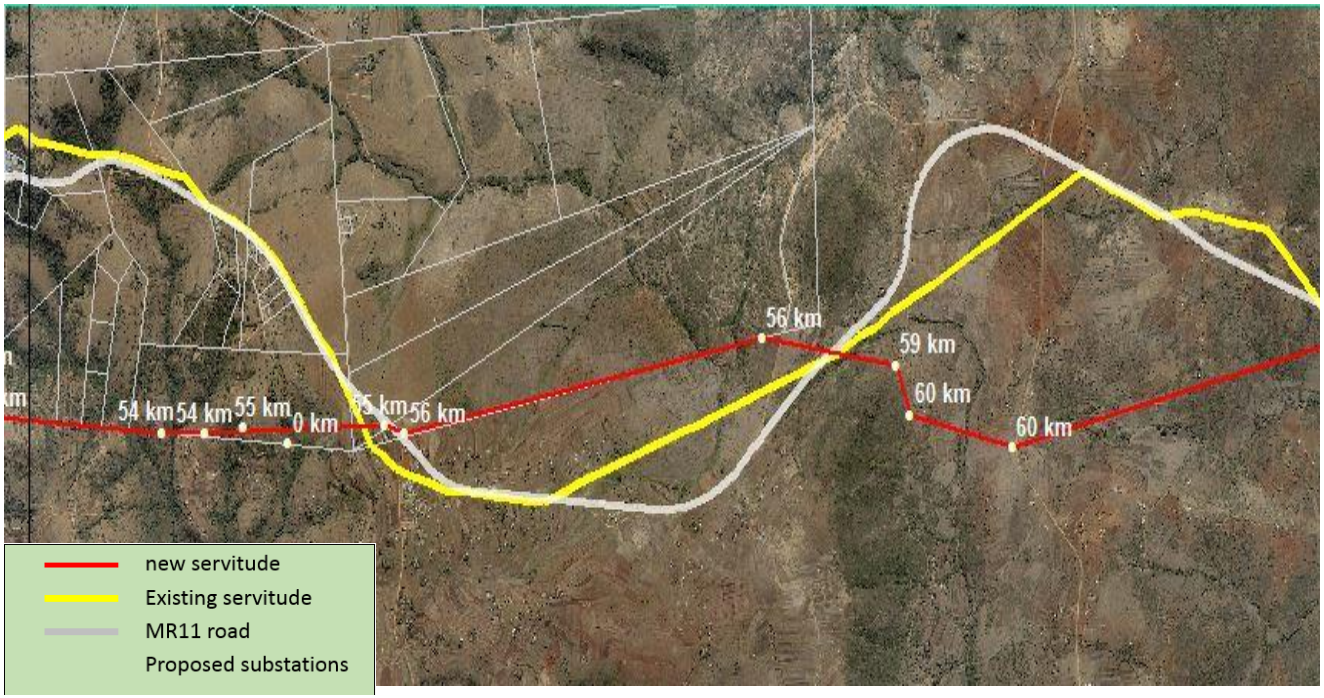
This section runs on existing 11kV servitude which is cutting through farms with cultivated fields.

Figure 5. Km 40 to 53, including Hluthi substation

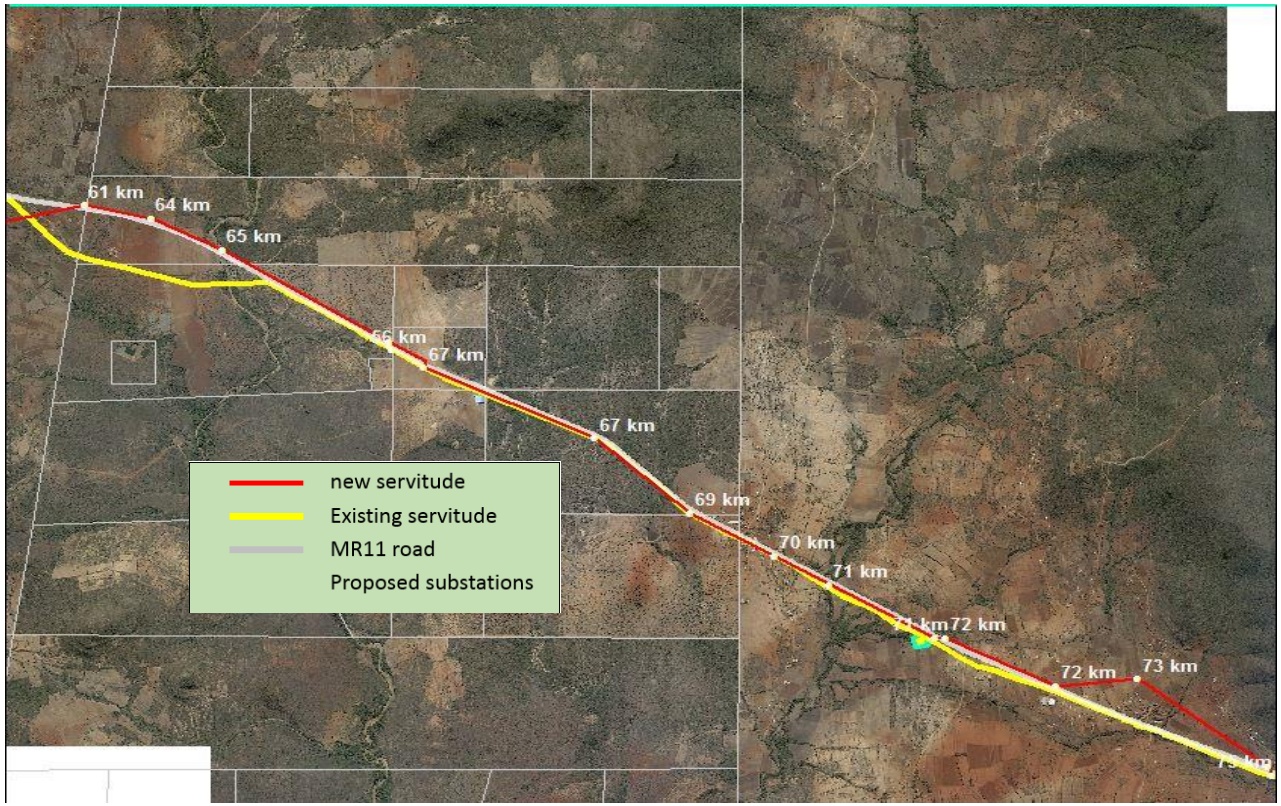


These sections runs on existing 11kV servitude which is cutting through farms with cultivated fields. From Hluti substation the powerline deviates from the existing servitude running along MR11 to create a direct route that reduces the line length and also avoids Hluthi town.

Figure 6. km 54 to km 61

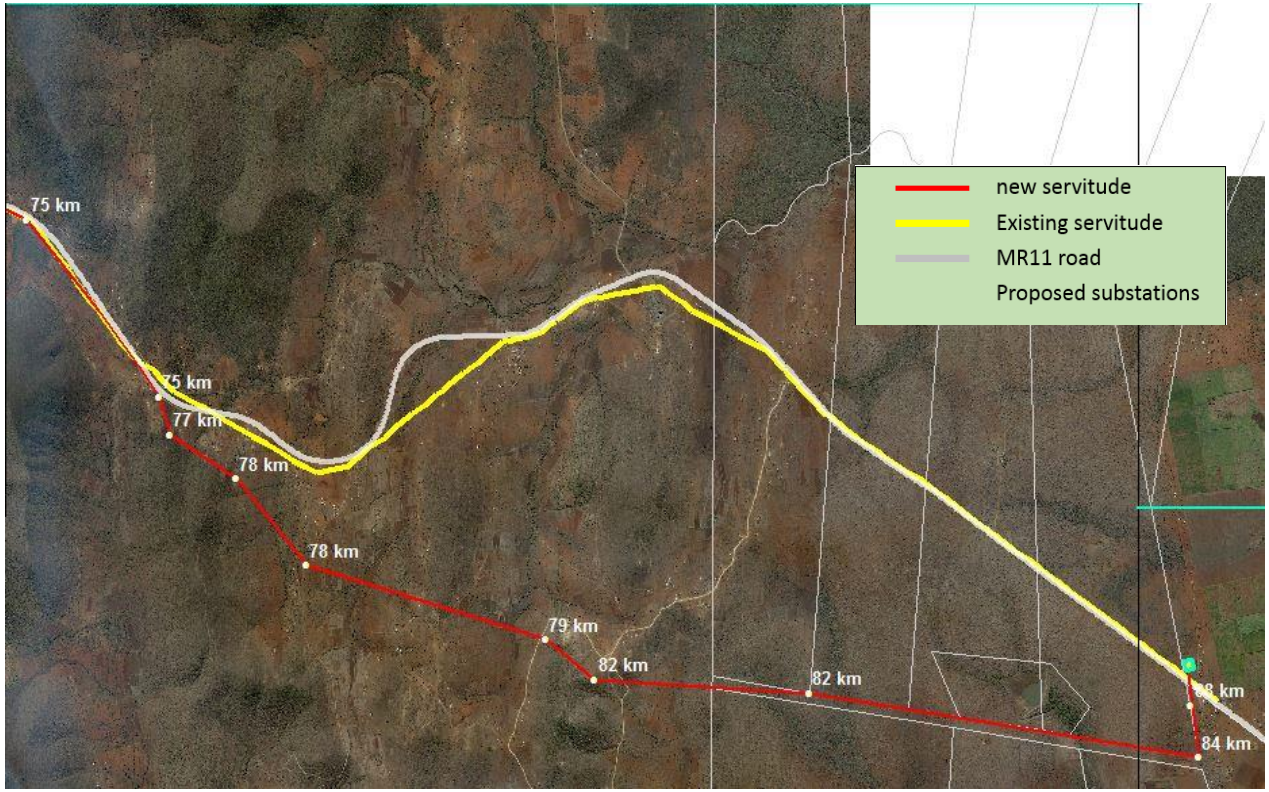


This section runs mainly on the existing 11kV servitude, except for a portion from km 60 to km 65 and from km 74 to 75.



The powerline deviates from the existing servitude running along MR11 to create a direct route that will reduce the line length and also avoid development happening along MR11.

Figure 5. Km 75 to 85 (Lavumisa Substation)



9.4 Appendix D. Minutes of Stakeholder Meeting

Purpose	Nhlangano – Lavumisa NRAP corridor stakeholder engagement meeting with Chief's Royal Kraal Councils
Date	8th-22nd March 2019
Time	
Venue	Chief's Royal Kraals along NRAP Corridor
Minutes taken by	Dumisani Shongwe
Agenda Item	**Responsibility**
1. Welcome and Introductions	Royal Kraal Chairman
2. Objectives of Meeting(NRAP Presentation) 2.1Project Description 2.2Goals of the NRAP 2.3Project potential impact 2.4Stakeholders continuous engagement 2.5Project impact Mitigation plan(Environmental and social) 2.6EEC Commitments and project funders	EEC
3. Feedbacks and Questions	All
4. Closing	All

ATTENDANCE:

See attached attendance list

1. Welcome and introductions

The Chief's Royal Kraal Chairman (Indvuna) welcomed EEC participants to the Meeting and introduced all members of the Chief's Royal Kraal Council and acknowledge the appointment made by EEC specifically to address the council. The chairman requested EEC to introduce themselves and Present.

2. Objectives of Meeting(NRAP Presentation)

2.1 Project Description

2.1.1 EEC informed the council that the Eswatini Network Reinforcement and Access Project (Project) supports the Government of the Kingdom of Eswatini's (GoKE) goal of providing access to modern energy to all by 2022 as stated in the National Energy Policy. Stated that the proposed NRAP will include construction of ≈87km of 132 kV transmission line from Nhlangano II to Lavumisa with 2 new substations at Matsanjeni and Lavumisa, and expansion works at the existing Nhlangano II substation, and the 11kV Hluthi switching station that will be converted into a 20MVA 132/11kV substation.

2.1.2 EEC informed the meeting that the route of the transmission line is likely to traverse over land belonging to community members which my result in temporary or permanent displacement which the EEC shall address through inclusive and participatory consultation with the affected persons or households and resettlement and compensation will be done in accordance to a policy framework which shall be shared and discussed with all stakeholders. EEC then mentioned that all efforts will be made by the project as far as practicable to reduce the impact of resettlement.

2.1.3 The EEC also told the meeting that there will be stakeholder engagement processes following this initial meeting to share information, consult affected persons and provide a mechanism for reporting grievances, concerns and any other issues related to the project.

2.2 The NRAP Goals

2.2.1 NRAP goal is to improve its network reliability and quality of supply to support growing demand in the region. It will cover the electrical, civil and electromechanical works, switchgear, and protection and control equipment thus reinforcing weak segments of the distribution network installing control equipment in key segments of the network.

2.3 NRAP Potential Impact

The meeting highlighted the following potential impact;

2.3.1 Land use and ownership due to right of way and encroachments;

2.3.2 Crops, Flora and fauna disturbances/ damage during construction;

2.3.3 The aesthetic and visual quality of the surrounding landscape of the project area from the introduction of transmission towers

2.3.4 Soil erosion due to excavation activities when constructing substations;

2.3.5 Occupational safety and health impacts from construction activities

2.3.6 Impacts on cultural heritage (cemetery, graves, sacred areas etc.)

2.3.7 Land health as a result of poor waste management on site;

2.3.8 Community safety and health from construction activities and labour influx in the region;

2.3.9 Resettlement(relocations)

2.3.10 Public nuisance such as noise, dust pollution etc., during construction activities.

2.4 Continuous Engagement Plan

2.4.1 Each Chief's Royal Kraal is expected to appoint a Community Liaison Officer (CLO) to facilitated continuous consultation with person affected by the project to ensure that all stakeholders, particularly project affected households and communities, vulnerable and disadvantaged people are involved throughout the process of resettlement planning, implementation, and monitoring. The NRAP shall deploy appropriate consultation methods while engaging the various stakeholders, including: i) focus group discussions, ii) informal interviews and, ii) public consultations. In each of these consultations, the NRAP's Project Implementation Unit shall ensure that everyone's voice is heard, responded to, recorded, and fully incorporated into the RAP.

2.5 Project impact Mitigation plan(Environmental and Social)

The meeting was informed about the Project impact mitigation plan on environment and social issues as follows;

1) The Resettlement impacts will be avoided or minimized
2) Affected people will be defined inclusively
3) Meaningful consultation with PAPs and communities will be undertaken
4) All adverse Project impacts will be identified prior to implementation and losses properly recorded and compensated
5) PAPs are entitled to full compensation and rehabilitation measures on an equitable basis
6) Vulnerable groups will receive special attention
7) Cultural and religious practices will be respected.
8) Resettlement planning, budgeting and implementation will be an integral part of the Project.
9) Grievance, monitoring and evaluation procedures will verify
10) Effectiveness of resettlement measures.
11) Project activities must be in accordance with policy and legislative framework
12) Adherence to Labour management plans guidelines
13) Adherence to EHS Guidelines
14) Adherence to Labour laws

2.6 EEC Commitments

2.6.1 EEC informed the meeting of its commitments to; i) Climate Change Mitigation & Adaptation; ii) Pollution Prevention; iii)Waste Management plans; iv) Risk Assessment & Management; v) Sustainable Development; vi) Biodiversity Protection; vii) Social impact mitigation

Approaches:

- **Avoid:** The Company will (where practicable) avoid activities that could result in significantly adverse impacts in a project area.
- **Prevent:** The Company will prevent occurrence of adverse impacts on the environment during project implementation.
- **Minimise:** Where unavoidable, the company will reduce the degree or extent/ duration of the adverse impact through immediate reaction.
- Rehabilitate: The Company will restore affected project area zones to their original states

3. Discussion Feedbacks and Questions

3.1 Royal Kraals' Feedback and Discussions

The comments and responses that came from the Royal Kraal leaders and community members at large were invariably the same owing to the current poor state of the network reliability and quality of supply service that these communities experience frequently. Some of the comments that were made are as follows**:**

Figure 6: Initial stakeholder Engagement Meeting at Sihlahleni, Endlovini area under Zwide II Umphakatsi - Ezikhotheni

- The Chief's Royal kraal Council Chairman welcomed the project with appreciation and requested EEC to implement this project without fail to address the current state of power supply.
- The Meeting requested timelines of the project implementation. The response was that there will be a continuous engagement, the Technical feasibility study will identify all the requirement of the project which will then give the project timelines. This will then be communicated to all stakeholders.
- The issue of a Community Liaison Officer engagement was raised and addressed by stating that, Each Royal Kraal Council shall appoint one CLO and shall be paid by EEC for the duration of the Project.
- Current Electricity Group Scheme awaiting funding was raised and addressed by stating that, EEC will work hand in hand with Ministry of Natural Resources and Energy in addressing affordable electricity connection and

funding of these schemes and all concerns will be addressed during the continuous engagement during project implementation.

- Employment issue was raised by the Council and was addressed that opportunity shall be available for unskilled labor within the community, the awarded Contractor is expected to employment laborers along the Project corridor with the help of CLO.

3.2 Regional Administrator Feedback and Discussions

The Regional Administrators' Office was represented by the Regional Secretary, Mr. Zwakele N. Dlamini, following that the term of office for the incumbent RA had come to an end was still awaiting the King to appoint a replacement. The regional Secretary made the following comments:

- Welcomed the project and thanked the EEC project team for the synoptic presentation of the project and emphasised the importance of the project to assist the Shiselwni region to drive its development agenda in line with Vision 2022 that was pronounced by His Majesty King Mswati III. He warned that this project should not just end with the disclosure process but EEC must ensure that it moves to implementation as is expected of the Water Project along the same corridor.
- The Regional Secretary pledged support to the project so that it succeeds and advised that since this is a national project he advises that the project be disclosed to all members of Local government heading the different Tinkhundla Centres and promised to play a pivotal role in ensuring that all Chiefs and Local Government Officials support the project and do not impede its progress.

4. Closing

4.1.1 The Royal Kraal Council chairman (Indvuna) closed the meeting with a word of Appreciation to EEC on the engagement at the early stage of the project.

Record of meeting proceedings prepared by:

Dumisani Shongwe

Approved by:  _____

CHAIRMAN **DATE**

9.5 Appendix Ea. Community consultation on Environmental and Social Issues

Date	Venue	Participants	Issues Discussed	Responses
29/04/2019	Nkonka Royal Kraal, Matsanjeni	• Chief's Inner Council Members (Herdsman, Secretary, Members) • Project affected Community Members All the above participants were from Kwaluseni, Vimbizumbuko and Nkonka Royal Kraals	Most of the issues discussed were around compensation issues, i.e, who will be eligible for compensation, how it will be calculated, and when the payments will be made to the affected parties. There was also a suggestion that land for land compensation should also consider the fertility of the land to ensure that the affected party is not left worse off. The issue	There is an eligibility criteria in the RPF that outlines who is eligible for compensation. All those directly affected by the project will be eligible and the calculation of compensation shall be done with the help of independent evaluators. Land for land option has

			of blasting was also raised to ensure that it done in a safe manner and that those affected by it are fairly compensated. One person wanted to know about the dangers/ impacts of the powerline to the people and what mitigation should be taken to avoid or minimise such impacts	already been considered and is mentioned in the entitlement framework. With regards to the blasting concerns, these would have to be incorporated into the ESIA study to ensure that they are well addressed. Regarding the impacts or dangers of the powerline, this was explained to the participants and is also explained in the preliminary ESIA. Power lines shall constructed to comply with all safety regulations regarding vertical and horizontal clearance.

STAKEHOLDER CONSULTATIONS ON DRAFT RPF

Networks Reinforcement and Access Project (NRAP)
Stakeholders Consultations Outcomes and Agreements
Eswatini, _____

Type of Stakeholder (s): Government and Regulators

(*Ministry of Natural Resources and Energy (MNRE), NERCHA, CANGO, Ministry of Health, Eswatini Environment Authority (EEA), Eswatini Energy Regulatory Authority (ESERA))*

Location: Mountain Inn-Mbabane
Date: 30 April 2019
Time: 10:48hrs to 13:50hrs
Consultation method(s): Focus groups

Consultation Topic (s)	Issues Raised by Stakeholder(s)	Response (s) Given	Agreement(s) Reached	Action (s) Agreed
Project Background: • Project components • Draft documentation on RPF, SEP, ESIA already	• CANGO requested to find out why the Ministry of Tinkhundla Administration and Development where not part of the meeting as the project touched heavy on the Tinkhundla system.	• EEC acknowledged that it mistakenly overlooked the importance of the Ministry of Tinkhundla as key stakeholder in advancing community development initiatives.	The Ministry of Tinkhundla Administration and Development will be engaged and frequently consulted as a key stakeholder.	The Ministry of Tinkhundla Administration and Development will be engaged and frequently consulted as a key stakeholder.

Consultation Topic (s)	Issues Raised by Stakeholder(s)	Response (s) Given	Agreement(s) Reached	Action (s) Agreed
disclosed to stakeholder • Project structure • Project program • Next steps		• Further clarification was given highlighting that the Shiselweni region was selected based on the poor electricity network there, its poor economic status and has the lowest levels of electricity access in the country; hence it was emphasized to the need to consult the Ministry of Tinkhundla as key stakeholder for electricity access component of the project.		
Project Background: • Project components • Draft documentation on RPF, SEP, ESIA already disclosed to stakeholder • Project structure • Project program • Next steps	CANGO wanted to find out what measures have been put in place to ensure that the project does not harm biodiversity, sensitive areas etc.	• EEC explained that the project has undergone preliminary studies based on desktop analysis and initial project screening. Final environmental impact assessments will be done by a consultant based on ground studies. In addition to the initial stages of the project in terms of EEA project briefing and categorization have been done.	• An independent consultant will assess the project to analyze all project biological, physical and socio-economic impacts as part of ESIA and to further strengthen the social safeguard instruments with ground data	• An independent consultant shall be procured and appointed to carry out the full environment and social impact assessment for the project

Consultation Topic (s)	Issues Raised by Stakeholder(s)	Response (s) Given	Agreement(s) Reached	Action (s) Agreed
		• EEA also took stakeholders through the EEA project approval process.		
Project Background: • Project components • Draft documentation on RPF, SEP, ESIA already disclosed to stakeholder • Project structure • Project program • Next steps	• CANGO wanted to know will be the level of electricity access in the country after project completion and what is the source of power for the project with regards to impacts to the environment	• The response from MNRE was that the country is currently very close to 75% electrification and projections for end of financial year 2022 are estimated to be 100% electrification access. However, due to a lot of unpredictable issues, this may not be the case. The ministry are of the notion that the project may help the country reach 90% electrification access. • In addition, they highlighted that from this project alone, it is projected that 8000 households alone shall be electrified to increase the overall level of access. • It was further added that the country has made great progress in terms of electrification. As part of the project design, Component 3	N/A	N/A

Consultation Topic (s)	Issues Raised by Stakeholder(s)	Response (s) Given	Agreement(s) Reached	Action (s) Agreed
		aims at supporting the enhancement of M&E in this regard among other activities.		
Project Background: • Project components • Draft documentation on RPF, SEP, ESIA already disclosed to stakeholder • Project structure • Project program • Next steps	• The Energy Regulatory Authority requested the EEC to put in place M&E mechanism to monitor that the project objective is fully met and that the country doesn't just invest in infrastructure that has no social and economic benefit. Further advised that the project could engage the services of Swaziland Economic Policy Analysis and Research Centre (SEPARC) as another stakeholder to conduct studies on the impact of the project on the socio-economic environment of the Shiselweni region. ESERA further stated that the Authority would be interested in reporting on this impact and feed it into the company profile (i.e. Feasibility of doing business in Shiselweni region for instance).	• The project team commented that the project's component 3, tackles issues raised by ESERA. It was highlighted that there's already a document being drafted by the Energy department and to that effect. • Other ways to support the country post this project lies on studies that will investigate the country's demographics in terms of energy accessibility and also on energy rates since the more people have access to electricity, the more expensive electricity becomes.	• Continuous engagement for component 3, as well, of the project will be made.	• The technical feasibility study shall evaluated the socio-economic impact of the project by conducting region-wide consultations with all stakeholders
Project Background: • Project components • Draft documentation	• The Project Team was asked how stakeholders were going to ensure that the project gets to the 8000-household for electricity access and	• ESERA have strategies in place for the end user and are currently harmonizing what needs to be done and what's currently being done. It was	ESERA to committed to develop policies that ensure affordability of electricity	ESERA will finilise the policy document that aims to address electricity subsidy to poor rural households

Consultation Topic (s)	Issues Raised by Stakeholder(s)	Response (s) Given	Agreement(s) Reached	Action (s) Agreed
on RPF, SEP, ESIA already disclosed to stakeholder • Project structure • Project program • Next steps	ensure that these households utilize the service.	also highlighted as a demand side management strategy, the MNRE and EEC are encouraging end users to venture into productive energy use, that is, investigate ways of not only using energy for household use but expanding into commercial use as well. • ESERA also highlighted that when it comes to affordability and accessibility, ESERA stays adamant that accessibility for people should not come at a high cost. With that said therefore, they have measures (Connection Charge Policy, Funding policies and Subsidy framework) in place (or being drafted) to assist customers on tariff charges.		to ensure that electricity tariffs are affordable to sustainable utilization of the service by these communities
Environmental and Social Impact Assessments	• Based on EEA's submission that it is their responsibility to monitor the number of complaints received from a project as a key indicator for project compliance, then EEA was advised to gauges the project's level of compliance not	• EEA went through their complaints management process, highlighting that it was systematic and also relied on what is submitted to it by the project proponent.	• The Environmental and Social Management Plan as well as all Environmental and Social instruments (GRM, SEP etc.)	• The EEA shall use mitigation measures that the project proponent have committed in the documentation submitted as part of

Consultation Topic (s)	Issues Raised by Stakeholder(s)	Response (s) Given	Agreement(s) Reached	Action (s) Agreed
	on the number of incidents but on how effective instruments adopted by EEC were being used to manage conflicts and disputes.		submitted to EEA by EEC will be used as a compliance monitoring tool by EEA rather than the number of incident occurrences.	application for compliance certification to hold project proponent accountable
Environmental and Social Impact Assessments	• A MNRE representative asked whether or not the consultant would be subject to a 'no objection' process from the Authority.	• EEA responded that unfortunately this was still a matter on the table, although not in place yet, such measures are coming in place where consultants will be required to be professionally registered for instance.	• EEC processes (aligned with World Bank requirements) will be used to procure and appoint a suitably qualified consultant.	• EEC shall obtain clearance from the World Bank and EEA
Environmental and Social Impact Assessments	• It was noted that the Environment Authority did not touch much on resettlement issues, hence requested that they (EEA) review the RPF that has been drafted by EEC for this project and disclosed on the website. This would ensure that the document and the systematic steps noted were aligned to National requirements and what has been done by previous projects. This would be necessary because, once the WB fully accepts the project's	• The Authority will review the document. • The Authority suggested that as a preventative mechanism (i.e. to prevent any compensation conflicts), they (EEA) also conduct an inspection of PAPs once these have been identified. By having the Authority present for such negotiations and verification processes, it is envisioned that the project	• Adequate and fair measures need to be implemented for the project. • For evaluations, National legislations will guide the project.	• EEC will benchmark with previous projects approved. • EEC will do a third-party audit before construction works begin in order to verify payments to PAPs have been completed.

Consultation Topic (s)	Issues Raised by Stakeholder(s)	Response (s) Given	Agreement(s) Reached	Action (s) Agreed
	RPF it would be difficult to make changes to the document.	would have collected enough evidence to prevent resettlement and compensation issues in future.		
Communicable diseases, Labour Influx and Gender Based Violence, child abuse issues	• NERCHA explained that there's a rise of new HIV infections in the Shiselweni region and this would have to be managed adequately by the Ministry of Health in collaboration with the relevant NGOs • It was highlighted that the project doesn't want to only focus on communicable diseases or gender-based violence but also the issue of labour influx in the area (child labour etc.) • Although NERCHA agreed to the role they had to play within the project, they felt that the project lacked demographic information on the region. Hence requested for a pre-mission / pre-survey for the region and project area followed by a project report that would guide steps to be taken for the project to be adequately managed.	• The Ministry of Health highlighted that the Ministry is made up of a lot of Head of Departments that look into the different matters highlighted by the project and has decentralized their responsibilities per region. He stated that what has been noted by EEC covers what the Ministry does. • The Ministry shed light that there are committees/ structures that encompass NGO involvement (i.e. NGOs are part of the teams) and meet every month. It was mentioned that NGOs are an extended arm of the Ministry that implement key community based health care activities.	• Through their different structures CANGO have NGOs that work on gender issues and other social issues (e.g. GENDER LINKS) and will share about this project to the Shiselweni wing. • They are more than happy to link EEC to these NGOs and people representing the DPMs office.	• Through their different structures CANGO have NGOs that work on gender issues and other social issues (e.g. GENDER LINKS) and will share about this project to the Shiselweni wing. • They are more than happy to link EEC to these NGOs and people representing

Muzi, Gcina, 4 others for SA Cycle Tour

BY ABSOMOND NOTMA

MBABANE – Eswatini Cycling Association (ECA) has selected a strong-looking squad to represent the country in the four-stage Tour de Limpopo.

The event will be staged in Polokwane, which is situated in South Africa's Limpopo Province. It takes centre stage between May 15 and 18 this year. The selected cyclists will endure a course of over 400km over the four days. Members of Team Eswatini include Gcina Banda and Sihle Dlamini of Dig Deep, as well as Similo Nyoni and Muzi Shabangu from MTN Khemani. Others are Zweli Zulu and Sihlangu Sikhondze of Newcom Wheels.

Team

Confirming the squad, ECA Executive Member and coach Mbusi Motsa said the development aspect was taken into consideration when selecting the team.

"The idea was to get representatives across the board, but we had challenges with one of the clubs, as no name was forwarded," said Motsa.

Meanwhile, this is an Africa Tour event and it is sanctioned by the International Cycling Union (UCI).

The race will start on Wednesday, May 15, and finish three days later.

The tour is dubbed as an event which showcases Limpopo as a premier cycling destination. It was launched last year and attracted 18 international professional teams.

According to information sourced from the event's official site, it will start at Bela Bela and head to Polokwane. It will end at Peter Mokaba Stadium in Polokwane.

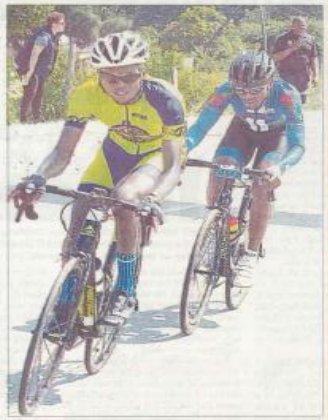
Teams will race for general classification as well as king of the mountain and sprinters jerseys. The best young cyclist and most aggressive rider will also make stops on the podium to claim prizes.

THE SQUAD:

Gcina Banda – Dig Deep
Sihle Dlamini – Dig Deep
Similo Nyoni – MTN Khemani
Muzi Shabangu – MTN Khemani
Zweli Zulu – Newcom Wheels
Sihlangu Sikhondze – Newcom Wheels

RACE INFORMATION:

May 14, 2019
Registration, team managers, meeting, welcome dinner – Bela Bela
May 15, 2019
Bela Bela to Polokwane – 172km
May 16, 2019
Polokwane to Tzaneen – 96km
May 17, 2019
Tzaneen to Mt Agatha – 101km
May 18, 2019
Tzaneen to Polokwane – 116km



Gcina Banda and Muzi Shabangu are in the squad to compete in Polokwane. (File pic)

Zondo scoops Refs Manager post

BY ABSOMOND NOTMA

MBABANE – The Eswatini Football Association (EFA) has finally succumbed to the pressure of appointing a referees manager.

There have been repeated calls, especially from the referees, for the appointment of this officer as per the norm in other countries. The post has been scooped by seasoned assistant referee Sifiso Zondo, who is forced to relinquish his refereeing duties with immediate effect. He is responsible for the administration and development of refereeing, among other duties, and reports to CEO Frederick Mngomezulu.

Zondo, who is also Referees Committee Secretary, made a presentation at the Hhohho Regional Football Association (HRFA) extraordinary meeting at Mbabane Central High School yesterday, where his appointment into the post became public knowledge.

Zondo's duties include assisting the referees committee and implementing decisions of the latter. He is also required to facilitate courses for both referees and match assessors.

The Eswatini Referees Association chairman confirmed learning about the appointment and expressed hope that it would help in hastening their operations.

"It is long overdue and we're grateful to the appointing authority," he said.

EFA Marketing and Communications Officer Muzi Radebe confirmed the appointment, saying it was made about a month ago.

Meanwhile, the Referees Committee is now being chaired by Thulani 'Little Known' Mavuso. The latter was elected an EFA executive member late last year to step into the shoes of the late Phillip 'Big Daddy' Dlamini.

Umhlambanyatsi for SABOLESWA Games

BY NTOKOZO MAGONGO

MBABANE – Umhlambanyatsi Social team will play against the best during the inaugural SABOLESWA Games billed for Rustenburg, South Africa.

The games will be played on Saturday by four teams from the four Southern Africa countries being Eswatini, Botswana, Lesotho and South Africa. Umhlambanyatsi Spokesperson Chucky Gule confirmed yesterday that they team would leave on Friday and head to the games.

"We have been playing international friendly for a long time and we sat down and came up with the plan to host this tournament. The tournament will be hosted by every country, participating twice a year with South Africa being the first to host," he said. Gule said the country would also do host the game in the future.

"We are a club that dreams of socialising with other people and it has worked well for us. We are driven by the love football. The team is confident that it will play well and win the tournament," he said.

The National U-13s that won a gold medal during the tournament played in Durban, South Africa. (Courtesy pic)

National U-13, 15 teams win gold

BY NTOKOZO MAGONGO

MBABANE – The country's national Under-13 and 15 squads were sensational in the football tournament hosted by the Durban Central Football Association.

They brought home gold medals while the Under-17s and 20s crashed out in the semi-finals of the tournament. Eswatini Football Association (EFA) Marketing and Development Officer Muzi Radebe said this was a great achievement by all the teams.

"The four junior men's national teams that went to compete in a football tournament over the Easter holidays in the Durban, Republic of South Africa, have safely returned home.

Champions

The Under-13 and Under-15 nation teams were crowned champions in their respective age categories, while the Under-17 and Under-20 national teams were eliminated in the semi-finals stage of their respective age categories.

These matches were played in a round-robin format with the top two teams qualifying for the knockout stage," he said.

The Under-13 squad was led by coach Bongani Makhanya while Sifiso 'Haiso' Dlamini led the Under-15 squad.

THE FULL RESULTS:

Under 13
Round-robin:
Eswatini 4 – 0 M. City
Eswatini 3 – 0 Juventus
Eswatini 7 – 0 Alfa Athly
Semi-final:
Eswatini 1 – 0 M.Classic
Finals:
Eswatini 0 – 0 Stella
(Eswatini won 4-2 on penalties)

Under 15
Round-robin:
Eswatini 5 – 0 Juventus
Eswatini 0 – 3 Magic
Eswatini 6 – 0 Tot Magic
Semi-finals:
Eswatini 2 – 1 Stella
Final:
Eswatini 1 – 1 Magic Stars
(Eswatini won 5-4 on penalties)

Under-17
Round-robin:
Eswatini 6 – 0 Juventus
Eswatini 1 – 0 Magic
Eswatini 5 – 0 Tot Magic
Semi-finals:
Eswatini 0 – 1 Addington
Under-20
Round-robin:
Eswatini 3 – 1 D. Hotspur
Eswatini 1 – 0 Juventus
Semi-final:
Eswatini 2 – 2 Maryville
(Eswatini lost 7-8 on penalties)