ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN FOR PROPOSED KIPEVU-MBARAKI 132KV TRANSMISION LINE AND ASSOCIATED MBARAKI 132/33KV MBARAKI SUBSTATION

Take off:

Latitude: 4⁰1'55.63S
Longitude: 39⁰ 37'57.79E

TERMINAL:

Latitude: 4⁰3'57.15S
Longitude: 39⁰ 39'30.77E

SEPTEMBER **2018**

Project Client:

Kenya Power and Lighting Company (KPLC)

Project Financial:

French Development Agencies (AFD)

Environmental & Social Management Plan

1.1 Project Information

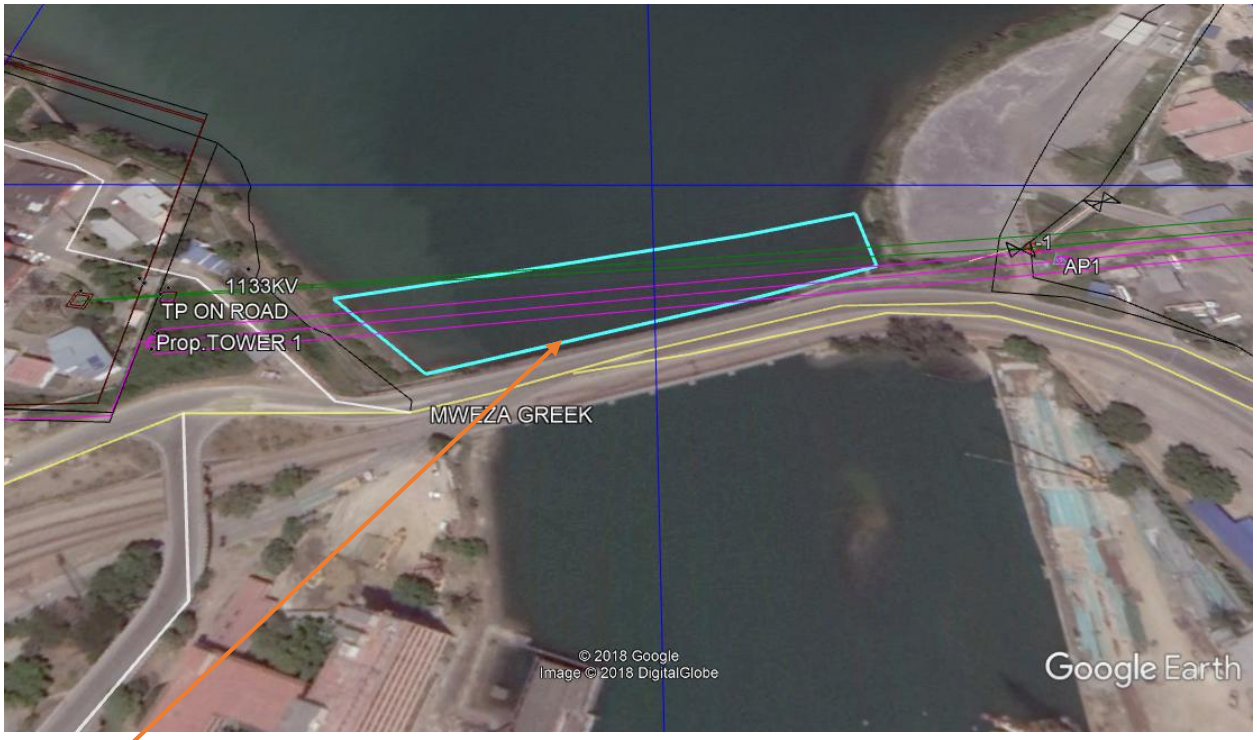
Kenya Power and Lighting Company (KPLC) through the assistance of French Development Agencies (AFD) plans to construct, commission and operate a 6.5 Kilometers, 132kV power transmission line and associated 132/33kv substation in Mombasa sub county Mombasa county. This is in response to an increase in demand for power and the need to expand electricity infrastructure. Power outages are common occurrence especially in Mombasa city and its surrounding environments. The construction of the proposed transmission line and associated 132/33kv substation will result in reliable and quality power supply for the area and its environs. Since the proposed transmission line and substation will impact the environment both positively and negatively. This Environmental and Social Management Plan (ESMP) has been prepared to guide this project implementation.

1.2 Project location and Route

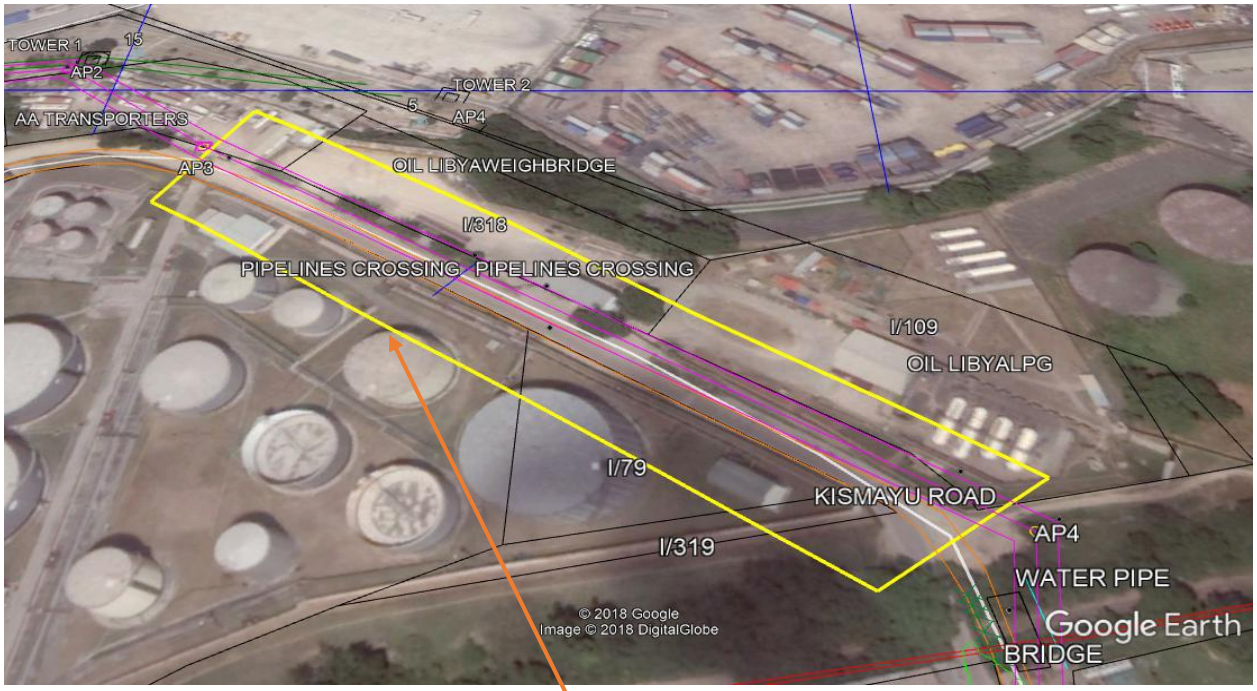
The line route runs from the existing Kipevu 132 kV Substation situated at the Kipevu area, to the proposed Mbaraki 132/33 kV Substation at Mbaraki KPLC depot in Mombasa Island. The proposed project is located within the Island of Mombasa County in Mvita Sub-County. The proposed project traverses two different locations starting at Kipevu in Railways Location and terminating at Mbaraki in Ganjoni Location.

The proposed transmission line route will start at Kenya power Kipevu substation. The line will be transmitted using an underground cable across KenGen generating station for about 800 meters to the Total fuel yard where it will be evacuated using a lattice structure. The line then crosses the ocean and over Kenya Ports Authority Engineering Workshop to another lattice structure to be constructed at the AA transporters yard. The Line is dropped down the structure then moves underground through AA Transporters garage yard to Kismayu Road; then to Makande Road and bends to Shimanzi road ending at angle point 8 which is the edge of VIVO Energy premises. The underground construction of the transmission line from AP2 to AP8 covers a total of 1.2km. The transmission line then runs overhead from AP8 through the remaining half of Shimanzi Road and angles to Beira Road bridge where it takes the railway line reserve passing next to Grain conveyors silos and KPA restaurant. It crosses Moi Avenue to the Railway Reserve for a long distance then through Tanga Road and angles at the fence of the existing 33/11kV KPLC substation. The line then runs along Tanga Road reserve and terminates at the proposed Mbaraki 132/33Kv Substation.

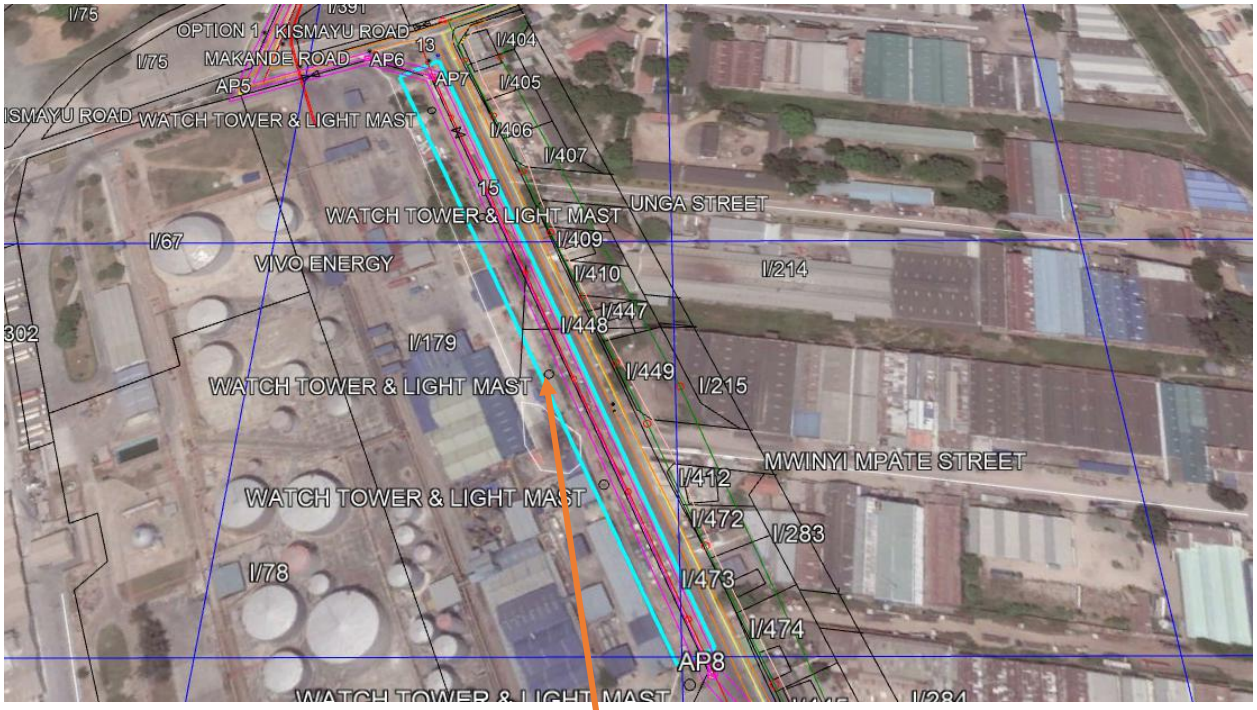
Notable establishments along the route of traverse include oil Libya way bridge, oil Libya LPG, EATL, mosques, Kenya railway dispensary, Kenya railways quarters, Mitchel cots, Siginon freights and logistics warehouse, Grain conveyers and Silos, slum dwellings on the Railway reserve, garages, roads small scale business premises railway lines and other public amenities.
Some of the critical environmental and social stakes of the project are as shown as per the screen shoots as shown below. The project map showing them will come as an attachment.



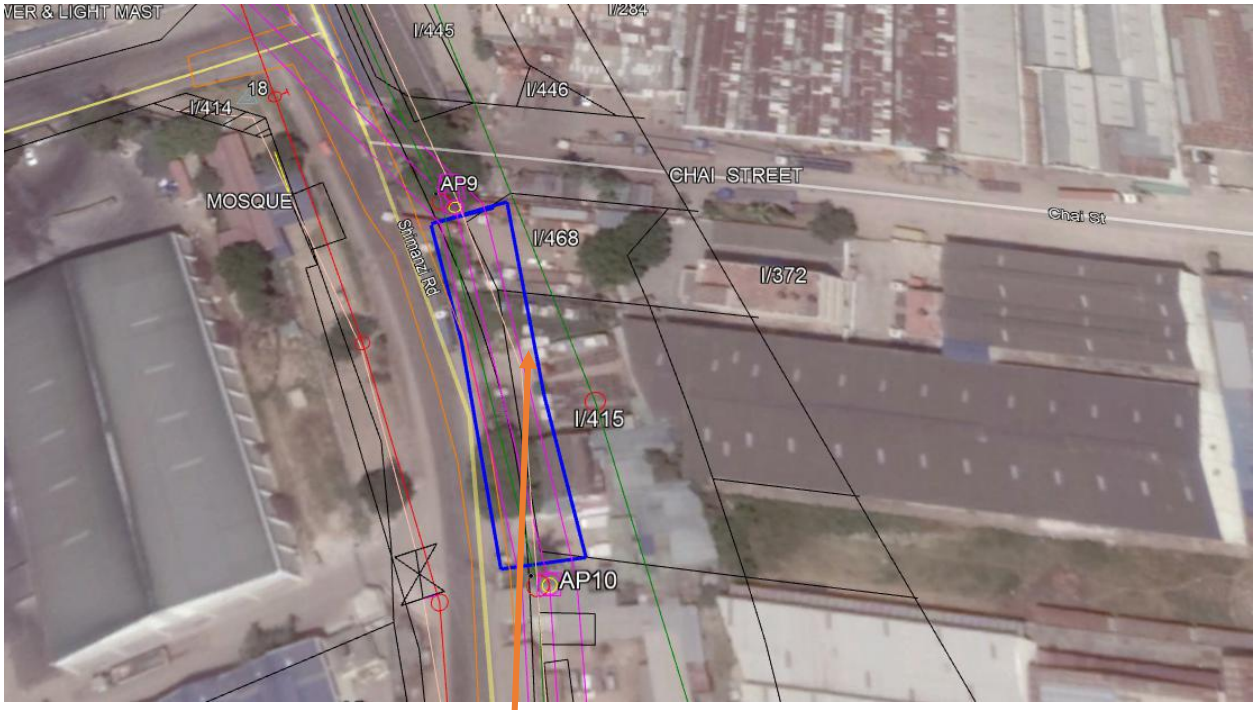
Powerline crossing the sea



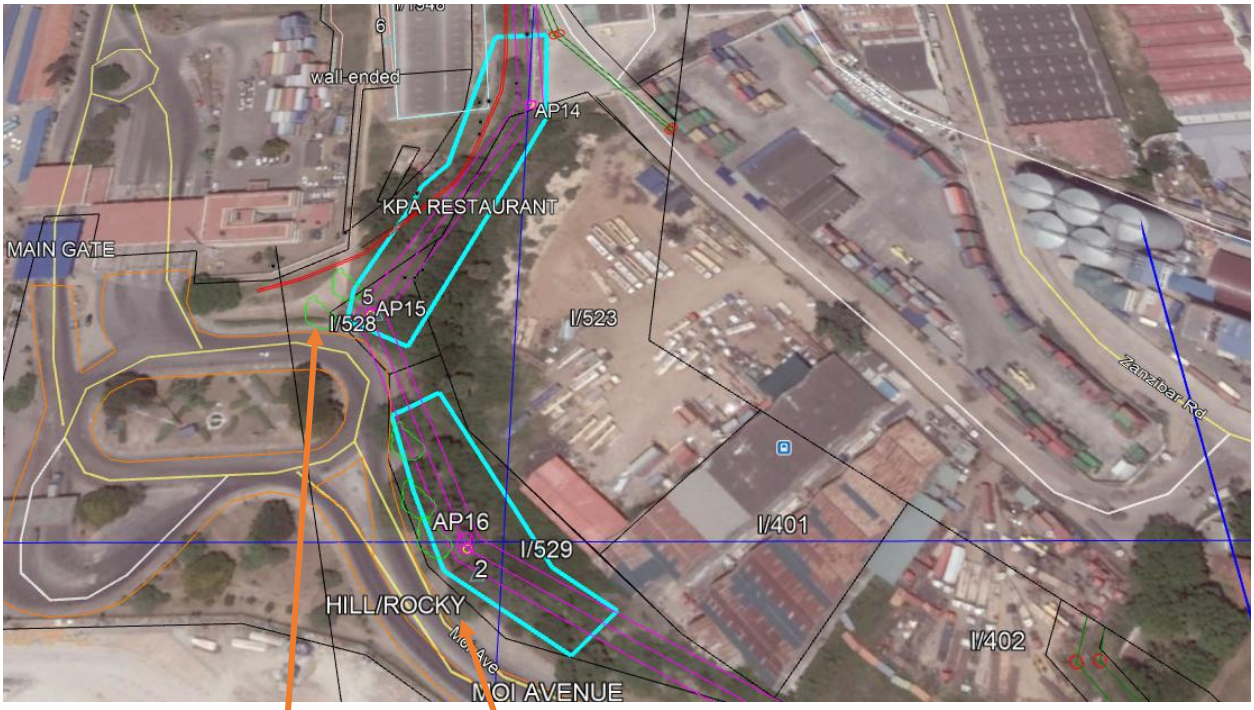
Oil Libya LPG tanks area



Section along Vivo land



Section within Shimanzi Road with temporary structures



Section showing section route near KPA with some trees

Section with temporary structures in Mbaraki railway reserve

1.3 Environmental and Social Management Plan

Environmental and Social Management Plan (ESMP) for this project projects provides a logical framework within which identified negative environmental and socio–economic impacts can be mitigated and monitored. In addition, the ESMP assigns responsibilities of actions to various actors and provides a timeframe within which mitigation measures and monitoring can be done. This ESMP is specifically applicable to the proposed transmission line and associated 132/33kv substation project. The ESMP covers information on the management and/or mitigation measures that will be taken into consideration to address impacts in respect of the following project phases: design, construction, operation and decommissioning. It will be of critical importance during the implementation of the proposed project whose funding is expected from development partners to maintain the highest level of coordination from the different departments concerned spearheaded by the Infrastructure Development Division. The Safety Health and Environment department will ensure that this ESMP is implemented and monitored to ensure compliance with relevant legal framework in Kenya and international standards especially the World Bank Safeguard Policies.

1.4 Objectives of the ESMP

The main aim of the ESMP is to ensure that the project complies with applicable national environmental and social legal requirements and the donors especially the (WB) environmental and social safeguard policies. Further, the ESMP aims at identifying the program's environmental and socio-economic benefits of the project as well as identify the potential negative environmental and socio-economic impacts. To mitigate the negative impacts and enhance projects benefits the ESMP describes measures that will be taken to prevent, minimize, mitigate and or compensate for adverse environmental and social impacts.

1.5 Legal and Regulatory Framework

Kenya has over 77statutes, which relate to environmental concerns. Most of these statutes are sector specific, covering issues such as land use, occupational health and safety, water quality, wildlife, public health; soil erosion, air quality etc. Previously, environmental management activities were implemented through a variety of instruments such as policy statements, permits and licenses and sectorial laws.

There was however need for stronger enforcement machinery to achieve better standards in environmental management. The enactment of the environmental Management and Coordination Act in 1999 provided for the establishment of an appropriate legal and institutional framework for the management and protection of the environment. Laws of particular concern in this project are:

- The environmental Management and Co-ordination Act, (Cap 387)
- The Environmental Management and Co-ordination (Amendment) Act, 2015
- Public Health Act (Cap. 242)
- Land Planning Act (Cap. 303)
- Occupiers Liability Act (Cap. 34)
- The Radiation Protection Act, Cap 243
- The Public Roads and Roads of Access Act
- Land in the Kenyan Constitution 2010

- Physical Planning Act, 1996
- Water Act, 2002
- Energy Act of 2006
- The Standards Act Cap 496
- County Government Act, 2012
- Penal Code Act (Cap.63)
- The wildlife conservation and Management Act, Cap 376
- Occupational Safety and Health Act, 2007
- The Forest Act, 2005
- Work Injury and Benefits Act, 2007
- The Land Act 2012
- Land Registration Act 2012
- The National Land Commission Act 2012
- The Civil Aviation Act Cap 394
- World Bank /IFC Environment and Social Safeguards
- Sessional Paper No. 6 of 1999 on Environment and Development
- The Agriculture, Fisheries and Food Authority Act 2013
- National Museums and Heritage Act, 2006
- The Traffic Act Chapter 403

1.6 Consultations

Communities and stakeholders were engaged to help identify and discuss environmental and social impacts anticipated. Stakeholders were identified, and consultative meetings held. Additional consultations will be carried out prior to the commencement of the construction works. At that time additional consultations will be carried out which will target the donor agencies, relevant government institutions, county government of Mombasa, private companies, local and international NGOs, CSOs, CBOs, religious groups, learning institutions, business communities among other locally based stakeholders. The consultative meetings will aim to develop a social inclusion strategy for community mobilization, sensitization and education aimed at ensuring effective participation.

1.7 MAIN ENVIRONMENTAL AND SOCIAL IMPACTS

The main activities considered under this Environmental and Social Management Plan are:

- Construction phase: site installation, topographic survey, layering, beaconing and picketing clearing of the right-of-way, foundation excavation, concreting, transport of equipment and materials, installation of beams and line conductors
- Operating phase: commissioning activity and line operation and maintenance

1.7.1 Positive Impacts

1.7.1.1 Construction Phase

Impact on the Socio-economic Environment: Recruitment of local labour and development of small businesses: the companies in charge of the works will recruit skilled and unskilled labour, while the presence of a concentration of workers will be a windfall for small local businesses generally in the hands of women.

1.7.1.2 Operating Phase

Strengthening and improving access to electricity in Mombasa City and its surrounding environment: The tangible impact will be an approximately 90% reduction of interruptions in electricity supply caused by the current defective distribution networks, and better access to electricity for Mombasa and its surrounding environment population.

Improvement of business productivity, socio-economic conditions of households and women: Economic recovery of Mombasa City, job creation and improvement in the living conditions of households, access to social infrastructure (schools, hospitals, cultural spaces, etc.) and increase in urban security. The project will benefit women in many ways, particularly in job creation, small production and processing units, trade development and improved access to health centres and education.

Reduction of greenhouse gas (GHG) emissions: The project will transmit electricity hence reducing the volume of fuel consumed in the area especially in cooking and righting since it will minimize blackouts in the area hence reduction of greenhouse gas production

1.7.2 Negative Impacts

Construction Phase Impacts on the Biophysical Environment: Impacts on soil structure - Soil erosion is the most important negative environmental impact of the works to be undertaken. The installation of transformers at the set down substations requires earthworks, excavation and levelling with heavy machinery. Earthworks and excavation for the installation of the 132 kV line monopoles and trench digging to lay the 132 kV underground lines could lead to soil alteration and loss of soil integrity. This impact can be more severe during the rainy season, which is characterized by strong winds, particularly on sloping areas. Use of sand or gravel from quarries already in operation, with the risk of deterioration of quarries if they are not restored.

Soil and surface water pollution: Risk of soil and surface water contamination caused by possible hydrocarbon leaks during work requiring the use of heavy machinery. Risk of spills and leaks of di-electric oils from transformers. Liquid or solid waste from the construction site

Dust production and air pollution: earthworks and ground levelling, and the movement of vehicles and heavy machinery transporting various materials could lead to an increase in local concentrations of fine particles in the atmosphere and the emission of toxic exhaust gases.

Felling of isolated trees: The construction of the 132-kV line both overhead and underground will require clearing of trees at certain areas for the installation of poles and the unwinding and pulling of cables.

1.7.2.1 Impacts on the Human Environment

- ***Obstruction of movement and disruption of traffic:*** during the works and especially during trenching and excavations for the installation of the proposed 132 kV underground lines, movement and ordinary traffic will be disrupted by the passage of numerous construction vehicles; the affected roads might not be accessible during the works.
- ***Inconveniences caused by noise and nuisance:*** nuisances to the human environment will stem from the organization of works. Construction works, and the movement of trucks and heavy machinery can increase noise level, above the 45-dBA limit considered as harmful in residential areas.

1.7.2.2 Impacts on the safety and health of workers and the population

- Accidents can occur during construction phases if people's access to construction sites is not monitored, during machine use or through falls into open trenches. Traffic accidents may rise, due to increase in vehicular traffic and heavy machinery to and from the construction site.
- The arrival on the site of workers from elsewhere and new lifestyles, including sex and dating, can expose the population to transmission of STIs, HIV-AIDS and other communicable diseases.
- The installation of lines can expose workers to electro-mechanical accidents (burns and electrocutions), and electromagnetic effects are to be feared in the presence of a conductor. For these reasons, personnel must be strongly recommended to wear personal protective equipment (PPE).
- The concentration of workers will require the provision of sufficient sanitary facilities to limit the risk of transmission of waterborne diseases to workers and the neighbouring population

1.8 Relocation

The project will cause population displacement or expropriation since the project facilities will be established along roads and railway reserves. There are people who have occupied those reserves to do business and residential hence the proposed project will displace them. On the proposed 132 kV line right-of-way, a number of structures have been identified that could be affected, hence the project proponent will offer compensation for the structures, trees and crops to be affected for their removal from the proposed line's right-of-way. KPLC will undertake a detailed resettlement action plan to determine the structures/properties, trees and plants that will be affected by the proposed development and determine their replacement costs. All compensation should be made to the project affected person early enough before any construction works of the proposed 132 kV transmission line commences.

1.9 Responsibilities and Institutional Arrangements

There will be a capacity needs assessment undertaken to identify the strengths, weaknesses, opportunities and threats to the KPLC. Training tools and programs will be customized to match the capacity needs identified. Capacity building will be through training and participation in the project implementation process. There will also be sessions for technology transfer to the KPLC members of staff who will be charged with the responsibility of implementing future electricity transmission projects.

2.1 Environmental and Social Monitoring Programme

Monitoring aims to ensure that mitigation and enhancement measures are implemented to feed into the normal project reporting and evaluation of the project, which determine the success, failure and lessons learnt. This should be done regularly to ensure compliance with the ESMP as well as ensuring compliance with environmental standards and procedures including relevant Kenyan policies and legislations. The Project Implementation Unit (PIU) especially the SHE Department of KPLC will be response for the overall management of implementation of the ESMP. The PIU will work under the direct supervision of the implementing Agency (KPLC). The contractor(s) will be accountable for the implementation of the mitigation measures to the PIU (KPLC SHE Department) during the construction and initial operation phases. The cost of implementing the various mitigation measures described in the ESMP to ensure that Environmental and Social risks are managed effectively will be included in the overall budget of the contract between Kenya Power and the contractor. It will be entirely the contractor's responsibility to come up, at the time of preparing its offer, with costing of various mitigation measures to put in place for various impacts highlighted in this ESMP. It is also expected that the contractor must have designated trained personnel to monitor Environmental, Safety and Health matters during construction works, and report regularly to PIU. The contractor's personnel on Environmental, Safety and Health matters should be part of the project to provide advice on the implementation and monitoring of environmental and social measures and will be responsible for supervising and reviewing the works as regards environmental and social requirements, safety, and quality assurance systems and plan the supervision functions to ensure that works are implemented while protecting the social and environment aspects.

2.2 Implementation Schedule and Reporting

The project Implementing Agency (KPLC), the contractor in collaboration with the Ministry of Energy and community members will ensure compliance with the environmental and social monitoring aspects of the project. The SHE department of KPLC will monitor implementation of the mitigation measures. Reporting to the project donor will be done quarterly by KPLC SHE Department while the contractor will be doing monthly reporting monthly. KPLC SHE will be making regular site visitation to determine the level of implementation on environmental and social issues.

2.3 Responsibility

The pre-construction, construction, operation and decommissioning phases of the proposed Kipevu – Mbaraki 132 kV transmission line will be supervised by KPLC Project Engineer. However, several departments in KPLC will be involved throughout the project cycle in the implementation of the proposed line and they will be getting instruction from the Project Engineer. The contractor on the other side will be responsible on various issues during the pre-construction and construction phases of this proposed project.

TABLE 1: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR KIPEVU – MBARAKI 132 KV TRANSMISSION LINE

('Generic' measures applicable to the whole project)

Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
Construction works for the proposed line	Soil Erosion especially during the rainy and sunny season during excavations	• Apply soil erosion control measures such as levelling of the project excavated site to reduce run-off velocity and increase infiltration of storm water into the soil. • Ensuring that once the trench excavations have been done a cable is laid and covered and compacted immediately. • Site excavation works to be planned such that a section is completed and rehabilitated before another section begins.	Contractor	Project Construction phase
	Noise & vibration	• Compliance with the legal requirements for noise impact specified in the gazetted noise quality regulations. • Excavation equipment will have properly functioning silencers or mufflers • Implementation of Noise prevention program as stipulated in EMCA and OSHA subsidiary legislations for minimizing noise and vibration generation from construction activities • Notification of the neighbours about the construction schedule & activities, including blasting, should it be required • Noise generating activities that take place near residential or sensitive institutional receptors will be restricted to between 0800 and 1700hrs, which is defined as 'daytime' in the Kenyan noise regulations • Working at night will be permitted strictly where the noise would not be an inconvenience to residents and adherence to Kenyan noise regulations	Contractor	Project Construction phase
	Dust emissions especially during the sunny days	• Minimize excavation especially during extreme dry seasons. • Sprinkle water on excavated soil when necessary to reduce dust generation especially when covering the trenches. • Personal Protective equipment to be provided to employees and worn especially mouth mask	Contractor	Project Construction phase
	Worksite Safety, accidents	• Ensure compliance with the Occupational Safety and Health Act	Contractor	Project

Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
	and Health Hazards to employees	(OSHA) 2007 provisions. • Provision of all appropriate PPEs to the contractor's employees and ensure they are always worn while they are working. • Holding of tool box talks every morning before commencing working and they will be based on working safely. • Provide and place necessary and appropriate warning signs in various points that are risk. • Barricade with conspicuous warning tapes along the open trenches • Provision of the first aid kits on site with trained first aiders.		Construction phase
Energy Consumption	Increased energy consumption	• Monitor energy use during construction and set targets for reduction of energy use. • Plan well for transportation of materials to ensure that fossil fuels (diesel, transformer oil, petrol) are not consumed in excessive amounts • Ensure electrical equipment, appliances and lights are switched off when not being used	Contractor	Project Construction phase
Excavations of foundations	Monopole foundations excavations	• Dust emissions because of excavations during the dry sessions • Soil erosion during the rainy seasons • Come up with traffic management plan • Use of traffic controlling marshals • Barricade the excavated foundations with warning tapes	Contractor	Project Construction phase
Fire Hazards	Fire outbreaks	• During construction, liaise with terminal owners to develop an elaborate fire risk management program • Contractor shall take all necessary precautions to prevent fires caused either deliberately or accidentally during construction process. • Adopt concrete foundations with anchor bolt designs to prevent possibilities of monopoles falling • Install safety guard nets under the line to arrest the line in case of possible snap • Contractor shall prepare a fire prevention and fire emergency plan as part of the Environmental Plan to be submitted to KPLC • The Contractor shall provide adequate firefighting appliances at	Contractor	Project Construction phase

Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
		specified localities on the worksite to meet any emergency resulting from ignition of a fire. • No burning of any litter/ cleared vegetation on site • All working areas should be no smoking zones		
Vehicle traffic flow	Increased flow of construction vehicles	• Traffic management plan • Regularize the supply of building materials • Having traffic marshals in place to control traffic	Contractor	Project Construction phase
Water Consumption	Increased Water Demand especially during civil works	• Install water conserving taps that turn-off automatically when water is not being used. • Regular sensitization of the construction workers to conserve water • Ensure taps are not running when not in use • Ensure prompt repair of broken and loose taps	Contractor	Project Construction phase
Population Increase	Health concerns	• Increase of small scale business especially food kiosks due to influx of construction staff members. • The contractor to liaise with the public health office to license the food kiosk owners. • The contractor to provide clean drinking water to its members of staff. • Provision of adequate and mobile rest rooms to members of staff. • Regular sentization and creation of awareness among the staff on HIV/AIDS and other sexually transmitted diseases • Provision of condoms	Contractor	Project Construction phase
Solid waste generation and ensure efficient solid waste management	Increased solid waste generation	• Use of an integrated solid waste management system i.e. through a hierarchy of options: 1. Reduction at source 2. Recycling 3. Reusing 4. Incineration 5. Sanitary land filling. • Through accurate estimation of the dimensions and quantities of materials required. • Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time • Provide facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or	Contractor	Project Construction phase

Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
		exposure to the elements • Use building materials that have minimal or no packaging to avoid the generation of excessive packaging waste • Reuse packaging materials such as cartons, cement bags, empty metal and plastic containers to reduce waste at site • Dispose waste more responsibly by contracting a registered NEMA waste handler who will dispose the wastes at designated sites or landfills only. • Waste collection bins to be provided at designated points		
Civil and structural works materials	Sourcing of Construction materials	• Source building materials from local suppliers who use environmentally friendly processes in their operations. • Ensure accurate budgeting and estimation of actual construction material requirements to ensure that the least amount of material necessary is ordered. • Ensure that damage or loss of materials at the construction site is kept minimal through proper storage. • Use at least 5%-10% recycled refurbished or salvaged materials to reduce the use of raw materials and divert material from landfills.	Contractor	Project Construction phase
Air pollution	Exhaust emission	• Vehicle idling time shall be minimized • Alternatively, fueled construction equipment shall be used where feasible equipment shall be properly maintained • Sensitize truck drivers to avoid unnecessary running engines of stationary vehicles and to switch off engines whenever possible	Contractor	Project Construction phase
Minimize release of liquid effluent	Generation of wastewater	• Provide means for handling sewage generated at the construction site-use of mobile toilet • Monitor effluent quality regularly to ensure that the stipulated discharge rules and standards are not violated	Contractor	Project Construction phase
Minimize Oil Spills	Oil spills Hazards	• Care must be exercised not to spill any fossil fuels • No maintenance of vehicles or equipment on site • Construction vehicles must be maintained in good state and proper	Contractor	Project Construction phase

Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
		servicing to ensure no oils are likely to spill • Any contaminated soil shall be scooped and disposed off appropriately. • In case of spillage the contractor should isolate the source of oil spill and contain the spillage using sandbags, sawdust, absorbent materials		
Increase of traffic	Traffic impacts on infrastructure	• All vehicles coming to the construction site should carry the recommended weight. • All drivers coming to the site must observe traffic rules and exercise courtesy to other road users. • Employ a road safety officer to oversee implementation of the traffic controls	Contractor	Project Construction phase
EMFs		• Routing or siting Transmission line is so as to avoid or minimize exposure to the public and where it is unavoidable all resettlements within the wayleave will be relocated. • Installation of transmission lines 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 expected to be above the recommended exposure limits **(International Commission on Non Ionizing Radiation Protection ICNIRP 2010** guidelines) application of engineering techniques should be considered to reduce the EMF produced by power lines. 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 **Where each/any of these technics is employed, evidence of adequacy in design proposal should be submitted with the bid document (Electric and Magnetic Field calculations).**	KPLC Contractor	Preconstruction

Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
Social Vice/Impacts	Sexual Exploitation and Abuse (SEA)/ Gender Based Violence (GBV)	• Strengthen operational processes for projects deemed High-Risk of SEA/GBV, including mandating Codes of Conduct for civil works contractors with prohibitions against SEA/GBV specifically against sexual activity with anyone under the age of 18. • Develop a clear internal Reporting and Response Protocol to guide project staff in case of such incidents. • Build and improve project staff capacity to address risks of SEA/GBV through the development of guidance, training and continuous provision of learning activities and materials • Ensure Grievances are reported to the environment and safety officer who advises on redress mechanism. • Regular sensitization and training for all project workers on human rights, gender and GBV and its consequences • Regular meeting organized among project workers in terms of single sex, age segmented and other demographically sensitive into focus group discussions to illicit perceptions of violence	Contractor	Project Construction phase

TABLE 2: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR KIPEVU – MBARAKI 132 KV TRANSMISSION LINE

(Measures applicable on specific sections)

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
Take off tower – AP1 – AP 2 Overhead	• Erecting of monopoles • Stringing of overhead conductors	Risk of motorized trucks knocking the monopoles along the road reserves	• Construction of concrete barriers around the monopole towers • Monopoles will be at the far edge of the road reserve	Contractor	Project Construction phase
	Kenya Ports Authority buildings (offices, parking lot and stores) in the way leave trace	Demolishing and relocation of buildings along the way leave trace	• Liaise with KPA management to relocate all buildings within the port neighborhood way leave trace. • Development of Resettlement action plan (RAP) to determine the mode of compensation • Maintenance of the way leave • Consult with KPA management of the possibility of relocating the buildings away from the way leave trace.	KPLC	Project Pre-Construction phases
	Safety concern of hanging conductors especially take off tower - AP1 - AP2 due to long spans	Hanging of the overhead conductors	• The monopoles to be used will be over 27 meters tall hence creating a safe working clearance in the ground. • Introduction of the safeguard nets below the conductors to enhance the safety where necessary	Contractor	Project Construction phase
AP2 – AP8 (underground)	Business structures Temporal Displacement of vehicles in the garage	Loss of livelihoods from business structures and activities	• Liaise with the business owners and demolish structures that falls within the way leave. • Development of Resettlement action plan (RAP) to determine the adequate mode of compensation • Maintenance of the way leave	KPLC	Project Pre-Construction phases
		Temporal relocation of trucks in garage	• Relocation of the trucks in the garage to create space for trench excavation.	KPLC	Project Pre-Construction phase
		Demolishing part of the garage	• Negotiate with the management of AA Transporter management on how the exercise will be	KPLC	Project Pre-Construction phases

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
		perimeter walls and other structures within the premise	undertaken • Provision of 24/7 security personnel on site for the demolished part of the wall • Repair and reinforce the sections of the perimeter walls that will be demolished • Demolished materials of the perimeter wall will be recovered and reused while repairing the wall • Development of Resettlement action plan (RAP) to determine the mode of compensation		
	Excavations of the underground cables trenches of around 1.2 kms metres	Soil Erosion especially during the rainy season	• Apply soil erosion control measures such as levelling of the excavated site to reduce run-off velocity and increase infiltration of storm water into the soil. • Ensuring that once the trench excavations have been done a cable is laid and covered immediately. • Site excavation works to be planned such that a section is completed and rehabilitated before another section begins.	Contractor	Project Construction phase
	Road side excavation	Congestion of traffic	• Come up with traffic management plan during the construction phase • Use of traffic controlling marshals • Construction works to be undertaken at night hours when the road is not that busy. • Introduction of traffic signs • Liaise with the Traffic Police Department and the county government in Mombasa on how to control traffic	Contractor	Project Construction phase
		Road side parking of the oil trucks	• Liaise with various oil terminals on how and when oil transporters will be collecting the oil. • Liaise with the Traffic Police Department and the county		

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			government in Mombasa to suspend road side parking of the trucks especially during the construction phase		
	Vegetation clearance	Indigenous trees and shrubs clearing	• Liaise with KFS, County government of Mombasa, NEMA and other relevant government departments on getting the clearance of cutting down the existing trees along the road where the project will be implemented. • Liaise and partner with KFS, County government of Mombasa, NEMA and other relevant government departments to plant trees in government land within the county of Mombasa. • The cutting of trees along the road side will be selectively done (where necessary)	KPLC KPLC Contractor	Project Construction phase
	Existence oil companies' facilities	Oil Libya company existing water and foam pipes and cables	• Coexistence in harmony with other underground already existing facilities along the road. • Liaise with owners of other existing facilities to provide guidance on how to lay down the 132-kV cable. • Seek clearance and guidance from Oil Libya management before the construction starts • Regular inspection and Mantaince of the proposed transmission line	KPLC	Project Construction, operation and decommissioning phases
	Vivo energy premises	Associated risks due to closeness of oil products (Vivo Energy)	• Undergrounding of 132 kV transmission line • Mantaince of 3 metres horizontal clearance Vivo structures • Regular Mantaince of the proposed transmission line	KPLC	Project Construction, operation and decommissioning phases
AP8-AP11 (Shimanzi Road)	Vegetation clearance	Indigenous trees clearing	• Liaise with KFS, County government of Mombasa, NEMA and other relevant government departments on getting the clearance of cutting down the	KPLC KPLC	Project Pre Construction and Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			existing trees along the road where the project will be implemented. • Liaise and partner with KFS, County government of Mombasa, NEMA and other relevant government departments to plant trees in government land within the county of Mombasa. • The cutting of trees along the road side will be selectively done (where necessary)	Contractor	
	Safety concern of hanging conductors	Hanging of the overhead conductors	• The monopoles to be used will be over 27 meters tall hence creating a safe working clearance in the ground. • Introduction of the safeguard net below the conductors to enhance the safety where necessary	Contractor	Project Construction phase
	Business structures	Loss of livelihoods from business structures and activities	• Liaise with the business owners and demolish structures that falls within the way leave. • Development of Resettlement action plan (RAP) to determine the adequate mode of compensation • Maintenance of the way leave	KPLC	Project Pre-Construction phases
	Safety of erected monopole towers	Risk of motorized trucks knocking the monopoles along the road reserves	• Construction of concreate barriers around the monopole towers • Monopoles will be at the far edge of the road reserve	Contractor	Project Construction phase
	Use of motorized machines	Road side parking of the motorized and non-motorized trucks	• Liaise with various oil terminals on how and when oil transporters will be collecting the oil. • Liaise with the Traffic Police Department and the county government in Mombasa to suspend road side parking of the trucks especially during the construction phase	Contractor	Project Construction phase
		Use of cranes and other	• Sensitize construction vehicle drivers and machinery operators	Contractor	Project Construction

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
		motorized equipment	to switch off engines of vehicles or machinery not being used. • Sensitize construction drivers to avoid running of vehicle engines or hooting • Ensure that construction machineries are kept in good condition to reduce noise generation • Ensure that all generators and heavy-duty equipment are insulated or placed in enclosures (containers) to minimize ambient noise levels.		phase
	Two 33 kV Lines	Demolition of the two 33 kV lines	• Members of community will be notified of the expected power blackout that will be experienced within a day. • KPLC customers who are served with the two lines shall be provided with power supply from other alternatives sources • The recovered concrete poles along the two lines will be reused in another project • The recovered conductors will be used in reconstructing the two 33 kV lines below the 132-kV line using the same monopoles.	Contractor	Project Construction phase
AP11-AP12 Grain Bulk Handlers along Beira Road	Two 33 kV Lines	Demolition of the two 33 kV lines	• Members of community will be notified of the expected power blackout that will be experienced within a day. • KPLC customers who are served with the two lines shall be provided with power supply from other alternatives sources • The recovered concrete poles along the two lines will be reused in another project • The recovered conductors will be used in reconstructing the two 33 kV lines below the 132-kV line	Contractor	Project Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			using the same monopoles.		
	Safety concern of hanging conductors	Hanging of the overhead conductors	• The monopoles to be used will be over 27 meters tall hence creating a safe working clearance in the ground. • Introduction of the safeguard net below the conductors to enhance the safety where necessary	Contractor	Project Construction phase
	Safety of erected monopole towers	Risk of motorized trucks knocking the monopoles along the road reserves	• Construction of concrete barriers around the monopole towers • Monopoles will be at the far edge of the road reserve	Contractor	Project Construction phase
	Increase of Motorized vehicles/machines	Congestion of traffic	• Come up with traffic management plan • Use of traffic controlling marshals • Construction works to be undertaken at night hours when the road is not that busy. • Introduction of traffic signs in liaison with traffic police • Liaise with the Traffic Police Department and the county government in Mombasa on how to control traffic	Contractor	Project Construction phase
	Mono pole Erection and string of conductors	Demolition of Parking yard	• Liaise with Grain bulk handlers' management and demolish parking yard structure that is within the wayleave. • Development of Resettlement action plan (RAP) to determine the adequate mode of compensation • Maintenance of the wayleave	KPLC	Project Pre-Construction phases
	Mono pole Erection and string of conductors	Use of cranes and other motorized equipment	• Sensitize construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used. • Sensitize construction drivers to avoid running of vehicle engines or hooting • Ensure that construction machineries are kept in good	Contractor	Project Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			condition to reduce noise generation • Ensure that all generators and heavy-duty equipment are insulated or placed in enclosures (containers) to minimize ambient noise levels.		
	Working safety for conveyor belts	Overhead passing of the electricity power lines on Conveyor belts for Grain Bulk Handlers	• Coexistence in harmony with other already existing facilities along the wayleave trace. • Liaise with Grain Bulk Handlers management of other existing facilities to provide guidance on how to string the 132-kV cable. • Seek clearance and guidance from Grain Bulk Handlers management before the construction starts • Provision of safety guard net below the 132-kV line. • Use of monopoles that are 35 metres taller for having adequate working clearance	Contractor	Project Construction phase
	Two 33 kV Lines	Demolition of the two 33 kV lines	• Members of community will be notified of the expected power blackout that will be experienced within a day. • KPLC customers who are served with the two lines shall be provided with power supply from other alternatives sources • The recovered concrete poles along the two lines will be reused in another project • The recovered conductors will be used in reconstructing the two 33 kV lines below the 132-kV line using the same monopoles.	Contractor	Project Construction phase
	Safety concern of hanging conductors	Hanging of the overhead conductors	• The monopoles to be used will be over 27 meters tall hence creating a safe working clearance in the ground. • Introduction of the safeguard net	Contractor	Project Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			below the conductors to enhance the safety where necessary		
	Safety of erected monopole towers	Risk of motorized trucks knocking the monopoles along the road reserves	• Construction of concrete barriers around the monopole towers • Monopoles will be at the far edge of the road reserve	Contractor	Project Construction phase
	Increase of Motorized vehicles/machines	Congestion of traffic	• Come up with traffic management plan • Use of traffic controlling marshals • Construction works to be undertaken at night hours when the road is not that busy. • Introduction of traffic signs in liaison with traffic police • Liaise with the Traffic Police Department and the county government in Mombasa on how to control traffic	Contractor	Project Construction phase
AP12 -AP13		Use of cranes and other motorized equipment along World Food Programme (WFP)	• Sensitize construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used. • Sensitize construction drivers to avoid running of vehicle engines or hooting • Ensure that construction machineries are kept in good condition to reduce noise generation • Ensure that all generators and heavy-duty equipment are insulated or placed in enclosures (containers) to minimize ambient noise levels.	Contractor	Project Construction phase
AP13-AP17	Vegetation clearance	Indigenous trees and shrubs clearing	• Liaise with KFS, County government of Mombasa, NEMA and other relevant government departments on getting the clearance of cutting down the existing trees along the road where the project will be implemented.	KPLC KPLC	Project Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			• Liaise and partner with KFS, County government of Mombasa, NEMA and other relevant government departments to plant trees in government land within the county of Mombasa. • The cutting of trees along the road side will be selectively done (where necessary)	Contractor	
	Increase of Motorized vehicles/machines	Congestion of traffic	• Come up with traffic management plan during the construction phase • Use of traffic controlling marshals • Construction works to be undertaken at night hours when the road is not that busy. • Introduction of traffic signs • Liaise with the Traffic Police Department and the county government in Mombasa on how to control traffic	Contractor	Project Construction phase
		Use of cranes and other motorized equipment	• Sensitize construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used. • Sensitize construction drivers to avoid running of vehicle engines or hooting • Ensure that construction machineries are kept in good condition to reduce noise generation • Ensure that all generators and heavy-duty equipment are insulated or placed in enclosures (containers) to minimize ambient noise levels.	Contractor	Project Construction phase
	Safety of erected monopole towers	Risk of motorized trucks knocking the monopoles along the road reserves	• Construction of concrete barriers around the monopole towers • Monopoles will be at the far edge of the road reserve	Contractor	Project Construction phase
	Two 33 kV Lines	Demolition of	• Members of community will be	Contractor	Project

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
		the two 33 kV lines	notified of the expected power blackout that will be experienced within a day. • KPLC customers who are served with the two lines shall be provided with power supply from other alternatives sources • The recovered concrete poles along the two lines will be reused in another project • The recovered conductors will be used in reconstructing the two 33 kV lines below the 132-kV line using the same monopoles.		Construction phase
AP18-AP19	Vegetation clearance	Indigenous trees and shrubs clearing	• Liaise with KFS, County government of Mombasa, NEMA and other relevant government departments on getting the clearance of cutting down the existing trees along the road where the project will be implemented. • Liaise and partner with KFS, County government of Mombasa, NEMA and other relevant government departments to plant trees in government land within the county of Mombasa. • The cutting of trees along the road side will be selectively done (where necessary)	KPLC KPLC Contractor	Project Construction phase
	Safety concern of hanging conductors	Hanging of the overhead conductors	• The monopoles to be used will be over 27 meters tall hence creating a safe working clearance in the ground. • Introduction of the safeguard net below the conductors to enhance the safety where necessary	Contractor	Project Construction phase
	Two 33 kV Lines	Demolition of the two 33 kV lines	• Members of community will be notified of the expected power blackout that will be experienced within a day. • KPLC customers who are served	Contractor	Project Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			with the two lines shall be provided with power supply from other alternatives sources • The recovered concrete poles along the two lines will be reused in another project • The recovered conductors will be used in reconstructing the two 33 kV lines below the 132-kV line using the same monopoles.		
	Safety of erected monopole towers	Risk of motorized trucks knocking the monopoles along the road reserves	• Construction of concrete barriers around the monopole towers • Monopoles will be at the far edge of the road reserve	Contractor	Project Construction phase
	Business structures	Loss of livelihoods from business structures and activities	• Liaise with the business owners and demolish structures that falls within the wayleave. • Development of Resettlement action plan (RAP) to determine the adequate mode of compensation • Maintenance of the wayleave	KPLC	Project Pre-Construction and Construction phases
	Motorized vehicles	Parked trucks in a garage below the proposed route	• Liaise with the garage owner and discuss on the modality of relocating non-motorized vehicles being repaired.	Contractor	Project Construction phase
		Use of cranes and other motorized equipments	• Sensitize construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used. • Sensitize construction drivers to avoid running of vehicle engines or hooting • Ensure that construction machineries are kept in good condition to reduce noise generation • Ensure that all generators and heavy-duty equipment are insulated or placed in enclosures	Contractor	Project Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			(containers) to minimize ambient noise levels.		
A19-A24	Vegetation clearance	Indigenous trees and shrubs clearing	• Liaise with KFS, County government of Mombasa, NEMA and other relevant government departments on getting the clearance of cutting down the existing trees along the road where the project will be implemented. • Liaise and partner with KFS, County government of Mombasa, NEMA and other relevant government departments to plant trees in government land within the county of Mombasa. • The cutting of trees along the road side will be selectively done (where necessary)	KPLC KPLC Contractor	Project Construction phase
	Food Crops damage /clearing	Food Crops loss	• Undertake crop inventory • Development of Resettlement action plan (RAP) to determine the adequate mode of compensation for damaged crops • Maintenance of the wayleave	KPLC	Project Pre-Construction and Construction phases
	Safety concern of hanging conductors	Hanging of the overhead conductors	• The monopoles to be used will be over 27 meters tall hence creating a safe working clearance in the ground. • Introduction of the safeguard net below the conductors to enhance the safety where necessary	Contractor	Project Construction phase
	Safety of erected monopole towers	Risk of motorized trucks knocking the monopoles along the road reserves	• Construction of concrete barriers around the monopole towers • Monopoles will be at the far edge of the road reserve	Contractor	Project Construction phase
	Residential and Business structures	Loss of livelihoods from business structures and activities Loss of	• Liaise with the business structure owner and demolish it since the business structure is within the wayleave. • Liaise with the residential housing structure owners and	KPLC	Project Pre-Construction and Construction phases

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
		residential houses	demolish them since the housing structures are within the wayleave. • Development of Resettlement action plan (RAP) to determine the adequate mode of compensation • Maintenance of the wayleave		
	Two 33 kV Lines	Demolition of the two 33 kV lines	• Members of community will be notified of the expected power blackout that will be experienced within a day. • KPLC customers who are served with the two lines shall be provided with power supply from other alternatives sources • The recovered concrete poles along the two lines will be reused in another project • The recovered conductors will be used in reconstructing the two 33 kV lines below the 132-kV line using the same monopoles.	Contractor	Project Construction phase
A24-A26	Vegetation clearance	Indigenous mature trees clearing	• Liaise with KFS, County government of Mombasa, NEMA and other relevant government departments on getting the clearance of cutting down the existing trees along the road where the project will be implemented. • Liaise and partner with KFS, County government of Mombasa, NEMA and other relevant government departments to plant trees in government land within the county of Mombasa. • The cutting of trees along the road side will be selectively done (where necessary)	KPLC KPLC Contractor	Project Construction phase
	Business structures	Loss of livelihoods from business structures	• Liaise with the business structure owner and demolish it since the business structure is within the wayleave.	KPLC	Project Pre-Construction and Construction phases

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
		and activities	• Development of Resettlement action plan (RAP) to determine the adequate mode of compensation • Maintenance of the wayleave		
	Safety concern of hanging conductors	Hanging of the overhead conductors	• The monopoles to be used will be over 27 meters tall hence creating a safe working clearance in the ground. • Introduction of the safeguard net below the conductors to enhance the safety where necessary	Contractor	Project Construction phase
	Safety of erected monopole towers	Risk of motorized trucks knocking the monopoles along the road reserves	• Construction of concrete barriers around the monopole towers • Monopoles will be at the far edge of the road reserve	Contractor	Project Construction phase
	KPLC building in the wayleave trace	Demolishing of KPLC Mbaraki office extension and parking lot structure	• Demolish part of the office block that falls within the wayleave. • Development of Resettlement action plan (RAP) to determine the mode of compensation • Maintenance of the wayleave	KPLC	Project Pre-Construction and Construction phases
A26 – Terminal Point	Vegetation clearance	Clearing of Mature Indigenous and mango trees	• Liaise with KFS, County government of Mombasa, Ministry of Agriculture, NEMA and other relevant government departments on getting the clearance of cutting down the existing trees along the road where the project will be implemented. • Liaise and partner with KFS, County government of Mombasa, NEMA and other relevant government departments to plant trees in government land within the county of Mombasa. • The cutting of trees along the road side will be selectively done (where necessary)	KPLC KPLC Contractor	Project Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
	KPLC staff Residential houses	Loss of residential houses	• KPLC Admin. Department to reallocate the current KPLC staff members residing in these houses to other staff houses if any. • Maintenance of the wayleave	KPLC	Project Pre-Construction phase
	Demolition wastes	Wastes generated from demolition of staff houses	• To be used in leveling the substation site • Recover and reuse timbers, stones, iron sheets among other materials during the construction of the substation • Dispose waste more responsibly by contracting a registered NEMA waste handler who will dispose the wastes at designated sites or landfills only.	Contractor	Project Construction phase
	Electrical equipments	Unused of electrical materials and equipments	• Relocate all electrical equipments to another site within the premise and the stores • Any material which is absolute shall be disposed more responsibly by contracting a registered NEMA waste handler who will dispose the wastes at designated sites or landfills only.	KPLC	Project Pre-Construction phase
	Contaminated Soil Disposal from scrap transformers	Soil contamination from leaking transformers	• Soil analysis if any will be carried out before contractor goes to site to determine the extent of pollution and remediation • Scoop the contaminated soil if any within transformer storage yard and dispose it using NEMA approved facilities • Stockpiling of contaminated soils if any can only be conducted on a temporary basis while making arrangements for disposal or treatment. During this time, soils must be placed	KPLC	Project Pre-Construction phase

Angle Points	Anticipated Activity	Anticipated impact	Proposed Mitigation Measure	Party in charge of works	Time Frame
			within a secure, lined, and bermed area and kept covered at all times. • Once the soils are removed, they can be taken to a NEMA authorized facility for treatment or disposal.		

4.2 Environmental and Social Monitoring Plan (*ESMP*)

4.2.1 Monitoring

The proposed programmes and plans will be subjected to monitoring. Monitoring will have two elements: routine monitoring against standards or performance criteria; and periodic review or evaluation. Monitoring will often focus on the effectiveness and impact of the programme or plan as a whole.

During construction phase, the Proponent shall monitor the contractor's activities to verify that the management measures/procedures/specifications are implemented as contained in the EMP. Compliance will mean that the Contractor is fulfilling their contractual obligation.

During operation phase, the Proponent will monitor facility's operations to ensure compliance with management measures in the EMP and operation procedures. As part of this monitoring, the Proponent will undertake statutory initial environmental audit as required by the EIA/EA Regulations, 2003 and subsequent annul self-environmental audits.

4.2.2 Programme Monitoring

The Proponent shall regularly monitor programme implementation. The process will include the regular monitoring of:

- Erosion of soil resulting in the immediate surroundings of the facility caused by the presence of facility or impacting on structures associated with the facility
- Air quality and ambient emissions, including dust generated by construction activities
- Noise generation during construction, operation and decommissioning phases

4.2.3 Plan Monitoring

All of the management plans make provision for monitoring and evaluation. Special attention should be given to the monitoring arrangements relating to biophysical impacts, occupational health and safety, facility operational and emergency response.

During the construction phase of the project, the Contractor's HSE Officer shall report all environmental impacts as well as accidents and incidents to the Proponent's Environmental and Social Specialists/ Socio-Economist and Coast Region Safety Engineer respectively.

The reported impacts and incidents will be captured on a database to ascertain trends and track progress in the implementation of preventive and corrective actions, and benchmarking against other, similar operations.

Depending on the level of severity, accidents and incidents will be investigated by the Contractor's SHE section, with key input from the line management to ensure accountability.

During operation, the Proponent's SHE department will monitor the health and safety of personnel and contractors, in compliance with legislative requirements. Emergency incidents should be reported to the relevant authorities. The reported impacts and incidents will be captured on a database to identify weakness in the emergency response plan and track progress in the implementation of preventative and corrective and benchmarking against other similar operations.

The Environmental and Social Monitoring Plan (*ESMP*) will provide the basis for monitoring of Potential Environmental Impacts associated with the Transmission Line Project. The implementation of the Monitoring Plan together with the Environmental and Social Management Plan will provide a benchmark for future environmental audits. The ESMP provides effective observation and documentation of monitorable parameters that will help in analyzing the effectiveness of the proposed mitigation measures with the advantages of improving operational efficiency, promoting competitive advantage, improving risk management, reducing liabilities and improving business performance.

4.2.4 Environmental and Social Monitoring by Contractors

KPLC will require that contractors monitor, keep records and report on the following environmental and social issues for their subproject:

1. *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).
2. *Environmental incidents and near misses*: environmental incidents and high potential near misses and how they have been addressed, what is outstanding, and lessons learned.
3. *Major works*: those undertaken and completed, progress against project schedule, and key work fronts (work areas).
4. *E&S requirements*: noncompliance incidents with permits and national law (legal noncompliance), project commitments, or other E&S requirements.
5. *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.
6. *Workers*: number of workers, indication of origin (expatriate, local, nonlocal nationals), gender, and skill level (unskilled, skilled, supervisory, professional, management).
7. *Training on E&S issues*: including dates, number of trainees, and topics.

8. *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.

9. *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.).

10. *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.

11. *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.

12. *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.

13. *Major changes to contractor's environmental and social practices*.

14. *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 KPLC determines the issue is resolved satisfactorily.

The environmental and social parameters monitoring procedures and techniques for proposed project are summarized in table 3

Table 3: Environmental and Social Monitoring Plan (ESMP)

Potential Environmental /Social impact	Parameter to be monitored	Timing	Frequency	Responsibility
Noise	Measure the Noise Level within the Project area and at distances of 30 from the transmission line	Construction and Decommissioning phases	Quarterly	Contractor
		Operation	Quarterly	KPLC
Vegetation and Habitat Loss	Quantify the area of cleared forest	During Construction	Monthly	Contractor
Soil erosion	Assess size of rills or Gulleys forming from accelerated run off from compacted areas	Operation phase	Quarterly	KPLC
Increased water Demand	Record amount of Litres used	During Construction and Decommissioning Phases	Monthly	Contractor
Oil Spills	Record any leakages from construction equipment. Record all accidental spills and number of litres	During construction phase	Monthly	Contractor
Encroachment	Record any new settlements within the Transmission	During Operation	Monthly during the first six	KPLC

Potential Environmental /Social impact	Parameter to be monitored	Timing	Frequency	Responsibility
	Wayleave trace and maintain wayleaves clear		Months from start of Construction and Quarterly for the first one year of operation then annually	
Fire hazards	Record any Fire incidences and investigate on possible causes	Construction and decommissioning	Monthly	Contractor
		Operation	Quarterly	KPLC
Occupational Health and Safety Issues	Record any incident, accidents and Possible hazard scenarios	Construction and decommissioning	Through out	Contractor
		Operation	Through out	KPLC
Birds Collisions	Record any dead birds within the project site	Construction	Quarterly	Contractor
		Operation	Quarterly	KPLC
Aircraft accidents	Record any plane crashes due to collision with the transmission line	Operation	Bi annually	KPLC
Fall from Heights	No of accidents	Construction and Decommissioning	Through out	Contractor
		Operation	Through out	KPLC