



# **KENYA ELECTRICITY MODERNIZATION PROJECT (KEMP)**

## **PERI~URBAN COMPONENT**

### **ENVIRONMENTAL & SOCIAL MANAGEMENT FRAMEWORK**

JANUARY 2015

The Environmental & Social Management Framework (ESMF) has been prepared by Environment & Social Unit, Safety, Health & Environment (SHE) Department, Kenya Power. The ESMF has been prepared based on an overall Environmental & Social Assessment, which includes:

- The general baseline at project areas.
- Evaluation of potential Environmental & Social impacts of different project components and subcomponents, and
- Assessment of environmental practices in different ongoing and completed projects.

The ESMF provides the guidelines for the preparation of all mitigation plans (Environmental & Social Management Plans and Construction Management Plan) to respond to the anticipated project impacts, once the route and specific household metering locations are identified.

**ENVIRONMENTAL & SOCIAL MANAGEMENT FRAMEWORK:  
KENYA ELECTRICITY MODERNIZATION PROJECT – PERI-URBAN COMPONENT**

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## LIST OF ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMCA	Environmental Management Act – 1996
ESAP	Environmental and Social Assessment Procedures
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESSF	Environmental and Social Screening Form
HIV	Human Immunodeficiency Virus
IESIA	Integrated Environmental and Social Impact Assessment
IP	Indigenous People
ISTS	Integrated Safeguard Tracking System
KEMP	Kenya Electricity Modernization Project
KP	Kenya Power
KPLC	Kenya Power & Lighting Company Ltd
NEC	National Environment Council
OP	Operational Procedure
OS	Operational Safeguards
PBO	Project Based Programs
RAP	Resettlement Action Plan
RoW	Right of Way
RPF	Resettlement Policy Framework
PCB	polychlorinated biphenyl
PIU	Project Implementation Unit (in KPLC for Peri-Urban Electrification Sub-component of KEMP)
SESA	Strategic Environmental & Social Assessment
SHE	Safety, Health & Environment
ToR	Terms of Reference
UN	United Nations
UNCLOS	UN Convention on the Law of the Sea
WB	World Bank
WRMA	Water Resources Management Authority

# EXECUTIVE SUMMARY

## Background

The Government of Kenya has pledged to stimulate economic growth and accelerate job creation to improve the economic wellbeing of Kenyans. Among the many interventions to achieve this is expansion of the power distribution system to be within reach and thus enable more Kenyans to connect to the grid at affordable cost and hence initiate economic activities at the micro-economic level. The current trend of network expansion driven by customer demand is approaching saturation in the urban areas. . In the foreseeable future there is a likelihood of the annual connectivity stagnating at the 300,000-400,000 level. To jumpstart and accelerate connectivity, it is necessary to develop a new mind set, as initially happened at the previous period of expansion in 2004.

To reduce the cost burden of increased connectivity on Kenya Power & Lighting Company (KPLC), as well as reduce the amount paid by the customer to connect to the grid, the strategy proposed is to extend the distribution network to as near the customer as possible using external or government funding. This can initially be achieved by extending the low and medium voltage network on existing and other upcoming/new distribution transformers to reach households lying within transformer protection distance (maximization). This model would involve building low and medium voltage lines both single phase and in selected cases, three phase along Peri-urban roads.

The Kenya Electricity Modernization Project – to be financed by the World Bank Group through the International Development Association (IDA) - aims to support the Government's initiatives of ensuring increased electricity access to Kenyans, particularly among low income groups in Peri-urban areas. The existing and new distribution transformers (pole-mounted) shall be optimized through extension of the low and medium voltage network to reach households located in the vicinity of these transformers.

The exact sub-project sites are not yet definitively identified. Once they are established Environmental Impact Assessments (EIAs) and or Environmental Management Plans (EMPs) will be prepared as required by NEMA and World Bank guidelines.

## Purpose of ESMF

The purpose of this Environmental and Social Management Framework (ESMF) is to provide a procedure for environmental and social assessment of the proposed KPLC projects. This framework approach was selected because even though the footprint of the project is known (i.e. the peri-urban geographic areas are known but the selection of which settlements in these areas are to be included in the project is not yet finalized), specific designs and the precise location of the investments are not yet definitively identified. The ESMF will guide KPLC in determining the appropriate level of environmental and social assessment required for the sub-projects and in preparing the necessary environmental and social mitigation measures for these sub-projects, using a standardized ESMP, during the preconstruction, construction and operational phases.

## Objectives of the ESMF

The objective of this ESMF is to ensure that the implementation of the Kenya Electricity Modernization Program (KEMP), for which the exact locations of the sub-project sites are not definitively identified at this stage, will be carried out in an environmentally and socially sustainable manner. The ESMF will provide the project

implementers with an environmental and social screening process and environmental management procedure that will enable them to identify, assess and mitigate potential environmental and social impacts of sub-project activities, including through the preparation of a site-specific Environmental Impact Assessment (EIA) where applicable.

The Environmental and Social Management Framework (ESMF) seeks to institute a consistent and effective environmental and social screening process for application in all KPLC distribution and transmission and transmission component projects at local and national levels. Specifically, the following are the objectives of the ESMF:

- To ensure that all projects are screened for potential adverse environmental and social impacts and that appropriate mitigation and monitoring measures, including cost estimates, are identified and implemented by qualified personnel at the local and national levels;
- To support and empower Kenya Power and Lighting Company officers to carry out the environmental and social screening process as outlined in this Framework, including the implementation and monitoring of mitigation measures of all projects as necessary.

### **Methodology used**

Several methods were involved in the preparation of this ESMF to meet Government of Kenya requirements and World Bank Operational Policies for environmental safeguards. An ESMF is meant to provide a screening process for the potential environmental and social impacts for the planned future project activities and recommend a standardized environmental management plan for addressing the potential positive and negative impacts associated with the project. For the purpose of achieving these targets, the following approaches were used:

- In-depth Literature review -This was done through a thorough review of the project appraisal documents focusing on project description- project development objective and key indicators, project components, project target areas, institutional and implementation arrangements, and monitoring and evaluation of outcomes.
- Consultations with the public and relevant stakeholders was done on 6<sup>th</sup> and 12<sup>th</sup> January 2015 through stakeholder forums organized by Kenya Power.
- Stakeholder Consultations- Consultations with key stakeholders were undertaken during the Environmental Assessment process for substation upgrading in other projects in several counties to ensure that the implementation of the KEMP Project, particularly with regard to environmental and social issues, takes on board views and concerns across different people and institutions including local and central government entities and key ministries at the County Level. This was undertaken mainly through interviews with key stakeholders.
- Preparation of ESMF

### **Baseline Information**

This section describes the overall baseline condition of Kenya in terms of the bio-physical, socio-economic and cultural environment. The proposed peri-urban electrification subcomponent of the KEMP project will be implemented in up to 50 locations across the country hence the baseline information presented is for the entire country but is not site specific.

## **Regulatory, Administrative and Legal Framework**

A number of legislations, policies and instruments are available to support environmental management and the Environmental Impact Assessment process in Kenya. The Environmental Management Coordination Act is the key instrument covering environmental management in all development sectors. The Environmental Impact Assessment Guidelines prescribe the process, procedures and practices for conducting an EIA and preparing the EIA reports. In addition to these instruments, there are sector specific policies and legislations that prescribe the conduct for managing the environment.

However, the national legislation does not include procedures for screening smaller-scale investments for potential adverse environmental and social impacts. To close this gap between national legislation and the Bank's OP/BP 4.01 Environmental Assessment (which requires that all investments proposed for Bank-financing are screened for potential adverse environmental and social impacts and appropriate environmental work be carried out based on the screening results), this ESMF is being prepared. Based on the screening results, the sub-project will either prepare a separate EA report; implement simple mitigation measures as proposed in the standardized Environmental Management Plan, or (as determined by the screening process) may not require any environmental management, apart from the normal safety measures..

## **KPLC Kenya Electricity Modernization Project Description**

KPLC has a total of 35,000 distribution transformers spread across the country. The transformers were installed for various reasons, i.e., for new customers, reinforcement of existing transformers due to load growth, and reinforcement to reduce length of the low voltage lines. As such, the majority of the transformers have varied lengths of the low voltage network emanating from them, some of which will be passing in close proximity to ready and potential customers. Other transformers will require extensions and additional transformers to enable access for those potential customers located further from existing transformers.

Data collected from across regions served by KPLC indicates that the company has the potential to connect approximately 472,002 households (corresponding to approximately 1.2 million customers) that are within 600 meters of the transformers through individual service lines. Of these households, some will be within developed areas, the majority of who will be reached by a service cable drop or a pole, whereas in the more dispersed zones in the Peri-urban and rural areas, construction of a 600m low voltage line for a single customer may well be required. Some areas will require an MV extension which nevertheless will not exceed 2kms with installation of new 50KVA transformers to cater for those potential customers located further than 600metres from existing transformers. It is estimated that the addition of new transformers in Peri-urban areas will lead to additional connections for 122,500 households benefiting an estimated 618,750 people.

The Kenya Electricity Modernization project is intended to support the Government's initiatives of ensuring increased electricity access to Kenyans, particularly among the low income groups and those in Peri-Urban areas. The existing and new distribution transformers shall be exploited to the maximum through extension of the low and medium voltage network to reach households located in the vicinity of these transformers.

## World Bank safeguards policies

The KEMP project has triggered the following environmental and social safeguard policies of the World Bank. Safeguard OP 4.01, Environmental Assessment; OP 4.04, Natural Habitats; OP 4.11, Physical Cultural Resources; OP 4.10, Indigenous Peoples, and OP 4.12, Involuntary Resettlement. The following safeguard policy instruments have been prepared and publicly disclosed for the different sub-components.

KEMP Project Component	Policy Instrument
A1. Upgrade of the Supervisory Control and Data Acquisition/Energy Management System (SCADA/EMS).  A2. Distribution system enhanced flexibility.	Environmental and Social Management Plan (ESMP)
C1. Peri-urban electrification	Environmental and Social Management Framework (ESMF) Resettlement Policy Framework (RPF)
C2: Off-grid electrification	Environmental and Social Management Framework (ESMF) Resettlement Policy Framework (RPF) Vulnerable and Marginalized Framework (VMGF)

The activities in the KEMP peri-urban electrification component are expected to trigger OP/BP 4.01 (Environmental Assessment), OP 4.12: Involuntary Resettlement and OP/BP 4.04 (Natural Habitats) although as a precautionary measure, OP/BP 4.11 Physical Cultural Resources is also triggered for this sub-component. The safeguards instruments prepared for any subprojects will address the requirements of any applicable policies.

OPERATIONAL SAFEGUARDS TRIGGERED BY THE PERI-URBAN ELECTRIFICATION COMPONENT OF KEMP PROJECT	YES	NO
OP/BP 4.01: Environmental Assessment	x	
OP/BP 4.04 Natural Habitats	x	
OP/BP 4.36 Forests		x
OP 4.09 Pesticide Management		x
OP/BP 4.11 Physical Cultural Resources	x	
OP/BP 4.10 Indigenous Peoples	x <sup>1</sup>	
OP/BP 4.12 Involuntary Resettlement	x	
OP/BP 4.37 Safety of Dams		x
OP 7.50 Projects in International Waters		x
OP 7.60 Projects in Disputed Areas		x

## Environmental and social impacts

### Benefits/Positive impacts

- Employment and wealth creation
- Local Material Supplies
- Up Scaling Electricity Access to the Poor
- Improve connectivity due Connection payment model
- Social Inclusion

<sup>1</sup>OP 4.10 is triggered for the Off-Grid component of the project.

- HIV/AIDS education and awareness
- Health benefit of the project
- Benefits to education
- Improved standard of living
- Increase in Revenues
- Improved Security
- Improved Communications
- Gender Considerations

### **Negative Environmental and Social Impacts**

- Impact on Natural Vegetation and Biodiversity
- Impacts on air quality from vehicle exhaust emissions
- Risk of sparks/fire from live conductors
- Solid waste
- Electric shocks and electrocution of people
- Occupation safety and health hazards
- Public health risk
- Construction material sourcing-wooden poles
- Oil Leaks from transformers
- Noise during construction
- Contamination from CCA & creosote-treated poles

### **KPLC Support in Screening Process**

Through this ESMF all projects will be screened for potential adverse environmental and social impacts. Based on the screening results, each subproject will include local costs of implementing and monitoring the mitigation measures. This will be done through involvement of National Environment Management Authority and KPLC Environment Unit in coordination with the Project Implementation Unit(PIU). This will be complemented by the availability of County Environmental Officers who are the environmental custodians for their own counties.

### **Screening Process**

The environmental and social screening process will take place once sub-projects are identified prior to implementation. This section identifies and illustrates the specific steps to be involved in the environmental and social screening process leading towards the review and approval of the sub projects from environmental and social management aspects. The steps followed incorporate the requirement of both relevant national laws and the World Bank's Operational Safeguards Policies to be triggered for this Project.

KPLC as an implementing agency for the KEMP project will screen the sub projects per Lot to identify adverse environmental and social impacts using the screening form provided. Then the institution will introduce into the sub project design the required measures to mitigate impacts identified from use of the screening form and checklist before submission of the sub project design to the respective implementing units for review and clearance.

In addition to the Environmental and Social Screening Form, an Environmental and Social Checklist will be prepared and availed to facilitate the identification of simple mitigation measures for KEMP sub-projects not requiring a separate EA report. Main features of the checklists will include: a detailed description of the activities to be undertaken, potential adverse impacts (environmental and social concerns), mitigation measures to be undertaken and the organization/person responsible for each activity, and monitoring responsibilities, and cost estimates.

## **Public Consultations and Participation**

As per World Bank requirements the borrower or client is responsible for conducting and providing evidence of meaningful consultation (i.e., consultation that is free, prior and informed) with communities likely to be affected by environmental and social impacts, and with local stakeholders, and also for ensuring broad community support.

Participatory Stakeholder Forums were held on 6<sup>th</sup> and 12<sup>th</sup> January, 2015, to consult with stakeholders on the environmental and social safeguards documents for the KEMP project. The Forums were attended by a large and diverse group of participants and stakeholders from across the country representing different institutions, government agencies, NGOs, indigenous people's representatives, the private sector, the Office of the President, contractors, county governments, and investors and other players in the energy sector, among others. A comprehensive list of the participants is included in the minutes of the Stakeholder Forum consultations appended to this report.

The Forums began with an introduction and description of the KEMP Project, and an explanation of the reporting and management requirements with regard to social and environmental issues. This was followed by specific presentations on the environmental and social safeguard documents under the project, including an explanation of the grievance redress mechanism. It was emphasised that more consultations will be held with communities that will be proposed as targeted beneficiaries, during the sub-project selection process.

Consultation is based on stakeholder analysis and is preceded by disclosure of adequate project information and environmental and social information to ensure that participants are fully informed. This process will continue throughout the selection of sub-projects and will continue as needed. Consultations will be conducted in a timely manner in the context of key project preparation steps, in an appropriate language, and in accessible places. The results of the consultations will be adequately reflected in the project design and in the project documentation. For consultations on this framework ESMF please refer to Chapter 9 and Annex 10 of this document.

## **Proposed Mitigation Measures**

After environmental and social screening, mitigation measures will be identified for each adverse impact identified during the screening process –with a particular focus on the safe disposal of PCB and creosote and CCA -treated poles, Occupational (and Public) Health and Safety, and loss of vegetation. The Mitigation measures will be implemented by the contractor based on LOT specific standardized ESMPs with monitoring undertaken by KPLC PIU, KPLC's Environment and Social Unit, and regional staff.

## **Potential Impacts and Proposed Mitigation Measures**

Proposed mitigation measures will have the following positive impacts:



- The use of Environmental Guidelines for Contractors will ensure that environmentally and socially sustainable construction techniques are applied in a standardized manner and construction sites are properly managed.
- Knowledge gained through training on environmental management and importance of mitigation measures will be used in other projects by KPLC.
- Tree plantation to replace any trees cut down during construction , though there is expected to be minimal cutting of trees, as KPLC will minimize tree cutting
- Tree planting will directly contribute to elimination of carbon dioxide hence reducing Greenhouse Gas emissions.

### **Capacity Building for KPLC Staff**

KPLC has a well-staffed Safety, Health and Environment (SHE) department. The SHE staff will support the Project Implementation Unit(PIU) for the Peri-Urban sub-component. This KPLC PIU Unit will have a dedicated environment and social position. KPLC PIU staff with help from regional staff will be continuously involved in the implementation of the environmental screening process for projects. The KEMP project will assist in strengthening KPLC PIU staff through support for capacity building in environmental and social management as regards the rehabilitation and construction of distribution network lines for last mile connectivity. Selected KPLC form the PIU and SHE department staff will undergo training in environmental management systems and impact assessment, implementation of the environmental and social screening process outlined in this ESMF, Strategic Environmental and Social Assessment, Hazardous waste management and pollution control and Occupational Health & Safety.

### **ESMF Implementation Budget**

The ESMF implementation budget refers to all costs that will be incurred to implement the requirements or recommendations of the ESMF. The ESMF requirements ensure that Project implementation integrates environmental and social issues for the sustainability of the project as well as the sub-projects. Among other things the ESMF recommends the following key issues, namely; training, capacity building, screening, reviewing and monitoring mechanisms. The total cost for training and implementation of the ESMF (including sub-project EA implementation) is estimated at approximately USD **200,000**. Actual costs will be determined during the implementation phase, when the specific number of people required for training will be identified and the level of technical assistance required.

# 1 CHAPTER ONE: INTRODUCTION

## 1.1 Background

The Government of Kenya has pledged to stimulate economic growth and accelerate job creation to improve the economic wellbeing of Kenyans. Among the many interventions to achieve this is expansion of the power distribution system to enable more Kenyans to connect to the grid at affordable cost and hence initiate economic activities at the micro-economic level. The current trend of network expansion driven by customer demand is approaching saturation in the urban areas. In the foreseeable future there is a likelihood of the annual connectivity stagnating at the 300,000-400,000 level.

To reduce the cost burden of increased connectivity on KPLC, as well as reduce the amount paid by the customer to connect to the grid, the strategy proposed is to extend the distribution network to as near to the customer as possible using external or government funding. This can initially be achieved by extending the low and medium voltage network on existing and other upcoming distribution transformers to reach households lying within transformer protection distance (maximization). This model would involve building low voltage lines - both single phase and to a certain extent three phases along Peri-urban access roads. Most of these extensions will be less than 2kms with 50KVA transformers to serve the Peri-urban populace.

KPLC has a total of 35,000 distribution transformers spread across the country. The transformers were installed for various reasons, i.e., for new customers, reinforcement of existing transformers due to load growth, reinforcement to reduce length of the low voltage lines hence improve transformer protected distances, etc. As such, the majority of the transformers have varied lengths of the low and medium voltage network emanating from them, some of which pass in close proximity to ready and potential customers. For some of the customers outside the radius extensions of up to 2kms are proposed, with 50KVA transformers being installed in between.

Data collected from KPLC regions indicates that the company has potential to connect approximately 472,002 households that are within 600 meters of the transformers through individual service lines. Of these households, some will be within developed areas, the majority of which will be reached by a service cable drop or a pole, whereas in the more dispersed areas in the Peri-urban and rural areas, construction of a 600m low voltage line for a single customer may be necessary. Furthermore 2km medium voltage extensions will be undertaken with new transformers being installed to enable greater access to electricity. Based on an average of two spans (@ 50m) single phase LV line, 30m service cable drop (10% of the service drops assumed to be three phase), 40km return transport and implementation by labour and transport contractors, the projected cost of connecting all these households is approximately USD 685million (KShs. 58.2Billion).

In the financial year 2011/2012, KPLC connected 307,000 customers to the grid after implementing 123,000 maximization projects. In effect each maximization project generated approximately 2,496 customers.

With data collected from the field showing that there exist approximately 472,002 households within reach of distribution transformers, implementation of the network to reach them will result in connection of approximately 1.2million customers.

The Kenya Electricity Modernization Project – to be financed by the World Bank Group through the International Development Association (IDA) - aims to support the Government's initiatives of ensuring increased electricity access to Kenyans, particularly among the low income groups and those in Peri-urban areas. The existing and new distribution transformers shall be optimized through extension of the low and medium voltage network to reach households located in the vicinity of these transformers.

## **1.2 ESMF Requirement**

This Environmental and Social Management Framework (ESMF) is an environmental assessment and management tool for the Peri-urban electrification component under the World Bank-financed KEMP project. The capital works will contribute to improving the reliability of power supplies by reducing the frequency and duration of power supply interruptions in Kenya's 47 Counties. KPLC plans to strengthen and modernize the power distribution network in the entire County, to improve the network efficiency and reliability, and to meet growing demand for electricity. Planning and design of the network upgrade is underway by KPLC and its Engineers, and will include upgrading and installing new transformers, up-rating and extending the existing distribution lines and installing a new dispatch /systems control room. The proposed works include optimal utilization of existing transformers to improve electricity access to low-income, currently unserved customers.

The World Bank(WB) Operational Policy OP 4.01 – Environmental Assessment - requires the borrower to prepare environmental safeguard documents (in this instance an Environmental and Social Management Framework [ESMF]) that will enable KPLC to assess the environmental and social impacts of its proposed activities before undertaking them, and to delineate the mitigation, monitoring and institutional measures to be undertaken during preparation, implementation and operation of the Project to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable minimal levels.

## **1.3 Purpose of ESMF**

The purpose of this Environmental and Social Management Framework (ESMF) is to provide a procedure for environmental and social assessment of the proposed KPLC projects. This framework approach was selected because even though the footprint of the project is known (i.e., the peri-urban geographic areas are known but the selection of which settlements in these areas are to be included in the project is not yet finalized), specific designs and the precise location of the investments are not yet definitively identified. The ESMF will guide KPLC in determining the appropriate level of environmental and social assessment required for the sub-projects and in preparing the necessary environmental and social mitigation measures for these sub-projects, using a standardized ESMP, during the preconstruction, construction and operational phases

## 1.4 Objectives of the ESMF

The objective of this ESMF is to ensure that the implementation of the Kenya Electricity Modernization Program (KEMP), for which the exact locations of the sub-project sites are not definitively identified at this stage, will be carried out in an environmentally and socially sustainable manner. The ESMF will provide the project implementers with an environmental and social screening process and environmental management procedure that will enable them to identify, assess and mitigate potential environmental and social impacts of sub-project activities, including through the preparation of a site-specific Environmental Impact Assessment (EIA) where applicable.

The Environmental and Social Management Framework (ESMF) seeks to institute a consistent and effective environmental and social screening process for application in all KPLC distribution and transmission and transmission component projects at local and national levels. Specifically, the following are the objectives of the ESMF:

- To ensure that all projects are screened for potential adverse environmental and social impacts and that appropriate mitigation and monitoring measures, including cost estimates, are identified and implemented by qualified personnel at the local and national levels;
- To support and empower Kenya Power and Lighting Company officers to carry out the environmental and social screening process as outlined in this Framework, including the implementation and monitoring of mitigation measures of all projects as necessary.

## 1.5 Environmental and social screening

The KPLC Project Implementation Unit (PIU) - with the help of regional staff - will be responsible for completing the Environmental and Social Screening Form for each sub-project, and based on the screening results, the appropriate level of environmental work will be determined by KPLC's Environment unit and carried out by qualified KPLC staff. The screening process has been developed because the exact locations and scope of the sub-projects have not been definitively identified, and therefore potential adverse localized environmental and social impacts cannot be precisely identified. Furthermore, Kenya's environmental legislation does not provide for the environmental and social screening of small-scale projects, such as those included in this component of the KEMP project, whereas World Bank OP 4.01 requires that all projects are screened for potential adverse environmental and social impacts to determine the appropriate level of mitigation measures.

## 1.6 Level of Environmental Work

The appropriate level of environmental work for the Peri-urban electrification component could range from the application of simple environmental mitigation measures (using the Environmental and Social Checklist); to the preparation of a comprehensive EIA Report; to no environmental mitigation work being required apart from the standard application of safety measures. The environmental and social screening process is consistent with Kenya's environmental policies and laws as discussed in this Framework, as well as with the World Bank's Operational Policy 4.01 - Environmental Assessment.

It is expected that the project will have minimal or limited adverse environmental impacts. Significant adverse environmental and social impacts that would require extensive mitigation measures and possibly the preparation of a comprehensive EIA are unlikely, given the limited scope of the civil works and the Peri-urban and urban location of the sub-projects.

## **1.7 Coordination of Environmental and Social Screening at KPLC**

During the implementation of the KEMP project; KPLC Safety, Health & Environment (SHE) unit will coordinate closely with County Environmental Officers in the evaluation of environmental impacts and the determination of appropriate mitigation measures.

## **1.8 Preparation and Use of this Framework**

This ESMF has been prepared by KPLC based on previous experience on similar projects, including the African Development Bank (AfDB) financed Last Mile Connectivity Programme. This ESMF will be a living document that will be subject to periodic review to address specific concerns raised by stakeholders, and emerging policy requirements. It will complement the Environmental Impact Assessment and Environmental Audits guidelines provided for operationalization of provisions of the Environmental Management and Coordination Act of 1999 which guides environmental protection and management.

## **1.9 Potential Users of the ESMF**

This framework has been prepared as a reference document for use by key stakeholders who will be involved in the planning, implementation, management and operation of the proposed Kenya Electricity Modernization Project for KPLC. As a reference material, the framework is useful to the following proposed project key stakeholders:

- World Bank as the Funding and development partner
- Senior government officials responsible for policy making and project & development planning;
- Government extension workers in the various ministries; and
- Non-governmental organizations involved in natural resource management.
- KPLC as the implementing agency;
- Central government and County officials responsible for environmental planning and management including NEMA;
- Politicians and local traditional leaders;
- Sector Environmental management Coordinators
- County Environmental Management Officers and Committees;
- Potential consumers of electricity;
- The private sector;
- Planners and engineers for the preparation of plans and designs of the subproject activities; and
- Engineers and contractors to be involved in implementation of the sub-project activities.

## 2 CHAPTER TWO: METHODOLOGY AND CONSULTATION

Several methods were involved in the preparation of this ESMF to meet the requirements. This ESMF provides a screening process for the potential environmental and social impacts for the planned future project activities and recommends a standard environmental management plan for addressing the potential positive and negative impacts associated with the project. For the purpose of achieving these targets, the following approaches were used.

### 2.1 Detailed & In-depth Literature Review

This was done through a thorough review of the project appraisal documents focusing on project description, project development objective and key indicators, project components, project target areas, institutional and implementation arrangements, and monitoring and evaluation of outcomes. Some key baseline information on Kenya's recent macroeconomic developments especially in the energy sector development was reviewed from project documents. The review also covered Kenya's policy, legal, regulatory and administrative frameworks relevant to the proposed KEMP project. The World Bank Operational Safeguard Policies were reviewed to identify the likely policies to be triggered by subprojects.

Bearing in mind that KEMP subproject sites were not definitively identified at the time of the preparation of this ESMF, the literature review further encompassed the overview of Kenya's physiographic and climatic issues, the state of the general environment and population and population dynamics throughout the country.

Among the documents that were reviewed in order to familiarize and further understand the project included:

#### ***World Bank Related Documents***

- *World Bank Project documentation for KEMP*
- *World Bank Safeguards Policies*
- *World Bank Group Environmental, Health, and Safety Guidelines (known as the "EHS Guidelines"). <http://www.ifc.org/ifcext/sustainability.nsf/Content/EHSGuidelines>*
- *IFC Performance Standards*

#### ***Kenyan Documents***

- Kenyan Constitution 2010
- Environmental Management and Coordination Act (1999)
- Water Act 2002
- Energy Act 2006
- Transport Act
- Land Acquisition Act

- Wayleave Act
- Public Health Act
- Wildlife Act 2006
- Forest Act 2005

## **2.2 Interactive Discussions with potential customers and the public**

Participatory Stakeholder Forums were held on 6<sup>th</sup> and 12<sup>th</sup> January, 2015, to disclose and consult with stakeholders on the environmental and social safeguards documents for the KEMP project. The Forums were attended by a large and diverse group of participants and stakeholders from across the country representing different institutions, government agencies, NGOs, indigenous people's organizations, the private sector, the Office of the President, contractors, county governments, and investors and players in the energy sector, among others. A comprehensive list of the participants is included in the minutes of the Stakeholder Forum consultations appended to this report.

The Forums began with an introduction and description of the KEMP Project, and an explanation of the reporting and management requirements with regard to social and environmental issues. This was followed by specific presentations on the environmental and social safeguard documents under the project, including an explanation of the grievance redress mechanism. It was emphasised that more consultations will be held with communities that will be proposed as targeted beneficiaries, during the sub-project selection process.

Moreover, during the preparation of the project, additional consultations were conducted by the SHE department during EIA process for the wider ongoing nationwide substation upgrading, new substation construction and construction of new lines and upgrading the existing during which the proposed Peri-urban electrification component included in the KEMP project was discussed. Most of the issues and suggestions raised by the public revolve around demand for connectivity. They propose the use of the STIMA loan model or any other method where they are given access to electricity and make regular payments over a period of time. Most people living in Peri-urban and rural areas are relatively poor and are not able to pay upfront for the connection fees.

The stakeholder consultation was significant to the preparation of this ESMF and formed the basis for the determination of potential project impacts (at sector level) and viable mitigation measures.

### **Stakeholder Consultations**

Consultations with key stakeholders were undertaken during the Environmental Assessment process for ongoing substation upgrading projects in several counties to ensure that the implementation of the proposed Kenya Electricity Modernization Distribution Project, particularly with regard to environmental and social issues, takes on board views and concerns across different people and institutions including local and central government entities and key ministries at the County Level. Interviews were undertaken with key stakeholders. General consultations were limited to stakeholders located in counties where the company was doing EIAs for new substations, Lines and upgrading of existing substation because of the following reasons;

- A sampling of counties was used to present some generic environmental and social issues which cut across all counties, because the nature of work is the same hence the sample counties are therefore likely to provide a good representative sample

## **2.3 Preparation of ESMF**

Preparation of the ESMF included the following stages:

- Collation of baseline data on the environmental conditions of the country in general;
- Identification of positive and negative environmental and social impacts of the proposed projects at potential sector level;
- Identification of environmental and social mitigation measures;
- Preparation of screening procedures to be used while screening Kenya Electricity Modernization project;
- Formulation of environmental and social monitoring plans.



## **3 CHAPTER THREE: KENYA ELECTRICITY MODERNIZATION PROJECT DESCRIPTION**

### **3.1 Introduction**

The energy sector plays a critical role in the socio-economic development of a country. Kenya is committed to universal access to modern forms of energy by year 2030, as articulated in the national economic development blueprint, the Vision 2030 (the Vision). The goal of the Vision is to make Kenya a middle income country enjoying a high quality of life by the year 2030. The objectives of the Vision have been adopted as GoK's national development objectives. Under this Vision, Kenya expects to achieve an economic growth rate of 10 % and above.

Energy is identified as a critical enabler of this vision. Currently, only 30% of the households (3.3 million), have electricity access from the national grid or mini-grids. The electrification rate is planned to be increased to 65 % by 2020 and 100 % by 2030. To attain these goals, policy and regulatory frameworks have been articulated for the energy sector through energy policy (Sessional Paper No.4 of 2004) and the Energy Act of 2006. A draft Energy Bill 2013 is under consideration.

Currently, the energy policy and the Act are being reviewed to align them with the Vision, the new Constitution of Kenya (2010) and global trends. The energy policy under review aims to set out the national policies and strategies for the energy sector that are aligned to the new Constitution and in tandem with the Vision.

The government has strategies to accelerate access to modern energy services through public and private initiatives. The government, with support from development partners, has allocated substantial resources for development of energy infrastructure including exploitation of renewable energy resources. This effort provides opportunities for collaboration with private sector in renewable energy development and national electrification.

Kenya Power supports the efforts of the Government of Kenya in the Electrification Schemes. Kenya Power projects normally results in significant amount of construction work for distribution and transmission lines, but with minimal environmental impacts. The Low Voltage lines to households shall be subjected to environmental screening so as to determine impacts and propose various mitigation measures on the impacts to be identified and implemented in compliance with the donors' safeguard policies (in the case of KEMP, the World Bank safeguard policies) as well as relevant national environmental legislation.

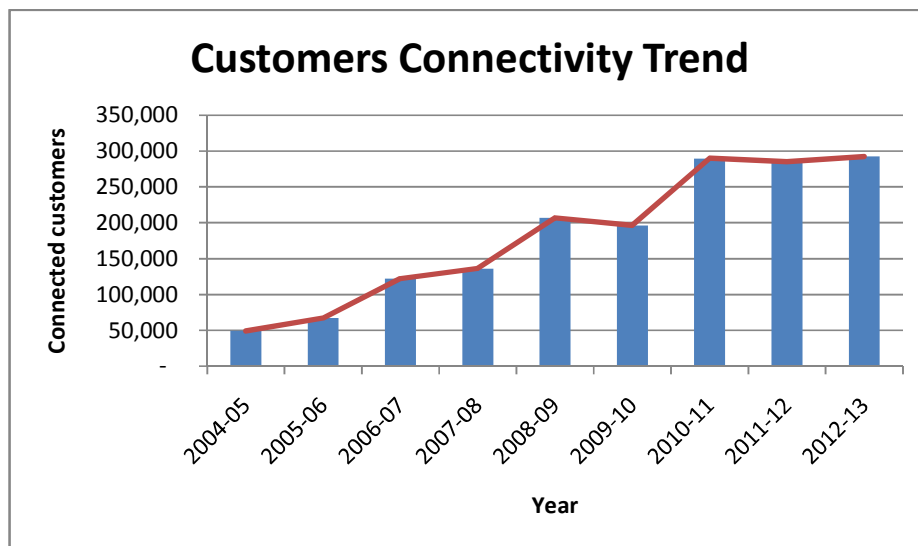
### **3.2 Background**

The rationale for the project concept is driven by the imperative to dramatically improve reliability of electricity supply and to increase access to electricity to underpin economic activity and to sustain electrification. Electricity service interruptions in recent years have a number of contributing causes. They include inadequate generation capacity (especially during dry periods when hydropower

availability is reduced), congestion in the transmission infrastructure that constrains power transfers from Mombasa where there is surplus generation capacity to Nairobi and the western regions where there is a deficit, scheduled interruptions for line work and unscheduled interruptions due to a weak network, inadequate preventive maintenance, vandalism, inadequate automation, etc. The project is designed to address the last two of these factors i.e. scheduled and unscheduled interruptions by building resiliency into the network so it has the ability to react to unexpected events by isolating problematic elements while the rest of the system is restored to normal operation and by minimizing the impact of scheduled network maintenance on the fewest number of customers.

Over the last 10 years the country has seen a steady growth in electricity connections both in urban and rural areas. This has been driven by a combination of various factors chief among them being the incoming of a new political dispensation in 2002. The new government demanded that the company accelerate connectivity. This called for a totally new approach in the connectivity model within KPLC. In 2004, a new connection policy was developed to address this new challenge and also take cognisance of the more empowered customer and public. In it, among other things, the cost for connection to customers on low voltage was standardized for single phase and three phase to a minimum of KShs. 32,480 and KShs. 44,080 respectively (between 3 and 8KVA, including connection charges @ KShs. 1000/= per KVA, VAT inclusive, and within 600m of a distribution transformer). This saw an unprecedented increase in connections as shown by the huge jump between FY 2005-2006 and 2006-2007. The increase continued year to year.

**Figure 1: Customers Connectivity Trend**



(Source: KPLC Annual Reports & Financial Statements)

In order to accelerate the connectivity rate and achieve annual connections in the range of 1.3 million, it is proposed that a new model be adopted that will help overcome the current bottlenecks in the connectivity pipeline. This new model focuses on availing the service connection, transformers for those outside the existing transformers 600m radius including the meter to the customer premises prior to engaging the customer to pay for the service. As such, activities such as way leave acquisitions

together with attendant county and other authorities' permits and approvals, materials procurement/delivery logistics, construction, etc. shall be addressed prior to the customer being requested to connect.

The county governments are gradually finding their ground and are expected to spur growth of businesses in their jurisdictions as they put more focus on infrastructure development. Coupled with the upcoming Vision 2030 flagship projects with the attendant ripple effect in their vicinity, the proposed strategy is bound to lead to accelerated economic growth and expansion.

Some of the benefits of this proposed model are:

- Accelerated access to electricity
- Improved standards of construction hence improved quality of supply;
- Provision of new supply in a shorter time;
- Opportunity for the company to develop long term network expansion plans.

### 3.3 Effect of the Standard Rate

The accelerated connectivity at the standardized rates has been achieved at a great cost to the company. Over the last five years during which time this initiative has been implemented, cost of all inputs has shot up by wide margins, as evidenced by the few items listed in the table below:

**Table 1: Materials Cost Comparison**

Materials	Unit	2007	2011	Increase
Wooden poles	KShs	8,382	12,150	44%
16mm2 Al cable	KShs	39	86	120%
Cut out	KShs	437	1,224	180%

Labour and transport costs have also risen over the same period

From the above, it is clear that KPLC has been subsidizing the input costs to a great extent. In all cases the additional costs above the standard (maximization) rates have been met by KPLC.

### 3.4 Proposed Model to Accelerate Connectivity

The Government has pledged to stimulate economic growth and accelerate job creation to improve the economic wellbeing of Kenyans. Among the many interventions to achieve this is expansion of the power distribution system to be within reach and thus enable more Kenyans to connect to the grid at affordable cost and hence initiate economic activities at the micro-economic level. The current trend of network expansion driven by customer demand is approaching saturation as seen from the line graph in Figure 1. In the foreseeable future there is a likelihood of the annual connectivity stagnating at the 300,000-400,000 level. To jumpstart and accelerate connectivity, a new thinking is needed as happened in 2004.

To reduce the cost burden of increased connectivity on KPLC, as well as reduce the amount paid by the customer to connect to the grid, the strategy proposed is to extend the distribution network to as near the customer as possible using external or government funding. This can initially be achieved by

extending the low voltage network on existing and other upcoming distribution transformers to reach households lying within transformer protection distance (maximization) as well as modernizing the system and having a smart grid. This model would involve building low and medium voltage lines both single phase and three phases (to a small extent) and installation of transformers along rural access roads.

Thereafter the cost of connecting customers can be at the maximization rate based on the new average actual cost.

The company will still continue implementing the following existing connectivity expansion strategies:

- a) Pre-investing in short medium voltage lines and distribution transformers to reach clusters of customers who may not be able to access the existing distribution transformers, but are close to existing MV lines;
- b) The Umeme Pamoja initiative for groups of customers far from existing transformers and MV lines.
- c) Clusters of 50 – Grouping potential customers in clusters of 50 households and providing reticulation for them, in order to drive down the individual contributions from each customer

### **3.5 Proposed Strategy**

KPLC has a total of 35,000 distribution transformers spread across the country. The transformers were installed for various reasons, i.e., for new customers, reinforcement of existing transformers due to load growth, reinforcement to reduce length of the low voltage lines hence improve transformer protected distances, etc. As such the majority of the transformers will have varied lengths of the low voltage network emanating from them.

Data collected from KPLC regions indicates that the company has potential to connect approximately 472,002 households that are within 600 meters of the transformers through individual service lines.

Of these households, some will be within developed areas, majority of which will be reached by a service cable drop or a pole or two, whereas in the expansive zones in the Peri-urban and rural areas, construction of a 600m low voltage line for a single customer may be necessary. Furthermore, for customers far away from the existing transformers extension for upto 2kms will be done on MV lines and more transformers will be installed. Based on an average of two spans (@ 50m) single phase LV line, 30m service cable drop (10% of the service drops assumed to be three phase), 3357km return transport and implementation by labour and transport contractors, the projected cost of connecting all these households is approximately KShs. 41,260,352,805. The table below shows the distribution of the potential households and estimated cost of reaching them, per region. (The current and most economical practice at present is to construct almost all distribution lines using private labour and transport contractors. The calculation is thus based on using them to implement the project. The average cost of construction using labour and transport contractors is approximately 67%<sup>1</sup> of the estimated cost using internal KPLC teams).

**Table 2: Total project cost per region (implementation by L&T contractors)**

<b>REGION</b>	<b>Estimated No. of Households within 600M of Transformer</b>	<b>Estimated Number of Customers</b>	<b>Low Voltage Line length, km</b>
Nairobi North	44,178	110,265	4,418
Nairobi South	54,745	136,640	5,475
Nairobi West	50,333	125,628	5,033
West Kenya	115,979	289,476	11,598
North Rift	54,453	135,911	5,445
Central Rift	35,225	87,919	3,523
Coast Region	20,652	51,546	2,065
Mt. Kenya North	42,423	105,885	4,242
Mt. Kenya South	54,014	134,815	5,401
<b>Total</b>	<b>472,002</b>	<b>1,178,086</b>	<b>47,200</b>

Note 1: Source: KPLC Database

### **3.6 KEMP Project Objectives**

The proposed project development objectives (PDOs) are: (a) to increase access to electricity; (b) to improve reliability of electricity service; and (c) to strengthen KPLC's financial situation.

#### **Project Components:**

#### **Component A- Improvement in Service Delivery and Reliability**

**Sub-Component A-1-**Upgrade of the Supervisory Control and Data Acquisition/Energy Management System (SCADA/EMS).

**Sub-Component A-2-**Distribution system enhanced flexibility.

**Sub-Component A-3-**Enhance maintenance practices to improve the quality in electricity supply.

#### **Component B: Revenue Protection Program**

The main objective of the RPP is to permanently protect KPLC's revenues from sales to the segment of large and medium customers, ensuring that all users in that "high value" segment are systematically billed according to their accurately metered full consumption.

#### **Component C: Electrification Program**

This component will support the government's objective of 70 percent household connectivity by 2017 by providing financing for the connection of new households in a more cost-effective manner. Payment of a connection fee will not be a pre-requisite for households to be connected. However, households may be required to contribute to the national electrification program in return for a connection as it is government policy. The amount of this contribution will however be based on household affordability so that no household remains unconnected due to inability to pay the contribution (during appraisal, the specific principles will be assessed and agreed with KPLC and the regulator).

**Sub-component C1 -** Peri-urban electrification.

**Sub-component C2 –** Off-Grid electrification

#### **Component D: Technical Assistance and Capacity Building**

This component will finance consultancy services, feasibility studies for new investments, training actions and other activities to support, among others:

- (i) *Preparation of the National Electrification Strategy (NES).*
- (ii) *Detailed national technical specifications and standardization.*
- (iii) *Regulations for enforcing quality on electricity service delivery.*
- (iv) *Project preparation support and feasibility studies for new investment projects as required.*

### **3.7 Project Sub Component Description for Peri-Urban Electrification**

This sub-component that will be implemented by KPLC will finance the design, materials and construction works required to electrify all households and businesses in selected high density peri-urban areas located close to existing electricity networks. KPLC has selected approximately 40 peri-urban areas in seven geographical regions, which is expected to connect 125,000 households. The areas were selected based on population density and their location close to existing electricity networks, in order to maximize the number of connections in a given area. KPLC's proposal of areas has been reviewed and endorsed by the government. This sub-component introduces new implementation arrangements (e.g., clearer responsibilities for each implementing agency and enhanced supervision arrangements) and new procurement arrangements (e.g., procurement of main equipment in bulk and independent contracts for construction and installation) to maximize the resources available and efficiently implement the project with the expectation to reduce cost and reach more customers.

#### **3.7.1 Low and Medium Voltage Distribution Power Line construction**

There are three categories of distribution lines under the KPLC jurisdiction namely:

- Medium voltage lines – 66kV, 33kV and 11kV
- Low voltage lines – 415V and 240V

Most of the overhead power networks at 11kV, 33kV and 66kV are constructed on concrete or treated wooden poles. The poles are treated with CCA and/or creosote, which is a petro-chemical product. The KEMP project will mainly cover extensions of 33KV, 11KV, 415V and 240V low and medium voltage lines to household. The screening process and the proposed project ESMP shall provide for safe treatment and disposal for treated wooden poles and disposal of the metal bars that could be used in these projects.

#### **3.7.2 Construction Materials**

Construction materials such as wooden poles will be procured from registered pole treatment and supply firms whose sites have undergone satisfactory Environmental Impact Assessment/Audit and received NEMA approval in the case of poles from Kenyan suppliers and in the case of poles procured from other countries from suppliers that have environmental licences. Since such firms are expected to apply acceptable environmental performance standards, the negative impacts of their activities at the extraction and treatment sites are considerably well mitigated. To reduce the negative impacts on availability and sustainability of the materials, KPL C will only order for what will be required through

accurate budgeting and estimation of actual construction requirements. This will ensure that materials are not extracted or purchased in excessive quantities. Moreover, the construction contractors will ensure that wastage, damage or loss of materials at construction sites is kept minimal, as these would lead to additional demand for and extraction or purchase materials..

**3.7.3 Way-leave Acquisition and Compensation for Low Voltage lines**

As already noted the project will involve connection of power to end users i.e. to low-income households within Peri-urban areas. The households will be mostly in settlements where the houses are grouped close together (the photos below are of such a settlement that possibly may be included in the project). Although the settlements will mostly comprise low-income households, these will be formal settlements, and will not encompass informal settlements. The medium and low voltage lines will mainly be constructed along the road reserve and the project will not involve any resettlement. The medium and low voltage lines will require way leaves acquisition to facilitate line construction and protection of power line. Way leaves by definition is an easement or rights of way (ROW) which gives the right of use or restricts the use of land of another in a way that benefits other people other than the owner of the land. Other than KPLC, rights of way are also established for railways, roads, airways, pipelines.





While the project does not expect any resettlement, there may be need, nevertheless, to compensate people whose assets, namely trees and crops may be damaged during project implementation. Way leaves is necessary for protection of power lines and it is not just a matter of facilitating line construction. The Energy Act 2007 provides that when a public electricity supplier intends to lay a power line on land owned by another person, the supplier must obtain consent (way leaves) beforehand.

The Way leave acquisition process entails the following main steps especially for the connection to customers.

- Survey, design and payment by the customer
- File is forwarded to way leaves officer who checks to see where the line will pass in order to identify the people to consult. Way Leave officer talks to land owners or public utility representatives e.g., roads authority on the need for a way leave consent
- The land owners sign the way leave consent allowing KPLC to lay line on their land
- Once consent is given the construction engineer/contractor proceeds with construction. Clearing of bushes and cutting of trees if any exists, will be undertaken with, minimal disturbance wherever possible to pave way for the line. The wayleaves officer will pay the tree owners as stipulated by the law and RPF prepared for the project as per OP 4.12 and records will be kept.
- Once construction is done, the construction engineer does a memo to the way leave officer to visit the site and assess the impact, if any damage to property has taken place.
- In such a case, damage assessment and recording is done by way leave officer in the presence of the owner and construction engineer or contractor who also sign the property damage report.
- Costing for damages is done by the way leave officer using property damages standard rates for the companies which are developed by the chief way leaves officer in liaison with government agencies such as ministry of agriculture and Kenya Forest service.
- The cost of damages are forwarded to finance for processing the funds



- Once the funds are ready the way leave officer talks to the local administration i.e. chief/assistant chief and arrange for a date when payments will be made. The officer then notifies all the concerned persons on the day and time of payment for damages which is done at the chiefs/assistant chiefs office
- Once payment is done the owner, wayleave officer, a representative from finance (accountant) and the chief signs the payment record sheet.

It is important to note that when granted, wayleave does not mean ownership of land but only limited use to the land. This project may occasion damage to properties of third parties accidentally or necessitated by line construction, survey and maintenance.

The same procedure shall be followed in this project. The main emphasis is that the contractor/supervisor shall record all damages occasioned in the presence of the owner or his/her representative and forward to the way leave officer who shall arrange for payments.

### **3.7.4 Project Implementation, Supervision and management (Sub-component Peri Urban Electrification)**

KPLC will be the Implementing Agency for the peri-urban sub-component of the Project. KPLC has the necessary technical and managerial ability to implement projects as demonstrated by the on-going projects financed by development partners. The involvement of the Supervision and Management consultant to be recruited through competitive bidding process will reinforce the capacity of the Project Implementation Unit. The sub-component is planned to be implemented in 18 months from contract commencement.

KPLC will designate a project implementation Unit (PIU) that will be responsible for the day-to-day implementation of the peri-urban sub-component of the Project (a separate PIU in KPLC will be responsible for the other sub-components of the Project that are managed by KPLC). The PIU for the peri-urban electrification sub-component (sub-component C1) will, at minimum, comprise of: one (1) project Chief Engineer; one (1) Supervision Coordinator; six (6) Site supervision engineers; one (1) procurement coordinator ; one (1) socio economist (1) environmental expert; and one (1) accountant.

See Annex 8 for KPLC PIU Organizational Chart for Peri-Urban Sub-Component (C1)

### **3.7.5 Environmental and Social Assessment**

There are no significant and/or irreversible adverse environmental issues anticipated from the investment sub-projects in the Peri-urban electrification sub-component of the Project, as these will all be located in peri-urban areas. Potential negative impacts are expected to be small-scale and site-specific and appropriate mitigation measures will be included to address these impacts.

It is envisaged that most of the network upgrades and expansion will be done by using overhead lines. The replacement of lines will take place along existing routes to minimize potential right of way (RoW) issues.

Effectiveness in addressing environmental and social concerns requires a number of functions. These include:

- Ensuring that proper appraisal of environmental and social effects of new interventions takes place and proper measures are put in place to mitigate these effects. This is a KPLC function;
- Setting out the basis for compliance and enforcement of terms and conditions of approval of project plans. This should be an integral part of KPLC and other representatives from the government departments;
- Designing compliance strategies by the SHE Department of KPLC; and
- Monitoring compliance and management of environment and social issues.
- The Director of NEMA in charge of enforcement and compliance may conduct independent follow-up to verify compliance.

KPLC will provide guidance to communities where the sub-projects will be implemented to ensure compliance with policies of the Ministry of Environment and NEMA as well as World Bank safeguard policies. The communities will give their views in regard to the proposed sub-projects and give suggestions on the design and implementation of the sub-projects so that the Project is implemented in a sustainable way taking into consideration of environmental and social issues of those communities.

The environmental and social screening process will be used at the planning stage of the sub-projects to determine potential adverse environmental and social impacts and design of the distribution lines. KPLC PIU staff - with help of regional staff - will complete the environmental and social screening forms. KPLC's Environmental Unit will analyse the forms and advise on the most suitable alternatives as necessary.

Given that the sub-projects will be mostly in peri-urban areas, environmental impacts are not expected to be significant. Nevertheless, it is essential that timely and informed consultations be held with stakeholders, (particularly those in residential areas close to substations), early in the sub-projects preparation process. Based on experience to date, KPLC's SHE Team has sufficient capacity to mitigate potential adverse environmental and social impacts. Nevertheless, during Project preparation KPLC's capacity to implement World Bank safeguard policies will be closely monitored, and any measures deemed necessary to strengthen this capacity will commence prior to Project approval.

### **3.7.6 Monitoring and evaluation of Project Implementation**

KPLC will maintain comprehensive and robust consultation, monitoring and evaluation systems. The PIU will ensure that the members in the Implementation Units are fully integrated into the management information processes of the project. The Monitoring and Evaluation System will track the performance indicators, scheduling and implementation data, and expenditure, as shall be agreed within the framework of the annual work plan and budget. The PIU will provide regular implementation reports.

## 4 CHAPTER FOUR: BASELINE INFORMATION

This section describes the overall baseline condition of Kenya in terms of bio-physical environment, as well as the socio-economic and cultural. The proposed project will rolled out in the entire country within the 47 counties hence the baseline information presented below will for the entire country.

### 4.1 Location and Size

Kenya (**Figure 1**) is located in the eastern part of the African continent approximately between latitudes 4°21' N and 4° 28' S and between longitudes 34° and 42° E. Kenya is bordered by Uganda to the west, Ethiopia and South Sudan to the north, Tanzania to the south and Somalia and the Indian Ocean to the east. Kenya covers an area of approx. 587,000 km<sup>2</sup>, of which 11,000 km<sup>2</sup> consists of water bodies.

Kenya's landscape is grouped into geographical zones including; the Savannah Lands covering most of the arid and semi- arid areas, the Coastal Margin, the Rift Valley, the Highlands and the Lake Victoria Basin.

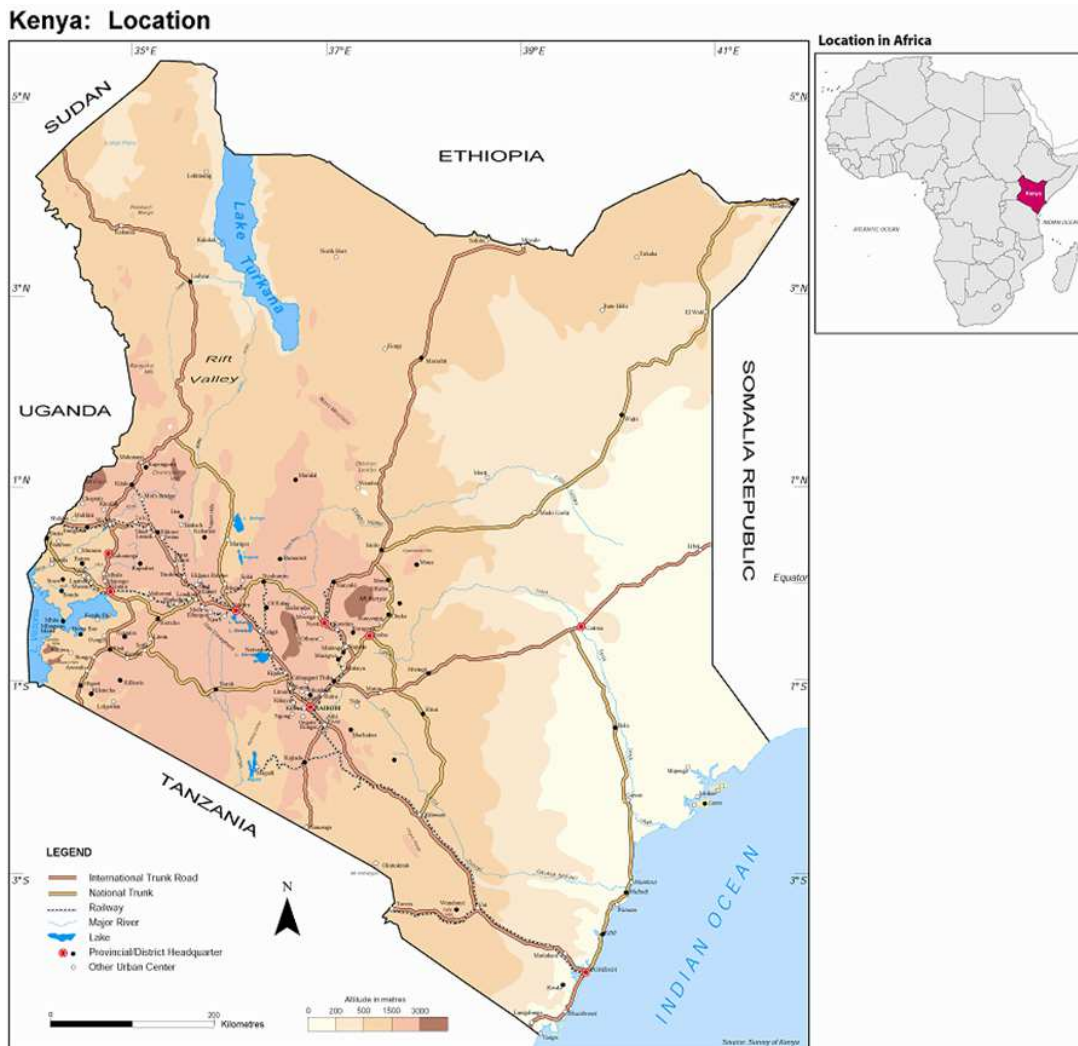


Figure 1: Map of Kenya

*Kenya sits on the Equator in East Africa. It is bordered by the Indian Ocean to the east, Somalia and Ethiopia to the north, South Sudan to the Northwest, Tanzania to the South, and in the West, by Uganda. Kenya is Africa's tenth most populated country and ranks 22<sup>nd</sup> in terms of its size (Source: Survey of Kenya 2003)*

Kenya lies along the equator in East Africa. Most of the country consists of high plateau areas and mountain ranges that rise up to 3,000 m and more. The plateau area is dissected by the Eastern Rift Valley, which is 40-50 km wide and up to 1,000 m lower than the flanking plateau.

The narrow coastal strip along the Indian Ocean is backed by a zone of thorn bush-land. Some areas in central Kenya, at the flanks of the Rift Valley, and in western Kenya, close to Lake Victoria, are very densely populated.

The land stretches from the sea level (Indian Ocean) in the east through a diversity of landforms. From the coast, the altitude changes gradually through the coastal belt and plains (below 152 Metres above sea level), the dry intermediate low belt to what is known as the Kenya Highlands (over 900 Metres above sea level). The country is split by the Great Rift Valley into the Western part, which slopes into Lake Victoria from the Mau ranges and Mount Elgon (4,300m) and the Eastern part dominated by Mt. Kenya and the Aberdare Ranges which rise to 5,200m and 4,000m respectively.

## **4.2 Physical Environment**

### **4.2.1 Climate**

Kenya enjoys a tropical climate. It is hot and humid at the coast, temperate inland and very dry in the north and northeast parts of the country. The average annual temperature for the coastal town of Mombasa (altitude 17 Metres) is 30.3<sup>o</sup> Celsius maximum and 22.4<sup>o</sup> Celsius minimum, the capital city, Nairobi (altitude 1,661 Metres) 25.20 Celsius maximum and 13.60 Celsius minimum, Eldoret (altitude 3,085) 23.6<sup>o</sup> Celsius maximum and 9.5<sup>o</sup> Celsius minimum, Lodwar (altitude) 506 Metres) and the drier north plain lands 34.8<sup>o</sup> Celsius maximum and 23.7<sup>o</sup> Celsius minimum.

The long rains occur from April to June and short rains from October to December. The rainfall is sometimes heavy and when it does come it often falls in the afternoons and evenings. The hottest period is from February to March and coldest in July to August.

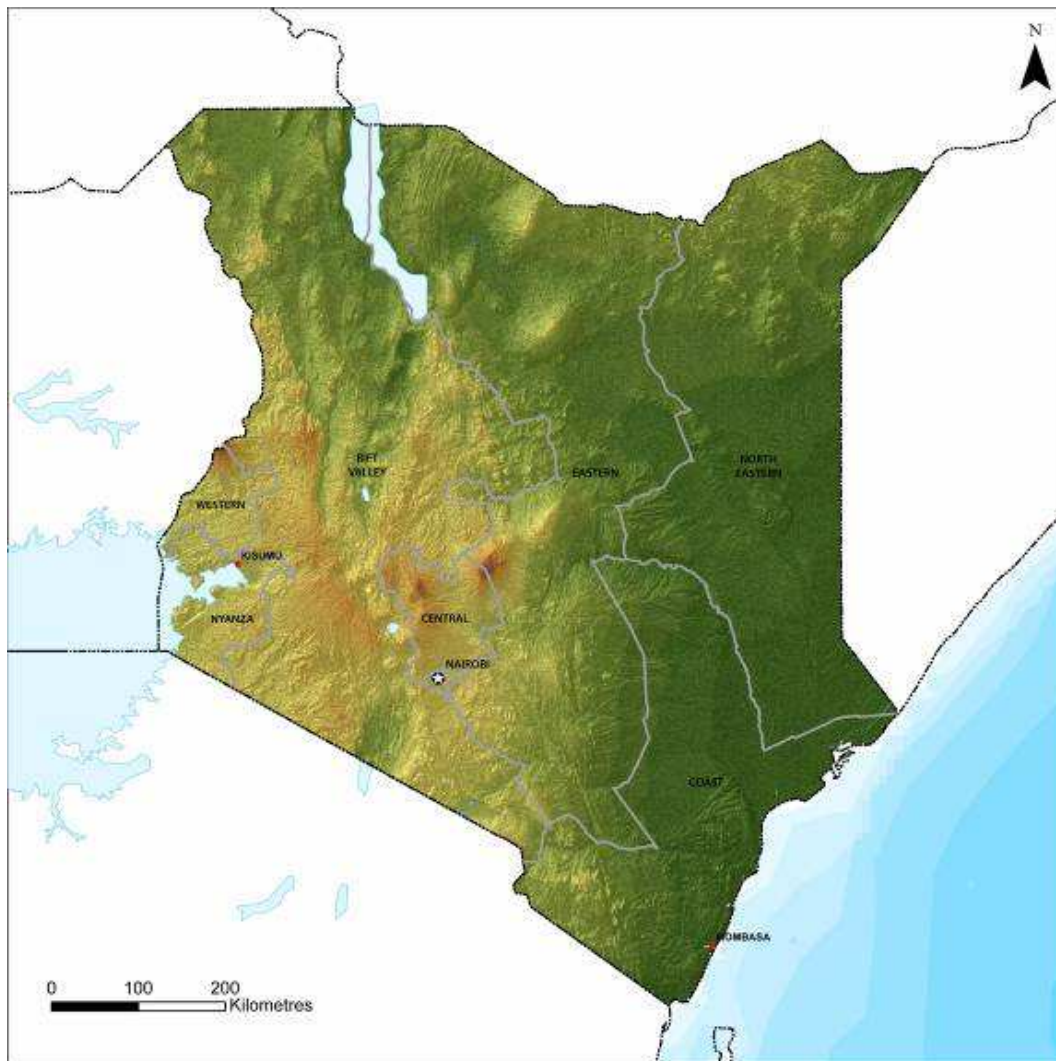
### **4.2.2 Topography and Drainage**

The Republic of Kenya has an area of approximately 582,646 sq. km. comprising of 97.8% land and 2.2% water surface. Only 20% of the land area can be classified as medium to high potential agricultural land and the rest of the land is mainly arid or semiarid. Forests, woodlands and national reserves and game parks account for ten percent (10%) of the land area, i.e. 58,264 sq. km. 18.

Kenya's total land surface comprises of 13,396 km<sup>2</sup> of water surface. This water surface comprise of a number of small lakes with fluctuating limits as well as part of Lake Victoria and most of Lake Turkana.

Only 3,831 km<sup>2</sup> of Lake Victoria is in Kenya while most of Lake Turkana lies in Kenya. Kenya's coastal line extends approximately 402 km along the Indian Ocean.

Topographically, the country may be divided into 4 distinct geographical and ecological regions or zones with different patterns of land use, namely; the coastal plain, the arid low plateau, the highlands, and the Lake Victoria basin. The rainfall patterns are extremely varied but generally follow those regions, with the Lake Victoria basin receiving the heaviest and most consistent rainfall.



**Figure 2: Relief Map of Kenya**

*Kenya's relief can be roughly divided into six major regions: the lowlands of the coastal belt and plains; the Buruma Wair Low land belt; the Foreland Plateau; the Highlands (East and West); the Nyanza Low Plateau (part of the Lake Victoria Basin); and the Northern Plain lands (Survey of Kenya 2003).*

A small percentage of the water surface area is covered by surface drainage. This drainage is determined primarily by the Rift Valley, which roughly bisects the highland zone from North to South. Within the Rift Valley, drainage is into a chain of lakes, which have no surface outlet west of the Rift

Valley rivers drain into Lake Victoria. To the East, rivers follow a southeasterly course into the Indian Ocean.

In some areas, topography and rainfall - runoff regime have created many semi-closed, poorly drained or overflow areas that retain a substantial amounts of runoff which originate on the sloped areas. On groundwater, the country is divided into three broad areas. These are volcanic rocks, Precambrian metamorphic basement rocks and Precambrian intrusive rocks and sedimentary rocks.

The volcanic rocks cover 26% of the country, more commonly in the western half of Kenya.

Groundwater sources occur in old land surfaces, which are weathered zones between successive lava flows that signify periods of quiescence. Fractures, faults, fissures and joints are also useful.

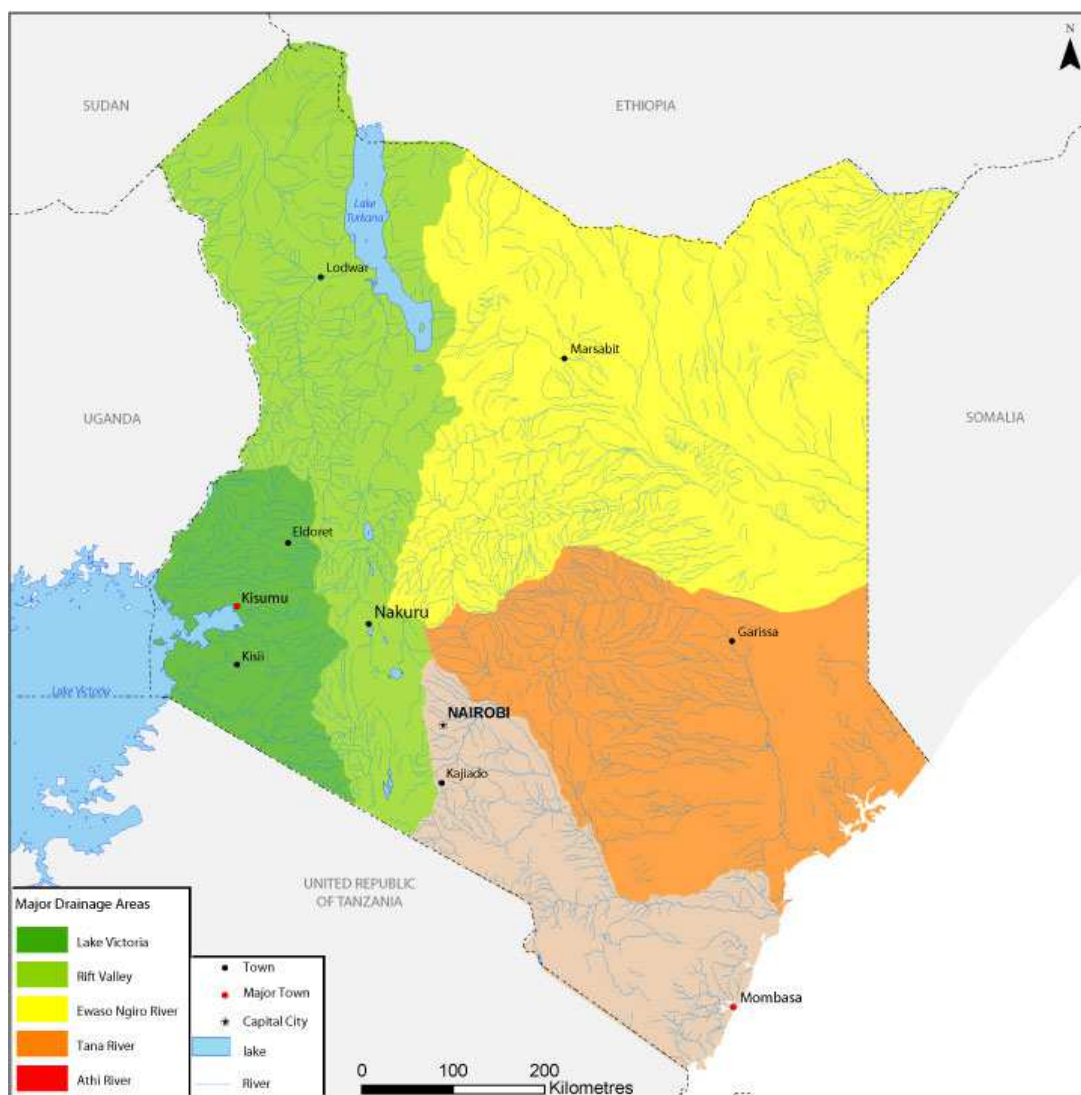
Water is mainly of bicarbonate type with low total dissolved solids. Local pockets of high fluoride are believed to be of volcanic and fumarolic origin.

The Precambrian rocks cover an area which is approximately 17% of the country and are widely distributed in the central, western and north western parts of Kenya. Water in these areas occurs in deep horizons of faults, and fractures. Aquifers are generally unconfined and yields and water levels vary within rocks. The sedimentary rocks cover 55% of the country, predominantly in the eastern parts. These areas have loose and permeable sediments. The aquifers are shallow and unconfined and most of them are generally saline. The salinity results from accumulation of soluble evaporate minerals within the sediments.

#### **4.2.3 Hydrology**

Kenya's four largest inland water bodies (Lake Victoria, Lake Turkana, Lake Naivasha, and Lake Baringo) account for about 1.9 per cent of the land area. The majority of Kenya's lakes, including both saline and freshwater, and closed and open basin systems, are located within the Great East African Rift Valley. Kenya's major permanent rivers originate in the highlands. The Nzoia, Yala, Sondu Miriu, and Migori rivers drain into Lake Victoria. The Ewaso Ngiro River is found in the northeastern part of the country and the Tana and Athi rivers flow in the southeastern part. The rivers draining into Lake Victoria (covering over 8 per cent of Kenya's land area) provide about 65 per cent of Kenya's internal renewable surface water supply. The Athi River drainage area (11 per cent of Kenya's land area) provides 7 per cent, the lowest share among Kenya's major drainage areas (Survey of Kenya 2008 and MOWI.).





**Figure 3: hydrological Map of Kenya**

#### 4.2.4 Soils and Geology

The geology of Kenya is characterized by Archean granite/greenstone terrain in western Kenya along Lake Victoria, the Neoproterozoic 'Pan-African' Mozambique Belt, which underlies the central part of the country and Mesozoic to Recent sediments underlying the eastern coastal areas.

The Eastern Rift Valley crosses Kenya from north to south and the volcanics associated with rift formation largely obliterate the generally north-south striking Neoproterozoic Mozambique Belt (Schlueter 1997). Rift Valley volcanogenic sediments and lacustrine and alluvial sediments cover large parts of the Eastern Rift.

About 59 per cent of Kenya's soils have moderate to high fertility, meaning they are theoretically suitable for growing crops. Fertility levels, however, depend on the amount of rainfall. Given the distribution and variability of rainfall in Kenya, only about 17 per cent of the land area has medium to

high potential for crops, while the remaining 83 per cent is classified as arid and semi-arid and so of low crop growing potential (Survey of Kenya 2003). Dry lands, however, provide essential habitat for about half the country's livestock and 70 per cent of Kenya's wildlife (UNCCD 2002).

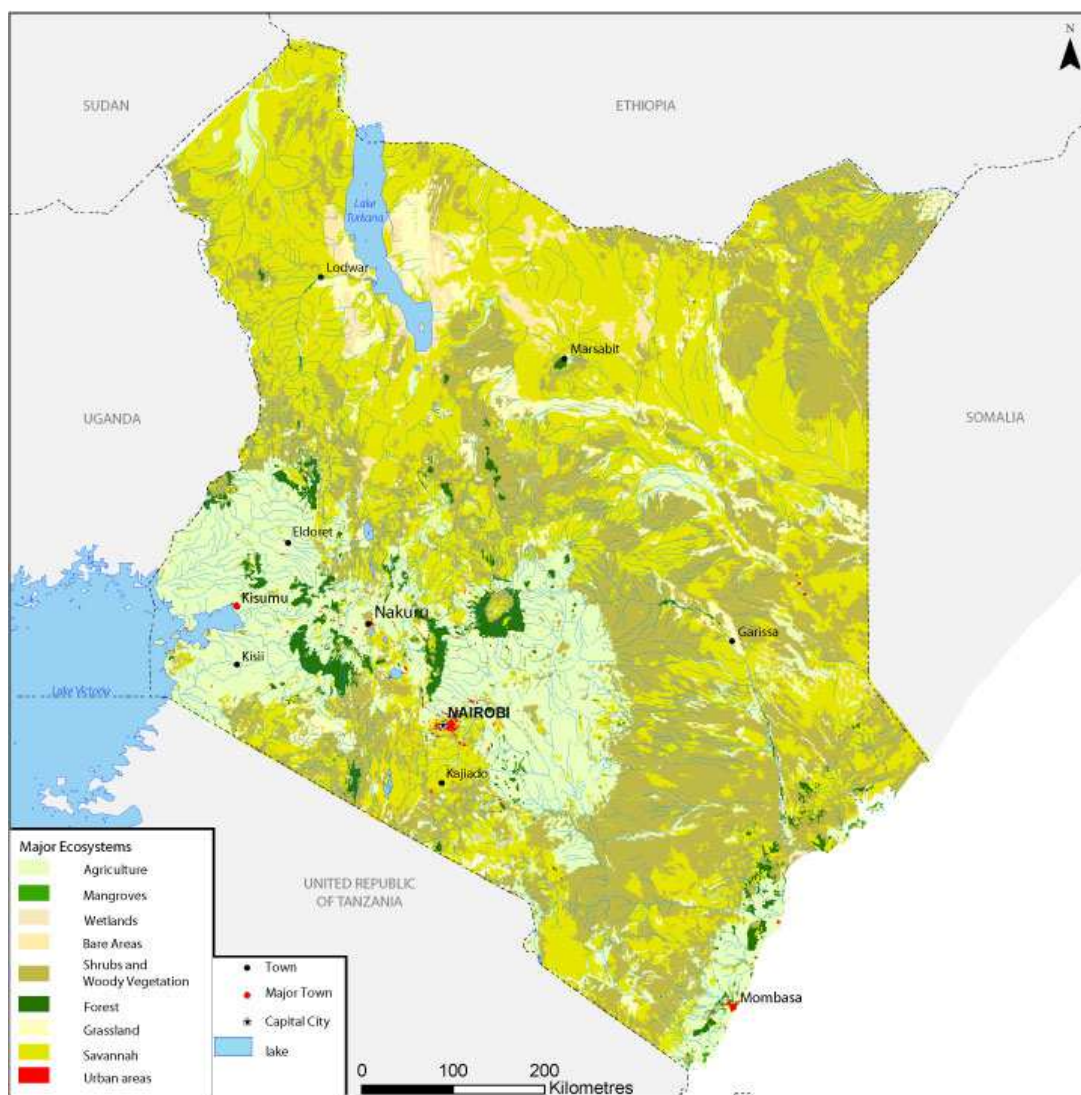
#### **4.2.5 Land Use**

Approximately seventy five per cent (75%) of the country's population lives within the medium to high potential (20% of land area) and the rest in the vast Arid and Semi-Arid Lands (ASALs). One consequence of this is that size and distribution of land varies quite widely as does population density which ranges from as low as 2 persons per sq. km. in the ASALs to a high of over 2000 in high potential areas.

### **3.5 Biological Environment-Ecosystems**

Kenya's land is covered by different types of vegetation according to the climate, topography, and other physical factors. The major categories are grassland, forests, semi-deserts, and mountains. Human impacts on the land continue to alter the distribution, amount, and health of these ecosystems (Survey of Kenya 2003).





**Figure 4: Major ecosystems in Kenya**

#### 4.2.6 Grasslands

Grasslands dominate Kenya's land cover and include what is known as 'savanna' vegetation. Permanent meadows and pastures occupy about 21.3 million ha. in Kenya, which represent 2.4 per cent of Africa's total meadows and pastures (FAO 2008).

#### 4.2.7 Forests

Forests cover 2.9 per cent of Kenya's land area (KFMP 1995). The main forest types are moist highland forest, dry forest, tropical rain forest, coastal forest, and riverine and mangrove forests (Survey of Kenya 2003). Although they are not extensive land cover, Kenya's forests provide significant goods and services, including numerous non-timber forest products that provide local people with food, fibres, medicines, and shelter. The closed canopy forests are habitat for disproportionately large percentage of the country's wildlife and other biodiversity. It is estimated that they harbor 40 per cent of large

mammals, 30 per cent of birds and 35 per cent of the nation's butterflies. About half of Kenya's threatened mammals and birds are found in its forests (Survey of Kenya 2003).

#### **4.2.8 Arid and semi-arid lands (ASALS)**

Over 80 per cent of Kenya is arid or semi-arid lands (ASAL). These lands are home to over 10million people. The ASAL has over 70 per cent of the livestock population and 90 per cent of the wild game, which attract tourism to the area. The ASAL also contains much of Kenya's commercial mineral wealth (WRI et al. 2007 and MSDNKAL 2008).

#### **4.2.9 Mountain vegetation**

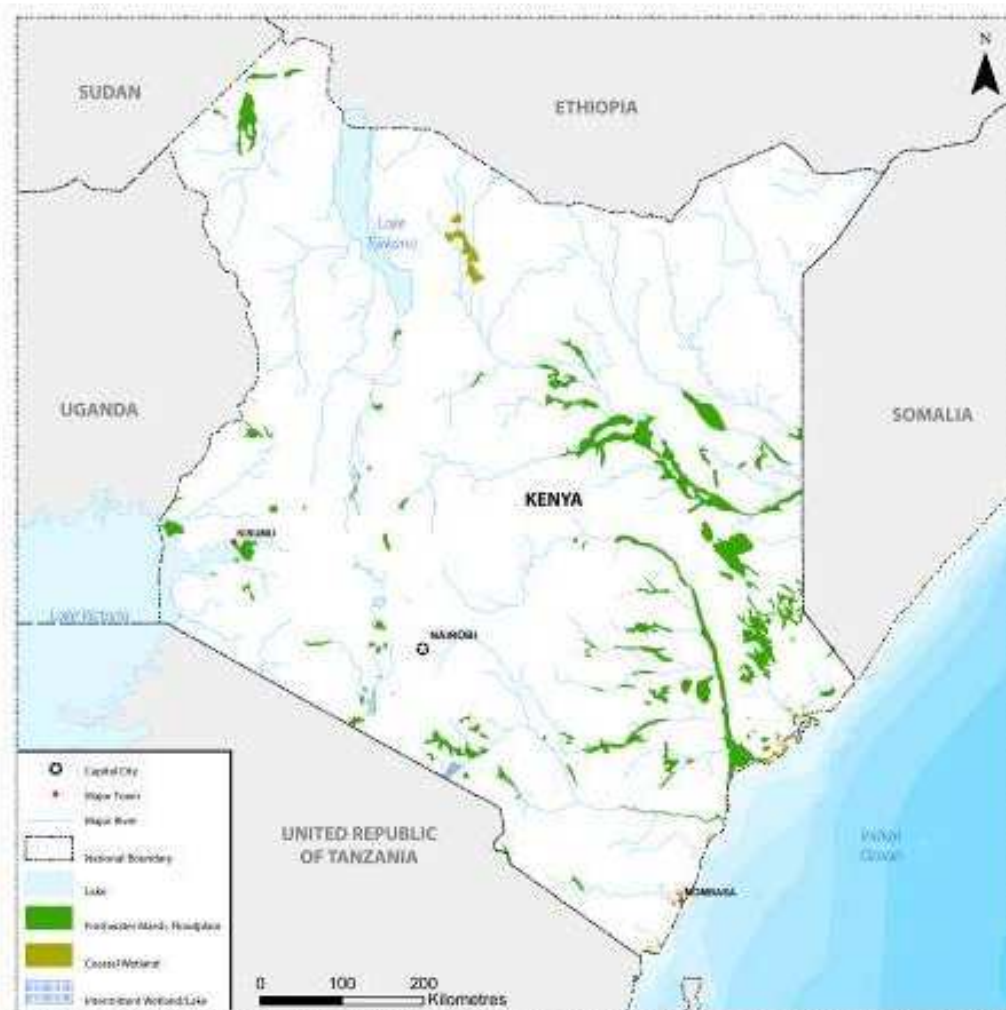
Kenya's five major mountainous regions (Mount Kenya, Mount Elgon, Aberdare Range, Mau Escarpment, and Cherangani Hills) are surrounded by foothills and high-elevation plateaus. Mountainous regions harbour unique types of vegetation due to the micro-climates that occur on their slopes. Different altitudes, aspects, and moisture availability create a large variety of ecosystems over relatively small areas.

#### **4.2.10 Wetlands**

Kenya's wetlands occur in both fresh and salt waters. They include coral reefs, mangroves, deltas, creeks, lake shores, rivers, marshes, ponds, impoundments, and mountain bogs. They are a source of water, provide numerous ecosystem services, and have a high diversity of characteristic biota or living organisms (Ramsar Convention 2001).

Kenya's wetlands cover about 14 000 km<sup>2</sup> (2-3 per cent of the country's surface area) and are found along the major rivers. In addition, many seasonal and temporary wetlands occur all over the country, including rock pools and springs in the southern part of Nairobi, west of Ngong Hills, and at Limuru. Wetlands have also been created by damming water for hydroelectricity and water supplies, and some wetlands have been built to treat wastewater (Macharia 2004).

Wetlands are a source of social-cultural and economic potential providing people with food, medicinal products, firewood, and materials for building and handicrafts. Rapid population growth, agricultural operations, and encroachment of development pose a serious threat to wetlands. Expanding industries and urban centers discharge their waste water into them and the polluted waters are unhealthy for human and livestock use, destroy aquatic life, and restrict recreation opportunities (Ramsar Convention 2001).



**Figure 5: Kenya's Largest Wetlands**

*They include the shallow lakes Nakuru, Naivasha, Magadi, Kanyaboli, Jipe, Chala, Elmentaita, Baringo, Ol' Bolossat, Amboseli and Kamnarok; the edges of Lake Victoria and Lorian, Saiwa, Yala, Shompole swamps; Lotigipi swamp(Lotigipi) and Kano plains; Kisii valley bottoms and Tana Delta; and coastal wetlands (Source: WWF 2005)*

#### **4.2.11 Marine and coastal areas**

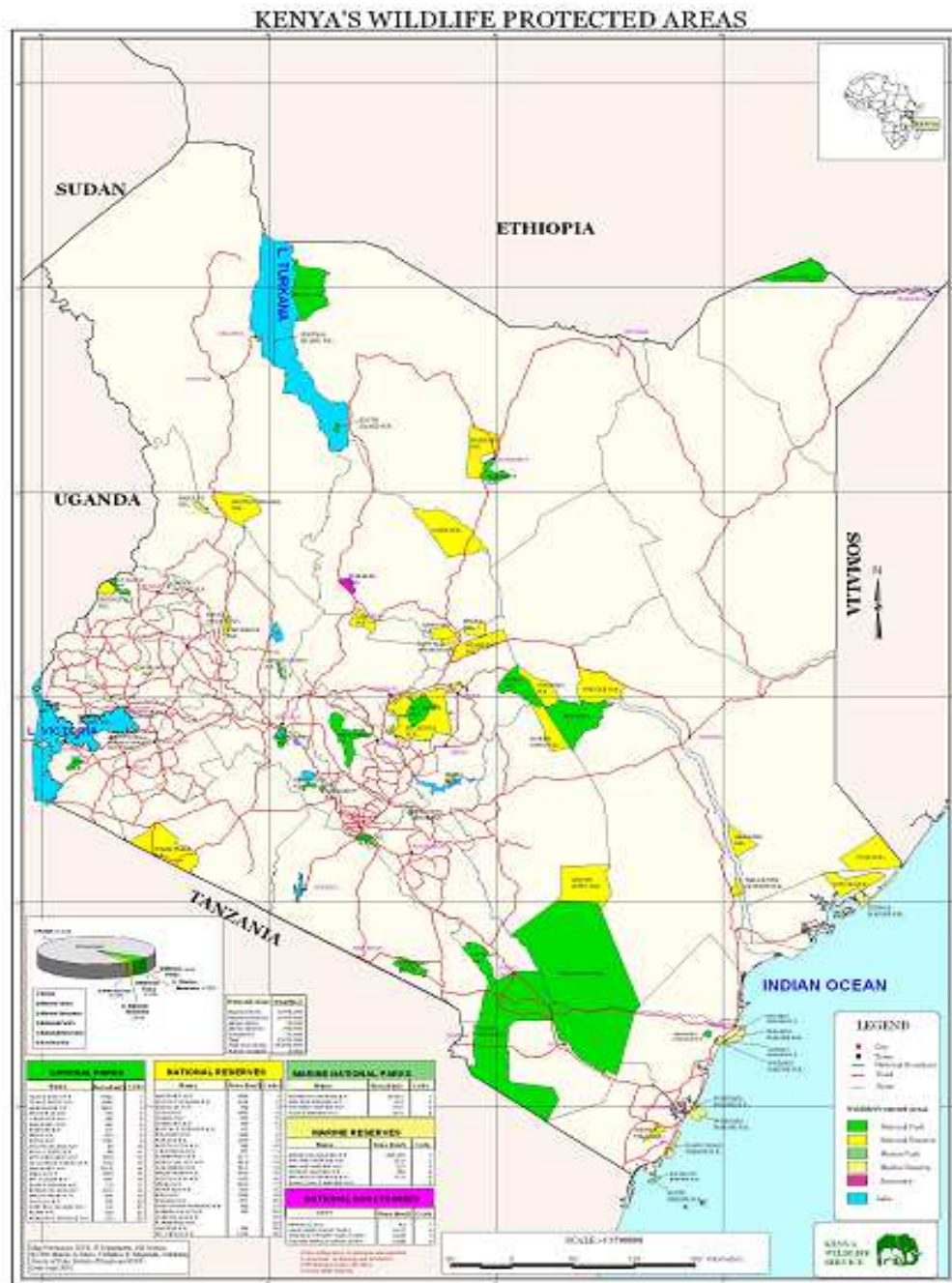
Kenya's marine and coastal environments include the Indian Ocean's territorial waters and the immediate areas that border the ocean. The Kenyan coast stretches 550 kilometers from the Somali border in the north in a south-westerly direction to the border with Tanzania. The fringing coral reef (comprised of about 140 species of hard and soft corals) runs between 0.5.kmand 2km off-shore with occasional gaps at the mouths of rivers and isolated areas facing creeks.

Beaches, cliffs, or mangrove forests dominate the shoreline in most areas. The coral-reef system, mangrove swamps, and hinterland provide unique natural landscapes and a wide range of biodiversity resources of special conservation concern.

#### **4.2.12 Wildlife**

Kenya's game parks and spectacular wildlife attract nearly two million tourists each year (UNWater2006) and generate important domestic revenues. Wildlife conservation is thus a high priority. Formed in 1946, Nairobi National Park, just outside the city, was the country's first protected area. By 2008, about 75 237.9 km<sup>2</sup> (WCPA 2007) of the nation's land area had been set aside as national parks and game reserves.

Wildlife is also protected by bans on game hunting, killing animals even when they attack, and the trade in ivory and skins. Nevertheless, poaching is a significant threat to many species including leopards, cheetahs, lions, elephants, and rhinoceroses. Efforts are being made to restore populations of the endangered African elephant and black rhino, and an aggressive campaign is being waged against poachers. Moreover, increased pressure on marine resources has led the Kenyan government to establish a system of protected areas managed by the Kenya Wildlife Service (KWS) to conserve and manage the most important ecosystems along the coast. In total, Kenya has five Marine Protected Areas (MPAs).



Examples of endangered species include the Sokokescops owl (*Otusireneae*); Taita blue-banded papilio (*Papiliodesmonditeita*); the highly endangered Tana River mangabey (*Cercocebusgaleritus*) and the Tana River red colobus (*Piliocolobusrufomitratu*s); the green sea turtle (*Cheloniemydas*) and the critically endangered hawksbill turtle (*Eretmochelysimbricata*).

In addition to threats to species biodiversity, a number of types of ecosystems are disappearing or are in dangerous decline due to human activities. These include the slopes of Mount Kenya and coastal forests as well as the Horn of Africa Acacia Savannas, a major centre of endemism for dry land plants.



## Physical Regions of Kenya

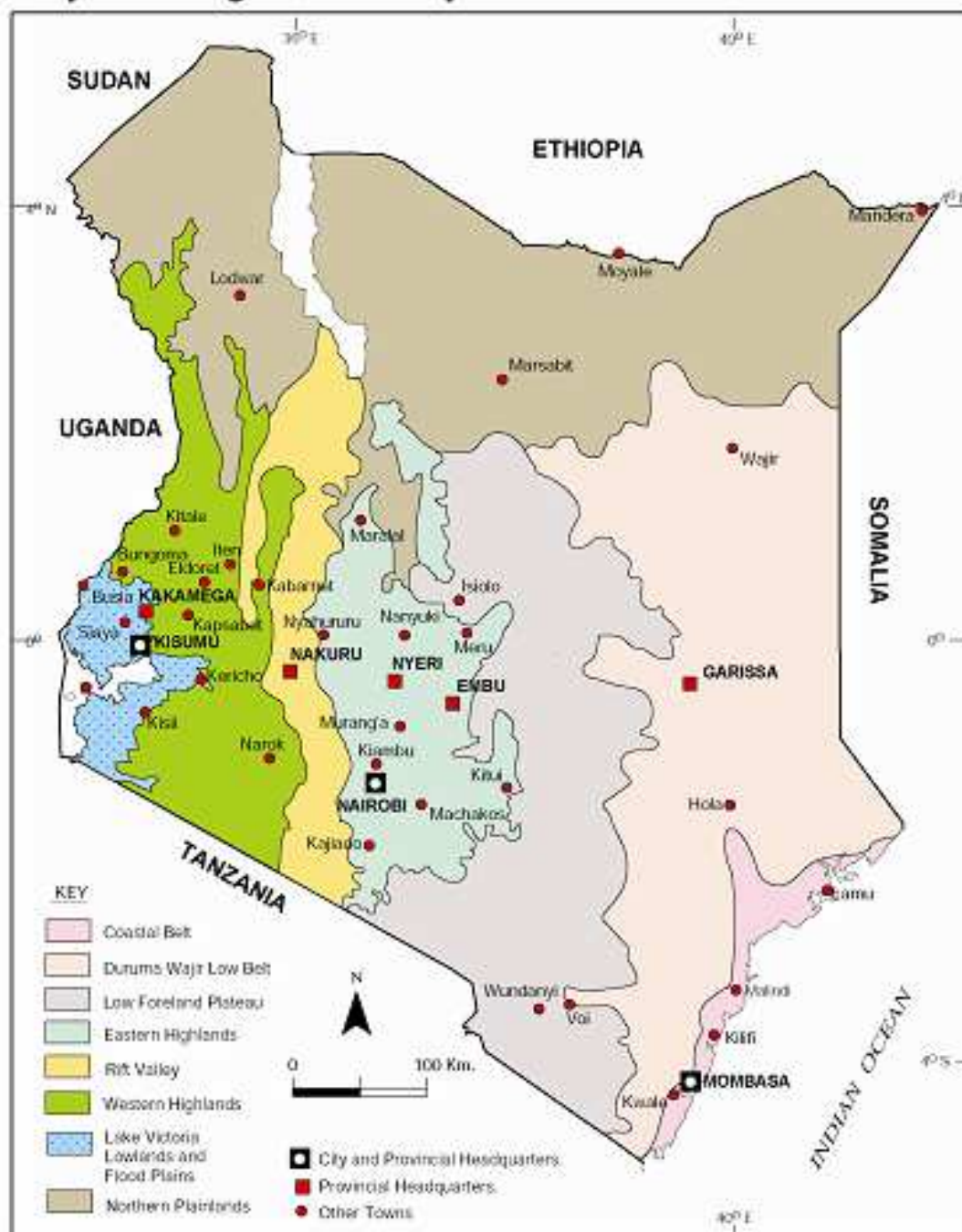


Figure 7: Physical Regions of Kenya

## 4.3 Socio-Economic Background

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### 4.3.1 Population

Kenya's population increases by an estimated one million a year. The government revised population based on the 2009 census is 39.8 million, an increase of over 35 percent in the past decade. The population report shows the distribution of the population across the country, with Rift Valley Province being the most populous with 10.1 million people. Nairobi, the capital, has 3.1 million people, according to the report released by the Ministry of Planning and National Development. Demographic trends show that more people are moving to urban areas and the Bank estimates that half of Kenya's population will live in cities by 2050. Better macro-economic conditions in the past decade helped improve the welfare of Kenyans, but the poor remain vulnerability to drought and other crises induced by climate change. Rural and urban poverty remain a challenge. Recent analysis of the data from the 2005 to 2006 Kenya Integrated Household Budget Survey (KIHBS) indicates that national absolute poverty declined from 52.3 percent in 1997 to 46.1 percent in 2005 to 2006. While this decline in poverty compares well with other Sub Saharan African countries, it can still be considered high in comparison to neighboring countries such as Tanzania (about 36 percent) and Uganda (about 31 percent). In rural areas, overall poverty declined from 52.9 percent to 49.1 percent, while in urban areas, poverty declined from 49.2 percent in 1997 to 38.8 percent over the same period.

The Kenyan poverty profile also reveals strong regional disparities in the distribution of poverty. According to the 2005 to 2006 survey, the lowest incidence of rural poverty was in Central province (30.3 percent), followed by Nyanza (47.9 percent), Rift Valley (49.7 percent), Eastern (51.1 percent), Western (53.2 percent), Coast (69.7 percent), and North Easter province (74.0 percent). Inequality in Kenya remains high. The distribution of income, measured by the Gini coefficient (a measure of inequality of income distribution—the higher the percentage the higher the level of inequality) was estimated at 39 percent in rural areas and 49 percent for urban areas (pre-crisis). Income disparities in the rural areas have gone down since 1997, while the disparities in the urban areas have increased slightly. The Commission on Revenue Allocation is using the development and poverty data to develop a model for more equitable distribution of public resources.

There has been additional progress with respect to other dimensions of social development over the past years. For example, net primary education enrolment was only 80 percent in 2003, but has since increased to about 90 percent in 2008 (with an equal enrolment ratio between boys and girls). In 2004, only about 60 percent of primary students completed their education compared with about 80 percent in 2008. The transition from primary to secondary and later to tertiary and university education has also improved in recent years due to increased public and private investment in the education sector.

### 4.3.2 Economic Growth & Setting

Kenya's economy recorded high growth rates of real Gross Domestic Product (GDP) averaging 6.6% per annum during the immediate post-independence years (1964-1973) and towards the end of that decade. Deceleration of this growth which started in late 1970s, continued until 2002 when the economy registered a record negative growth rate of 0.2%. During the years 1997-2002 economic growth declined steadily with GDP recording an average annual growth rate of only 0.9%, against a

population growth rate of 2.9% per annum. The economy has been on a recovery path since 2003 when real GDP grew by only 0.5% to 6.1 % in 2007, giving rise to an annual growth rate of about 4.3% against a population growth rate of about 2.8% per annum.

Among the key factors contributing to the economic decline were poor infrastructure, particularly bad roads, inadequate energy supply, inadequate water supply, a weak institutional framework, weak performance of the major sectors of the economy namely; agricultural and manufacturing sectors, and poor macro-economic management. More recently, about 46.6% of Kenya's population of 35.5 million people in 2005/06 was estimated to be living below the country's poverty line in both rural and urban areas.

Despite a number of economic challenges, Kenya will still experience a satisfactory growth rate of 4.3 percent in 2011. This will be higher than Kenya's long-term growth rate of 3.7 percent but still a full percentage point below the average projected for Sub-Sahara Africa. In the first half of 2011, the Kenyan economy grew by 4.5 percent, driven by a strong performance in the financial sector (8.2 percent), construction (8.1 percent), as well as hotels and restaurants (6.4 percent). Moderate growth was recorded in the agricultural and industrial sectors. Overall growth for 2011 is expected to be balanced across all key sectors, with the services sector maintaining its position as the growth engine over the last decade

Agriculture has performed average despite the moderate drought. Agriculture production grew by 3.5 percent in the second first half of the year as rains normalized, especially in Kenya's "bread basket", the Rift Valley, and production held up again. The drought mostly affected Kenya's livestock production in Northern and Eastern regions. It is estimated that the drought shaved off 0.2 percentage points from GDP growth, mainly as a result of livestock mortality. Beyond these arid regions, low rainfall and high temperatures affected tea production. In addition, the crises in North Africa and Europe adversely affected the demand for Kenya's cash crops, mainly horticulture, coffee and tea.

Industrial sector growth remains driven by construction while manufacturing is lagging. The construction sub-sector recorded an impressive 8.1 percent growth in the first half compared to a 2.2 percent growth in the same period in 2010. Manufacturing grew at a modest 3.2 percent, compared to 5.5 percent in the same period last year. The drought impacted hydro power generation and the resulting high cost of energy has adversely affected the industrial sector. The share of hydro power in Kenya's energy supply declined from 57 percent in July 2010, to 43 percent in July 2011. This in turn increased dependence on back-up thermal power generation, which uses expensive imported fuel as its feedstock. Industries that depend on imported raw materials, saw their production costs increase significantly due to high import costs (oil and steel), along with the depreciation of the shilling.

The costs of imported machinery and equipment also increased substantially. The combined effect of these factors has negatively impacted the competitiveness of industry, resulting in a sluggish performance in 2011.

The services sector is holding up, fuelled by continued growth in ICT and a strong performance in tourism. Services grew by 4.3 percent in the first half of 2011, mainly driven by financial intermediation



(8.2 percent); hotels and restaurants (6.4 percent), and transport and communication (5.2 percent). Tourist arrivals increased by 13.6 percent in the first half of 2011, compared to 2010 levels. Despite Europe's economic slowdown, 46 percent of arrivals were still from Europe, 25 percent from the rest of Africa, 12 percent from the Americas, and 10 percent from Asia. However, the emerging security concerns stemming from Kenya's incursion in Somalia will dampen tourist arrivals for the remainder of the year, though the high season is over.

The ICT revolution is reaching new milestones and is stimulating growth in other services. The mobile phone revolution has continued, with subscriptions peaking at 25.3 Million at the end of June 2011, which is more than the number of adults in Kenya. Since June 2010, subscriptions increased by more than 25 percent. In the same period, internet users increased by 60 percent, climbing to 12.5 Million.

This indicates that the data revolution is now also in full swing. A key factor in the growth of internet usage is the new affordable tools, including smart phones and social networking applications with both internet and mobile interface that are proving increasingly popular, especially among the urban youth. The sector has also generated additional innovations, including-banking, linking mobile money with personal bank accounts, M-credit, and M-insurance, which are expanding the reach of financial services to previously unbanked segments of the population.

#### **4.4 The Physical Infrastructure Sector**

The Physical Infrastructure Sector consists of Roads; Public Works; Transport; Energy; Local Government; Nairobi Metropolitan Development and Housing Sub-Sectors. In the new long term development blue print for the country "The Kenya Vision 2030", infrastructure development has been recognized as an enabler for sustained development of the economy and particularly for the six key sectors namely; Tourism, Business Process Outsourcing (BPO), Wholesale and Retail, Manufacturing, Financial Services and Agriculture and Livestock identified under the economic pillar.

The Kenya Vision 2030 recognizes the importance of development infrastructure as critical for socio-economic transformation. The Infrastructure Sector aspires for a country with modern metropolitan cities, municipalities and towns with infrastructural facilities that meet international standards to make Kenya a globally competitive and prosperous country. The strategies and measures to be pursued in the medium term include; supporting the development of infrastructure initiatives around flagship projects, strengthening the institutional framework for infrastructure development, raising the efficiency and quality of infrastructure as well as increasing the pace of infrastructure projects so that they are completed as envisaged, protecting the environment as a national asset and conserving it for the benefit of the future generations and the wider international community. Other measures include encouraging Private Sector participation in the provision of infrastructure services through the Public-Private-Partnerships (PPPs) framework. Below are the ongoing flagship physical infrastructure projects in the different sectors;

#### **4.4.1 Public Works Sub-Sector**

Sufficient investments in the Public Works sub-sector are required to facilitate provision of adequate building space for all stakeholders in Government. It is therefore necessary to develop innovative ways of resource mobilization and prudent utilization for optimal growth.

With rapid population and urbanization, proliferations of informal settlements increasingly continue to pose social and economic challenges for the housing sub sector. This can be mitigated by aggressive investment in housing infrastructural facilities and provision of appropriate incentives to foster private sector participation in housing development. Various legislative frameworks relevant to housing such as Building Laws; Housing Bill, Tenant and Landlord Bill need to be fast tracked for enactment to spur growth in the housing sector.

#### **4.4.2 Metropolitan development sub sector**

Metropolitan development sub sector has experienced inadequate funding although this has been rising gradually. However, as a result of the continuous capacity building in terms of personnel, facilities and equipment, the sub sector's actual expenditure has been increasing progressively. It is envisaged that the increase in resource allocation as well as the progressive capacity building will enable the sub - sector deliver its services through effective project implementation.

Successful implementation of projects in the roads' sub-sector will be realized if effective collaboration with key stakeholders is enhanced. It is notable that liquidity levels for road contractors have increased on account of reduction of withheld VAT from 16% to 8%. However the refund systems of input VAT continues to be too bureaucratic causing undue delays in the refund. The sub sector has endeavored to address the challenge of outstanding bills, through timely completion of ongoing projects and did not take to start any new projects to ensure that ongoing ones are adequately funded and are completed on time. Further, reduction of the percentage earmarked for maintenance of Class DE/Other roads to 10% and equal distribution of the same across all constituencies continues to impact negatively on road maintenance.

#### **4.4.3 Energy sub-sector**

The energy sub-sector is critical in ensuring sufficient and efficient power supply. However, it continues to experience inadequate power supply capacity resulting to over-reliance on hydropower. Some of the challenges experienced by the sub sector include inability of KPLC to connect all customers due to weak transmission and distribution network; high cost of power compared to other regional players; dependence on donor financing and their stringent conditionality, and ever rising prices of fossil fuels.

Rural Electrification Program: This program will facilitate supply of power from the national grid to 460 trading centres and 110 secondary schools among other public facilities. In addition the Program intends to spend Kshs. 180 million to provide solar electricity generators to 74 public institutions such as secondary schools, boarding primary schools, health centres and dispensaries. Some isolated mini diesel power stations will also be constructed to serve areas which are uneconomical to be supplied power from the national grid.

Geothermal Appraisal at Olkaria IV: Six (6) appraisal wells will be drilled to assess the commercial viability of producing 140 MW of electricity. In the medium the drilling campaign will be stepped up to other areas with geothermal resources to realize adequate steam to produce equivalent 600MW. Coal Exploration: Initial exploratory drilling at Mui Basin in Kitui and Mwingi Districts has indicated the existence of coal in this area. During the MTP period, appraisal drilling and assessment will be undertaken to determine the quantity and quality with a view to ascertaining the commercial viability of the coal deposits. Coal exploration will thereafter be extended to cover other areas such as Karoo in the Coast Province.

Wind Power Generation: Wind power generation by KenGen and IPPs is expected to supply a total of about 150 MW. Cogeneration: Power will also be produced in the process of producing sugar. The sugar factories in the country have the potential of producing about 120 MW using bagasse as the base.

#### **4.4.4 Transport sub-sector**

Transport sub-sector provides leadership in Transport policy development and therefore requires enhanced empowerment to facilitate effective co-ordination. With Kenya being strategically located with good access to sea and air connections to most parts of the world, there is pressure to ensure safety in all modes of transport. Piracy in Kenyan water is a concern and requires the concerted efforts and collaboration of the sub-sector and that of Defense by increasing the patrolling in the Kenyan waters along the Indian Ocean. As the road infrastructure is improved, there is need to ensure safety. To do this, road safety awareness campaigns, erection of studs in black spot and adoption of best tested and piloted systems will be enhanced. Effective sub-sector capacities are a pre-requisite in transforming challenges into opportunities through efficient program implementation.

***Dredging and Deepening the Mombasa Port:*** The dredging of the port to deepen the channel to 16 metres will enable larger post-Panama vessels to access the port and thereby remove the risk of the port slowly evolving into a feeder facility which larger vessels have no access. Dredging the port to 16 meters to accommodate panama vessels is underway. Under Port Container Terminal Expansion, Procurement of consultancy for civil works supervision is complete. Awarding of civil works contract is at an advanced stage.

***Nairobi Metropolitan Region Rapid Bus Transit System:*** The Government has laid plans for the development of a rapid bus transport system starting with the following three transport corridors: Athi River Town to Kikuyu Town (approximately 38 km); Thika Town to the Central Business District (approximately 50 kms); and Jomo Kenyatta International Airport to the Central Business District (approximately 25 kms). The Nairobi Metropolitan region rapid bus transit is expected to be operational in four years' time. So far a feasibility study on Mass Rapid Transit System for Nairobi Metropolitan region is being undertaken together with development of commuter rail services in an effort to decongest Nairobi Metropolitan region.

***Development of Light Rail for Nairobi and its Suburbs:*** The area expected to be served by the light rail stretches from Nairobi Railway Station, situated in the Central Business District, to Embakasi/Jomo

Kenyatta International Airport, a distance of 15.6 kilometres, and borders the heavily populated industrial area, Makongeni, Makadara, Buru Buru, Doonholm and Pipeline, Jogoo Road, Outer Ring Road, Airport Roads, Mombasa Road, the Airport Siding and the Nairobi-Makandara. It is projected that the new light rail services will serve at least 150,000 daily passengers, which is 5 per cent of the future public transport demand in the Nairobi metropolitan area. To make this possible, a feasibility study for light Rail/Commuters trains to JKIA, CDB and suburbs (Athi River to City Centre, Kikuyu Town to city centre and Thika Town to the Central Business District) is in progress.

***Development of a New Transport Corridor to Southern Sudan and Ethiopia:*** This corridor will link Lamu, Kenya's North Eastern province, Ethiopia and Southern Sudan: The project involves the development of a new transport corridor from the new port at Lamu through Garissa, Isiolo, Maralal, Lodwar, and Lokichogio to branch at Isiolo to Ethiopia and Southern Sudan.

***Rehabilitation and Maintenance of Airstrips and Airport Expansion and Modernisation:*** This will involve rehabilitation and expansion of airstrips and airports serving tourist and commercial sites in the country.

## **5 CHAPTER FIVE: DESCRIPTION OF THE ADMINISTRATIVE, POLICY AND REGULATORY FRAMEWORK**

### **5.1 Introduction**

There is a growing concern in Kenya and at global level that many forms of development activities cause damage to the environment. Development activities have the potential to damage the natural resources upon which the economies are based. Environmental Impact Assessment is a useful tool for protection of the environment from the negative effects of developmental activities. It is now accepted that development projects must be economically viable, socially acceptable and environmentally sound.

A detailed review of relevant institutional and legal as well as policy framework that bears significance or implication to the KEMP project is presented in this chapter of the ESMF report. The World Bank Safeguard Operational Policies applicable to the project as well as the international laws and conventions that bear relevance to the implementation of this project have also been highlighted in this chapter.

### **5.2 Environmental Problems in Kenya**

There are many environmental problems and challenges in Kenya today. Among the cardinal environmental problems include: loss of biodiversity and habitat, land degradation, land use conflicts, human animal conflicts, water management and environmental pollution. This has been aggravated by lack of awareness and inadequate information amongst the public on the consequences of their interaction with the environment. KPLC is aware of the important role the environment plays and as such strives to carry its activities in an environmentally friendly way.

### **5.3 Administrative / Institutional Framework**

At present there are over twenty (20) institutions and departments which deal with environmental issues in Kenya. Some of the key institutions include:

#### **5.3.1 National Environment Management Authority (NEMA)**

The objective and purpose for which NEMA is established is to exercise general supervision and co-ordinate over all matters relating to the environment and to be the principal instrument of the government in the implementation of all policies relating to the environment. However, NEMA's mandate is designated to the following committees:

## **5.4 Provincial and District Environment Committees**

According to EMCA, 1999 No. 8, the Minister by notice in the gazette appoints Provincial and District Environment Committees of the Authority in respect of every province and district respectively. The Provincial and District Environment Committees are responsible for the proper management of the environment within the Province and District in respect of which they are appointed. They are also to perform such additional functions as are prescribed by the Act or as may, from time to time be assigned by the Minister by notice in the gazette. The decisions of these committees are legal and it is an offence not to implement them.

### **5.4.1 Public Complaints Committee**

The Committee performs the following functions:

- Investigate any allegations or complaints against any person or against the authority in relation to the condition of the environment in Kenya and on its own motion, any suspected case of environmental degradation and to make a report of its findings together with its recommendations thereon to the Council.
- Prepare and submit to the Council periodic reports of its activities which shall form part of the annual report on the state of the environment under section 9 (3) and
- To perform such other functions and exercise such powers as may be assigned to it by the Council.

### **5.4.2 National Environment Action Plan Committee**

This Committee is responsible for the development of a 5-year Environment Action Plan among other things. The National Environment Action Plan shall:

- Contain an analysis of the Natural Resources of Kenya with an indication as to any pattern of change in their distribution and transmission quantity over time.
- Contain an analytical profile of the various uses and value of the natural resources incorporating considerations of intergenerational and intra-generational equity.
- Recommend appropriate legal and fiscal incentives that may be used to encourage the business community to incorporate environmental requirements into their planning and operational processes.
- Recommend methods for building national awareness through environmental education on the importance of sustainable use of the environment and natural resources for national development.
- Set out operational guidelines for the planning and management of the environment and natural resources.
- Identify actual or likely problems as may affect the natural resources and the broader environment context in which they exist.
- Identify and appraise trends in the development of urban and rural settlements, their impact on the environment, and strategies for the amelioration of their negative impacts.
- Propose guidelines for the integration of standards of environmental protection into development planning and management.
- Identify and recommend policy and legislative approaches for preventing, controlling or mitigating specific as well as general diverse impacts on the environment.
- Prioritise areas of environmental research and outline methods of using such research findings.

- Without prejudice to the foregoing, be reviewed and modified from time to time to incorporate emerging knowledge and realities and;
- Be binding on all persons and all government departments, agencies, States Corporation or other organ of government upon adoption by the national assembly.

#### **5.4.3 Standards and Enforcement Review Committee**

This is a technical Committee responsible for environmental standards formulation, methods of analysis, inspection, monitoring and technical advice on necessary mitigation measures.

#### **5.4.4 National Environment Tribunal**

This tribunal guides the handling of cases related to environmental offences in the Republic of Kenya.

#### **5.4.5 National Environment Council (NEC)**

EMCA 1999 No. 8 part iii section 4 outlines the establishment of the National Environment Council (NEC). NEC is responsible for policy formulation and directions for purposes of EMCA; set national goals and objectives and determines policies and priorities for the protection of the environment and promote co-operation among public departments, local authorities, private sector, non-governmental organisations and such other organisations engaged in environmental protection programmes.

### **5.5 The Legal, Regulatory and Policy Framework**

#### **5.5.1 The Constitution of Kenya, 2010: Constitutional provisions**

Kenya now has a new Supreme law in form of the New Constitution which was promulgated on the 27th of August 2010 and which takes supremacy over all aspects of life and activity in the New Republic. The Constitution is the supreme law of the Republic and binds all persons and all State organs at all levels of government. The Constitution of Kenya, 2010 provides the broad framework regulating all existence and development aspects of interest to the people of Kenya, and along which all national and sectoral legislative documents are drawn.

In relation to the environment, article 42 of chapter four, *The Bill Of Rights*, confers to every person the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislative measures, particularly those contemplated in Article 69, and to have obligations relating to the environment fulfilled under Article 70.

Chapter 5 of the document provides the main pillars on which the 77 environmental statutes are hinged.

Part 1 of the chapter dwells on land, outlining the principles informing land policy, land classification as well as land use and property. Of core importance is the definition of private land as land within the project area is largely privately owned, and would be acquired for irrigation purposes.

The second part of this chapter directs focus on the environment and natural resources. It provides a clear outline of the state's obligation with respect to the environment, thus;

*“The state shall-*

- Ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;*
- Work to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya;*
- Protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities;*
- Encourage public participation in the management, protection and conservation of the environment;*
- Protect genetic resources and biological diversity;*
- Establish systems of environmental impact assessment, environmental audit and monitoring of the environment;*
- Eliminate processes and activities that are likely to endanger the environment; and*
- Utilise the environment and natural resources for the benefit of the people of Kenya.”*

There are further provisions on enforcement of environmental rights as well as establishment of legislation relating to the environment in accordance to the guidelines provided in this chapter.

In conformity with the Constitution of Kenya, 2010, every activity or project undertaken within the republic must be in tandem with the state's vision for the national environment as well as adherence to the right of every individual to a clean and healthy environment.

Section 69 (2) every person has a duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources

Every person has the right to a clean and healthy environment which includes the right –

- a) To have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69; and*
- b) To have obligations relating to the environment fulfilled under Article 70*

Section 69 (2) every person has a duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources

Section 70 provides for enforcement of environmental rights thus:

***(1) If a person alleges that a right to a clean and healthy environment recognized and protected under Article 42 has been, is being or is likely to be, denied, violated, infringed or threatened, the person may apply to a court for redress in addition to any other legal remedies that are available in respect to the same matter.***



**(2) On application under clause (1), the court may make any order, or give any directions, it considers appropriate—**

- a) To prevent, stop or discontinue any act or omission that is harmful to the environment;*
- b) To compel any public officer to take measures to prevent or discontinue any act or omission that is harmful to the environment; or c) To provide compensation for any victim of a violation of the right to a clean and healthy environment.*

**(3) For the purposes of this Article, an applicant does not have to demonstrate that any person has incurred loss or suffered injury.**

Essentially, the new Constitution has embraced and provided further anchorage to the spirit and letter of EMCA 1999 whose requirements for environmental protection and management have largely informed Sections 69 through to 71 of this document. In Section 72 however, the new constitution allows for enactment of laws towards enforcement of any new provisions of the Supreme Law.

### **5.5.2 Vision 2030**

The economic, social and political pillars of Kenya Vision 2030 are anchored on macroeconomic stability; continuity in governance reforms; enhanced equity and wealth creation opportunities for the poor; infrastructure; energy; science, technology and innovation (STI); land reform; human resources development; security as well as public sector reforms. The 2030 Vision aspires for a country firmly interconnected through a network of roads, Electricity railways, ports, airports, water and sanitation facilities, and telecommunications.

### **5.5.3 The Environment Management and Co-ordination Act, 1999**

This is an Act of Parliament providing for the establishment of an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto. This Act is divided into 13 Parts, covering main areas of environmental concern as follows: Preliminary (I); General principles (II); Administration (III); Environmental planning (IV); Protection and Conservation of the Environment (V), Environmental impact assessments (EIA), audits and monitoring (VI); Environmental audit and monitoring (VII); Environmental quality standards (VIII); Environmental Restoration orders, Environmental Easements (IX); Inspection, analysis and records (IX); Inspection Analysis and Records (X); International Treaties, Conventions and Agreements (XI) National Environment Tribunal (XII); Environmental Offences (XIII).

Part II of the Environment Management & Coordination Act, 1999 states that every person in Kenya is entitled to a clean and healthy environment and has the duty to safeguard and enhance the environment. In order to partly ensure this is achieved, Part VI of the Act directs that any new programme, activity or operation should undergo environmental impact assessment and a report prepared for submission to the National Environmental Management Authority (NEMA), who in turn may issue a license as appropriate.

KPLC is committed to ensuring that all its activities are carried out in an environmentally friendly manner throughout the three major project phases of design, construction and operation of the proposed project.

The Act provides for the setting up of the various ESIA Regulations and Guidelines which are discussed below:

#### **5.5.3.1 The Environmental (Impact Assessment and Audit) Regulations, 2003**

This regulation provides guidelines for conducting Environmental Impact Assessments and Audits. It offers guidance on the fundamental aspects on which emphasis must be laid during field study and outlines the nature and structure of Environmental Impact Assessments and Audit reports. The legislation further explains the legal consequences of partial or non-compliance to the provisions of the Act.

Electrical infrastructure as an activity is listed on section 9 in the second schedule of EMCA as among projects that require full Environmental Impact Assessments before commencement. The project cannot start before the license is granted, upon conducting the EIA. For this reason, Kenya Power has to undertake ESIA studies for their projects.

#### **5.5.3.2 The Environmental Management Coordination (Waste Management) Regulations): Legal Notice 121**

The regulation provides that a waste generator shall use cleaner production methods, segregate waste generated and the waste transporter should be licensed. The notice further states no person shall engage in any activity likely to generate any hazardous waste without a valid Environmental Impact Assessment license issued by the National Environment Management Authority.

Hazardous waste will not be generated from this development. The project proponent will ensure that waste is segregated and a licensed waste transporter is contracted to dispose solid waste.

KPLC will manage all the construction waste as per the provision of this regulation.

#### **5.5.3.3 The Environmental Management Coordination (Water Quality) Regulations): Legal Notice 120**

This Legal Notice on Water Quality provides that anyone who discharges effluent into the environment or public sewer shall be required to apply for Effluent Discharge License. The license for discharge is Kshs. 5,000 while annual license fee for discharge into the environment will be Kshs. 20,000 or Kshs 100,000 depending on the facility. Non-compliance with the regulations attracts a fine not exceeding Kshs. 500,000 and the polluter pay principle may apply depending on the court ruling.

#### **5.5.3.4 Environmental Management and Coordination (Noise and Excessive Vibration pollution) (Control) Regulations, 2009: Legal Notice 61**

This regulation prohibits any person to cause unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. Part 11 section 6(1) provides that no person shall cause noise from any source which exceeds any sound level as set out in the First Schedule of the regulations.

#### **5.5.3.5 Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006**

This legislation aims at enhancing preservation of biodiversity and safeguarding of endangered and rare plant and animal species within any human activity area.

Section 4 of the legislation expressly prohibits any activity which may have adverse effects on any ecosystem, lead to introduction of alien species in a given area or result in unsustainable utilization of available ecosystem resources.

#### **5.5.3.6 Environmental Management and Coordination (Fossil Fuel Emission Control) Regulations 2006**

These regulations are described Legal Notice No. 131 of the Kenya Gazette Supplement no. 74, October 2006 and will apply to all internal combustion engine emission standards, emission inspections, the power of emission inspectors, fuel catalysts, licensing to treat fuel, cost of clearing pollution and partnerships to control fossil fuel emissions. The fossil fuels considered are petrol, diesel, fuel oils and kerosene.

#### **5.5.4 Public Health Act (Cap. 242)**

Part IX, section 115, of the Act states that no person/institution shall cause nuisance or condition liable to be injurious or dangerous to human health. Section 116 requires that Local Authorities take all lawful, necessary and reasonably practicable measures to maintain their jurisdiction clean and sanitary to prevent occurrence of nuisance or condition liable to be injurious or dangerous to human health. Such nuisance or conditions are defined under section 118 and include nuisances caused by accumulation of materials or refuse which in the opinion of the medical officer of health is likely to harbour rats or other vermin. The environmental management plan (EMP) advises the Proponent on safety and health aspects, potential impacts, personnel responsible for implementation and monitoring, frequency of monitoring, and estimated cost.

KPLC shall observe policy and regulatory requirements and implement measures to safeguard public health and safety.

#### **5.5.5 County Government Acts, 2012**

This Act makes provisions for county governments' powers, functions and responsibilities to deliver services and for connected purposes. Part VIII of the act on Citizen Participation (87) (b) emphasizes on the right of citizens to participate to any development projects prior to their implementation.

section 135 (1) states that the Cabinet Secretary may make regulations for the better carrying out of the purposes and provisions of this Act and such Regulations may be made in respect of all county governments and further units of decentralization generally or for any class of county governments and further units of decentralization comply to the set regulations and by laws.

This is the primary law governing the development of counties and thereby will be key during implementation of the Kenya Power projects. All organs established under this law should be consulted

and approvals sought from the relevant authorities in relation to the relevant County Government where the project will be located.

#### **5.5.6 Physical Planning Act, 1996**

The Local Authorities are empowered under section 29 of the Act to reserve and maintain all land planned for open spaces, parks, urban forests and green belts. The same section, therefore allows for the prohibition or control of the use and development of land and buildings in the interest of proper and orderly development of an area.

Section 24 of the Physical Planning Act gives provision for the development of local physical development plan for guiding and coordinating development of infrastructure facilities and services within the area of authority of County, municipal and town council and for specific control of the use and development of land. The plan shows the manner in which the land in the area may be used.

Section 36 states that if in connection with development application a local authority is of the opinion that, the proposed activity will have injurious impact on the environment, the applicant shall be required to submit together with the application an Environmental Impact Assessment report. The environmental impact assessment report must be approved by the National Environmental Management Authority (NEMA) and followed by annual environmental audits as spelled out by EMCA 1999. Section 38 states that if the local authority finds out that the development activity is not complying to all laid down regulations, the local authority may serve an enforcement notice specifying the conditions of the development permissions alleged to have been contravened and compel the developer to restore the land to its original conditions.

#### **5.5.7 Urban Areas and Cities Act No. 13 of 2011**

This is an act of Parliament to give effect to Article 184 of the Constitution; to provide for the, classification, governance and management of urban areas and cities; to provide for the criteria of establishing urban areas, to provide for the principle of governance and participation of residents and for connected purposes. This act will apply where Kenya Power projects will be located within urban areas and cities.

#### **5.5.8 Land Act, 2012**

This Act gives effect to Article 68 of the Constitution, to revise, consolidate and rationalize land laws; to provide for the sustainable administration and management of land and land based resources, and for connected purposes.

Section 110(1) of the Act provides that land may be acquired compulsorily under this if the Commission certifies, in writing, that the land is required for public purposes or in the public interest as related to and necessary for fulfilment of the stated public purpose.

In such an acquisition, this Act, in section 111(1) provides that just compensation shall be paid promptly in full to all persons whose interests in the land have been determined.

The procedure for land acquisition is laid out in Part VIII of the Act.

#### **5.5.9 The Land and Environment Court Act 2011**

This is an Act of Parliament to give effect to Article 162(2)(b) of the Constitution; to establish a superior court to hear and determine disputes relating to the environment and the use and occupation of, and title to, land, and to make provision for its jurisdiction functions and powers, and for connected purposes. The principal objective of this Act is to enable the Court to facilitate the just, expeditious, proportionate and accessible resolution of disputes governed by this Act.

Section 13 (2) (b) of the Act outlines that in exercise of its jurisdiction under Article 162 (2) (b) of the Constitution, the Court shall have power to hear and determine disputes relating to environment and land, including disputes:

- Relating to environmental planning and protection, trade, climate issues, land use planning, title, tenure, boundaries, rates, rents, valuations, mining, minerals and other natural resources;
- Relating to compulsory acquisition of land;
- Relating to land administration and management;
- Relating to public, private and community land and contracts, chooses in action or other instruments granting any enforceable interests in land; and
- Any other dispute relating to environment and land.

#### **5.5.10 Water Act, 2002**

Part II, section 18, of the Water Act 2002 provides for national monitoring and information system on water resources. Following on this, sub-section 3 allows the Water Resources Management Authority (WRMA) to demand from any person or institution, specified information, documents, samples or materials on water resources. Under these rules, specific records may require to be kept by a facility operator and the information thereof furnished to the authority.

The Water Act Cap 372 vests the rights of all water to the state, and the power for the control of all body of water with the Minister, the powers is exercised through the Minister and the Director of water resources in consultation with the water catchments boards, it aims at provision of conservation of water and appointment and use of water resources. Part II Section 18 provides for national monitoring and information systems on water resources. Following on this, Sub-section 3 allows the Water Resources Management Authority to demand from any person, specified information, documents, samples or materials on water resources. Under these rules, specific records may be required to be kept and the information thereof furnished to the authority on demand.

Section 76 states that no person shall discharge any trade effluent from any trade premises into sewers of a licensee without the consent of the licensee upon application indicating the nature and composition of the effluent, maximum quantity anticipated, flow rate of the effluent and any other information deemed necessary. The consent shall be issued on conditions including the payment rates for the discharge as may be provided under section 77 of the same Act.

### **5.5.11 Energy Act of 2006**

The Energy Act of 2006 replaced the Electric Power Act of 1997 and The Petroleum Act, Cap 116. The Energy Act, amongst other issues, deals with all matters relating to all forms of energy including the generation, transmission, distribution and transmission, supply and use of electrical energy as well as the legal basis for establishing the systems associated with these purposes.

The Energy Act, 2006, also established the Energy Regulatory Commission (ERC) whose mandate is to regulate all functions and players in the Energy sector. One of the duties of the ERC is to ensure compliance with Environmental, Health and Safety Standards in the Energy Sector, as empowered by Section 98 of the Energy Act, 2006. In this respect, the following environmental issues will be considered before approval is granted:

1. The need to protect and manage the environment, and conserve natural resources;
2. The ability to operate in a manner designated to protect the health and safety of the project employees; the local and other potentially affected communities.

Licensing and authorization to generate and transmit electrical power must be supported by an Environmental Impact Assessment Report (EIA) approved by NEMA.

Part IV Section 80(1) provides that a person shall not conduct a business of importation, refining, exportation, whole sale, retail, storage or transportation of petroleum, except under and in accordance with the terms and conditions of a valid license.

Part IV Section 90 (1) stipulates that a person intending to construct a pipeline, refinery, bulk storage facility or retail dispensing site shall before commencing such construction, apply in writing to the Energy Regulatory commission for a permit to do so. The application shall: specify the name and address of the proposed owner; be accompanied by three (3) copies of plans and specifications and be accompanied by an Environmental Impact Assessment (EIA) Report.

Part IV section 91(1) stipulates that the Energy Regulatory Commission shall, before issuing a permit under section 90, take into account all relevant factors including the relevant government policies and compliance with Environment Management and Coordination Act, 1999 and in particular EIA report as per Impact Assessment and Audit Regulations 2003, the Physical Planning Act, 1996 and the Local Government Act.

Part iv section 100 (1) provides that it is an offence if a person being the owner or operator of a refinery, pipeline, bulk liquefied Petroleum gas or natural gas facility, service station, filling station or storage depot, fails to institute appropriate environmental, health or safety control measures. The offence if convicted, he/she shall be liable to a fine not exceeding two million shillings or to a maximum term of imprisonment of two years, or to both.

### **5.5.12 Building Code 1968**

Section 194 requires that where sewer exists, the occupants of the nearby premises shall apply to the local authority for a permit to connect to the sewer line and all the wastewater must be discharged into

sewers.

#### **5.5.13 Penal Code Act (Cap.63)**

Section 191 of the penal code states that if any person or institution that voluntarily corrupts or foils water for public springs or reservoirs, rendering it less fit for its ordinary use is guilty of an offence. Section 192 of the same Act says a person who makes or vitiates the atmosphere in any place to make it noxious to health of persons /institution, dwelling or business premises in the neighborhood or those passing along public way, commit an offence.

KPLC shall observe the guidelines as set out in the environmental management and monitoring plan laid out in this report as well as the recommendation provided for mitigation/minimization/avoidance of adverse impacts arising from the project activities.

#### **5.5.14 Wildlife Conservation and Management Act, 2013**

This Act provide for the protection, conservation, sustainable use and management of wildlife in Kenya and for connected purposes. The law has as one of its guiding principles the devolution of conservation and management of wildlife to landowners and managers in areas where wildlife occurs, through in particular the recognition of wildlife conservation as a form of land-use, better access to benefits from wildlife conservation, and adherence to the principles of sustainable utilization.

#### **5.5.15 The Forestry Services Act, 2005**

The Act led to the establishment of Kenya Forest Service which is charged with management of forests in consultation with the forest owners. The body enforces the conditions and regulations pertaining to logging, charcoal making and other forest utilization activities.

To ensure community participation in forest management, the service collaborates with other organizations and communities in the management and conservation of forests and for the utilization of the biodiversity.

Section 43 subsection 1 provides that if mining, quarrying or any other activity carried out in the forest, shall, where activity concerned is likely to result in forest cover depletion, the person responsible shall undertake compulsory re-vegetation immediately upon the completion of the activity.

#### **5.5.16 Occupational Safety and Health Act, 2007**

The Act provides for the safety, health and welfare of workers and all persons lawfully present at work place, as well as the establishment of the National Council for Occupational Safety and Health and for connected purposes.

Section 3(1) and (2) of the Act explains that it applies in all workplaces where any person is at work, either temporarily or permanently. It expounds on the purpose, which is to secure the safety, health and welfare of persons at work as well as protecting persons other than persons at work against risks resulting from, or connected to, activities at workplace.

Further, sections 43 and 44 of part V give regulations on registration of work places.

This shall be considered at the construction, implementation and decommissioning phases of the project.

#### **5.5.16.1 Health**

The premise must be kept clean; a premise must not be overcrowded. The circulation of fresh air must secure adequate ventilation of workrooms. There must be sufficient and suitable lighting in every part of the premise in which persons are working or passing. There should also be sufficient and suitable sanitary conveniences separate for each sex, must be provided subject to conformity with any standards prescribed by rules. Food and drinks should not be partaken in dangerous places or workrooms. Provision of suitable protective clothing and appliances including where necessary, suitable gloves, footwear, goggles, gas masks, and head covering, and maintained for the use of workers in any process involving exposure to wet or to any injurious or offensive substances.

#### **5.5.16.2 Safety**

Fencing of premises and dangerous parts of other machinery is mandatory. Training and supervision of inexperienced workers, protection of eyes with goggles or effective screens must be provided in certain specified processes. Floors, passages, gangways, stairs, and ladders must be soundly constructed and properly maintained and handrails must be provided for stairs. Special precaution against gassing is laid down for work in confined spaces where persons are liable to overcome by dangerous fumes. Air receivers and fittings must be of sound construction and properly maintained. Adequate and suitable means for extinguishing fire must be provided in addition to adequate means of escape in case of fire must be provided.

#### **5.5.16.3 Welfare**

An adequate supply of both quantity and quality of wholesome drinking water must be provided. Maintenance of suitable washing facilities, accommodation for clothing not worn during working hours must be provided. Sitting facilities for all female workers whose work is done while standing should be provided to enable them take advantage of any opportunity for resting. Every premise shall be provided with readily accessible means for extinguishing fire and persons trained in the correct use of such means shall be present during all working periods.

Regular individual examination or surveys of health conditions of industrial medicine and hygiene must be performed and the cost will be met by the employer. This will ensure that the examination can take place without any loss of earning for the employees and if possible within normal working hours. The (OSH) Act provides for development and maintenance of an effective program of collection, compilation and analysis of occupational safety. This will ensure that health statistics, which shall covering injuries and illness including disabling during working hours, are adhered. *The environmental management plan (EMP) advises the Proponent on safety and health aspects, potential impacts, personnel responsible for implementation and monitoring, frequency of monitoring, and estimated cost.*



#### **5.5.17 Work Injury and Benefits Act, (WIBA) 2007**

This Act provides for compensation to employees for work related injuries and disease contracted in the course of their employment and for connected purposes. Key sections of the Act include the obligations of employers; right to compensation; reporting of accidents; compensation; occupational diseases; medical aid etc. *In case of any accidents or incidents during the project cycle, this Act will guide the course of action to be taken.*

#### **5.5.18 The Traffic Act Cap 403 of 2009**

This Act consolidates the law relating to traffic on all public roads. Key sections include registration and licensing of vehicles; driving licenses; driving and other offences relating to the use of vehicles on roads; regulation of traffic; accidents; offences by drivers other than motor vehicles and other road users. Many types of equipment and fuel shall be transported through the roads to the proposed site. Their registration and licensing will be required to follow the stipulated road regulations. The Act also prohibits encroachment on and damage to roads including land reserved for roads. KPLC will observe the provisions of the Act.

#### **5.5.19 The Civil Aviation Act No. 21 of 2013**

The provisions of this Act or any regulations made there under shall, except where expressly or by implication excluded, apply to—

- (a) All aircraft whilst in or over any part of Kenya;
- (b) All Kenya aircraft and the crew and other persons on board wherever they may be; and
- (c) All aerodromes and service providers within aerodromes.

The provisions of this Act shall not, except where expressly included or if the Cabinet Secretary so directs by order published in the Gazette, apply to state aircraft or to any class or classes of state aircraft. All aircraft shall be subject to the requirements of this Act in respect of rules of the air. The proposed Substation upgrade is not going to penetrate the atmosphere beyond 15 meters and is not proximal to any airstrip and this act will not be triggered.

### **5.6 World Bank Operational Safeguard Policies and their applicability**

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The proposed KEMP project—is classified as environmental Category B according to the Bank's OP 4.01. The projects are expected to have significant positive environmental and social impacts, with relatively minor and localized negative impacts. The ESMF has been developed to ensure environmental and social due diligence for subprojects. The Bank environmental safeguards policies on Environmental Assessment (OP 4.01), OP 4.04 on Natural Habitats (although this addresses more the off-grid electrification component) and Physical Cultural Resources (OP 4.11) are triggered by the Peri-urban electrification component of the KEMP project. OP 4.12 (Involuntary Resettlement) is also triggered for this component.

The World Bank's environmental and social safeguard policies are a cornerstone of its support to sustainable poverty reduction. The objective of these policies is to prevent and mitigate undue harm to the local people and their environment in the development process. These policies provide guidelines

for Bank-funded projects in the identification, preparation, and implementation of programs and projects. The effectiveness and development impact of projects and programs supported by the Bank has substantially increased as a result of attention to these policies. Safeguard policies have often provided a platform for the participation of stakeholders in project design, and have been an important instrument for building ownership among local populations for the projects and programs that are being implemented. A summary of the ten safeguard policies is provided in Chapter 6, but only those environmental safeguards triggered by the peri-urban electrification component of KEMP are discussed below.

#### **5.6.1 OP 4.01 Environmental Assessment**

The objective of OP 4.01 is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate environmental screening, analysis of actions and mitigation of their likely environmental impacts and monitoring. This Therefore, OP 4.01 has been triggered, and in line with this operational policy, the environmental and social screening process for the distribution component of the Kenya Electricity Expansion Project (KPLC) funded sub-projects has been prepared.

#### **5.6.2 OP 4.04 Natural Habitats**

This policy recognizes that the conservation of natural habitats is essential to safeguard their unique biodiversity. Natural habitats comprise terrestrial, freshwater, coastal, and marine ecosystems. They include areas lightly modified by human activities, but retaining their ecological functions and most native species. The World Bank supports the protection, management, and restoration of natural habitats in its project financing. The World Bank supports, and expects borrowers to apply a precautionary approach to natural resource management to ensure environmentally sustainable development. While the Peri-urban electrification component of the proposed project is unlikely to have negative impacts on natural habits as the distribution lines will be built mostly on existing road reserves and sub-stations location sites and thus will avoid natural habitats, this OP is triggered as a precaution

#### **5.6.3 OP 4.12 Involuntary Resettlement**

The objective of this policy is to (i) avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs; (ii) assist displaced persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them; (iii) encourage community participation in planning and implementing resettlement; and (iv) provide assistance to affected people regardless of the legality of land tenure.

This policy covers not only physical relocation, but any loss of land or other assets resulting in: (i) relocation or loss of shelter; (ii) loss of assets or access to assets; (iii) loss of income sources or means of livelihood, whether or not the affected people must move to another location. This policy also applies to the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.

#### **5.6.4 OP 4.09 Pest Management**

The aim of the policy is to ensure pest management activities follow an Integrated Pest Management (IPM) approach, minimize environmental and health hazards due to pesticide use and contribute to developing national capacity to implement IPM and to regulate and monitor the distribution and use of pesticides. The policy has not been triggered because pesticides and/or herbicides won't be used under the KEMP Project's distribution component.

#### **5.6.5 OP 4.11 Physical Cultural Resources**

The Physical Cultural Resources (PCR) includes archaeological and historical sites, historic urban areas, sacred sites, graveyards, burial sites, unique natural values. The policy aims to ensure that Physical Cultural Resources (PCR) are identified and protected in World Bank financed projects, and national laws governing the protection of physical, cultural property are complied with. The policy is implemented as an element of the Environmental Assessment. The distribution lines will mainly be constructed along road reserves hence OP 4.11 has been triggered as a precaution. Therefore, the ESMF includes guidance in the event chance finds are made (see Annex 1, 3).

### **5.7 International Conventions and Treaties Ratified by Kenya**

Kenya has ratified a number of international conventions pertinent to land administration, environmental protection and human rights. Some of these conventions are:

Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention) 2001

United Nations (UN) Convention on Biological Diversity 1994

UN Framework Convention on Climate Change, 1992

Kyoto Protocol to the United Nations Framework Convention on Climate Change

Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (Basel Convention) 1989

Montreal Protocol on Substances that Deplete the Ozone Layer

Vienna Convention on the Ozone Layer 1985

UN Convention on the Law of the Sea (UNCLOS), Montego Bay, 1982

Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan Convention) 1981

Convention Concerning the Protection of the World Cultural and National Heritage (World Heritage Convention), Paris, 1975

Convention on the Conservation of Migratory Species of Wildlife Animals, 1979

Convention on the Prevention of Marine Pollution By Dumping of Wastes and Other Matter, 1972 (amended 1992)

African Convention on Conservation of Nature and Natural Resources, 1968

Convention on International Trade In Endangered Species of Wild Fauna And Flora

## 6 CHAPTER SIX: DESCRIPTION OF WORLD BANK OPERATIONAL SAFEGUARD POLICIES

This ESMF has been designed so that all sub-projects that will be implemented under KEMP comply with the Operational Safeguard Policies of the World Bank and all the applicable environmental policies, laws and regulations of the Government of Kenya (GoK). In this chapter, the World Bank's safeguards policies and their applicability are discussed. The World Bank's Operational Safeguard Policies are outlined below and summarized in **Table 3** below and thereafter a determination has been made on the safeguards that will be triggered as a result of the KEMP project.

The World Bank's 10 Safeguard Policies are:

1. Environmental Assessment (OP/BP 4.01)
2. Forests (OP/BP 4.36)
3. Involuntary Resettlement (OP/BP 4.12)
4. Indigenous Peoples (OP/BP 4.10)
5. Safety of Dams (OP/BP 4.37)
6. Pest Management (OP 4.09)
7. Physical Cultural Resources (OP/BP 4.11)
8. Natural Habitats (OP/BP 4.04)
9. Projects in Disputed Areas (OP/BP 7.60)
10. Projects on International Waterways (OP 7.50)

The environmental issues that might arise as a result of the peri-urban component of the KEMP project trigger three of the ten safeguard policies namely:

- Environmental Assessment (OP/BP 4.01);
- Natural Habitats (OP/BP 4.04) and
- Physical Cultural Resources (OP/BP 4.11).

This component will also trigger OP 4.12 – Involuntary Resettlement.

A complete description of the Bank safeguards and their triggers for applicability is summarized in Annex I to be used as part of the environmental and social screening process presented in chapter 9 of this ESMF.

**Table 3: Summary of World Bank Operational Safeguards objectives**

OPERATIONAL SAFEGUARD	OBJECTIVE	TRIGGER FOR THE POLICY
<b>Environmental Assessment</b> (OP/BP 4.01)	To ensure that Bank-financed projects are environmentally sound and sustainable, and that decision making is improved through appropriate analysis of actions and their likely environmental Impacts assessment and Environmental Management Plan (EMP). When the project is likely to have sectoral regional impacts, sectoral or regional EA is required. The Borrower is responsible for carrying out the EA.	<ul style="list-style-type: none"> <li>• This OP/BP 4.01 is triggered through the mandatory Environmental and Social Screening Process through which the project is assigned a Category based upon its potential environmental and social risks and impacts in its area of influence.</li> <li>• This policy is triggered if a project is likely to have potential (adverse) environmental risks and impacts in its area of influence. Depending on the project, and the nature of impacts a range of instruments can be used: EIA, environmental audit, hazard or risk assessment and environmental management plan (EMP). When the project is likely to have sectoral regional impacts, sectoral or regional EA is required. The Borrower is responsible for carrying out the EA.</li> <li>• These potential risks and impacts include physical, biological, socio-economic, health, safety, cultural property, Trans-boundary impacts and global impacts including Greenhouse Gas (GHG) emissions and vulnerability to climate change effects.</li> </ul> <p><i>Under KEMP, SHE has prepared this ESMF and will comply with national EIA regulations which outline the environmental screening process to be applied to sub-projects implementation.</i></p>
		•
OP/BP 4.04 Natural Habitats	This policy recognizes that the conservation of natural habitats is essential to safeguard their unique biodiversity and to maintain environmental services and products for human society and for long-term sustainable development. The Bank therefore supports the protection, management, and restoration of natural habitats in its project financing, as well as policy dialogue and economic and sector	<ul style="list-style-type: none"> <li>■ This policy is triggered by any project (including any sub-project under a sector investment or financial intermediary) with the potential to cause significant conversion (loss) or degradation of natural habitats, whether directly (through construction) or indirectly (through human activities induced by the project).</li> <li>■ This OP/BP can be triggered if a project is to be located in a habitat where there may be potential biodiversity impacts or in areas</li> </ul>

		<p>work. The Bank supports, and expects borrowers to apply, precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. Natural habitats are land and water areas where most of the original native plant and animal species are still present. Natural habitats comprise many types of terrestrial, freshwater, coastal, and marine ecosystems. They include areas lightly modified by human activities, but retaining their ecological functions and most native species. Specific objective of the OP includes but not limited to the following</p> <ul style="list-style-type: none"> <li>■ To preserve biological diversity by avoiding, or if not possible, reducing and minimizing impacts on biodiversity;</li> <li>■ In cases where some impacts are unavoidable, to endeavor to reinstate or restore biodiversity including, where required, the implementation of biodiversity offsets to achieve “not net loss but net gain” of biodiversity;</li> <li>■ To protect natural, modified and critical habitats; and</li> <li>■ To sustain the availability and productivity of priority ecosystem services to maintain benefits to the affected communities and to sustain project performance.</li> </ul>	<p>providing ecosystem services upon which potentially affected stakeholders are dependent for survival, sustenance, livelihood or primary income, or which are used for sustaining the project. It is also triggered if the project is designed to extract natural resources as a main purpose (e.g. plantation forestry, commercial harvesting, agriculture, livestock, fisheries and aquaculture).</p>
OP/BP Forests	4.36	<p>The objective of this policy is to assist borrowers to harness the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development and protect the vital local and global environmental services and values of forests. Where forest restoration</p>	<p>This policy is triggered whenever any Bank-financed investment project</p> <ul style="list-style-type: none"> <li>• Has the potential to have impacts on the health and quality of forests or the rights and welfare of people and their level of dependence upon or interaction with forests; or</li> <li>• Aims to bring about changes in the management, protection or utilization of</li> </ul>

	and plantation development are necessary to meet these objectives, the Bank assists borrowers with forest restoration activities that maintain or enhance biodiversity and ecosystem functionality. The Bank assists borrowers with the establishment of environmentally appropriate, socially beneficial and economically viable forest plantations to help meet growing demands for forest goods and services.	natural forests or plantations.
OP 4.09 Pest	The objective of this policy is to promote the use of biological or environmental control and reduce reliance on synthetic chemical pesticides; and strengthen the capacity of the country's regulatory framework and institutions to promote and support safe, effective and environmentally sound pest management. More specifically, the policy aims to (a) Ascertain that pest management activities in Bank-financed operations are based on integrated approaches and seek to reduce reliance on synthetic chemical pesticides (Integrated Pest Management (IPM) in agricultural projects and Integrated Vector Management (IVM) in public health projects. (b) Ensure that health and environmental hazards associated with pest management, especially the use of pesticides are minimized and can be properly managed by the user. (c) As necessary, support policy reform and institutional capacity development to (i) enhance implementation of IPM-based pest management and (ii) regulate and monitor the distribution and use of pesticides.	<p>The policy is triggered if :</p> <ul style="list-style-type: none"> <li>• Procurement of pesticides or pesticide application equipment is envisaged (either directly through the project, or indirectly through on lending, co-financing, or government counterpart funding);</li> <li>• The project may affect pest management in a way that harm could be done, even though the project is not envisaged to procure pesticides.</li> </ul> <p>This includes projects that may;</p> <ul style="list-style-type: none"> <li>■ Lead to substantially increased pesticide use and subsequent increase in health and environmental risks;</li> <li>■ Maintain or expand present pest management practices that are unsustainable, not based on an IPM approach, and/or pose significant health or environmental risks.</li> </ul>
OP/BP 4.11 Physical Cultural Resources	The objective of this policy is to assist countries to avoid or mitigate adverse impacts of development	This policy applies to all projects requiring a Category A or B Environmental Assessment under OP4.01, project located in, or in the vicinity of,

	<p>projects on physical cultural resources. For purposes of this policy, “physical cultural resources” are defined as movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above ground, underground, or underwater. The cultural interest may be at the local, provincial or national level, or within the international community.</p>	<p>recognized cultural heritage sites, and projects designed to support the management or conservation of physical cultural resources.</p>
OP/BP 4.10 Indigenous Peoples	<p>The objective of this policy is to (i) ensure that the development process fosters full respect for the dignity, human rights, and cultural uniqueness of indigenous peoples; (ii) ensure that adverse effects during the development process are avoided, or if not feasible, ensure that these are minimized, mitigated or compensated; and (iii) ensure that indigenous peoples receive culturally appropriate and gender and inter- generationally inclusive social and economic benefits.</p>	<p>The policy is triggered when the project is undertaken in areas where Indigenous Peoples are present (with characteristics described in OP 4.10 para 4) in the project area.</p>
OP/BP 4.12 Involuntary Resettlement	<p>The objective of this policy is to (i) avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs; (ii) assist displaced persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them; (iii) encourage community participation in planning and implementing resettlement; and (iv) provide assistance to affected people regardless of the legality of land tenure.</p>	<p>This policy covers not only physical relocation, but any loss of land or other assets resulting in:</p> <ul style="list-style-type: none"> <li>• Relocation or loss of shelter;</li> <li>• loss of assets or access to assets;</li> <li>• Loss of income sources or means of livelihood, whether or not the affected people must move to another location.</li> </ul> <p>This policy also applies to the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.</p>



OP/BP 4.37 Safety of Dams	The objectives of this policy are as follows: For new dams, to ensure that experienced and competent professionals design and supervise construction; the borrower adopts and implements dam safety measures for the dam and associated works. For existing dams, to ensure that any dam that can influence the performance of the project is identified, a dam safety assessment is carried out, and necessary additional dam safety measures and remedial work are implemented.	This policy is triggered when the Bank finances: (i) a project involving construction of a large dam (15 m or higher) or a high hazard dam; and (ii) a project which is dependent on an existing dam. For small dams, generic dam safety measures designed by qualified engineers are usually adequate.
OP 7.50 Projects in International Waters	<p>The objective of this policy is to ensure that Bank financed Projects affecting international waterways would not affect:</p> <ul style="list-style-type: none"> <li>(i) Relations between the Bank and its borrowers and between states (whether members of the Bank or not); and</li> <li>(ii) The efficient utilization and protection of international waterways.</li> </ul> <p>The policy applies to the following Types of projects:</p> <p>(a) Hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial and Similar projects that involve the use or potential Pollution of international waterways; And (b) Detailed design and engineering studies of projects Under (a) above, include those carried out by The Bank as executing agency or in any other capacity.</p>	This policy is triggered if (a) any river, canal, lake or similar body of water that forms a boundary between, or any river or body of surface water that flows through two or more states, whether Bank members or not; (b) any tributary or other body of surface water that is component of any waterway described under (a); and (c) any bay, gulf, strait, or channel bounded by two or more states, or if within one state recognized as a necessary channel of communication between the open sea and other states, and any river flowing into such waters.
OP 7.60 Projects in Disputed Areas	The objective of this policy is to ensure that projects in disputed areas are dealt with at the earliest possible stage: (a) so as not to	This policy is triggered if the proposed project will be in a "disputed area". Questions to be answered include: Is the borrower involved in any disputes over an area with any of its neighbors. Is the

	affect relations between the Bank and its member countries; (b) so as not to affect relations between the borrower and neighboring countries; and (c) so as not to prejudice the position of either the Bank or the countries concerned.	project situated in a disputed area? Could any component financed or likely to be financed as part of the project be situated in a disputed area?
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## 6.1 World Bank's Safeguards likely to be triggered by KEMP

The likely locations for subprojects under this component of KEMP are not yet known, but will most definitely include urban and Peri-urban areas of Kenya. Further preparatory work needs to be concluded as to the specific geographic reach of the proposed project (e.g. selection and location of infrastructure investment). Further details on the state/county and social/physical environment of the project activities will be provided in the later stage.

The activities in the KEMP are for the moment expected to trigger only OP/BP 4.01 (Environmental Assessment), OP 4.12: Involuntary Resettlement and OP/BP 4.04 (Natural Habitats) and as a precaution OP/BP 4.11 Physical Cultural Resources. The safeguards instruments prepared for any subprojects will address the requirements of any applicable policies.

OPERATIONAL SAFEGUARDS THAT MAY BE TRIGGERED BY THE PERI-URBAN ELECTRIFICATION COMPONENT OF KEMP PROJECT	YES	NO
OP/BP 4.01: Environmental Assessment	x	
OP/BP 4.04 Natural Habitats	x	
OP/BP 4.36 Forests		x
OP 4.09 Pesticide Management		x
OP/BP 4.11 Physical Cultural Resources	x	
OP/BP 4.10 Indigenous Peoples	x <sup>2</sup>	
OP/BP 4.12 Involuntary Resettlement	X	
OP/BP 4.37 Safety of Dams		x
OP 7.50 Projects in International Waters		x
OP 7.60 Projects in Disputed Areas		x

<sup>2</sup>OP 4.10 is triggered for the Off-Grid Component of the project.

	SAFEGUARD POLICY	POLICY TRIGGERED	JUSTIFICATION
1	OP 4.01: Environmental Assessment	YES	The policy is triggered due to the small-scale physical interventions that would be financed under KEMP projects. The project is not expected to result in significant, negative or irreversible impacts. Due to the nature of interventions, some subprojects could result in adverse environmental impacts which are expected to be site-specific and temporary in nature. The ESMF includes methodology to apply an environmental and social screening process that will guide in determining the potential environmental and social impacts of subprojects and in the application of appropriate mitigation measures. Site-specific EMP will be prepared during implementation and before construction as required for the subprojects. Screening of KEMP subprojects will be done to determine whether sub-projects would require a full environmental assessment; NEMA approval will be sought before commencement of detailed design to ensure that good practices are included in the technical design. The ESMF will serve as the environmental safeguards document in cases where a full environmental assessment is not deemed necessary based on the findings of the screening. The ESMF also requires that all construction materials (in particular wooden poles treated with creosote) are sourced from firms that have undergone a satisfactory environmental impact assessment/audit and have received NEMA approval.
2	OP 4.04: Natural Habitats	YES	The policy is triggered for KEMP though mainly applies to the off-grid electrification component. The project activities in Peri-urban areas will not cause conversion or degradation of natural habitats or critical natural habitats as defined by the policy.
3	OP 4.09: Pest Management	NO	The policy is not triggered. The project activities will not involve the use of pesticides for pest management at any stage. No pesticides or application machinery shall be procured. The projects do not include purchase or use of pesticides. Any clearing of vegetation will be undertaken manually.

4	Indigenous Peoples OP/BP 4.10	NO	As some of the off-grid sub-projects will be located in rural areas where Indigenous Peoples are present, the policy is triggered for the off-grid electrification component. But it is unlikely to be triggered for Peri-urban component given the nature of urban and peri-urban integrated settlement in the project areas under this component.
5	OP 4.11: Physical Cultural Resource	YES	The policy is triggered as a precaution, although the sub-projects are not expected to traverse areas of cultural or historical importance. Chance find procedures will be included in contracts and EMPs.
6	OP 4.12: Involuntary Resettlement	YES	The policy is triggered for this component. The small scale nature of infrastructure works under the Peri-Urban combined with a community participatory approach will make it possible to request for right of way or wayleave by signing wayleave consent forms. The subproject will not involve any kind of involuntary taking of land which may warrant triggering the policy. The replacement of lines will take place along existing routes to minimize potential RoW issues. Nevertheless there may be need for compensation for damage to crops and other assets during construction.
	Forests OP/BP 4.36	NO	The policy is not triggered. Although there will be a need for replacement of trees that will be removed along the Right of Way (RoW), no natural forest will be affected in urban areas. In rural areas, sub-projects will be screened to ensure that projects are not in or traverse natural forests. Furthermore the peri-Urban project will be located in areas already deprived of trees because it will in relatively highly dense areas of settlement with very limited trees if any, hence the cutting of tree will be very minimal and will not be widespread
	Safety of Dams OP/BP 4.37	NO	The policy is not triggered as KEMP projects under IDA financing will not include construction of dams as defined in the policy.
	Projects on International Waterways OP/BP 7.50	NO	The policy is not triggered as the project will not undertake any activities in the catchment areas of international waterways and shared aquifers.
	Projects in Disputed Areas OP/BP	NO	The policy is not triggered as project activities

	7.60		will not be implemented in any disputed areas.
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### 6.1.1 Environmental Assessment (OP4.01)

This policy requires Environmental Assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision-making. The EA is a process whose breadth, depth, and type of analysis will depend on the nature, scale, and potential environmental impact of the proposed investments under the KEMP.

The EA process takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property) and Trans-boundary and global environmental aspects.

However, since the exact location of these investments will not be identified before World Bank appraisal of the project, the EA process calls for the Kenya Power to prepare an Environmental and Social Management Framework (ESMF).

OP/BP 4.01 is triggered in case of KEMP, as the World Bank will finance project works that will ensure increased electricity access to Kenyans, particularly among the low income groups in Peri-Urban areas. The existing and new distribution transformers shall be exploited to the maximum through extension of the low voltage network to reach households located in the vicinity of these transformers. The exact locations and scope of the sub-projects have not yet been identified, though the potential impacts for such project are known from experience with the past and ongoing projects.

This report which will establish a mechanism to determine and assess future potential environmental and social impacts during implementation of KEMP activities, and then to set out mitigation, monitoring and institutional measures to be taken during operations of these activities, to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

Operational Safeguard 4.01 further requires that the ESMF report must be disclosed as a separate and stand-alone document by the Government of Kenya and the World Bank as a condition for World Bank appraisal. The disclosure should be both in Kenya where it can be accessed by the general public and local communities and at the Banks website and the date for disclosure must precede the date for appraisal of the program/project. The policy further calls for the KEMP as a whole to be environmentally screened to determine the extent and type of the EA process. The WorldBank system assigns a project to one of the four project categories, as defined below:

#### Category “A” Projects

An ESIA or SESA is always required for projects that are in this category. Impacts are expected to be adverse, sensitive, irreversible and diverse with attributes such as pollutant discharges large enough to cause degradation of air, water, or soil; large-scale physical disturbance of the site or surroundings; extraction, consumption or conversion of substantial amounts of forests and other natural resources; measurable modification of hydrological cycles; use of hazardous materials in more than incidental

quantities; and involuntary displacement of people and other significant social disturbances which require the preparation of RAP.

### **Category “B” Projects**

Although a full EIA is not always required, some environmental analysis is necessary. Category B projects have impacts that are ‘less significant, not as sensitive, numerous, major or diverse. Few if any, impacts are irreversible, and remedial measures can be more easily designed.’ Typical projects include rehabilitation, maintenance, or upgrades, rather than new construction. Although an EIA is not always required, some environmental analysis is necessary. Category B projects are likely to have detrimental site-specific environmental and / or social impacts that are less adverse than those of Category A projects and can be minimized by applying appropriate management and mitigation measures or incorporating internationally recognized design criteria and standards.

**KEMP project is classified as a Category B project.**

### **Category “C” Projects**

No EIA or other analysis is required. Category C projects result in negligible or minimal direct disturbance of the physical environment. Typical projects include education, family planning, health, and human resource development. Category C projects do not directly impact the environment adversely and are unlikely to induce adverse social impacts. They do not require an environmental and social assessment. Beyond Categorization, no action is required. Nonetheless, to design a Category C project properly, it may be necessary to carry out gender analyses, institutional analyses, or other studies on specific, critical social issues in order to anticipate and manage unintended impacts on the affected communities.

### **Category F1 Projects**

A Category F1 project involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts. The Projects involve Bank lending to Financial Intermediaries (FIs) who on lend or invest in sub-projects that may produce adverse environmental and social impacts. FIs include banks, insurance, re-insurance and leasing companies, microfinance providers and investment funds that use the Bank’s funds to on-lend or provide equity finance to their clients. FIs shall also be understood to include private or public sector companies that receive corporate loans or loans for investment plans from the Bank used to finance a set of sub-projects.

## **6.1.2 Physical Cultural Resources (OP/BP 4.11)**

For the purposes of this policy, ‘physical cultural resources’ are defined as movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above ground, underground, or underwater. Their cultural interest may be at local, provincial or national level, or within the international community. It is in the interests of the World Bank to assist countries to avoid or mitigate adverse impacts of development projects on physical cultural resources. OP 4.11 applies to all projects requiring a Category A or B Environmental Assessment under OP 4.01, applies to projects located in, or in the vicinity of, recognized cultural heritage sites, and projects designed to support the management or conservation of physical cultural resources. When OP 4.11 is triggered, the borrower

assesses the project's potential impacts on physical cultural resources as an integral component of the Environmental Assessment (EA). The process steps for the physical cultural resources component of the EA are the same as for Category A and B projects.

The physical cultural resources component of the EA provides for (a) an assessment of physical cultural resources likely to be affected by the project, (b) documentation of the characteristics and significance of these resources, and (c) an assessment of the nature and extent of potential direct and indirect impacts on these resources. Where the EA predicts adverse impacts on physical cultural resources, the cultural resources component of the EA includes a management plan which includes: (a) actions to mitigate adverse impacts, (b) provisions for the treatment of physical cultural resources discovered during project implementation and operation (hereafter referred to as "chance finds"), (c) any necessary measures for strengthening institutional capacity to implement the management plan, and (d) a monitoring system to track progress of these activities.

## **6.2 Alignment of WB and GOK Policies relevant to this ESMF**

- Both the World Bank safeguards policies and GoK laws are generally aligned in principle and objective: Both require Environmental Assessment before project design and implementation (which also includes an assessment of social impacts).
- Both require public disclosure of EIA reports and stakeholder consultation during preparation.
- While OP 4.01 of World Bank stipulates different scales of EIA for different category of projects, Kenya's EMCA requires environmental screening to be undertaken for new projects. In the event that notable environmental impacts will occur as a consequence of the sub-project, then an EIA will be undertaken for those sub-projects. If there would only be minimal impacts for a sub-project then the results of the environmental screening will be prepared and submitted to NEMA and the World Bank.
- Where EMCA requires Strategic Environmental Assessments, OP 4.01 requires that an Environmental Assessment be conducted, the complexity and nature of which depends on the project category.
- EMCA recognizes other sectoral laws while WB has safeguards for specific interests.
- The Bank requires that stakeholder consultations be undertaken during planning, implementation and operation phases of the project which is equivalent to the EMCA requirements. Additionally, statutory annual environmental audits are required by EMCA.

In Kenya, it is a mandatory requirement under EMCA 1999 for all development projects (Schedule Two) to be preceded by an EIA study. Thus, under the Laws of Kenya, environmental assessment is fully mainstreamed in all development process consistent with World Bank safeguard policies on EA. All the sub projects under the KEMP are not likely to fall under schedule I of EMCA and thus may not require a full scale EIA process. Further, in order to fully insure against triggers to WB safeguard policies, individual investments will be screened against each policy as part of the EIA project report requirements.

## **5.3 Requirements for Public Disclosure**

This ESMF will be disclosed in line with the World Bank requirements through posting on the Kenya Power's website [www.kplc.co.ke](http://www.kplc.co.ke) and on the World Bank's external website. The final version will be publicly disclosed through the Bank's Info shop.

## **7 CHAPTER SEVEN: POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS**

### **7.1 Introduction**

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The sub-projects described under KEMP Component on connection of new electricity users in high settlement density will be located in Peri-urban areas across the country. These Peri-urban areas are already populated and there is existing infrastructure in place including roads and provision of a level of water treatment and water supply systems. This project relates to last-mile connectivity in many aspects but will have additional salient features including using MV lines in addition to LV, and additional transformers and uprating of substation this ESMF has been prepared to suit this broader scope of investment and screening process will also be enhanced to cover a wider area.

Cumulative environmental impacts are not expected to be significant, as the project -although nationwide - is relatively limited in geographic scope and environmental impact. Induced impacts will be largely positive or benign - for example, decreased use of fuel wood and kerosene, improved economic welfare as a result of electricity provision allowing for job creation and opportunities to study after nightfall. Since this component addresses peri-urban areas, the electrification works will not be supported by the construction of large civil works (such as access roads or forest clearing) that may result in loss of biodiversity or impact natural habitat or forested areas.

### **7.2 Positive Environmental and Social Impacts**

#### **7.2.1 Project Beneficiaries**

Preliminary data collected for the KEMP project and indicates that KPLC will add additional 1,000 distribution transformers across the country. Majority of the transformers will have varied lengths of low and medium voltage network emanating from them some of which pass close to ready and potential customers. The estimated number of targeted customers with the available funding from World Bank will be 122, 500. This translates into an estimated 618,750 people as direct beneficiaries accessing electricity.

Electricity access will replace kerosene lamps which are expensive to operate. Kerosene is costly both for low income households that buy it, and for governments that subsidize it. In parts of Africa, for instance, kerosene costs make up 10-25% of household monthly budgets according to a report by Lighting Africa market trends report 2013. A study on Energy Kiosks for Lighting up Kenya presented in at Light Africa conference 2010 found that on average a family spends about 750 per month for lighting kerosene. Empirical data presented by Kenya National Bureau of Statistics found 2013 indicates that a family consuming about 50kw/h of electricity which is mainly domestic paid a bill of Kshs 586 in February 2012, Kshs. 568 in January 2013 and 564 in February 2013 which gives an average bill of Kshs. 572. Comparing these two costs of consumption electricity bills seem to be cheaper than using kerosene for lighting by about Kshs. 128. Therefore the Kenya Electricity Modernization Project means greater savings on the part of the households.



## **7.2.2 Expected Impact on Poverty Alleviation**

### **7.2.2.1 Employment and wealth creation**

The Kenya Electricity Modernization project will have a positive impact on both direct and indirect employment levels in the country although the bulk of them will be on temporary basis during construction of the infrastructure.. These job opportunities will be made available to the locals thereby easing unemployment in the country. In addition this will translate into incomes at the household levels which will trigger other spending and demand in the local economy.

### **7.2.2.2 Local Material Supplies**

Another positive impact of the project involves local material sourcing mainly sale of wooden poles for use in the project. An estimated 237, 359 wooden poles will be required for the project according to the preliminary engineer's estimates. Some of these can be expected to be sourced locally and the rest through importation.. Therefore the project will generate new income revenues for the local population across the country in harvesting, pole treatment and transportation of poles. The new income revenues received will create demand for other goods and services causing a trickledown effect to the entire economy

### **7.2.2.3 Up Scaling Electricity Access to the Poor**

According to Kenya Power's annual report of 2012/2013, electricity access stood at 2,330,962 customers as at June 2013. This translates to about 27% of the total population accessing electricity. This is a small percentage owing to the fact that there exists many transformers within reach of the 600metre protection radius but the uptake has been low even with the existing connection rate of Kshs. 34,480 for single phase. Needless to say, the uptake has been low due to the situation that the cost of connection has to be paid up front keeping in mind that about 46.6% of the Kenyan population is poor.

### **7.2.2.4 Connection payment model**

From a social point of view, the Kenya Electricity Modernization Project should respond to the challenge of paying for connection charges upfront by utilizing a deferred mode of payment for the connection charges. A deferred model of payment has been used in the company before and is commonly referred to as Stima Loan. Stima Loan is a Kenya Power initiative in partnership with the French Development Agency (AFD) through the Government of Kenya. It aims at connecting low-income families that cannot afford the connection fees upfront by giving them loans. More than 49,000 Kenyans have benefitted (May, 2014) from the loan scheme with customers paying 20% upfront with the balance payment spread out over a period of 24 months. According to the Engineers preliminary estimates the average cost of connecting one household under the Kenya Electricity Modernization project is \$ 1,151 equivalent to about Kshs. 101,288

To allow more people and especially those in the low socio economic echelon (the poor) including the vulnerable groups (widows, widowers, orphans, persons with disabilities) to benefit, the government should consider allowing them to pay Kshs. 35,000 on deferred mode while the government provides a subsidy on the difference. Kenya Power suggest that the government considers availing funds to utilize this kind of a model in the Kenya Electricity Modernization Project and probably extend the payment

period to five years so that the payments to the individual customers loaded in the monthly bills is affordable.

In 2009/10, The Kenya Power & Lighting Company implemented a Demand Side Management program which involved retrofitting CFL bulbs in exchange with Incandescent light bulbs. The main objective of the project was to reduce system peak demand and mitigate load shedding due to poor hydrology then. The implementation of the project saw the peak demand reduced by about 50MW and increase in awareness on the use of CFLs to increase efficiency of use of energy. The supply side also resulted in a savings in energy purchase cost of Kshs. 122.9 million. At the demand side fuel cost reduction savings/year was 7.2 billion. At individual level, a CFL uses 80% less electricity than an ordinary bulb. So, if a customer was using ordinary bulbs and they are replaced with energy saving ones, the bill for lighting (note that the customer will also be using the electricity for other things as well) will reduce by 80%.

Kenya Power has plans for a similar project. The project aims at replacing (approximately) 3,300,000 ICLs with high quality CFLs in Kenyan households free of charge across the country under the Green Light for Africa Small Scale Programme of Activities herein referred to as SSC-PoA. The PoA is currently under validation by an independent UN accredited body, Bureau Veritas. The CFLs will be rated 15,000hours lifetime with an average power rating of 14 watts and 22 Watts. The existing ICLs will be replaced with CFLs of similar light output. The distribution will mainly be to the low income households. The company through customer service should step up its campaigns of the importance of using the energy saving bulbs to the new beneficiaries of this project so that the bills will be affordable.

#### **7.2.2.5 Social Inclusion**

The Kenya Electricity Modernization Project aims at scaling up access of electricity to low-income households. This is in line with the tenets of social inclusion which the World Bank defines as the process of improving the terms for individuals and groups to take part in society. Further, Social inclusion aims to empower poor and marginalized people to take advantage of burgeoning global opportunities. It ensures that people have a voice in decisions which affect their lives and that they enjoy equal access to markets, services and political, social and physical spaces.

#### **7.2.2.6 HIV/AIDS**

Kenya Power's HIV/AIDs policy underscores the fact that HIV/AIDS has no cure and the only way to stop its spread is through attitudinal and behavioral changes as well as management that can be secured effectively through education (awareness and information campaigns). One of the positive impacts of this project will be disseminating of HIV and AIDs information to communities and workers who otherwise would not have had the correct information on three levels:

a) Direct beneficiaries of the project i.e. those who will be connected will have the benefit of health education messages through use of radios and TV as using electricity to power these gadgets is more reliable. Benefits are higher because the beneficiaries will be able to access HIV/AIDs information that is reliable and which comes from time to time as they can use the T.V and radios at will. The

beneficiaries will also benefit from expert's opinion on the pandemic such as listening to doctors and nutritionists regarding HIV/AIDs.

b) The other method of disseminating HIV/AIDs information during project implementation will be through the contractor. The contractors will be expected to disseminate information to the workers as part of their daily tool box talks. SHE department will liaise with NACC to get materials (if they are available at the time) on HIV/AIDS that can be distributed by the contractors during the tool box talk. This will reach more people as the project is being implemented country wide.

c) During the Environment Impact Assessment for other projects the Safety Health and Environment department disseminates HIV/AIDs to the public during public consultations meetings.

#### **7.2.2.7 Health benefits of the project**

According to the 2009 population census access to electricity stood at 23%, while 31% used lantern lamps and 39% was using tin lamps for lighting. This indicates that 70% of the population was using kerosene for lighting. Although access to electricity has improved a majority of Kenyans are still using kerosene for lighting. This poses health problems as reported by World Bank report 2008 on the Welfare of Rural Electrification. The report notes that kerosene lamps emit particles that cause air pollution; these are measured by the concentration of the smallest particles per cubic meter (PM10). Burning a liter of kerosene emits PM51 micrograms per hour, which is just above the World Health Organization 24-hour mean standard of PM10 of 50 micrograms per cubic meter. But these particles do not disperse, so burning a lamp for four hours can result in concentrations several times the World Health Organization standard. The health risks posed by this indoor air pollution mainly include acute lower respiratory infections, but also low birth weight, infant mortality, and pulmonary tuberculosis. Additionally, available data suggest that insufficient illumination (low light) conditions can cause some degree of eye strain, and reading in these conditions over long periods of time may have the potential to increase the development of nearsightedness (myopia) in children and adults. The Last Mile project will result in many families replacing kerosene lamps for lighting with electricity there-by reducing disease burden at the family level and on the government.

#### **7.2.2.8 Benefits to education**

Access to electricity at the household level and schools will create opportunities for children to study. For example children from households with electricity have an advantage because they have more time for study and doing homework in the evening as opposed to children from households without electricity. This benefit will in the end translate to better results. Additionally children in households with electricity can also access T.V. which gives them an advantage of benefiting from education programs being aired through such communication channels. Appropriate lighting through electricity will provide school going children in homes an opportunity to study after household chores especially girls who have to assist their mothers in preparing dinner.

#### **7.2.2.9 Improved standard of living**

The implementation of this project will result in connecting about 851,149 beneficiaries to the national grid. Access to electricity will change the standard of living of the people as they can use domestic appliances like iron boxes, fridges, television sets, washing machines to mention but a few. Use of

electricity for lighting implies that the people will not be exposed to smoke arising from use of kerosene lamps which predisposes people to respiratory diseases.

#### **7.2.2.10 Increase in Revenues**

The implementation of the project will boost income streams accrued from increased sales of electricity to KPLC in the long run. Though not in the short term, these revenues will go to system reinforcement to ensure reliable quality supply while some of it goes to the government as taxes which results in improvement in service provision by the government to its citizens.

#### **7.2.2.11 Security**

There will be enhanced security in the country arising from well-lit social, commercial and individual premises. With the implementation of the project, the level of security will increase across the country. This is as a result of more security lights which helps keep off opportunistic crimes and gender based violence.

#### **7.2.2.12 Communications**

Access to electricity will lead to improved communication for the beneficiaries. This will be enabled by the fact that charging of mobile phones will be easier and cheaper. Access also to mass media like radio and T.V will provide opportunity for the households to access a wide range of information which is useful for decision making. Some of information beneficiaries receive include: information on markets, farm inputs, crop management and local affairs, nutrition, diseases, investments and entertainment among others.

#### **7.2.2.13 Gender Considerations**

The vision of National Gender and Equality Commission is “A society that upholds gender equality, dignity and fairness for all”. The Commission is guided by a mission “To effectively and efficiently promote gender equality and freedom from discrimination of all persons in Kenya”. Kenya Powers Gender mainstreaming policy is in line with the NGEV Vision and Mission. The company’s gender vision is a world class power provider that is free from inequality and discrimination. The gender mission is promoting gender equality in powering people for better lives. The gender policy of Kenya Power is to mainstream gender within the company’s procedures, management and monitoring and evaluation processes for the equal benefit of men and women by 2015.

Electricity is a basic service especially for lighting but is still a luxury for many rural women and men. Access to modern electricity will go a long way towards alleviating the daily household burdens of women, giving them more time, improving their health and enhancing their livelihoods. The Last Mile Project will increase access to electricity across the whole country. Available literature on gender and energy suggests that providing electricity to communities and homes and motive power for tasks considered women’s work can promote gender equality, women’s empowerment, and women’s and girls’ access to education, health care, and employment.

Indeed, most gender benefits of the project will occur because women tend to spend more time at home, are responsible for household chores that can be carried out more productively with electricity, and because certain tasks are culturally defined as women’s work. Majority of the beneficiaries will use

the electricity mainly for lighting and powering low energy gadget such as TV, radio, phone charging, refrigeration and to some extent ironing and cooking. In general, lighting and TV are the first common uses of electricity, accounting for at least 80% of rural electricity consumption according to a working paper on Energy Gender and Development of the World Bank 2012. The first and strongest impacts of the project shall occur via lighting and TV. Electricity will definitely displace more expensive candles and kerosene lamps, thereby reducing indoor air pollution, fire, burn risk and providing higher quality light. Women and girls will benefit more from air pollution of kerosene lamps because they spend more time in the kitchen.

Lighting and television will improve access to information, the ability to study, and extend the effective working day. This is more so because children can have extended time of study. The women will also benefit more due to access of information especially on health and nutrition since they also spend more time at home. The project will also enhance security in the rural areas as most homes will be lit up, a benefit that is more appreciated by women.

### **7.3 Negative Environmental and Social Impacts**

Despite the various socio economic and environmental benefits outlined, the project will also have some negative impacts. As regards the proposed KPLC Projects, potential adverse environmental and social impacts on the natural and human environment are likely to arise from inputs as well as project processes at the construction and operation and maintenance phases. The following are the negative impacts and suggested mitigation measures.

#### **7.3.1 Impact on Natural Vegetation and Biodiversity**

The project will involve short service lines within the 600m radius mainly along the road reserve. No tall growing trees will be allowed below the lines or along the way leave trace but the alignment of lines will be undertaken in a manner so as to minimize cutting of large or old-growth trees. Grass and short vegetation will be manually cleared to pave way for erection of poles. The clearing of trees will be very minimal and not widespread since some of the peri-urban areas are devoid of trees, and other areas are very lightly forested. No large-scale cutting of trees will take place under the project.



**Figure 8: Example of peri-urban area with scattered trees**

### **7.3.2 Impacts on air quality from vehicle exhaust emissions**

Exhaust emissions are likely to be generated by the construction vehicles and equipment. Motor vehicles that will be used to ferry construction materials would cause air quality impact by emitting pollutants through exhaust emissions.

### **7.3.3 Risk of sparks/fire from live conductors**

Potential adverse impacts related to fire hazards can result from the project. The live conductors can cause short circuiting in case conductors touch one another due to strong winds, falling tree branches or trees. In case of big sparks falling on dry grass there can be a likelihood of fire

### **7.3.4 Solid waste**

Little if any solid waste will be generated which includes conductor cuttings and tree cuttings. For the civil works at substations and for the electrification of households, key factors are to ensure that appropriate safety guidelines are adopted, and that obsolete equipment and construction waste is disposed of in an environmentally sustainable manner.

### **7.3.5 Electric shocks and electrocution of people**

Electricity, though a good master and a bad servant, is a hazard and safety precautions must be adhered to and properly used. Within the households electric shocks are likely in case of poor handling of electricity such as using wet hands, poor wiring and overloading of sockets. To implement live-line maintenance, the project will provide special safety training for maintenance teams, and the provision of specialized tools and equipment to ensure safety of maintenance teams and bystanders during live maintenance works.

### **7.3.6 Occupation safety and health hazards**

During construction many people will be engaged in activities such as pole and conductor wiring and working at heights. Workers can be exposed to occupational risks like falling from heights, being pressed by poles etc.

### **7.3.7 Public health risk**

At project implementation many new workers will be involved and new interactions between people are likely to take place. These interactions are likely to pose risks to the social fabric of the society. Such risks include public health related issues such as (HIV/AIDS, communicable and sexually transmitted diseases (STDs).

### **7.3.8 Construction material sourcing-wooden poles**

Majority of these service lines are constructed using wooden poles. This would impact on the environment because many poles will be used during construction.

### **7.3.9 Oil Leaks from transformers**

Transformers can experience a leak arising from a fault, poor handling and vandalism. These leaks may result in potential contamination of surface and groundwater as well as soil.

### **7.3.10 Noise during construction**

Noise pollution from the proposed development during construction noise will be generated from the construction machines and construction workers

### **7.3.11 Contamination from CCA and creosote-treated poles**

Soil and water pollution due to unsafe disposal of CCA and creosote-treated poles may occur if proper care and management procedures are not put in place

## **7.4 E-Waste Mitigation Measure and Management/Disposal Plan**

This ESMF contains potential mitigation measures through which the adverse impacts associated with E-Waste emanating from this project can be managed. The mitigation measures or guidelines have been designed in order to avoid, minimize and reduce negative environmental and social impacts at the project level. The mitigation measures are presented in the following tables in a descriptive format.

### **7.4.1 Procurement of Electronic Equipment from Credible Manufacturers**

The project will as a mitigation measure ensure that all electronic devices are procured from manufacturers that are credible and that all equipment will have a clear date of manufacture and warranty. This will avoid procurement of refurbished or used second hand electronic devices with a shorter shelf life a common problem that leads to generation of E-waste as a result of obsolescence.

### **7.4.2 Recycling**

All the E-wastes generated from will be taken to Nairobi where there is a facility that recycles E-waste at no cost. The East African Compliant Recycling Company is operating Kenya's first E-waste recycling

facility, operating to international health, safety and environmental standards and establishing a local, sustainable IT E-waste recycling industry.

The East Africa Compliant Recycling was designed as a scalable model for E-waste recycling. It was established in Mombasa in October 2011 as a pilot project with funding from HP. The EACR is the first facility of its kind in East Africa to test a practical approach to E-waste recycling. The objectives behind its establishment were to:

- Analyze and measure volumes of E-waste returned
- Establish the process to safely separate the products into parts
- Identify facilities and markets to process all the resulting dismantled materials

Since beginning official operations, the EACR remains the only recycling facility in Kenya to accept, dismantle and separate all E-waste components and not just the valuable resources. Plastics, glass, batteries - everything - are all disposed in accordance with the highest international criteria while generating local income and employment opportunities. Until now, the facility receives end-of-life IT from business and public sector customers, as well as from the informal sector for recycling. EACR facility offers its workers advice on handling E-waste containing hazardous materials such as lead and cadmium.

**Table 4. E-Waste Management/Disposal Plan**

Issue: Procurement and provision of Electronic Devices e.g. Solar panels and batteries				
Impact	Mitigation	Monitoring	Responsibility	Budget (USD)
<b>Air Pollution through improper disposal</b> which leads to release of toxic, hazardous and carcinogenic gaseous	<p>Procure Electronic devices from credible manufactures to avoid purchasing second hand, refurbished or obsolete devices with a short shelf life or already categorised as E-Waste</p> <p>Recycle all E-waste;</p> <p>Transport all E-wastes to the East African Compliant Recycling Company in Nairobi.</p> <p>Conduct awareness and sensitization targeting the users of the electronic devices to ensure that they engage in best practise for E-waste management.</p>	<p>Warranty for Electronic Devices purchased</p> <p>Credibility of manufacturers supplying the electronic devices</p> <p>Availability of E-waste receptacles in each school</p> <p>Number of awareness and training conducted for users of electronic devices on E-waste</p> <p>Certificate of disposal of E-wastes given by the East African</p>	MOEP/KPLC, and NEMA	5,000 USD for transport and purchase of recycling bins. The East African Compliant Recycling Company offers free recycling services.



		Compliant Recycling Company attesting that E-waste from the program have been successfully disposed		
<p><b>Human Health Impacts due to poor disposal.</b></p> <p>Electrical and electronic equipment contain different hazardous materials, which are harmful to human health and the environment if not disposed of carefully.</p>	<p>Procure Electronic devices from credible manufactures to avoid purchasing second hand, refurbished or obsolete devices with a short shelf life or already categorised as E-Waste</p> <p>Recycle all E-waste;</p> <p>Transport all E-wastes to the East African Compliant Recycling Company in Nairobi.</p> <p>Conduct awareness and sensitization targeting the users of the electronic devices to ensure that they engage in best practise for E-waste management.</p>	<p>Warranty for Electronic Devices purchased</p> <p>Credibility of manufacturers supplying the electronic devices</p> <p>Availability of E-waste receptacles in each school</p> <p>Certificate of disposal of E-wastes given by the East African Compliant Recycling Company attesting that E-waste from the program have been successfully disposed</p>	MOEP/KPLC, and NEMA	5,000 USD for transport and purchase of recycling bins. The East African Compliant Recycling Company offers free recycling services.
<p><b>Pollution of land resources including landfills</b></p> <p>Electrical and electronic equipment contain different hazardous materials, which are harmful to human health and the environment if not disposed of carefully.</p>	<p>Procure Electronic devices from credible manufactures to avoid purchasing second hand, refurbished or obsolete devices with a short shelf life or already categorised as E-Waste</p> <p>Recycle all E-waste;</p> <p>Transport all E-wastes to the East African Compliant Recycling Company in Nairobi.</p>	<p>Warranty for Electronic Devices purchased</p> <p>Credibility of manufacturers supplying the electronic devices</p> <p>Certificate of disposal of E-wastes given by the East African Compliant Recycling Company attesting that E-waste from the program have been successfully disposed</p>	MOEP and NEMA	5,000 USD for transport and purchase of recycling bins. The East African Compliant Recycling Company offers free recycling services.

<p><b>Pollution of water bodies</b></p> <p>Electrical and electronic equipment contain different hazardous materials, which are harmful to human health and the environment if not disposed of carefully.</p>	<p>Procure Electronic devices from credible manufactures to avoid purchasing second hand, refurbished or obsolete devices with a short shelf life or already categorised as E-Waste</p> <p>Recycle all E-waste;</p> <p>Transport all E-wastes to the East African Compliant Recycling Company in Nairobi.</p> <p>Conduct awareness and sensitization targeting the users of the electronic devices to ensure that they engage in best practise for E-waste management.</p>	<p>Warranty for Electronic Devices purchased</p> <p>Credibility of manufacturers supplying the electronic devices</p> <p>Certificate of disposal of E-wastes given by the East African Compliant Recycling Company attesting that E-waste from the program have been successfully disposed</p>	<p>MOEP and NEMA</p>	<p>5,000 USD for transport and purchase of recycling bins. The East African Compliant Recycling Company offers free recycling services.</p>
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## **8 CHAPTER EIGHT: THE ENVIRONMENTAL AND SOCIAL SCREENING PROCESS FOR THE KENYA ELECTRICITY MODERNIZATION PROJECTS**

### **8.1 The Environmental and Social Screening Process in Kenya**

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The Environmental Management Coordination Act of 1999 and the Environmental (Impact Assessment and Audit) Regulations (June 2003) prescribe the conduct for Environmental Impact Assessment for development projects. However, these instruments do not contain guidelines regarding the screening, identification, assessment and mitigation and monitoring of potential adverse, localized environmental and social impacts of small-scale investments, where the project details and specific project sites are not known at the time of appraisal of the parent project.

### **8.2 Environmental and Social Screening in the Framework**

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The Environmental and Social Screening Process outlined in the ESMF complements Kenya's EIA procedures for meeting the environmental and social management requirements. The Environmental and Social Screening Process also meets the requirements of the World Bank. It provides a mechanism for ensuring that potential adverse environmental and social impacts of projects by KPLC are identified, assessed and mitigated and monitored as appropriate, through an environmental and social screening process (see ***Environmental and social screening form in (Annex 1)***). This will be undertaken by qualified NEMA registered EIA/EA experts within KPLC staff at the national supported by regional staff.

### **8.3 Application of the Screening processes**

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The objectives of the screening process are to:

- Determine the potential adverse environmental and social impacts of the proposed project;
- Determine the appropriate environmental category as per OP/BP 4.01 environmental assessment;
- Based on the assigned environmental category, determine the appropriate level of environmental work required (i.e. whether an EIA is required or not (environmental category A); whether the application of simple mitigation measures will suffice (environmental category B) as is the case for the KEMP project; or whether the project has negligible adverse environmental and social risks. (Environmental category C).
- Determine appropriate mitigation measures for addressing adverse impacts using the Environmental and Social Checklist (annex 2); this checklist can be adjusted to reflect project-specific environmental management requirements;
- Determine the extent of potential solid and liquid waste generation, including hazardous wastes such as PCB and creosote, and appropriate mitigation measures;
- Determine potential adverse impacts on physical cultural resources, and provide guidance to be applied in the case of chance finds;

- Incorporate environmental mitigation measures as presented in the screening form and/or separate EA report into the proposed project design;
- Determine potential adverse social impacts due to land acquisition;
- Facilitate the review and approval of the screening results and separate ESMP reports (the screening form would be looking at planned construction and rehabilitation activities); and
- Provide environmental and social monitoring indicators to be followed during the construction, rehabilitation, operation and maintenance of the infrastructure service facilities and related project activities.

The following criteria should be followed for project selection so as to comply with the environmental legislations:

- Proposed project construction/expansion will avoid or mitigate adverse impacts of the project construction / expansion projects on physical cultural resources, including ensuring government authorities responsible for the protection of cultural assets are notified and have the opportunity to document chance finds, etc. "Physical cultural resources" are the movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance;
- Proposed project construction/expansion will not be located within conservation areas, protected areas, sanctuary, and forest areas as designated by Wildlife Conservation and Forest Departments;
- Proposed project will not be located within a wetland or on a reservation of surface water bodies.
- Potential environmental impacts associated with location will be minimized by selection of alternative sites;
- All stages of the project screening, design and implementation will be done in a participatory manner with public consultation with potential affected persons;
- Solid and liquid waste management facilities under the proposed project will not be sited adjacent to settlements; will not include treatment of hazardous waste. The PCB wastes will be disposed of by using of powerful reagents such as sodium. The reagent does not affect the basic oil itself, but breaks down the PCB, generating a residue which may be removed by physical separation. In the hands of expert contractors, such technologies can be carried out even whilst a transformer is in use and operating. The residues will be disposed of by incineration process. Waste oils can be recovered and recycled, either directly in the case of high oil content wastes, or after some form of separation and concentration from high aqueous content materials. While certain types of waste oils, lubricants in particular, can be subjected to regeneration processes which give products of comparable quality to the original material, a large volume of waste oil is used for its energy content, as a secondary or substitute fuel.
- The disposal of creosote treated wood, however, is subject to local regulation of disposing of the Insecticide, Fungicide, and Rodenticide. In case the local regulations will not apply then the international regulations shall apply on the three major wood preservations--namely, creosote, pentachlorophenol, and inorganic arsenicals. Among other things, these rules require that wood which has been treated with creosote should not be burned in an outdoor fire or in stoves or fireplaces; rather, this wood should be buried in a non-hazardous waste landfill unless otherwise

required by the law. This requirement was included to ensure that no toxic contaminants would be released as a result of the burning process.

- Proposed project with some significant environmental impacts will be undertaken but adequate mitigation measures will be put in place so as to minimize those impacts to the manageable size throughout the project period.

The following procedure will be followed for the projects that are under the above criteria.

- (a) The first step in environmental assessment will be preliminary screening. The KPLC PIU staff with assistance of regional staff will accomplish this task by completing the environmental and social screening form (annex 1) described in the ESMF.
- (b) The completed environmental and social screening form (annex 1 of the ESMF) is attached to the recommendation and submitted to NEMA regional level for review and clearance purposes.
- (c) Projects assessed to have some adverse environmental impacts and assigned the environmental category 1 will be required to go through a full EA.
- (d) The environmental assessment will be undertaken in a participatory manner and the stakeholder consultations will be documented in the environmental assessment documents; in case a consultant will be used, KPLC Environment and Social Unit will prepare TOR and be involved in recruitment of EA consultants. Although currently KPLC has adequate capacity to carryout screening.
- (e) The Environmental Guidelines for Contractors (annex 4) will be attached to the bidding documents to ensure environmentally and socially sound construction practices.
- (f) For sites where Environmental assessments will be undertaken, NEMA approval will be sought before commencement of detailed design in order to ensure that good practices are included in the technical design.
- (g) As regards the approval of environmental and social screening results, NEMA's regional offices will provide review and clearance prior to the commencement of works.
- (h) KPLC Environment Unit will ensure that environmental concerns are addressed during planning, design, construction, and operations of the projects and appropriate mitigation measures are in place.

Proposed project selection, design, contracting, mitigation, monitoring and evaluation will be consistent with agreed process outlined in the ESMF and ESMP will be fully integrated into the Project Implementation Plan/Operations Manual and project cost tables.

The list of measures to mitigate potential adverse impacts as per screening results and/or separate EA reports, including terms and conditions and the sector specific ESMP, supplemented by any additional site specific measures will be attached as a part of the contract specifications. A clause in the Particular Conditions of Contract will refer to the Environmental and Social Management Plan for a proposed project. The Particular Conditions of Contract prepared by KPLC based on the environmental and social management plan will also stipulate that any non-compliance with the mitigation measures set out in the contract will attract the same remedies under the contract as any non-compliance with the contract provisions; such remedies would be instructions, notices, suspension of works, etc. The Instruction to Bidders will highlight the inclusion of the ESMP in the contract specifications and the

contractor's obligation of compliance. The performance agreement will carry a clause to the effect that the recipient shall ensure the design; construction; operation and implementation of the proposed projects are carried out in accordance with the ESMF. In addition ***Environmental Guidelines for Contractors (Annex 3)*** will be implemented and monitored by the KPLC SHE staff.

## **8.4 The Screening Process**

The extent of environmental work that might be required, prior to the commencement of construction and rehabilitation of the KPLC Projects will depend on the outcome of the screening process described below.

### **8.4.1 Step 1: Screening of project activities and sites**

Prior to going to the field, a desk appraisal of the construction and rehabilitation plans, including transformers, and distribution lines designs, will be carried out by KPLC/PIU and Environment unit staff or selected consultant. KPLC PIU with the help of regional staff will carry out the initial screening in the field, by completing the Environmental and Social Screening Form (Annex 1).

The screening form, when correctly completed, will facilitate the identification of potential environmental and social impacts, potential water and oil pollution, soil erosion, the need for safe disposal of creosote treated poles, PCB, need for way-leave acquisition, the determination of their significance, the assignment of the appropriate environmental category (consistent with OP/BP 4.01 Environmental and Social Assessment), the determination of appropriate environmental and social mitigation measures, and the need to conduct an Environmental Impact Assessment (EIA) and/or Resettlement Action Plans (RAPs) and/or IPPS.

To ensure that the screening form is completed correctly for the various project locations and activities, training should be provided to KPLC PIU staff, KPLC Environment unit staff and KPLC regional Staff as part of strengthening internal capacity.

### **8.4.2 Step 2: Assigning the Appropriate Environmental Category**

The environmental and social screening form, when completed, will provide information on the assignment of the appropriate environmental category to a particular project.

The KPLC PIU will be responsible for assigning the appropriate environmental category to the proposed peri-urban electrification sub-component of the Project in accordance with the requirements of OP/BP 4.01, Environmental Assessment and EMCA 1999.

Categorization follows the principle of using the appropriate type and level of environmental and social assessment for the type of operation. Working with Bank operations staff, the borrower proposes a category, providing sufficient supporting documentation and baseline data to allow the Bank's Compliance and Safeguards function to review and validate the proposed category. The responsibility of appropriate categorization is therefore shared by the Bank and its borrowers and should be based on reasonably accurate due diligence material.

- A. **Category A:** A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing a report, normally an EIA (or a suitably comprehensive or sectoral EA) that includes as necessary, elements such as environmental audits or hazard or risk assessments.
- B. **Category B:** A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas - including wetlands, forests, grasslands, and other natural habitats - are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A. Like Category A, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.
- C. **Note:** The KEMP project is categorized as a Category B project. Given that most Kenya Electricity Modernization Project (Peri-Urban Electrification component) will not have significant adverse environmental and social impacts. Most of the impacts are reversible and can be mitigated against.
- D. **Category C:** A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.
- E. **Category FI:** A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that might result in adverse environmental impacts. **Note:** This environmental category will not apply to any of the Kenya Electricity Expansion Project funded sub-projects as it will not involve the investment of Bank funds through financial intermediaries.

### 8.4.3 Step 3: Carrying Out Environmental and Social Impact Assessment

The EIA process will identify and assess the potential environmental and social impacts of the proposed construction activities, evaluate alternatives, as well as design and implement appropriate mitigation, management and monitoring measures. These measures will be captured in the Environmental and Social Management Plan (ESMP) which will be prepared as part of the EIA process for each project. **Environmental and Social checklist (Annex 2)** will be used for category B2 projects; and **Generic EA TOR in Annex 5** will guide EA study for category B1 projects in case they occur.

Preparation of the EIA, the ESMP be carried out in consultation with the relevant sector Ministries including potentially affected persons. The relevant government departments in close consultation with the Ministry of Environment, Water and Natural Resources and the Project Management Team will arrange for the (i) preparation of EIA terms of reference for projects;(ii) recruitment of a service provider to carry out the EIA; (iii) public consultations; and (iv) review and approval of the EIA through the national EIA approval process.

#### **8.4.4 Step 4: Review and Approval of the Screening Activities**

The results and recommendations presented in the environmental and social screening forms and the proposed mitigation measures presented in the environmental and social checklists will be reviewed by KPLC Environmental Unit and Validated by NEMA at the County level.

Where an EIA has been carried out, NEMA will review the reports to ensure that all environmental and social impacts have been identified and that effective mitigation measures have been proposed.

Based on the results of the above review process, and discussions with the relevant stakeholders and potentially affected persons, NEMA, in case of projects that don't require EIA make recommendations to the County Environmental Committee for approval/disapproval of the screening results and proposed mitigation measures. As regards to EIA reports, County Environmental Officer will recommend EIA reports to the NEMA for approval while RAPs will be approved by the Ministry of Lands, Housing and Urban Development.

#### **8.4.5 Step 5: Public Consultations**

Public consultation is a regulatory requirement by NEMA and donors 'safeguards for new projects by which the public's input on matters affecting them is sought in regard to the project. Its main objectives will be improving the efficiency, transparency and public involvement in the proposed projects that will enhance the compliance of the environmental laws and policies in regard to the implementation of the projects. It will involve notification (to publicize the matter to be consulted on), consultation (a two-way flow of information and opinion exchange) as well as participation involving interest groups. Through public participation, environmental conservation will be enhanced.

#### **8.4.6 Step 6: Environmental Monitoring**

This describes the processes and activities that need to take place to characterize and monitor the quality of the environment in the project sites. This will be used towards the preparation of environmental screening, as well as in many circumstances in which the project activities carry a risk of harmful effects on the natural environment. All monitoring strategies and programmes for the projects shall have reasons and justifications which will be designed to establish the current status of an environment or to establish trends in environmental parameters where the projects shall be implemented. In all cases the results of monitoring will be reviewed, analysed statistically and published for the purpose of project implementation. The project design should have a monitoring programme which must have regard to the final use of the data before project monitoring starts. This environmental monitoring for the projects should be continuous throughout the project life.



#### **8.4.7 Step 7: Environmental Monitoring Indicators**

These are the measurement, statistic or value that provides a proximate gauge or evidence of the effects of environmental management programs or of the state or condition of the environment that could result from the projects that could be implemented by KPLC. The environmental indicators that need to be monitored include; air quality, water quality, flora and fauna, human health, social and economic conditions.

## **9 CHAPTER NINE: PUBLIC CONSULTATION AND PARTICIPATION**

Participatory Stakeholder Forums were held on 6<sup>th</sup> and 12<sup>th</sup> January, 2015, to disclose and consult with stakeholders on the environmental safeguards documents for the KEMP project. Given that at this stage, the exact sub-project sites are not yet definitively identified, consultations were held on this draft Environmental and Social Management Framework. Once sub-projects have been identified and confirmed for inclusion under KEMP Environmental Impact Assessments (EIAs) and/or Environmental Management Plans (EMPs) will be prepared as required by NEMA and World Bank guidelines and further public consultations and stakeholder engagements with targeted beneficiaries will be conducted at that time.

After location selection of a sub-project, community level environmental screening will be an integral part of the sub-project planning. The community meetings will be held to discuss the sub-projects, identify the community priorities and identify the scope of work.

Public consultation is generally a continuous process aimed at engaging the stakeholder efforts throughout the planning, design, construction, and operation of a project. The objectives of consultation and access to information will be to generate public awareness by providing information about a sub-project to all stakeholders, particularly the sub-projects affected persons (PAPs) in a timely manner, and to provide opportunity to the stakeholders to voice their opinions and concerns on different aspects of the project. The opinions and suggestions of the stakeholders would assist in taking appropriate decisions for effective environmental management of the sub-projects. It would help facilitate and streamline decision making whilst fostering an atmosphere of understanding among individuals, groups and organizations, who could affect or be affected by the sub-projects. As a part of Environmental Screening and EIA, an effective public consultation and access to information plan (PCAIP) will be developed. The specific objectives of Public Consultation are:

- To keep stakeholders informed about the sub-projects at different stages of implementation,
- To address the environmental and social concerns/ impacts, and devise mitigation measures taking into account the opinion/ suggestions of the stakeholders,
- To generate and document broad community support for the sub-projects,
- To improve communications among interested parties, and
- To establish formal complaint submittal / resolution mechanisms.
- To discuss the KEMP project and document its issues, concerns and mitigation measures.

### **Consultation Process**

A critical element of the KEMP project will be the implementation of a comprehensive participatory consultation. Considering the importance of effective participation and consultation in a wide spread project area along with the time and resource constraints in the KEMP project, the following participation techniques will be followed:

Information dissemination and information sharing techniques will be used to advise stakeholders in a timely manner of proposed actions being undertaken in KEMP project sites. Tools and techniques used will include:

- A questionnaire/survey together quantitative and qualitative feedback about the KEMP sub-projects. .

- Focused Group Discussion (FGDs) covering different components of the KEMP project to increase local awareness about the forthcoming project as well as to incorporate their views, needs, priorities considering different positive and negative impact of the project.
- Key Informant surveys among the more well-informed and long term members of the project area (including elderly people) of the project area to incorporate their views and suggestions based on their long experience and knowledge and knowledge of the project area.
- Hot Spot Consultation will be conducted in problematic locations of the KEMP schemes with participation of knowledgeable and affected people, prominent members of the community, public representatives, officials and NGO representatives to ensure local needs and concerns are taken into account.
- Participatory workshops will be organized with the participation of different types of representative stakeholders.

The focus group discussions (FGDs) will have representations from the cross-sections of the stakeholders of various professions and categories like agriculture, fishery, students, teachers, business persons, poorer section of the community, housewives, women groups, vulnerable groups, NGOs/CBOs, local government, development organizations, development partners. The Environmental and Social Specialist will monitor and contact the stakeholders as and when necessary. The experts will conduct the FGD in consultation and coordination with the designated stakeholders, PIU and project Engineers.

## 9.1 Instruments for Use during Consultations

The Kenya Guidelines for EIA and EA provides details concerning the public consultation methods in Kenya. Such methods include press conferences, information notices, brochures/fliers, interviews, questionnaires and polls, community meetings, advisory committees, and public hearings. The guidelines for public consultation include, among others, a requirement that major elements of the consultation program should be timed to coincide with significant planning and decision-making activities in the project cycle. In terms of Kenya's EIA process, and policy standards, public consultation should be undertaken during (i) the preparation of the EIA terms of reference; (ii) the carrying out of an EIA; (iii) NEMA review of EIA reports; and (iv) the preparation of environmental and social terms and conditions of approval. Consultations will be carried out by communities as part of the environmental and social screening process of projects, and the results will be communicated in an understandable language to potentially affected persons and beneficiaries.

Kenya Power is responsible for conducting and providing evidence of meaningful consultation (i.e., consultation that is free, prior and informed) with communities likely to be affected by environmental and social impacts, and with local stakeholders, and also for ensuring broad community support, especially for Category 1 projects and for projects affecting indigenous peoples.

Consultation will be undertaken with reference to the updated World Bank's guidance on consultation, participation and broad community support, which also provide guidance on affected communities' involvement in the process of project planning, implementation and monitoring.

For the Kenya Electricity Modernization Project, the affected communities and stakeholders will be consulted about the; environmental screening report, environmental and social assessment report where applicable and the draft ESMP which is going to be developed using ESMF as a guide. Consultation will be conducted mainly with the objective of ensuring that the project has broad community support, and that affected people endorse the proposed mitigation and management measures.

## **9.2 Summary of the outcome of Public and Stakeholder consultations held on 6<sup>th</sup> and 12<sup>th</sup> January 2015**

Participatory Stakeholder Forums were held on 6<sup>th</sup> and 12<sup>th</sup> January, 2015, to disclose and consult with stakeholders on the environmental safeguards documents for the KEMP project. The Forums were attended by participants and stakeholders across the country representing different institutions, government agencies, NGOs, indigenous people's organizations, the Private sector, the Office of the President, Contractors, the county government, and players in the energy sector, among others. A comprehensive list of the participants is included in the minutes of the Stakeholder Forum consultations appended to this report.

The Forum began with an introduction and description of the KEMP Project, and an explanation of the reporting and management requirements with regard to social and environmental issues. This was followed by specific presentations on the environmental and social safeguard documents under the project, including an explanation of the grievance redress mechanism. It was emphasised that more consultations will be held with communities that are proposed as targeted beneficiaries, during the sub-project selection process.

In addition to questions on environmental issues, green (renewable) energy, social, resettlement, and gender issues, Kenya Power addressed concerns raised about reliability and security of power [concerns were raised about burned out transformers], financial accessibility for low-income consumers, how peri-urban areas are classified for inclusion [the most significant classification is based on population density], criteria for determining connectivity [what is the maximum distribution distance from household allowed to secure connection], and accessibility to power data/mapping.

Comprehensive discussions and deliberations on the outcome of the Stakeholder Forum (including Kenya Power's detailed responses to concerns raised) can be found in the minutes appended to this report as Annex 10.

Since consultations for all components of the KEMP Project were held concurrently, some of the questions relate more to the off-grid electrification component of the KEMP Project than to the peri-urban electrification sub-component. Some of the salient issues highlighted by attendees included:

Kenya Forestry Service (KFS) requested that consultations be conducted early on in design of the route alignment to minimize any cutting of trees, and that they be given an opportunity to provide forest resource assessment to minimize conflicts on land use. (However, the nature and scope of the KEMP project will not necessitate any large-scale tree cutting).

Kenya Civil Aviation Authority (KCAA) requested that they be consulted in advance to work with Kenya Power to ensure aerodromes, airports, and heliports are safeguarded from power lines and associated facilities.

Participants from the Office of the Presidents (Chiefs) requested that Kenya Power work in partnership with them and that they be involved in the criteria for selection of the Peri-urban areas that will benefit from the project.

Kenya Power responded to queries from County governments and the Ministry for interior Security to assure them that Kenya Power is working to address the issue of transformer vandalism and illegal connections that were costing the company and the national economy big revenue losses.

In response to concerns raised, Kenya Power reiterated that power line way leaves must be respected and Kenya Power will work with County governments to stop Temporary Occupation Licences that were a safety risk to the public and the electric power infrastructure system.

Many participants from the Counties requested Kenya Power and the Ministry of Energy to provide assistance in plotting and carrying out studies on Wind and Solar capacity and to make available energy data in the public domain. .

The participants from the devolved government agencies also requested Kenya Power to consider their County integrated plans when implementing KEMP and other electricity access plans.

Action Aid international was concerned about the quality of compensation and resettlement.( This concern applies to the off-grid component as no compensation and resettlement is envisioned in the peri-urban component).

Kenya Association of Manufacturers (KAM) asked whether there was any focus on industries to enable them be sited on rural and off grid areas. It was noted that REA and KETRACO were aware of this issue, and would be engaged in projects to ensure access to electricity in rural and off-grid areas.

Some of the Contractors present (Que Energy Limited) advised Kenya Power to look into new systems and technologies for dual systems mainly solar and thermal. They also noted that emphasis was on communities and wondered what Kenya Power was doing to cover private contractors.

WinPower Ltd Company was concerned on the criteria to be used in selection of contractors in the off-grid areas, and the tendering process was explained to them

The devolved governments reported that they were already generating their own power generating stations in partnerships with Private investors and were concerned whether they could also feed into the existing grid.

Most participants were concerned about the perceived high connection costs and tariffs and wanted to know whether KEMP was a continuation of GPOBA. It was noted that KEMP was the next level up of GPOBA and Peri-urban areas were more organized with better infrastructure.

A specific consultation forum with representatives of Vulnerable and Marginalized Groups (VMGs) was conducted on 12<sup>th</sup> January 2015 in Stima Plaza. The forum was attended by 16 people with 6 of the participants from VMGs from different counties (Narok, Kwale, Nakuru and Kajiado). Four safeguards instruments prepared for the KEMP were presented during this forum. These were: (a) Resettlement Policy for KEMP; (b) Vulnerable and Marginalized Group Framework (VMGF) for KEMP; (c) Environmental and Social Management Framework (ESMF) for Peri Urban Component and the (d) Environmental and Social Management Framework for the Off Grid Component. The representatives of the VMGS were appreciative of the initiative to involve them during the preparatory stage of KEMP project. They were in particular impressed by the policy documents and the manner in which these addressed their issues of concern. They were overall supportive of the project goal and objectives and proposed interventions. Participants were very resourceful in discussing and highlighting issues of concern in each of the instruments. The main issues raised included:

- a) What mechanisms were in place to increase affordability of connections by VMGs;
- b) Need to pay particular attention to gender/women;
- c) Ascertaining free, prior and informed consultations
- d) Treatment of VMGs that do not have title deeds
- e) Clear feedback mechanisms
- f) Compensation for sensitive sites
- g) More clarity on principles of compensation for losses;
- h) Clarification on role and responsibilities of government and bank in screening/triggering policy O.P 4.10 and undertaking the social assessment process;
- i) The need to build on local /cultural mechanisms for GRM.

However, they cautioned that from their past experiences reality has tended to depart from the paper work and urged that all efforts be made to ensure implementation will be as per the instruments presented.

The Bank and KPLC (on behalf of REA) clarified that the project was guided by principles embodied in the safeguard documents presented and the various Bank operational policies triggered. KPLC (on behalf of REA) welcomed the comments/suggestions and promised to take them into considerations.

A full summary of consultations, including a list of attendees, is detailed in Annex 10.

## 10 CHAPTER TEN: GRIEVANCE REDRESS MECHANISM

Grievance mechanisms provide a formal avenue for affected groups or stakeholders to engage with the project implementers or owners on issues of concern or unaddressed impacts. Grievances are any complaints or suggestions about the way a project is being implemented. They may take the form of specific complaints for damages/injury, concerns about routine project activities, or perceived incidents or impacts. Identifying and responding to grievances supports the development of positive relationships between projects and affected groups/communities, and other stakeholders.

The World Bank Group standards outline requirements for grievance mechanisms for some projects. Grievance mechanisms should receive and facilitate resolution of the affected institutional or communities' concerns and grievances. The World Bank Group states the concerns should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities, at no cost and without retribution. Mechanisms should be appropriate to the scale of impacts and risks presented by a project. Grievances can be an indication of growing stakeholder concerns (real and perceived) and can escalate if not identified and resolved. The management of grievances is therefore a vital component of stakeholder management and an important aspect of risk management for a project. Projects may have a range of potential adverse impacts to people and the environment in general, identifying grievances and ensuring timely resolution is therefore very necessary. As such the ESMF has developed a grievance management process to serve as a guide during project implementation.

Process	Description	Time Frame	Other Information
Identification of grievance	Face to face; phone; letter, e-mail; recorded during public/community interaction; others	1 Day	Email address; hotline number
Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e. in a log book)	3-6 Days	Significance criteria: Level 1 –one off event; Level 2 – complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMF/RPF provisions
Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	8-15 Days	
Development of response	Grievance assigned to appropriate party for resolution Response development with input from management/ relevant stakeholders	4-8 Days	
Response signed off	Redress action approved at appropriate	8-15 Days	
Implementation and communication of response	Redress action implemented and update of progress on resolution communicated to complainant	5-9 Days	

KPLC as a proactive organization has developed a grievance Redress Mechanism procedure to use in case of any incidence or complaint from the public or affected persons. **See Annex9.** It should be noted that if complainants are not satisfied with the grievance process, they have the right to present their complaint through the court system.

# 11 CHAPTER ELEVEN: MITIGATION MEASURES

## 11.1 Mitigation Measures

Mitigation measures involve avoiding of impact altogether, minimizing the impact, rectifying the impact and gradual elimination of impact over time. Mitigation measures are twofold: physical and socio-economic. Physical measures relate to issues of project siting, re-vegetation and preventive measures like bush clearing, erosion, sedimentation and pollution control and good construction / farming practices, waste management, and application of Environmental Guidelines for Contractors. Socio-economic measures will include education and awareness, hygiene and sanitation training, rules and regulations, institutional support (including skills training), and recruitment of qualified personnel.

The mitigation measures for the public health issues; explore options to accommodate crew off site and avoid camps and in absence of that, educate the crew about preserving vegetation, provide decent temporary sanitation facilities like toilets. Use local and regional labour as much as possible and provide HIV/AIDS awareness training to the workers and the community, provide guidelines on local culture, behaviour and social life to the workers and create walk ways and plant grass where necessary.

The mitigation measures for use of hazardous waste include; use off site treatment methods and only deliver poles ready for fixing, proper burning or disposal of any hazardous materials found on site, use protective gear during work, remove or bury all abandoned construction materials and rubbles and fill in and close all latrines and septic systems. The mitigation measures for use of heavy plant and equipment i.e. tippers for material delivery include; Minimize the use of heavy trucks, Provision of drainage channels to guide surface run offs and introduction of mulching to minimize effects on soil erosion and set protocols for vehicle maintenance on site and not dump any oil around the site.

A summary of typical environmental and social impacts and the corresponding typical mitigation measures for the types of activities likely to be undertaken by KPLC are as shown in Table 4 and 5. The table are not intended to be exhaustive in content but rather to indicate in general the scope of ESIA's and ESMPs. It is entirely possible that additional impacts will be identified during impact assessment studies or audit preparation and will require additional mitigation measures. In the ESIA's and ESMPs, impacts shall be categorized according to project phase (planning, construction, operation, and decommissioning) and for all project types.

**Table 4: ESMP and Mitigation Program**

No.	Potential negative impacts	Mitigation measures	Monitoring activities and surveillance	Responsibility for Monitoring	Performance Indicator	Timing	Estimated Cost (Kshs.)
1.	<b>Electric shocks and electrocution of people.</b>  Electricity, though a good master and a bad servant, is a hazard and	<ul style="list-style-type: none"> <li>Proper public education to the people on safe use of electricity</li> <li>Proper wiring in the customers' premises by qualified technicians</li> </ul>	Inspection	Supervising Engineer Contractor	<ul style="list-style-type: none"> <li>No of Public safety awareness sessions held</li> <li>No of</li> </ul>	operation	2,350,000



No.	Potential negative impacts	Mitigation measures	Monitoring activities and surveillance	Responsibility for Monitoring	Performance Indicator	Timing	Estimated Cost (Kshs.)
	safety precautions must be adhered to and properly used.	<ul style="list-style-type: none"> <li>Use of danger/hatari signs on the poles</li> </ul>			accidents recorded <ul style="list-style-type: none"> <li>No of deaths</li> <li>Medical Records</li> <li>Presence of Hazard communication signs</li> <li>Availability of wiring certificate</li> </ul>		
2.	<b>Occupation safety and health hazards.</b>  During construction many people will be engaged in working. Such people are exposed to occupational risks like falling from heights, Accidents etc.	<ul style="list-style-type: none"> <li>The contractor must observe all the safety precautions to ensure workers work safely</li> <li>Safety awareness creation to the workers</li> <li>Use of personal protective equipment like gloves, helmet, climbing shoes, harnesses etc.</li> <li>Staff Training and regular equipment service and testing</li> <li>Only trained &amp; certified workers to install, maintain or repair electrical equipment;</li> <li>Use of signs, barriers and education/ public outreach to prevent public contact with potentially dangerous equipment;</li> <li>Community policing to be encouraged to reduce vandalism of transformers and distribution cables</li> <li>Follow safe work procedures</li> <li>Maintain a fully stocked and accessible first aid kit</li> <li>Observe OSHA 2007</li> </ul>	Inspection	Safety Engineer; contractor ; Technical Engineer	<ul style="list-style-type: none"> <li>Workers in PPE</li> <li>Records of safety awareness sessions held with workers</li> <li>Fully stocked First Aid Kit</li> <li>Competency records</li> <li>Tool box talk records</li> </ul>	Construction Operation & decommissioning	235,000

No.	Potential negative impacts	Mitigation measures	Monitoring activities and surveillance	Responsibility for Monitoring	Performance Indicator	Timing	Estimated Cost (Kshs.)
		regulations					
3.	<b>Public health risk</b>  At project implementation many new workers will be involved and new interactions between people are likely to take place. These interactions are likely to pose risks to the social fabric of the society. Such risks include public health related issues such as (HIV/AIDS, communicable and sexually transmitted diseases (STDs)).	<ul style="list-style-type: none"> <li>Public awareness of the public health issues identified.</li> <li>Provision of condoms</li> <li>Distribution of HIV &amp; AIDS awareness materials in collaboration NACC</li> </ul>	Inspection	Safety Engineer/ Project Engineer	<ul style="list-style-type: none"> <li>Availability of Condoms</li> <li>No of public health awareness sessions with workers</li> </ul>	Construction	150,000
4.	<b>Impact on Natural Vegetation</b>  The project will involve short service lines within the 600m radius mainly along the road reserve. No tall growing trees will be allowed below the lines or along the way leave trace.  Grass and short vegetation will be cleared to pave way for erection of poles.	<ul style="list-style-type: none"> <li>KPLC to plant trees as a way of compensation for the cleared ones</li> <li>Clear limited areas only where the pole will be erected</li> <li>Select alternative alignments to avoid sensitive natural features</li> </ul>	Inspections	Environmentalist	<ul style="list-style-type: none"> <li>No of trees planted</li> </ul>	Construction & operation	2,000,000
5.	<b>Construction material sourcing-wooden poles.</b>  Majority of these service lines are constructed using wooden poles. This would impact on the environment as close to a million poles will be needed according to the preliminary estimates.	<ul style="list-style-type: none"> <li>Plant more trees to compensate for the poles used</li> <li>Ensure accurate budgeting to ensure only necessary material is ordered</li> <li>Proper storage to ensure minimal loss</li> <li>Supply seedlings to farmers to increase forest cover</li> </ul>	Inspection	Environmentalist/ project Engineer	<ul style="list-style-type: none"> <li>No concrete poles used</li> <li>No of trees planted</li> </ul>	Construction period	1,500,000

No.	Potential negative impacts	Mitigation measures	Monitoring activities and surveillance	Responsibility for Monitoring	Performance Indicator	Timing	Estimated Cost (Kshs.)
6.	<b>Impacts on air quality from vehicle exhaust emissions</b>  Exhaust emissions are likely to be generated by the vehicles used to ferry materials during construction. These exhaust emissions can impact on the quality of air.	<ul style="list-style-type: none"> <li>Drivers shall not leave vehicles idling so that exhaust emissions are lowered.</li> <li>Maintain all machinery and equipment in good working order to ensure minimum emissions are produced.</li> </ul>	Inspection	<ul style="list-style-type: none"> <li>Project engineer</li> </ul>	<ul style="list-style-type: none"> <li>No vehicle idling onsite</li> <li>Vehicle maintenance Records</li> </ul>	Construction	Nil
7.	<b>Solid waste</b>  Little if any solid waste will be generated which includes conductor and tree cuttings.	<ul style="list-style-type: none"> <li>All left over conductor cuttings to be disposed appropriately or be returned to the store for proper disposal</li> <li>Proper budgeting of materials to reduce wastage</li> <li>practice 3 Rs of waste management: reduce, reuse, recycle of materials</li> <li>Manage storage, transfer, and disposal of transformer oils according to industry standards</li> </ul>	Inspection	Project Engineer	No waste on site Records of material return to store if any	Construction & Decommissioning	
8.	<b>Noise</b>	<ul style="list-style-type: none"> <li>Proper servicing of vehicles</li> <li>Not necessary for power lines of such low voltage. However contractor should ensure minimal noise generation during construction and decommissioning phases</li> <li>Maintain all work equipment at optimal operating condition</li> <li>Monitor noise levels at sensitive receptors (residential areas, schools, hospitals)</li> <li>Work through community liaison officers to agree on working hours and to respond promptly to complaints.</li> </ul>	Inspection	Project Engineer / Safety Engineer	Vehicle maintenance Records	Construction & decommissioning	Nil

No.	Potential negative impacts	Mitigation measures	Monitoring activities and surveillance	Responsibility for Monitoring	Performance Indicator	Timing	Estimated Cost (Kshs.)
9	<b>Risk of Fire from live conductors and Transformers</b> -Potential adverse impacts related to fire hazards remain a main feature of this project. The Transformers will have combustible products like the transformer oil and the risks associated with fire hazards form a significant adverse impact on the human health and environment	<ul style="list-style-type: none"> <li>No burning of vegetation along the distribution lines rights-of-way</li> <li>Timely maintenance of the right of way</li> <li>Time maintenance of transformers</li> </ul>	Routine maintenance	Operation and Maintenance Engineer	Way leave and Transformer maintenance Records	Operation	1,000,000
10.	<b>Damage to crops and trees-</b>	Compensation for loss of crops and trees to the owners	Verification with owners of crops	Socio-economist	Records of payments made	Construction and operation	Nil
11	<b>Loss of physical cultural resources</b>	Physical Cultural Resources may be triggered as a precaution, although the sub-projects are not expected to traverse areas of cultural or historical importance. Chance find procedures will be included in contracts and in the environmental documents.	Close monitoring of the contractor	Environmental specialist	Records of any chance finding and report to the NMK	Construction	20,000
12.	<b>Oil Leaks</b> -The refilling and emptying of the transformer oil can lead to accidental oil spills. There is a possibility of oil leaking from the transformers can lead to oil spills. This may lead to potential contamination of surface and groundwater as well as soil.	<ul style="list-style-type: none"> <li>Need to design appropriate protection devices against accidental discharge of transformer oil substances.</li> <li>Frequent inspection and maintenance of the transformers should be done to minimize spilling.</li> <li>All waste oils from maintenance of transformers and other associated equipment should be segregated and disposed properly by a reputable/registered waste handler in accordance with the waste disposal plan.</li> </ul>				Operation and decommissioning	400,000

**Table 5: Typical impacts and mitigation measures for new LV and MV distribution lines and Way leave acquisition**

Project Activities / Environmental Aspects	Potential and Associated Impacts	Mitigation Measures
Acquisition of Right of Way (ROW)	Anxiety among potentially affected landowners and users	<ul style="list-style-type: none"> <li>• Work through community liaison officers to keep public fully informed</li> </ul>
	Dissatisfaction with compensation; disruption of livelihoods	<ul style="list-style-type: none"> <li>• Prepare and implement compensation plan in accordance with the guiding principles and way leave regulations</li> </ul>
	Loss of natural habitat	<ul style="list-style-type: none"> <li>• Give preference in site selection to land already converted</li> <li>• Select alternative alignments to avoid protected areas and other sensitive natural features</li> </ul>
	Loss of or damage to cultural resources	<ul style="list-style-type: none"> <li>• Select alternative alignments to avoid physical cultural resources</li> <li>• Where avoidance is impossible, comply with World Bank OS2 and consult with national authorities and/or local leaders on best way to preserve or relocate cultural property.</li> <li>• Formulate and implement chance finds procedure</li> </ul>
Clearance of RoW	Loss or fragmentation of or increased access to natural habitat, leading to reduction in biodiversity, possible impacts on rare or endangered species	<ul style="list-style-type: none"> <li>• Give preference in site selection to land already converted</li> <li>• Minimize width of cleared area</li> <li>• Use labor-intensive mechanical clearing methods to maximize employment opportunities and avoid impacts of herbicides</li> </ul>
	Accumulation of brush and debris	<ul style="list-style-type: none"> <li>• Use appropriate disposal techniques; prohibit burning</li> </ul>
Pole installation and Cable Stringing; Equipment Delivery and Installation	Soil / groundwater contamination from accidental fuel/engine oil spill refueling	<ul style="list-style-type: none"> <li>• Store fuel and chemicals on an impermeable surface with a bund that will hold 110% of the capacity of fuel and chemicals stored.</li> <li>• Train personnel in safe fuel handling</li> <li>• Use drip pans to contain any spills during refueling activities</li> </ul>
	Onsite noise and vibration and other hazards.	<ul style="list-style-type: none"> <li>• Maintain all work equipment at optimal operating condition</li> <li>• Enforce use of PPE</li> <li>• Implementation of weekly Health and Safety (H&amp;S) training</li> <li>• Daily tool box talks</li> </ul>
	Disturbance by noise and vibration in surrounding communities	<ul style="list-style-type: none"> <li>• Maintain all work equipment at optimal operating condition</li> <li>• Monitor noise levels at sensitive receptors (residential areas, schools, hospitals)</li> <li>• Work through community liaison officers to agree on working hours and to respond promptly to complaints.</li> <li>• Sensitize workers to reduce noise during working hours in sensitive areas</li> </ul>

Project Activities / Environmental Aspects	Potential and Associated Impacts	Mitigation Measures
	Risk of accidents to life and property	<ul style="list-style-type: none"> <li>Set and enforce speed limits</li> <li>Mandatory driver training</li> <li>Use warning signs and, where necessary, personnel to direct traffic</li> </ul>
	Damage to roads and other infrastructure caused by transit of heavy trucks	<ul style="list-style-type: none"> <li>Routine inspection, and prompt repair of any damage</li> </ul>
	Working at heights and in confined spaces.	<ul style="list-style-type: none"> <li>Adequate ladder should be provided</li> <li>Provision of climbing shoes</li> <li>Provide safety harness</li> </ul>
Distribution line operation	Risk of electrocution, injury or property damage	<ul style="list-style-type: none"> <li>Prevent encroachment and enforce restrictions on activities in RoW</li> <li>Post warning signs and properly install electrical poles with anti-climbs to prevent access to conductors by unauthorized personnel</li> <li>Provide safety belts and include log-out/tag-out procedures</li> <li>Create public and staff awareness on the electrical safety rules as set out in Kenya power safety book</li> </ul>
	Pollution from Improper disposal of solid and liquid wastes	<ul style="list-style-type: none"> <li>Operators to practice 3 Rs of waste management: reduce, reuse, recycle</li> <li>Dispose of wastes and scrapped equipment properly</li> <li>Manage storage, transfer, and disposal of transformer oils according to industry standards</li> </ul>
Distribution line maintenance	Damage to natural habitat	<ul style="list-style-type: none"> <li>Set and enforce restrictions on hunting by workers</li> <li>Minimize width of cleared area</li> <li>Use labor-intensive mechanical clearing methods to maximize employment opportunities and avoid impacts of herbicides</li> </ul>
	Accumulation of brush and debris	<ul style="list-style-type: none"> <li>Use appropriate disposal techniques; prohibit burning</li> </ul>
	Soil / groundwater contamination from accidental fuel/engine oil spill refueling	<ul style="list-style-type: none"> <li>Train personnel in safe fuel handling</li> <li>Use drip pans to contain any spills during refueling activities</li> </ul>
	Risk of accidents to life and property	<ul style="list-style-type: none"> <li>Set and enforce speed limits</li> <li>Mandatory driver training</li> <li>Use warning signs and, where necessary, personnel to direct traffic</li> </ul>

## 11.2 Environmental and Social Management Plan (ESMP)

The purpose of the Environmental and Social Management Plan (ESMP) is to provide guidance during the implementation of the Proposed KPLC Projects regarding the institutional responsibilities and cost estimates for effective environmental and social management. Towards this end, the ESMP will:

- Ensure that proper appraisals on the effects of projects takes place and that proper measures are put in place to mitigate the effects;
- Set out the basis for compliance and enforcement of terms and conditions for approval;
- Design compliance strategies; and
- Monitor compliance and managing of the environment.

Thus, the provided ESMP (annex 6) (i) describes the potential adverse environmental and social impacts of future projects; (ii) outlines proposed mitigation measures to be adopted and indicate parties responsible for implementing mitigation measures; (iii) identifies parties that will carry out the monitoring of the implementation of the mitigation measures; (iv) outlines the time horizons for the various activities; and (v) detail the associated costs and sources of funds. The ESMP will be included in the Project Implementation Manual and the cost estimates for implementing the ESMP will be included in project cost tables.

### 11.3 Monitoring Plan

Monitoring of the implementation of the ESMP will be done by KPLC Environment unit with assistance from regional safety officers/engineers. The ESMP will outline the institutional arrangements and cost estimates for environmental and social management during the implementation, operation and decommissioning of the KPLC Projects. The following are specific institutional responsibility for the projects:

- Play the role of facilitating the implementation of the projects
- To produce annual and periodical reports to the bank indicating the actions that has been undertaken towards the implementation of projects on the environmental status.
- Drawing up project objectives for monitoring purposes
- Develop the key indicators for monitoring purposes with the bank and ensure the monitoring capabilities.
- Carrying out Environmental awareness campaigns and collaborates with other stakeholders where these projects will be implemented.
- KPLC will be fully involved in the implementation of the project.

The capacity building needed for KPLC SHE department will be in terms of training which will involve regional safety engineers/officers and environmental unit staff in KPLC since they will be involved directly in implementing all KPLC projects and in carrying out environmental screening and monitoring. These trainings will ensure the SHE staffs have adequate manpower in all aspects of environment for sustainable development. Provision of necessary equipment for better execution of their duties and proper monitoring of these projects to ensure continuity and sustainability should be provided.

The following course shall be offered to the SHE staff who will oversee the environmental aspects of the proposed projects. They include;

- Environmental Management Systems and Impact Assessment& Implementation of the ESMF, Hazardous Waste Management and Pollution Control and

- Strategic Environmental and Social Assessment (SESA)
- Project Management and Monitoring and evaluation
- NEBOSH International Certificate in Occupational Safety & Health

KPLCSHE department needs manpower development to cope with its many tasks, which include the donor funded projects.



## 12 CHAPTER TWELVE: INSTITUTIONAL CAPACITY FOR ENVIRONMENTAL MANAGEMENT

### 12.1 Responsibilities for Environmental and Social Monitoring

Environmental and social monitoring will be carried out by the KPLC PIU in conjunction with the relevant government departments that have been given that responsibility by the Kenyan laws. Monitoring of environmental and social safeguards needs to be carried out during the construction and rehabilitation of the existing and new distribution and transmission lines and substations, as well as during their operation and maintenance.

The table below provides some of the key environmental and social monitoring indicators, to be adapted to the projects as necessary.

**Table 6: Key environmental and social monitoring indicators**

ISSUE	REMARKS
Reduction in soil erosion	
Increase in re-afforestation	
Drainages around infrastructures	
Wayleave acquisition	
Hectarage of land acquired	
Number of people affected	
Type and amount of assets to be affected for the community members and government by the project	
Number of persons expressing willingness to relocate	
Number of persons expressing unwillingness to relocate	
Livelihood status prior to project	
Livelihood status after project	
Has standard of living increased, decreased, or remained the same	
Number of women employed by civil works	
Number of employees receiving HIV/AIDS awareness training at work site	
Number of community members receiving HIV/AIDS awareness training during project implementation	
Number of people employed from project surrounding areas	
Construction Works of the proposed projects	
Hectarage of land clearance	
Project areas where infrastructure will be constructed	

ISSUE	REMARKS
Number of pit latrines for workers at camp site	
Number of water points for workers at camp site	
Number of environmental mitigation measures implemented and financed by projects	
Implementation status of safe disposal of creosote-treated poles	
Implementation status of the Environmental Guidelines for Contractors	
Number of staff and other personnel having completed environmental training	
Implementation status of safe disposal of PCB	
Number of complaints on inconveniences caused by the construction works (complaints against dust)	
Number of Accidents	
Number of cases contravening health and safety procedures	
Number of disposal sites for wastes from the construction sites and camp sites	
Number of Disposal sites that will be restored to original or better state in terms of environmental degradation.	

The SHE department ensures compliance with national and international environmental regulations and with the World Bank Operational Safeguards. The staff will include environmental and social specialists and a Socio-economist. The SHE department has prepared a number of ESIA's, RAPs, and/or Environmental Audits as well monitoring of other projects for Kenya Power.

## 12.2 Monitoring, evaluation and reporting

Monitoring, evaluation and reporting on environmental issues will be part of project implementation processes and reporting systems. KPLC will keep records of all activities that will be undertaken under each project site, which will be compiled and used in enhancing environmental sustainability of the project sites. The KPLC PIU will be responsible for environmental and social monitoring at local levels. KPLC's Environmental Unit, Project engineers and Regional Safety Officers/engineers will distil environmental and social screening actions from the completed Environmental and Social Screening Forms (Annex 1). Compliance to environmental and social screening requirements will also be generated based on quarterly reports, annual reports, evaluation reports, feedback meetings and Implementation support missions. KPLC's Environment Unit will regularly report to the World Bank on the status of environmental and social management of projects in the project's Quarterly Reports.

## 12.3 Capacity Building and Environmental Training

Capacity building should be undertaken for the SHE department and Regional Safety Officers/Engineers to ensure that the ESMF is effectively operationalized. The KPLC PIU and regional staff involved in environmental matters have to be exposed to formal training in the management of environmental issues. The training program for various role players will include an orientation program

on the ESMF to be done by SHE department which will include environmental assessment processes and participatory methodologies. Capacity building will help improve the effectiveness of stakeholders at various levels in the management of environmental and social impacts during planning, implementation and operation of proposed projects.

Capacity building will enhance the ESMF management capacity by allowing real application of the best practices such as the following:

- Screening of investments for potential environmental and social impacts, scoping assessments, planning mitigation options, public consultation to assess feasibility and acceptability options; steps 1-7 to implement the environmental and social screening process for projects;
- Environment: site selection to minimize environmental impacts and social disruption; restoration of drainage patterns including mitigation matters in contracts; management of impacts during construction; monitoring of effectiveness of measures;
- Monitoring and grievance redress: transparency and supervision responsibilities.

As regards the institutional capacity building, the KPLC PIU and regional staff as well as some staff of the SHE department in Nairobi are to be trained in different aspects of the implementation of the ESMF and the proposed Project, including interpretation and implementation of environmental impact management guidelines and the World Bank safeguard policies. Different groups involved in project implementation have different training needs in terms of raised awareness, sensitization to the issues, and detailed technical training. While some would require training on general awareness building and more specific training would be needed for others. The three major areas for anticipated trainings are:

- Awareness raising for participants who need to appreciate the significance or relevance of environmental issues;
- Sensitization to the issues for participants who need to be familiar enough with the issues that they can make informal and specific requests for technical support;
- Detailed technical training for participants who will need to analyse potentially adverse environmental impacts, to prescribe mitigation approaches and measures, and to prepare and supervise the implementation of environmental and social management plans. This training will address such matters as community participation methods; environmental assessment; using the ESMF; and project supervision and monitoring;
- The community members will be trained on better methods of environmental conservation and management.

The PIT will be attending various courses towards enhancing capacity building when they are identified. These courses include;

- Environmental conservation and management;
- SEA Trainings
- ESMF implementation and Monitoring Trainings
- Monitoring and evaluation;
- Waste management;

- Occupational Safety & Health;
- Project management;
- Climate change among others.
- Environmental quality assessment and monitoring
- Ecological assessment trainings especially on Fauna and Flora

## 13 CHAPTER THIRTEEN: AN ESMF IMPLEMENTATION BUDGET

The ESMF implementation budget refers to all costs that will be incurred to implement the requirements or recommendations of the ESMF. The ESMF requirements ensure that implementation of the projects integrates environmental and social issues for the sustainability of the project as well as the sub-projects. Among other things the ESMF recommends the following key issues, namely; training, capacity building, screening, reviewing and monitoring mechanisms. These issues are clearly described here under; the staff- who will be involved in the implementation of the project should be trained to enhance their skills on environmental and social issues. Building the capacity of staff from implementing Division/departments/ sections such as projects, SHE, Network Management, Chain Supply Management and Finance will enable them to screen, review and monitor environmental issues in the sub-projects to ensure compliance with requirements of the national policies and Acts as well as World Bank safeguard policies. Based on experience from other related assignments the estimated cost for technical assistance for capacity building would be 80,000 USD.

Furthermore, screening and reviewing processes would also involve some cost implications. Every sub-project would be screened and reviewed by the implementing unit while involving Environmental Experts. The estimated costs for such processes would be 60,000 USD.

Monitoring plan: there will be monitoring during the implementation of the sub-projects in order to measure the effectiveness of the mitigation measures. The monitoring and reporting procedures will ensure early detection of conditions that necessitate particular mitigation measures and will furnish information on the progress and results of mitigation. The monitoring component will involve some cost implications. Based on previous experience from related projects, the estimated costs for monitoring would be 60,000 USD.

**Table 7: Estimated level of costs for ESMF implementation**

S/NO	ESMF proposed actions)	Concerned institutions	Level of cost (USD)
1	Training and capacity Building	SHE, Procurement, infrastructure and Network Management	80,000
2	Screening and reviewing	Project Implementation Unit	60,000
3	Monitoring activities	PIU, NEMA	60,000
4	<b>Total Costs</b>		<b>200,000</b>

The cost implications for implementing this ESMF are reflected in table 6 above. The estimates reflect the level of cost but the actual costs will be determined during the implementation phase, when the specific number of people required for training will be identified and the level of technical assistance required.

## **14 CHAPTER FOURTEEN: CONCLUSION AND RECOMMENDATIONS**

This Environmental and Social Management Framework (ESMF) has been prepared to establish the mechanism to determine and assess future potential adverse environmental and social impacts of sub-projects that are to be identified and cleared under the Peri-urban electrification component of the Kenya Electricity Modernization program/Project.

This ESMF is meant to ensure that the implementation of the KEMP, of which the specific sub-project sites are unknown at this stage, will be carried out in an environmentally and socially sustainable manner. The ESMF provides the project implementers with an environmental and social screening process that will enable them to identify, assess and mitigate potential environmental and social impacts of sub-project activities, including the preparation of site-specific Environmental Impact Assessments (EIA) where applicable, in accordance with the EMCA, 1999 as well as World Bank safeguard policies particularly Environmental Assessment (OP/BP 4.01).

Consequently, specific information on the number of sub-projects, site location of sub-projects, Land requirements, geo-physical land features, nature, type and use of equipment, etc. are not available at this stage. Therefore, exact details and the intensity of social and environmental impacts and their effective mitigation cannot be determined with precision.

The framework delineates the World Bank Operational Safeguards that are likely to be triggered by the proposed power connectivity project, identifies potential environmental concerns/impacts, environmental and social management plan, institutional responsibilities, capacity building, training needs, and technical assistance required.

In view of all these the ESMF therefore recommends the following;

- Training needs. Staff who will be appointed to the Project Implementation Unit (PIU) for Peri-Urban Electrification sub-component of the Project, Implementing units and other sections which will be responsible for coordinating activities across the company for managing sub-projects for the purpose of maintaining a formative monitoring system throughout the project to assess the quality of implementation, use of funds, and impacts should have the necessary skills in Environmental and Social Management. Therefore they should undertake training in environmental management. Training topics may include an overview of environmental issues within the power sector, introduction to EIA processes and methods, impact analysis, EIA review, the role of the public and stakeholders, EIA experience in Kenya, and case studies. Other training needs are explained in chapter 10.
- The implementation of KEMP sub-projects should strongly integrate environmental and social issues in relation to the sub-project as outlined in this ESMF. Furthermore the implementation of the KEMP project as well as its subprojects must comply with the Kenyan Policies and Laws as well as World Bank Policies as defined in chapter 5 and 6.

- Adherence to ESMF requirement. The ESMF requires this project to ensure that procedures are followed in relation to environmental and social screening, review and approval prior to implementation of sub- projects to be financed under the KEMP. Furthermore, appropriate roles and responsibilities, for managing and monitoring environmental and social concerns related to sub-projects should also be followed.

## 15 REFERENCE

- Building Code 1968
- County Government Acts, 2012
- Energy Act of 2006
- Environmental Management and Coordination (Fossil Fuel Emission Control) Regulations 2006
- Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006
- Environmental Management and Coordination (Noise and Excessive Vibration pollution) (Control) Regulations, 2009: Legal Notice 61
- Government of Kenya Wayleave Act
- Government of Kenya Roads Board Act
- Government of Kenya State of Environment 2010
- Government of Kenya Public Procurement and Disposal Act
- Government of Kenya Agriculture Act
- Government of Kenya Roads Act
- Government of Kenya Fiscal Management Act (CAP 5) of 2009
- Government of Kenya Antiquities and Monuments Act, Cap 215 of 1983
- Government of Kenya Employment Act, 2007
- Government of Kenya Maritime Authority Act 2006
- Kenya Vision 2030: A Globally competitive and prosperous Kenya 2007
- Land Act, 2012
- Occupational Safety and Health Act, 2007
- Penal Code Act (Cap.63)
- Physical Planning Act, 1996
- Public Health Act (Cap. 242)
- The Civil Aviation Act No. 21 of 2013
- The Constitution of Kenya, 2010: Constitutional provisions
- The Environment Management and Co-ordination Act, 1999
- The Environmental Management Coordination (Water Quality) Regulations): Legal Notice 120
- The Environmental Management Coordination (Waste Management) Regulations): Legal Notice 121
- The Environmental (Impact Assessment and Audit) Regulations, 2003
- The Forestry Services Act, 2005
- The Land and Environment Court Act 2011
- The Traffic Act Cap 403 Of 2009

- Wildlife Conservation and Management Act, 2013
- Urban Areas and Cities Act No. 13 of 2011
- Water Act, 2002
- Work Injury and Benefits Act, (WIBA) 2007
- Kenya power Safety Rules Handbook 2014
- World Bank Project documentation for KEMP
- World Bank Safeguards Policies
- World Bank Group Environmental, Health, and Safety Guidelines
- IFC Performance Standards



## 16 ANNEXES

### 16.1 Annex 1: Environmental and Social Screening Form

#### ENVIRONMENTAL AND SOCIAL SCREENING FORM

##### Introduction

This form is a tool to standardise the environmental and social screening process of Kenya Electricity Modernization sub-projects in the Peri-Urban Electrification Sub Component.

The main objective of the screening process is to identify and highlight environmental and social issues that need to be taken into account in further decisions, planning, and design of a project. The aim is to support the sustainable implementation of the planned investments under the above project.

The screening must be carried out at an early stage of the sub-project (i.e., prefeasibility), in accordance with the requirement for donor financed projects. The proponent must complete each section of this form, as outlined below.

##### Proponent and Project Identification:

Name of Project: **Kenya Electricity Modernization Project**

Project Proponent (Company / Institution): **Kenya Power and Lighting and Company**

Contact person (Proponent):

Name: John Guda

Phone: 254 20 3201460

E-mail: [jguda@kplc.co.ke](mailto:jguda@kplc.co.ke)

Responsible person and the name of the person completing this form:

Company:.....

.....

Name:.....

.....

Phone:.....

.....

Email:.....

Locality and date: Nairobi

Signature .....

Signature.....

(Proponent)

(Responsible Consultant / Person)

## **1. The Screening Form**

The questions regarding this form or the procedure may be sent to:

Kenya Power Lighting and Company

Wilfred Koech

Phone: 3202442/0722690119

E-mail: [Wkoech@kplc.co.ke](mailto:Wkoech@kplc.co.ke)

## **2.0 Project Descriptions**

2.1 Name and Type of Project:

2.2 Expected start and end date (month/year) and project duration (in months) of the construction phase:

2.3 List the technology and machinery to be used in the construction and operation phases

2.3 List the materials to be used during the construction and operation phases (e.g., infrastructure, creosote treated poles, fuels and oils):

2.5 Expected number of workers during construction and during operation:

2.6 Maps (in Annexes):

2.6.1 Provide a map with the geographical location of the project;

2.6.2 Provide an appropriately-scaled map clearly showing:

The project area with existing buildings, infrastructure, vegetation, and land use;

The project area with any planned construction, plants, lines, or access roads.

2.7 Is the project area or its immediate surroundings subject to pollution or environmental damage caused by other (existing) activities?

Yes \_\_\_\_\_ No \_\_\_\_\_

2.8 Is there any other infrastructure in or close to the project area?

Yes \_\_\_\_\_ No \_\_\_\_\_

Provide an additional description for “yes”

answers: \_\_\_\_\_

## The Biological Environment

### 3 The Natural Environment

3.1 Describe the habitats and flora and fauna in the project area and in the entire area expected to be affected by the project (e.g., downstream areas, access roads)\_\_\_\_\_

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3.2 Will the project directly or indirectly affect:

3.2.1 Natural forest types? Yes\_\_\_\_\_ No\_\_\_\_\_

3.2.2 Mangroves or swamps? Yes\_\_\_\_\_ No\_\_\_\_\_

3.2.3 Wetlands (i.e., lakes, rivers, swamps, seasonally inundated areas)? Yes\_\_\_\_\_ No\_\_\_\_\_

3.2.4 Other habitats of threatened species that require protection under Kenyan laws and/or international agreements?

Yes\_\_\_\_\_ No\_\_\_\_\_ If yes, describe\_\_\_\_\_ -

\_\_\_\_\_

\_\_\_\_\_

3.3 Are there according to background research / observations any threatened / endemic species in the project area that could be affected by the project?

Yes\_\_\_\_\_ No\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3.4 Will vegetation be cleared?

Yes\_\_\_\_\_ No\_\_\_\_\_

3.5 Will there be any potential risk of habitat fragmentation due to the clearing activities?

Yes\_\_\_\_\_ No\_\_\_\_\_

3.6 Will the project lead to a change in access, leading to an increase in the risk of depleting biodiversity resources?

Yes\_\_\_\_\_ No\_\_\_\_\_

3.7 Will the proposed project activity trigger OP 4.04 Natural Habitats?

Yes\_\_\_\_\_ No\_\_\_\_\_ If yes, please describe

Provide an additional description for “yes”

answers:\_\_\_\_\_

\_\_\_\_\_

#### **4. Protected Areas**

Does the project area or do project activities:

4.1 Occur within or adjacent to any designated protected areas?

Yes\_\_\_\_\_ No\_\_\_\_\_

4.2 Affect any protected area downstream of the project?

Yes\_\_\_\_\_ No\_\_\_\_\_

4.3 Affect any ecological corridors used by migratory or nomadic species located between any protected areas or between important natural habitats (protected or not) (e.g., mammals or birds)?

Yes\_\_\_\_\_ No\_\_\_\_\_

4.4 Will the proposed project activity trigger OP 4.04 Natural Habitats?

Yes\_\_\_\_\_ No\_\_\_\_\_ If yes, please describe

Provide an additional description for “yes”

answers:\_\_\_\_\_

\_\_\_\_\_

#### **5. Invasive Species**

5.1 Is the project likely to result in the dispersion of or increase in the population of invasive plants or animals (e.g., along distribution and transmission lines, access roads, quarry sites or borrow pits)

Yes\_\_\_\_\_ No\_\_\_\_\_ If yes, please describe.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Provide an additional description for a “yes”

answer:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **The Physical Environment**

### **6. River Systems**

Will the project affect / change:

6.1 Water quantity? Yes\_\_\_\_\_ No\_\_\_\_\_

\_\_\_\_\_

6.2 Water quality (i.e., through sedimentation, chemical pollution)?

Yes\_\_\_\_\_ No\_\_\_\_\_

\_\_\_\_\_

6.3 River stream pattern? Yes\_\_\_\_\_ No\_\_\_\_\_

\_\_\_\_\_

6.4 Seasonal flow variations? Yes\_\_\_\_\_ No\_\_\_\_\_

\_\_\_\_\_

6.5 Flooding regime? Yes\_\_\_\_\_ No\_\_\_\_\_

\_\_\_\_\_

6.6 River ecology? Yes\_\_\_\_\_ No\_\_\_\_\_

6.7 Aquatic habitats? Yes\_\_\_\_\_ No\_\_\_\_\_

Provide an additional description for “yes”

answers:\_\_\_\_\_

\_\_\_\_\_

### **7. Geology / Soils**

7.1 Will vegetation be removed and any surface left bare?

Yes\_\_\_\_\_ No\_\_\_\_\_

\_\_\_\_\_

7.2 Will slope or soil stability be affected by the project?

Yes\_\_\_\_\_ No\_\_\_\_\_

---

7.3 Will the project cause physical changes in the project area (e.g., changes to the topography)?

Yes\_\_\_\_\_ No\_\_\_\_\_

7.4 Will local resources, such as rocks, sand, gravel, or groundwater be used?

Yes\_\_\_\_\_ No\_\_\_\_\_

7.5 Could the project potentially cause an increase in soil salinity in or downstream the project area?

Yes\_\_\_\_\_ No\_\_\_\_\_

7.6 Could the soil exposed due to the project potentially lead to an increase in lixiviation of metals, clay sediments, or organic materials?

Yes\_\_\_\_\_ No\_\_\_\_\_

Provide an additional description for “yes”  
answers:\_\_\_\_\_

---

## **8. Landscape / Aesthetics**

8.1 Is there a possibility that the project will adversely affect the aesthetics of the landscape?

Yes\_\_\_\_\_ No\_\_\_\_\_

Provide an additional description for a “yes”  
answer:\_\_\_\_\_

---

## **9. Pollution**

9.1 Will the project use or store dangerous substances (e.g., large quantities of hydrocarbons, creosote-treated poles/ PCB)?

Yes\_\_\_\_\_ No\_\_\_\_\_

9.2 Will the project produce harmful substances?

Yes\_\_\_\_\_ No\_\_\_\_\_

9.3 Will the project produce solid or liquid wastes?

Yes\_\_\_\_\_ No\_\_\_\_\_

9.4 Will the project cause air pollution?

Yes\_\_\_\_\_ No\_\_\_\_\_

9.5 Will the project generate noise?

Yes\_\_\_\_\_ No\_\_\_\_\_

9.6 Will the project generate electromagnetic emissions?

Yes\_\_\_\_\_ No\_\_\_\_\_

9.7 Will the project release pollutants into the environment?

Yes\_\_\_\_\_ No\_\_\_\_\_

Provide an additional description for a “yes”

answer:\_\_\_\_\_

\_\_\_\_\_

## **The Social Environment**

### **10. Land Use, Resettlement, and/or Land Acquisition**

10.1 Describe existing land uses on and around the project area (e.g., community facilities, agriculture, tourism, private property, or hunting areas):\_\_\_\_\_

\_\_\_\_\_

10.2 Are there any land use plans on or near the project location, which will be negatively affected by project implementation?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.3 Are there any areas on or near the project location, which are densely populated which could be affected by the project?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.4 Are there sensitive land uses near the project area (e.g., hospitals, schools)?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.5 Will the project reduce income, the value /use of existing infrastructure, or negatively affect existing economic activities?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.6 Will a large land area or a high proportion of a community's land be affected?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.7 Will the project affect any resources that local people take from the natural environment?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.8 Will there be additional demands on local water supplies or other local resources?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.9 Will the project restrict people's access to land or natural resources?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.10 Will the project require resettlement of any residents?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.11 Will the project result in construction workers or other people moving into or having access to the area (for a long time period and in large numbers compared to permanent residents)?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.12 Are financial compensation measures expected to be needed?

Yes\_\_\_\_\_ No\_\_\_\_\_

10.13 Who is/are the present owner(s)/users of the project area: -

Please describe:

---

Provide an additional description for "yes" answers:

---

---

## **11. Loss of Crops, Fruit Trees, and Household Infrastructure**

Will the project result in the permanent or temporary loss of:

11.1 Crops? Yes\_\_\_\_\_ No\_\_\_\_\_

11.2 Fruit trees / coconut palms? Yes\_\_\_\_\_ No\_\_\_\_\_

11.3 Household infrastructure? Yes\_\_\_\_\_ No\_\_\_\_\_



Provide an additional description for “yes” answers and refer to the Resettlement Policy Framework (RPF):

---

## **12. Indigenous Peoples**

12.1 Are indigenous peoples present in, or have attachment to, project lands?

Yes\_\_\_\_\_ No\_\_\_\_\_

12.2 What are the project/component effects on indigenous peoples? Please describe:

---

Provide an additional description for “yes” answers and refer to the Indigenous Peoples Planning Framework.

---

## **13. Occupational Health and Safety, Health, Welfare, Employment, and Gender**

13.1 Is the project likely to affect human / community health or welfare (e.g., through disease vectors)? Yes\_\_\_\_\_ No\_\_\_\_\_

13.2 Is the project likely to safeguard worker's health and safety and public safety (e.g., occupational health and safety issues)? Yes\_\_\_ No\_\_\_\_\_

13.3 How will the project minimize the risk of accidents? How will accidents be managed, when they do occur?

Please describe:

---

13.4 Is the project likely to provide local employment opportunities, including employment opportunities for women? Yes\_\_\_\_\_ No\_\_\_\_\_

13.5 Is the project being planned with sufficient attention to local poverty alleviation objectives? Yes\_\_\_\_\_ No\_\_\_\_\_

13.6 Is the project being designed with sufficient local participation (including the participation of women) in the planning, design, and implementation process?

Yes\_\_\_\_\_ No\_\_\_\_\_

Provide an additional description for “yes”  
answers:\_\_\_\_\_

---

#### **14. Historical, Archaeological, or Cultural Heritage Sites**

Based on available sources, consultation with local authorities, local knowledge and/or observations, could the project alter?

14.1 Historical heritage site(s) or require excavation near the same?

Yes\_\_\_\_ No\_\_\_\_

14.2 Archaeological heritage site(s) or require excavation near the same?

Yes\_\_\_\_ No\_\_\_\_

14.3 Cultural heritage site(s) or require excavation near the same?

Yes\_\_\_\_ No\_\_\_\_

14.4 Graves, or sacred locations (e.g., fetish trees or stones) or require excavations near the same?

Yes\_\_\_\_ No\_\_\_\_

14.5 Will any of the project activities trigger OP 4.11 Cultural Property?

Yes\_\_\_\_\_ No\_\_\_\_\_

In the case of chance finds, please contact:

- 
- National Museums of Kenya
  - Ministry of Sports, Gender and Culture

Provide an additional description for “yes”  
answers:\_\_\_\_\_

---

#### **Screening Form was completed by:**

Name\_\_\_\_\_

Position\_\_\_\_\_

Signature\_\_\_\_\_

\_\_\_\_\_

Date\_\_\_\_\_

\_\_\_\_\_

**Screening Results were reviewed and approved by:**

Name\_\_\_\_\_

Position\_\_\_\_\_

Signature\_\_\_\_\_

Date\_\_\_\_\_

## **SUMMARISED ENVIRONMENTAL AND SOCIAL SCREENING FORM**

<b>GENERAL PROJECT DESCRIPTION AND SETTING</b>		
	<b>General Aspects/Questions</b>	<b>Provision of answers to project aspects</b>
1.	Name and/or Title	
2.	Project Type	
3.	Expected start and end date (month/year) & project duration (in months) of the construction phase:	
4.	List the technology and machinery to be used in the construction and operation phases	
5.	List the materials to be used during the construction and operation phases (e.g., infrastructure, creosote treated poles, fuels and oils):	
6.	Expected number of workers during construction&operation:	
7.	Provide a map with the geographical location of the project;	
8.	Provide an appropriately-scaled map clearly showing: The project area with existing buildings, infrastructure, vegetation, and land use if Possible; The project area with any planned construction, plants, lines, or access roads if Possible	
9.	Is the project area or its immediate surroundings subject to pollution or environmental damage caused by other (existing) activities?	
10.	Is there any other infrastructure in or close to the project area?	
<b>THE SOCIAL ASPECTS</b>		
	<b>Social issues around the project area</b>	<b>Describe the potential issues/impacts</b>
11.	Existing land uses on and around the (existing transformer)/project area	
12.	Land uses on or near the project area which will be negatively affected by project implementation?	

13.	Presence of residential/sensitive areas e.g. community facilities	
14.	Present owner(s)/users of the project area	
15.	Population density	
16.	Job opportunities (for the local people)	
17.	Effects of project on people's access to land or natural resources	
	Compensation to property damage	
18.	Effects of project on incomes, value of land and other economic activities?	
19.	Construction workers (number and how long they will spend in project area)	
20.	Exposure of community/public to diseases	
21.	Safety of workers (e.g. occupational health and safety issues)?	
22.	Public engagement (role of the project beneficiaries across all phases of the project)	
23.	Public risk to shocks and electrocution	
24.	Public awareness on use of the service (electricity)	
25.	Population density	
26.	Presence of Indigenous Peoples in the project area	
<b>Conclusion from the screening process</b>		
<b>ENVIRONMENTAL ASPECTS</b>		
	<b>Existing environment:</b>	<b>Description –describe features and indicate sensitivity to disturbance</b>
<b>Physical Features</b>		
27.	Topography/terrain	
28.	Soil (type & quality)	
29.	Surface water (presence & quality)	
30.	Sediments/substance (Type and quality)	
31.	Ground water (local use & quality)	
32.	Air quality (any pollution issues)	
<b>Biological features</b>		
33.	Vegetation (trees, ground cover, aquatic vegetation)	

34.	Wetlands (e.g. bogs, fens and marshes)	
35.	Fish and fish habitat	
36.	Birds (water fowl, migratory birds and others)	
37.	Mammals	
38.	Special habitat areas (special designations or identifies sensitive zones)	
39.	Archaeological resources (recorded or potential for them to exist)	
40.	Special designations (parks, protected areas)	
41.	Traditional economic/cultural activities (trapping, fishing, collection of medicinal plants)	
<b>Conclusion from the screening process</b>		

## 16.2 Annex 2: Environmental and Social Checklist Form

Please note that this checklist does not concern itself with screening which was done through Annex 1

Potential Environmental & Social Impacts of Distribution component	Proposed Mitigation Measures
Creation of social conflict or inequity	Community participation & buy-in
Erosion of economic land value	Plan land use change Compensation, relocation
Damage to historical/cultural monuments or artefacts	Relocation of project affected people
Increased Deforestation	Afforestation
Nuisance – dust, smell or noise	Planning and siting
Water and soil pollution	Control of water and soil pollution
Soil Erosion	Provide and use approved storm water drainage
Health hazards to workers and communities	Sensitize workers and community on safety and health measures
Increasing incidence of communicable diseases	Communication and awareness
Impacts of creosote-treated poles	Proper disposal of waste creosote treated poles
Impacts of PCB at sub-stations	Contractor, workers and community awareness
Impacts on aquatic flora and fauna	Minimize clearing of the natural habitat
Strain on vegetation cover	Minimize clearing of the natural habitat
Changes in migration patterns of humans and animals	Integrate with rural planning
Inundation of cultural or archaeological resources or artefacts	Consider alternative siting Remove resources;
Water logging of soil	Micro-engineering solutions
Loss of scenic value	Re-vegetate
Disruption of land tenure, ownership rights	Community participation & buy-in; implementation of RPF & RAP
Population migration to the area	Integrate with rural planning
Relocation of people	Community participation & buy-in; implementation of RPF
Indigenous Peoples	To be involved
Community participation & support, implementation of IPPF	Cooperation among all stakeholders
Sub-project specific recommendations	
Sub-project	Recommendations
Substation (Transformers)	
Power Lines (distribution and transmission , medium voltage, low voltage, high voltage	
Way leaves/Access roads	

## 16.3 Annex 3: Environmental Guidelines for Contractors

### General Environmental Management Conditions

#### General

1. In addition to these general conditions, the Contractor shall comply with any specific Environmental Management Plan (EMP) for the works he is responsible for. The Contractor shall inform himself about such an EMP, and prepare his work strategy and plan to fully take into account relevant provisions of that EMP. If the Contractor fails to implement the approved EMP after written instruction by the Supervising Engineer to fulfil his obligation within the requested time, the Owner reserves the right to arrange through the SE for execution of the missing action by a third party on account of the Contractor.
2. Notwithstanding the Contractor's obligation under the above clause, the Contractor shall implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance Requirements specified in an EMP. In general these measures shall include but not be limited to:
  - Ensure that noise levels emanating from machinery, vehicles and noisy construction activities (e.g. excavation, blasting) are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.
  - Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels is maintained and/or re-established where they are disrupted due to works being carried out.
  - Upon discovery of ancient heritage, relics or anything that might or believed to be of archaeological or historical importance during the execution of works, immediately report such findings to the Supervising Engineer so that the appropriate authorities may be expeditiously contacted for fulfilment of the measures aimed at protecting such historical or archaeological resources.
  - Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, and collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.
  - Implement soil erosion control measures in order to avoid surface run off and prevents siltation, etc.
  - Ensure that garbage, sanitation and drinking water facilities are provided in construction workers camps.
  - Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long distance transportation.
  - Ensure public safety, and meet traffic safety requirements for the operation of work to avoid accidents.

3. The Contractor shall adhere to the proposed activity implementation schedule and the monitoring plan /strategy to ensure effective feedback of monitoring information to project management so that Impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions.
4. Besides the regular inspection of the sites by the Supervising Engineer for adherence to the Contract conditions and specifications, the Owner may appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. State environmental Authorities may carry out similar inspection duties. In all cases, as directed by the Supervising Engineer, the Contractor shall comply with directives from such inspectors to implement measures. Required to ensure the adequacy rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.

#### **Work site/Campsite Waste Management**

5. All vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous Chemicals shall be bonded in order to contain spillage. All waste containers, litter and any other waste generated during the construction shall be collected and disposed at designated disposal sites in Line with applicable government waste management regulations.
6. Used oil from maintenance shall be collected and disposed of appropriately at designated sites or be re-used or sold for re-use locally.
7. Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures Such as banks, drains, dams, etc. to reduce the potential of soil erosion and water pollution.

#### **New extraction sites:**

8. Vegetation clearing shall be restricted to the area required for safe operation of construction work. Vegetation clearing shall not be done more than two months in advance of operations.
9. Stockpile areas shall be located in areas where trees can act as buffers to prevent dust pollution. Perimeter drains shall be built around stockpile areas. Sediment and other pollutant traps shall be located at drainage exits from workings.
10. The Contractor shall deposit any excess material in accordance with the principles of these general conditions, and any applicable EMP, in areas approved by local authorities and/or the Supervising Engineer.
11. Areas for depositing hazardous materials such as contaminated liquid and solid materials shall be approved by the Supervising Engineer and appropriate local and/or national authorities before the commencement of work. Use of existing, approved sites shall be preferred over the establishment of new sites.



## **Soil Erosion Prevention**

12. To the extent practicable, the Contractor shall rehabilitate the site progressively so that the rate of rehabilitation is similar to the rate of construction.
13. Always remove and retain topsoil for subsequent rehabilitation. Soils shall be stripped when they are wet as this can lead to soil compaction and loss of structure.
14. Re-vegetate stockpiles to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.
15. To the extent practicable, reinstate natural drainage patterns where they have been altered or impaired.
16. Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.
17. Ensure reshaped land is formed so as to be inherently stable, adequately drained and suitable for the desired long-term land use, and allow natural regeneration of vegetation.
18. Minimize the long-term visual impact by creating landforms that are compatible with the adjacent landscape.
19. Minimize erosion by wind and water both during and after the process of reinstatement.
20. Re-vegetate with plant species that will control erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. The choice of plant species for rehabilitation shall be done in consultation with local research institutions, forest department and the local people.

## **Water Resources Management**

21. The Contractor shall at all costs avoid conflicting with water demands of local communities.
22. Abstraction of both surface and underground water shall only be done with the consultation of the local community and after obtaining a permit from the relevant Water Authority.
23. Abstraction of water from wetlands shall be avoided. Where necessary, authority has to be obtained from relevant authorities.
24. No construction water containing spoils or site effluent, especially cement and oil, shall be allowed to flow into natural water drainage courses.

25. Wash water from washing out of equipment shall not be discharged into water courses or road drains.
26. Site spoils and temporary stockpiles shall be located away from the drainage system, and surface run off shall be directed away from stockpiles to prevent erosion.

### **Traffic Management**

27. Location of access roads/detours shall be done in consultation with the local community especially in important or sensitive environments. Access roads shall not traverse wetland areas.
28. Upon the completion of civil works, all access roads shall be ripped and rehabilitated.
29. Access roads shall be sprinkled with water at least five times a day in settled areas, and three times in unsettled areas, to suppress dust emissions.

### **Disposal of Unusable Elements**

30. Unusable materials and construction elements such as electro-mechanical equipment, cables, accessories and demolished structures will be disposed of in a manner approved by the Supervising Energy Expert (SE). The Contractor has to agree with the SE which elements are to be surrendered to the Client's premises, which will be recycled or reused, and which will be disposed of at approved landfill sites.

### **Health and Safety**

31. In advance of the construction work, the Contractor shall mount an awareness and hygiene campaign. Workers and local residents shall be sensitized on health risks particularly of AIDS.
32. Adequate road signs to warn pedestrians and motorists of construction activities, diversions, etc. shall be provided at appropriate points.
33. Construction vehicles shall not exceed maximum speed limit of 40km per hour.

### **Repair of Private Property**

34. Should the Contractor, deliberately or accidentally, damage private property, he shall repair the property to the owner's satisfaction and at his own cost. For each repair, the Contractor shall obtain from the owner a certificate that the damage has been made good satisfactorily in order to indemnify the Client from subsequent claims.
35. In cases where compensation for inconveniences, damage of crops etc. are claimed by the owner, the Client has to be informed by the Contractor through the Supervising Engineer.

This compensation is in general settled under the responsibility of the Client before signing the Contract. In unforeseeable cases, the respective administrative entities of the Client will take care of compensation.

### **Contractor's Environment, Health and Safety Management Plan (EHS-MP&ESMP)**

36. Within 6 weeks of signing the Contract, the Contractor shall prepare an EHS-MP to ensure the adequate management of the health, safety, environmental and social aspects of the works, including implementation of the requirements of these general conditions and any specific requirements of an EMP for the works. The Contractor's EHS-MP will serve two main purposes:

- For the Contractor, for internal purposes, to ensure that all measures are in place for adequate EHS management, and as an operational manual for his staff.
- For the Client, supported where necessary by a Supervising Engineer, to ensure that the Contractor is fully prepared for the adequate management of the EHS aspects of the project, and as a basis for monitoring of the Contractor's EHS performance.

37. The Contractor's EHS-MP shall provide at least: a description of procedures and methods for complying with these general environmental management conditions, and any specific conditions specified in an EMP; a description of specific mitigation measures that will be implemented in order to minimize adverse impacts; a description of all planned monitoring activities (e.g. sediment discharges from borrow areas) and the reporting thereof; and the internal organizational, management and reporting mechanisms put in place for such.

38. The Contractor's EHS-MP will be reviewed and approved by the Client before start of the works. This review should demonstrate if the Contractor's EHS-MP covers all of the identified impacts as spell out in the ESMF, and has defined appropriate measures to counteract any potential impacts.

### **EHS Reporting**

39. The Contractor shall prepare bi-weekly progress reports to the Supervising Engineer on compliance with these general conditions, the project ESMP if any, and his own LOT specific EHS-MP. An example format for a Contractor EHS report is given below. It is expected that the Contractor's reports will include information on:

EHS management actions/measures taken, including approvals sought from local or national authorities;

- Problems encountered in relation to EHS aspects (incidents, including delays, cost consequences, etc. as a result thereof);
- Lack of compliance with contract requirements on the part of the Contractor;
- Changes of assumptions, conditions, measures, designs and actual works in relation to EHS aspects; and

- Observations, concerns raised and/or decisions taken with regard to EHS management during site meetings.
40. It is advisable that reporting of significant EHS incidents be done “as soon as practicable”. Such incident reporting shall therefore be done individually. Also, it is advisable that the Contractor keeps his own records on health, safety and welfare of persons, and damage to property.
41. It is advisable to include such records, as well as copies of incident reports, as appendixes to the bi-weekly reports. Example formats for an incident notification and detailed report are given below.

Details of EHS performance will be reported to the Client through the Supervising Engineer reports to the Client.

#### **Training of Contractor's Personnel**

42. The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions, any project EMP, and his own EHS-MP, and are able to fulfil their expected roles and functions. Specific training should be provided to those employees that have particular responsibilities associated with the implementation of the EHS-MP.

General topics should be:

- EHS in general (working procedures);
- Emergency procedures; and social and cultural aspects (awareness raising on social issues).

#### **Cost of Compliance**

43. It is expected that compliance with these conditions is already part of standard good workmanship and state of art as generally required under this Contract. The item “Compliance with Environmental and Social Management Conditions” in the Bill of Quantities covers these costs. No other payments will be made to the Contractor for compliance with any request to avoid and/or mitigate an avoidable EHS impact.

## 16.4 Annex 4: Example Format: EHS Report

**Contract:**

**Period of reporting:**

**EHS management actions/measures:**

Summarize EHS management actions/measures taken during period of reporting, including planning and management activities (e.g. risk and impact assessments), EHS training, specific design and work measures taken, etc.

**EHS incidents:**

Report on any problems encountered in relation to EHS aspects, including its consequences (delays, costs) and corrective measures taken. Include relevant incident reports.

**EHS compliance:**

Report on compliance with Contract EHS conditions, including any cases of on-compliance.

**Changes:**

Report on any changes of assumptions, conditions, measures, designs and actual works in relation to EHS aspects.

**Concerns and observations:**

Report on any observations, concerns raised and/or decisions taken with regard to EHS management during site meetings and visits.

**Signature (Name, Title Date):**

Contractor Representative

### **Example Format: EHS Incident Notification**

Provide within 24 hours to the Supervising Engineer

**Originators Reference No:**

**Date of Incident:**

**Time:**

**Location of incident:**

**Name of Person(s) involved:**

**Employing Company:**

**Type of Incident:**

**Description of Incident:**

Where, when, what, how, who, operation in progress at the time (only factual)

**Immediate Action:**

Immediate remedial action and actions taken to prevent reoccurrence or escalation

**Signature (Name, Title, Date):**

Contractor Representative

Example Format: Detailed EHS Incident Report

The Incident Notification should be follow-up by a Detailed EHS Incident Report

Containing the following information where applicable

**1. Incident Summary****2. Specific Details**

Date

Time

Place

Weather/Visibility

Road conditions

**3. Persons Involved**

Name/s

Age/s

Experience

Date joined Company

Last Medical Check

Current Medical Treatment

Evidence of Drugs/Alcohol

Last Safety Meeting attended

Infringements/Incidents record

**4. Equipment Involved****5. Description of Incident****6. Findings of Investigation Team Interim/Final**

Investigation Team Members

Persons Interviewed

Recommendations & Remedial Actions

Investigation Methodology

**7. Signature (Name, Title, Date):****8. Attachments**

Photographs

Witness Statements and Incident Notification Report

## **16.5 Annex 5: Generic EA Terms of Reference**

### **I. Introduction and context**

This section will be completed at the appropriate time, and will provide the necessary information with respect to the context and methodological approaches to be undertaken.

### **II. Objectives of the study**

This section will (i) outline the objectives and particular activities of the planned activity; and (ii) indicate which activities are likely to have environmental and social impacts that will require appropriate mitigation. (Adapted to specific activities)

### **III. Terms of Reference**

The consultant will perform the following tasks:

- a) Carry out a description of the biophysical characteristics of the environment in which the planned activity will take place, and highlight the major constraints that need to be taken into account during construction as well as during operation of the facility;
- b) Carry out a description of the socio-economic environment of the planned investment, and highlight the major constraints that need to be taken into account during construction as well as during operation of the facility;
- c) Assess the potential environmental and social impacts due to construction or rehabilitation activities, and recommend mitigation measures as appropriate, including cost estimates;
- d) Assess the potential environmental and social impacts due to the provision of water supply and sanitation facilities that might be needed for the planned facility and make appropriate recommendations;
- e) Assess the need for liquid and solid waste collection, disposal and management in the facility, and make recommendations accordingly;
- f) Discuss alternative project designs and make recommendations;
- g) Assess alternative project designs and make recommendations;
- h) Carry out a review of the respective national environmental policies, legislation, regulatory and administrative frameworks in conjunction with the donors' safeguard policies, indicate which of these policies is triggered by the planned activity, identify any gaps that might exist, and make recommendations as to how potential gaps should be bridged in the context of the planned activity;
- i) Review the Conventions and Protocols to which the country is a signatory;

- j) Assess the country's environmental assessment and management capacity, as well as the capacity to implement the proposed mitigation measures, and make appropriate recommendations, including potential capacity building and training needs, and their costs;
- k) Prepare an Environmental and Social Management Plan (ESMP) for the planned activity. The ESMP should outline (a) potential environmental and social impacts resulting from the activity; (b) proposed mitigation measures; (c) institutional responsibilities for implementation of the mitigation measures; (d) monitoring indicators; (e) institutional responsibilities for monitoring the implementation of the mitigation measures; (f) cost estimates for these activities; and (g) time horizons for implementing the ESMP.
- l) Public consultations: EIA results and proposed mitigating measures will then be shared with the potentially affected population, NGOs, local authorities and the private sector working in the area where the activity will take place. Minutes of this consultation will form an integral part of the report.

#### **IV. Report Plan**

- Cover page
- Table of Contents
- List of acronyms
- Executive summary (as necessary, in English and French)
- Introduction
- Description of the proposed activity
- Description of the environment of the area where the activity will take place
- Description of the policy, institutional and regulatory framework.
- Methods and techniques used during evaluation and impact analysis of the proposed activity.
- Description of potential alternatives to the proposed project design.
- Description of environmental and social impacts of the proposed activity.
- Discussion of consultations with relevant stakeholders, including potentially affected persons.
- Environmental Management Plan for the proposed activity.
- Monitoring indicators for the proposed activity.
- Recommendations
- References.
- List of individuals/ institutions contacted.
- Summary table of the Environmental Management Plan (EMP).



## 16.6 Annex 6: Environmental and Social Management Plan (ESMP)

### Guidelines for the preparation of ESMP

The preparation of an ESMP should include the following key sections:

1. **Summary of Impacts:** Anticipated adverse environmental impacts should be identified and summarized as well as their relationship to social impacts and the appropriate mitigation measures.
2. **Description of Mitigation measures:** The mitigation measures proposed for the various impacts should be described in relation to the corresponding impacts while stating the conditions under which they are required. Adequate description of the consultations should be done and justified.
3. **Description of monitoring program:** A detailed monitoring program should be described in the ESMP, listing environmental performance indicators and their link with impacts and mitigation measures. The ESMP should also describe the parameters to be measured, methods to be used, sampling location and frequency of measurements, detection limits and a clear definition of thresholds that indicate the need for corrective measures. Monitoring and supervision schedules should be clearly stated and agreed with the Bank to ensure timely detection of needs for remedial action and also provide information on the level of compliance with ESMP in accordance with Bank safeguards. These arrangements must be clearly stated in the project implementation/operations manual to reinforce project supervision.
4. **Legal requirements and bidding/contract documents:** The ESMP should be incorporated in all legal documents to enforce compliance by all contractors participating in the project. The ESMP should be summarized and incorporated in the bidding and contract documents.
5. **Institutional arrangements:** The ESMP should clearly state who is responsible for monitoring, execution of remedial action and the reporting order and format to allow for a defined channel of information flow. It should also recommend institutional strengthening for relevant agencies and the funding authorities for the various activities.
6. **Capacity Development and Training:** To support timely and effective implementation of environmental project components and mitigation measures, the ESMP draws on the EA's assessment of the existence, role, and capability of environmental units on site or at the ministry level. If necessary, the ESMP recommends the establishment or expansion of such units, and the training of staff, to allow implementation of EA recommendations. Specifically, the ESMP provides a specific description of institutional arrangements i.e. who is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). To strengthen environmental management capability in the agencies responsible for implementation, most ESMPs cover one or more of the following additional topics: (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.

7. **Implementation Schedule:** The frequency, timing and duration of mitigation measures and monitoring should be stated in the implementation schedule. Links between mitigation measures and development of relevant institutions and legal requirements of the project should be stated.
8. **Reporting:** The order of information flow as it concerns monitoring reports should be clearly defined. The relevant officers to receive these reports should be those who have authorities to facilitate implementation of the results of the monitoring. These reports should also be communicated to the Bank via media to be agreed and specified in the ESMP. Adequate arrangements should be made by the Bank to facilitate the circulation of the ESMP through the selected means.
9. **Cost estimate:** The cost of carrying out monitoring and implementation of the mitigation measures at the various stages of the project should be integrated into the total cost of the project and factored into financial negotiations. These costs should include administrative, design and consultancy, operational and maintenance costs – resulting with meeting required standards and project design.

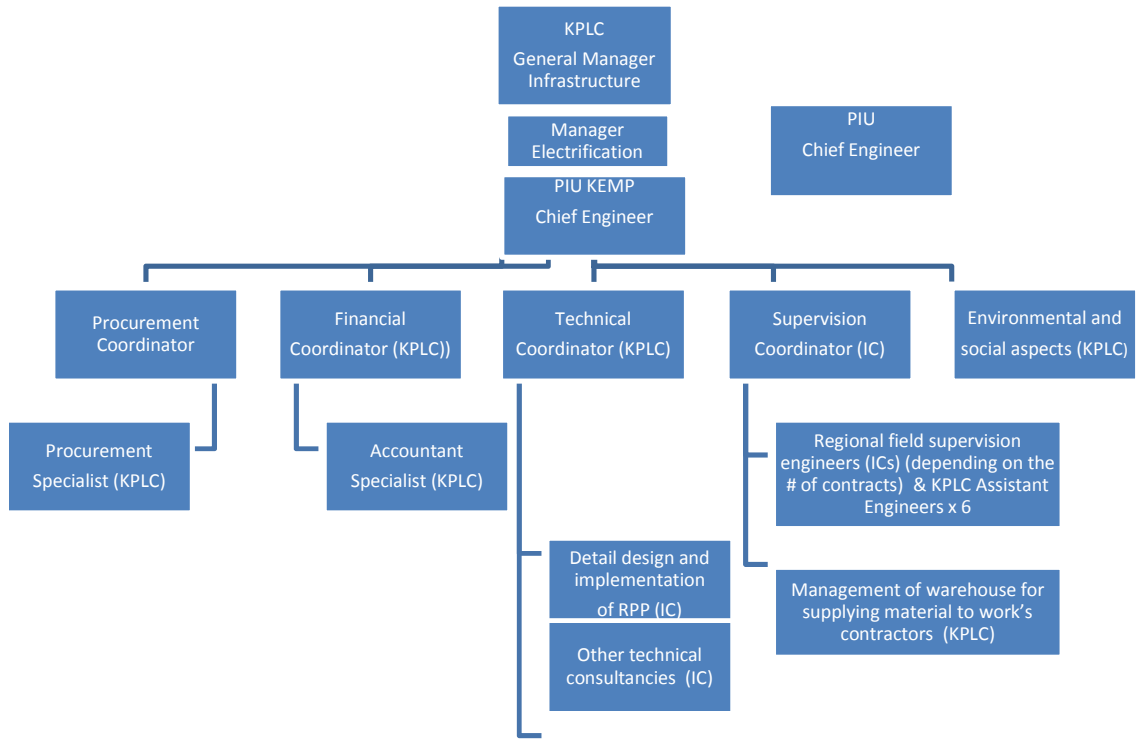
## 16.7 Annex7: Sample of ESMP

Project Activities	Potential Environmental & Social Impacts	Proposed Mitigation Measures	Responsibility for implementing mitigation measures	Responsibility for Monitoring implementation of mitigation measures	Time Horizon	Cost Estimates (US\$)
Construction of new substations;  Construction of new access roads;  Use of quarries and borrow pits  Establishment of camp sites	Loss of vegetation, noise, dust, soil erosion, Construction waste, Generation of wastewater, Increase of water use; Loss of livelihoods; Spoil materials due to construction material excavation	Apply Environmental Guidelines for Contractors  Implement RPF  Implement EA and/or screening recommendations through contract requirements  Use of separators Contractors.	Contractor   KPLC-PIU	KPLC-PIU and Environment unit and Regional staff	Throughout construction period  Prior to civil works	Incl. in Contract
Rehabilitation of existing substations (Transformers) and Lines	Interruption of services	Inform public of planned works and their potential environmental and social impacts	KPLC – PIU	KPLC-PIU and Environment unit and Regional staff	Throughout construction period	None
	Loss of livelihoods and/or land for the projects	Implement RPF	KPLC – PIU	KPLC-PIU and Environment unit and Regional staff	Throughout construction period of the sub project components	Incl. in Contract

Project Activities	Potential Environmental & Social Impacts	Proposed Mitigation Measures	Responsibility for implementing mitigation measures	Responsibility for Monitoring implementation of mitigation measures	Time Horizon	Cost Estimates (US\$)
	<p>Increase of noise, dust, soil erosion, Construction waste, Generation of wastewater, Increase of water use</p> <p>Soil and water pollution due to PCB</p>	<p>Apply Environmental Guidelines for Contractors;</p> <p>Implement EA and/or screening recommendations through contract requirements</p> <p>Contamination sites should be covered with a barrier or coating to avoid contacts. Laboratory screening tests</p> <p>PCB waste management</p>	<p>Contractor</p> <p>KPLC-PIU</p> <p>Contractor and KPLC-PIU</p>	KPLC-PIU and Environment unit and Regional staff	Throughout construction period	Incl. in Contract
Construction of new power lines	<p>Loss of vegetation, noise, dust, soil erosion, Construction waste</p> <p>Use and disposal of Creosote treated poles</p> <p>Loss of livelihoods</p>	Apply Environmental I Guidelines for Contractors	KPLC-PIU	KPLC-PIU and Environment unit and Regional staff	Throughout construction period	Incl. in Contract
Rehabilitation of existing power lines	Interruption of services	Inform public of planned works	KPLC-PIU	KPLC-PIU and Environment unit and Regional staff	Throughout Rehabilitation period	None
	<p>Loss of livelihoods and/or land</p> <p>Use and disposal of creosote treated poles</p>	<p>Implement RPF</p> <p>Burning of this woods in high temperature incinerators</p> <p>Recycle and use of the poles</p> <p>Waste poles to be disposed in landfills</p>	Contractor	KPLC-PIU and Environment unit and Regional staff	Before construction works	To be calculated when affected sites will be identified



16.8 Annex 8: Kenya ElectricityModernization Project Implementation Structure for Peri-Urban Electrification Sub-component C1



## **16.9 Annex 9: Kenya Power's Grievance Redress Mechanism**

### **1. Introduction**

A resettlement plan is triggered when a project is expected to cause displacement of people, property and livelihoods. In the process of RAP implementation complains and issues may arise which needs to be resolved for successful implementation of the project. Therefore the grievance redress mechanism comes later in the RAP implementation.

To address such arising issues the proponent shall form a Grievance Redress Committee

### **2. The constitutions of the grievance redress committee**

The basic idea in the formation of the committee is to have all the stakeholders represented. Therefore the proponent, the government and the affected community shall have representatives in the committee.

The committee therefore shall comprise of;

- The proponent's representatives (Valuer, Socio –economist, Surveyor, Environmentalist and Wayleave Officer.
- The local community representatives/PAPs representatives
- Local Administration Officers
- Any other relevant stakeholders

The roles of the committee include;

- Resettlements and compensations of on the ground,
- Ensuring that grievances are promptly addressed
- Linking PAPs to the other stakeholders

### **3. The grievance redress process**

- **Publicizing the grievance management procedures**

The grievance mechanism will be introduced to the project stakeholders as a part of the project stakeholder engagement program stating the purpose of the projects grievance mechanism and the type of responses complainants can expect from the GRC. The uptake channels should be publicized and advertised via local media, the implementing agency and—where relevant—contractors.

- **Receiving and registering the grievance**

Any member of the grievance redress committee can receive the complaints from the public either through direct face-face meetings or in writing.

The members who receive complaints verbally should put them in writing for them to be considered. Recognizing that many complaints may be resolved 'on the spot' and informally by committee, there are

opportunities to encourage these informal resolutions to be registered to (i) Encourage responsiveness; and  
(ii) Ensure that repeated or low-level grievances are being noted in the system. The GRM should have the ability to handle anonymous complaints.

- **Documenting the grievance**

All grievances received will be documented and records kept. The records should indicate the grievances received, grievances resolved and grievances not resolved. Complainants should be handed a receipt and a flyer that describes the GRM procedures and timeline (staff should be trained to read this orally for illiterate complainants). Where possible, the grievance log should capture complaints being made via informal or traditional systems, such as village councils or elders.

- **Reviewing and investigating grievances**

The grievances shall be screened to determine whether they are eligible for the grievance mechanism. Ineligible complaints include those that are not project related or those that the community procedures are more appropriate to address. Eligibility should be a procedural step to ensure that the issue being raised is relevant to the project. It is often better to ensure a relatively low barrier to entry with quick turnaround rather than to prevent users having their issues considered. Complaints that cannot be resolved on the spot should be directed to the grievance focal point who will have a set number of days to assess the issue and provide a written response to the complainant, acknowledging receipt and detailing the next steps it will take (one week or less is recommended).

The grievances are categorized in three categories (A, B or C)

*Category A: Immediate action*-these issues require immediate actions are typically issues which threaten the short term safety or the community member's e.g. chemical spills or accidents near community water supply or sensitive environments.

*Category B: Urgent action*-these are issues which cause a nuisance or a long term safety to the community members, employees and the environment. They should be communicated to the M (SHE) within 12 hours after receiving and be responded to within 72 hours.

*Category C: action* – these are issues requiring action which is not of urgent nature are typically procedural or dispute type issues.

- **Action and Feedback**

This is the development of resolution options taking into consideration the community preferences, project policy, past experience, current issues and potential outcomes

- **Closure**

All grievance records and supporting documents will be filled and recorded in the database. Upon completion of the agreed upon corrective actions, collect proof that these actions have taken place this includes photos, documentary evidence record of resolution which is signed and dated by the responsible staff member and if the resolution have been to the satisfaction of the complainant

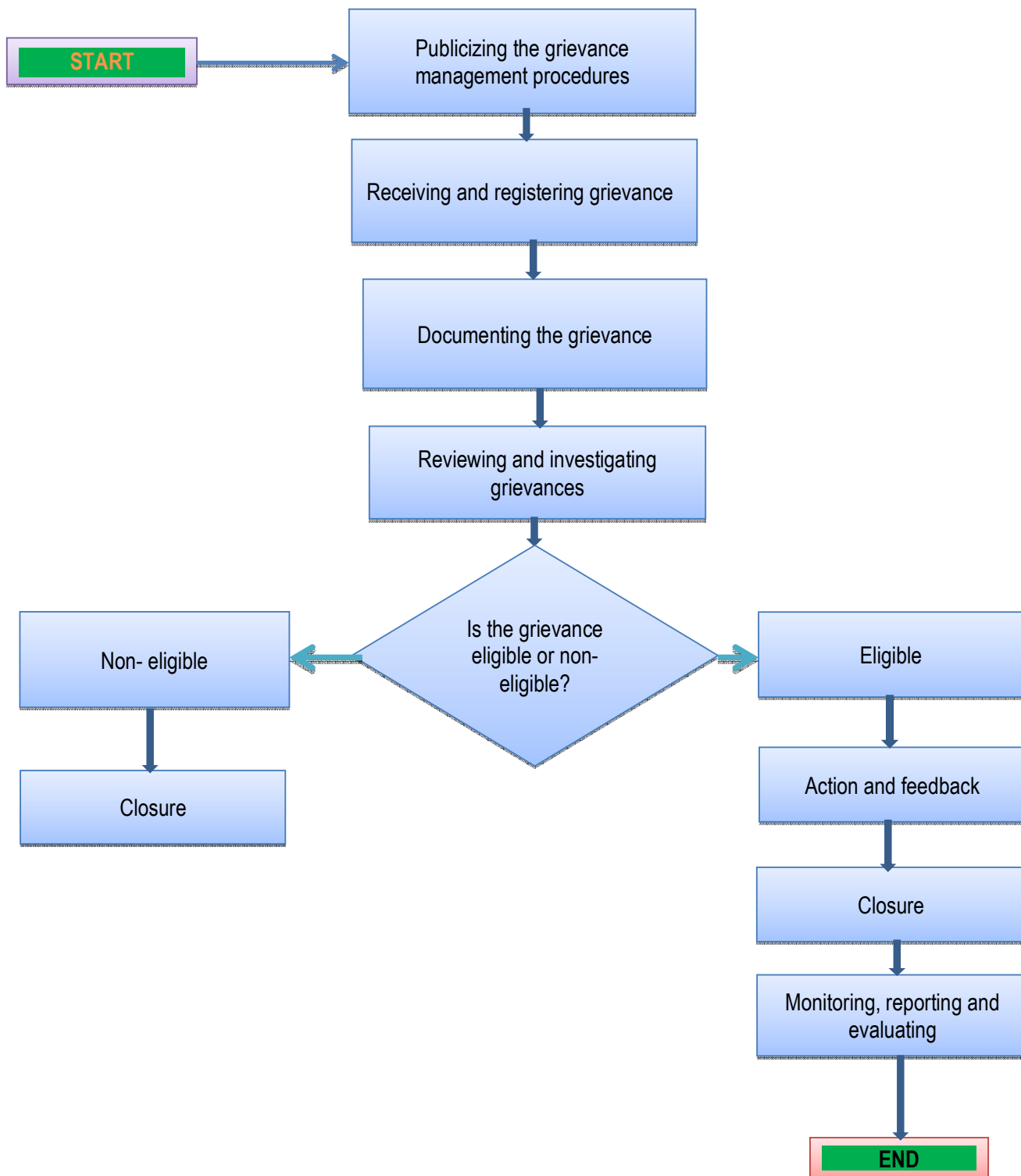


confirmation of this for the record. These are all included and recorded in the case documentation. If complainants remain unsatisfied with the grievance process, they have the right of recourse to the courts.

- **Monitoring, Reporting and Evaluating**

Monitoring and reporting are the tools for measuring the effectiveness of the grievance mechanism, efficient use of project resources and for determining trends and recurring problems to facilitate proactive resolution.

## **THE GRIEVANCE REDRESS MECHANISM PROCESS**



## **16.10Annex 10: Minutes of KEMP Stakeholder Consultation forum held on 6<sup>th</sup> January, 2015 at Safari Park Hotel, Nairobi.**

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### **MINUTES OF KEMP STAKEHOLDER CONSULTION FORUM ORGANISED BY KENYA POWER**

**DATE: 6/01/2015**

**VENUE: THE SAFARI PARK HOTEL, NAIROBI,**

**TIME: 9:00 AM – 1:30 PM**

#### **Agenda:**

Disclosure and consultation on Kenya Electricity Modernization Project (KEMP) safeguard documents.

#### **MIN 01/01/2015 – Preliminaries**

Samuel Abaya of Kenya Power called the meeting to attention, he welcomed guests and thanked them for coming.

The meeting was opened by a word of Prayer from Mercy Towett of Kenya Power. Samuel Abaya then invited John Guda, the Manager - Safety Health & Environment, KPLC.

John Guda officially welcomed guests on behalf of the Ministry of Energy & Petroleum and Kenya Power. He informed participants that the main purpose of this stakeholder forum was to deliberate concerning electrification programs and disclose safeguard documents to be applied in **Kenya Electricity Modernization Project (KEMP)**. Kenya Power plans to connect over 1 million new customers in the FY 2014/2015 and to facilitate in achieving the government's target of moving the current electricity access rate of 30-32 percent to 70 percent by 2017 through various projects some of which may have environmental and/or social challenges. These potential environmental and social impacts would be the subject of this particular meeting.

John Guda then introduced the Kenya Power team, representatives from the Ministry of Energy & Petroleum, Rural Electrification Authority, Energy Regulatory Commission and the World Bank personnel present.

#### **MIN 02/1/2015 – Welcoming Speech**

Eng. Michael Adhiambo, the Manager – Projects at Kenya Power, delivered the welcoming speech on behalf of Eng. Stanley Mutwiri, General Manager - Infrastructure Development at Kenya Power.

Eng. Adhiambo welcomed guests to the meeting and thanked them for availing themselves. He informed participants that the Kenya Electricity Modernization Project (KEMP) which would be the subject of this meeting was part of a range of other projects funded by the World Bank. Such projects form part of the Kenya Energy Expansion Project (KEEP). The main purpose of this workshop was therefore

to bring all stakeholders on board as KEMP would be undertaken all over the country.

KEMP is aimed at improving access to electricity as currently household access is 30-32 percent and Kenya Power would like to increase this to over 70 percent by 2017. He noted that as electricity access increases there would therefore be need to improve the system. Therefore he informed participants that KEMP consist of 4 major components:

- Component A - Improvement in Service Delivery and Reliability
- Component B - Revenue Protection Program
- Component C - Electrification Program. This was aimed at increased electricity access to unreached areas, through the Off – Grid Component and Peri- Urban Component. The Off - Grid component would cover sparsely populated areas not covered by main national grid and would be implemented through mini grid areas. The Peri-Urban Component would target areas of lower income groups in towns and cities.
- Component D - Technical Assistance and Capacity Building

Therefore, Eng. Adhiambo noted that all those that will be affected by the projects need to be made aware of impacts to environment and social issues hence the purpose of the meeting. In addition, he informed participants that such public consultations are a key requirement for the National Environment and Management Authority (NEMA). This meeting would also enable people to raise any issues they may have concerning KEMP.

### **MIN 03/01/2015 Forum Objectives and Frameworks Overview: John Guda**

Participants were informed that the main objectives of KEMP were:

1. To increase access to electricity
2. To improve reliability of electricity service
3. To restore KPLC'S financial sustainability

The KEMP components were as follows:

- A – Improvement in Service Delivery and Reliability
- B – Revenue Protection Program
- C – Electrification Program - Peri-Urban electrification and Off-grid electrification
- D – Technical Assistance and Capacity Building

John Guda informed participants that this meeting was concerned with the third component that is the **electrification program**. Thus Kenya Power had prepared various safeguard documents with regards to the electrification component. These documents included *Environmental Social Management Frameworks* (ESMF) for Off-Grid and Peri-Urban Components, the *Resettlement Policy Framework* (RPF) and the *Vulnerable & Marginalised Groups Framework* (VMGF) for the Off-Grid Component. It is these safeguards that would be disclosed during this meeting and inputs from participants collected concerning these.

## **MIN 04/01/2015 – Presentations on ESMFs – Peri Urban and Off Grid Components**

Wilfred Koech of Kenya Power took the participants through two presentations to disclose the Environmental Social Management Frameworks for the Peri-Urban Component and the Off-Grid Component respectively. He informed the participants that the exact sub-project sites were not known yet. When they are identified Environmental Impact Assessments (EIAs) and/or Environmental Management Frameworks (EMFs) will be prepared as needed in accordance with National Environment Management Authority (NEMA) and World Bank guidelines.

The presentations included the background information of Peri-Urban and Off-Grid Components respectively and their objectives; the purpose of the ESMF; the methodology used in preparing the two ESMFs; policy and regulatory frameworks; World Bank Operational Safeguard Policies that would be triggered by each component respectively; public consultation; the potential beneficial and adverse impacts of each of the components respectively and subsequent mitigation measures.

The Environmental and Social Management Frameworks (ESMFs) would ensure that the KEMP would be implemented in a socially and environmentally sustainable manner. The ESMFs will support capturing of environmental and social issues in decision making.

## **MIN 05/01/2015 – Presentations on RPF and VMGF – Off Grid Component**

Roseline Njeru of Kenya Power took the participants through two presentations namely; the Resettlement Policy Framework (RPF) and the Vulnerable Marginalised Groups Framework (VMGF) for the Off Grid component. These two safeguards were necessary to ensure that KEMP takes care of the social impacts of the project.

The RPF is concerned with social impacts that require resettlement. The RPF is a form of commitment by Kenya Power indicating how it shall handle resettlement in the event it is found necessary. The framework set out principles of how resettlement will be done. However it was noted that Kenya Power was not anticipating major movements of people, however the RPF would cater for resettlement if it were to occur, keeping in line with World Banks Operational Policy 4.12 on Involuntary Resettlement.

The presentation on the RPF included its purpose and objectives; methodology used in preparing the RPF, potential impacts and mitigation measures; compensation; public participation and consultation; RPF monitoring during implementation and the grievance redress mechanisms.

The VMGF would ensure that if vulnerable or marginalised groups would be present in any of the Off- Grid project sites that they are given special attention as such groups are unable to voice and claim their rights as compared to the rest of society. Therefore in case indigenous People are found where the projects will be

implemented the World Bank Operational Policy 4.10 on Indigenous People would be triggered.

The VMGF was prepared in anticipation of Vulnerable & Marginalised Groups (VMGs), however it was noted that exact locations of the project were not yet conclusive. Therefore it was not yet known if VMGs are present on any of the Off-Grid Sites. Once locations were known screening would be done to identify the VMGF. If they are present a specific Vulnerable Marginalised Group Plan (VMGP) would be prepared specific for that group.

Further consultations would therefore take place as the Off-Grid Component of KEMP progresses, such consultations are important as they would enable identification together with VMGs the impacts of the project and culturally sensitive mitigation measures. It was also noted that the aim was to enhance project benefits to VMGs and avoid or mitigate any adverse impacts on them. The presentation on the VMGF included the purpose of the VMGF, methodology used to prepare the document, social assessment of VMGs, the potential beneficial and adverse impacts of the project, public participation and consultation Vulnerable and Marginalised Groups Plan, the grievance redress mechanisms, monitoring and reporting arrangements and disclosure arrangements.

## MIN 06/01/2015 – Plenary Session

Comment/Question	Response / Remarks from Kenya Power
<p><b>Okoth Obado – Governor Migori County</b></p> <p>Main challenge in Migori is inadequate power supply and power outages. Therefore I am pleased to be part of this forum and I hope it will aid in generating solutions to address these issues in Migori.</p> <p>Concerning Power Reliability (one of the objectives on KEMP) – what is happening with the current transformers that are burning out so easily?</p>	<p>Concerning distribution transformers one the greatest challenges is vandalism. It is not that the transformers have become worse. Technology has modernised. It is vandalism, taking components of the transformers and accessories that degrade the life of the transformers. It is a challenge not only for Kenya Power but for the whole country. If there are opportunities to work together maybe through initiatives such as community policing then this issue can be addressed.</p> <p>Initially power to the whole Nyanza area was fed through a substation in Kericho (Chemosit Substation). But to address shortages in Nyanza region another transmission line was extended from Kericho to Kisumu. But this is still not adequate for Migori, Kuria and Homa Bay. Therefore there is another substation being done in Migori County behind Sony Sugar factory gate in order to address issue of power outages being experienced in Migori. Out of that substation there will be lines to supply Gogo, Homa Bay, a special line to Migori town another line going to Kuria, Isebania and Ogembo. Transmission towers are also being erected in that area under KEEP (implemented by KPLC/KETRACO)</p> <p>In addition for other areas Kenya Power is aware that Homa Bay has the same problems. To address this there is a KETRACO line from Sondu Miriu substation to Homa Bay. A third alternate line will be constructed. The line is to run from Olkaria through Narok to join current Line from Kericho to Kisii. The Governor was welcomed to visit the Substation site behind Sony Sugar factory.</p>
<p>To increase accessibility high tariffs are charged. Are there cheaper ways to connect people to electricity?</p>	<p>Connection charges - One of the challenges to accessibility is charges. The Governor challenged Kenya Power to come up with new and innovative ways. This project will explore such new and innovative ways. There are also a</p>

Comment/Question	Response / Remarks from Kenya Power
	<p>number of projects Kenya Power is running that can have people being connected without necessary paying fully initial charges, and instead can pay through instalments.</p> <p>Clarification on tariffs:  New connections – There are many avenues through which customers can be connected. Customers (within 600 metres from transformers) that can be connected for KES. 35,000.  ERC is conducting studies on tariffs and will advise Kenya Power in due course.  There are also various financing arrangements such as <i>Stima Loan</i>, which is available through Kenya Power, Equity Bank, Jamii Bora. This can be paid via instalments.</p> <p>The Global Partnership on Output Based Aid (GPOBA) Project funded by World Bank to electrify slums is very affordable. The KES 1000 cost can be paid in instalments after connection. Participants were urged to notify Kenya Power of any slums in their areas and Kenya Power will arrange a study and see how to provide a solution to electrify these areas.</p> <p>If there is a line passing through a community it is possible to connect people around that area so participants were urged to mobilize people to be connected. At Kenya Power, marketing officers are also actively engaged all over the country meeting potential customers. Communities can organise themselves in groups and follow up connections.  More information could be found on the Kenya Power website or by visiting any Kenya Power office and asking for a marketing officer who will assist concerning connectivity.</p>
Off grid systems – along the lake there are strong winds and sunshine, can I be assisted to have a study done in my area	It was agreed that wind power is a potential avenue because of strong winds along lake shore, and that potential can be explored. Wind and solar options will be explored especially in areas such as the islands on Lake Victoria that



<b>Comment/Question</b>	<b>Response / Remarks from Kenya Power</b>
on harnessing wind and solar energy?	are off grid.
In my county I host a small sub-station Gogo, it generates about 1-2MW but it has potential to generate up to 50MW. Can we confirm if potential to increase power is there?	Gogo Substation – old substation currently generates just about 1.5 MW, it was agreed that there is potential to produce more energy. Nevertheless it may not be economical to develop a full substation at this point but the lines mentioned should be able to stabilize the power in Migori and adjoining areas. Concrete answers concerning increased generation could not be given because that was under KenGen's mandate.
<b>Ruben Sinange – Minister Energy &amp; Environment, Nyamira County</b> Nyamira suffers the same situation as Migori: What does Peri- Urban mean in very small towns? What is classified as peri-urban and how are you going to select Peri-Urban areas in smaller towns? Will they be left out and focus be only on big cities?	The definition of Peri-Urban does not discriminate whether the towns are major or smaller towns. It is if there is sufficient density to get many people on the grid, which qualifies an area for this Peri-Urban electrification. It was agreed that it is difficult to distinguish between Peri-Urban and Rural areas but Kenya Power will use existing County development plans to help with this.
Concerning Off grid electrification already some of us have been in contact with investors and have made some preparations. How can we coordinate with you on this? Kenya Power has mentioned it will be a public private partnership, How can we move forward on this?	It was noted that some counties have taken it upon themselves to establish some Off-Grid sites. So there is need to coordinate with these efforts to avoid duplication. It was agreed that there is need to share what plans Kenya Power and the Counties have. Kenya Power is also aware that a number of counties have taken initiative to establish public-private partnerships to supplement public funding. Whatever generation stations the counties have established through such public-private partnerships ideally should be able to feed into main grid.
Is Peri–Urban electrification different from the Global Partnership on Output Based Aid (GPOBA) Project or is it an	The difference is that Peri-Urban is the next level up from GPOBA, it is not as a result of haphazard development. Peri-Urban areas are more organised better planned with infrastructure. Facilities can be run in a more organised

Comment/Question	Response / Remarks from Kenya Power
extension? How will connection charges be different with Peri-Urban?	and structured manner.
Rural areas want to be connected but population is not in high density, and the connection charges are too high. How can we help them? Is there any Funding?	<p>There are other ongoing projects that are intended to improve supply. They are being funded by other donors such as the African Development Bank and other donors in addition to initiatives taken by KPLC under Boresha Stima Projects.</p> <p>If there is a line passing through a community it is possible to connect people around that area so participants were urged to mobilize people to be connected. However at Kenya Power, marketing officers are actively engaged all over the country meeting and sourcing potential customers. Communities can organise themselves in groups and follow up connections.</p> <p>More information can be found on the Kenya Power website by visiting any Kenya Power office and asking for a marketing officer who will assist concerning connectivity.</p>
I would like to appreciate Kenya Power work specifically Boresha which has reached Homa-Bay. Will KEMP be a continuation of Boresha since it is aimed at improving reliability?	No. As noted earlier it is an electrification program with Peri-Urban and Off-Grid components. Boresha Stima Projects were being done was to upgrade the existing infrastructure.
<p><b>Anne Kariuki – Kenya Association of Manufactures (KAM)</b></p> <p>You mentioned households in the presentations. Is there any focus on industries to enable them to move to Peri-Urban and off grid areas?</p>	Concerning industries Kenya Power is also putting up new substations to boost supply in Peri-Urban areas to encourage investors and this has been funded under a separate cover. KETRACO is also doing a number of upgrades. In total there are 70 new substations that are being implemented.

Comment/Question	Response / Remarks from Kenya Power
When you say increasing connectivity what exactly does it entail? For example is it 100 metres to the nearest transformer or pole?	<p>Distribution distance to connect households is 600m from the transformer. The rate is currently KES 35,000. This is being reviewed and could become lower. The Last Mile Connectivity Project will enable those within 600 Metres to be connected immediately and money can be recovered over time.</p> <p>As part of improving electricity access; Peri-Urban component funded by World Bank goes beyond Last Mile Connectivity.</p>
<b>Eunice Karoki – Minister of Environment, Kiambu County</b> For the Peri-Urban component will you consult counties and our development plans since we have already planned and identified Peri-Urban areas and industries?	New Kenya Power County Managers were being established. So each of the Counties can provide information on their plans so we can streamline with ours and improve coordination
Data – it is challenging as we cannot access data on power from Kenya Power, this hampers development plans.	Kenya power does not work in a vacuum, the company works hand in hand with development partners. Kenya Power is interested in knowing what the County's plans are in order to enable collaboration. County Managers will work closely with Counties to know their plans. Kenya Power is generous with sharing data. Most Kenya Power maps at the moment are in hard copy hence the challenge in accessing them could come from there. This will become easier once the company concludes on a GIS project that will digitize data. The company is willing to share technical data. The data that might be sensitive; is that which infringes on rights of a third party.
Will land acquisition be compulsory?	No
<b>Ondieki Evans - Minister Environment</b>	The ESMF for the Off-Grid component contains a section on electronic waste,

<b>Comment/Question</b>	<b>Response / Remarks from Kenya Power</b>
<b>and Energy Nairobi County</b> During presentation on ESMF I did not see a proper framework on how hazardous waste will be handled.	this on Chapter 7, pages 88 - 91. Concerning the ESMF for the Peri-Urban component not much electronic waste is expected for this component. However in the event of any this has been taken care of in the ESMF for the Peri-Urban Component under Chapter 7, from page 69.
Resettlement Frameworks – I did not see a lot of input on gender. In the case of compensation it is the men who will want to pick the money and the women left out	Gender considerations will be taken especially during consultations in identifying impacts to allow all parties affected including women understand the compensations and voice their concerns. Issues of payment that involves family property disputes will be handled as they arise. The county administrators from the county and national government will be engaged in dealing with such disputes.
Input on other marginalized groups – widows, orphans, single mothers etc. not seen in the VMGF. How they will be protected?	Within Vulnerable and marginalized groups there could be certain groups who are also vulnerable such as; the aged, orphaned children, female headed households, disabled and persons living with HIV/AIDs. During preparation of actual VMGP these groups will be accorded special attention to ensure they do not miss out on the benefits of the project and that they are not negatively impacted by the project.
Vulnerable groups in urban areas – there are truly marginalised groups in slums, need to capture uniqueness of urban areas in terms of marginalized groups.	The KEMP project component of electrifying Peri-Urban areas does not envisage any resettlement because only low voltage lines will be put in place. Therefore, no adverse impacts will occur in urban areas to disadvantage vulnerable groups further
Energy from renewable resources – why should electricity from a free resource be so expensive? You need to explain to the public why this is.	Kenya Power is getting raw energy, harnessing and distributing it involves costs. This is from initial capital outlay and also systems and infrastructure that are put in place to distribute energy and make it consumable. In addition to maintenance of infrastructure That is why the renewable energy comes at a cost. Biggest component that has been escalating costs is the thermal component. But diversification is being carried out include forms renewable energy and this should help reduce costs.

<b>Comment/Question</b>	<b>Response / Remarks from Kenya Power</b>
Suggestion - can World Bank extend this concept such that issue revolves around empowering all people? (not just in terms of those falling under definitions of Peri-Urban, VMGs. Green energy – we need an to move towards implementation	Comments noted
<b>Daniel Theuri – Que Energy Ltd</b> There are technologies on solar thermal that can be used. There are new technologies where opportunities for dual systems that Kenya Power should look into.	Comments well taken and will be considered
1 <sup>st</sup> Presentation - environmental compliance, who is responsible for enforcing this?	Environment and Social Unit in partnership with implementing departments within Kenya Power, in other incidences REA will be involved especially in the off-grid areas in liaison with NEMA.
2 <sup>nd</sup> presentation - emphasis on community; what about the investor? Need to come up with mechanism to cover other stakeholders like investors.	Tenders will be floated and competitive bidding will be done to select contractors based on set evaluation criteria.
World Bank policy on International Waterways – Does this cover trans boundary rivers?	World Bank Operational Policy on international waterways will not be triggered in KEMP
Information sharing and Data - come up with a protocol for formal sharing of information. Establishing a Liaison person at Ministry of Energy is a suggestion	Data is available following studies done by the Government in partnership with UNEP, NASA and such data is available from the ministry of Energy
<b>Gibwa Kajubi– World Bank</b> To plenary - what did people think of the social frameworks, the RPF and VMG?	No remarks from participants

<b>Comment/Question</b>	<b>Response / Remarks from Kenya Power</b>
What is the feeling of the participants on this	
<b>Simiyu Mabuya– DCG (Contractor)</b> As a contractor in off grid and hybrid generations – what will be the expectation from the contractor?	Tenders will be floated and competitive bidding will be done to select contractors based on set evaluation criteria.
Concerning Information 2 years ago Ministry of Energy and Petroleum commissioned a feasibility study on renewable energy. So are we going by the same study?	Yes in addition to other studies done in collaboration with UNEP and NASA, in some specific incidences further site specific studies will be conducted.
On marginalized groups what about the youth and accessing contracts from these projects?	Marginalized groups (youth) and KPLC contracts: due to type of financing for this type of project there are specific guidelines that ensure competitive bidding and open process. Contractors covering all groups such as youth women are welcome so long as skills exist amongst them. In maintenance and as the systems continue to run contractors will participate actively, and in the supply of spare parts. In the main works there are strict guidelines which will be specified in the tender documents.
<b>Magdelene Kariuki – Manager, Action Aid International</b> Quality of compensation and resettlement – will quality of resource being compensated be retained?	Quality of compensation is well explained in the RPF document pages 32, 33 and chapter 8 on valuation and compensation.
Community land – is there an audit process that will be put in place to mitigate disfranchisement of women and address gender?	Community property is handled differently. The parties concerned are called for a meeting so that there is consensus. If it is land that is held in trust discussions are held first with the trustees and then the members. Deliberate effort will be put to ensure women participate including holding consultative meetings with women only so as to assess specific impacts and appropriate mitigations

Comment/Question	Response / Remarks from Kenya Power
<p><b>Peter Kihoria – Ministry of Agriculture, Livestock and Fisheries, Kajiado County</b></p> <p>I work a lot with pastoralist groups in Kajiado concerning social inclusion amongst vulnerable marginalized groups. In pastoral communities you have to coerce women to give their opinions, the usually will not give their comments. Men will not be concerned about water and firewood. When the land is compensated for land women are able to continue to using it. However when its financial compensation women lose out on livelihood as the men take the money.</p>	<p>Consultations will be done on how to loop the women in and have appropriate mitigations. In case of issues involving payments of family property national government (the administration) will be engaged i.e. chiefs to advice.</p> <p>In communities where women are shy to speak in meetings, they will be consulted differently so that mitigation measures will be sensitive to their needs.</p>
<p>What is the plan for capacity building for women to utilize electricity for their development and enhance their livelihoods that is, reap benefits of projects?</p>	<p>Women will be sensitized on various ways they can use electricity for economic benefits.</p>
<p><b>Dr. Pacifica Ogola – Kengen</b></p> <p>The KEMP project is more of a national project and there is a lot of diversity in social and environmental issues. There isn't a one size fits all, so need to recognize diversity. You need to take lessons learnt from previous projects as well.</p>	<p>Comments well taken and issues will be addressed as and when necessary. The ESMF, VMGF and RPF are guidelines and commitments from the proponent that environmental and social issues will be handled. This is because exact locations of the projects are not yet identified. Once site identification is done the specific Environmental Impact Assessment, vulnerable and Marginalized Groups Plans and Resettlement Action plans will be prepared as required.</p>

Comment/Question	Response / Remarks from Kenya Power
<p>Caution on social impacts – resettlement was downplayed, presentation mentioned that there would be not mass movements, so what does actually mass mean? It is not just about the numbers.</p> <p>When you go to a place where land adjudication has not been done then other challenges will present. Also need to consider impacts if developing on a world heritage sites. In addition consider the long term sustainability of the Off-Grid component</p>	
<p><b>Asman Owiti - Chief Kasarani</b> Kindly what is KPLC doing on the mitigation issue barring people on encroaching on way leaves since the same is issued by County Governments through issuance of TOL (Temporary Occupation Licence) to people? How will this conflict be resolved between KPLC and County Governments?</p>	<p>Kenya Power will work with the County Governments to ensure Way Leaves are respected and encroachment is not allowed.</p>
<p><b>Bernard Osawa –WinPower Ltd</b> What is the criterion for selection of PPP partners/ Investors for Off- Grid sites?</p>	<p>Competitive bidding based on set evaluation criteria after tenders are floated. Process will be public and transparent.</p>
<p>What ESMF, RPP and VMGF standards will apply in this case?</p>	<p>The investors should observe the guidelines provided in the safeguard documents</p>
<p><b>John N Ikinya- Chief, Kirigiti Location-Kiambu Sub County</b> Early last year, there was plan to</p>	<p>There were challenges in getting a site for the sub-station and this has caused delays.</p>



Comment/Question	Response / Remarks from Kenya Power
<p>construct a substation at Thathi-Ini village within my location to address constant power outages, considering the growing and ever increasing population in Kiambu town. However the land turned out to be registered under private individual though an okay had been given by County Government. Now, what option is there to implement the same project in this area? Probably can you consider purchasing a private land for the same purpose?</p>	
<p>Criterion for selection of Peri-Urban centers to be included in the project. This should be reflected in the methodology for ESMF.</p>	<p>Peri-Urban areas will be determined based on population density</p>
<p>The selection/ Sampling criterion should ensure geographical equity</p>	<p>KEMP is a nationwide project</p>
<p><b>Engineer Philemon Kachila - County Chief officer, Infrastructure, Taita Taveta County</b>  Taita taveta has enormous potential for off-grid installations such as:</p> <ul style="list-style-type: none"> <li>i) Large tracks of government controlled ranches that have potential for both solar and wind farms.</li> <li>ii) Enormous sisal estates and factories that have potential for biomass/biomass installations.</li> <li>iii) Rivers flowing from the highlands</li> </ul>	<p>Comments well taken and will be considered</p>

Comment/Question	Response / Remarks from Kenya Power
<p>to the lowlands which have high altitude ranges. These have potential for micro HEP</p> <p>The market for power is readily available from hotels spread in the Tsavo East and West National Parks and planned livestock abattoirs.</p> <p>On behalf of the county executive we would like to partner with KP/WB to carry out feasibility studies to map out the exact potential (resources) with a bid to invite investors.</p> <p>We would like to partner with KP/WB in selection of projects within the county. Kindly let us know whether we can be considered as partners in this KEMP.</p>	
<p><b>Kenya Forest Service</b></p> <p>The purpose of the ESMF is to ensure full integration of environmental and social concerns in the KEMP planning process: At what stage will Kenya power integrate environmental and social concerns during project implementation? (route alignment survey and project design vis-à-vis environmental and social integration)</p>	<p>Environmental and Social considerations are being integrated as early as possible from the planning phase, through implementation to decommissioning phases.</p>
<p>The purpose of the RPF and VMGF is to ensure public participation and full compensation to the affected farmers through consensus. The services of</p>	<p>Comments well taken and will be considered</p>

Comment/Question	Response / Remarks from Kenya Power
<p>Kenya Forest Service can be outsourced at gazette rates for forest resource assessment in order to minimize conflicts with land owners and avoid litigation in law courts which are expensive and time consuming (Use of experts and professional bodies can help alienate challenges and compensation and resettlement plans)</p>	
<p><b>Peter Munyao – Kenya Civil Aviation Authority (KCAA)</b> Kenya power to continue working with Kenya Civil Aviation Authority in order to ensure aerodromes, airports, airstrips and heliports are safeguarded from power lines and associated facilities. Currently there is massive development of energy in which KCAA is participating in: -power lines -wind turbines -solar panel areas (new) among other infrastructures challenging aviation. It is important to note they are current and planned infrastructure</p>	<p>Comments well taken and will be considered</p>
<p><b>S. C Muraguri – Chief Mukuru- Kaiyaba</b> What programs do you have for the slums of Nairobi? Do you know cartels (power men) are selling electricity at KES 500 per cubicle per month? Do you know Mukuru</p>	<p>GPOBA projects is under implementation to ensure that consumers pay for what they use and minimize on revenue loss and safety challenges in the slum areas.</p>

Comment/Question	Response / Remarks from Kenya Power
<p>Kaiyaba with 19,621 cubicles gives KES 9,810,500 to cartels?</p> <p>Why can't Kenya power use chiefs, DCs and DOs (National Government)to give power metres to cubicle owners directly than through cartels?</p>	

**LIST OF PARTICIPANTS – KEMP STAKEHOLDERS CONSULTATION FORUM ORGANISED BY KENYA POWER**

**DATE: 06.01.2015**

**VENUE: SAFARI PARK HOTEL**

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99.	Angeline Oduor	Office of the President		
100.	John K Mang`uri	Office of the President		
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103.	Jorum Midiwo	Office of the President		



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## KEMP STAKEHOLDERS FORUM IN PICTURES



KEMP Consultative meeting in progress



John Guda- Manager SHE – KPLC,  
addressing the consultative forum



ENG. Michael Adhiambo (KPLC)  
responding to questions



Migori Governor, Okoth Obado making his contribution



Minister of Energy, Water & Environment –Homa Bay county making his contribution



A participant asking a question



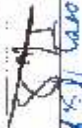









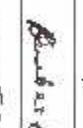

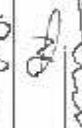
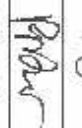

























Kenya Power










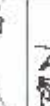

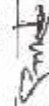






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MEETING HELD ON 6<sup>TH</sup> JANUARY 2015 AT SAFARI PARK HOTEL**

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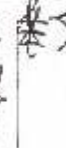















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Kenya Power

# LIST OF PARTICIPANTS AT THE STAKEHOLDER CONSULTATION MEETING HELD ON 6<sup>TH</sup> JANUARY 2015 AT SAFARI PARK HOTEL

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**MINUTES Of The Meeting With Representatives of VMGs.**  
**MINUTES OF KEMP STAKEHOLDER CONSULTATION MEETING**  
**DATE: 12<sup>TH</sup> JANUARY 2015**  
**VENUE: STIMA PLAZA**

The Vulnerable Marginalised Groups representatives were overall supportive of the project goals and objectives and the proposed interventions. Main issues raised included (a) What mechanisms were in place for affordability of connections by VMGs; (b) Need to pay attention to gender/women; (c) More clarity on the principles of compensation for losses; (d) clarification of role and responsibilities of government and the bank in screening/triggering the policy OP 4.10 and undertaking Social Assessment process and (e) need to build on local/cultural mechanisms for GRM.

The Bank and KPLC (on behalf of REA) clarified that the project was guided by the principles embodied in the safeguard documents presented and the various Bank Operational Policies triggered. KPLC on behalf of REA welcomed comments/suggestions and will take them into consideration. Specific responses are as in the minutes below:

**MIN 01/01/2015 – Preliminaries**

John Guda, Manager – Safety Health and Environment - Kenya Power, welcomed participants to the meeting on behalf of the Ministry of Energy and Petroleum and Kenya Power, and REA.

The meeting was opened by word of prayer from Mercy Towett of Kenya Power. KPLC shared that the Kenyan Government planned to increase electricity to increase electricity access from approximately 30% to 70% by 2017. Therefore to increase electricity access some initiatives have been undertaken by Kenya Power with financing from various donors such as the World Bank. The Kenya Electricity Modernisation Project was such an initiative. Therefore it was necessary to create awareness to key stakeholders on this. To do this Kenya Power had organised a Stakeholder Consultation Forum on the 6<sup>th</sup> of January 2015. However key stakeholders were not well represented resulting in the organization of the day's meeting. He then invited the participants to introduce themselves.

Participants were informed that KEMP would comprise of four components:

- a) Delivery Enhancement – working with existing substations to enhance quality and reliability
- b) Revenue protection
- c) Electrification programme – would entail Peri- Urban and Off- Grid Components
- d) Building capacity

This particular meeting would concern Component C, this component would be financed by the World Bank. One of the World Bank requirements was the preparation of certain documents, thus Kenya Power and/or REA had prepared four documents that were to be disclosed. These documents were the Environmental Social Management Framework (ESMF) for the Peri – Urban Component, Environmental Social Management Framework (ESMF) for the Off Grid Component, the Resettlement Policy Framework (RPF) for the Off

Grid Component and the Vulnerable Marginalised Groups Framework (VMGF) for Off-grid Component. The meeting was to disclose these documents to the participants. Therefore presentations on the safeguard documents would be shared and views and inputs from the participants were highly welcome. All presentations would be shared via email.

#### **MIN 02/1/2015 – Presentation on Environmental Social Management Framework – KEMP Peri-Urban Component**

Simon Mwangangi took the participants through the Environmental Social Management Framework for the Peri - Urban Component of KEMP. He informed participants that this presentation was the same one that was shared during the stakeholders meeting that took place of the 6<sup>th</sup> of January 2015. In addition he informed the participants that the actual sites for the project were not yet established and when known site specific Environmental Social Impact Assessments would be undertaken as and when necessary.

The presentation included a background on the KEMP project and its objectives; the Peri-Urban component; the purpose of the ESMF; scope of the Peri-Urban component, World Bank Safeguard instruments that might be triggered; potential positive and negative impacts of the project; mitigation measures; stakeholder involvement and public consultations and avenues for grievance redress.

#### **MIN 03/02/2015 – Presentation on Environmental Social Management Framework – KEMP Off-Grid Component**

Simon Mwangangi took the participants through the Environmental SMF for the off grid components. He informed the participants that ‘Off-Grid’ would entail those areas that had not been penetrated by the national grid. As feasibility studies had shown these areas could not be cost effectively served by the national grid. Currently those sites had not yet been conclusively identified. He informed the participants that major environmental impacts were not anticipated as the Off-Grid component would entail green energy.

The presentation included a background on the Off-Grid component; the purpose and objectives of the ESMF; World Bank Operational Safeguard Policies that might be triggered; potential environmental and social impacts; mitigation measures; public consultation and participation and the grievance redress mechanism.

Major social and environmental impacts for both components were not expected, as the Peri-Urban component would entail extension of existing lines. As for the Off-grid it would depend on number of households and densities of those specific areas, thus site locations had not been identified.

#### **MIN 04/02/2015 – Presentation on KEMP Resettlement Policy Framework (RPF) – Off-Grid Component**

Samuel Abaya of Kenya Power took the participants through the Resettlement Policy Framework, the participants were informed that resettlement was not expected as land acquisition would be done on a willing seller willing buyer basis. However this framework had been prepared in the event any resettlement was to occur. Site specific Resettlement Action Plans (RAPs) would be prepared as and when necessary. The framework was in line with the World Bank Operational Policy 4.12.

The presentation included the purpose of the RPF, objectives of the RPF, methodology for RPF preparation; potential impacts; eligibility for compensation; valuation methods for compensation; resettlement action plans (RAP); stakeholder consultation and participation; RPF implementation; RPF implementation and monitoring; implementation budget and the grievance redress mechanism

The participants were informed that the specific budget had not been established as all the sites had not been identified.

#### **MIN 04/02/2015 – Presentation on KEMP Vulnerable Marginalized Groups Framework (VMGF)**

Roseline Njeru of Kenya Power made a presentation on the Vulnerable Marginalized Groups Framework (VMGF). She informed the participants that the VMGF was a requirement of the World Bank and it would ensure that the rights of such groups are protected. It was emphasized that the main idea was to enhance project benefits to Vulnerable Marginalized Groups (VMGs) and avoid potential adverse impacts and increased marginalization. The framework was prepared because the specific project sites had not yet been conclusively identified. Hence the framework would act as a guideline for REA in the event that such communities were found when project sites had been identified. Specific Vulnerable Marginalized Groups Plan (VMGP) would be prepared as and when necessary. The VMGF was in line with the World Bank's Operation Policy 4.10 on Indigenous People, the policy stated indigenous people however in this framework the term VMG was used in reference to the same.

The presentation included the purpose of the VMGF, screening of VMGF, Social assessment of the vulnerable & marginalized groups; policy and legal framework; methodology and consultation in preparation of VMGF; potential positive and negative impacts of KEMP on VMGs; free, prior and informed consultations; vulnerable and marginalized groups plan (VMGP); strategy for participation and consultation with VMGs; grievance redress mechanism; monitoring and reporting arrangements and disclosure arrangements for VMGPs was discussed.

The main issues raised included

- a) What mechanisms were in place to improve affordability by VMGs?
- b) The need to pay particular attention to gender/women
- c) More clarity on the principle for compensation for losses;
- d) Clarification on role and responsibilities of Government and Bank in screening / triggering the OP 4.10 policy and undertaking the social assessment process;
- e) The need to build on local/cultural mechanisms for GRM

The bank and KPLC ( on behalf of REA) clarified that the project was guided by the principles in the safeguard documents presented and the various bank operational policies triggered. KPLC work on the comments/suggestions and promised to take them into consideration. The specific responses are in detailed in the minutes below:

## MIN 05/01/2015 – Plenary Session

The following issues emerged from the plenary discussions

No.	Comments / Issues Raised	Response
1.	<p><b>Affordability</b> Some of the participants wondered how the project would ensure access to marginalised given that the costs in the past have been prohibitive and beyond reach of the VMGs</p>	<p>Kenya Power had put in place mechanisms to enhance access for the lower income groups including: Stima Loan – where payments can be made through installments after connection The move towards renewable energy would see costs reduce and enable more connections even for the lower income groups.</p>
2.	<p><b>Gender and youth</b> Participants suggested that special attention be given to women and youth during consultations.</p> <p>The challenge of how connection would be done in semi-permanent structures was raised.</p>	<p>The process would ensure inclusive consultations during the meeting. Representatives of women and youth would be part of the team overseeing the implementation of the project.</p> <p>Connections to semi-permanent houses (grass thatched) could be done.</p>
3.	<p><b>Ascertaining Free, prior and informed consultations / participation</b> Participants raised the concern of how the project implementing agency would conduct free, prior and informed consultations had been done, and which institutional framework would be used to ensure this.</p> <p>It was suggested that the IPOs were now moving towards consent rather than consultations.</p> <p>The representatives of VMGs suggested that VMG participation should go beyond engaging them as casual labourers on sites, to tapping on their expertise and enhancing livelihoods.</p>	<p>There would be use of broad based consultations involving community leaders, Indigenous Peoples Organizations (IPOs), women, youth and the VMGs and triangulation of information collected.</p> <p>It was acknowledged that the World Bank Safeguard Policies were under review however the present policy on consultation would apply to the project until the review process was completed</p> <p>Giving people power would expand their opportunities towards improving their livelihoods.</p>

4.	<p><b>Treatment of VMGs that do not have title deeds</b></p> <p>Participants raised the issue of those VMGs that do not have title deeds, therefore how would they access electricity through this project as connection was attached to title deed, and in addition how they would be compensated for land.</p> <p>The participants raised the issue of land acquisition through ‘the willing buyer willing seller’ which may still compromise rights of VMGs.</p>	<p>If land is to be acquired it will be guided by willing buyer willing seller basis and compensation funds would be place into escrow until land disputes are clarified. For those VMGs living in the periphery of the forest, connection consent would have to be secured from Kenya Forest Service, before household connections could be done.</p> <p>Kenya Power will use certified valuers and the principles of the RPF require compensation at current market value.</p>
5.	<p><b>Clear feedback mechanisms</b></p> <p>Participants suggested that there was need for clear mechanisms for feedback in the entire process.</p>	<p>The entire process would involve inclusive consultations where input by stakeholders would progressively inform the project.</p>
6.	<p><b>Compensation for sensitive cultural sites</b></p> <p>The challenge of compensating for sensitive socio-cultural sites and artefacts such as sacred places, graves etc.</p> <p>The participants raised the issue of how adverse impacts such as loss of livelihoods would be compensated</p>	<p>The project did not foresee resettlement however if it occurred, every attempt would be made to avoid such sites. They would be dealt with in accordance with the World Bank’s Operational Policy 4.11. Consultation with community elders could also be done in such cases.</p> <p>The RPF clearly stipulates how various losses would be compensated such as land, structures, business, crops trees etc.</p>
7.	<p><b>Clarification on the roles and responsibilities of the borrower and the Bank in screening and triggering OP 4.10 and undertaking Social assessment</b></p> <p>The issue of conflict of interest arising from the borrower undertaking social assessment was raised.</p>	<p>The initial screening is undertaken by the World Bank to determine whether to trigger OP 4.10 and the borrower carries on the social assessment guided by Terms of Reference (TOR) as per OP</p>



		4.10.
8.	<b>The need to build on local / cultural mechanisms for Grievance Redress Mechanism</b> Emphasis was placed on the need to explore local/cultural mechanisms for grievance redress before resorting to the courts.	The entire process would involve free, prior, informed consultation and participation of all stakeholders.

#### **MIN 06/01/2015 – Wrap Up and Way Forward**

John Guda, Manager Safety Health and Environment – Kenya Power – reiterated that Kenya Power was doing its level best to increase electricity access across the country. He thanked the participants for their attendance and inputs, he also informed them that their inputs would be incorporated. Further consultations would follow as the project is developed and urged them to be part and parcel of the project in their respective regions.

VMGS PHOTOS





**KPLC ( on behalf of REA) consultations with Representatives of Indigenous peoples Organizations on the KEMP Safeguards Instruments --  
List of Participants -January 12, 2014, Stima Plaza, Nairobi, KENYA**

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