DECLARATION PAGE

This document has been prepared in accordance with Environmental (Impact Assessment and Audit) Regulations, 2003 of the Kenya Gazette Supplement No. 56 of 13th June 2003, Legal Notice No. 101.

LEAD EIA/AUDIT EXPERTS

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Do hereby certify that this report was prepared based on the information provided by various stakeholders as well as that collected from other primary and secondary sources and on the best understanding and interprétation of the facts by the Environmental Social & Impact Assessors. It is issued without any préjudice.

ABBREVIATIONS

CBD	Convention on Biological Diversity
CBO	Community Based Organizations
DOSH	Directorate of Occupation Safety and Health
DRSRS	Department of Resource Surveys and Remote Sensing
EA	Environmental Audits
EMCA	Environmental Management and Co-ordination Act
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
ESMP	Environmental and Social Management Plan
GoK	Government of Kenya
IKS	Indigenous Knowledge System
KETRACO	Kenya Electricity Transmission Company Limited
KFS	Kenya Forest Service
KWS	Kenya Wildlife Service
NBSAP	National Biodiversity Strategy and Action Plan
NEAP	National Environment Action Plan
NECC	National Environmental Complaints Committee
NEMA	National Environment Management Authority
NGOs	Non-Governmental Organizations
NPEP	National Poverty Eradication Plan
PEC	Poverty Eradication Commission
PRSP	Poverty Reduction Strategy Paper
RoW	Right of Way
TL	Transmission Line
WRA	Water Resources Authority
WSSD	World Summit for Sustainable Development

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EXECUTIVE SUMMARY

Introduction

The country's development blue print and Government Big four agenda recognizes the energy sector as key sector in realization of the vision 2030. Energy is one of the economic and social enabler of the country, the correlation between the electricity consumption and economic growth is that economic empowerment will always depend on accessible, stable and affordable power, in line with this energy is key sector to the country's development.

In line with this, Kenya Electricity Transmission Company Limited (KETRACO) which was established under ministry of energy Act 2012, whose mandate is to construct, own operate and maintain high voltage electricity transmission lines is tasked with construction of 40km Isinya-Konza 400kv transmission line and 400Kv Konza city Substation

The Kenya Government policy on all new projects (under the second schedule of the Environmental Management and Coordination Act (EMCA), cap 387 requires that an Environmental and Social Impact Assessment (ESIA) study be carried out at the project planning phase, in order to ensure that significant impacts on the environment and social aspects are taken into consideration at the construction, operations and decommissioning stages of the project. For compliance to this provision, KETRACO has therefore used its' in-house man-power consisting of Electrical and Civil Engineers, Socio-Economists, Land Economists, Surveyors and Environmental Experts to undertake the ESIA for the proposed project.

Study Objectives

The principal objective of this assessment was to identify significant potential impacts of the project on environmental and social aspects, and to formulate recommendations to ensure that the proposed project takes into consideration appropriate measures, to mitigate any adverse potential impacts to the environment and people's health through all of its' phases (construction, operation and decommissioning phases).

Scope

The ESIA study was done in consideration to the construction, operation and decommissioning phases of the project and was limited to:

- The baseline environmental conditions of the area,
- Description of the proposed project,
- Provisions of the relevant environmental laws,

- Public participation and stakeholder consultation,
- Identification and discussion of any adverse impacts to the environment anticipated from the proposed project,
- Appropriate mitigation measures,
- Development of an Environmental and Social Management Plan outline
- Analysis of project alternatives

Study Methodology

The approach to this exercise was structured so as to cover the requirements under the Environmental Management and Coordination Act (EMCA), Cap 387 and its' constituent regulation, i.e. the Environmental Management and Coordination (Impact Assessment and Audit) Regulations of 2003.

It involved largely an understanding of the project background, the preliminary designs and the implementation plan as well as decommissioning plan. In addition, baseline information was obtained through physical investigation of the site and the surrounding areas, desktop studies, public consultations with Lead Agencies and members of the community in the project areas, survey, photography, and discussions with key informants in KETRACO (the proponent).

The key activities undertaken during the assessment included the following:

- Consultations with the key project stakeholders including the project proponent, community members, the County government of Machakos and Kajiado counties administration and opinion leaders. The consultations were based on the proposed project, site planning, the project implementation plan, the potential environmental and social impacts and the mitigation measures thereof.
- Physical inspections of the proposed project area which included observation of available land marks, photography and interviews with the local residents and local administration,
- Evaluation of the activities around the project site and the environmental setting of the wider area through physical observations Review of available project documents, and
- Report writing, review and submission.

Policy, Legal and Regulatory Framework

The Environmental Management and Co-ordination Act (EMCA) cap 387, is the principal legislation that governs EIA studies in Kenya. This project falls under the Second Schedule of EMCA, Cap 387, which lists the type of projects that are required to undergo EIA studies in accordance with Section 58(1-4) of the Act.

Various other key national legislation that govern the management of environmental resources and those pertinent to the project have been discussed in the report.

Identified Potential Environmental and Social Impacts

The following positive and negative impacts are likely to be associated with the proposed project.

Positive Impacts

- National reliable and secure power supply
- Direct and indirect skilled and non-skilled Employment opportunities *(cleaners, tea girls, masons, carpenters, welders, drivers etc.*
- Gains to the local and national economy and increase in revenue.
- Informal sectors benefits
- Development of other Sectors

Negative Impacts

- Noise pollution
- Generation of exhaust emissions
- Dust emissions
- Solid and liquid waste generation
- Oil spill hazards
- Destruction of existing vegetation and habitats
- Avifauna mortality
- Increased demand for material consumption
- Impacts on workers' and community health and safety
- Soil erosion
- Fire outbreaks
- Visual and aesthetic impacts
- Incidences of electrocution
- Perceived dangers of electrostatic and magnetic forces

- Increase in social vices

Proposed Mitigation Measures

Mitigation of the potential impacts as described in chapter 6, and implementation of the Environmental and Social Management Plan and Environmental Monitoring Plan (chapter 8 and 9) will help to minimize the negative impacts, and enhance the positive outcomes of the project.

Conclusion

An Environmental and Social Management Plan (ESMP) outline has been developed to ensure sustainability of the site activities from construction through operation to decommissioning phase. The plan provides a general outline of the activities, associated impacts, and mitigation action plans, responsible actors, implementation timeline and the costs thereof.

A monitoring plan has also been developed and highlights some of the environmental and social performance indicators as identifiable parameters. Monitoring creates possibilities to call to attention, changes and problems in environmental quality. It involves the continuous or periodic review of operational and maintenance activities to determine the effectiveness of recommended mitigation measures. Consequently, trends in environmental degradation or improvement can be established, and previously unforeseen impacts can be identified or pre-empted.

It is strongly recommended that a concerted effort is made by the site management in particular, to implement the Environmental and Social Management and Monitoring Plan provided herein. Statutory Environmental and Safety Audits must be carried out in compliance with the national legal requirements, and the environmental performance of the site operations should be evaluated, against the recommended measures and targets laid out in this report.

It is quite evident from this study that the construction and operation of the proposed project will bring positive effects in the project area including improved supply of electricity, creation of Employment opportunities (welders, carpenters, masons, cleaners, drivers etc.) , gains in the local and national economy, provision of market for supply of building materials, informal

sectors benefits, Increase in revenue, Improvement in the quality of life for the workers and community members, and Improved security.

Considering the proposed location, construction, management, mitigation and monitoring plan that will be put in place, the project is considered important, strategic and beneficial and given that no immitigable negative impacts were encountered and that no community objection was received, the project may be allowed to proceed and a NEMA EIA license issued thereof.

1 INTRODUCTION

1.1 PROJECT BACKGROUND

The country's development blue print and Government Big four agenda recognizes the energy sector as key sector in realization of the vision 2030. Energy is one of the economic and social enabler of the country, the correlation between the electricity consumption and economic growth is that economic empowerment will always depend on accessible, stable and affordable power, in line with this energy is key sector to the country's development.

In line with this, Kenya Electricity Transmission Company Limited (KETRACO) which was established under ministry of energy Act 2012, whose mandate is to construct, own operate and maintain high voltage electricity transmission lines is tasked with construction of 40km Isinya-Konza 400kv transmission line and 400kV Konza City Substation

Kenya's legal framework stipulates that all new projects requires an Environmental and Social Impact Assessment (ESIA) this is anchored in the Environment Management and Coordination Act (EMCA) Cap 387. ESIA study is meant to be carried out at the project planning phase in order to ensure that environmental issues are taken into consideration at the project planning stage and adequately addressed during project implementation: construction, operations and decommissioning stages, therefore KETRACO involved the in-house expertise to undertake the ESIA study.

The aim of this Environmental and Social Impact Assessment (ESIA) study is to examine the positive and negative effects that the proposed project is likely to have on both the physical and the socio economic environment. An identification of possible impacts and management of the same will ensure environmental sustainability in that, its development does not adversely interfere with natural environment. This study is important because it plays the roles described in the figure below

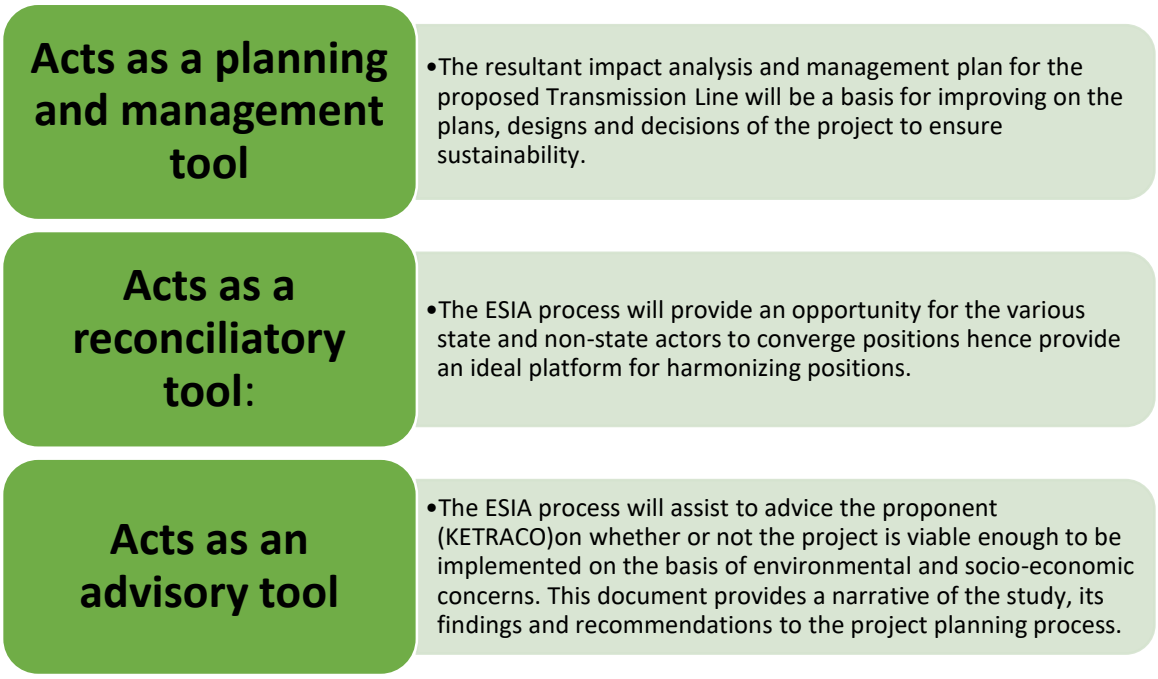


Figure 1: Importance of ESIA study

1.2 ESIA STUDY

1.2.1 Study Objectives

This ESIA study is undertaken under requirements of EMCA, Cap 387 schedule II as stipulated by National Environment Management Authority (NEMA) that requires all development projects to do so in order to avert the potential adverse impacts of a project and thereby recommending appropriate mitigation measures.

In this study, the proposed project's activities are broken down into four phases, i.e.:

- Design phase
- Construction phase
- Operational phase
- Decommissioning phase

The study has two main objectives:

- Ensuring sustainable development and good environmental practice through wise use of natural resources to ensure inter- and intra-generational equity.
- Identification, prevention, avoidance or offset any negative impacts that may come up from the project thus preventing losses or any disadvantages to any stakeholders.

Achievement of these two main objectives would reduce negative impacts and promote or enhance the projects positive impacts.

The ESIA will cover the following aspects:

- Establish the existing environment where the project falls
- Definition of the legal, institutional and policy framework of the proposed project
- Identify, consult and involve all stakeholders to facilitate all study objectives, Analysis of potential impacts of the proposed project
- An Analysis of the alternatives available to the proposed project
- Develop accurate and practical mitigation measures for the significant negative impacts
- Develop an Environmental and Social Management and Monitoring Plan (ESMMP) for the significant negative impact

1.2.2 Methodology

To achieve these objectives, the study collected baseline data firstly through desktop studies on a: national level; regional, and then finally scoping down to the study area and its immediate environs. This was done using detailed study, information from previous similar studies; developed checklist, and professional knowledge. The checklist focussed on information gained from the screening process and other cross-sectorial issues such as: health and safety, biodiversity, pollution etc.

Figure 2 illustrates the methodology and process that was employed in undertaking the ESIA study.

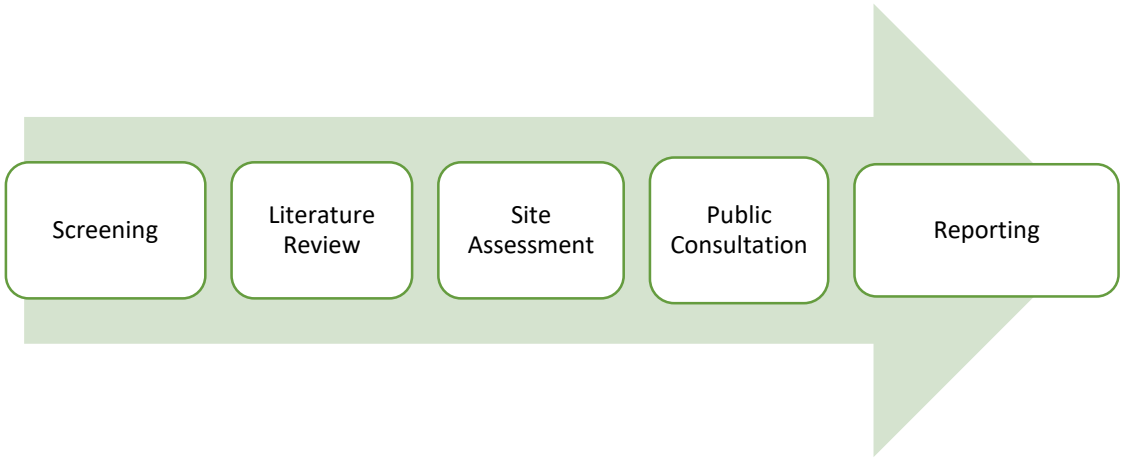


Figure 2: Methodology and Process for the ESIA

1.2.2.1 Screening

Screening of the project was undertaken to evaluate the need of conducting an EIA and the level of study. Transmission lines are listed under schedule II of EMCA, Cap 387 among projects requiring EIA before commencement. In addition, other considerations taken into account during the screening process included the physical site location, zoning, nature of the immediate neighbourhood, sensitivity of the areas surrounding the site and socio-economic activities in the area, among others.

From the screening exercise, it was determined that ESIA report for the proposed Transmission line was a requirement.

1.2.2.2 Literature Review

The literature review undertaken involved review of legislature, policies, development plans and past studies carried out in the area. It also informed the ESIA study on the baseline conditions and solidified the legal, institutional and environmental setting of the proposed project.

1.2.2.3 Site assessment

The site assessment was carried out within 28th November to 8th December 2018 to take into stock the following;

- The site landscape
- The flora, fauna and avifauna found in the proposed project area
- The sensitive receptors in the proposed project area
- The environment and social status of the project are
- Land ownership and usage.

Photography was used to capture salient features and baseline conditions in the project site and its neighbourhood. The photos were used to define existing features in the project area and identify soils and floral species in the area.

1.2.2.4 Public consultation

Stakeholders were consulted to facilitate all objectives of the study and the methods used included:

- Key Informant Interviews and questionnaires
- Public meeting/baraza

1.2.2.5 Reporting

The ESIA Study Report was written in accordance with the Environmental (Impact Assessment and Audit) Regulations, 2003.

1.3 ESIA TEAM

The multi-disciplinary ESIA team comprised of the following experts:

1. Caleb Mango- Lead EIA/Audit Expert
2. Richard Godana- Lead EIA/Audit Expert
3. Linet Mbova - Associate EIA/Audit Expert
4. Grace Nduta -Socio-economist
5. Douglas Kingori- Land Surveyor

1.4 REPORT STRUCTURE

The structure of this ESIA Report is as follows: -

- Executive Summary
- Introduction (Chapter 1)
- Project Description (Chapter 2)
- Policy, Legal and Institutional Framework (Chapter 3)
- Environmental and Socio-economic Baseline Description (Chapter 4)
- Public and Stakeholder Consultation (Chapter 5)
- Impact Assessment and Mitigation Measures (Chapter 6)
- Analysis of Alternatives (Chapter 7)
- Environmental and Social Management Plan (Chapter 8)
- Environmental Monitoring Plan (Chapter 9)
- Conclusion and Recommendations (Chapter 10)
- References
- Appendices
    a. Appendix 1- Consultation with Key Informants
    b. Appendix 2-Sample filled Questionnaires- Community Members
    c. Appendix 3- Public Meeting minutes
    d. Appendix 4-Public Meetings attendance sheets
    e. Appendix 5- Expert Practicing license

2 PROJECT DESCRIPTION

2.1 PROJECT PROPONENT

The project is being implemented by **Kenya Electricity Transmission Company Limited (KETRACO)**

2.2 NATURE OF THE PROJECT

The project will be composed of approximately 40Km Transmission Line from an existing Isinya Substation to new Konza city Substation. The TL will traverse through two counties: approximately 32 Km in Kajiado County and approximately 8km in Machakos County. It will occupy a wayleave corridor of 60m (30m on either side from the centre of the transmission line). It is important to note that construction activities will comprise of Isinya-Konza 400KV TL and 400KV new substation at Konza City.

2.3 PROJECT LOCATION

The proposed TL runs parallel to existing Mombasa – Nairobi 400kV TL from Isinya Substation for approximately 9.5km where Mombasa – Nairobi takes an angle turn at coordinates (268239.83E, 9805248.58N) towards Mombasa, whereas Isinya – Konza TL proceeds straight to Konza city substation (295044.84E, 9812169.73N). The line overflies SGR at coordinates (286929.26E, 9807220.02S) and then proceeds through Kapiti plains and LISA ranch and animal sanctuary.

The project co-ordinates are provided in Table 1 below

Table 1: Transmission Line and Substation Co-ordinates

COORDINATES ARE REFERED TO ARK 1960 ZONE 37S				
	NAME	EASTINGS	NORTHINGS	CHAINAGE (M)
0	ISINYA SS	258802.724	9804085.721	0
1	ISINYA TT	258882.368	9804078.183	80
2	AP1	278641	9807213	20085.765
3	AP2	286831.933	9807518	28282.395
4	AP3	292497	9810208	34553.452
5	AP4	294097	9811825	36828.246
6	AP5	294810.82	9812157.459	37615.69
7	KONZA CITY TT	294916.096	9812170.33	37721.75
8	KONZA CITY SS	295044.875	9812170.02	37850.529

Figure 3 below provides a map for the proposed Isinya-Konza 400KV TL.

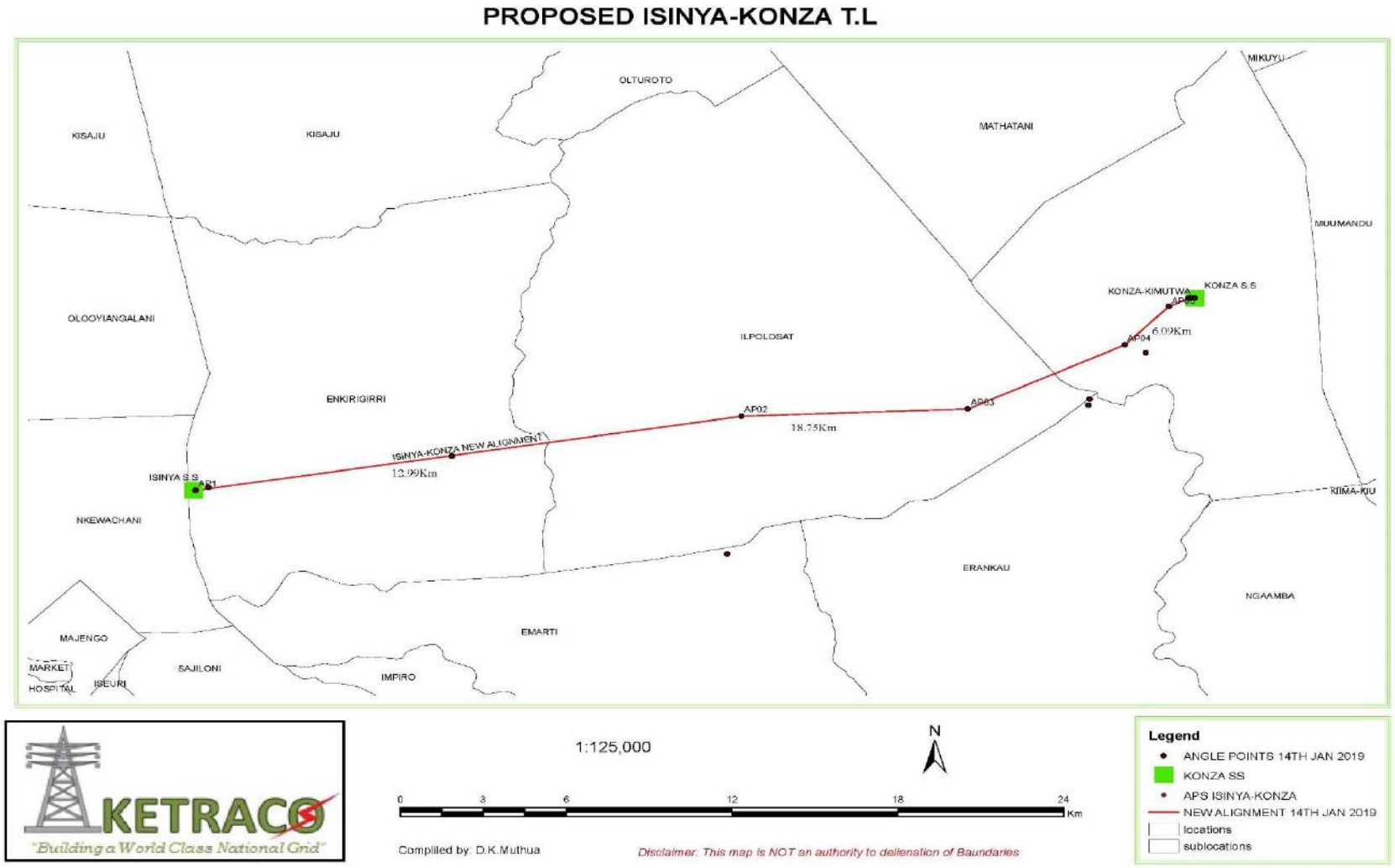


Figure 3: Map of the proposed Isinya-Konza 400KV TL

2.4 PROJECT OBJECTIVES AND JUSTIFICATION

The main objective of the proposed project is to ensure provision of adequate and stable supply of electricity to the upcoming Konza smart city. Konza will be a smart city, with an integrated urban information and communication technology (ICT) network that supports delivery of connected urban services and allows for efficient management of those services on a large scale. It is expected that there will be high demand for power that cannot be met by the available power in Konza area and hence the need to bring in more power from elsewhere.

2.5 PROJECT DESIGN

2.5.1 The 40km Transmission Line

2.5.1.1 Design Overview

The 400 kV transmission line will be an overhead double-circuit transmission line supported by steel-lattice type transmission towers. The transmission tower will be placed at an interval of around 300-400 m, and the height will be around 45 m but may vary depending on the site topography and surrounding structures. Sufficient clearance height will be secured from the ground level as per Kenyan regulation. The four corners of the transmission tower base will be secured over a concrete foundation and will occupy an area of around 10 x 10 m. The exact location of the transmission towers will be determined in the ensuing detailed design study. The general construction methodology for the transmission line is provided in the subsections below



Plate 1: Typical design of a steel lattice type transmission tower

2.5.1.2 Processes and activities

2.5.1.2.1 *Pre-construction activity*

The following activities form part of the pre-construction phase:

- Walkover surveys to identify the corridor;
- Detailed survey for fixing the alignment;
- Check surveys for exact tower spotting before actual construction; and
- Soil investigation of important tower locations to ascertain the type of foundation to be adopted

2.5.1.2.2 *Marking of the route and Right of Way (RoW)*

All construction activities will be undertaken within the RoW for safe operations of the TL, considering minimum clearances as per international standards. The RoW is taken as 30m on both sides of the centre line of the TL making a total of 60M. The TL route will be marked by wooden pegs within the ground in accordance with the line design.

2.5.1.2.3 *Clearing of tower sites*

At the tower sites, all vegetation within the footprint of the tower base and for a distance of approximately 2m beyond the base in all directions will be cleared to ground level.

2.5.1.2.4 *Excavation of tower foundation*

Pit marking is done for the legs of the towers. Foundations will be dug to a depth of about 3m x 3m x 3m depending upon the ground conditions. This area may vary depending on the slope and soil type of the area.

2.5.1.2.5 *Foundation for towers*

Foundation for towers is laid depending upon the type of soil encountered. The formwork, reinforcing bars, the embedded parts of the towers and any earthing elements will be placed in the pits.

2.5.1.2.6 *Backfilling*

The foundation pits will be backfilled following the removal of the formwork with soil. The top part of the stub of the tower leg remains above the ground level after the backfilling. The backfilling soil will be compacted in accordance with good engineering practices.

2.5.1.2.7 *Tower material delivery*

The materials for construction of towers will be delivered from the storage yard directly to the site. Materials required for one particular tower will be issued for work at site. The materials will be brought to the construction site using either a tractor/trailer or manually depending on the terrain.

2.5.1.2.8 *Erection of towers*

Lag time will be maintained for curing of concrete before erection of the towers. Water is required for curing of foundations. Erection of towers is done manually by assembling prefabricated components of the lattice structure.

2.5.1.2.9 *Stringing*

This involves the stringing of the conductor wires which is done manually with the help of tractors/puller machines. Stringing is usually done between two angle towers at a time.

2.5.1.2.10 *Reinstatement*

Once backfilling is completed, the surface of the towers will be graded to ensure that water drains away from the tower support and that the surface is smooth. All excesses construction materials and debris will be removed from the site and disposed off in the rightful manner.

2.5.1.2.11 *Testing and inspection*

On completion of the work, physical inspection and checking of all foundation works, tower erection and stringing will be carried out to ensure strict adherence to the technical requirements.

Insulation and continuity test of the TL as well as earth resistance of each tower will be carried out before final commissioning

2.5.1.2.12 *Safety measures for operations*

A warning sign will be attached to each tower approximately 2m above ground advising on high voltage. Once stringing is complete, anti-climbing devices will be placed on all faces of the tower. Also before the activation of the TL, the public will be sensitized regarding the operations of the TL for safety purposes.

2.5.2 The 400kV Konza City Substation

2.5.2.1 Design Overview

Substation Design Services Include: One-Line Diagrams and Construction Drawings, Site Selection & Equipment Layouts, Equipment Procurement, Construction Coordination, Relay, Control & Metering, Protective Systems Coordination, Substation Automation, SCADA Systems Design, Grounding Systems and Final Checkout, Start-up and Testing.

The layout of the substation is very important since there should be a Security of Supply. In an ideal substation all circuits and equipment would be duplicated such that following a fault, or during maintenance, connection remains available. Practically this is not feasible since the cost of implementing such a design is very high. Methods have been adopted to achieve a compromise between complete security of supply and capital investment.

Equipment for control, protection and auxiliary power will be housed in a small control building. The proposed substation layout consists essentially of the arrangement of a number of switchgear components in an ordered pattern governed by the function and rules of spatial separation. The spatial separation will include:

- Earth clearance, which is the clearance between live parts and earthed structures, walls, screens and ground.
- Phase clearance, which is the clearance between live parts of different phases and

- Isolating distance, which is the clearance between the terminals of an isolator and the connections thereto.

The section clearance is the clearance between live parts and the terminals of a work section. The limits of this work section, or maintenance zone, may be the ground or a platform from which the substation works are executed.

2.5.2.2 Processes and activities

The table below outlines the processes and activities that will be involved in the proposed 400kV Substation

Table 2: Project Activities and Processes

PROJECT ACTIVITIES & PROCESSES
Design Phase
This phase will involve preconstruction activities of mainly planning and managing the project. It will involve professionals who will undertake various studies geared towards designing the lounge such as engineers, architects, interior designers, land surveyors, quantity surveyors, geologists, environmentalists, project managers etc. Funding and other professionals will also be sourced during this phase, for subsequent phases.
Construction Phase
This phase activity will involve preparing the project site and setting up the structure. Professionals involved will include engineers, contractors, draughtsmen, technicians, masons, plumbers, electricians, gardeners/landscapers, architects and other project coordinators. Civil works will also be carried out during this phase and the main activities are listed as:- o Removal of vegetation within the substation footprint o Construction of access roads for the substation o Terracing and leveling of the site o Installation of foundations for infrastructure such as transformers, control room and radio tower o Construction of bunds and oil holding dams (for emergency holding of transformer oil in the event of a spill) o Compaction and filling with gravel of the areas between the foundations o Creation of formal drainage and storm water control measures o Delivery and installation of transformers, towers, bus bar and associated infrastructure o Construction of control room and administrative infrastructure o Construction of perimeter fencing and lighting All construction activities including ground preparation, earth moving, materials delivery, building, walling, roofing and the installation of amenities (power, water, communication equipment, etc.), fittings (doors, windows, safety provisions, etc.) will be carried out by competent personnel

obtained through rigorous tendering procedure to ensure the set quality standards and time lines are met. The highly specialised and rugged equipment to be installed shall have the relevant international standards and best practice.
Operational Phase
Upon commissioning, this phase will involve the main intended activities of the proposed project. This will involve the running of the substation.
Decommissioning Phase
When the proposed project has reached the end of its life cycle this phase will come into effect and it will involve stopping all its activities, pulling down the structures and returning the environment back to at least' its initial state. Professionals involved will include those involved in civil works such as plumbers, masons, engineers, contractors/demolition experts, landscapers, waste handlers, managers, environmentalists.

2.6 MAJOR EQUIPMENT AND MATERIALS REQUIRED DURING CONSTRUCTION

Equipment and materials necessary for the construction of the project is listed in Table 3 below

Table 3: Equipment and materials required

S/N	REQUIREMENTS
Construction of towers and the substation	
1.	Stubs of towers
2.	Stub setting templates
3.	Stub setting jacks
4.	Form boxes for concreting, wooden planks for shuttering
5	Concrete mixer machines, vibrators, dewatering pumps
6	Sand, cement and stone chips
7	Metal screens/sand screens etc. and other related tools/tackles for excavation/concreting and backfilling
Erection of towers	
1	Tower steel members with nuts and bolts and various tower accessories
2	Derrick poles for lifting of tower members
3	Poly propylene ropes for guying purposes
4	Various single sheave pulleys and other related tools/tackles for tower erection
Stringing of conductor and earth wire	
1	Conductor and earth wire drums

2	Insulator discs, hardware fillings and accessories
3	Tensioner and puller machine for stringing purposes
4	Turn table and drum mounting jacks
5	Pilot wires
6	Hydraulic compressor machine for making joints of conductor and earth wire
7	Various four sheave pulleys, rollers, clamps, wire ropes etc. and other related tools and tackles for stringing purposes.

2.7 VEHICULAR ACCESS REQUIREMENTS

As far as possible, access to tower sites will be via existing roads and tracks. In some cases, temporary roads might have to be created in order to access the tower sites. These roads will not be graded and some of them would be retained for maintenance activity in future.

2.8 MANPOWER REQUIREMENTS DURING CONSTRUCTION

An average of 20 workers (e.g. skilled and unskilled labour) are expected daily to be working at the construction sites. Most workers will be procured locally, although skilled foreigners may be hired for highly technical works. The entire recruitment process for the workers will be managed by the contractors in accordance with Kenya labour laws.

Normal working hours are planned to be from around 08:00-17:00 from Monday to Saturday. Works outside of normal working hours will require permission from KETRACO and relevant local authorities.

3 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 INTRODUCTION

The Republic of Kenya has a policy, legal and administrative framework for environmental management. The Government's policy on energy is to provide efficient and reliable energy. Under the administrative framework, NEMA is responsible for ensuring EIAs are carried out for new projects and environmental audits on existing facilities as per the requirements of the EMCA Cap 387. Projects subject to this requirement are specified in the Second Schedule of the Act.

The Government of Kenya has established regulations to facilitate the process on ESIAs and Environmental Audits (EA). The regulations are contained in Kenya Gazette Supplement No. 56, legislative, Supplement No.31, Legal Notice No.101 of 13th June 2003 and Environmental (Impact Assessment and Audit) (Amendment) Regulations of 2009. In Kenya, it is a legal requirement that any proposed project of the scale described in this report should undergo an ESIA. These requirements are stipulated in EMCA, Cap 387 and EIA/EA Regulations 2003. This section outlines the Policy, Legal and Institutional framework pertaining to the proposed 400kV Isinya-Konza TL project.

3.2 NATIONAL POLICY FRAMEWORK

4.2.1 National Environmental Action Plan (NEAP) of 1994

The National Environment Action Plan (NEAP) for Kenya was formulated in 1994 through a consultative process involving various stakeholders. The action plan was aimed at integrating environmental considerations into the country's socio-economic development. The integration process was to be realised through development of a comprehensive framework that ensures linkage of environmental management of natural resources to decision-making processes. The NEAP also established the addresses the issue of social, economic and industrial activities and their impacts on the ecosystem as opposed to environmental sustainability. This policy also emphasizes environmental concerns to be accounted for in socio-economic developments. The EIA process was established in line with this policy and the key players in this were local authorities and other development partners.

4.2.2 The National Poverty Eradication Plan (NPEP) of 1999

The NPEP was formulated with an objective of reducing the high levels of poverty in Kenya by 50 percent by the year 2015, as well as to strengthen the capabilities of the poor and vulnerable groups to earn income. The plan also aimed at reducing gender and geographical disparities in order to create a healthy, better-educated and more productive population. The formulation of the plan was guided by the goals and commitments agreed during the World

Summit for Sustainable Development (WSSD) of 1995. The plan therefore focuses on the delivery of four WSSD themes of poverty eradication; reduction of unemployment; social integration of the disadvantaged people and creation of an enabling economic, political, and cultural environment through development of transport and communication sector. The plan is implemented by the Poverty Eradication Commission (PEC) that was established in collaboration with various Government Ministries, bilateral and multilateral donors, the private sector, Community Based Organizations (CBOs) and Non-Governmental Organizations (NGOs). The NPEP is relevant since the proposed project will create an enabling environment that will contribute immensely in the enhancement of economic growth in Kenya. The proposed project would also impact businesses, agricultural and tourism related activities that have great relevancy to poverty eradication in the country.

4.2.3 The Poverty Reduction Strategy Paper (PRSP) of 2000

The PRSP for Kenya has the broad objective of reducing poverty and promoting economic growth. This policy articulates Kenya's commitment and approach to tackling endemic poverty through involvement of the poor communities in both rural and urban areas in various socio-economic development activities. The proposed project, during and after implementation will offer various employment opportunities to Kenyans and will therefore contribute directly towards the realisation of the broad national goal of reducing poverty in the country. In addition, the project would stimulate economic development by creating an enabling environment for other key sectors of the economy to thrive.

4.2.4 Environment and Development (Sessional Paper No. 6 of 1999)

The Kenya's policy paper on the Environment and Development was formulated in 1999. The policy defined approaches that will be pursued by the Government in mainstreaming environment into development. The policy harmonized environmental and developmental objectives with the broad goal of achieving sustainable development. The policy paper also provided guidelines and strategies for government action regarding environment and development. With regard to wildlife, the policy reemphasized government's commitment towards involving local communities and other stakeholders in wildlife conservation and management, as well as developing mechanisms that allow them to benefit from the natural resources occurring in their areas. The policy also advocated for the establishment of zones that allow for the multiple use and management of wildlife. This policy is relevant to the proposed development project in view of the potential impacts on the environment and involvement of the public in project planning.

4.2.5 The National Biodiversity Strategy and Action Plan of 2000

The NBSAP was formulated in order to enable Kenya address national and international commitments defined in Article 6 of the Convention on Biological Diversity (CBD). The strategy is a national framework of action for ensuring that the present rate of biodiversity loss is reversed and present levels of biological resources are maintained at sustainable levels for posterity. The general objectives of the strategy are to conserve Kenya's biodiversity; to sustainably use its components; to fairly and equitably share the benefits arising from the utilization of biological resources among the stakeholders; and to enhance technical and scientific cooperation nationally and internationally, including the exchange of information in support of biological conservation. It advocates for sensitization and empowerment of communities through participatory management practices and use of environmentally friendly techniques and technologies to achieve Kenya's vision to maintaining a clean and healthy environment with abundant biodiversity resources

3.3 NATIONAL LEGAL FRAMEWORK

3.3.1 The 2010 constitution of Kenya

The constitution declares that the people of Kenya are respectful to the environment, which is their heritage and they are determined to sustain it for the benefit of future generations and Article 42 states that every person has a right to a clean and healthy environment. Section 2 of Chapter 5 states that 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.

Article 70 deals with enforcement of environmental rights and everyone who feels their right to a clean and healthy environment has been denied has the obligation to go to court to seek redress.

The relevancy is that the proponent must ensure that all the applicable provisions of the Constitution are observed during the implementation of the project

3.3.2 The Environment and Management Coordination Act (EMCA), CAP 387

EMCA, CAP 387 is the principal Act governing environmental protection. It contains various legal notices with regulations on environmental conservation and Management. This informs the conducting of the EIA on the proposed 40km 400kV Isinya-Konza transmission line.

Schedule II confers the right of every person to a clean environment and therefore makes it mandatory to work in a clean environment and protect people living close to the project.

Part VI Gives detailed mechanism and stipulation regarding Environmental Impact Assessment.

The Act has also established a National Environmental Complaints Committee (NECC), which provides the administrative mechanism for addressing environmental degradation. The Committee has the mandate to investigate complaints relating to environmental damage and degradation. The NECC Assesses for purposes of variation of the approved EIA license for the proposed project

KETRACO should acquire an approval from NEMA before commencing the project

The subsections below further describe regulations under EMCA that are related to the project

3.3.2.1 Environmental (Impact Assessment and Audit) Regulations, 2003, Legal Notice No. 101

The Environmental (Impact Assessment and Audit) Regulations provides guidelines for conducting EIA studies. The regulations provide details on the parameters to be evaluated when undertaking an EIA study. It also provides guidelines on the conduct of environmental audits and development of project monitoring plans. The proposed project must comply with the requirements of the regulations that also include conducting continuous monitoring and annual audits on the proposed project.

3.3.2.2 Environmental Management and Co-ordination (water quality) Regulations, 2006 Legal notice No. 120

The EMCA (Water Quality) Regulations, 2006 provide guidelines on the use and management of water sources in order to safeguard quality of water for domestic use and irrigation, among others. The proposed project will need to comply with the requirements of this regulation in order to ensure water sources along the route are protected from pollution and over abstraction. The project will also need to comply with the regulations that prohibit undertaking of development within a minimum of 6m from the highest ever recorded flood level of a river system. Section 4(2), 6 and Section 24 of the regulation prohibits pollution of water bodies and requires that all substances discharged into the water bodies should meet the standards set under the Third Schedule of the regulation.

Everyone is required to refrain from any actions, which directly or indirectly cause water pollution, whether or not the water resource was polluted before the enactment of the Environmental Management and Coordination Act (EMCA) Cap 387. It is an offence to contravene the provisions of these regulations with a fine not exceeding five hundred thousand shillings. In response to the above, the project design team should be advised on

the requirements of this regulation and appropriately incorporate the regulations in the project design document.

Important in protection of ground water sources and meeting standards for discharge of effluent. In emptying onsite sewage disposal facilities, deal only with licensed liquid waste handlers. Also, ensure domestic water to meet drinking standards as set out under the second schedule

3.3.2.3 Environmental Management and Coordination (Waste management) Regulations, 2006 Legal Notice No. 121

The relevant institution is NEMA, this act focuses on management of solid wastes, industrial wastes, hazardous wastes, pesticides and toxic substances and radioactive substances.

Provides standards for handling, transportation, and disposal of different types of waste. Addresses concerns such as responsibility for waste generators and obligations for disposal.

Section 4(1) states that No person shall dispose of any waste on a public highway, street, road, recreational areas or in any public place except in a designated waste receptacle.

Section 4(2) stipulates that a waste generator shall collect, segregate, and dispose such waste in the manner provided under these regulations.

In compliance to this, the contractor and the proponent will ensure there exists proper contractual agreement with licensed solid waste handlers and that solid wastes are disposed in the manner prescribed. This has been addressed in the ESMP section of this report

3.3.2.4 The Environmental Management and Co-ordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 Legal Notice No. 61

The Noise and Excessive Vibration Pollution Control Regulations, 2009 prohibits excessive noise and vibration. It states that no person shall make or cause to be made any loud, unreasonable, unnecessary or unusual noise which annoys disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. The contactor of the project will have to ensure that no excessive noise and vibrations are made during the construction stage. This is important since the construction of the project may involve use of heavy earthmoving equipment and trucks which can generate excessive noise and vibrations. Motor vehicles used during the construction of the proposed project should also adhere to the regulations which prohibit excessive noise. The provision of the act on motor vehicle states that no person shall operate a motor vehicle which produces any loud and unusual sound exceeding 84 dB(A) when accelerating. The Act also states that no person shall at any time sound the horn or other warning device of a vehicle except when necessary to prevent an accident or an incident. Any person carrying out construction, demolition, mining or quarrying

work should ensure that the vibration levels do not exceed 0.5 centimetres per second beyond any source property boundary or 30 metres from any moving source.

All these provisions have been comprehensively catered for in this report at the ESMP and their adherence shall be closely monitored.

3.3.2.5 The Environmental Management and Coordination (Air Quality) Regulations, 2008

NEMA is the body tasked with overseeing that no person shall necessitate emission of air pollutants listed in the first schedule, second schedule, & seventh schedule of the regulation to an extent that compromised the ambient air quality levels.

The proponent will strive to observe the provision of this regulation on air quality and emission standard throughout the project cycle.

3.3.2.6 Environmental Management and Co-ordination Act (Controlled Substances) Regulations, 2007

The EMCA (Controlled Substances) Regulations aimed at controlling the production, consumption and, exports and imports of controlled substances. Controlled substances are grouped into three lists as indicated below:

- Group 1 list consists of halogenated flouro-chemicals with ozone depleting substances.
- Group 2 list consist of hydrobromoflourocarbons with ozone depleting substances.
- Group 3 list consist of bromochloromethane with ozone depleting substances.

Products containing controlled substances include air conditioners, air coolers, refrigerants, portable fire extinguishers, heat pump equipment, dehumidifiers, insulation boards, panels and pipe covers, pre-polymers, etc.

The project contractor and the proponent will need to ensure that the requirements of this regulation are observed in order to ensure that equipment, machinery, vehicles and chemicals containing such components are not imported into the country for use in the proposed project.

***3.3.2.7* Environmental Management and Co-ordination (Fossil Fuel Emission Control) Regulations, 2006**

The EMCA (Fossil Fuel Emission Control) Regulations, 2006 aims at eliminating or reducing emissions emitted from internal combustion engines to acceptable levels. The regulation provides guidelines on use of clean fuels, use of catalysts and inspection procedures for engines and generators. This regulation is applicable to the proposed project since there would be use of vehicles, machineries and equipment that depend on fossil fuel as their source of energy. The requirements of the regulation must be implemented in order to

eliminate or reduce air quality degradation. Sections of the regulation citing the standards of recommended emission levels will be given to the contractor and or pinned at strategic points in the contractor's field offices.

3.3.2.8 Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006

The EMCA (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006 provides that no person shall engage in any activity that may have an adverse impact on any ecosystem; may lead to the introduction of any exotic species or to unsustainable use of natural resources, without an Environmental Impact Assessment License issued by the Authority under the Act.

The regulation requires NEMA in consultation with the relevant lead agencies, to impose bans, restrictions or similar measures on the access and use of any threatened species in order to ensure its regeneration and maximum sustainable yield.

3.3.2.9 Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009

The Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009 applies to all wetlands in Kenya whether occurring in private or public land. The objectives of the regulations are to provide for the conservation and sustainable use of wetlands and their resources in Kenya and promote the integration of sustainable use of resources in wetlands into the local and national management of natural resources for socio-economic development. The act also aims at ensuring the conservation of water catchments and the control of floods and the sustainable use of wetlands for ecological and aesthetic purposes for the common good of all citizens. The act also makes provision for the protection of wetlands as habitats for species of fauna and flora. It also provides a framework for public participation in the management of wetlands.

The Act requires wetland resources to be utilized in a sustainable manner compatible with the continued presence of wetlands and their hydrological, ecological, social and economic functions and services. The Act requires special measures to be undertaken to preserve and maintain knowledge innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity in wetlands.

The regulation also calls for sustainable use of wetlands through integration into the national and local land use plans to ensure sustainable use of wetlands in the country. The contractor

will need to employ measures for the preservation and conservation of these wetlands and river systems by ensuring that their material suppliers (e.g. sand) do not harm wetlands and riverbeds

3.3.3 The Land Act, 2012

The body that oversees this is National Land Commission. The Act specifies the manner for determination and the award for compulsory acquisition to be served on the persons determined to have interest in the affected land.

According to Section 128 of the Act, any dispute arising out of any matter under the Act, which involves compulsory acquisition process, should be referred to the Land and Environmental Court for determination.

Sections 107-133 of the Land Act specify the procedure to be followed in the process of compulsory land acquisition.

Part II section 8 provides guidelines on management of public land by the National Land Commission on behalf of both national and county government.

According to Section 111 of the Act, just compensation shall be paid promptly to all persons whose interests have been affected by the land acquisition.

Proponent shall adhere to the requirements of the Act in the implementation of land acquisition, and any project affected people will be compensated accordingly.

3.3.4 The Energy Act, 2019

The Act provides the regulatory framework for the energy sector and, among other things, stresses the need for energy players in general and electrical energy players in particular to adopt environmentally friendly and sustainable practices in power generation, distribution and consumption. It sets standards for proper environmental management in the sector. Section 30 (1) part (b) of the Act states compliance with the EMCA, Cap 387 as an important criterion to be considered by the ERC during the registration and supervision of sector players.

The ESIA Study has been undertaken in fulfilment of requirements of the Energy Act.

3.3.5 Wildlife Conservation and Management Act 2013

This Act was enacted to consolidate and amend the law relating to the protection, conservation and management of wildlife in Kenya, and for purposes connected therewith and thereto. Section 9 of the Act states that 'the Director of Wildlife Conservation shall, through the officers of the service, control, manage and maintain all national parks'. It also states that within the National Park, the Director may:

- Reserve or set aside any portion of the park as a breeding place for animals or as nurseries for vegetation;

- Authorize the construction of such roads, bridges, airfields, buildings and fences, the provision of such water supplies, and the carrying out of such other works, as may be necessary for the purposes of the park;
- With the approval of the Minister, let sites for the erection of hotels, or other accommodation for the visitors to the park provided that nothing in any document connected with the letting shall be construed as in any manner abridging the overall control of the Park by the Service, or as preventing the Director from giving directions as to the manner in which the premises concerned shall be managed.

The project is located in a wildlife migratory corridor. The proponent shall therefore implement the proposed mitigation measures and ESMP towards protection and conservation of wildlife in the area.

3.3.6 The Water Act, 2002

Section 76(1) states that no person shall discharge any effluent from any trade premises into the sewers without the consent of the licensee. An application for consent shall be made to the licensee and shall state the following:

- The nature or composition of the trade effluent.
- The maximum quantity of the effluent which it is proposed to discharge on any one day.
- The highest rate at which it is proposed to discharge the effluent; and
- Any other information required by the licensee.

The licensee's consent may be given subject to conditions, including conditions requiring the payment to the licensee of charges for the discharge. "Trade effluent" means any liquid, whether with or without suspended particles, produced as a by-product in the course of any trade or industry. Provided that any owner or occupier considers that any such requirement is unreasonable may, within thirty days after service on him of notice of such requirement, appeal to the Water Appeal Board.

Section 25 of the Act requires a permit to be obtained for among others any use of water from a water resource, discharge of a pollutant into any water resource according to section 29 of the same Act. Application for such a permit shall be subject to public consultation as

well as an environmental impact assessment as per the Environmental Management and Co-ordination Act, 2015.

The conditions of the permit may also be varied if the authority feels that the water so used is causing deterioration of water quality or causing shortage of water for other purposes that the authority may consider has priority. This is provided for under section 35 of the Act. Section 36 gives the WRA to require applications or re-applications where it becomes necessary to rationalize water use with respect to promotion of beneficial use of water in the public interest, efficient management of the water resources or protect the water resources quality. The Act further requires that a riparian reserve be provided for any water resources.

In the construction and operation of Proposed Transmission Line, these regulations and its provision on water pollution management shall be taken into consideration and closely monitored.

3.3.7 The Physical Planning Act (Cap 286)

An Act of Parliament to provide for the preparation and implementation of physical development plans and for connected purposes enacted by the Parliament of Kenya Under this Act, no person shall carry out development within the area of a local authority without a development permission granted by the local authority under section 33. The County Government concerned shall require the developer to restore the land on which such development has taken place to its original condition within a period of not more than ninety days. If on the expiry of the ninety days notice given to the developer such restoration has not been affected the concerned local authority shall restore the site to its original condition and recover the cost incurred thereto from the developer.

The Proponent shall secure all mandatory approvals and permits as required by the law.

3.3.8 The Occupational Safety and Health Act, 2007

The Occupational Safety and Health Act 2007applies to all workplaces where any person is at work, whether temporarily or permanently. The purpose of the Act is to secure the safety, health and welfare of persons at work and protect persons other than persons at work against risks to safety and health arising out of, or in connection with, the activities of persons at work. Section 19 of the Act provides that an occupier of any premises likely to emit poisonous, harmful, injurious or offensive substances, into the atmosphere shall use the best practicable means to prevent such emissions into the atmosphere and render harmless and inoffensive the substances which may be emitted.

Section 16 provides that no person shall engage in any improper activity or behaviour at the workplace, which might create or constitute a hazard to that person or any other person.

The contractors of the proposed project and the operators will need to fully comply with the requirements of the Occupational Safety and Health Act 2007.

The report advices the Proponent on safety and health aspects, potential impacts, personnel responsible for implementation and monitoring, frequency of monitoring, and estimated cost, as a basic guideline for the management of Health and Safety issues in the proposed project.

3.3.9 The Public Health Act

The Public Health Act regulates activities detrimental to human Health. An environmental nuisance is one that causes danger, discomfort or annoyance to the local inhabitants or which is hazardous to human health. Although the Act is primarily concerned with domestic water supplies and sources of water used for human consumption, its regime may be extended to cover rivers, streams, lakes and underground water resources since these are the basic water sources for the majority of Kenya's population.

It also outlines the standards of construction of various facilities of any place. In terms of air pollution thermal plants are said to emit a variety of gases, volatile organic compounds and particulate matter depending on the amount and type of fuel used and method used for burning. It is therefore necessary to monitor the air pollution. The Act prohibits activities (nuisances) that may be injurious to health. The primary purpose of the Act is to secure and maintain public health. It defines nuisances on land and premises and empowers public health authorities to deal with such conditions.

Part IX, section 115, of the Act states that no person/institution shall cause nuisance or condition liable to be injuries 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 injuries or dangerous to human health.

On responsibility of the Local Authorities Part XI, section 129, of the Act states in part "It shall be the duty of every local authority to take all lawful, necessary and reasonably practicable measures for preventing any pollution dangerous to health of any supply of water which the public within its district has a right to use and does use for drinking or domestic purposes. Section 130 provides for making and imposing regulations by the local authorities and others the duty of enforcing rules in respect of prohibiting use of water supply or erection of structures draining filth or noxious matter into water supply as mentioned in section 129. This provision is supplemented by section 126A that requires local authorities to develop by laws for controlling and regulating among others private sewers, communication between drains, power lines, and sewers as well as regulating

sanitary conveniences in connection to buildings, drainage, cesspools, etc. for reception or disposal of foul matter. Part XII, Section 136, states that all collections of water, sewage, rubbish, refuse and other fluids which permits or facilitates the breeding or multiplication of pests shall be deemed nuisances and are liable to be dealt with in the matter provided by this Act.

The Proponent shall observe its provisions and implement measures to safeguard public health and safety.

3.3.10 County Government Act 2012

The Act empowers county governments to control or prohibit all businesses, factories and workshops that, by reason of smoke, fumes, chemical gases, dust, smell, noise or vibration or other cause may be a source of danger, discomfort or annoyance to the neighbourhood and to prescribe the conditions subject to which business, factories and workshops shall be carried on.

3.4 INSTITUTIONAL FRAMEWORK

The EMCA Act, Cap 387 established a number of institutions for the management of the Environment in Kenya. The Apex is the parent ministry which is currently the ministry of Environment, Water and Natural Resources. Below the ministry is the National Environment Council. These key institutions and government departments are rresponsible for the environmental protection and natural resource management in Kenya forms the key stakeholders in the project implementation.

3.4.1 Ministry of Environment, Water and Natural Resources

The mandate of the ministry is to monitor, protect, conserve and manage the environment and natural resources through sustainable exploitation for socio-economic development aimed at eradication of poverty, improving living standards and ensuring that a clean environment is sustained now and in the future. The ministry comprises of various divisions at the headquarters and the following parastatals and departments.

- National Environment Management Authority
- Kenya Meteorological Department
- Mines and Geology Department
- Department of Resource Surveys and Remote Sensing (DRSRS)

The functions of the ministry include but not limited to the following:

- Environment and Natural Resources Policy formulation, analysis and review
- Sustainable management of Mineral resources and conservation of environment

- Continuous development of geo-database for integrated natural resources and environmental management systems
- Promote, monitor and coordinate environmental activities and enforce compliance of environmental regulations and guidelines

3.4.2 Kenya Electricity Transmission Company Limited (KETRACO)

KETRACO is the proponent in this project. KETRACO is therefore responsible for land acquisition, implementation and monitoring the project throughout all its phases.

3.4.3 National Environment Management Authority (NEMA)

National Environment Management Authority (NEMA) is the institution with the legal authority to exercise general supervision and coordination over all matters relating to the environment. It is the principal instrument of the government charged with the implementation of all policies relating to the environment. NEMA's functions are more particularly set out in section 9(2) of the EMCA act, Cap 387.

According to section 68 of the environmental management and coordination Act (EMCA) Cap 387, The Authority shall be responsible for carrying out environmental audits on all activities that are likely to have a significant effect on the environment.

Environmental Auditing (EA) is a tool for environmental conservation and has been identified as a key requirement for existing facilities to ensure sustainable operations with respect to environmental resources and socio-economic activities in the neighbourhood of the facilities. The government has established regulations to facilitate the process on Environmental Impact Assessments and Audits. The regulations are contained in the Kenya Gazette Supplement No. 56, legislative supplement No. 31; legal notice No. 101 of 13th June 2003.

The authority core functions are:

- Coordinating the various environmental management activities being undertaken by the lead agencies
- Promote the integration of environmental considerations into development policies, plans, programs and projects, with a view to ensuring the proper management and rational utilization of environmental resources, on sustainable yield basis, for the improvement of the quality of human life in Kenya.
- To take stock of the natural resources in Kenya and their utilization and conservation.
- Carry out surveys, which will assist in the proper management and conservation of the environment.

- Advise the Government on legislative and other measures for the management of the environment or the implementation of relevant international conventions, treaties and agreements.
- Undertake and coordinate research, investigation and surveys, collect, collate and disseminate information on the findings of such research, investigations or surveys.
- Mobilize and monitor the use of financial and human resources for environmental management.
- Identify projects and programs for which environmental audit or environmental monitoring must be conducted under this Act.
- Initiate and evolve procedures and safeguards for the prevention of accidents, which may cause environmental degradation and evolve remedial measures where accidents occur e.g. floods, landslides and oil spills.
- Monitor and assess activities, including activities being carried out by relevant lead agencies, in order to ensure that the environment is not degraded by such activities. Management objectives must be adhered to and adequate early warning on impending environmental emergencies is given.

3.4.4 National Environmental Council (NEC)

The National Environment Council established under section 4 of part 3 of the EMCA act consists a board which comprises the Chairman (Minister), PS of the relevant ministry, representatives from public universities, representatives from research institutions, NGO representatives, Director General (Secretary) and such number of members as may, from time to time, be co-opted by the minister to be members of the council.

3.4.5 The National Environmental Action Plan Committee

National Environmental committee is supposed to prepare a national environmental action plan after every 5 years for consideration and adoption by the National Assembly. The NEAP is a compilation of provincial Environment Action Plans which are prepared by the district environment committee.

3.4.6 The County Environmental Committee

County Environmental Action Plan Committee is charged with the responsibility of preparing a provincial environmental Action based on the county environmental plan. The county Environmental action plans are further compiled at the national level.

3.4.7 The National Environmental Complaints Committee

The Act (EMCA) has also established a National Environmental Complaints Committee, which provides the administrative mechanism for addressing environmental harm. The Committee has the mandate to investigate complaints relating to environmental damage and degradation. Its members include representatives from the Law Society of Kenya, NGOs and the business community.

3.4.8 Directorate of Occupational Health and Safety

The institution will be task for registration of the construction site as a work place and eforcing compliance with Occupational Health and Safety Regulations at the construction site

3.4.9 Department of Physical Planning

The department will monitor compliance with the building plans/design

4 ENVIRONMENTAL AND SOCIO-ECONOMIC BASELINE INFORMATION

4.1 INTRODUCTION

The 400kV Isinya- Konza transmission line traverses Kajiado and Machakos Counties. The TL begins from the existing Isinya substation in Kajiado County and evacuates power to a proposed Konza city substation.

This chapter provides a description of the current environmental/natural and socio-economic conditions of the site and surrounding areas, which directly or indirectly may be affected by the proposed Transmission Line. The baseline data collection focussed on providing information to support the assessment of any potential impact of the proposed project. Information was therefore collected at the following levels:

- County Level: Secondary information was collected at the county level aimed at providing a contextual overview within the County
- Project Area: Primary information was collected within the project area where the project is located. This included information captured on the parcel of land.

In order to capture information in the above levels mentioned, the following methodology was utilised:

- **Desktop Study:** A desktop study was carried out of publicly available scientific publication to investigate the natural environment that exists in the study area. This was complimented by the site visit conducted in the period of 27th November to 8th December, 2018. During the site visit, information pertaining to natural environment particularly existing flora, fauna, soils and hydrology within the Study and Project area was captured in photography and GPS.
- **Stakeholder Engagement:** A stakeholder Engagement exercise was taken as part of the ESIA Study (*for further detail see Chapter 5 of this Report)*. Most of the stakeholders consulted were found within the Project Area.

4.2 LOCATION AND SIZE

Kajiado County

The proposed Transmission Line passes approximately 32 KM in Kajiado County

Kajiado County is located in the southern part of Kenya. It borders Nairobi County to the North East, Narok County to the West, Nakuru and Kiambu Counties to the North, Taita Taveta County to the South East, Machakos and Makueni Counties to the North East and east

respectively, and the Republic of Tanzania to the South. It is situated between Longitudes 360 5' and 370 5' East and between Latitudes 10 0' and 30 0' South. The county covers an area of 21,900.9 square kilometres (Km2).

Machakos County

The proposed Transmission Line passes approximately 8km within Machakos County, specifically in Konza-Kimutwa sub location.

The Konza City subatation site is located in Machakos County within the Konza City perimeter. The County borders eight counties: Nairobi and Kiambu counties to the West; Embu to the North; Kitui to the East; Makueni to the South; Kajiado to the South West and Muranga and Kirinyaga to the North West. It lies between latitudes 0º45´South and 1º31´South and longitudes 36º45´ East and 37º45´ East. It covers a total area of 6208.2 km².

4.3 BIO-PHYSICAL ENVIRONMENT

4.3.1 Climatic conditions

Overall, Kenya has been divided into seven agro-climatic zones using a moisture index (Sombroek et al, 1982). The index used is annual rainfall expressed as a percentage of potential evaporation (Eo). Areas with an index of greater than 50% have a high potential for cropping, and are designated zones I, II and III. The semi-humid to arid regions (zones IV, V, VI, and VII) have indexes of less than 50% and mean annual rainfall of less than 1100 mm as shown in Table 4 below

Table 4: Agro-ecological Zones in Kenya

Zone	Classification	Moisture index (%)	Annual rainfall (mm)
I	Humid	>80	>1800
II	Sub-humid	60-80	1500-1800
III	Semi-humid	50-60	1100-1500
IV	Semi-humid to semi-arid	40-50	600-1100
V	Semi-arid	25-50	450-900
VI	Arid	15-25	300-550

Kajiado County

The county has a bi-modal rainfall pattern. The short rains fall between October and December while the long rains fall between March and May. There is a general rainfall gradient that increases with altitude. The bimodal rainfall pattern is not uniform across the County. The long (March to May) rains are more pronounced in the western part of the County while the short (October to December) rains are heavier in the eastern part. The rainfall amount ranges from as low as 300mm in the Amboseli basin to as high as 1250mm in the Ngong hills and the slopes of Mt. Kilimanjaro.

Temperatures vary both with altitude and season. The highest temperatures of about 340C are recorded around Lake Magadi while the lowest of 100C is experienced at Loitokitok on the eastern slopes of Mt. Kilimanjaro. The coolest period is between July and August, while the hottest months are from November to April.

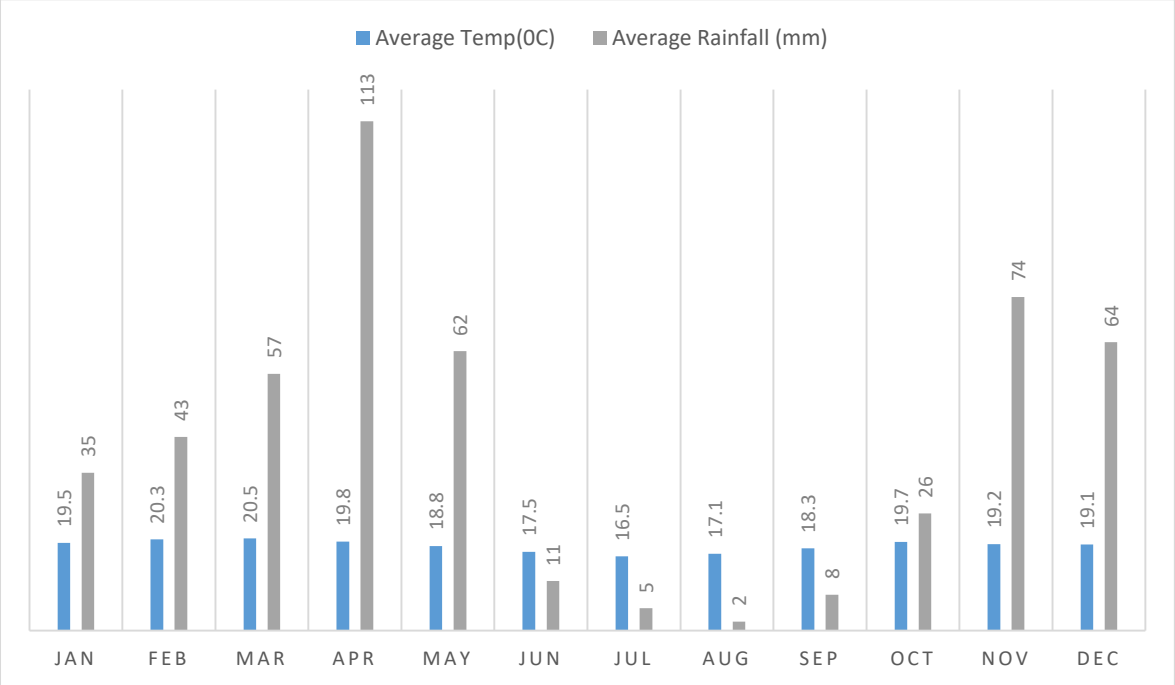


Figure 4: Climatic conditions in Kajiado County

Machakos County

The County receives bimodal rainfall with short rains in October and December while the long rains from March to May. The rainfall range is between 500mm and 1250mm, which is unevenly distributed and unreliable. The altitude mainly influences rainfall distribution in the county. The high areas such as Mua, Iveti and Kangundo receive an average rainfall of 1000mm while the lowland areas receive about 500mm. Temperatures vary between 18˚C

and 29˚C throughout the year. The dry spells mainly occur from January to March and August to October.

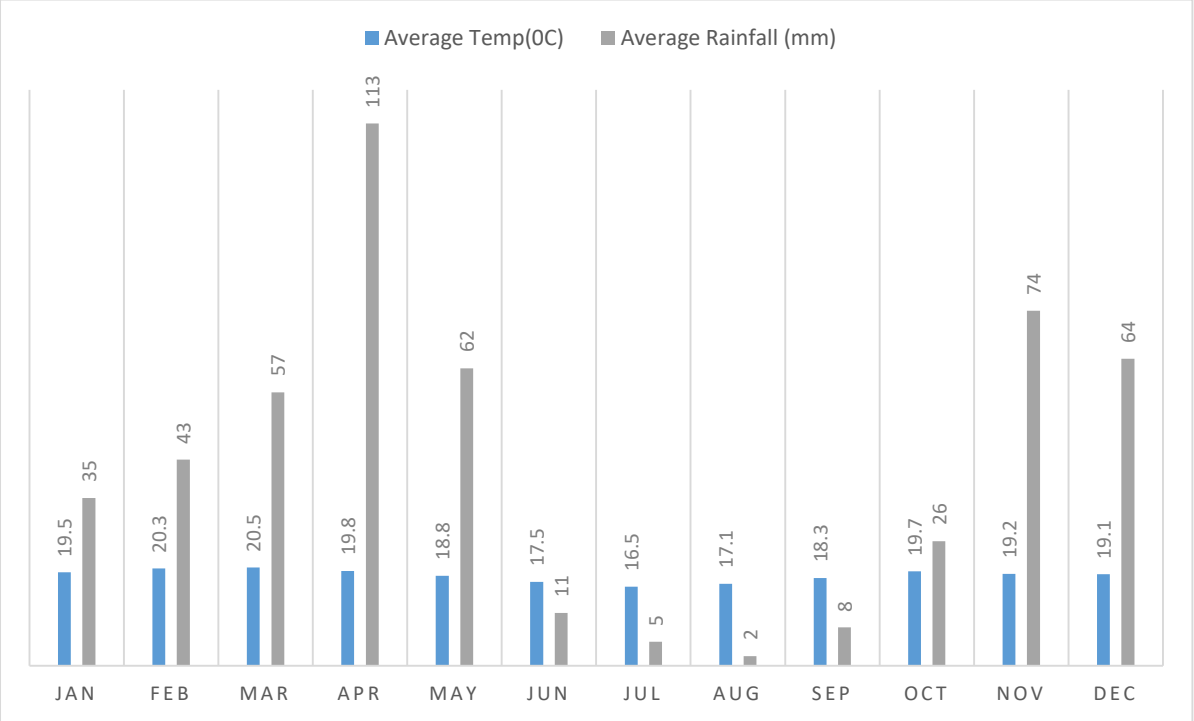


Figure 5: Climatic conditions in Machakos County

Study area

The proposed project is located within arid and semi-arid land with a mean annual rainfall ranges from 300 to 800 mm. The project area has a bimodal rainfall pattern with precipitation generally occurring in the months of March to May and October to December.

4.3.2 Physical and topographic features

Kajiado County

The main physical features of Kajiado County are plains, valleys and occasional volcanic hills ranging from an altitude of 500 metres above sea level at Lake Magadi to 2500 metres above sea level in Ngong Hills. Topographically, the county is divided into three different areas namely; Rift Valley, Athi Kapiti plains and Central Broken Ground.

The Rift Valley is a low depression on the western side of the county running from north to south. It is made up of steep faults giving rise to plateau, scarps and structural plains. The depression has important physical features such as Mount Suswa and Lake Magadi. The lake has substantial deposits of soda ash and it is commercially exploited. The altitude ranges between 600 and1740metres above sea level.

The Athi Kapiti Plains consist mainly of gently undulating slopes, which become rolling and hilly towards the Ngong hills. The altitude ranges from 1580 to 2460 metres above sea level. The hills are the catchment areas for Athi River, which is fed by Mbagathi and Kiserian tributaries.

The Central Broken Ground is an area stretching 20-70 kilometres wide from the North Eastern boarder across the county to the southwest where altitude ranges from 1220 to 2073 metres above sea level.

Machakos County

The County has unique physical and topographical features. These include hills rising between 1800 – 2100m above sea level and Yatta plateau, which is elevated to about 1700m above sea level and slopes to the South East. There are isolated hills in the North West. In the plains, the soils are well-drained, shallow, dark and red clay soils. In addition, the vegetation across the entire County varies according to the altitude. The plains receive less rainfall and are characterized by open grassland with scattered trees as compared to high altitude areas, which receive high rainfall and have dense vegetation.

Study area

The proposed project passes through Athi Kapiti plains as depicted in the map below



Figure 6: The proposed project passing through the Kapiti plains

4.3.3 Geology and soils

The area consists of three geological regions: quaternary volcanic, Pleistocene and basement rock soils. Alluvia soils are also found in some areas. Quaternary Volcanic soil is found in the Rift Valley. Basement System Rocks which comprise various gneisses, cists, quartzite and crystalline limestone, are found mainly along the river valleys and some parts of the plains.

The project area is predominantly covered by black cotton soil which is underlain by volcanic rocks, mainly agglomerates, tuffs and phonolites. Figure 7 below depicts the soils in the project area



Figure 7: Soils in the project area

4.3.4 Hydrology

The major sources of water in the project area for domestic and livestock use are sub surface sources such as water pans, dams and shallow wells. The amount of surface water varies from area to area. There were no rivers observed in the project area, however a marsh was observed during site visit being overflown by the proposed project as per Figure 8 below

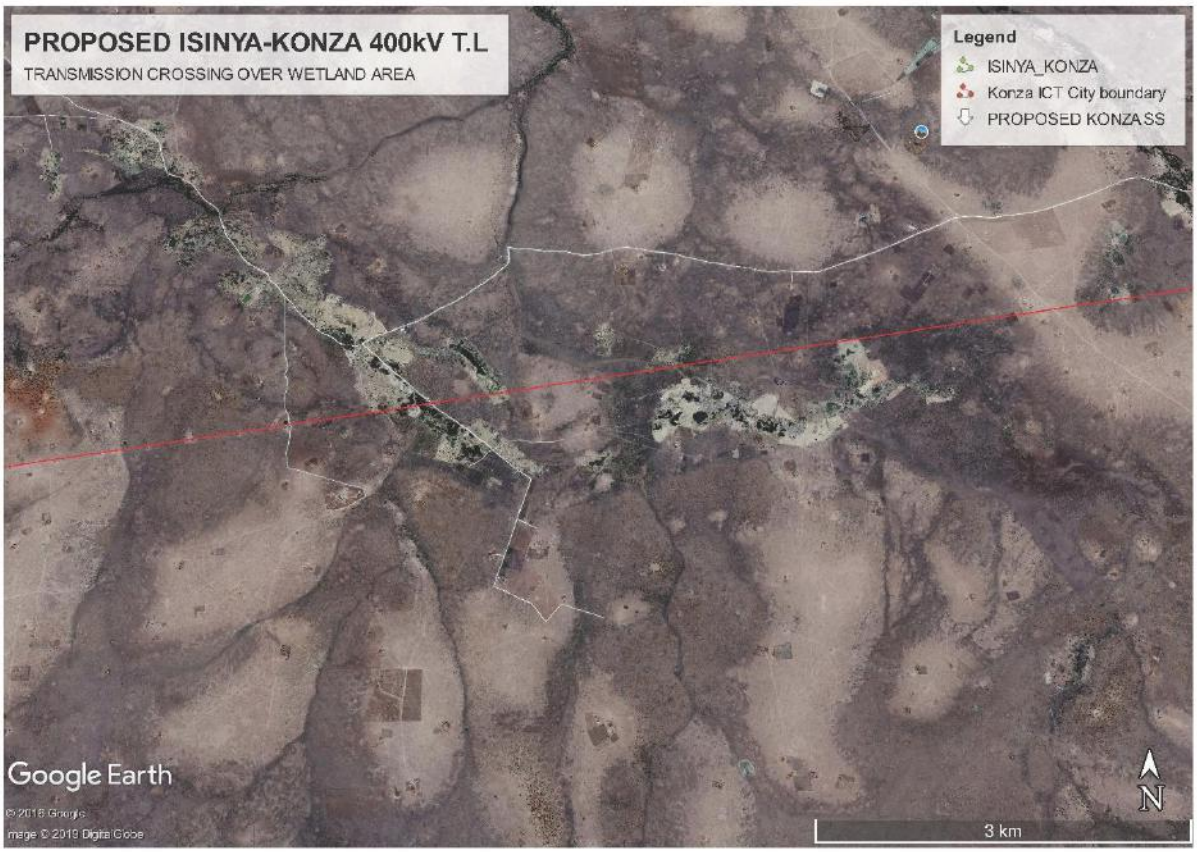


Figure 8: Marshy area overflown by the proposed Transmission Line

4.3.5 Flora

Generally, vegetation in the area is determined by altitude, soil type and rainfall. In many instances it has been modified by animal and human activity. Grazing, browsing, charcoal burning, extraction of fuel wood and cultivation are the major causes of vegetation reduction. The vegetation in the study area is sparsely distributed, this area being ASAL; the most occurring vegetation are grasslands, species of acacia trees and short shrubs. But in the areas which has the high water tables the taller species of acacia tree grows a considerable height, the picture bellow shows different types of vegetation found around the corridor and areas surrounding the TL





Plate 2: Acacia sp. occurring along the TL.



Plate 3: open grassland and acacia trees occurring along TL



Plate 4: open grassland with few stunted acacia species and ostrich



Plate 5: stunted Acaccia tortalis along the TL

4.3.6 Fauna

The project area lies within the Athi-Kaputei ecosystem according to Government of Kenya (GoK), report on wildlife migratory corridors and dispersal areas, 2017. The area supports a large wildlife population (more than 20 species, including the migratory wildebeest and zebras). The semi-arid plains to the south of the Nairobi National Park are home to the Kaputiei Maasai

community, which depends for its livelihood on livestock keeping. In also hosting a rich wildlife population, these plains are critical to the health of the Nairobi National Park, in that 70-80 % of the park's larger mammals roam outside its boundaries at one time or another (Ogutu *et al*., 2013).

The study area is a migratory/ dispersal area for wildlife. The core area for wildebeest was around Olooloitikoishi, Kaputiei North, the Machakos ranches, and the Nairobi National Park. The pattern was similar for zebra, except for in the park, which they utilize as a dispersal area. Giraffes were widely dispersed, with core areas around Olooloitikoishi and towards the south. Figure 9 below describes the migratory routes/corridors and threats in the Athi-Kaputei Ecosystem while Table 4 describes the routes.

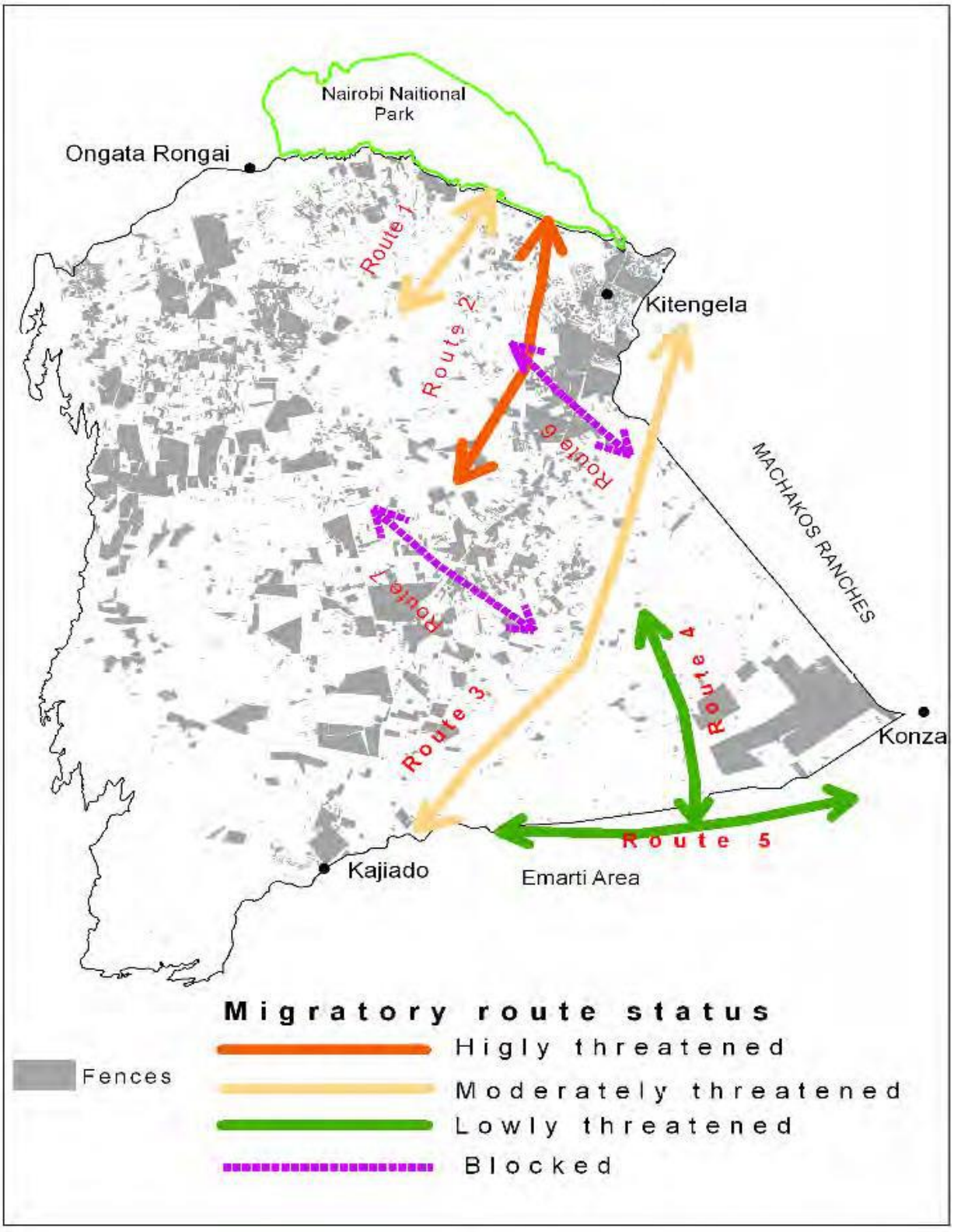


Figure 9: Migratory routes/corridors and threats in the Athi-Kaputei Ecosystem. This map should be read together with Table 4 describing the routes

Table 5: Connections and linkages and conservation threats in the Athi-Kaputiei Ecosystem.

Route	Threat	Description	State
1		Runs to and from Nairobi NP through upper eastern part of sheep and goat open land, and towards Olooloitikoishi-Kipeto open lands	Privately owned but critical passage to the park. Also imminent blockade by the proposed Mlolongo - Mbagathi bypass.
2		Exits the park at Sheep and Goat open land and crosses Kitengela and Olooloitikishi Riversto Enkasiti and Kisaju	The sheep and goat open land is a critical link to Nairobi National Park
3		Runs from the upper Machakos ranches to east of Kitengela town, and crosses Ilasit and Olturoto in the south, and then to wildebeest calving zone in Enkirigirri (Kaputiei North).	Housing developments (shopping Centres, residential estates) along the Kitengela-Namanga highway
4 &5		4 - Runs to and from Ilasit in the east of Olturoto and crosses Olturoto River to Emarti in Kaputiei Central. 5 - Cross Emarti and connect calving zone in Enkirigirri to Machakos ranches	Land subdivisions between Ilasit and Olturoto, and gypsum mining at Ilopolasat and Enkirigirri
6&7		2nd triangle to ensure 1st and Connects the wildebeest and zebra movements to Nairobi NP	Blocked

Moderate High Low Blocked

During the filed visit, it was noticed that there were a lot of both wild and domestic animals occurring in this area, roaming freely along the TL. Some of the wild animals observed were the antelope species, ostrich, zebras, wild beasts and a lot of bird species. Below is some of the animals found along the TL.



Plate 6: A pack of Zebra grazing along the TL



Plate 7: Wild beast grazing around the project area

4.4 SOCIO-ECONOMIC BASELINE

4.4.1 History and Culture

Kajiado County

Kajiado County was formed after the successful implementation of Kenya's Constitutional Referendum of 2010 which yielded the 47 counties in the Country. Kajiado was initially occupied by the Maasais but people from other Kenyan tribes as well as foreigners have since moved in. The Maasai are nomadic cattle herders, although some members of this community practice subsistence agriculture. Maasais consider cattle a sacred gift from their god Enkai. The animals are a sign of wealth in the community and are often used in payment of dowry. The Maasai are renowned for their colourful dressing that consists of red shuka (light blankets), wrapped around the body and multi-coloured beaded jewellery worn around the necks and arms. The Maasai men are traditionally polygamous, while women are allowed to have intimate relationships with their husbands' age-mates so as to bring forth warriors.

Machakos County

Machakos was established in 1887, ten years before Nairobi. Machakos was the first administrative centre for the British colony, but they moved the capital of Kenya to Nairobi in 1899 since Machakos by-passed the Uganda Railway that was under construction. The county is predominantly dominated by the Kamba Community who belong to the Bantu group.

As the fifth largest tribe, Kambas make up about 11 percent of Kenya's total population. They speak the Kamba (or Kikamba) language. Kamba people have special skills in woodcarving and basketry. In gift shops, open-air markets and art galleries in the major cities and towns of Kenya, you are bound to find beautiful handcrafts - woodcarvings, sisal baskets and well decorated artifacts made by the Kambas. They are also involved in other activities such as hunting, farming and pastoralism.

4.4.2 Demography

Kajiado County

The county has a population growth rate of 5.5 percent; total population was estimated at 807,070 with 401,785 being females and 405,245 males as at the statistics of 2012. The population is projected to grow to 1 million by the year 2017. During the site visit, it was noted that the area is sparsely populated. This is attributed to the fact that the area is underdeveloped and semi-arid in nature.

Apart from Maasais, other residents of Kajiado County include Kikuyu, Kalenjin, Ameru, Kamba, Luhyia and Luo among other tribes. Other people of foreign origin can also be found in Kajiado. Some have intermarried with the Maasais, others settled primarily to do business while some are employment by government and non-governmental organisations such as AMREF and ActionAid.

Machakos County

The population density and distribution in the County is driven by the economic activity carried out in the specific sub county. As at 2009 the County had a population density of 177 per Km^2, it was projected at 188 per Km^2 as at 2012, 200 per Km^2 as at 2015 and 212 per Km^2 as at 2017.

4.4.3 Education

Kajiado County

A total of 28% of Kajiado County residents have a secondary level of education or above. Kajiado North constituency has the highest share of residents with a secondary level of education or above at 49%. A total of 42% of Kajiado County residents have a primary level of education only. Kajiado South constituency has the highest share of residents with a primary level of education only at 47%. This is 9 percentage points above Kajiado West constituency, which has the lowest share of residents with a primary level of education only. Some 31% of Kajiado County residents have no formal education. Kajiado Central constituency has the highest share of residents with no formal education at 48%. Umma University, the first Islamic institution of higher education in Kenya, offering Certificate, Diploma and Degree programmes is located right opposite Isinya Substation.

EDUCATION

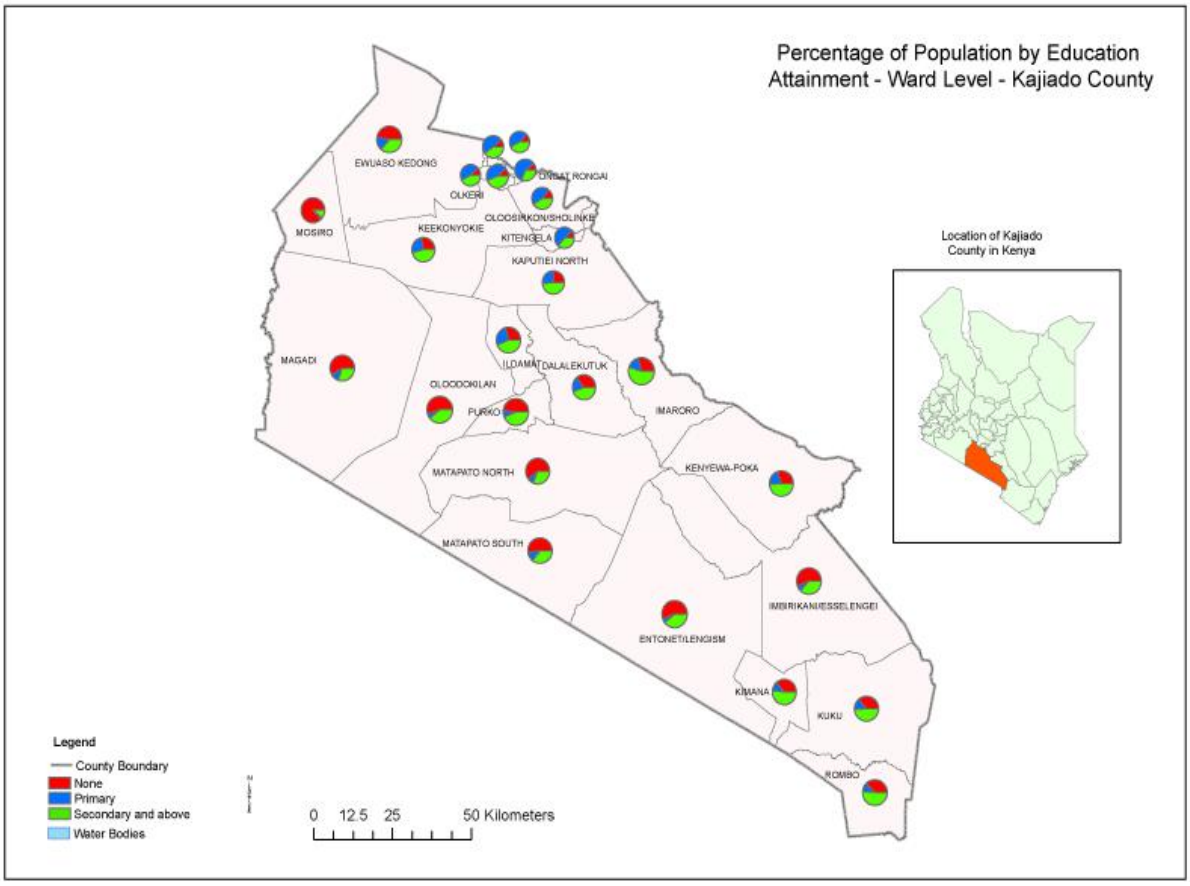


Image Source: Society for International Development

Machakos County

The County has 1,736 Early Childhood Development (ECD) centres, 688 primary schools and 190 secondary schools. The County has one medical training institution (MTC) located in Machakos town and two private universities Daystar University and Scott Christian University which are situated in Mavoko and Machakos Town constituencies respectively. Other universities such as Nairobi University, Kenyatta University, Nazarene University St. Pauls University and Jomo Kenyatta University of Agriculture and Technology have also opened various campuses in the County. Most of the campuses are situated in Machakos town. The institutions have created opportunities for the youth to acquire skills and knowledge.

4.4.4 Economy/Land use

Kajiado County

The main Economic Activities include pastoralism, livestock herding, tourism and agriculture. Livestock products include poultry, dairy, beef, hides and skins. Agriculture is practiced through irrigation and greenhouses owing to the arid nature of the county with horticulture

being the major practice. Kajiado has Forestry about 6,866.88 ha of forest cover. Conservation efforts to improve our forest cover being a serious matter in the hearts of the people of Kajiado. Tree farming as an economic activity is being encouraged.

The County is blessed with natural resources such as wildlife, savannah grasslands, woodlands and forests. Tourism contributes immensely to the county's economy. The county is famous for the Amboseli National Park.

Economic growths and development is majorly depending on the main strengths and future investments in this sectors of agriculture, horticulture, food crop farming, livestock production, dairy, beef production, hides and skins, poultry farming and other commercial exploits.

Machakos County

Agriculture is a main source of livelihood. From available statistics, the main cash crops are coffee, French Beans, pineapples and Sorghum which are mainly grown in Kangundo Matungulu, Kathiani, Yatta and Mwala. The County, through the department responsible for agriculture seeks to increase the crops grown within the County as well as increase the productivity of the arable land. Other major economic activities in the county are: trade, livestock keeping and agroforestry.

During the ESIA site visit, it was noticed that the main land use in the area is agro-pastoralism since the climatic conditions of the area is semi-arid. Thus the users of the project site use it mainly for grazing animals and planting crops especially maize and beans.

4.4.5 Social Infrastructure

4.4.5.1 Water and Sanitation

Kajiado County

Everyone has the right to water. According to SPHERE handbook for minimum standards for WASH, the average water use for drinking, cooking and personal hygiene in any household should be at least 15 liters per person per day. The maximum distance from any household to the nearest water point should be 500 meters. It also gives the maximum queuing time at a water source which should be no more than 15 minutes and it should not take more than three minutes to fill a 20-litre container. Kajiado County which is classified as semi-arid area lacks adequate water supply systems. This can be derived from the fact that Kajiado town being the county headquarter with a projected population of 16,003 in 2013 (KNBS, 2010) has

no functional municipal water supply system. There is no permanent river near the town and the town has a formation with poor aquifer such that even bore holes have low water yields.

In Kajiado County, 66% of residents use improved sources of water, with the rest relying on unimproved sources. An improved drinking-water source is defined as one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with faecal matter. Use of improved sources varies by gender with 68% of male headed households and 63% in female headed households using it. Improved sources of water comprise protected spring, protected well, borehole, piped into dwelling, piped and rain water collection while unimproved sources include ponds, dams, lakes, streams/rivers, unprotected springs, unprotected wells, water vendors and others. Kajiado North constituency has the highest share of residents using improved sources of water at 77%. That is 25 percentage points above Kajiado West constituency, which has the lowest share using improved sources of water.

Machakos County

Water resources in the County are under pressure from agricultural chemicals and urban and industrial wastes, as well as from use for hydroelectric power. The County has two permanent rivers namely Athi and Tana. There are also several dams that serve as water resources and springs which are found in the hilly areas. Underground water sources supplement surface water sources. In Machakos County, 37% of residents use improved sources of water, with the rest relying on unimproved sources. Use of improved sources is mostly common in male headed households at 39% as compared with female
headed households at 33%.

4.4.5.2 Energy

Kajiado County

The type of fuel used for cooking has implications for development. Lack of access to clean sources of energy is a major impediment to development through health related complications such as increased respiratory infections and air pollution. The type of cooking fuel used by households is related to the socio-economic status of households/individuals. High level energy sources are cleaner but cost more and are used by households with higher levels of income compared with simpler sources of fuel, mainly firewood, which are mainly

used by households with a lower socio-economic profile. The use of high level energy sources in Kajiado is 15.0% which is significantly above the national average of 6.6 percent.

Machakos County

Only 3% of residents in Machakos County use liquefied petroleum gas (LPG), and 11% use paraffin. 69% use firewood and 16% use charcoal. Firewood is the most common cooking fuel by either gender with 64% of male headed households and 76% in female headed households.

4.4.5.3 Railways line

Towards the Konza area, the area is traversed by the Standard Gauge Railway (SGR) and the old railway line. The old railway line serves as the boundary between Machakos and Kajiado county. The proposed project crossed over these infrastructure as depicted in Figure 10 below.



Figure 10: Proposed line crossing over the railway lines

5 PUBLIC AND STAKEHOLDER CONSULTATION

EMCA, Cap 387 calls for effective public and stakeholder participation in the ESIA process. This chapter describes the public and Stakeholder Engagement that was carried out for the proposed Transmission Line and Substation.

5.1 PUBLIC CONSULTATION FRAMEWORK ADOPTED

Stakeholder engagement is a key part of this ESIA process. One of the key aims of the stakeholder engagement exercise is to ensure all relevant stakeholders are provided with the opportunity to express their concerns and opinions, which are incorporated as early as possible in the project development: at planning, implementation and operation phase and in the effect minimize the potential unexpected opposition of the proposed project and potential adverse effects to the environment. It is also very beneficial in incorporating the views of the public into the design process for the adoption of the best workable models and systems. The stakeholder engagement exercise also provides NEMA with the necessary information to assist it in making an informed decision about the Project.

5.2 STANDARDS AND GUIDANCE ON STAKEHOLDER ENGAGEMENT

Under the laws of Kenya several statutes require the participation of stakeholders in projects especially where the projects are likely to affect stakeholder livelihoods directly or indirectly. Pertinent legislation includes:

- The Constitution of Kenya of 2010
- The Environmental Management and Coordination Act (EMCA), Cap 387
- The Environmental (Impact Assessment and Audit) Regulations of 2003
- The Occupational Safety and Health Act of 2007

5.3 PUBLIC/STAKEHOLDER ENGAGEMENT OBJECTIVE

The main objective of the exercise was to inform stakeholders about the project and its likely effects, which in turn would incorporate their inputs, views and concerns, and thus enable their views to be take into account during the decision-making. The specific objectives of the consultations were geared towards: -

- Increasing public confidence in the ESIA process
- Improving transparency and accountability of decision making
- Facilitating consideration of alternatives, mitigation measures and trade-offs (if any)
- Ensuring that important impacts are not overlooked and benefits are maximized

- Reducing chances of conflict through early identification of contentious issues
- Providing an opportunity for stakeholders to influence the Project design and operational plan in a positive manner
- Obtaining local and traditional knowledge that may be useful to decision making including Indigenous Knowledge Systems (IKS)

5.4 STAKEHOLDER ENGAGEMENT EXERCISE

The stakeholder engagement exercise was undertaken in the two steps:

1) Stakeholder identification and analysis to establish the level and mode of engagement per stakeholder group.
2) Stakeholder engagement through the use of appropriate tools and methods.

5.4.1 Stakeholder identification and analysis

5.4.1.1 Stakeholder identification

The first step in the process of public participation process was stakeholder identification. The main aim was to determine all organizations and individuals who may be directly or indirectly (positively or negatively) affected by the proposed project. In the end, the stakeholders were grouped into two main categories depending on their various needs, interest, and potential influence to the project. These included:

- **Primary Stakeholders**-The directly affected by the project. These largely included the residents in four locations where the Transmission line traverses.
- **Secondary Stakeholders**-The indirectly affected by the project but influence development through project implementation. These included: -
    - Relevant National Government Officials in Machakos and Kajiado counties
    - Relevant County government officials in Machakos and Kajiado Counties
    - Any other Interested Party

5.4.1.2 Tools and Methods of Engagement

A structured questionnaire was used to collect views and opinions from key stakeholders and the general public on the project. It contained sections where the interviewee filled her/his opinion on the environmental and socioeconomic aspects on which the project may have an impact on and the measures they may want to see in place to prevent, reduce, avoid or manage the negative impacts.

Key stakeholders were given a brief of the project, the objectives, before they gave their opinions. Public baraza meetings were conducted in four locations (Konza, Ilmamen, Ilpolosat, Isinya) where the line traverses from Tuesday 4th to Friday 7th December, 2018. In all the meetings, members of the public were given a brief of the project, before being issued with questionnaires to give their opinions.

5.5 OUTCOME OF THE CONSULTATION EXERCISE

5.5.1 Consultations with key stakeholders

5.5.1.1 List of key stakeholders consulted

A list of all key stakeholders consulted during the ESIA process is provided in ***Table 6*** below

Table 6:List of key stakeholders consulted

S/N	Institution	Name	Designation	Contacts
1	Ministry of Interior and Coordination of National Government		County Commissioner, Kajiado County	
		Galgalo A.H	County Commissioner, Machakos County	0722900438
		Stanley Too	Deputy County Commissioner, Isinya, Kajiado County	0722607414
		Robert Kiti	Assistant County Commissioner, Isinya Kajiado County	0726972842
		Elijah Omuyo	Assistant County Commissioner, Machakos County County	0710407015
		Pius Mwalavu	Chief, Kimutwa Location, Machakos County	0726534848
		Jonathan Kamia	Sub chief, Konza sub-location Kimutwa Location, Machakos County	0722282510
		Raphael Kisanei	Chief, Ilmamen Location, Kajiado County	0721286855

S/N	Institution	Name	Designation	Contacts
		Daniel Sekenoi	Chief, Ilpolosat Location, Kajiado County	0722694909
		Ezekiel Sanirei	Sub chief, osewan sublocation ilpolosat Location, Kajiado County	0704726782
		Francis Mpaashe	Chief, Isinya Location, Kajiado County	0725935546
		Maera Ntuser	Sub chief, Isinya Location, Kajiado County	0721696686
2	Kajiado County Government	County Secretary	County Secretary, Kajiado County	
		Victoria Ndaryi	Sub County agricultural office, Kajiado County	0735946596
		Erick J.O Ahenda	County Range development officer, Kajiado County	0722401554
3	Machakos County Government			
		Newton Muinde	Chief Officer, Department of Energy and Natural Resources, Machakos County	0703779605
		Fransisca K Mwanzia	County Director of Agriculture, Machakos County	0722665466
		Joseph Murungi	Department of Agriculture, Machakos County	0723926716
		Thomas Kavivya	Chief Officer, Housing and Urban Development	0714013337
4	Kenya Wildlife Service (KWS)	Mutemi winyaini	Warden, Kajiado County	P.O Box 74, Kajiado
		A.W Kisio	Deputy Warden, Machakos county	0735548023

S/N	Institution	Name	Designation	Contacts
5	National Environment Management Authority (NEMA)	County Director of Environment, Kajiado County		0734423574
		County Director of Environment, Machakos County		
6	Kenya Forest Service (KFS)	Joseph Macharia	Deputy Ecosystem Conservator, Kajiado County	0710443993
7	National Lands Commission	Patrick Waweru	County Coordinator, NLC, Machakos County	P.O Box 1996-90100 Machakos
8	LISA Ranch	Michael Mbithi	Lisa Ranch and game sanctuary	0724220244
9	ILRI- Kapiti plains ranch	Geoffrey	Security officer, ILRI Ranch	0701081483
10	Kenya Civil Aviation Authority (KCAA)	Jonah K. Kinyua	KCAA	+254 20 6827470

5.5.2 Public baraza meetings

Public baraza meetings were held as follows:

Location	Dates and venues of first meeting	Dates and venues of Second meetings
Ilmanen Location, Kajiado County	Tuesday 4th December, 2018 at the chief's office grounds	Wednesday, 6th November, 2019 at the chief's office grounds
Konza Location, Machakos County	Wednesday 5th December, 2018 at the chief's office grounds	Tuesday, 5th November, 2019 at the chief's office grounds

Ilpolosat Location, Kajiado County	Thursday 6th December, 2018 at Ilpolosat dispensary grounds	Friday 8th November, 2019 at Ilpolosat
Isinya Location, Kajiado County	Friday 7th December, 2018 at the chief's office grounds	Friday 8th November, 2019 at Kikayaya Primary school

Photos of public consultation meetings held are shown below



Plate 8: Public Consultation meeting in Ilmanen Location, Kajiado County



Plate 9: Public Consultation Meeting in Isinya Location, Kajiado County



Plate 10: Public Consultation meeting in Konza Location, Machakos County

A total of 165 members of the public attended the meetings. 82% of these were men, while 18% were female as represented in Figure 11. Figure 12 shows the comparisons in gender compositions in all public barazas. A comprehensive list of the public who participated in the barazas and the respective minutes are attached at appendix 3 and 4 of this report respectively:

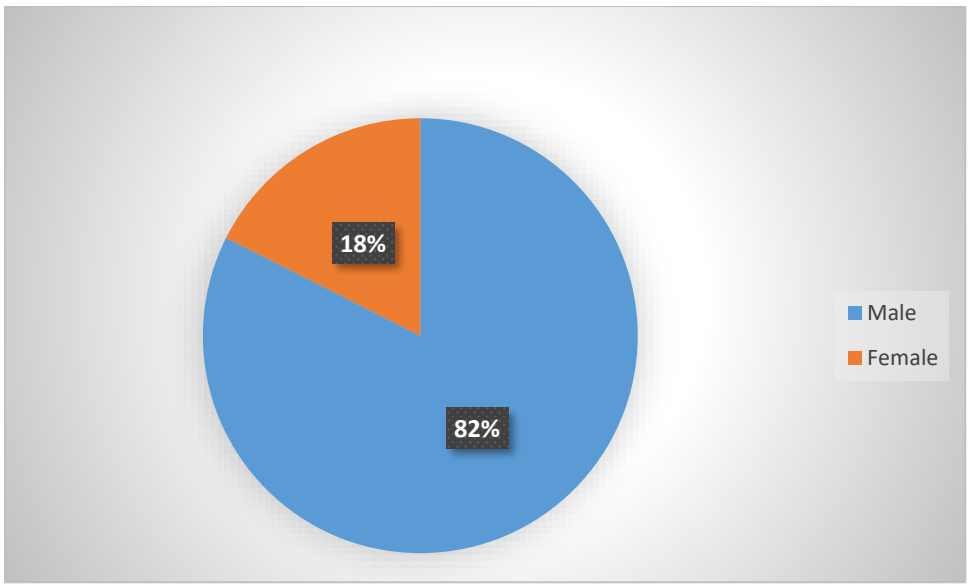


Figure 11:Percentage of men and women consulted

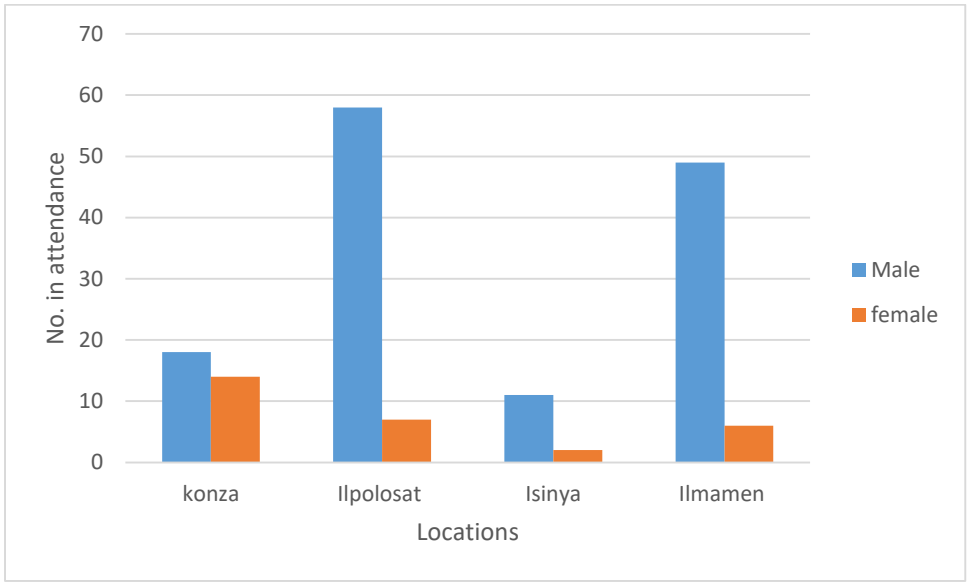


Figure 12:Comparison in gender compositions in all public barazas held

5.5.3 Summary of issues raised from the consultation exercise

Positive issues

1. Increased Power quality leading to low blackouts in the area
2. Employment opportunities to the communities around the project area
3. Increase in land values as a result of development in the area
4. Increased economic activities in target areas
5. Improved road infrastructure thus opening up more development in the area

Negative issues

1. Wayleave issues/conflicts among families making them spend money in courts
2. Diminishing of arable land
3. Loss of vegetation due to clearance for wayleave corridor.
4. Human- wildlife conflict expected in the area
5. Limited loss of use to owners of land as a result of the transmission line
6. Energy losses from transmission line causing EMF
7. Increase in social vices in the community as a result of new people coming to work in the area
8. Noise and air pollution (through dust) during the construction period
9. Displacement of people
10. Loss of aesthetic value/ beauty of land under the corridor
11. Soil erosion as a result of the project

Proposed mitigation measures to the negative issues identified

1. More public consultation and awareness throughout the project cycle
2. Liaise with county governments for support in the project
3. Have tree planting programmes to cover for lost vegetation
4. Compensation to land owners as a result of limited loss of use
5. Construction works be carried out during the day only.

5.5.4 **Project opinions**

All key stakeholders consulted supported the project. Out of the 87 questionnaires administered to the members of the public in barazas only four rejected the proposed project. The figure below depicts project opinions from the stakeholder engagement process.

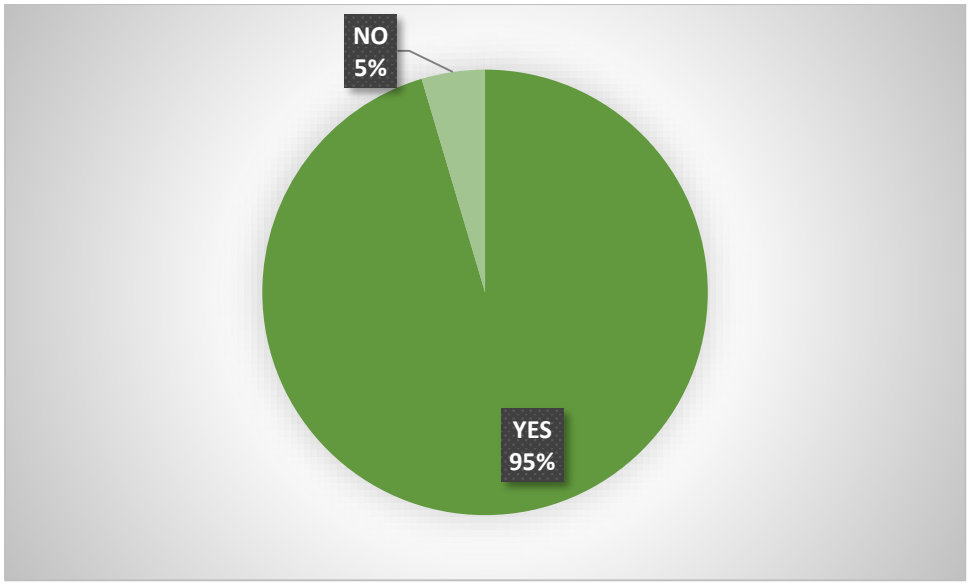


Figure 13: Project Opinions from stakeholder engagement process

5.6 HOW THE RESULTS OF THE ENGAGEMENT HAVE BEEN INCORPORATED INTO THE ESIA

In line with the objectives of the public participation and consultation exercise, the results of the engagement have been incorporated into the ESIA in the following ways:

- The socio-economic section of the baseline of the ESIA has been informed by this consultation and engagement process;
- Impact identification has been informed by the outcomes of the consultation and engagement process;
- Development of mitigation measures has been informed by the consultation exercise
- Analysis of alternatives has been informed by the consultation exercise
- The identification and mapping of stakeholders has led to the development of a comprehensive database of stakeholders to be consulted in the future;

6 IMPACT ASSESSMENT AND MITIGATION MEASURES

6.1 INTRODUCTION

The anticipated potential impacts discussed in this chapter are from construction, operation and decommissioning phases. A number of positive and negative anticipated impacts to the environmental and social wellbeing have been identified thus far. Among the broad areas of impacts include the following positive and negative impacts:

6.2 CONSTRUCTION PHASE

6.2.1 Positive Impacts

6.2.1.1 Employment Opportunities

Locals will seek employment at construction sites to provide their services e.g. casual work. In addition, there will be opening of businesses to supply food and other goods to construction workers.

6.2.1.2 Enterprise development

Increased local trade and business on local products such as agricultural and dairy products to meet the daily demands of construction workers

6.2.2 Negative Impacts

6.2.2.1 Environmental Impacts

6.2.2.1.1 ***Noise and Vibration***

There will be noise and vibrations generated during the construction phase but it will be no different from that on any other typical construction site. The noise impact during construction is expected to be short-term. Major sources of noises and vibration will come from: drilling during construction equipment, blasting to get aggregate; crushing to obtain aggregates and earthmoving machinery, as well as noise from the work force itself.

The major receptors are expected to be the construction workers as well as any immediate neighbouring premises. Excessive vibration forces from blasting of hard granite rocks and the use of vibrators may impair functions of the chest, abdominal organs and musculoskeletal system as well as contribute to fatigue and decrease in concentration. Excessive production of high noise by the blasting of hard granite rocks, rotating turbines, vehicular traffic and machinery operations May result in poor quality of life and potential loss (or reduction) in hearing.

Mitigations Measures:

- The contractor will adhere to the EMCA Noise and Excessive Vibration Pollution Control Regulation, 2009 and will be required to implement noise control measures amongst exposed work force and community. This will include provision of hearing

protective devices such as ear plugs and ear muffs; avoiding construction or demolition activities during the night, education and awareness programs and creation of a buffer to propagate against noise pollution among other noise control measures.

- The contractor should only blast rocks where it is very necessary. Blasting will require approvals from Mines and Geology Department
- Ensure that the works are distant from the settlement areas, and vibration is not expected to have impacts beyond its site boundaries;
- In order to meet noise level requirements, the works will be equipped with standard noise attenuation features. Machines that exceed acceptable noise limits will be equipped with silencers or lagging materials or specially designed acoustic

6.2.2.1.2 ***Air Quality***

The following emissions will be expected to result from construction activities. This would in turn lead to compromise of air quality in the project area.

- Dust from excavations and earth moving vehicles as well as materials delivery;
- Particulate matter from dry materials, more specifically sand, cement, gravel, marram, etc.,
- Emissions such as smoke, hydrocarbons and nitrogenous gases among others from machinery exhausts

Mitigation Measures

- Personal protective equipment (PPE) such as dust masks must be worn in the immediate vicinity of the operations
- The stockpiles of earth generated during construction works should be suppressed by spraying water or water based mixtures. Spraying should also be carried out on unpaved road accesses regularly and at handling sites for cement;
- All machinery and equipment should be maintained in good working order to ensure minimum emissions including carbon monoxide, oxides of Nitrogen and Sulphur, as well as suspended particulate matter;
- Drivers of construction vehicles and delivery trucks should be cautioned to drive slowly near the site to avoid creating dusty conditions;
- Construction trucks removing soils from the site, delivering sand and cement to the site should be covered to minimize dust blowing into the surrounding neighborhood;
- No burning of any materials whatsoever should be allowed at the site; and

- Drivers of construction vehicles and delivery trucks must be supervised so that they do not leave vehicles idling and limit their speeds so that dust levels are lowered.

6.2.2.1.3 *Solid and Liquid waste generation*

The anticipated solid waste during construction period will arise from: soil during excavation work, deleterious material from aggregate screening; maintenance and repair of machinery; workers domestic waste; as well as wooden planks. Therefore, the most appropriate options in waste management are: identification of the waste types; segregation into the various categories; and the establishment of suitable mechanisms for collection, storage, transfer, and final disposal.

Solid waste mitigation

- Construction solid waste generated by materials which are unsuitable for use should be disposed by NEMA licensed waste handlers.
- Providing waste collection bins at designated points on site for purposes of waste segregation.
- Ensuring that, all remnants of loose gravel and concrete are effectively collected from the tower bases and re-used or disposed of in an environmentally friendly manner. Place in strategic places signs against littering and dumping of wastes;
- Use of building materials that have minimal or no packaging to avoid the generation of excessive packaging waste;
- The excavated soil should be used for backfilling the towers base and the concrete, asphalt and other waste on the site should be handled by the NEMA licensed waste handlers.

Liquid Waste Mitigation:

There will be minimal water demand and wastage during construction however the following will be put in place:

- Waste water from concrete batching will be reused;
- Cement trucks will be washed in designated car wash areas away from the construction site;
- Machinery will be maintained and repaired in designated garages away from the construction site;
- All machinery will be fueled at designated fueling stations

6.2.2.1.4 *Risk of leaks and spills*

Petroleum hydrocarbons present both an environmental and fire risk. The storage of petroleum hydrocarbons on site presents a hazard source and the release of hydrocarbons into the environment could result in significant impacts on a variety of receptors. The pathway for pollution is soil or water, and the primary receptors include the sub-soil and groundwater. Other receptors include air (from fuel vapours) and people (through dermal contact, inhalation or ingestion). It is however worth noting that the risks of a major oil spillages occurring are minimal.

***Mitigation Measures**:*

- Install oil trapping equipment in areas where there is a likelihood of oil spillage;
- Regular maintenance of site equipment and machinery should be carried out to ensure any leakages are detected and controlled. The motor vehicles and heavy equipment should be serviced according to manufacturer's requirements to limit the exhaust emissions. Install oil trapping equipment in areas where there is a likelihood of oil spillage;
- Collect the used oils and re-use, re-sell, or dispose of appropriately using expertise from licensed waste handlers;
- consider the possibility of fitting catalytic converters especially for the heavy equipment to convert harmful substance in the exhaust fumes to less harmful substances;
- Safety procedures for fuel storage and re-fueling should be well understood and implemented by site staff; and
- Oil residuals including waste oil, lubricants, used filters, should be carefully collected and stored for safe disposal, in order to prevent migration of contaminant hydrocarbons into storm water or groundwater resources.

6.2.2.1.5 *Terrestrial Habitat Alternation and Disruption*

Wildlife is one of natural resource that the country has been endowed with, its acts as the country's foreign earner. The construction (and maintenance) of transmission line rights-of-way, could also result in terrestrial habitat alteration and disruption. Specific impacts include loss of wildlife habitat (including for nesting), establishment of non-native plant species and visual/auditory disturbance due to the presence of machinery, construction workers, transmission towers, and associated equipment.

***Mitigation Measures**:*

- Sitting and designing the TL in way that it avoids sensitive ecosystem and distribution right-of-way, access roads, lines and towers to avoid critical use, through the use of existing utility and transport corridors, as well as existing roads and tracks for access roads, where possible;
- Installation of transmission lines above existing vegetation (vegetation in the area is mostly composed of shrubs) to avoid land clearing;
- Re-vegetation of disturbed areas with native plant species; and
- Removal of invasive plant species during routine vegetation maintenance.

6.2.2.1.6 *Aquatic Habitat Alteration*

The route of the proposed transmission line crosses small marshy area within the Kajiado County this may require the construction of corridors crossing wetland habitats that may disrupt these and wetlands as well as require the removal of riparian vegetation. In addition, sediment and erosion from construction activities and storm water runoff may increase turbidity of surface water.

***Mitigation Measures**:*

- Minimizing clearing and disruption to riparian vegetation; and
- Management of construction site activities those are around the riparian area.
- Establishment of buffer zones around the riparian area.

6.2.2.1.7 *Impact of power transmission lines on migratory fauna*

The proposed transmission line May impact bats, birds and terrestrial migratory species as their migration routes could be disrupted due to construction activities. From KWS there exist of many migratory corridors in this area. Hence, the following mitigation measure are recommended:

Mitigation Measures:

- Selection of right of way that avoids sensitive habitats; and
- Use of common corridors to minimize impacts on undisturbed areas

6.2.2.1.8 *Soil erosion and sedimentation*

Construction activities have the potential to loosen soils, particularly on slopes, which can then be washed down into the lower areas (streams and valleys) and soil quality degradation is also likely to occur during construction as a result of disposal of construction materials on the adjacent lands,

Mitigation Measures:

- Establishment of the buffer zones around the riverine areas, and
- Re-vegetation of exposed areas around the site should be carried out rapidly in order to mitigate erosion of soil through surface water runoff and wind erosion
- Construction of gabions in areas prone to soil erosion,

6.2.2.2 Occupational Health and Safety Impacts

6.2.2.2.1 *Use of machinery*

Potential impacts during construction include: exposure to physical hazards from the use of heavy equipment; trips and fall hazards; and exposure to dust and noise. The uncontrolled proximity to high vehicular traffic during transportation of construction materials and equipment may lead to injuries or fatalities due to traffic accidents. Other injuries or fatalities May result from workers operating equipment without adequate training or with a lack of personal protective equipment or extended exposure to outdoor weather resulting in heat-related lethargy.

Mitigation Measures*:*

- Ensure all equipment is inspected before use for appropriate safe guards and that the machine operators are trained on machine safety; and
- Ensure the working hours are controlled and that employees are not allowed to extend the working hours beyond an acceptable limit for purposes of gaining extra pay.

6.2.2.2.2 *Use of Jack Hammers*

The use of jack hammers for crushing rocks during the construction site may lead to whole body vibrations of the jack hammer operators which are likely causes of impaired functions of the chest, abdominal organs and the musculoskeletal system.

Mitigation Measure:

Avoid the use of jack hammers and employ other form of technology for crushing of rocks.

6.2.2.2.3 *Vehicular Accidents*

Due to the high vehicular traffic expected during the construction phase, it is likely that traffic accidents may become an important factor especially for children from neighbouring communities crossing the roads leading to the project site.

Mitigation Measures:

- usage of reflective jackets among the other PPEs to avoid accident
- Employ the traffic marshals to control the movement of vehicles.
- Ensure appropriate road safety signage is placed and drivers adhere to the requirements of such signage; and
- Erection of bumps where human and vehicular traffic have high interaction opportunities

6.2.2.2.4 *Manual Tasks*

During the construction phase, several manual tasks will be carried out by the project workers. Repetitive tasks have the effect of imparting ergonomic disorders especially when they are carried out over long periods of time.

Mitigation Measures:

- Provide adequate manual labor to suffice the tasks; and
- Eliminate repetitive task by semi-automation where possible

6.2.2.2.5 *Risk of Fires*

Uncontrolled burning of wastes during construction or operations may cause risk of fire, especially during the dry season especially as the surrounding area is characterized by bushes, trees and grass.

Mitigation Measures:

- Solid waste burning during construction be completely banned. Any waste be handled by a licensed waste handler.

6.2.2.3 Social Impacts

6.2.2.3.1 ***Increase in social vices including HIV/AIDS***

Today the world has 43 million people living with HIV and the number is rising in every region of the world. The impact has a devastating effect on individuals and families as well as whole communities and the economy at large. Infected People becomes dependent of other family members and a lot of resources is used to take care of infected person.

Also the influx of new people – like construction workers - can affect the number of new cases of HIV, because they often interfere with an otherwise stable situation and at the same time the newcomers themselves are at higher risk. During the construction phase of the project, there May be an increase in the interaction of persons of both genders. This interaction May at times result in sexual relations with potential subsequent increase in HIV/AIDS infection rates.

***Mitigation Measures**:*

The objective of the HIV/AIDS initiatives would be to create awareness; the following measures should be put into place;

- Periodic sensitization forums for employees on ethics, morals; general good behavior and the need for the project to co-exist with the neighbors
- Guidance and counselling on HIV/AIDS and other STDs to employees
- Provision of condoms
- Contractor to have a strong policy on sexual harassment and abuse of office guided by proponent's policy on the same

6.2.2.3.2 *Relocation of Project Affected Persons.*

Locating the transmission line by the proponent and has been done in a way such that it avoids extensive relocation of individuals. However, where it is unavoidable, implementation of the project will lead to displacement of persons, relocation of structures including houses and clearance/cutting down of trees and other vegetation. This necessitates compensation and resettlement of the affected persons and property.

Mitigation Measures

- A comprehensive RAP should be carried out to determine the losses.
- All the identified project displaced persons and project affected persons should be compensated

6.2.2.3.3 ***Impact on Access Roads***

Although it is anticipated that the existing accesses are adequate for the transportation of materials, the Contractor must maintain these roads during the construction period, in order to minimize the soil degradation.

Mitigation measures:

- Vehicles should use one access road if possible
- Movement of heavy construction traffic should be planned appropriately.

6.3 OPERATION PHASE

6.3.1 Positive Impacts

6.3.1.1 Increased power capacity

There will be adequate and stable supply of electricity to the upcoming Konza smart city. Konza will be a smart city, with an integrated urban information and communication technology (ICT) network that supports delivery of connected urban services and allows for

efficient management of those services on a large scale. Areas in Kajiado and Machakos will also benefit from the same.

6.3.1.2 Employment Opportunities

Maintenance and supervision of power line will require some workforce, particularly skilled labor in the maintenance of the Transmission Line.

6.3.2 Negative Impacts

6.3.2.1 Environmental Impacts

6.3.2.1.1 *Aesthetic Impacts*

Whether the aesthetic impact of the power line will be negative or positive largely depend on the viewer and his/her perception of the line. As much as others associate existence of power lines with economic development and thus not finding them objectionable, some would see them as disrupting scenic views and objectionable from aesthetic point of view. The proposed development however will have minimal effects on the landscape.

Mitigation Measure

- Meeting the co-inhabitance requirements imposed by natural landscape, objects, building and facilities in the neighborhood by accurate framing with limited impact on land.

6.3.2.1.2 *Perceived Electro-Magnetic impacts of the line*

It is perceived that Electric power lines emit electromagnetic fields whose strengths depend on the line voltage and its effect on the lateral distance to receptor. It is important to note that the strength of electromagnetic fields reduce drastically with distance. Apart from height consideration by KETRACO on the height of electric lines, studies have never shown any relation between human health and effect of EMF.

Mitigation Measure

- The vertical height of pylon structures considerably reduces the electromagnetic fields experienced at the ground level by humans and wildlife.
- The conductor cables do not interfere with communication infrastructure as they contain different frequencies.
- A 60m way leave corridor has also been provided for the transmission line where activities are controlled.

6.3.2.1.3 *Avian and Bat Collisions and Electrocutions*

The combination of the height of the transmission towers, distribution poles and electricity carried by transmission and distribution can pose potentially fatal risks to birds (including raptors) and bats through collision and electrocutions. Birds and bats may be electrocuted by

power lines in one of three ways: simultaneously touching an energized wire and a neutral wire; simultaneously touching two live wires; and simultaneously touching an energized wire and any other piece of equipment on a pole or tower that is bonded to earth through a ground wire (IFC, 2007). Avian collisions with power lines can occur in large numbers if located within daily flyways or migration corridors, or if groups are travelling at night or during low light conditions.

Mitigation Measures:

- Maintaining a 1.5-meter spacing between energized components and grounded hardware;
- Covering energized parts and hardware; and Installing visibility enhancement objects (marker balls)

6.3.2.1.4 *Aircraft Navigation Safety*

Power transmission lines, if located near an airport or known flight paths can impact air safety directly through collision or indirectly through radar interference.

Mitigation:

- Consultation with regulatory air traffic authorities (KCAA) prior to installation; and
- Adherence to air safety regulations;

6.3.2.1.5 *Impact on Flora and Fauna during ROW maintenance*

Regular maintenance of vegetation within the right-of-way must be carried out to avoid disruption to overhead power lines and towers. Regular maintenance May involve the use of mechanical methods (mowing machines) that May disrupt wildlife and their habitats.

Excessive vegetation maintenance May remove unnecessary amounts of vegetation resulting in the continual replacement of succession species and an increased likelihood of the establishment of invasive species.

Mitigation Measures:

- Scheduling maintenance activities to avoid breeding and nesting sessions;
- Avoiding clearing in riparian areas;
- Avoiding use of machinery in the vicinity of watercourses; and
- Observing manufacturer machinery and equipment guidelines, procedures with regard to noise as well as oil spill prevention and emergency response.

6.3.2.2 Occupation Health and Safety Impacts

6.3.2.2.1 *Risk of Fires*

During operations, high voltage power may also cause a fire risk in the event of electrical faults with equipment. Bat and bird collisions with power lines may result in power outages and fires. Also, if underlying growth is left unchecked, or slash from routine maintenance is left to accumulate within right of way boundaries, sufficient fuel can accumulate and as such promote bush fires.

Mitigation Measures

- Undertake routine clearance of invasive vegetation where applicable within the project areas.

6.4 DECOMMISSIONING PHASE

Transmission line facilities shall be decommissioned where the useful life of the line is reached. This will lead to demolition of the transmission line parts to enable restoration activities. In such a case, the Machakos and Kajiado County governments and NEMA offices will be notified before the start of the process. The demolition exercise shall involve:

- Removal of the conductor cables
- Demolition and removal of the transmission line tower structure
- Demolition, exaction and removal of the tower structure concrete foundation.

6.4.1 Positive Impacts

6.4.1.1 Employment opportunities

Similar to construction stage, employment will be offered to those willing to offer their services at the decommissioning phase. The procedure will be similar but in the reverse order as in the construction stage.

6.4.2 Negative Impacts

6.4.2.1 Solid Waste generation

Demolition of the project buildings and related infrastructure will result in large quantities of solid waste. The waste will contain the materials used in construction including concrete, metal, drywall, wood, glass, paints, adhesives, sealants and fasteners. Although demolition waste is generally considered as less harmful to the environment since they are composed of inert materials, there is growing evidence that large quantities of such waste may lead to release of certain hazardous chemicals into the environment. In addition, even the generally non-toxic chemicals such as chloride, sodium, sulphate and ammonia which may be released

as a result of leaching of demolition waste, are known to lead to degradation of groundwater quality.

Proposed mitigation measures:

- ***i.*** *All workers to be provided with the necessary PPEs*
- ***ii.*** *Segregation of waste before disposal by a NEMA licensed waste handler.*
- ***iii.*** *Preparation of a d*ecommissioning plan will to ensure smooth management of the decommissioning phase.

7 ANALYSIS OF ALTERNATIVES

An environmental assessment study could be done in order to identify and assess alternative development project. It is very important that development projects of such magnitude be assessed in order to identify project alternatives which should be based on less negative impacts and offer a better cost benefit. The “no project” is the most important alternative to be analysed because it helps the proponent to quantify the impacts from the project in alignment with those which would have taken place without the project.

7.1 THE NO- PROJECT OPTION

Baseline information defines the no-action alternative which is crucial in the appraisal of impacts since other alternatives are measured with reference to it. There will be no any significant negative effects on either bio-physical or the socio-culture, an assurance which is outstanding from the qualitative analysis and summary of the proposed site for the project. The Project is crucial to aid in improvement of environmental situations to avoid possible deterioration. The no-project option will limit the occurrence of harmful incidents arising from the project. The no –project option will however have several disadvantages: -

- Population growth will increase demand for electricity thus making consumers to continually suffer from shortage and unstable supply.
- Employment opportunities will be limited due to expansion of business activities that would have been spurred by availability of electric power.
- The failure of electric power will affect the functionality of institutions such as the Konza City, schools, Hospitals, Churches, Mosques etc. which rely on electricity.
- Information flow and Public education through electronic media e.g. Television will also be affected.
- The Government will be seen to have reneged to its promise of providing electric energy to more of its citizens through working and achieving vision 2030.
- There will be loss of Productivity and reduced ability to create wealth.

Generally, the long term positive impacts of the proposed project outweigh the negative effects which can be easily mitigated.

7.2 ALTERNATIVE PROJECT SITE

In choosing the sites for power lines, preference is given to electrical power requirements and existing land uses. The best possible locations for the power lines are the road reserves while sometimes open fields are used.

The proposed Transmission line largely avoids built up areas, thus minimising the need for resettlement. The transmission Line route in itself has been chosen to avoid settlements, social amenities, heritage and forest areas, thus minimising any adverse impacts. For the substation land, the chosen site is considered suitable if the proposed mitigation measures are implemented. In addition, alternative land would imply cost implications on the part of the proponent and financial loss in respect to the current development. Therefore, the option of seeking alternative land, whereas the anticipated impacts are manageable presents a high risk of financial failure. It is against this backdrop that giving an option to the proponent to identify alternative location to implement the project may be difficult since the identification of such lands is limited

7.3 ALTERNATIVE DESIGNS

The cost of building a high voltage electricity step down substation and Backup Centre and NSCC backup centre is substantial. Detailed research and development of the design and components form an important part of the process of the substation and Backup Centre construction. The current design for the proposed 400/220/66kV substation and Backup Centre and NSCC backup system at Malaa is regarded as the most cost effective whilst operationally sound for such a project.

7.4 ALTERNATIVE PROCESSES AND MATERIALS

Highly refined mineral insulating oils are used to cool transformers and provide electrical insulation between live components. Sulfur hexafluoride (SF6) may also be used as a gas insulator for electrical switching equipment and in cables, tubular transmission lines and transformers. Polychlorinated Biphenyls (PCB) can be used as a dielectric fluid to provide electrical insulation. SF6 is a greenhouse gas with a significantly higher Global Warming Potential (GWP) than carbon-dioxide. PCB is a highly toxic substance that is no longer commonly used for electrical insulation. For this project the proponent is advised to use mineral insulating oil for cooling and insulation and to minimize or completely stop the use of SF6 and PCB.

7.5 PROPOSED DEVELOPMENT JUSTIFICATION

After assessing and studying the proposed development by KETRACO for both positive and negative impacts and comparing it to possible alternatives as discussed above it has been found to be the most suitable development with all factors considered. There were no foreseeable adverse effects that would justify the non-execution of the project, thus the long term benefits of the project warrant its commission. These benefits include increased supply of electricity to the broader population, the resultant effects of this for domestic and commercial use of electricity and the consequential enhancement of wellbeing of Kenyan

8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

This section comprises the Environmental and Social Management Plan (ESMP) for the ESIA for this project as evidenced by the tables below. The tables summarize the organizational requirements and action plans to ensure that the necessary measures are taken by the responsible parties to avoid potentially adverse effects- and maximise potential benefits- of the Project with respect to Environmental, Health and Safety (EHS) and social aspects. Additively to ensure that the project operate in conformance with applicable laws and regulations within Kenya, as well as the policies of International Financial Organizations.

The specific ESMP items are based on the Baseline Conditions and the Impact Assessment described in previous sections of this ESIA, plus the results of discussions with the different stakeholders identified and consulted.

The primary objective of the mitigation measures outlined previously and this ESMP is to avoid negative impacts of the Project where possible, or otherwise to minimise the residual impacts to an acceptable level. The ESMP is applicable throughout the project life-cycle and will continue to evolve in scope and depth within the different stages of the project implementation that curtail:

- Construction Phase;
- Operation Phase; and
- Decommissioning Phase.

8.1 CONSTRUCTION PHASE ESMP

Table 7: Construction phase ESMP

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
ENVIRONMENTAL IMPACTS				
1. Minimization of Noise and Vibration				
Noise and vibration	**1.** Sensitize construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used.	KETRACO & Contractor	Entire construction period	0
	2. Sensitize construction drivers to avoid running of vehicle engines or hooting			0
	3. Regular servicing of engines and machine parts to reduce noise generation			100,000
	4. Ensure that all generators and heavy duty equipment are insulated or placed in enclosures (containers) to minimize ambient noise levels.			Design cost
	5. The noisy construction works will entirely be planned to be during day time when most of the neighbours will be at work.			0
	6. Provide necessary PPE to workers who may be exposed to high levels of noise and ensure proper and constant use			Ear plugs and ear muff @500 each
	7. All construction equipment and machinery to be used must be tested to verify if they are compliant with Kenya and the internationally acceptable standards of noise.			

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
2. **Air Quality**				
Dust emission	**a)** Ensure strict enforcement of on-site speed limit regulations	KETRACO & Contractor	Entire construction period	0
	b) Avoid excavation works in extremely dry weather			0
	c) Sprinkle water on graded access routes when necessary to reduce dust generation by construction and vehicles			10,000
	d) Stockpiles of earth should be enclosed / covered / watered during dry or windy conditions to reduce dust emissions			0
	e) PPE to be provided to employees and ensure proper and constant use			Dust coats and dust masks@3000 per employee
Exhaust emission	a) Sensitize truck drivers and machine operators to switch off engines when not in use			0
	b) Regular servicing of engines and machine parts to reduce exhaust emission generation			0
	c) Alternative non-fuel construction equipment shall be used where feasible			0
3. **Minimize solid and liquid waste generation and ensure efficient waste management during construction**				

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
Increased solid waste generation	**1.** Use of an integrated solid waste management system i.e. the 5 R's: 1. Reduce2. Reuse 3. Recycle 4. Recover 5. Residuals	KETRACO and Contractor	Entire construction period	0
	2. Accurate estimation of the dimensions and quantities of materials required.			0
	3. Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time			0
	4. Provide facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage			Design cost
	5. Use building materials that have minimal or no packaging to avoid the generation of excessive packaging waste			0
	6. Reuse packaging materials such as cartons, cement bags, empty metal and plastic containers to reduce waste at site			0
	7. Waste collection bins to be provided at designated points on site			10,000
	8. Dispose waste more responsibly by contracting a registered waste handler who will dispose the waste at designated sites or landfills only and in accordance with the existing laws.			10,000/month
4. **Minimize leaks and spills**				

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
Oil spills Hazards	**a.** Install oil trapping equipment in areas where there is a likelihood of oil spillage e.g. during maintenance of vehicles.	KETRACO and Contractor	Continuous	0
	b. In case of an oil spill, immediate clean up measures will be instituted			
	c. Storage and liquid impoundment areas for fuels, raw and in-process material solvents, wastes and finished products should be designed with secondary containment to prevent spills and the contamination of soil, ground and surface water		One-off	10,000
	d. Collected used oils should be re-used, disposed of appropriately by licensed waste handlers, or be sold for reuse to licensed firms		Continuous	5,000 per month
5. **Impact of the proposed project to Flora and Fauna**				
Terrestrial habitat alteration through Destruction of existing vegetation	a) Sitting and designing the TL in way that it avoids sensitive ecosystem and distribution right-of-way, access roads, lines and towers to avoid critical use, through the use of existing utility and transport corridors, as well as existing roads and tracks for access roads, where possible;	KETRACO and Contractor	Continuous	0
	b) Installation of transmission lines above existing vegetation (vegetation in the area is mostly composed of shrubs) to avoid land clearing;			0

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
	c) Re-vegetation of disturbed areas with native plant species; and	KETRACO and community	Entire project period	100,000
Aquatic Habitat Alteration	a) Minimizing clearing and disruption to riparian vegetation; and management of construction site activities those are around the riparian area.	KETRACO & Contractor	Entire construction period	0
	b) Establishment of buffer zones around the riparian area.			0
Impact on Migratory Fauna	a) Selection of right of way that avoids sensitive habitats; and Use of common corridors to minimize impacts on undisturbed areas	KETRACO & Contractor	Entire construction period	0
6. Reduce soil erosion				
Soil Erosion and Sedimentation	**a)** Establishment of the buffer zones around the riverine areas	KETRACO & Contractor	Entire construction period	0
	b) Re-vegetation of exposed areas around the site should be carried out rapidly in order to mitigate erosion of soil through surface water runoff and wind erosion			10,000
	c) Construction of gabions in areas prone to soil erosion			50,000
OCCUPATION HEALTH AND SAFETY IMPACTS				
7. Minimize occupational health and safety risks				

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
Use of Machinery	a) Ensure all equipment is inspected before use for appropriate safe guards and that the machine operators are trained on machine safety	KETRACO, DOHSS and Contractor	Entire construction period	100,000
	b) Ensure the working hours are controlled and that employees are not allowed to extend the working hours beyond an acceptable limit for purposes of gaining extra pay.			0
	c) Avoid the use of jack hammers and employ other form of technology for crushing of rocks			0
Vehicular accidents	**1.** usage of reflective jackets among the other PPEs to avoid accident	KETRACO and Contractor	Entire Construction Period	100,000
	2. Employ the traffic marshals to control the movement of vehicles.			50,000
	3. Ensure appropriate road safety signage is placed and drivers adhere to the requirements of such signage; and			10,000
	4. Erection of bumps where human and vehicular traffic have high interaction opportunities			30,000
Manual Tasks	**a)** Provide adequate manual labor to suffice the tasks; and	KETRACO and Contractor	Entire Construction Period	100,000
	b) Eliminate repetitive task by semi-automation where possible			200,000

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
Risk of fire	**a)** Solid waste burning during construction be completely banned. Any waste be handled by a licensed waste handler.	KETRACO and Contractor	Entire Construction Period	10,000 per month
SOCIAL IMPACTS				
8. Increase in social vices				
Increase in social vices including HIV/AIDS	**a.** Periodic sensitization forums for employees on ethics, morals; general good behavior and the need for the project to co-exist with the neighbors	Contractor	Entire construction period	0
	b. Guidance and counselling on HIV/AIDS and other STDs to employees	KETRACO and contractor		10,000
	c. Provision of condoms			10,000
	d. Contractor to have a strong policy on sexual harassment and abuse of office guided by proponent's policy on the same	Contractor	Quarter one	0
Relocation of Project Affected Persons	**a)** A comprehensive RAP should be carried out to determine all affected persons. All the identified project displaced persons and project affected persons should be compensated	KETRACO	Before construction of the project	500,000
Impact on access road	a) Vehicles should use one access road if possible	KETRACO and Contractor	Entire construction period	0
	b) Movement of heavy construction traffic should be planned appropriately.			10,000

8.2 OPERATION PHASE ESMP

Table 8: Operation Phase ESMP

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
ENVIRONMENTAL IMPACTS				
1. Aesthetic Impact	**8.** Meeting the co-inhabitance requirements imposed by natural landscape, objects, building and facilities in the neighborhood by accurate framing with limited impact on land.	KETRACO	Entire Operation Period	0
2. Perceived Impacts of EMF	**a)** Maintain the 60m wayleave corridor to avoid encroachment by the communities adjacent to the Transmission Line	KETRACO	Entire operation period	100,000 per year
3. Avian and Bat Collisions and Electrocutions	**f)** Maintaining a 1.5-meter spacing between energized components and grounded hardware;	KETRACO	Entire Operation period	0
	g) Covering energized parts and hardware; and Installing visibility enhancement objects (marker balls)			100,000

POTENTIAL NEGATIVE IMPACTS	RECOMMENDED MITIGATION MEASURES	RESPONSIBLE PARTY	TIME FRAME	COST (KSHS)
4. Aircraft Navigation Safety	**a)** Consultation with regulatory air traffic authorities (KCAA) prior to installation;	KETRACO	Before construction period	0
	b) Adherence to air safety regulations;			
5. Impact on Flora and Fauna during ROW maintenance	**a)** Scheduling maintenance activities to avoid breeding and nesting sessions;	KETRACO	Entire operation Phase	0
	b) Avoiding clearing in riparian areas;			0
	c) Avoiding use of machinery in the vicinity of watercourses; and			0
	d) Observing manufacturer machinery and equipment guidelines, procedures with regard to noise as well as oil spill prevention and emergency response.			100,000
OCCUPATION HEALTH AND SAFETY IMPACTS				
6. Risk of fires	**a)** Undertake routine clearance of invasive vegetation where applicable within the project areas.	KETRACO	Entire operation phase	100,000

8.3 DECOMMISSIONING PHASE ESMP

Table 9: Decommissioning Phase ESMP

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Kshs)
ENVIRONMENTAL IMPACTS				
1. Reduction of Noise and vibrations				
Increase noise and vibration	**a.** Demolish mainly during the day. The time that most of the neighbours are out working.	KETRACO and Contractor	Entire decommissioning period	To be determined
	b. Provide appropriate PPE to workers			
	c. Co-ordinate with relevant agencies and neighbouring communities regarding all demolition activities			
2. Abatement of air pollution				
Generation of dust	**a.** Watering all active demolition areas as and when necessary to lay dust.		Continuous	0
	b. Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.			
	c. Pave, apply water when necessary, or apply (non-toxic) soil stabilizers on all unpaved areas, parking areas and staging areas at demolition sites.		One-off	10,000

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Kshs)
	d. Provide appropriate PPE to all workers	KETRACO and Contractor	Continuous	Dust coats and dust masks@3000 per employee
Generation of exhaust emission	**a.** Vehicle idling time shall be minimised	KETRACO and Contractor	Continuous	0
	b. Regular servicing of engines and machine parts to reduce exhaust emission generation			
3. Waste management				
Demolition waste	**a.** Use of an integrated solid waste management system i.e. the 5 R's: 1. Reduce2. Reuse 3. Recycle 4. Recover 5. Residuals	KETRACO and Contractor	Continuous	0
	b. All machinery, equipment, structures and partitions that will not be used for other purposes must be removed and recycled/reused as far as possible or they be taken to a licensed waste disposal site	KETRACO and Contractor	One-off	0
	c. Dispose waste more responsibly by contracting a registered waste handler who will dispose the waste at designated sites or landfills only and in accordance with the existing laws.	KETRACO and Contractor	Continuous	Cost borne by the contractor
OCCUPATION HEALTH AND SAFETY IMPACTS				

Expected Negative Impacts	Recommended Mitigation Measures	Responsible Party	Time Frame	Cost (Kshs)
4. Oil Spill Hazards				
Oil spills Hazards	**a.** Install oil trapping equipment in areas where there is a likelihood of oil spillage.	KETRACO and Contractor	Continuous	0
	b. In case of an oil spill, immediate clean up measures will be instituted			
5. Impacts on workers' and community health and safety				
Health and Safety for workers' and community members	**a.** Ensure strict compliance with the Occupational Safety and Health Act (OSHA) 2007	KETRACO DOHSS and Contractor	Continuous	To be determined
	b. Prohibit access by unauthorized personnel into the demolition site			
	c. Place warning signs where necessary			
6. Rehabilitation of project site				
Vegetation disturbance	**a.** Implement an appropriate re-vegetation programme to restore the site to its original status	KETRACO and community	One-off	100,000
	b. Consider use of indigenous plant species in re-vegetation			

Expected Negative Impacts	**Recommended Mitigation Measures**	**Responsible Party**	**Time Frame**	**Cost (Kshs)**
Community grievances	**a.** Quarterly Environmental Management Planning Monitoring will be done where views of the local community will be sort through public consultation meetings **b.** The community will also be encouraged to forward their complaints through KETRACO wayleave assistant who is usually recruited from the local community	KETRACO		

9 ENVIRONMENTAL MONITORING PLAN (EMoP)

This section of the ESIA sets out the environmental, health & safety and community-related monitoring control and measures that the proponent KETRACO and its' contractors will implement to avoid, minimize and manage potentially adverse environmental, health & safety and community-related risks and impacts identified as part of this ESIA. Similarly, the EMoP is geared towards ensuring that the project operates in conformance with applicable laws and regulations within Kenya and internationally.

Table 10: Environmental Monitoring Plan for the proposed project

MONITORING SCOPE	RELEVANT LEGISLATION	FREQUENCY	METHODOLOGY	RESPONSIBILITY	REMARKS
1. Noise and vibration impacts	Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009	Daily observation; monthly noise level analysis	Noise level analysis; quarterly reports on log of vehicle and machine servicing; trees planted; number of (noise) licences given; PPE provided; and sensitization meetings held; Measured levels by a hand held noise meter at identified receptor points.	KETRACO and Contractor	Quarterly reports
2. Impacts on air pollution	Occupational Safety & Health Act (OSHA), 2007	Daily dust observation; monthly air quality analysis	Daily dust observation; quarterly air sampling and lab analysis; quarterly reports on PPE provided; log of vehicle and machine servicing; sensitization meetings held; frequency of sprinkling water	KETRACO and Contractor	Quarterly reports

MONITORING SCOPE	RELEVANT LEGISLATION	FREQUENCY	METHODOLOGY	RESPONSIBILITY	REMARKS
3. Solid and liquid waste generation	Environmental Management and Coordination (Waste Management) Regulations, 2006	Monthly	Reports on waste management plans developed; amounts of waste generated; facility provided for handling and storage of waste; methods employed for waste disposal; training meetings held; number of inspections held to identify leaking or blocked pipes	KETRACO and Contractor	Quarterly & annual reports
4. Oil spills	Occupational Safety & Health Act (OSHA), 2007	Daily	Reports of oil trapping equipment installed; number of oil spill incidents and corrective measures taken	KETRACO and Contractor	Daily Incident register; Annual reports
5. Destruction of existing vegetation and habitats	EMCA, CAP 387	Daily	Reports on site zoning program; community initiatives held on tree planting; landscaping programme on re-vegetation implemented	KETRACO and Contractor	Annual reports
6. Health and Safety issues	Occupational Safety & Health Act (OSHA), 2007	Daily	Quarterly reports on health and safety plans; SHE training programs; records of any incident, accident; investigation and corrective actions; PPE provided; warnings posted; Registration of workplace	KETRACO and Contractor	Quarterly and annual reports
7. Soil erosion	EMCA Cap 387	Daily	Reports on storm water management and soil erosion control plans developed	KETRACO and Contractor	Annual reports

MONITORING SCOPE	RELEVANT LEGISLATION	FREQUENCY	METHODOLOGY	RESPONSIBILITY	REMARKS
8. Fire outbreaks	Occupational Safety & Health Act (OSHA), 2007	Monthly	Reports on fire risk assessment held; compliance with OSHA 2007; trainings held;	KETRACO and Contractor	Daily incident register Annual reports
9. Visual and aesthetic impacts	EMCA Cap 387	Quarterly	Reports on public consultation held; landscaping programme designed and implemented	KETRACO and Contractor	Annual reports
10. Electrocution incidences		Daily	Reports on maintenance system developed; electrocution accidents occurrence and corrective measures taken; warning signs posted; sensitization workshops held	KETRACO and Contractor	Daily incident register Quarterly reports
11. Perceived danger of Electrostatic and Magnetic force	Occupational Safety & Health Act (OSHA), 2007	Annually	Reports on education and awareness campaigns held Hand held monitoring equipment	KETRACO	Annual reports

MONITORING SCOPE	**RELEVANT LEGISLATION**	**FREQUENCY**	**METHODOLOGY**	**RESPONSIBILITY**	**REMARKS**
12. Increase in social vices	HIV and AIDS Prevention and Control Act (Cap 14 of 2006)	Monthly	Reports on sensitization forums held; sessions held on guidance and counselling on HIV/AIDS and other STDs; number of condoms issued	KETRACO and Contractor	Annual reports
13. Rehabilitation of project site	EMCA, CAP 387	Quarterly	Reports on re-vegetation programme developed and implemented; number and species of trees planted	KETRACO and Contractor	Quarterly reports

10 CONCLUSION AND RECOMMENDATION

An ESMP outline has been developed to ensure sustainability of the site activities from construction through operation to decommissioning. The plan provides a general outlay of the activities, associated impacts, and mitigation action plans. Implementation time frames and responsibilities are defined, and where practicable, the cost estimates for recommended measures are also provided.

A monitoring plan has also been developed and highlights some of the environmental performance indicators that should be monitored. Monitoring creates possibilities to call to attention changes and problems in environmental quality. It involves the continuous or periodic review of operational and maintenance activities to determine the effectiveness of recommended mitigation measures. Consequently, trends in environmental degradation or improvement can be established, and previously unforeseen impacts can be identified or pre-empted.

It is quite evident from this study that the construction and operation of the proposed project will bring positive effects including food security, improved supply of electricity, creation of employment opportunities both skilled and unskilled (safety officer, welders, masons, drivers etc.), gains in the local and national economy, provision of market for supply of building materials, Informal sectors benefits, Increase in revenue, Improvement in the quality of life for the workers and community members, and Improved security.

Considering the proposed location, construction, management, mitigation and monitoring plan that will be put in place, the project is considered important, strategic and beneficial and given that no immitigable negative impacts were encountered and that no community objection was received, the project may be allowed to proceed.

10.1 RECOMMENDATIONS

Following the impact analysis presented in Chapter 6, the following recommendations were made: -

- The proposed project to be implemented in compliance with the relevant legislation and planning requirements
- The proponent to ensure implementation of the mitigation measures provided in the ESMP
- The proponent to monitor implementation of the ESMP using the developed EMoP
- The proponent to conduct Annual Environmental Audits and submit to NEMA
- NEMA to consider, approve and grant an Environmental Impact Assessment License Variation to the proponent

10.2 CONCLUSION

From the foregoing, it is noted that;

- no immitigable negative impacts were encountered
- No objection from the community was received
- Identified potential negative impacts can be mitigated
- Benefits to the community, region, and the country at large are immense

The ESIA team, therefore, recommends to NEMA to consider, approve and grant an Environmental Impact Assessment License to the proponent and the proponent to implement the project with strict adherence to the proposed ESMP

REFERENCES

1. Aubrvile, A., P. Dovingeaud, A.C. Hoyle, R.W.J. Keay, F.A Mendoca and R.E.G. Pichi-sermolli 1958. Vegetation Map of Africa. UNESCO Paris.
2. Bridson, D. and L. Forman 1998. The Herberium Handbook (Third edition). Royal Botanic Garden, Kew, London.
3. Beentje H.J. 1994. Kenya, Trees, Shrubs and Lianas. National Museums of Kenya, Nairobi.
4. Environmental and Social Management Framework, KETRACO
5. Greenway P.J. 1973. A classification of the vegetation of East Africa. Kirkia: Journal of the Federal Herberium, Salisbury, Rhodesia and Nyasaland, 9: 1-68 with small scale Vegetation maps.
6. Hedberg O. 1969. Taxonomic and ecological studies on the Afroalpine flora of Mt. Kenya. Hochgebirksforschung, 1: 74-94
7. Itani, J. & H. Terashima 2001. African vegetation map: a proposal (in Japaneese). Humanities and Sciences, 15: 15-18 with coloured vegetation map.
8. JNCC (2007), Handbook for phase 1 habitat survey – a technique for environmental audit, Field Manual. Nature Conservancy Council.
9. Kenya Gazette Supplement Acts 2000, Environmental Management and Coordination Act Number 8 of 1999. Government Printer, Nairobi
10. Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations 2003. Government printer, Nairobi
11. Kenya gazette supplement number Environmental Management and Coordination (Emissions Control) Regulations, 2006 Government printer, Nairobi
12. Kenya gazette supplement Environmental Management and Coordination (Water Quality) Regulations, 2006
13. Kenya gazette supplement Environmental Management and Coordination (Waste Management) Regulations, 2006
14. Kenya gazette supplement Environmental Management and Coordination (Excessive Noise and Vibration Control) Regulations, 2009

15. Kenya gazette supplement, Special Issue 51, Legal Notice number 19; Environmental Management and Coordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009 Government printer, Nairobi
16. Safety, Health and Environment (SHE) Policy Manual, KETRACO
17. The World Bank Safeguard Policies

APPENDICES

APPENDIX 1: CONSULTATION WITH KEY INFORMANTS

THE REPUBLIC OF KENYA

THE PRESIDENCY

Telegrams: "DISTRICTER", Kajiado
Telephone: 0203570295
Fax: 0202064416
E-mail: kajiadocc2012@yahoo.com
Kajiadocc2012@gmail.com

MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

OFFICE OF THE COUNTY COMMISSIONER
KAJIADO COUNTY
P.O BOX 1-01100
KAJIADO

When replying please quote

Ref. KJD/CC/CON/ADM 36/VOL IV (38) **30TH NOVEMBER, 2018**

TO
DCC ISINYA AND MASHUURU SUBCOUNTY

RE: PUBLIC CONSULTATIONS ON THE PROPOSED 40KM 400k V ISINYA- KONZA TRANSMISSION LINE

The above subject matter refers

Kenya Electricity Transmission Company Limited (KETRACO) Proposes to construct a 40KM 400KV double circuit Transmission line from Isinya to Konza to boost power supply and realiability in Kajiado County and its environs. The proposed transmission transverse 32km within Isinya, Ilpolosat and Ilmunkush Locations.

The purpose of the letter therefore is to request your office to facilitate public baraza for the purpose of the above exercise. They are proposing the barazas as follows:

1. Ilmunkush location- Tuesday 4th December, 2018
2. Ilpolosat location- Wednesday 5th December, 2018
3. Isinya location Thursday 6th December, 2018.

CHERONO RORIAN
FOR: COUNTY COMMISSIONER
KAJIADO COUNTY

Cc: Ketraco

KETRACO
KENYA ELECTRICITY TRANSMISSION CO. LTD.

KAWI COMPLEX. BLOCK B.
POPO LANE. OFF RED CROSS ROAD. SOUTH C.
P. O. Box 34942 – 00100, NAIROBI
Phone: 020 4956000, 0719018000, 0732128000
Web: www.ketraco.co.ke• email: info@ketraco.co.ke

30th November, 2018

County Secretary,
Kajiado County
P.O Box 11
Kajaido

Dear Sir,

RE: PUBLIC CONSULTATIONS ON THE PROPOSED 40KM, 400kV ISINYA-KONZA TRANSMISSION LINE

The above subject refers

Kenya Electricity Transmission Company Limited (KETRACO) is a 100% Government owned state corporation mandated to plan, design, construct, own, operate and maintain high voltage electricity transmission lines and regional power interconnectors that forms the backbone of the National Transmission Grid, in line with Kenya Vison 2030.).

The company proposes to construct a 40Km 400kV double circuit Transmission Line from Isinya to Konza to boost power supply and reliability in Kajiado County and its environs. The proposed transmission line transverses 32 km within Isinya, Ilpolosat and Ilmunkush Locations in Kajiado County

To ensure that the project is implemented in an environmentally and socially sound manner, KETRACO is conducting an Environmental and Social Impact Assessment (ESIA) for the proposed project. Stakeholder and public participation in the ESIA process is a requirement of the Environmental Management and Co-ordination Act, Cap 387.

This letter therefore is to inform your office on the proposed project and request for a consultative meeting with the relevant officers to seek their views and opinions on the same.

We thank you for your continued support

Kind Regards,

Ramat Godana

Senior Environmental Expert

COUNTY GOVERNMENT OF KAJIADO
THE COUNTY SECRETARY
30 NOV 2018
RECEIVED
BOX 11 - 01100, Kajiado

KETRACO
KENYA ELECTRICITY TRANSMISSION CO. LTD.

KAWI COMPLEX. BLOCK B.
POPO LANE. OFF RED CROSS ROAD. SOUTH C.
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Phone: 020 4956000, 0719018000, 0732128000
Web: www.ketraco.co.ke • email: info@ketraco.co.ke

KEY INFORMANT QUESTIONNAIRE
PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

Kenya Electricity Transmission Company Limited (KETRACO) is a 100% Government owned state corporation that was incorporated o 2nd December 2008 and registered under the Companies Act, Cap 486 pursuant to Sessional Paper No. 4 of 2004 on Energy. Its mandate is to plan, design, construct, own, operate and maintain high voltage electricity transmission lines and regional power interconnectors that forms the backbone of the National Transmission Grid, in line with Kenya Vison 2030. The voltage rating of the transmission lines and its associated substation include 132kV, 220kV, 400kV and 500kV (HVDC).

The company proposes to construct a 40Km 400kV double circuit Transmission Line from Isinya to Konza to boost power supply and reliability in Kajiado County and its environs.

To ensure that the project is implemented in an environmentally and socially sound manner, the Proponent (KETRACO) is conducting an Environmental and Social Impact Assessment (ESIA) for the proposed project. This will help us obtain information that will be used to identify potential environmental and socioeconomic impacts of the proposed project and hence propose adequate mitigation measures to be adhered to during project implementation.

Participation of interested and affected parties in the ESIA is a requirement of the Environmental Management and Co-ordination Act, Cap 387. As an identified stakeholder, you are requested to document your views, opinions and concerns regarding the proposed project.

This questionnaire acts as a guide for the respondent to provide relevant information on the proposed project. All the information obtained shall be used entirely for the proposed study and shall be treated confidentially. We appreciate your cooperation and thanks for your willingness to participate in this exercise.

COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) - Increased supply of power/electricity to the area thus becoming reliable.
b) - Employment creation opportunities; improving livelihoods/incomes
c) - At national level, contribute to government revenue
d) - Increased economic activities in the target area & nationwide.
e) - Social inclusion - Both gender (M, F, Youth) in project implementation
f) - Improved road infrastructure thus opening up more development opportunities
g) - There could be an element of giving back to the community i.e CSR
h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

Vegetation

b) – Restrictions on land use Cos of transmission line
c) – There will be change on nature & biodiversity ecos. ecos
d) system interference – This impact on flora & fauna
e) – Energy losses during electricity transmission may have
f) perceived climatic effects/danger of electrostatic & magnetic force.
– Increase in social vices eg prostitution
– Also impacts on existing infrastructure eg existing lines have to change
– The land use patterns may be affected eg from natural annual habitats to commercial.

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) 1. Restrictions on land use eg structures/buildings – owners compensated &
b) relocation is recommended. Otherwise expansion may have indirect impact
c) 2. Impacts on nature eg forests, game reserves & Annual parks.
d) causes deforestation/desertification & also affects movement of wildlife
e) Cos their corridors may be affected.
f) 3. On social vices – The community/public shd be sensitized on the upcoming of the project the public/barazas & dangers highlighted
4. For vegetation/tree cleared – Re afforestation plan is recommended.

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

It will ensure steady supply of power that is more reliable in terms of voltage and distribution. This opens up more other economic benefits that improves the social welfare of people.

5. Do you have any other comments regarding this project?

Speed implementation once the groundworks (ESIA and other required reports) are completed.

6. Please provide your contact details for purposes of authentication.

Name:	FRANCISCA K. MWANZIA	Sector/Organisation:	MIN OF AGRICULTURE
Telephone & Address:	0722665466 BOX 40-90100 MACHAKOS		
Signature		Stamp	COUNTY DIRECTOR OF AGRICULTURE DATE 4/12/2018 SIGN * MACHAKOS *

Thank you for your participation

KETRACO
KENYA ELECTRICITY TRANSMISSION CO. LTD.

KAWI COMPLEX. BLOCK B.
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KEY INFORMANT QUESTIONNAIRE
PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

Kenya Electricity Transmission Company Limited (KETRACO) is a 100% Government owned state corporation that was incorporated o 2nd December 2008 and registered under the Companies Act, Cap 486 pursuant to Sessional Paper No. 4 of 2004 on Energy. Its mandate is to plan, design, construct, own, operate and maintain high voltage electricity transmission lines and regional power interconnectors that forms the backbone of the National Transmission Grid, in line with Kenya Vison 2030. The voltage rating of the transmission lines and its associated substation include 132kV, 220kV, 400kV and 500kV (HVDC).

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To ensure that the project is implemented in an environmentally and socially sound manner, the Proponent (KETRACO) is conducting an Environmental and Social Impact Assessment (ESIA) for the proposed project. This will help us obtain information that will be used to identify potential environmental and socioeconomic impacts of the proposed project and hence propose adequate mitigation measures to be adhered to during project implementation.

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This questionnaire acts as a guide for the respondent to provide relevant information on the proposed project. All the information obtained shall be used entirely for the proposed study and shall be treated confidentially. We appreciate your cooperation and thanks for your willingness to participate in this exercise.

COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) Security – ~~More~~ Lighting of homes & Social places;
b) Create employment – New Markets; IPT joints;
c) Food security – Open up of processing plants.
d) ~~Electricity~~ to pump water for irrigation.
e) Improved health – Power required to run
f) Medical facilities eg theatres & Mgnes.
g) Improved infrastructure –
h) Promote improved education –
~~Food Preservation~~. Improved communication
– Improved road transport.

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

b) Displacement of residents.
c) Environmental pollution / noise & dust during excavation
d) Destruction of fauna & flora along the lines
e)
f)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
a) Reasonable Compensation for residents
b) Construction works during the day.
c) Planting of trees along the lines (cluster SPP).
d) Engage in Cooperate Social responsibility
e) Building social amenities eg schools & Hospitals
f) Engage Local Leaders & Stakeholders.

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

After completion of the Project the area will open up to development in terms of Industries, financial institution, Communication will improve. ~~Promote to~~ Attract local and International Investors.

5. Do you have any other comments regarding this project?

Project will go along way in opening Machakos County & the neighbouring towns to local & International Investors. Will Promote livelihood of the local residents

6. Please provide your contact details for purposes of authentication.

Name:	JOSEPH MURUNGI	Sector/Organisation:	DEPARTMENT of AGRIC- MACHAKOS
Telephone & Address:	0723926716 Box 40-90100 MACHAKOS.		
Signature		Stamp	COUNTY DIRECTOR OF AGRICULTURE DATE 4/12/2018 SIGN. MACHAKOS

Thank you for your participation

KETRACO
KENYA ELECTRICITY TRANSMISSION CO. LTD.

KAWI COMPLEX. BLOCK B.
POPO LANE. OFF RED CROSS ROAD. SOUTH C.
P. O. Box 34942 – 00100, NAIROBI
Phone: 020 4956000, 0719018000, 0732128000
Web: www.ketraco.co.ke • email: info@ketraco.co.ke

KEY INFORMANT QUESTIONNAIRE
PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

Kenya Electricity Transmission Company Limited (KETRACO) is a 100% Government owned state corporation that was incorporated o 2nd December 2008 and registered under the Companies Act, Cap 486 pursuant to Sessional Paper No. 4 of 2004 on Energy. Its mandate is to plan, design, construct, own, operate and maintain high voltage electricity transmission lines and regional power interconnectors that forms the backbone of the National Transmission Grid, in line with Kenya Vison 2030. The voltage rating of the transmission lines and its associated substation include 132kV, 220kV, 400kV and 500kV (HVDC).

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COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) – Create employment during construction
b) – Make comfotable the people living in Konza
c) – Reduces Black outs
d) –
e)
f)
g)
h)

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

b) people living near the power line will be at risk
c) .....
d) Make peoples land un-usable.
e) .....
f) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) => ~~Ca~~ ~~Be~~ establish a way leave and
b) Compesate people living near it.
c) => Align the wayleave with the existing
d) road reserve.
e) -
f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

.....

.....

.....

.....

5. Do you have any other comments regarding this project?

- Ensure it is along ~~the~~ road reserve
to reduce ~~the~~ disturbance and displacement.
-
.....

.....

6. Please provide your contact details for purposes of authentication.

Name:	Thomas Kariuka	Sector/Organisation:	CO Housing & Urban Dvlpmt
Telephone & Address:	0714 013 337		
Signature	Thomas	Stamp	MIN. OF LANDS, ENERGY, ENVIR. & NAT. RESOURCES RECEIVED 05 DEC 2018 TEL 020-2717730 P.O. BOX 720-40700 MACHAKOS

Thank you for your participation

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COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) Loss of Land
b) benefit to Konza residents
c) .....
d) .....
e) .....
f) .....
g) .....
h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

b) Loss of grazing land

c) Man interference with wildlife during construction

d) .....

e) .....

f) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) .....

b) .....

c) .....

d) .....

e) .....

f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

It for the benefit of the people of Kenya

.....

.....

.....

5. Do you have any other comments regarding this project?

.....

N/A

.....

.....

6. Please provide your contact details for purposes of authentication.

Name:	Mulema Wanjala-ili	Sector/Organisation:	KWS
Telephone & Address:	74 Kajiado		
Signature		Stamp	Warden Kajiado Station KENYA WILDLIFE SERVICE 07 DEC 2018 P. O. Box 74-01100 KAJIADO COUNTY

Thank you for your participation

b) .....

c) .....

d) .....

e) .....

f) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) Compensate for loss of use of land.

b) .....

c) .....

d) .....

e) .....

f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

.....

.....

.....

.....

5. Do you have any other comments regarding this project?

None

.....

.....

.....

.....

6. Please provide your contact details for purposes of authentication.

Name:	Patrick Wawera	Sector/Organisation:	NLC
Telephone & Address:	P.O Box 1946 – ~~900100~~ 90100 MACHAKOS		
Signature		Stamp	COUNTY COORDINATOR NATIONAL LAND COMMISSION MACHAKOS COUNTY

Thank you for your participation

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COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) Employment creation to the local community
b) Increased access of electricity to the local community
c) Increased value of land within the environment
d) The community stands to benefit from social amenities e.g. schools, road networks
e) Stable supply of electricity to towns, market centres & individuals within the are
f) .....
g) .....
h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) Likelihood of exposing community to social ills e.g. STI's due to irresponsible beha

b) Loss of aesthetic value/beauty of the land under the corridor

c) Erosion of culture of the indigenous people/Community.

d)

e)

f)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) Capacity building of the community

b)

c)

d)

e)

f)

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

The benefits overide the negative impacts

5. Do you have any other comments regarding this project?

Kindly involve all relevant technocrats/stakeholders including government departments during community sensitization exercises.

6. Please provide your contact details for purposes of authentication.

Name:	Victoria Ndanyi	Sector/Organisation:	Agriculture Dept
Telephone & Address:	0735 946596		
Signature	For CDA Agriculture	Stamp	Sub County Agricultural Office Kajiado Central P. O. Box 54, Kajiado

Thank you for your participation

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KEY INFORMANT QUESTIONNAIRE
PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

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COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) The project will bring power
b) Stability within the region.
c)
d) The project will also improve security
e) in the region.
f) The project will also increase employment
g) opportunities to locals
h)

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) Destruction of vegetation along the str

b) Will disturb natural habitat for wildlife
c) Clearing of vegetation may cause dirty
d) Chart soil erosion and other negative
e) Climatic impact
f)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) To compensate for the loss of trees the organisation
b) Should supporting raising of seedling and tree planting
c) Plus where land is not within the County.
d)
e)
f)

4. In your opinion, should the project be implemented? Yes [ ] No [ ]

If YES/NO, why?

Yes — The positive impact outside the negative impact further more the negative impacts can mitigated.

5. Do you have any other comments regarding this project?

K.F.S is willing to work with other stakeholders to cooperate in assisting to move mitigate the negative impacts.

6. Please provide your contact details for purposes of authentication.

Name:	JOSEPH M. MACHARIA	Sector/Organisation:	KENYA FOREST SERVICE
Telephone & Address:	0710443993 229 - KAJIADO		
Signature		Stamp	FOR: ECOSYSTEM CONSERVATOR KAJIADO COUNTY

Thank you for your participation

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PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

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COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) - Uninterrupted power supply to households.
b) - It will promote livestock value chains by the establishment of cold chambers for preservation of
c) livestock products
d)
e) - It will boost alternative livelihoods for the
f) pastoral community and the County citizenry in general.
g)
h)

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) Displacement of households and livelihoods

b) .....

c) .....

d) .....

e) .....

f) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) Fair and adequate compensation to the affected households/ livelihoods

b) .....

c) .....

d) .....

e) .....

f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

It will boost the general well being of the Community in general in addition to enhancing/ upscaling of the livestock value chains

5. Do you have any other comments regarding this project?

Inas far as Corporate Social Responsibility is concerned, the company should, in collaboration with the County Department of Livestock initiate activities for the pastoral Community geared towards improving one or two livestock value chains through provision of Ex-Start up capital and capacity building of livestock groups.

6. Please provide your contact details for purposes of authentication.

Name:	(COUNTY RANGE DEVELOPMENT OFFICER - KAJIADO) ERICK J.O. AHENDA	Sector/Organisation:	LIVESTOCK PRODUCTION
Telephone & Address:	0722401554 P.O. Box 130 KAJIADO		
Signature		Stamp	COUNTY GOVERNMENT OF KAJIADO COUNTY DIRECTOR LIVESTOCK PRODUCTION 02 DEC 2015 Signature:..... P O Box 130 - 01100, KAJIADO

Thank you for your participation

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COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) Development infrastructure spurs positive development
b) Provide power to the Konza Technocity and boost
c) surrounding power supply
d) With power industry is possible and employment
e) is a social positive for the area
f)
g)
h)

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) Disruption of development activities along the line

b) Effects on birdlife in regard to powerline
c) design and compatibility with birds.
d)
e)
f)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) Engage landowners in alignment of the powerline
b) for example on Lisa Ranch we request
c) a realignment to avoid proximity to our
d) homestead.
e)
f) Use a fauna friendly design for the powerline.

4. In your opinion, should the project be implemented? Yes [ ] No [ ]

If YES/NO, why?

Yes it is a key national infrastructure project that will spur development in the area.

5. Do you have any other comments regarding this project?

We appreciate the engagement to participate in the planning for this project and to give our views.
Please make the questions more direct and less abstract.

6. Please provide your contact details for purposes of authentication.

Name:	MICHAEL MBITHI	Sector/Organisation:	LISA RANCH & GAME SANCTUARY
Telephone & Address:	0724220244 olav43@hotmail.com		
Signature		Stamp	

LISA RANCH P.O.BOX 28192 00200-NAIROBI. DATE ..... KONZA

LISA RANCH P.O.BOX 28192 00200-NAIROBI. DATE ..... KONZA

Thank you for your participation

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KEY INFORMANT QUESTIONNAIRE
PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE AND ASSOCIATED SUBSTATION

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COMMENTS (please use separate sheets if you wish)

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?

a) - Supply of power to the economic zones will
b) improve the economy.
c) - Power reliability in Kajiado County, Machakos &
d) environment will improve. Social well being.
e) - Supply of Power will reduce over reliance on
f) other fuels such as firewood.
g)
h)

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) – Loss of usable land along the powerlines
b) – Noise generation at the substations
c)
d)
e)
f)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) – Adequate compensation on those affected by the
b) powerline as a result of loss of usable land.
c) – Moving the persons affected to safer locations
d)
e)
f)

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

– It aids development

5. Do you have any other comments regarding this project?

– There is need for proper consultation with local communities to own the project

6. Please provide your contact details for purposes of authentication.

Name:	Jonah K. Kinyua	Sector/Organisation:	Kenya Civil Aviation Authority
Telephone & Address:	30163-00100 NAIROBI +254 20 6827470 EXT 2229		
Signature		Stamp	KENYA CIVIL AVIATION AUTHORITY AAMLE

Thank you for your participation

APPENDIX 2: SAMPLE FILLED QUESTIONNAIRES- COMMUNITY MEMBERS

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COMMUNITY QUESTIONNAIRE

PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

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To ensure that the project is implemented in an environmentally and socially sound manner, the Proponent (KETRACO) is conducting an Environmental and Social Impact Assessment (ESIA) for the proposed project. Participation of the general public/communities in the project area is a requirement of the Environmental Management and Co-ordination Act, Cap 387. Therefore, you are requested to document your views, opinions and concerns regarding the proposed project.

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NAME	CHARLES NGUTI	LOCATION	~~KITUTUA~~ KALAMA
SUBLOCATION	KONZA	TEL NO	0729019510
ID NO.	9774610	SIGNATURE	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Economic Benefit #1: Open up Konza to industry hence
   b) increased opportunities for jobs
   → c) Increase reliability of current power supply ie reduced
   d) Power outages
   → e) Increase our land valuations.
   → f) & Help the proposed Konza city in its growth
   g) that has stagnated against all our expectations
   h)

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) Impact negatively to our Health for those near the pylons
b) due to radiation.
c) ~~We~~ How fair will the Compensation be, bearing in mind
d) Konza is just about to become a planned city...
e) What Measures are in place to ensure quick payment to
f) landowners affected ??
g) .....
h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

(1) a) KETRACO to keep Confidential the detailed maps
b) of the path of the power lines to fend off
c) speculators.
(2) d) KETRACO to prepare adequate funds for speedy/fair
e) Compensation to affected landowners.
(3) f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

YES. So long as KETRACO as the government agency is above board in its dealings with the people of Konza vis-a-vis Compensation, Keeping out speculators.

.....

.....

5. Do you have any other comments regarding this project?

(1) The government Must ensure we the people of Konza have tangible benefits not Mere conduits of power to the new city. i.e ~~so~~ Mini substations to supply the old Konza Town.

(2) KETRACO Must of necessity engage the people of Konza economically in the project. i.e employ local labour in the project

Thank you for your participation

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COMMUNITY QUESTIONNAIRE

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NAME	REGINA KAMUA JOHN	LOCATION	KIMUIWA
SUBLOCATION	KONZA	TEL NO	0727677049
ID NO.	15596?5	SIGNATURE	Regina

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Kupunguza Upotevu wa stima
   b) Kupatikana kwa ajira zaidi
   c) Ongezeko la Wakaaji
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) Kuhamishwa kwa wakaaji
   b) Ukataji wa miti
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) Fidia kufanywa kwa haraka
   b) Upandaji wa miti iliyokatwa
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   Ndiyo, sitima ni Mali muhimu na ikipitia itatusaidia kibiashara na kijamii
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   N/A
   .....
   .....
   .....

Thank you for your participation

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NAME	RUTH MUTISYA	**LOCATION**	KIMUTWA
SUBLOCATION	KONZA	**TEL NO**	0729771041
ID NO.	29755792	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) is beter becaus it makes more jobes
   b) dered depplemedes.
   c) The city it will be Exlend
   d) mony jobles likes konza city.
   e) it will make mamey jobes
   f) and etc.
   g)
   h)

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) young ones they will jobes
   b) .....
   c) sitim hita teta wangaz kuta kujj
   d) pia hita tanya wata wawe na
   e) maendelea ya kumba
   f) kila mad ndu kwahii kujj
   g) hata pata sitima
   h) Etc

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) katika kenya wachu wengi hawana
   b) sitima!
   c) .....
   d) Tukiwa na sitima tutawe za
   e) kutanya mahoe mengi sana
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   .....
   Yesu yes
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   .....
   NO
   .....
   .....
   .....

Thank you for your participation

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NAME	KATHERINE MUKULU KYULE	**LOCATION**	KIMUTWA
SUBLOCATION	KONZA	**TEL NO**	0726509483
ID NO.	23455381	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) kupitia kwa Stima ya ketraco tutapata kazi-
   b) " " " " Viwanda vita jengwa-
   c) " " " Baba barabara ita wekwa kami.
   d) - " hospitali zitajengwa na vifaa muhimu
   e) - zinazo tumia Stima kupatikana
   f) - mashule yetu pia itaendelea vizuri
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) Stima ikipita kwaka kutolipwa Ngarama.
   b) Kukatwa kwa miti
   c) Watu kutolewa kwa makao yao.
   d) Saa zingine inawezaa aguka na ichome
   e) watu.
   f)
   g)
   h)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) ~~Mto~~ Watu walipwe vizuri na wakati uwaa.
   b) Kama mtu, aja guzwa sana aachwe aendelee
   c) na kulima kwa Shamba Lake na
   d) Pia alipwe ~~maahu~~ maali kume
   e) guzwa.
   f)

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
   If YES/NO, why?
   maendeleo ~~ha yata pakika~~ yatapatikana konza.

5. Do you have any other comments regarding this project?
   Iazishwe haraka ndio ituzaidie mapema.

Thank you for your participation

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NAME	BERNARD KIMEU MATIVU	**LOCATION**	Kimutwa
SUBLOCATION	Konza.	**TEL NO**	0722974785
ID NO.	6268785.	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) ....Itawenza kuongeza kazi kwa.....
   b) ....Watu wa enEO wa Konza.....
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) ....Kukatwa.....kupoana.....miti.....na.....mikoma.....
   b) ....kutoka.....kwa.....kijiji.....
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) ..kwa.....sababu.....twatoka.....kwenye.....miti.....
   b) ..miti.....wamekokoa.....enea.....sisi.....wafikilime
   c) .....kwenye.....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
   If YES/NO, why?
   .....yes.....kwa.....sababu.....itatulatae.....maendeleo
   .....kwa.....enea.....ya.....kanga.....nakuangalia.....
   .....kanga.....kwa.....watu.....
   .....
   .....

5. Do you have any other comments regarding this project?
   .....tunaomba.....sisi.....mulandi.....tendelae.....
   .....kama.....inawezekana.....kwa.....alata.....
   .....
   .....

Thank you for your participation

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) CUTTING of tree
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) .....
   b) CHASING WILDLIFE (WANYAMA)
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
   If YES/NO, why?
   .....
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   .....
   I think ~~it~~ It is good to COPARATE
   With the COMUNiy FULLY,
   .....

Thank you for your participation

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NAME	PETER WAHYOIKE WAMBUGU	**LOCATION**	KIMUTUA LOCATION.
SUBLOCATION	KONZA SUBLOCATION	**TEL NO**	0715439092
ID NO.	0528680	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) DEVELOMENT OF THE AREA.
   b) CREATION OF JOBS e.g. SELF EMPLOYMENT.
   c) It will make the area be industrial
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) The affected Person might forced to shift without proper
   b) arrangement.
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) the affected person to be given
   b) enough period to arrange himself.
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   For Area Development.
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   Nil
   .....
   .....
   .....

Thank you for your participation

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NAME	EMMANUEL MUTUA	**LOCATION**	KIMUTWA
SUBLOCATION	KONZA	**TEL NO**	0703231136
ID NO.	12536499	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Reduction of Power Blackouts
   b) Creation of Jobs
   c) People will migrate to the area
   d) More Industries may be established
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) Displacement of people
   b) Cutting down of trees
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) Compensation to be done promptly
   b) Alternative measures to replace cut down trees
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   Yes: Electricity is essential in every day life therefore its beneficial to us when it is near our community.

5. Do you have any other comments regarding this project?
   N/A

Thank you for your participation

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NAME	David Mark	**LOCATION**	~~Konza~~ Kimuka a
SUBLOCATION	Konza	**TEL NO**	0714340631
ID NO.	33601[illegible]3	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) [illegible] Mark Mwanzia
   b) [illegible] Konza
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) ..... =
b) .....
c) .....
d) .....
e) .....
f) .....
g) .....
h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) .....
b) .....
c) .....
d) .....
e) .....
f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
If YES/NO, why?

.....
.....
.....
.....
.....

5. Do you have any other comments regarding this project?

.....
.....
.....
.....

Thank you for your participation

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NAME	SAMUEL KATUMWA M'TUERANDU	**LOCATION**	KIMUTWA KONZA
SUBLOCATION	KONZA	**TEL NO**	0722636892
ID NO.	8310656	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) More people will get electricity lighting due to
   b) additional Kiosks
   c) More people doing more business hence self employ-
   d) ment and more money circulating. Improve security
   e) of people for those work at night and drives to
   f) twenty four shop economy town.
   g) Attract More Investors from different areas
   h) of the Country.

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) Some Members of the community May be dislocated
b) those people with small plots of land
c) May be disadvantage.
d) After any compesation some people may tend
e) to misuse the money compesated to the detrim
f) ental of the rest of the family members eg school
g) going children, Mothers or ~~Fam~~ father separating
h)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) Compesation should be monitored to balance
b) the families.
c) Land valuation should be done to determine
d) the correct compesation.
e) Lack of labour due to displacement of
f) people.

4. In your opinion, should the project be implemented? Yes [✓] No [ ]

If YES/NO, why?

It has more benefits to the Community
if properly carried out

5. Do you have any other comments regarding this project?

Please implement and ~~it~~ don't make
it a time waste.

Thank you for your participation

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) Hakuwa...Dot.....
   b) Italeta...mathlala...Jeli...watu...Watapamichiwa.....
   c) .....
   d) Watu...wafaenda...kwaziha...maisha...ingine.....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) .....
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   .....
   .....Yes.....
   .Mamba.....Yatakuwa.....kasi...ilu...kwetu.....
   .....
   .....

5. Do you have any other comments regarding this project?
   .Itakuwa...ni...Uzuri.....
   .Mamba....Yatakuwa.....kasi...ilu...kwetu.....
   .Sitima...haitakuwa...ikipotea.....kama...awali.....
   .....

Thank you for your participation

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NAME	Jacinta Ngwava	**LOCATION**	Kimutwa
SUBLOCATION	Konza	**TEL NO**	0715122516
ID NO.	9851004	**SIGNATURE**	Jacinta.

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Blasharo Itaendo Juu:
   b) Hitsdi ya watu Itapando Juu
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) Kuta Kuwa na Shida ya Kuamusha Kwa Watu 320
   b) Kuta Kuwa na Magonjwa ya Kupenga mbona 320
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) .....
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   Yes
   .....
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   Sitima utakuwa ikipotea
   Kutapenga vita ningi Sa Kuhama sitima
   Kama mashule, colleges na Factories!
   .....

Thank you for your participation

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COMMUNITY QUESTIONNAIRE

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NAME	Martina Mueni	**LOCATION**	Kimutwa.
SUBLOCATION	Konza	**TEL NO**	0713699119
ID NO.	12536602	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Tutapata Stima Kwa wingi
   b) Vitana wetu watapata makazi
   c) Biashara zetu pia zitapanuka eo2 Stima
   d) Itakuwa kwa wingi.
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) .....
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) Itadhuru wata kwa kuanza.
   b) Co2 mtu labda hakuwa anataka kuhoka
   c) kwa lyo area'
   d) Ni mahali ameka kuhoka kudaiwa
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   .....
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   Itakuwa vizuri Co2 ni maendeleo ambayo
   Hatufikia kama wata wa konza.
   .....
   .....

Thank you for your participation

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NAME	PAUL MUTUA Kamuti	LOCATION	KIMUTWA
SUBLOCATION	KONZA	TEL NO	0720848796
ID NO.	9244392	SIGNATURE	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) .....
   b) ...Well ... Maji ... People ... to .....
   c) .....
   d) ...Go: ... Jua ... Kuendela ... Vi nguvu .....
   e) .....
   f) ...Kati ... Kaka ... Mulandi .....
   g) ...Konza ... Itaendeca: .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) .....
b) ...Ca 20 Haindi matheva yeyate.....
c) .....
d) ...kwa Uvi Muvandi.....
e) ...kwa mbesa ina watemeny.....
f) .....
g) ...Ime yiisa Kwiungana afikini.....
h) ...Kwiwang, Kwiva nca Mathea.....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) .....
b) .....
c) .....
d) .....
e) .....
f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
If YES/NO, why?

.....
.....
.....
.....
.....

5. Do you have any other comments regarding this project?

.....
.....No
.....
.....

Thank you for your participation

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NAME	PAUL NZAI	LOCATION	KIMUTWA
SUBLOCATION	KONZA	TEL NO	
ID NO.	28265289	SIGNATURE	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Increase of Job Opportunities
   b) Electricity Increament
   c) Cutting down Trees
   d) Demanthing houses
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) Cut down trees
   b) Fall our land
   c) destroy homes
   d) These all need compensation
   e)
   f)
   g)
   h)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) Compensation
   b)
   c)
   d)
   e)
   f)

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
   If YES/NO, why?
   because Electricity is the Only gain development of Industries.

5. Do you have any other comments regarding this project?
   I don't have any other Comment

Thank you for your participation

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) AKUNA MATATA
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) .....
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   .....
   NDIO
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   .....
   .....
   .....
   .....

Thank you for your participation

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NAME	Isaac CK Mwongela	**LOCATION**	Kimuthoa
SUBLOCATION	Konza	**TEL NO**	0700 037495
ID NO.	20249353	**SIGNATURE**	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) SIONI Mathata ya KE
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) gina mathara Kyoto kwa ~~Ata~~
   b) Wata Na wanyama
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) .....
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   ..... yes .....
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   ..... No .....
   .....
   .....
   .....

Thank you for your participation

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NAME	JONATHAN KAMIA	LOCATION	KIMUTWA
SUBLOCATION	KONZA	TEL NO	0722282510
ID NO.	7384061	SIGNATURE	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) We really need this power
   b) This will reduce power backout
   c) Industrials grow
   d) good supply of electricity to Konza city
   e) Lighting our roads and Market
   f) Enough supply to our schools 3 phase.
   g) Empowering the residents in small business
   h) Connect SGR to the power.

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) replacement of Person
   b) Cutting tree
   c) Clearing bushes around the line
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) Dust because of machine working
   b) Tree cutting
   c) People being displaced
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
   If YES/NO, why?
   because it will make our area grow in Industrial, domestic use & low portage

5. Do you have any other comments regarding this project?
   I say we really welcome this project in our area

Thank you for your participation

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NAME	Prisilla Nundy	LOCATION	Kimutwa
SUBLOCATION	Konza	TEL NO	0724929897
ID NO.	1009075	SIGNATURE	Nundy

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Roads
   b) Industry
   c) .....
   d) Will help in Hospitals
   e) .....
   f) -
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) .....
b) .....
c) Accidents incase the powerline falls
d) .....
e) .....
f) .....
g) .....
h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

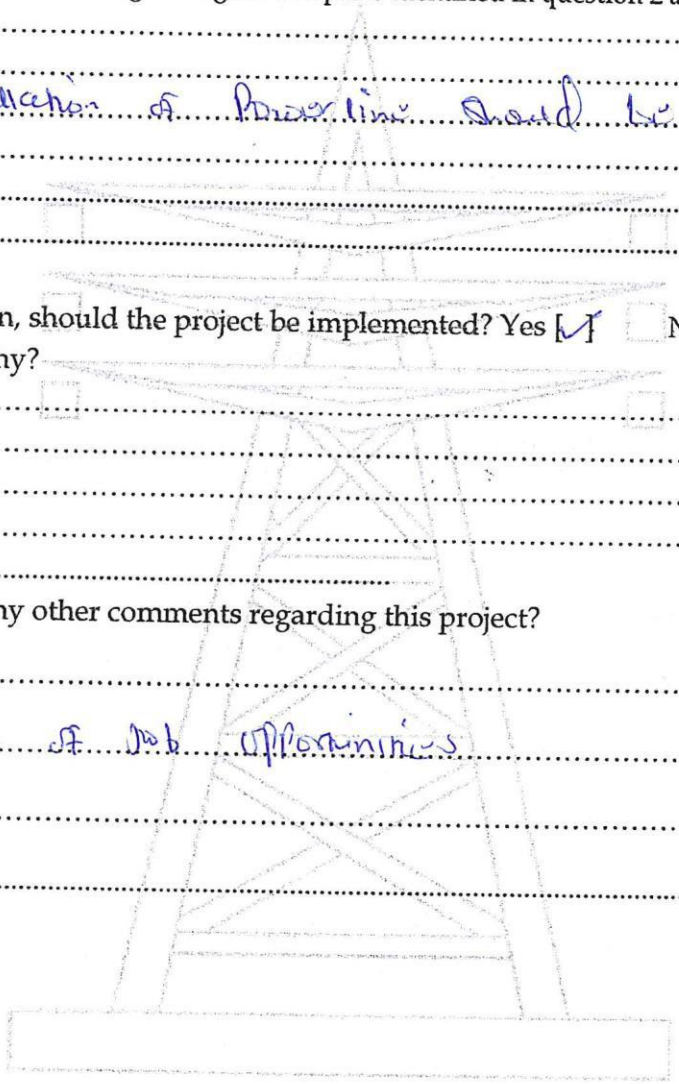
a) .....
b) .....
c) Installation of Powerline should be done properly.
d) .....
e) .....
f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
If YES/NO, why?

.....
Yes
.....
.....
.....

5. Do you have any other comments regarding this project?

.....
Creation of Job Opportunities
.....
.....



Thank you for your participation

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NAME	CHARLES MBITHI	LOCATION	KIMUTWA
SUBLOCATION	KONZA	TEL NO	0704299901
ID NO.	0703346	SIGNATURE	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Maendeleo Konza
   b) .....
   c) Boost power sapply minimizing blackouts
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) .....
b) ...Accidents from electrocution.....
c) .....
d) ...Delay of compensation payments.....
e) .....
f) .....
g) .....
h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a) .....
b) ...None.....
c) .....
d) .....
e) .....
f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
If YES/NO, why?

.....
.....
.....
.....
.....

5. Do you have any other comments regarding this project?

- Development of Industries in the area.....
- More development in terms of hospitals.....
.....
.....

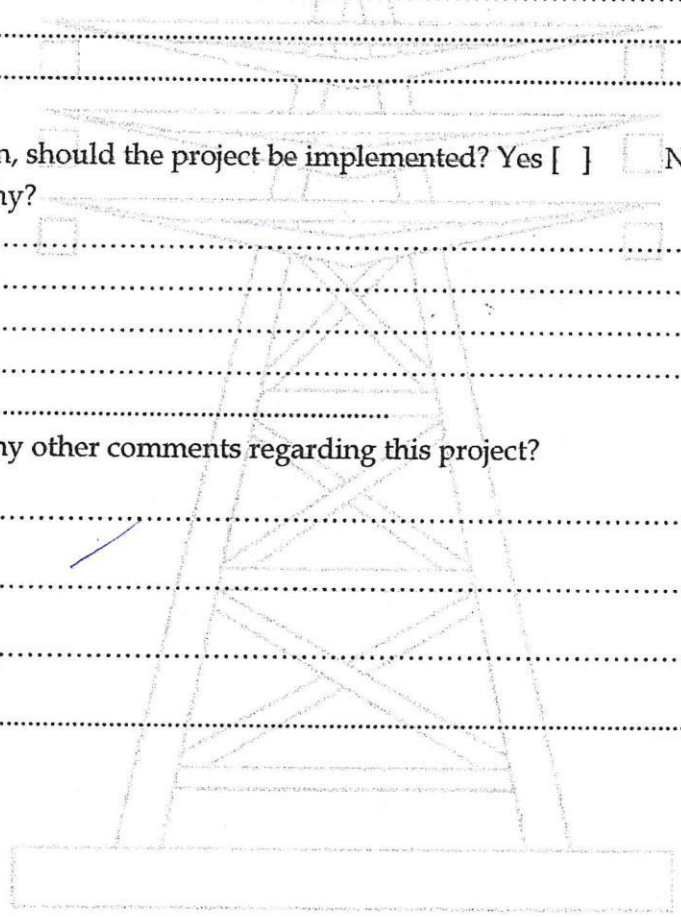
Thank you for your participation

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) they will Composet bug prophos
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) they will be paid
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   Yes
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   NO
   .....
   .....
   .....



Thank you for your participation

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NAME	PETER SMART NZAU	**LOCATION**	Kimutwa
SUBLOCATION	Konza	**TEL NO**	0716139234
ID NO.	0793323	**SIGNATURE**	Peter

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Wiele kyeni kisioni
   b) Syana situ ikwate mawia
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) ~~tae~~ Kulea kuiva ala affected
   b) Kumenane na ala maiytwe
   c) Syana kuhea School ,Nadhukume
   d) Eitu maitu Kuvotavota
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) Musisye mumaive nesa
   b) Syana iswiwe na ndeto isome
   c) Eitu mataive
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   .....
   Mradi uu, utueteive maendeeo tweethwa
   tuvi kyenini
   .....
   .....

5. Do you have any other comments regarding this project?
   .....
   Twithunge mueo nundu wa maendeeo
   .....
   .....

Thank you for your participation

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NAME	Helena Mulee	**LOCATION**	Kimutwa
SUBLOCATION	Konza	**TEL NO**	
ID NO.		**SIGNATURE**	Mulee

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Home Consumption for electricity will improve
   b) Self employment to the use on small
   c) Scale and large scale businesses.
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?

a) Land Compensation may be not well done
b) if not monitored
c) displacement of people and may lead to
d)
e) family Separation
f)
g)
h)

3. Please give suggestions to mitigate negative impacts identified in question 2 above?

a)
b) The goverment to overlee the Construction
c)
d)
e)
f)

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
If YES/NO, why?
More people will benefit

5. Do you have any other comments regarding this project?
All is well if done well

Thank you for your participation

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P. O. Box 34942 – 00100, NAIROBI
Phone: 020 4956000, 0719018000, 0732128000
Web: www.ketraco.co.ke • email: info@ketraco.co.ke

COMMUNITY QUESTIONNAIRE

PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

Kenya Electricity Transmission Company Limited (KETRACO) is a 100% Government owned state corporation mandated to plan, design, construct, own, operate and maintain high voltage electricity transmission lines. The company proposes to construct a 40Km 400kV double circuit Transmission Line from Isinya to Konza to boost power supply and reliability in Kajiado County and its environs.

To ensure that the project is implemented in an environmentally and socially sound manner, the Proponent (KETRACO) is conducting an Environmental and Social Impact Assessment (ESIA) for the proposed project. Participation of the general public/communities in the project area is a requirement of the Environmental Management and Co-ordination Act, Cap 387. Therefore, you are requested to document your views, opinions and concerns regarding the proposed project.

This questionnaire acts as a guide for the respondent to provide relevant information on the proposed project. All the information obtained shall be used entirely for the proposed study and shall be treated confidentially. We appreciate your cooperation and thanks for your willingness to participate in this exercise.

NAME	JOSEPHAT MUNGAI	LOCATION	KIMUTWA
SUBLOCATION	KONZA	TEL NO	0722719998
ID NO.	14475597	SIGNATURE	

COMMENTS

1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) DEVELOPMENT OF INDUSTRIES
   b) JOB CREATION
   c) REDUCED POWER BLACKOUTS
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) MAY BE DISPLACEMENT OF SOME PEOPLE
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) COMPENSATION TO THE AFFECTED PERSONS
   b) .....
   c) .....
   d) .....
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [ ] No [ ]
   If YES/NO, why?
   YES
   FOR REASON SHOWN IN 1

5. Do you have any other comments regarding this project?
   I WOULD WISH THE COMPANY TO ASSIST THE PEOPLE OF KONZA BY
   1. DRILLING BOREHOLES
   2 IMPROVEMENT OF THE ROADS

Thank you for your participation

KETRACO
KENYA ELECTRICITY TRANSMISSION CO. LTD.

KAWI COMPLEX. BLOCK B.
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COMMUNITY QUESTIONNAIRE

PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

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To ensure that the project is implemented in an environmentally and socially sound manner, the Proponent (KETRACO) is conducting an Environmental and Social Impact Assessment (ESIA) for the proposed project. Participation of the general public/communities in the project area is a requirement of the Environmental Management and Co-ordination Act, Cap 387. Therefore, you are requested to document your views, opinions and concerns regarding the proposed project.

This questionnaire acts as a guide for the respondent to provide relevant information on the proposed project. All the information obtained shall be used entirely for the proposed study and shall be treated confidentially. We appreciate your cooperation and thanks for your willingness to participate in this exercise.

NAME	JOYCE MUGNI MAFIA	LOCATION	KIMUTWA
SUBLOCATION	KONZA	TEL NO	0715589988
ID NO.	4955427	SIGNATURE	Joyce

COMMENTS

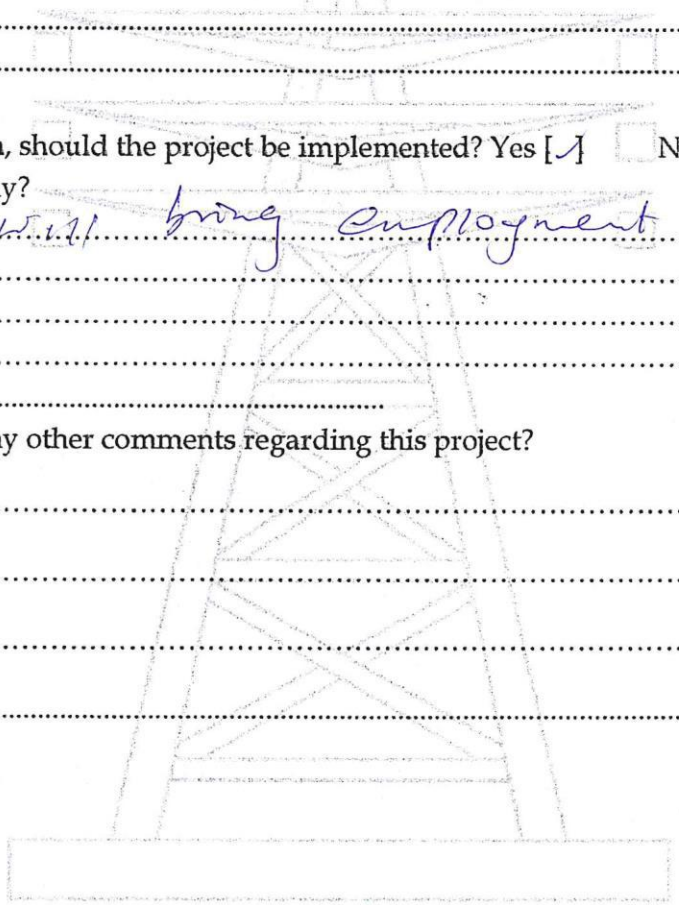
1. In your opinion, what **Environmental, Social and Economic benefits** do you think will arise from the proposed project?
   a) Damage to trees and crops incase the line
   b) passes over your land.
   c) .....
   d) Less produce to reduction of the land where
   e) the line passes over.
   f) .....
   g) .....
   h) .....

2. In your opinion, what **Environmental, Social and Economic negative impacts** do you think will result from the proposed project?
   a) Destruction of trees which may affect
   b) the distribution of rains
   c) .....
   d) .....
   e) .....
   f) .....
   g) .....
   h) .....

3. Please give suggestions to mitigate negative impacts identified in question 2 above?
   a) Proper Environmental care.
   b) .....
   c) Compensation should be done by the area
   d) Administration of the area.
   e) .....
   f) .....

4. In your opinion, should the project be implemented? Yes [✓] No [ ]
   If YES/NO, why?
   It will bring employment
   .....
   .....
   .....
   .....

5. Do you have any other comments regarding this project?
   .....
   .....
   .....
   .....



Thank you for your participation

APPENDIX 3: PUBLIC MEETING MINUTES

Public Meetings Minutes for meetings held in December, 2018

Ilmanen Location, Kajiado County

Subject:	**COMMUNITY CONSULTATION MEETING**
Date of Meeting:	4th December, 2018
Location	Ilmanen Location, Kajiado County
Time	11:00am – 2:00pm

1. Purpose of Meeting
COMMUNITY CONSULTATION FOR THE PROPOSED ISINYA-KONZA 400KV TRANSMISSION LINE
2. Attendance at Meeting

See attached attendance list

3. Agenda
Community consultation at the project site. Household administration of questionnaires to the community members.

4. Meeting Notes, Decisions and Key Action Items

Min No.	Discussion
Min 1/2018	*Preliminaries* The meeting was called to order by the area chief Mr. Raphael Kisanei. A community member volunteered to give a word of prayer,
Min 2/2018	*Community induction on the project's objective and environmental impacts of the project.* The community members were taken through an induction process by Mr Ramat Godana to bring them known to the project, its purpose and the impacts arising with

	the project. This involved community acknowledgement of the project and question and answer session.

Min 3/2018: *Community issues and Concerns*

The table below provides a summary of issues raised by the community and the answers provided by the KETRACO team

NAME Of Community Member	**Question/Concern Raised**	**Response from KETRACO**
Stephen Matipei	Where exactly does the line pass?	The surveyor gave a general orientation of the line to the community from Isinya Substation to Konza
Stephen Matipei	How will land compensation be handled? We have had problems with KETRACO on previous projects	Land compensation will be carried out as per the company policies and laws of the land. Affected land owners will be engaged further after a RAP is done.
Pr. Jonathan	Has KETRACO done cadastral survey for the line?	The cadastral survey will be carried out later on. ESIA is the first step of the project.
Mary Mbelesi	What will be the employment criteria to get opportunities when the line starts?	According to company policies, unskilled labour is sought locally when works begin. Skilled labour follows the employment criteria according to Kenyan laws.
Daniel Matei	Will the project employ unskilled labour only or consider skilled labour? We have learned people from this area	According to company policies, unskilled labour is sought locally when works begin. Skilled labour

		follows the employment criteria according to Kenyan laws.
Paul Parsaut	KETRACO already passed through our land sometimes back and showed us where lines would pass. Is this a different line?	KETRACO had earlier planned for Machakos-Konza-Isinya-Namanga 132kV line. This is a different line from Isinya-Konza 400kV
William Parsaut	Is the line insulated? Fear of EMF that can cause cancer that is a safety hazard in the area	EMF emissions from transmission line is negligible given the ground clearance of the line.
Pr. Jonathan	What does compensation entail?	KETRACO compensates for crops, houses and land which is guided by the RAP that identifies all affected persons.

Min 4/2018	*Acceptability of the project* The community members were positive about the project and emphasised on the following benefits: -Reliable power supply in the area -Employment opportunities in the area -Good compensation rates for those who will be affected by the project -Proper mitigation measures to be put in place when the project begins
Min 5/2017	*Household Administration of questionnaires* The community members were issued with questionnaires to fill in giving their views towards the proposed project's impacts.
Min 5/2017	*AOB* The meeting came to an end at 2:00pm with a word of prayer from a community member.

konza sublocation, Kimutwa Location, Machakos County

Subject:	**COMMUNITY CONSULTATION MEETING**
Date of Meeting:	5th December, 2018
Location	konza sublocation, Kimutwa Location, Machakos County
Time	10:00am – 1:00pm

1. Purpose of Meeting
COMMUNITY CONSULTATION FOR THE PROPOSED ISINYA-KONZA 400KV TRANSMISSION LINE

2. Attendance at Meeting

See attached attendance list

3. Agenda
Community consultation at the project site. Household administration of questionnaires to the community members.

4. Meeting Notes, Decisions and Key Action Items

Min No.	Discussion
Min 1/2018	*Preliminaries* The meeting was called to order by the area sub chief Mr. Jonathan kamia. A community member volunteered to give a word of prayer,
Min 2/2018	*Community induction on the project's objective and environmental impacts of the project.* The community members were taken through an induction process by Mr Ramat Godana to bring them known to the project, its purpose and the impacts arising with the project. This involved community acknowledgement of the project and question and answer session.

Min 3/2018: *Community issues and Concerns*

The table below provides a summary of issues raised by the community and the answers provided by the KETRACO team

NAME Of Community Member	**Question/Concern Raised**	**Response from KETRACO**
Charles Nguti	What are the benefits of the project to the community?	-Reliable power supply in the area. -Employment opportunities especially unskilled labour during the construction of the project
Jackson Mutua	What will be the criteria for Job allocation to youths?	According to company policies, unskilled labour is sought locally when works begin. Skilled labour follows the employment criteria according to Kenyan laws.
Charles Mbithi	Does KETRACO compensate in case a structure is affected by the Transmission line?	KETRACO compensates for crops, houses and land affected by the project which is guided by the RAP that identifies all affected persons.
Charles Mbithi	What is the timeframe for this project?	The project is expected to start soonest possible depending on issuance of all licences required before the start of the project

Min 4/2018	*Acceptability of the project* The community members were all positive about the project and emphasised on the following benefits: -Employment opportunities in the area -Good compensation rates for those who will be affected by the project -Proper mitigation measures to be put in place when the project begins

Min 5/2017	*Household Administration of questionnaires* The community members were issued with questionnaires to fill in giving their views towards the proposed project's impacts.
Min 5/2017	*AOB* The meeting came to an end at 1:00pm with a word of prayer from a community member.

Ilpolosat Location, Kajiado County

Subject:	**COMMUNITY CONSULTATION MEETING**
Date of Meeting:	6th December, 2018
Location	Ilpolosat Location, Kajiado County
Time	10:00am – 1:00pm

1. Purpose of Meeting

COMMUNITY CONSULTATION FOR THE PROPOSED ISINYA-KONZA 400KV TRANSMISSION LINE

2. Attendance at Meeting

See attached attendance list

3. Agenda

Community consultation at the project site.

Household administration of questionnaires to the community members.

4. Meeting Notes, Decisions and Key Action Items

Min No.	Discussion
Min 1/2018	*Preliminaries* The meeting was called to order by the area chief Mr. Daniel Sekenoi and Sub chief Ezekiel Sanirei . A community member volunteered to give a word of prayer,
Min 2/2018	*Community induction on the project's objective and environmental impacts of the project.* The community members were taken through an induction process by Mr Ramat Godana to bring them known to the project, its purpose and the impacts arising with the project. This involved community acknowledgement of the project and question and answer session.

Min 3/2018: *Community issues and Concerns*

The table below provides a summary of issues raised by the community and the answers provided by the KETRACO team

NAME Of Community Member	**Question/Concern Raised**	**Response from KETRACO**
Gideon Parsaut-village elder	What is the furthest distance that the community should stay away from the line?	The proposed TL will have a wayleave corridor of 60m ie 30m from either side of the center line. No structures are allowed within the wayleave corridor.
Daniel Kaposhi	Does the project entail construction of a new substation at Isinya or the line will commence from the existing one?	There is no new substation at Isinya. The line commences from the existing substation in Isinya.
David Leiyo	KETRACO to consider a CSR apart from individual compensation from the affected PAPs	This will be reported though the team is not promising a CSR at this stage
Dan Kitunga	What are the negative impacts of the project to the people near the project	-Environmental impacts like noise and dust are expected -Social impacts like displacement is also expected -However, the report will come up with appropriate measures to mitigate these impacts
Dan Kitunga	What does compensation entail?	KETRACO compensates for crops, houses and land which is guided by the RAP that identifies all affected persons.

Dan Kitunga	How many transmission lines are passing through this area?	Currently, there is the completed Mombasa-Nairobi 400kV TL. Then there is the proposed Isinya-Konza 400kV TL as at now.
Lewis Kitila	Where exactly does the line pass?	The surveyor gave a general orientation of the line to the community from Isinya Substation to Konza
Gideon Parsaut	What happens when a line passes through a wetland?	The line is assessed and route alternatives proposed. Wetlands are sensitive environmental areas that need to be preserved.
Solomon Meria	Will KETRACO engage affected persons before construction of the line? Or engagement will be after completion of the line	Public consultation and engagement is a continuous project from the design phase of the project to completion of the project. Therefore, the ESIA is the first point of engagement. Affected persons will be engaged throughout the project cycle.
Solomon Meria	When a project passes through a road reserve, who benefits?	Most KETRACO project pass through private and community lands. However, in case a project passes through a road reserve, the relevant road authorities are consulted on the same.
Amos Sopon	What are the health impacts of high voltage lines to human beings, plants and other animals? And what is the	There are no documented health impacts of transmission lines to animals, human beings and plants.

	distance expected that human being should live from a transmission line	The Transmission lines are safe. It is expected that the community respects the wayleave corridor which is 60m for the line and resist from having structures along the corridor.

Min 4/2018	*Acceptability of the project* The community members were all positive about the project and emphasised on the following benefits: -Employment opportunities in the area -Good compensation rates for those who will be affected by the project -Proper mitigation measures to be put in place when the project begins
Min 5/2017	*Household Administration of questionnaires* The community members were issued with questionnaires to fill in giving their views towards the proposed project's impacts.
Min 5/2017	*AOB* The meeting came to an end at 1:00pm with a word of prayer from a community member.

Isinya Location, Kajiado County

Subject:	**COMMUNITY CONSULTATION MEETING**
Date of Meeting:	7th December, 2018
Location	Isinya Location, Kajiado County
Time	10:00am – 2:00pm

1. Purpose of Meeting

COMMUNITY CONSULTATION FOR THE PROPOSED ISINYA-KONZA 400KV TRANSMISSION LINE

2. Attendance at Meeting

See attached attendance list

3. Agenda

Community consultation at the project site.

Household administration of questionnaires to the community members.

4. Meeting Notes, Decisions and Key Action Items

Min No.	Discussion
Min 1/2018	*Preliminaries* The meeting was called to order by the area chief Francis Mpaashe and Sub chief Maera Ntuser. A community member volunteered to give a word of prayer,
Min 2/2018	*Community induction on the project's objective and environmental impacts of the project.* The community members were taken through an induction process by Mr Ramat Godana to bring them known to the project, its purpose and the impacts arising with the project. This involved community acknowledgement of the project and question and answer session.
Min 3/2018: *Community issues and Concerns*	

The table below provides a summary of issues raised by the community and the answers provided by the KETRACO team

NAME Of Community Member	**Question/Concern Raised**	**Response from KETRACO**
Samuel Mwenget	KETRACO has not undertaken formal employment to members of the community from this area from their last project	According to company policies, unskilled labour during project construction is sought locally when works begin. Skilled labour follows the employment criteria according to Kenyan laws.
Samuel Mwenget	There was a court case from the previous Mombasa- Nairobi TL that consumed a lot of Money. KETRACO should compensate us that money before start of another project. If not, the community will organise for a demonstration against a new project in the area	KETRACO never promised to compensate the money that was used in the court case. The community through elected leaders should follow up on the same not involving KETRACO.
Stephen Patiet	The community have no objection to the new proposed project. However, KETRACO needs to be faithful in telling exactly when compensation is expected	Noted
Maera Ntuser -Assistant Chief	Land compensation was properly done in the previous project. What the community was not happy with is legal fees used in court and casuals	KETRACO never promised to compensate the money that was used in the court case. In the new project, proper monitoring will be done to ensure

	that undertook bush clearing not being paid	that contractors pay casuals as expected.
Francis Mpaashe - Chief	What is the main objective of this transmission Line? Will locals gain from having power connected to their homes?	KETRACO only deals with transmission of high voltage power. Distribution is done by Kenya Power. The proposed line will evacuate power from Isinya to the proposed Konza Techno-city.

Min 4/2018	*Acceptability of the project* The community members were not welcoming to the project. They however emphasised that if the project has to continue, more consultations need to be done before start of the project.
Min 5/2017	*Household Administration of questionnaires* The community members were issued with questionnaires to fill in giving their views towards the proposed project's impacts.
Min 5/2017	*AOB* The meeting came to an end at 2:00pm with a word of prayer from a community member.

Public Meetings Minutes for meetings held in November, 2019

konza sublocation, Kimutwa Location, Machakos County

Subject:	**COMMUNITY CONSULTATION MEETING**
Date of Meeting:	***5th November, 2019***
Location	konza sublocation, Kimutwa Location, Machakos County
Time	10:00am – 1:00pm
1. Purpose of Meeting	
COMMUNITY CONSULTATION FOR THE PROPOSED ISINYA-KONZA 400KV TRANSMISSION LINE AND ASSOCIATED SUBSTATION	
2. Attendance at Meeting	

See attached attendance list

3. Agenda
Community sensitization and consultations on the proposed project

4. Meeting Notes, Decisions and Key Action Items

Min No.	Discussion
Min 1/2019	*Preliminaries* The meeting was called to order by the area sub chief Mr. Jonathan kamia. A community member volunteered to give a word of prayer.
Min 2/2018	*Community induction on the project's objective and environmental impacts of the project.* The community members were taken through an induction process by Mr Caleb Mango to bring them known to the proposed project, its objectives/purpose and the impacts (both positive and negative) arising with the project. The community was then invited to give their views and opinions on the project.
Min 3/2018: *Community issues and Concerns*	

The table below provides a summary of issues raised by the community and the answers provided by the KETRACO team

NAME Of Community Member	**Question/Concern Raised**	**Response from KETRACO**
Onesmus Gitau	Will the project provide employment opportunities to the locals especially for youths and women?	- Employment opportunities will be available especially for unskilled labour during the construction phase of the project -According to company policies, unskilled labour is sought locally when works begin. Skilled labour follows the employment criteria according to Kenyan laws.
Charles Mbithi	What happens when the transmission line passes through areas that owners have no title deeds? Will they be compensated?	-Land compensation is done to the affected land owner and must produce a legal document that shows land ownership during compensation
Teresia Kithia	The community hopes that there will be no biasness in providing employment opportunities and especially to the youths	Employment opportunities will be available especially for unskilled labour during the construction phase of the project -According to company policies, unskilled labour is sought locally when works begin. Skilled labour follows the employment criteria according to Kenyan laws

Paul Gitau	Will KETRACO employ a Community Liaison Officer to link the community and the company	-When the project begins, KETRACO will employ a Local wayleave officer through the chiefs office to link the community and the company
Joseph Mutiso	How many KETRACO lines are passing through this area?	- Currently there is the proposed Isinya-Konza 400KV TL and the SGR electrification project. Other lines may develop in future based on need.

Min 4/2018	*Acceptability of the project* The community members were all positive about the project and emphasised on the following benefits: -Employment opportunities in the area -Good compensation rates for those who will be affected by the project -Proper mitigation measures to be put in place when the project begins
Min 5/2017	*AOB* The meeting came to an end at 1:00pm with a word of prayer from a community member.

Ilmanen Location, Kajiado County

Subject:	**COMMUNITY CONSULTATION MEETING**
Date of Meeting:	6th November, 2019
Location	Ilmanen Location, Kajiado County
Time	11:00am – 2:00pm

1. Purpose of Meeting
COMMUNITY CONSULTATION FOR THE PROPOSED ISINYA-KONZA 400KV TRANSMISSION LINE AND ASSOCIATED SUBSTATION
2. Attendance at Meeting

See attached attendance list

3. Agenda
Community sensitization and consultations on the proposed project

4. Meeting Notes, Decisions and Key Action Items

Min No.	Discussion
Min 1/2018	*Preliminaries* The meeting was called to order by the area chief Mr. Raphael Kisanei. A community member volunteered to give a word of prayer,
Min 2/2018	*Community induction on the project's objective and environmental impacts of the project.* The community members were taken through an induction process by Mr Caleb Mango to bring them known to the proposed project, its objectives/purpose and the impacts (both positive and negative) arising with the project. The community was then invited to give their views and opinions on the project.

Min 3/2018: *Community issues and Concerns*

The table below provides a summary of issues raised by the community and the answers provided by the KETRACO team

NAME Of Community Member	**Question/Concern Raised**	**Response from KETRACO**
Benjamin Sakoi	Where exactly does the line pass?	The surveyor gave a general orientation of the line to the community from Isinya Substation to Konza
Benjamin Sakoi	Kindly elaborate the project benefits	- Boost power supply -Employment opportunities will be available especially for unskilled labour during the construction phase of the project
Benjamin Sakoi	What are some of the safety measures to be taken with regards to livestock and inhabitants of Ilmamen	-KETRACO will ensure proper waste management -KETRACO will ensure proper EHS monitoring for the safety of the workers and the community
Benjamin Sakoi	Will there be any employment opportunities?	-Employment opportunities will be available especially for unskilled labour during the construction phase of the project -According to company policies, unskilled labour is sought locally when works begin. Skilled labour follows the employment criteria according to Kenyan laws.

Joshua Tepespesi	What will be the benefit of the project to the Community? Any planned CSR?	This will be reported though the team is not promising a CSR at this stage.
Joshua Tepespesi	We have experienced destruction of roads during construction which when left after construction, they become eroded. What measures have you put in place to ensure that this doesn't happen again?	-The ESIA will address this issue and provide proper mitigation measures for rehabilitation after construction of the project
Walter Parsaot	Will KETRACO employ a community Liasin officer from this community	-KETRACO employs a Wayleave officer from communities affected by the project once the project begins
Wilson Nasira	How does KETRACO deal with issues of sexual offences against underage children	-The Law is very clear on sexual offences against underage children. If the contractors engage themselves in such acts, they will be charged in accordance to the law.

Min 4/2018	*Acceptability of the project* The community members were positive about the project and emphasised on the following benefits: -Reliable power supply in the area -Employment opportunities in the area -Good compensation rates for those who will be affected by the project -Proper mitigation measures to be put in place when the project begins
Min 5/2017	*AOB* The meeting came to an end at 2:00pm with a word of prayer from a community member.

Ilpolosat Location, Kajiado County

Subject:	**COMMUNITY CONSULTATION MEETING**
Date of Meeting:	8/11/2019
Location	Ilpolosat Location, Kajiado County
Time	12.30pm – 3:00pm

1. Purpose of Meeting
COMMUNITY CONSULTATION FOR THE PROPOSED ISINYA-KONZA 400KV TRANSMISSION LINE AND ASSOCIATED SUBSTATION
2. Attendance at Meeting

See attached attendance list

3. Agenda
Community sensitization and consultations on the proposed project

4. Meeting Notes, Decisions and Key Action Items

Min No.	Discussion
Min 1/2018	*Preliminaries* The meeting was called to order by the area chief Mr. Daniel Sekenoi. A community member volunteered to give a word of prayer,
Min 2/2018	*Community induction on the project's objective and environmental impacts of the project.* The community members were taken through an induction process by Mr Caleb Mango to bring them known to the proposed project, its objectives/purpose and the impacts (both positive and negative) arising with the project. The community was then invited to give their views and opinions on the project.

Min 3/2018: *Community issues and Concerns*

The table below provides a summary of issues raised by the community and the answers provided by the KETRACO team

NAME Of Community Member	**Question/Concern Raised**	**Response from KETRACO**
Mr Mahugu Kamau	What happens if the wayleave takes a big portion of my plot such that the remaining section cannot be put into productive use?	-Payment will be done according to the percentage affected. So, it will not be same all through the line
Paul Jesu	The beacons in his land covers a Wayleave of 120m and not 60m, will that change or it will permanently remain like that?	-Wayleave for the line is standard 60m (30 meters from each side of the centre line).
Reuben Sakuda	-Will water pans and dams be compensated? -What age and type of trees will be compensated? -How will crops be compensated?	-KETRACO tries as much as possible to avoid affecting dams and water pans since they are public resources -All crops and trees affected, regardless of the age will be compensated after destruction, during construction of the project.
Stanley Parkanta	-Why are land owners being compensated once yet KETRACO benefits in the long term by leasing fibre optic cable to Safaricom?	-KETRACO only compensates for limited loss of use. Meaning, the land owner will still use his land within acceptable limits
Nathan Terra	How many meetings does KETRACO plan to hold in the area because it seems the agenda for the meetings are the same?	-KETRACO is in constant consultations with its stakeholders to keep them updated and

		informed. Thus, many meeting are expected till the project ends.
Min 4/2018	*Acceptability of the project* The community members were all positive about the project and emphasised on the following benefits: -Employment opportunities in the area -Good compensation rates for those who will be affected by the project -Proper mitigation measures to be put in place when the project begins	
Min 5/2017	*AOB* The meeting came to an end at 1:00pm with a word of prayer from a community member.	

Isinya Location, Kajiado County

Subject:	**COMMUNITY CONSULTATION MEETING**
Date of Meeting:	8/11/2019
Location	Isinya Location, Kajiado County
Time	10:00am – 2:00pm

1. Purpose of Meeting
COMMUNITY CONSULTATION FOR THE PROPOSED ISINYA-KONZA 400KV TRANSMISSION LINE AND ASSOCIATED SUBSTATION
2. Attendance at Meeting

See attached attendance list

3. Agenda
Community sensitization and consultations on the proposed project

4. Meeting Notes, Decisions and Key Action Items

Min No.	Discussion
Min 1/2018	*Preliminaries* The meeting was called to order by the area chief Nashon Ntusero. A community member volunteered to give a word of prayer.
Min 2/2018	*Community induction on the project's objective and environmental impacts of the project.* The community members were taken through an induction process by Grace Nduta and Linet Mbova to bring them known to the proposed project, its objectives/purpose and the impacts (both positive and negative) arising with the project. The community was then invited to give their views and opinions on the project.

Min 3/2018: *Community issues and Concerns*

The table below provides a summary of issues raised by the community and the answers provided by the KETRACO team.

NAME Of Community Member	**Question/Concern Raised**	**Response from KETRACO**
Mr. Teti	What are the environmental impacts of the project? Especially long term impacts?	-Most impacts associated with the project will be during the construction phase such as noise pollution, air pollution, dust emission, health and safety issues. -Proper mitigation will be provided in the EMP that will be used in the implementation of the project
Mr Teti	How will compensation for trees and crops be done?	-Trees and crop compensation will be done using rates provided by KFS and ministry of agriculture. -Note that trees and crops will be compensated after the damage.
Area Chief	Can the project provide 70% of employment to the locals?	-KETRACO cannot promise 70% employment. However, the contractor is encouraged to use locals for manual jobs during construction of the project
Roseline	Can KETRACO repair roads in the area as CSR? What other CSR can be done in our area?	-CSR issues can be considered later though it is not 100% ensured that CSR will happen

Jackson Ntusero	How can the locals access the ESIA report for review?	-The ESIA report will be available in the Environment offices in Kajiado County and NEMA website for all Kenyans to review and give comments on the report
Jackson Ntusero	Does KETRACO carry out environmental monitoring and Auditing for its projects?	-Yes. KETRACO does monitoring during construction to ensure compliance of the contractor to the ESIA and audits at the end of the project
Jackson Ntusero	How does KETRACO address the issues of bird strikes?	-Where there are bird migratory routes, KETRACO uses bird diverters to ensure that no electrocution occurs

Min 4/2018	*Acceptability of the project* The community members welcomed the project. They however emphasised that if the project has to continue, more consultations need to be done before start of the project.
Min 5/2017	*AOB* The meeting came to an end at 2:00pm with a word of prayer from a community member.

APPENDIX 4: PUBLIC MEETINGS ATTENDANCE SHEETS

Ilmamen Location meeting on 4th December, 2018

KETRACO

ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING FOR A PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

LIST OF MEMBERS PRESENT

VENUE: ...RNAMEN SUB-STATION...

DATE...4th/12/2018...

No.	Name	Designation	Telephone	Signature
01	Rinicoine Iccateyio		0710845801	
02	Julius Asaape		0713905153	
03	paul parsaoti		0724202578	
04	Steven Matipei		0721319571	
05	Ole Saicoi		0712109501	Saicoi
07	James Kanee		0720983518	
08	Daniel Toikei		0700928345	Toikei
09	Benard ole kaeshu		07	
010	John Moisasi		0712227296	
011	Paul Koruta		0711259746	
012	Mary Mpelesi		0720172805	
013	JEREMIAH PARMAD		0721779310	
014	Jonathan m. SILOMA		0720703886	
015	JOSEPH S. MOIKOI		0720 700 507	
016	WILLIAM PARSAOLU		0718943939	
017	Julius MAMIPEI		0722950171	

No.	Name	Designation	Telephone	Signature
018	JACOB PARMAD		0705825399	
019	JOSPHAT ASAAPE		07[illegible]4E0252.	
020	DAVID NDICAT		0723095611	
021	JACKSON KALPET		0716618636	
022	Damiel Parletuan		0719202702	
023	Partick Mutiso		0795197331	
024	Daniel Sakalwua		0725174092	
025	Terito Mulical		0798354542	
026	Moses Mulcai		0720461874	
027	Daniel Periano		0726993033	
028	Philiph KIPOIPOI		0714654793	
029	Koilopen Resipesi		0712582573	
030	JOSHUA KUSEREN		0705602973	
031	Thomas Nkele		0714 846381	
032	PAUL TUTUMA		0702 880 220	
033	JOHN SELIAN		0731 [illegible]	
034	LEONARD NTOONKI		0792 157 840	
035	Shadrack Mutical		0728492572	
036	Kapalce Matee		0725853867	
037	Julius Matee		0707586879	
038	JOSEPH CHARRAR		0718 157 196	
039	Simon letoire		0724213375	
040	Jeremiah Nkoroyia		0718022780	
041	Joel parsoeti		0726792404	
042	Pashice kuntai		0727771461	

No.	Name	Designation	Telephone	Signature
043	DICKSON PARSAOTI		0725 052 615	
044	Emily Kenteyio		0729588129	
045	JOHN Matee		0712798751	
046	Daniel Mututua		0721 650846	
047	Carol Wiliams		0797584061	
048	Aristine Batonga		0713890068	
049	Agness Nabeta		0702 798509	
050	Tolua olenkasp		0703768693	
051	patricic Muthikei		0726086838	
052	JOHN TIRINKONG		0726896897	
053	Jonathan Mutuma	Pastor	0726634921	
054	06 Mpaati		0716 969 02	
055	Lucy Kimundi		0718 9188 49	
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Ilmamen Location meeting on 6th November, 2019

Ilmamen Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Kona 400kV TL

Assignment: ESIA **Date:** 6/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Paul Matte	~~36402937~~	~~0710107321~~	
2.	Simon Tinighoy	36402937	0710107321	
3.	James Letinika	13611819	0705698400	
4.	Daniel Ndelai	13611881	0723095611	
5.	Joseph Melita	26581980	0722471596	
6.	Amos Kiluka			
7.	Simon Letoiye	0724 21 33 75 22401126	0724 21 33 75	
8.	Daniel Moshoka	0721332975 25623090	0721332975	
9.	walter parsaoti	27074989	0713493353	
10.	Jackson Reteti	27239278	0716618636	

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

Ilmamen Location

MEETING ATTENDANCE SHEET

Project: Isinya-konza 400kV TL

Assignment: ESIA **Date:** 6/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Samuel peripei	21618372	0714238168	
2.	William LETOIRE	20231746	0722-555807	
3.	PETER MOLITA	11726781		
4.	Willson Sakoi	11680915.		
5.	TIRIKSO			
6.	Joshua Tipikong'o.	9654875	0726 809697	JOHN
7.	Rahim Lemarimoi	43336582.	0758968683	
8.	James Sosio.	26036170	0714681908	
9.	JUWS. KILOPIO	-	-	
10.	BRIAN KOINET	35693182	0706185119	

Ilmamen Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya-konza 400kV TL

Assignment: ESIA **Date:** 6/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	JULIUS LETOIRE	9742064	0797752163	
2.	BENSON SAITAGA	30291736	0790956289	
3.	PARKIRE SAKAIWUA	22885598	0700245520	
4.	NELSON TUNKEI	29635007	0743955434	
5.	JIPSON SAISÀ	34019559	0795621134	
6.	Simon Ntaserna	34019069	0129602410	
7.	Francis Supeet	37387914	0769702291	
8.	Amos Pontsor	25290967	0719119588	
9.	Alphonce Musoomba	23929801	0724245150	
10.	LESIAN PESI PESI	35427042	0741711700	

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

Ilmamen Location

MEETING ATTENDANCE SHEET

Project: 4. Isinya - Konza 400kV TL

Assignment: ESIA **Date:** 6/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	William Nasira	26631684	0705277015	
2.	Jackson Silita	29495393	0714885364	
3.	JOSHUA T PESIPESI	27 88 5605	0711 480 187	
4.	Theshure OLE Ikashu.			
5.	Benard Lemayia	28242290	0727809741	
6.	PAUL LE SANKINS	29637253	0703934083	
7.	BIMINTAI ROTENIKE	30 34 46 35	0248 6988	
8.	JEREMIAH LEPEN	12536611	0758872967	
9.				
10.				

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

Ilmamen Location

MEETING ATTENDANCE SHEET

Project: ISINYA – KONZA TL

Assignment: ILMAMEN LOCATION **Date:** 6th NOV. 2019

No.	Name	ID. No.	Telephone	Signature
1.	MOSES TOMBE	29 63 26 87	0758 50 4003	
2.	Samuel Koren	27 32 54 36	0721 71 43 48	
3.	LANTEI Isiketen	14 60 73 27	0746505313	
4.	SALIMU JUMA	TA.027021	0722-912894	
5.				
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Ilmamen Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Kon.2a 400kV TL

Assignment: ESIA **Date:** 6/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	JOHN PARSAOTI	6116084	0723798046	Parsaoti.
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Konza Location meeting held on 5th December, 2018

KETRACO

ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING FOR A PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

LIST OF MEMBERS PRESENT

VENUE: KONZA LOCATION

DATE: 05/12/2018

No.	Name	~~Designation~~ ID Number	Telephone	Signature
1	JONATHAN M. KAMIA	7384061	0722825 10	
(2)	ISAACK MWONGELA	20243553	0700 037495	
3	BOZI ISAACK	93646646	0725681344	
4	PAUL MUTUA	92244 3292		
5	PAUL NZUI	8826589	0717569576	
6	Ruth Mutisya	29755 92	0729771641	
7	JONES NDETI	2975531	0248593 2	
8	PETER WANYOIKE WAMBUGU	0528680	0715439092	
9	David maiu	33 60 193	0417 3 70 631	
10	Emmanuel Mulwa	12536455	0703231136	
11	REGINA JOHN	1559675	0727 077049	Regina
12	Jaenta Ngwava	9851004	0715122516	Jaenta
13	Jackline Nthenya	20795707	0714 114 684	Nthenya
14	Martina Mueni	12536602	0713 699 119	
15	Prisilla Nundu	1009075	0724 929 697	
16	Catherine M. Kyule	23455381	0726 50 94 83	

No.	Name	~~Designation~~ ID Number	Telephone	Signature
17	Charles Mbiti			
18	~~PATRICK~~ POPO	0703346	0704299901	
19	PATRICK POPO	1D1400	0799702819	PATRICK.
20	Benard Kimeu	~~6268759~~	~~0727974785~~	
21	SAMUEL KAMENYI	8310656	0722636892	
22	Agnes N Wambua	9550438	0725301102	Agnes
23	Esther K. Wambua	18935 31	0711438473	Esther
24	Peter Smart NZAU	0793323	0716139234	PETER
25	Monica Wambua	0	0740028994	
26	Helena Mulee		0714390415	Mulee
27	~~Christine~~ Josphine Katumbi	22811298	0729201540	Josphine
28	Beatrice Mathaka	2624005	0724078962	Beatz
29	Mary Kingola	12951366	0725499322	
30	JOSEPHAT MUNGAI	14475597	0722719998	
31	HARRISON MWINZI	0916269	0723453614	
32	FRANCIS LISA	5378463	0718324739	

Konza Location meeting held on 5th November, 2019

Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: PROPOSED ISINYA - KONZA TL

Assignment: ESIA **Date:** 05.11.2019

No.	Name	ID. No.	Telephone	Signature
1.	ONESMUS WAMBUA MATHEKA	32730722	0715355296	
2.	ALEX MUTUA	27338179	0720165707	
3.	PFIEP MULEI	22811254	0724940403	
4.	BENJAMIN WAMBUA	35242650	0704603553	
5.	DANIEL MUTETI KAMOLO	14635578	0729088763	
6.	AUGUSTINE MWENDO	22753869	0713160149	
7.	DANIEL NJAMBUA	29412206	0728360266	
8.	PATRICK MUTUA	36559152	0707550575	
9.	JOSEPH SYANJA	24810784	0742134066	
10.	NICODEMUS MUSEMBI	34620963	0757194256	

Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: PROPOSED ISINYA – KONZA TL

Assignment: ESIA **Date:** 05.11.2019

No.	Name	ID. No.	Telephone	Signature
1.	Japheth Kicko	33203203	0705335690	
2.	Michael Mueti	3316 2070	0705772940	
3.	Alex Mwendwa	37943232	0727681729	
4.	Gabriel Mwendwa	28960698	0713215888	
5.	Mashack wambua	35257355	0794632224	
6.	Kilo Molloy	21217914	0708318888	
7.	Joseph Nzioka	33605561	0701698326	
8.	Anthony Kimeu	32532427	0799039923	
9.	Maria Ndeiu	24218244	0702825906	
10.	Peter Mutua	33067319	0724129331	

konza location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - konza 400kV TL

Assignment: ESIA **Date:** 5/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Christopher Muanzia	33833155	0716728967	
2.	Bonifasee Musyoki	33647391	0758504284	
3.	Cornalius Mutunga	24945376	0710223519	
4.	Davius Matheka	22015819	0700 417765	
5.	Heny Kyalo	27034058	0707 859105	
6.	Sebastian Kilonzo	23772300	0745235211	
7.	Bernard Mutisya	22883591	0727589451	
8.	Nicholas Vaati	33739813	0704220694	
9.	John Wainaina	23485844	0792287367	
10.	Wambua Ringoo	30038415	0718382339	

Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Proposed Isinya - Konza 400kV TL

Assignment: ESIA **Date:** 5/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Faith Syombua	23056366	0727 164022	
2.	JACINTA MUTINDI	22781362	0712205281	
3.	Jackline Mutungi	24946666	0713561929	
4.	Hellen Ndulu	0793491		
5.	Elizabeth Reuben	12981367	0700767082	
6.	Temimah Muende	22811209	0720484099	
7.	Benaddata Mwololo	15600125		
8.	Juliana Mwanzilu			
9.	Monica Mwanzinu	28436680	0799451104	
10.	Tabitha Ndeisi	29755530		

Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: PROPOSED ISINYA – KONZA TL

Assignment: ESIA STUDY **Date:** 5.11.2019

No.	Name	ID. No.	Telephone	Signature
1.	JACKLINE NZILANI	29696749	0702170546	
2.	Mary M. Kingola	12957366	0725229322	
3.	Jacinta M. Ngatheya	9851004	0715122548	
4.	Esther M. Musyoka	13536470	0719697423	
5.	Christine Mumbua	3365187	0718382342	C.M.
6.	Justinah Mueni	29273831	0729448645	
7.	Agnes N wambua	9550838	0725301102	Agnes
8.	Juliet mbula	33885100	0798992169	
9.	EDWIN GIKOMO	24454010	0726806869	
10.	Charles Mbithi	0703346	0704299901	

Konza Location.

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya – Konza 400kV TL

Assignment: ESIA **Date:** 5/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	ONESMUS K. KITAU	12536477	0725[illegible]	
2.	FRANCIS MUROKI	28497652	0725200413	
3.	Paul M. Ndeto	31873499	0790705394	
4.	NICHOLAS MUZUMBI NDAMBUKI	20033063	0700347161	
5.	CHARLES MUTHUI	14636014	0729964[illegible]	
6.	GABRIEL MUCNDIMA	25565893	0713215855	
7.	PETER NZIOKA	29855372	0708911074	
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Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Konza 400kV TL

Assignment: ESIA **Date:** 5/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Joseph Ndavi Nziska	23222262	0723377024	
2.	Daniel Muiso Muioki	21223546	0746352744	
3.	Joseph Mailtuya	10515725	0721962206	
4.	STEPHEN MAILU	7404618	0704220694	
5.	ANDREW MUTHA PETER	27608781	0712960912	
6.	JANE KIOKO	14W2X555	0711914400	
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Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Konza 400kV TL

Assignment: ESIA **Date:** 5/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	FREDRICK NZUI MATHEKA	25639427	0710 238173	
2.	PAUL NZUI MUTUKU	8826589	0717569576	
3.	PATRICK NZUKI MASAKU	22652076	0727-078685	
4.	DAVID MUSSOKI	26482510	0721 671889	
5.	JUDE MUENDO MUANGE	28284827	0728-328737	
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Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Konza 400kV TL

Assignment: ESIA **Date:** 05/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Paul Gitau	20276773	0727304795	
2.	Benjamen Mutua	34458257	0715242434	
3.	Alfred Mutunga Ndui	25975599	0711438159	
4.	James Mvendo Mwau	28212379	0726309166	
5.	Kalinga Kingola	22811217	0729177907	
6.	Samuel Karanja	32193130	0726142295	
7.	David Mwau	33601993	0717347631	
8.	Tabitha Mutuku	0710638904		
9.	Peter Kyungo	0793323		
10.	Elizabeth Kavoi	3361720		

Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya – Konza 400kV TL

Assignment: ESIA **Date:** 5/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Hekona Mulee		0714590415	
2.	Ndambuki Mulinge			
3.	ANNASTACIA MUTUA	20945275	0712728199	
4.	RUTH M MUTISYA	29755592	0729771041	
5.	TERESIA K. NZOMBA	0793883	0718083514	
6.	MOTHER Mulimi	29754494	—	Mulimi
7.	MARY MZIU	26719641	0720574575	
8.	MONICA WAMBUA	53645258	0712713986	
9.				
10.				

Konza Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya-konza 400kV TL

Assignment: ESIA **Date:** 5/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Joyce Munanye		0725262545	
2.	Regina John	15596675	0727077049	Regina
3.	Nduhiu Mukera	2975598		
4.	Anna Kagambe Kimau	0793886	0727499350	
5.	Elizabeth Moses	9711177	0721539099	
6.	JACKLINE MWIONGELI	23544408	0799821787	
7.	JADIE MAWELI	33601311	0724834530	
8.	Josphen Wayua	6138171	0727164022	
9.	Philomena Mukethe	8791084	0716164832	
10.	Esther Mukau	7562152	0702722243	Esther

Ilpolosat Location meeting held on

6th December, 2018

KETRACO

ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING FOR A PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

LIST OF MEMBERS PRESENT

VENUE: ..... Ilpolosat .....

DATE..... 6.12.2018 .....

No.	Name	~~Designation~~ ID NUMBER	Telephone	Signature
1	Chief Daniel Sekewi	Chief Ilpolosat	0722 694909	
2	Ezekiel Ntooki Saniaei	Asst. Chief Oseman	0704-726782	
3	VINCENT SAITABAU	20453919	722589432	
4	Gideon Parkashi	Village Leader	0721 274 850	
5	Richard Rongoine Peria	Emamparisuai	0729 79 3581	
6	James Maeto	Lenchani Leader	0726 752 442	
7	Paul Kesi	Emamparisuai	0734 947089	
8	REUBEN SAKUDE	EMAMPARISUAI	0739 380177	
9	DAVID PARTIRO	ILASIT	0723252838	
10	JAMES PARKANTA	Emamparisuai	0722241814	
11	DUNCAN KIELUNGA	OSawan	0799612489	
12	LEWIS D. KITILA	OLE-KULE	0727472169	
13	JOSEPH KIRANTO	21428629 OLEPOLOS	0722 977509	
14	JULIUS PARKANTA	I.D No: 22419887 EMAMPARISUAI	0723 160806	
15	Reuben Kodui	20126758 ENKILELE	0708368958	
16	Daniel Merinkoi	Lenchani	0723 791295	

No.	Name	~~Designation~~ ID NUMBER	Telephone	Signature
17	ELIJA SOPON	24981853	0722160098	
18	SOLOMON MPIA	25291445	0722211438	
19	Agnes Nkinyayio	23854362	0765138449	
20	Daniel Parsaoti	6117351	0786556388	
21	Amos T SOPON	28506339	0722131318/0786767673	
22	William T SOPON	24278579	0713291435	
23	Stephen Tiampo Tertia	13610681	0710-514558	
24	TIMOTHY · N · SOIPET	32305593	0701-270855	
25	Amos MUSUNKILI	29516993	0723779699	
26	EZEKIEL PARSAOTI	26117033	0728228872	
27	LAURENCE SARUNI	32833620	0725162485	
28	Sanchey Kakaro	33277325	0703557039	
29	LEMAYIAN NTOYIAP	33297342	0799647708	
30	JOSPHAT RUNCHO	24659639	0726125663	
31	DALLAS LEPARAKUO	21956231	0725909592	
32	Paul Parsaoti	6116736	0724202578	
33	Josephat Paitah	11586008	0721820491	
34	MIKE PARSAOTI	28017968	0724686787	
35	BICKSON PARSAOTI	26230130	0725052615	
36	Benjamin Meiji	23766078	0714575287	
37	NATHAN KIRANKA	30480126	0715449600	
38	DICKSON MAPI	26170114	0702104130	
39	David Meiji	12952285	0720177582	

No.	Name	~~Designation~~ ID NUMBER	Telephone	Signature
40	EMMANUEL S. SAMIRE I	29535450	0704 602470	
41	JACKSON Joshua Sumare	35812428	0705091353	
42	Joseph Kinatio	6373267	0726079577	

No.	Name	~~Designation~~ ID NUMBER	Telephone	Signature
1	DANIEL KAPOSYI	CHOMAKIANA	0721 486654	
2	George Tait	9022395	0716026525	
3	DAVIES MOISABSI	27864400	0712353578	
4	DAVID PASATIATO	0091116		
5	MOSES SAKUDIA	5365878	0722313660	
6.	JOEL TERITA	23018369	0720434485	
7	KEN' SAKUDIA	33338959	0728955232	
8	NOAH SOIROPEI	23058493	0721716560	
9.	Philipson KOITA	12648816	0727982190	
10	Daniel Kisiangua	11385994	0721498017	
11	CAROLINE MAKONNEN	26101175	0724764241	

No.	Name	~~Designation~~ ID NUMBER	Telephone	Signature
1	AGNES SIMEL	5365639	0722988077	
2	JOYCE MATIPE		0712 373567	
3	HELEN TOTO		0703 191941	
4	SUSAN KESUMA.			
5	JOSEPH SAKUDO		0722597776	

Ilpolosat Location meeting held on

8th November, 2019

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: ISINYA – KAJIADO 400KV TRANSMISSION LINE

Assignment: ESIA STUDY PUBLIC CONSULTATION **Date:** 8/4/2019

No.	Name	ID. No.	Telephone	Signature
1.	Moses Shaluja	5365878	0722315660	
2.	REUBE KAKORO	13265886	0722458018	
3.	GEORGE MWENKU	7117642	0721363647	
4.	Stephen Kuta	13610681	0710574558	
5.	Stanley Parkanda	24969543	0726824451	
6.	NATHAN TERIM	30410126	0715449600	
7.	Agnes Nkuniyayio	23864362	0716513849	
8.	Elizabeth Doole	21152305	0722623354	
9.	Joel Doorie	25861026	0724867571	
10.	DAVID MAHUGU	0721 [illegible]5184	0721 724665	

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: PROPOSED KINYA-KANZA 400KV TRANSMISSION LINE

Assignment: ESIA SCOPING PUBLIC CONSULTATION **Date:** 8/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Jonathan Sakuda	27872311	0715490845	
2.	JAMES SAKUDA	23219018	0721562888	
3.	NOAH DOORIE	215 158 68	0714675734	
4.	SAPON AMOI	25666837	0720131318	
5.	JOSEPH SAKUDA	1168100	0722577776	
6.	Julius Parkanta	22419887	0723760806	
7.	CHIEF Daniel Merik	5373428	0722225637	
8.	Ezekiel Sanirei	26654874	0704 726782	
9.	Paul Kesu		0734-997089	
10.	BENSON SAKUDA	11126598		

Isinya Location meeting held on 7th December, 2018

KETRACO

ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING FOR A PROPOSED 40KM ISINYA-KONZA 400KV DOUBLE CIRCUIT TRANSMISSION LINE

LIST OF MEMBERS PRESENT

VENUE: KINKIRANGIARI / ISINYA LOCATION

DATE: 7/12/2018

No.	Name	Designation ID NUMBER	Telephone	Signature
1.	Stephen Petiet	~~0708831347~~ 9743319	0708831347	
2.	Rev. David K. Maitumo	22646787	0732873796	
3.	~~MAAREE~~MAGREI NAKEEL	6117323		
4.	Rev Nahashon	~~ASS.~~ CHIEF	072169668-6	
5	SAMUEL MAINKET	0091289	0722821794	
6.	SAYIOCE KILEY			
7.	~~FRANCIS~~ T. MAASHE	0791152	0725,735546	CHIEF.
8	Stephen L. Lakijia	0790936	0710897160-8	
9.	Lkycliffe Moisoi	29238302	0719776851	
10	Joseph Ketukei	23461372	0735591071	
11	Joel Kiria	24659658	0712373233	
12.	Moses Muyangai	0088763	0704883132	
13	Florence Kiley	26644325	0706162090	

Isinya Location meeting held on 8th November, 2019

Isinya Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Konza 400kV TL

Assignment: ESIA **Date:** 8/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Florence Kilau	26600223	0726162690	
2.	Susan Nkapapa	30688044	0715943185	
3.	Dorothy Parvitaro	30725475	0701397504	
4.	Jesseline Tokoni	22817685	0711885 96	
5.	Roselyne Siyiantei Rianto	30175625	0715898862	
6.	Magdaline Siaka	28255090	0701766074	
7.	HELLEN KIENU	30640716	0792569547	
8.	GLADYS KANDI		0710272686	
9.	Joseph Maura	34964265	+254724306488	
10.	Mary Parsemei	20851713	0720832704	

Isinya Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Konza 400KV TL & SS

Assignment: ESIA **Date:** 8/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	NAHASHON NTUSERO	11384376	0721696686	
2.	JEREMIAH ATETI	0791646	0721978497	
3.	LINET MBOVA	25172801	0733838081	
4.	Jackson P. NTUSERO	20851906	0720476793	
5.	STEPHEN S. PARKIARO	26176875	0721 511986	
6.				
7.				
8.				
9.				
10.				

Isinya Location.

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Kenza 400kV TL

Assignment: ESIA **Date:** 8/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Stephen mopel	0791856	0721-777181	
2.	James Lebor	0791099	0721-366445	
3.	Daniel. NTuseso	0725393102	0703507	
4.	Shadrack Lantei	29961258	0724090586	
5.	Evans Saviore	35137094	0703996790	
6.	Joseph Saviore	29668652	0701776141	
7.	SIMEL TANANKU	32856018	0717457220	
8.	Josiah MAILISTO	22562082	0715660049	
9.	Benjamin S. Sawani	9208909	0722243192	
10.	Stephen Iesigia	0790986	0710897168	

Isinya Location

KETRACO
Kenya Electricity Transmission Company Limited
"Building a World Class National Grid"

MEETING ATTENDANCE SHEET

Project: Isinya - Konza 400KV TL

Assignment: 400KV TL ESIA: **Date:** 8/11/2019

No.	Name	ID. No.	Telephone	Signature
1.	Solomon M Saoina	26230076	0712332595	
2.	KELLY MOIMIGET	25077062	0715227907	
3.	James Sonkoi	~~07~~ 11127189	0712 224 774	
4.	John Ntusero	12652866	0716 831312	
5.	Moses Mwangi	0055763 ~~0714883732~~	~~0714883732~~	
6.	Raphael Lopatei	37089461	0703104016	
7.	Ezekiel Matunda	31507916	0792935723	
8.	Joseph Ntusero	14475431	0706187949	
9.	Emily KEKAYAYA	0790710	0725678243	
10.	Joseph ole Tambo	0088593	0721261727	

APPENDIX 5: EXPERT PRACTICING LICENSE

FORM 7 (r.15(2))

nema

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/10641

Application Reference No: NEMA/EIA/EL/14177

M/S **Richard Ramat Godana**
(individual or firm) of address

P.O. Box 34942-00100, Nairobi.

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **1747**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **5/7/2019** Expiry Date: **12/31/2019**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2008 Certified



nema

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

Application Reference No: NEMA/EIA/EL/13053

M/S **CALEB MATHEWS OKOTH MANGO**
(Individual or firm) of address

P.O. Box 35089-00200, Nairobi.

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **260**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **3/27/2019**

Expiry Date: **12/31/2019**

Signature

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2008 Certified