MINISTRY OF ENERGY AND MINERAL DEVELOPMENT

RURAL ELECTRIFICATION AGENCY

PROJECT BRIEF

FOR THE ENVIRONMENTAL ASSESSMENT (EA)

For

PROPOSED LOT 2: KIGANDA – MILE 16 WITH TEE-OFF KATABALANGA AND KIBYAMIRIZI 33KV ELECTRICITY DISTRIBUTION GRID EXTENSION LINES AND ASSOCIATED LOW VOLTAGE NETWORKS

Consultant:

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Date: December, 2014

CERTIFICATION

We certify that the Environmental Assessment for the proposed Kiganda – Mile 16 with Tee-Off Katabalanga and Kibyamirizi 33kv Electricity Distribution Grid Extension lines and associated low Voltage Networks was conducted under our direction, supervision and based on the Terms of Reference provided to us by Rural Electrification Agency. We hereby certify that the particulars given in this Project Brief are correct and true to the best of our knowledge:

Names	**Relevant Qualifications**	**Signature**
Mr. S. A. K. Magezi Natural Resources Management Specialist **(Team Leader)**	Certified Environmental Practitioner and Auditor: BSC (Physics-Hons), Pgd. (Met), Msc. (PP Ass.), Pgd. (Environ. Management), Cert. in EIA, Cert. Consultancy Development Skills, and over 20 years experience in Environment Management.	
Ms. Gertrude B Magezi Sociologist	Sociologist and Certified Environmental Practitioner: BA (Social Sciences), PG cert. in Planning and Devlp. Pgd in Planning, Housing and Building, Pgd in Devlp. and Gender, Cert. Consultancy Devlp. Skills.	
Contributing Experts		
, Dr Eric Sande	EIA Specialist in ecology and related biodiversity. He is a holder of a PhD (Environmental Science), MSc. (Ecology) and B.Sc. (Hons) (Botany/Zoology. He has worked as a Lecturer at Makerere University and as the Regional BirdLife International Coordinator for BirdLife Africa Partnership.	
John Diisi, GIS and Mapping Specialist	An expert with 10 years of professional experience in remote sensing, research, consulting and project management in national and international environment. He is familiar power line projects. He has a strong background in GIS and mapping and is well versed with a range of GIS software packages.	
Mr Kimathi Patrick –	Bsc. Fisheries and aquatic sciences. He has nine years' experience in environmental impact assessment studies and report writing	
Mr. Hussein Majugo Mulambe	Bsc geology has five years experience in mining operations and prospecting for minerals in the project area.	

Key: Pgd. = Post Graduate Diploma, Pdd. = Post Doctoral Diploma, PG cert = Post Graduate certificate, Cert = Certificate, Devlp. = Development, PPAss = Pollution Potential Assessment.

ACRONYMS

AAAC:	All Aluminium Alloy Conductor
AAC:	All Aluminium Conductor
ACSR:	Aluminium Conductor Steel Reinforced
CFR:	Central Forest Reserves
DEO:	District Environment Officer
EA	Environmental Assessment
EIA:	Environmental Impact Assessment
EMF:	Electromagnetic Fields
ESIA:	Environmental and Social Impact Assessment
ESMMP:	Environmental and Social Management and Monitoring Plan
ESMP:	Environmental and Social Management Plan
ERA:	Electricity Regulatory Authority
ERT:	Energy for Rural Transformation
HV:	High Voltage
LC:	Local Council
LOU:	Laws of Uganda
LV:	Low Voltage
MEMD:	Ministry of Energy and Mineral Development
MLHUD	Ministry of Lands, Housing and Urban Development
MWE	Ministry of Water and Environment
NEMA:	National Environment Management Authority
NFA	National Forestry Authority
NHTF	Natural Tropical High Forest
OHS:	Occupational Health and Safety
PAP:	Project-Affected Person(s)
PB:	Project Brief
POP	Persistent Organic Pollutants
PPE	Personal Protection Equipment
RAP:	Resettlement Action Plan
REA:	Rural Electrification Agency
REF:	Rural Electrification Fund
RGC:	Rural Growth Centres
RTI:	Respiratory Tract Infections
ROW:	Right-of-Way
SWER:	Single-Wire Earth Return
TC:	Trading Centres
TWNR:	Two Wire Neutral Return
UETCL:	Uganda Electricity Transmission Company Limited
WB:	World Bank

Measures and units:

km:	Kilometre (= 1 000 metres)
kv:	Kilovolt (103 volt)
KVA:	Kilovolt Amperes
m:	Meters

ABOUT THE CONSTRUCTION ACTIVITIES

Construction Area/Site	The land on which the project will be located. It includes the Distribution power line route, and tracks as well as any other area affected or disturbed by construction activities.

ABOUT THE ENVIRONMENT

Environment	The surroundings within which people exist. The environment is made up of: the soil; water and atmosphere; fauna; flora; any part, combination or interrelationships among these; and all the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.
Environmental ,Social Management and Monitoring Plan (ESMMP)	A detailed plan of action prepared to organise and co-ordinate environmental mitigation, rehabilitation and monitoring so that positive impacts are enhanced and negative impacts and damage to the environment are avoided, minimised or rectified where required.
Environmental Impact	The effect of an activity on the environment, whether desirable or undesirable. Undesirable or negative environmental impacts will result in damage and / or pollution of, or detriment to the environment or in danger to the public, whether immediate or delayed.
Fugitive Dust	Natural and / or human associated dust becoming airborne due to the forces of wind or human activity.
Flora and Fauna	Any individual or group of micro-organisms, plants or animals.
General Waste and Construction Rubble	It includes waste paper, board, cardboard, benign organic and domestic waste and uncontaminated construction debris such as used paint tins, unused conductors and earth wires, insulator sets, nuts, bolts and unused subsoil.
Heritage Sites and Artefacts	Heritage sites and artefacts can be defined as any object or site of cultural, historical, archaeological or paleontological significance found in or on the land. Historical objects with architectural, historical, scientific, cultural, social, spiritual, linguistic, technological or aesthetic value. For example, buildings or parts thereof, graves or burial sites, milestones, numismatic and military objects. Archaeological objects include material remains resulting from human activity which are over 100 years old and which are in a state of disuse, such as tools, artefacts, human and hominoid remains and artificial features and structures. Pale ontological objects include any fossilised remains of animals or plants
Hazardous Substances	Potentially dangerous substances that may affect human health and / or environmental health and / or have inherent chemical

	and physical composition, which could be toxic, poisonous, flammable, explosive, carcinogenic or radioactive. Hazardous waste includes, but are not limited to: human excrement, the by products and wastes associated with the use of hazardous substances (i.e. used fuel, oil, lubricant and solvents), as well as items such as spent batteries, old oil filters, light bulbs, tyres, circuit boards, etc. which require special collection and handing. When left abandoned, even substances such as scrap metal, wire, tins, broken glass and plastic could be harmful to people, wild and domestic animals. For example: plastic could be ingested by animals; people and animals could be injured by broken glass or metal objects; and animals could get trapped in drums, tins and bottles and get entangled in plastic or metal wiring. Even if buried, such objects may become exposed over time due to wind erosion, scavengers or future human activities. Because of the sensitive nature of the area, these substances are all regarded as 'hazardous waste' for the purposes of this EMP.
Hydrological Features	For the purposes of the EMP, hydrological features include, but are not limited to: wetlands; open water; vegetated drainage channels; subterranean water; marine environments and estuarine environments.
Mitigation	Environmental management measures designed to avoid, limit or remedy undesirable environmental impacts.
Monitoring	Structured observation, measurement and evaluation of environmental data over a period of time to assess the efficiency of environmental mitigation and rehabilitation measures.
Rehabilitation	Measures implemented to restore a damaged environment.
Sensitive Sites	Environmentally sensitive sites include but are not limited to: o Areas with high conservation value due to the presence of important plant specimens, pristine habitats, high biodiversity, important water resources or heritage features and artefacts; o Areas particularly prone to erosion once disturbed (steep slopes); o Vulnerable areas with low potential for rehabilitation / slow rate of recovery (rock outcrops, steep slopes); and o Areas in close proximity of sensitive receptors, such as farm homesteads, viewpoints or tourist stopovers.

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EXECUTIVE SUMMARY

0.1 Background

The Government of Uganda has received financing from the World Bank towards the cost of the Energy for Rural transformation Project Phase III and has asked for Consultancy Services to Undertake Environmental Assessment (EA) and prepare a Project Brief for the proposed 33kV Distribution line and associated Low Voltage networks. LOT 2 Kiganda – Mile 16 with Tee off Katabalanga and Kibyamirizi. The project area is located in Central Uganda in the District of Mubende. The proposed grid extension project will cover a distance of 95 km of 33kV overhead Lines and 52.2 km of low voltage reticulation network. It is proposed that 27 distribution transformers with a total installed capacity of 1,550 kVA serving at least 23 load centres including towns / villages will be installed.

The Principal Developer of the project is the Rural Electrification Agency (REA) while the principal consultant who has been mandated to conduct the Environmental Assessment is RESCO Property Consultant Surveyors. This statement comprises the Project Brief for the Environmental Assessment for the 33kv Kiganda Mile 16 Distribution line. In preparing this Project Brief, the potential environmental concerns have been identified and appropriate mitigation measures have been proposed. As part of the EA methodology, Consultations with key stakeholders have been done, in addition to the relevant literature review as well as site visits. The consultations covered the sub counties of Kitenga, Kibalinga, Kigando and Kasambya all in Mubende District.

0.2 Description of the Project

The total length of proposed power distribution line will be 147.2 Km including 95 km of 33kV overhead lines and 52.2 km of low voltage network In all, there will there will be 27 distribution Transformers with a total installed capacity of 1,550kVA which will serve at least 23 Load centres including Trading Centres (TC), Rural Growth Centres (RGC) and villages.

During the construction phase, a number of activities will be done some of which will have socio environmental implications. These will include the following: -

- Construction of line structures, and installation of accessories and conductors;
- Clearing of Right-Of-Way (ROW) as necessary along the road reserve;
- Construction of the low voltage reticulation for the covered Rural Growth Centres and upcoming Towns;
- Possible Construction and operation of storage facilities for the project materials;
- Transport operations supporting the facilities above.

While conducting the EA for the Project Brief, the Policy, Legal and Institutional set up within which the electrification project will be managed was reviewed and discussed. This is necessary to enable the project comply with the National Environmental law.

0.3 Existing Environmental and Social Economic Conditions of the Project Area

The EA baseline information has been based on both a review of the available secondary information, discussions with a cross section of stakeholders and field findings which were conducted at various times from May 2014 to September 2014.

Biophysical Environment: - The Vegetation of Mubende District can be classified as medium altitude forests and Savanna mosaic vegetation. The medium altitude (670-1,760m) forests have moist evergreen and semi-deciduous vegetation. These form closed stands (30-50m) high with abundant lianas and epiphytes. Grasses are generally absent and are broad leaved and fire sensitive. They are threatened by land degradation in form of deforestation and soil erosion mostly stemming from poor land use and management practices such as; poor agricultural methods, uncontrolled bush burning and overgrazing among others.

The species within this study area were mostly farmland plants with remnants of forest trees an indicator of degraded forests. The common farm land vegetation included the following; *Carica papaya, Musa spp,Zea mays, Coffea Arabica, Syzygium jambolan Phaseolus vulgalis* and *Persea Americana*. The rest of the species are common weeds of disturbance such as *Bidens pilosa,* common shrubs included but not limited to; *Lantana camara, Solanum incanum, Eichhamia crassipes and Xanthurium stramonium* among others whereas a few (i.e. *Coixlacryma-jobi, Cyperus dives, C. esculenta, Echinochloacolona, E. crus-galli, E. pyramidalis, Eichhornia crassipes Persicaria madagascaroensis* and *P. senegalensis* are known species of wetlands. Among the common trees encountered includes; *Mangifera indica, Albizia spp. Bridelia scleroneura Lonchocarpus laxiflorus* and one *Milicia excels* (Mvule) among others.

None of the encountered species is IUCN red listed and so all are species of no conservation concern. The exception was the timber species *Milicia excels* (Muvule) which is IUCN listed in the category 'Lower Risk/near threatened'.

Within the project area, there are three major wetlands that may be impacted by the distribution line. Most other wetlands are narrow and can be avoided by spanning over them using M/H membered structures.

The project area has many CFRs. At least three CFRs will be bypassed by the Distribution line. These are Kasolo, Kisombwa and Kasana - Kasambya CFRs, all composed of mainly pine species. They do not have species of conservation value. The Kasolo CFR is heavily encroached, completely degraded and has no tree standing. There are many private pine and eucalyptus plantations and are under intense pressure due to degradation.

The project traverses River Katabalanga. The main crossing point is along the Mityana – Mubende road just at the Mubende Town Council boundary which is also the boundary between Bagezza and Kitenga Sub Couties.

Socio Cultural environment: Although Mubende District has all the four types of land tenure systems, the Project Area has mostly leasehold, mailo land and customary land tenure systems. A few rich farmers have converted their leasehold into free hold land while new land acquisitions are being directly converted into Freehold. The District is composed of 3 Counties of Buwekula , Kasanda and Kasambya while the project will be in Kasmbya County. The majority of the people are either Baganda or Banyoro. There is an increasing number of immigrants, the majority of whom are Bafumbira, Bakiga or Banyankore from South Western Uganda. While the immigration has led to increased agricultural production in the area, it has equally increased environmental degradation through deforestation.

In general, settlement patterns within the area are not planned and none of the RGC had a structure plan despite the fact that the whole of Uganda (since the enactment of the Town and Country Planning Act Cap 246) is a planning region. Nevertheless there is a mixture of permanent houses, semi-permanent as well as temporary structures which serve as residential accommodation. Within the RGCs the number of permanent houses is increasing.

Firewood and charcoal are the main power sources for domestic needs across the entire project area and the practice is a major contributor to forest degradation due to search for both fuel wood and charcoal. There are a few rich people / farmers who use either solar energy and or diesel for lighting and pumping of water from the water dams. All the grain milling plants encountered as well as the single milk cooling plant use diesel as the power source.

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The dominant economic activity within the project area is mainly subsistence agriculture and limited commercial farming. Presently Maize has become a major commercial crop and almost every household has some maize for both domestic and commercial use. To the South west of the project area there is cattle ranching as well as dairy farming. Mubende district forms part of Uganda's cattle corridor.

No known cultural sites were encountered in the proposed project area.

0.4 Significant Environmental Impacts and proposed Mitigation measures: -

The Environmental Assessment mainly relied on expert judgment of the team and information derived from existing literature, field observations and records as well as Information from consultations with key stakeholders in the project area. A number of potential Impacts were identified for both the construction and the operational phases of the power distribution Project. Apart from the negative impacts, there were also positive Impacts. These would mostly be observed after the construction phase although there are some short term benefits during the actual construction. Positive impacts include: -

- Provision of energy source for cooking resulting into reduced environmental degradation (future potential) arising from cutting of trees for firewood and charcoal production;
- Job Creation mainly for casual workers during construction;
- Improved general life skills for those locals who may get employed on the project;

- Improved quality of production and work after the power has become reliably available and possible work satisfaction and increased efficiency;
- Improved performance in schools and public institution which have hitherto not had electricity;

The Tables 0.1 and 0.2 below provide a summary of the identified impacts during both construction and operation of the power line respectively.

Table 0.1: Environmental Impacts during Construction of the Power Distribution Line

Item	Environmental Impacts during Line Construction	Mitigation Measures
1	Land take and loss of crops along the ROW and access points	• Ensure that land take is minimized by restricting the line route to the existing road alignment to the extent possible. • Compensate all crops and trees at the going rates and in line with the latest Mubende District Compensation rates
2	Impact on Water sources due to Soil erosion	• Only the existing roads will be used and no construction of roads will be allowed; • No poles will be constructed within drainage lines; • Excavations within drainage canals will not be allowed even if of a temporary nature
	Mitigation Options regarding Biophysical Impacts	• It is recommended as follows: - • Ensure that there is a gap of at least 4.0 metres between energised lines and ground equipments/earthling. In this way the potential for electrocuting of ground based animals / humans will be reduced. • Design the line with auto-reclosers at certain points. These reclosers are designed to detect fault on the line and switch it off and try to reclose it after a certain period say 3minutes. The recloser will make three attempts and then leave the line open for someone to physically come and investigate. • Ensure the conductors are properly spaced so that collision/electrocution of birds is minimised. Horizontal alignment (parallel to the ground) of conductors is recommended in wetlands areas where large birds such as the crested cranes are usually found.
3	• Potential impacts along the wetlands within the construction corridor for the Power line:	• Clearance for construction work and inspection will be limited to the necessary extent. • For Nabakazi wetland, there is a platform at the centre where the transmission pole will be put. If this is done, then the wetland will be protected. For Katabalanga I and II, the upstream of the wetland is narrower than the downstream. The line will pass along the upstream bank

Table 0.1: Environmental Impacts during Construction of the Power Distribution Line		
Item	**Environmental Impacts during Line Construction**	**Mitigation Measures**
		such that H/M member poles are planted at the banks of the wetlands with none in the middle of the wetland. • If it becomes inevitable to plant a pole within the wetland, then the holes for poles in wetland areas will be back filled using imported suitable gravel material in such quantities that will be just enough to stabilize the hole with no extra soil to silt the wetland. Excess soils will be evacuated;
4	Impact on loss of vegetation and habitats	• Clearance for construction work and inspection will be limited to the necessary extent. • Where necessary and required, the affected areas will be restored
5	Noise , Vibration and fugitive dust and emissions - Increased Dust and air pollution;	• Promote dust abatement measures such as control of construction traffic speed limits; • Maintain and inspect all equipment and machinery to ensure that they are in good working order and do not produce excessive fumes and noise, • Maintain safety measures in order to ensure the health and well-being of the workers. • Vehicles transporting materials will be required to observe speed limits especially within population centres in order to reduce dust levels; • During extremely dry conditions when dust becomes a major hazard, dust suppression measures will be undertaken near working areas especially if they are close to settlements. Such suppression measures include water spraying using water sprinkler vehicles to sprinkle the road networks leading to the locations under construction regularly; • Maintain and inspect all equipment and machinery to ensure that they are in good working order and do not produce excessive fumes and noise, • Workers who can make a lot of noise will be cautioned so that they do not make unnecessary noise during construction; • All workers will be required to wear full PPE (including earmuffs or ear plugs) especially those operating cranes and those adjacent to such noise emitters. • The developer will minimize exposure to the general population by limiting activities to daylight hours. • The developer will minimize noise through ensuring no

Table 0.1: Environmental Impacts during Construction of the Power Distribution Line		
Item	**Environmental Impacts during Line Construction**	**Mitigation Measures**
		engine is left idling when off-loading poles. • Introduce work rotation procedures to reduce cumulative exposure to noise for workers • Vehicles transporting materials will be required to observe speed limits especially within population centres in order to reduce dust levels;
6	Possible Population influx	• The Project Management will closely work with leadership especially the LCs to hire local people to do most of the casual jobs at the project in response to numerous requests by stakeholders consulted; • Identification tags / uniform will be provided to all the workers on the project sites and such identification which will be property of the Project management subject to withdrawal from workers when not engaged in the project work; • Good public relations will be maintained between the local community, Local leadership and the Developer.
7	Security of Construction materials	• The Project Management will sensitise the community about the negative effects of stealing and vandalising electrical installation through radio announcements and at community meetings. • During construction the developer will hire only those workers who have been vetted by their local LC councils/chairpersons; • Equipment to be guarded by registered security guards during construction and all workers will be provided with identification tags to reduce intruders to working areas; • Work hand in hand with local security officials including the Secretary for Defence at the local level (LC);
8	• Settlements and structures	• The design of the distribution lines passes along the road reserve which are normally devoid of settlements • Where there are many houses / structures within RGCs, the lines will pass behind the RGC and only consumption lines will be directed into the network of structures. • The communities to be sensitised regarding the dangers of high voltage overhead conductors. • In the event a pole or any structure targets a house, then changes will be made in the design to avoid disrupting such a house / structure;
9	Hazardous materials and waste	• REA will adhere to their stated procurement guidelines which ensure that all their transformers will conform to

Table 0.1: Environmental Impacts during Construction of the Power Distribution Line		
Item	**Environmental Impacts during Line Construction**	**Mitigation Measures**
		latest edition of appropriate EC specifications and/or other recognized International Standards in particular: IEC 60060, IEC60071, IEC60076, IEC, IEC 60137, IEC 60156, IEC 60126, IEC60354, IEC 60529, IEC60551, IEC60606, IEC60616, IEC60722, IEC60733, B.S. 148 and BS5493; and • Poles will be pre-treated at a designated facility to ensure chemical fixation of the preservative and prevent leaching into the soil among others.
10	Impacts due to construction and operation of a workers camp;	• The workers camp will not be constructed, but instead there will be ***Equipment storage areas as*** appropriate. • Proper sanitation facilities will be put in place at the ***Equipment storage areas***; • Other bio-degradable domestic waste will be dumped in a compost pit while polythene and plastic materials will be segregated, collected and recycled. There are a number of factories which have specialised in recycling plastics. • Hazardous waste such as torch batteries will be containerized and later disposed off through established waste disposal agencies; • Other hazardous waste arising out of chemicals at the storage area will be discharged in accordance with the manufacturer's instructions; • Oils and other petroleum products will be containerised so that they are not allowed to sip into the ground and into the water bodies. Instead they will be sold off or reused as appropriate;
11	• Safety of workers and community	• Put in place Warning Signs on approaches to the working areas to warn bona fide travellers so that they do not get involved in related incidents and accidents since the operational areas are near the roads • Fence off storage areas and camp sites to discourage idlers/intruders to the sites; • Sensitise the community through the media and meetings at local levels; • Workers on project activities will be supplied with full Personnel Protection Equipment (PPE) particularly with respect to boots, gloves and helmets; • Those required to climb poles will be supplied and be required to wear harnesses to protect them from falling off

Table 0.1: Environmental Impacts during Construction of the Power Distribution Line		
Item	**Environmental Impacts during Line Construction**	**Mitigation Measures**
		the poles; • Warn School children through education and sensitisation about the likely dangers of loitering within the construction zone area. • A First-Aid kit to be provided at every active working site and at the camp. It should be supplied and managed by the Contractor; • ***During the construction phase workers will be sensitised about HIV/AIDS while condoms (both male and female) will be distributed (free of charge) among the workforce;*** • .

Table 0.2: Environmental Impacts during Operation phase of the Distribution Line		
Item	**Environmental Impacts during Line Operation**	**Mitigation Measures**
1	Bio- physical concerns during operation of the line	• Limit clearance during maintenance work to the necessary extent. • Remove as much vegetation as possible by hand and avoid the use of heavy machinery, especially in sloping areas and sensitive areas; • The muvule tree will not be cut or disturbed in any way
2	Impacts on CFR and \private forest estates	• For the trees that will be cut in in the CFR which are pines of no conservation value adequate compensation will be paid; • REA will enter an agreement with NFA to ensure that removed trees are replanted before compensation is paid; • NFA will use the compensation money to plant another area within the project area. • For the privately owned plantations which are either eucalyptus or pine forests full compensation will be paid to the owners and owners will be encouraged to plant new ones in adjacent land if they have it. For those not having land, the NFA is still parcelling out land for private people to plant trees and such owners will be encouraged to take advantage of such offers.
2	• Potential for electrocution during operation of the Line	• In liaison with the Local Government Authorities, the Developer will sensitise communities about the dangers of exposed high voltage live wires. This may be done through schools, local radios and publication

Table 0.2: Environmental Impacts during Operation phase of the Distribution Line		
Item	**Environmental Impacts during Line Operation**	**Mitigation Measures**
		of relevant pamphlets in the local language. • Conspicuous warning signs will be affixed at all installations to warn the general public from touching the lines or fixtures. Warning signs will be in Bright colours such as red or yellow/amber; • Communities will be sensitised to report immediately they observe a sagging, broken wire/conductors or one that has fallen to the ground; • Maintenance personnel will be vigilant inspecting the lines regularly;
3	Bush Burning Impacts	• Communities be sensitised against bush burning; • The Local Government will enforce the law against bush burning; • The developer or the appointed agent to operate the power distribution may be encouraged to give incentives to people who report those responsible for starting bush fires; • The developer to put in place surveillance mechanisms to reduce this impact.

The EA project brief statement also provides a time and action bound work plan showing who will address the different impacts and how they will be addressed. The cost of implementing mitigation measures has been estimated at Uganda shilling 43.8 Million.

Conclusion

This Project Brief report highlights the potential impacts to the environment particularly as they relate to the 33kv Kiganda Mile 16 Distribution Line. A number of benefits have been highlighted and this Project Brief proposes measures to enhance these benefits as they affect the stakeholder community. Mitigation measures and a proposal to put in place implementation plan have been proposed to ensure that the development is done within the confines of the law with minimum damage to the environment. The cost of implementing the resulting Environment Management and Monitoring Plan was estimated to be Uganda Shillings 66,800,000/=.

If the proposed mitigation measures are implemented, the development may go on without significant long-term impacts to the neighbouring communities and environment.

CHAPTER 1: - INTRODUCTION AND BACKGROUND

1.1 Overview

This Project Brief (PB) report is based on the findings of the preliminary survey that was conducted from 21 May 2014 and 22nd May, 2014 as well as the detailed survey that was conducted during the month of September 2014. This is in line with the terms of reference for environmental assessment of the proposed **Kiganda – Mile 16 with Tee-Off Katabalanga and Kibyamirizi 33kv Electricity Distribution Grid Extension Lines and Associated Low Voltage Networks.**

This project brief presents the findings of an assessment of the environmental and social implications of the proposed power distribution Line project in Mubende District and the associated low voltage networks (415/240V).

An "*Environmental appraisal during feasibility studies*" was conducted by the Rural Electricity Agency (REA) prior to this study from whose findings they concluded that a Project Brief would be adequate to mitigate the potential environmental impacts which will arise as a result of the implementation of this electrification project. This Project Brief therefore, will inform the overall project planning and design process for the proposed development. In addition, this PB is further intended to provide information that will facilitate decision-making by the Executive Director of NEMA on the environmental aspects of the proposed project.

1.2 Background

The Government of Uganda has applied for financing from the World Bank towards the cost of the Energy for Rural transformation Project Phase III and has asked for Consultancy Services to undertake Environmental Impact Assessment for the proposed 33kV Distribution line and associated Low Voltage networks. LOT 2 Kiganda – Mile 16 with Tee off Katabalanga and Kibyamirizi. The project area is located in Central Uganda in the District of Mubende. The proposed grid extension project covers a distance of 95 km of 33kV overhead Lines and 52.2 km of low voltage reticulation network. It is proposed that 27 distribution transformers with a total installed capacity of 1,550 kVA serving at least 23 load centres including towns / villages will be installed.

The Government is currently in the process of implementing rural electrification projects under the Energy for Rural Transformation Project Phase III. This consultancy service is financed from the Rural Electrification Fund (REF) under the Rural Electrification Agency (REA). Environmental Assessment of the proposed development is a prerequisite prior to the construction of the proposed power distribution line.

This report therefore is the Project Brief for the EA for the proposed construction of the Power Distribution Line and associated low Voltage Networks in selected Trading Centres (TC) and Rural Growth Centres (RGC) within the sub counties of Kitenga, Kigando, Kasambya and Kibalinga all in Mubende District. In addition to this EA, a Resettlement Action Plan (RAP) has also been commissioned in parallel. Most of the distribution lines will

be constructed mainly along the road reserves. Where the road reserve has not been defined and acquired, the lines will still follow as closely as possible the existing road/track alignments for the respective distribution and low voltage networks. This will minimise the possibility of land take and subsequent relocation/displacement of people. There will be no physical displacement of persons (PAP) under this project.

1.3 Project Location

As stated earlier, the project area is located in Central Uganda in the District of Mubende (see map Fig. 1). The proposed Grid Extension project covers a distance of 95 km of 33kV overhead Lines, 52.2 km of low voltage network and 27 distribution transformers with a total installed capacity of 1,550 kVA serving at least 23 load centres including towns or Rural Growth Centres (RGC) / villages. The project covers the sub counties of Kiganda, Kitenga, Kigando, Kasambya, Nabingola and Kibalinga. The bulk of the project is within the sub counties of Kitenga and Kigando. In general therefore, the project area is within Mubende District and is restricted to those five Sub counties. The Line Diagram for Kiganda Mile 16 33kv Interconnector is attached as Annex 2 showing Load centres in the project area. The Fig 1 shows the location of Mubende District In Uganda while Fig 2 shows the map of the project area which was visited by the assessment team. Mubende District borders the districts of Mityana, Sembabule, and Kyenjojo.

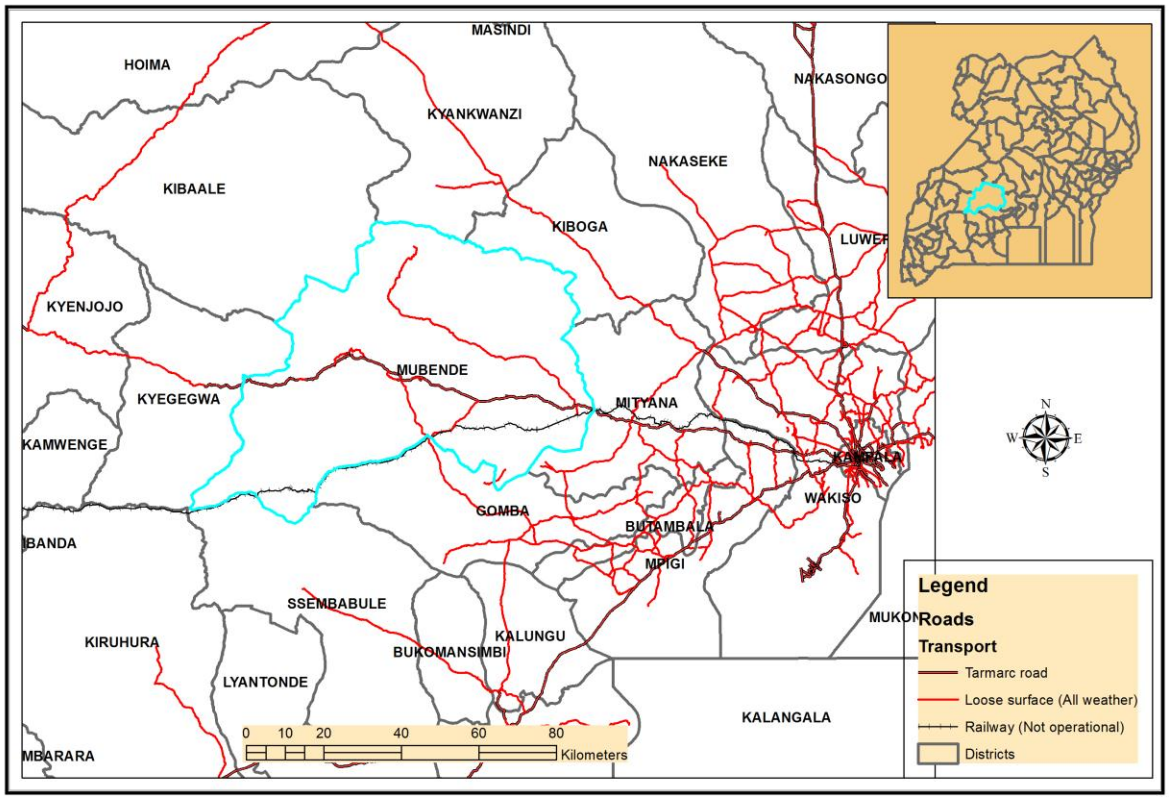

Figure 1: Location of Mubende District in Uganda

Source: Adopted from NFA data base.

1.4 Project Objective

The main objective of this project is to provide electricity to rural areas in parts of Mubende District covering the sub counties of Kiganda, Kitenga, Kigando, Kasambya, Nabigola and Kibalinga which have hitherto not been connected to the National Grid. Trading Centres (TC) and Rural Growth Centres (RGC) along the road will be provided with transformers of different capacities based on projected power consumption in the area. This is to be done in the context of the Energy for Rural Transformation Project (Phase III) under the Rural Electrification Agency (REA) of the Ministry of Energy and Mineral Development (MEMD).

1.4.1 Objective of the Report

This EA report has been compiled in accordance with National Environment Act Cap 153, EIA Regulations and guidelines and the World Bank's (WB) Operational Safeguard Policies.

The purpose of this Project Brief is to identify the potential impacts that the proposed Kiganda Mile 16 33kv Distribution Line project in Mubende District will have on both the bio–physical and social environments. During this study, potential impacts of all proposed project components have been assessed.

These mainly relate to construction impacts: "*Clearance* for the Right of Way (RoW)", wetland management in affected areas, impacts on fragile ecosystem, Fugitive dust and other emissions (e.g. from vehicle traffic, land clearing activities, and materials stockpiles), Noise from heavy equipment and truck traffic, Potential for hazardous materials and oil spills associated with heavy equipment operation and fueling activities and social impacts on both the workers and the general community including issues related to HIV/AIDS prevalence and prevention, acquisition of the land for transformers (should it be necessary) and storage facilities for project material (especially wooden poles and materials).

In order to achieve the above mentioned objective, this Project Brief:

- documents the baseline biophysical and social environmental conditions;
- highlights how the proposed project complies with Uganda's applicable National Environmental and Social Legal Requirements as well as those of the World Bank;
- details the potential negative and positive impacts of the Kiganda Mile 16 33kv Distribution line;
- proposes recommendations for the mitigation of the identified potential environmental and social impacts.

1.5 Project Justification

The proposed 33kv Kiganda Mile 16 Distribution line project is in line with the National Rural Electrification Programme. Currently the proposed project area has no source of electricity apart from occasional generators and solar power among a few rich people and entertainment centres. Most of the population use paraffin for lighting while some about 15% use fuel wood to provide lighting.

Besides, there have been a lot of migrations in the project area (discussion with the Sub County Chief – Kigando) as well as the 3 year development Report for the Sub County). The Project area is a major grower of Maize. That requires electricity to operate grinding/hammer mills. Such developments require grid electricity to operate. Grid Extension will enhance implementation of the Rural Electrification Program, and improve the living conditions of the beneficiaries.

1.6 Name, Title and Address of the Developer

The developer is a designated Agency of the following details: -

Rural Electrification Agency
Plot 10, Windsor Loop, House of Hope, 2nd Floor
(Behind City Oil Kamwokya)
P.O.Box 7317 Kampala- Uganda.
Tel: 0312 264095/264103/4/4 Fax 04141 346013
Email: rea@rea.or.ug website: www.rea.or.ug

1.7 Cost of the development

The construction of the project is estimated to cost US$ 3,559,800

1.8 Project Description

The total length of proposed power distribution line will be 147.2 Km including 95 km of 33kV overhead lines and 52.2 km of low voltage network. The project location is shown in Fig 1 above. The numbers of Distribution as well as the Tee-offs are shown in Fig 2 below

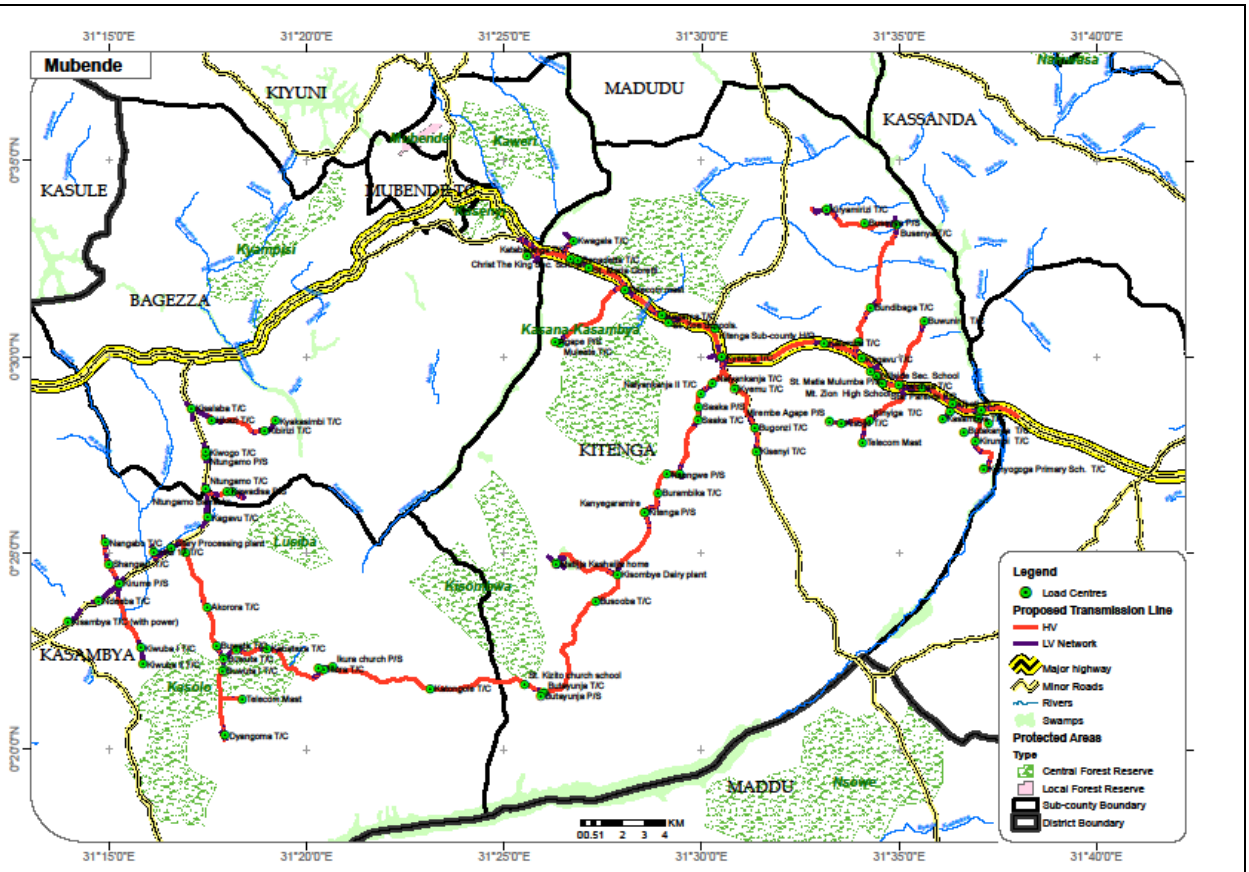

Figure 2 Map showing the Proposed Distribution Network

From the above figure, it can be seen that there will be 27 distribution Transformers with a total installed capacity of 1,550kVA which will serve at least 23 Load centres including Trading Centres (TC), Rural Growth Centres (RGC) and villages.

Specifically, the proposed construction of the distribution line is associated with:

- Clearing of right-of-way as necessary along the proposed route;
- Installation of line structures, accessories and conductors;
- Erection of poles for the 33 kV Distribution Lines and Low voltage network
- Possible construction of workers camps and storage facilities for the project materials

Although it is desired that the power lines run along the road reserves, in some cases due to sharp corners and the need to avoid some sensitive ecosystems the lines may not strictly go along the Road Reserve. For these areas an environmental assessment in line with the requirements for a Project Brief has been conducted. Furthermore, it is observed that on the proposed Distribution line map, the line passes through the Kasolo Central Forest Reserve (CFR) which could have led to major environmental Challenges. The Environment Assessment team on the ground however found that the Kasolo CFR is heavily encroached and settled with most of the settlers not even remotely aware that they are settled on a CFR.

1.9 Materials and methods (Technical consideration)

1.9.1 Overhead Power Lines Route

The proposed overhead 33kv power Distribution Line will be constructed along the existing road reserve (where feasible) so as to minimize the negative environmental and social impacts. In some cases the team has found that the provisional design passes the Distribution line too close to buildings (shops) and has had to move them to pass behind the shop alignment. The low voltage lines are allowed to move as close as possible to the buildings to ease connection costs by the end-users. This serves the main objective of the project which is to extend power to the villages and upcoming Rural Growth Centres (RGC) together with other institutions such as schools, Health Centres, resorts and upcoming industries and entertainment centres among others.

1.9.2 Voltage Levels

Uganda Electricity Transmission Company Ltd (UETCL) uses voltage levels of 132kV and 66kV at transmission. UMEME the electric power distribution company uses 33kv and 11kV at Sub-transmission/distribution, and 415/240V for low voltage distribution. The proposed Grid Extension project covers a distance of 95 km hence the choice of 33kV for the overhead lines. The Low voltage network is about 52.2 km and a voltage of 415/240 was selected for distribution.

The proposed 33kv power line will be 3 phase throughout with three line conductors in vertical and/or horizontal flat formation and a continuous earth wiring running along above the three conductors.

1.9.3 Three-Phase Versus Single-Phase

Three phase sub-transmission is favoured mainly because of its advantage in terms of conductor size for a given load. This criterion applies when the conductor requirement due to the load is higher than the requirement for the mechanical resistance of the line.

As is expected, at the initial stage for upcoming Rural Electrification Schemes, the loads are initially very light and the above mentioned criterion would not apply. Instead, single phase line would have been preferred either as Two Wire Neutral Return (TWNR) or Single-Wire Earth Return (SWER). This could offer considerable cost reductions as compared to three phase lines. However, from the consumer side, the single-phase schemes do not allow three-phase loads to be supplied and the cost savings have to be balanced against the possible drawbacks to the large consumers who may have to procure large single phase motors at higher prices. This is why in most of these rural electrification projects, a three phase 33kv line is selected and considered more suitable.

1.9.4 Conductors

The conductor selected is AAAC100 (100m2 All Aluminium Alloy Conductor) for the main line and AAAC50 for short spurs, transformer T-Offs and all LV distribution networks. The size was selected as the most economical for anticipated loads taking into account line losses. The type AAAC as compared to ACSR (Aluminium Conductor Steel Reinforced), and AAC (All Aluminium Conductor) was selected because it does not find a ready market with the Aluminium Hallow-ware manufacturers who normally buy vandalized ACSR and ACC Conductors.

1.9.5 Poles

Creosote treated wooden poles were selected because of their availability, cost as well as the technical skills available to handle such poles. Concrete and Mild steel poles were considered as the second option and mainly because of cost these two poles have not been used in Uganda. Creosote was selected for treatment in preference to Tanalith due to the poor experience in Uganda of Tanalith treated poles. There seems to be a problem with Tanalith treated poles since they seem to start rotting after a short time as short as two years.

1.9.6 Insulators

Pin type porcelain insulators will be generally used rigidly mounted on a steel cross-arm on top of the pole. These are passive materials without any effect on the environment. The design takes into account wind gusts of up to 80 knots. The insulators a rigidly mounted but the conductors can swing in the wind. The design has allowed for swings at maximum loads without the conductors touching.

1.9.7 Line Construction

The 33kv power lines will be constructed mainly with 12m high creosote treated wooden poles, with an average spacing of 110m. The holes for the wooden poles will be of diameter 350mm and depth of 2000mm. While there is effort not to place poles in wetlands, this may happen at two locations of Nabakazi River and Rivers Kattabalanga I and II. In this case the holes for poles in wetland areas will be back filled using imported suitable gravel material. Steel wire (7/4.00) stay sets will be installed at intermediate angle poles, section poles, T-offs and terminal structures. The stay wires will be anchored by a stay block buried at depth of 2.0m and about 3m from the base of the pole. The stay block shall consist of 1000mm long creosote treated woodblock or 300mm x300mmx300mm concrete block.

Addition to that, H-type section poles will be erected every 1.5km and each H-type pole consists of two poles erected 2m apart with one cross-arm together with four stay sets installed along the line corridor. At heavy angles, the stay wire will be installed at 45 degrees angle from the pole.

It is estimated that more than 850, 12m wooden poles will be required for the 33kv line which is 95km long. The minimum clearance required for the 33kv line from the ground or

highest water level will be 6.0m and 3m from the nearest point on a building. The clearance from the edge of the road will be a minimum of 2m.

The LV distribution network will require approximately 1300, 10m wooden poles. The distance between poles for the LV distribution is 50m maximum.

1.9.8 Transformers

At each load centre, a sub-station of appropriate capacity say 25KVA, 50KVA and or 100KVA shall be established to distribute power to the local consumers. Each sub-station consists of a transformer which will step down the voltage from 33kv to 415V 3phase or 240 single phase. Most of the consumers will require a single phase supply although some consumers presently running maize grinding mills may require the 3 phase supply.

The transformers will be mounted on poles depending on the size. 25KVA will be mounted on a single pole while the 50KVA and 100KVA will be mounted on an H-pole. This consists of two poles with the transformer mounted on a steel platform between the two poles.

The transformers are made of a steel tank with copper coils immersed in mineral oil in the tank. Possible impacts are oil leakage, transformer burning due to overloads, possible vandalisation to steal the oil.

1.9.9 Connections to Consumer's Premises

Connections to Consumer's premises shall be by an overhead solidal cable. The connection for a consumer in the trading centres where the power line passes may require no pole; whereas for those consumers further away from the distribution network one or more additional pole may be required.

The premises to be connected will have to be properly wired and inspected by an authorized person for safety. All consumer connections shall be through a pre-paid energy meter. Rural Electrification Agency (REA) will put in place an Institutional arrangement to take charge of the line and the consumers.

CHAPTER 2: PREPARATION OF THE PROJECT BRIEF (METHODOLOGY)

2.1 Background

In general, the EA was prepared in line with the provisions governing ESIA procedures as contained in the National Environment Act Cap 153, The Environmental Impact Assessment Guidelines, 1997; the Environmental Impact Assessment Regulations, 1998 as well as Safeguard Policies of the WB.

A team of environmental practitioners was dispatched to the project area covering the six sub Counties of Kiganda, Kitenga, Kigando, Kasambya, Nabigola and Kibalinga all in Mubende District to physically document the baseline characteristics, identify and assess the likely impacts and determine their magnitude resulting from the construction activities of the line. In addition a number of key stakeholders were contacted to discuss the likely impacts and potential mitigation options. During this survey the following were conducted:

- Identification of key components of the existing physical and biological and socioeconomic environment of the project area.
- Description of all project activities to be carried out during the lifespan of the project;
- Identification of the social and environment concerns;
- Recommendations for mitigation and monitoring measures to be implemented during both the construction and operation of the 33kv distribution line in order to avoid or minimize the negative impacts.

Specifically, the following approach was adopted: -

2.2 Project Strategy

In accordance with guidelines for Environmental Assessment, this Environmental Assessment was conducted by a multidisciplinary team to ensure that the emerging concerns have been addressed. Subsequently, a number of specialists including the Team Leader (An experienced environmental assessment specialist), Sociologist of many years experience in social and environmental assessment, GIS/informatics Expert and Plant ecologist as well as an avifauna specialist were each assigned to collect information in accordance with their specialisations.

The methods which were used in identification of environmental issues included consultations with civic leaders and local communities, physical inspection of the proposed power line site and professional judgment by the Consultant.

2.3 Site Surveys

The entire length of the proposed Distribution Line was inspected from the beginning to the end, including areas where Tee-Offs and the associated low voltage networks have been plotted. This was done to enable the consultant assess the potential environmental impacts that may be caused by the grid extension activities.

2.4 ***Social, Physical and Biological Environment***

The EA team inspected the physical environment and the state of the biodiversity in the project area. It also surveyed the prevailing status with respect to the social environment (particularly employment, livelihood and health). With respect to social concerns, a questionnaire was served to the likely to be impacted people in order to determine their social characteristics.

This project does not envisage relocation or land take since most of the works will be along or within the Road Reserve; ***and the project does not warrant land acquisition.*** In the rare case that land will have to be acquired, the project has in place an experienced valuer who will work closely with the Chief Government Valuer (CGV) to ensure full and adequate compensation for those impacted. Nevertheless, the social-economic aspects of the project have been adequately covered in this assessment for the Project Brief.

2.5 ***Literature Review***

Appropriate literature review has been carried out. The review has covered the relevant Environmental Laws and Guidelines, and existing State of the Environment Reports for Mubende District. In addition, the team is conversant with the World Bank Safeguards and Guidelines.

2.6 ***Public Participation***

During the study, the EA team identified the key stakeholders including those identified in Table 1 below.

Table 1: Stakeholder Analysis for Kiganda Mile 16 Rural Electrification Project (33kv Distribution Line and related Low voltage works) EA process

	Stakeholder	Relevance	Opportunity	Threat	Link
1	Ministry of Energy and Mineral Development	It is the PCU and Provides Policy guidelines on Energy production, Use, and management in Uganda.	Supports energy activities within Uganda	Failure to implement National Policies on Power Production and Transmission	Electricity Act
2	Rural Electrification Agency (REA)	Developer and overall in Charge of the Electricity Distribution project	Well prepared to distribute the power in the rural areas	Limited resources to buy and distribute the power to rural areas.	Electricity Act
3	National Environment Management	Ensures Environmental Compliance and	Will support environmental compliance for the	Blind application of the law without	National Environment Act

	Authority (NEMA)	regulates activities that affect the environment;	benefit of all stakeholders	considering mitigation factors	
4	Local Government of Mubende District from LC 5 to LC 1 level within project area.	Administrative Units to ensure equity and success of project implementation and environmental compliance within the respective Sub Counties;	Has capacity to mobilize communities as well as overseeing any grievance that might arise	The Local Government displeasure can translate to project failure	Local Government Act 1997
5	Ministry of Lands, Housing and Urban Development;	Valuation of properties for compensation and other land aspects;	Facilitates land transfer and compensation if necessary	Can overestimate or underestimate the values distorting the market	The Land Act Cap 227, Constitution, and Compensation Policy
6	Ministry of Water and Environment	Responsible for the environmental concerns including wetlands, water bodies and other Natural resources;	Supports environmental compliance for the benefit of all stakeholders	Blind application of the law without considering mitigation factors	National Environment Act Cap 153
7	The National Forestry Authority	Responsible for Central Forest Reserves (CFR) such as the Kasambya and Kisobwa CFRs in the project area	Responsible for all Central Reserve forests in Uganda	Failure to corporate will block passage of distribution lines through the CFR	The National Forest and Tree Planting Act
8	Project Affected People (PAP) along the proposed line in Mubende District	This includes all the PAPs who will be impacted to some degree;	The PAPs could improve livelihood by taking advantage of the project.	PAP may threaten workforce for lack of public relations.	Project is within their area.
9	Department of	To take care of	Enables the	Over enthusiasm	Historical

	Museums and Monuments	any Artefacts and findings of archaeological or Cultural Significance to ensure that Physical and Cultural Resources are protected;	department keep the database if artefacts are found.	on part of the department can kill project	Monument Act
10	Department of Wetlands Management	The Department is in charge of both seasonal and perennial wetlands/swamps that require protection. The proposed Distribution lines will cross a few of them.	Responsible for monitoring and managing all the Wetlands in Uganda and supports environmental compliance in wetlands	Blind application of the policy and law could disrupt the project	Wetland Policy and the National Environmen t Act
11	Uganda National Roads Authority	In charge of the Road reserves along the National Roads where the Power lines will pass.	Responsible for all Government roads in Uganda	Denial of the UNRA to pass along the road reserves could disrupt the project	The Roads Act Cap 358
12	Department of Occupational Safety and Health	Responsible for the safety at the work place considering that the Workforce could be at Risk due to construction activities	Ensures compliance on construction sites	That all works are safe and compliant	Occupationa l Safety and health Act 2006
13	Key NGOs in the environment sector operating within the project area.	To sensitise communities on relevant environmental concerns	They are on the ground	Can de-campaign the project	Policy and the Local Government Act
14	Contractor / Developer	In charge of the Works and project Implementation;	They supervise	Can withhold resources	Electricity Act

This project does not envisage relocation of persons or large amounts of land take since most of the works will be close to within the Road Reserve. Besides, the design will try to minimise this impact.

2.7 ***Comments from the Consultation Process***

Under Annex 5, a comprehensive record of stakeholder comments is provided. In summary, the consultations were carried out using at least two approaches. For the Lead Agencies and Institutions, consultations were at individual level using face to face interviews. For the community and Local Leaders', group meetings were called where each group was at most about 30 to 40 people along the impacted villages. The comments and concerns are provided in the summary Table below: -

S/NO	Stakeholder	Key Stakeholder Concern	Proposed Measure
1	UNRA	▪ Concerned that when infrastructure passes along the road reserve, it is made to compensate at the time they wish to expand or upgrade the road;	▪ REA to request for the conditions of Use of UNRA road Reserve in writing;
			▪ UNRA to give the Conditions of use of the road reserve in writing at the time of implementation;
2	NFA	▪ Concerned whether adequate compensation will be paid for all the cut trees	▪ All cut trees and crops to be compensated for plus a disturbance allowance paid
			▪ REA shall require NFA to develop an off-set plan before money is disbursed. Based on NFA's off-set plan, an agreement between REA and NFA to ensure that replanting of forest is done. ▪ REA shall continuously monitor implementation progress of the off-set plan
		▪ Concerned that REA might legalize the encroachers that are in the CFR by giving them power;	▪ REA agrees not to supply power to people who have encroached on the CFR
3	Mubende District Planner	▪ Concerned of possible conflicts and interference by local politicians;	▪ Will wait to see and receive any complaints from the Local politicians;

4	Mubende District Environment Office	▪ Concerned that the electricity will electrocute unsuspecting persons during operations	▪ Warning signs to be displayed at all sensitive / exposed sites and sensitization to be conducted at times of RAP implementation
		▪ Possibility of increased HIV due to the workforce in the area	▪ Both workers and the community will be sensitized and whenever possible the condoms should be distributed especially to the workers.
		▪ Concerned that Mubende is most degraded and there is virtually no wildlife	▪ N/A
		▪ Concerned that REA will not provide free seedlings to the community to plant trees since the area is heavily degraded	▪ REA to limit its activities of compensation to directly impacted people whose trees or crops have been removed;
5	Private Forest Owners	▪ Concerned whether they will be adequately compensated	▪ Compensation to be paid out promptly after valuation has concluded;
6	General Public and Local leaders	▪ Concerned that some Population Centres were not considered for the extension of the grid; ▪	▪ REA to consider further expansion in the future
		▪ Concerned that the cost of connecting people to the grid is high	▪ Informed that for those within 50 metres of the line, the only cost will be wiring their houses otherwise REA to meet the costs. Those beyond will pay for the extension;
		▪ Concerned whether people would be allowed to share connecting poles	▪ This is always the case
		▪ Concerned that REA is compensating for only trees and crops	▪ The design will avoid structures
		▪ Concerned that if a PAP should die	▪ Informed that the laws of

		who will collect the compensation;	succession will apply
		▪ Wondered whether the power will support small scale industries	▪ Informed that it will
		▪ Concerned of the possible conflict between land lords and Bibanja holders	▪ Compensation will cover developments and no land will be involved
		▪ Concerned that the construction may delay and people build in the valued areas	▪ The project will be on time;
		▪ Concerned of the potential hazards of electricity during operation	▪ Sensitization to be conducted and warning signs to be put in place;

2.8 ***Impact Assessment Methodology***

The impact assessment mainly relied on expert judgment of the team and information derived from existing literature, field observations, records and Information from consultations with key stakeholders in the project area.

The potential impacts were analysed according to the impact assessment methodology outlined below, with significance ratings (from insignificant to very high) assigned to each potential impact. The methodology considered the standard characteristics of potential impacts, including extent, intensity (or magnitude), duration and probability (likelihood of the impact occurring).

The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur. The criteria used to determine impact consequence are presented in Table 2 below.

Table 2: Criteria used to determine the consequence of the impact

Rating	Definition of Rating	Score
A. Extent– the area in which the impact will be experienced		
Local	Confined to project or study area or part thereof (e.g. site)	1
Regional	The region, which may be defined in various ways, e.g. cadastral, catchment, topographic	2
(Inter) national	Nationally or beyond	3
B. Intensity– the magnitude or size of the impact		
Low	Site-specific and wider natural and / or social functions and processes are negligibly altered	1
Medium	Site-specific and wider natural and / or social functions and processes continue albeit in a modified way	2

High	Site-specific and wider natural and / or social functions or processes are severely altered	3
C. Duration– the time frame for which the impact will be experienced		
Short-term	For the duration of project activities / up to 2 years	1
Medium-term	2 to 15 years	2
Long-term	More than 15 years	3

The combined score of these three criteria corresponds to a consequence rating, as set out in Table 3 below.

Table 3: Method used to determine the consequence score

Combined Score (A+B+C)	3 – 4	5	6	7	8 – 9
Consequence Rating	Very low/Negligible	Low/Minor	Medium/minor-moderate	High	Very high/Major

Once the consequence is derived, the probability of the impact occurring is considered, using the probability classifications presented in Table 4 below.

Table 4: Probability classification

Probability of impact – the likelihood of the impact occurring	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring
Definite	> 90% chance of occurring

The overall significance of impacts is determined by considering consequence and probability using the rating system outlined in Table 5 below.

Table 5: Significance Rating

Significance Rating	Consequence		Probability
Insignificant	Very Low	&	Improbable
	Very Low	&	Possible
Very Low	Very Low	&	Probable
	Very Low	&	Definite
	Low	&	Improbable
	Low	&	Possible
Low	Low	&	Probable
	Low	&	Definite
	Medium	&	Improbable
	Medium	&	Possible
Medium	Medium	&	Probable
	Medium	&	Definite
	High	&	Improbable
	High	&	Possible
High	High	&	Probable
	High	&	Definite
	Very High	&	Improbable
	Very High	&	Possible
Very High	Very High	&	Probable
	Very High	&	Definite

Finally the impacts are considered in terms of their status (positive or negative) and the confidence in the ascribed impact significance rating is noted. The classification for considering the status of impacts and the confidence in assessment is presented in Table 6

Table 6: Impact Status and Confidence

Status of impact	
Indication whether the impact is adverse (negative) or beneficial (positive).	+ (positive – a 'benefit')
	– (negative – a 'cost')
	Neutral
Confidence of assessment	
The degree of confidence in predictions based on available information, the environmental consultant's judgment and / or specialist knowledge.	Low
	Medium
	High

2.9 ***Disclosure Process***

The final Project Brief will be shared with Stakeholders especially key Lead Agencies and the Mubende District Local Government, which is in charge of the Project Area and feedback will be obtained.

CHAPTER 3. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

The purpose of this section is to set out the legislative, regulatory, and policy context in which the distribution lines being proposed must comply. It discusses policy, legal and institutional framework within which the study was conducted. Relevant policies have also been reviewed and the relevance highlighted as in subsequent sections below.

3.1 Policy Framework

3.1.1 The National Environment Management Policy, 1994

The overall goal of this policy is promotion of sustainable economic and social development mindful of the needs of future generations and EIA is one of the vital tools it considers necessary to ensure environmental quality and resource productivity on long-term basis. Therefore, this study is aimed at establishing environmental and social concerns of the planned project and charting out measures to ensure that, the project is implemented along a sustainable path.

3.1.2 Uganda's Vision 2025

In 'Vision 2025' Ugandans set themselves many goals to achieve by the year 2025. The goals range from political, economic, social, environmental, and cultural among others. Concerning the environmental goals, Ugandans aspire to have a sustainable social-economic development that ensures environmental quality and the resilience of the ecosystem. As far as the quality of life is concerned, electricity is one of the key ingredients in the quality of life as it facilitates development and industrialization process.

3.1.3 The Energy Policy, 2001

The policy goal is to meet energy needs of Uganda's population for social and economic development in an environmentally sustainable manner. The policy recognizes linkages between the energy sector and other sectors such as economy, environment, water resources, agriculture, forestry, industry, health, transport, education, decentralization and land use. Since energy development and environmental damage are related, the policy recognizes need to mitigate both physical and social environmental impacts of energy projects.

3.1.4 Renewable Energy Policy for Uganda, 2007

The overall goal of the Renewable Energy Policy is to increase the use of modern renewable energy, so that its proportionate use increases from the current 3.8% to 61% of the total energy consumption by the year 2016.Electricity to be supplied will be hydropower. Therefore, this project will support this policy since hydropower is a renewable energy. Furthermore, the project augments the policy by increasing coverage of usage of renewable energy in the country.

3.1.5 The National Policy of HIV/AIDS

The National Policy of HIV/AIDS, which has largely been developed along the lines of the International Labour Organization (ILO) Code of Practice on HIV/AIDS and the World of Work provides policy guidance and implementation strategies for HIV and AIDS interventions at the workplace.

The influx of immigrate labour to implement the project, plus the movement of people into the project area for employment opportunities will increase the spread of HIV/AIDS in the area. This Environmental Project Brief streamlines the policy objectives into the project and without forgetting the communities where it will be implemented.

3.1.6 The Uganda Gender Policy

The Uganda Gender Policy is an integral part of the national development policies. It is a framework for redressing gender imbalances as well as a guide to all development practitioners. The aim of this policy is to guide all levels of planning, resource allocation and implementation of development programmes with a gender perspective. The emphasis on gender is based on the recognition that "gender" is a development concept useful in identifying and understanding the social roles and relations of women and men of all ages, and how these impact on development.

3.1.7 Plan for Modernization of Agriculture (PMA)

The overarching goal of the Plan for Modernization of Agriculture (PMA) is poverty eradication. Modernizing agriculture is another way to eradicate poverty through increased production thus, ensuring that there is enough food for all the people at all times. The majority of the population lives in rural areas and is engaged in subsistence agriculture. Therefore, the intervention of rural electrification will seek to increase the productivity of factors of production in agriculture, to ensure food security, to create gainful employment, to increase incomes, and to improve the quality of life of those engaged in the agriculture sector and to promote agro-processing through value addition. Given that the project area is predominated by agriculture (mainly subsistence but with some commercial) as a source of livelihood, this project is relevant for PMA as availability of electricity in these areas will result in value addition leading to increased incomes.

3.1.8 National Development Plan (NDP) (2010/2011-2014/2015)

The National Development Plan of Uganda aims to address structural bottlenecks in the economy to accelerate socioeconomic transformation and bring a portion of the third of the population out of poverty. The plan outlines the development priorities and implementation strategies to help achieve this. Among these, energy and specifically rural electrification is acknowledged as an enabling sector that will require integration with other sectors of the economy for successful socioeconomic transformation. This plan has been put in place with the vision “A transformed Ugandan society from a peasant to a modern and prosperous country within 30 Years” and theme; “Growth, Employment and Socio-Economic Transformation for Prosperity”. Chapter 3.2 section 120 of the NDP sets out objectives including; increasing household incomes and promoting equity, improving stock and quality of economic infrastructure, increasing access to quality social services, and promoting science, technology, innovation and ICT to enhance competitiveness.

The above objectives are directly linked to the project because electricity distribution and use will form an important part in achieving them in the project areas.

3.2 Legal Framework

This section presents a summary of the legal and institutional frameworks governing the construction and operation of electrical transmission lines. It also summarizes the relevant lead agencies and departments that administer and monitor issues related to the proposed investment.

3.2.1 The Constitution of the Republic of Uganda (1995)

The importance of environment in Uganda is recognized by the Constitution of the Republic of Uganda of 1995. This is a supreme law in Uganda. The Constitution provides for *inter alia*, matters pertaining to land, natural resources such as rivers and lakes and the environment. Article 245 refers to protection and preservation of the environment. This Project Brief is prepared to ensure environmental and settings in the project area are protected. Therefore, under the Constitution, the activities of this Project have to be implemented in a manner that ensures that, environmental and social settings are utilized in a sustainable manner.

3.2.2 National Environment Act, Cap 153

The National Environment Act Cap 153 provides the legal framework for the sustainable management of Uganda's environmental resources. Section 20 makes it a legal requirement for every developer to undertake an environmental assessment for projects listed in the third schedule of the statute. Electrical transmission lines are listed in paragraph 10 (b). The implementation of the Project will further be guided by the Approval Conditions that shall be issued by NEMA.

3.2.3 The Land Act, 1998

The Land Act provides for the tenure, ownership, and management of land in Uganda. The Act should be read together with the 1995 Constitution that restored all private land tenure regimes, divested the state and vested it directly to the citizens of Uganda. The Act also stipulates that land acquisition can be through private treaty with the owner/lawful occupant or compulsorily in public interest. Although no land take is envisaged in this project, the Act is relevant because of its reference to compensation on page 15, in addition to the access and use of the road reserve for infrastructure developments as well as provision for acquisition of land in the interest of the Public/Government should be mentioned.

3.2.4 The Workman's Compensation Act, 2000

The law requires that compensation be paid to a worker who has been injured or acquired an occupational disease or harmed in any way in the course of his work. Sections 6 and 7 provide for the compensation for fatal injury and 46 months of earning. For any permanent incapacity compensation will be paid in the equivalent of 60 and 72 months earning respectively. Section 15 puts medical examination for an injury to be the Employer's responsibility and prescribes a form of notification of injury to the Commissioner for Labor.

The implementation of the project must of necessity provide and ensure that the safety and the health of the workers is not compromised and matters of injuries, accidents and death while at work are all adequately addressed.

3.2.5 The Occupational Safety and Health Act (2006)

The Act provides for the prevention and protection of persons at all workplaces from injuries, diseases, death and damage to property. Employers must provide for the protection of workers from adverse weather, provision of a clean and healthy work environment, sanitary conveniences, washing facilities, First Aid and facilities for meals. The Act provides for safe access to the workplaces and safe work practices which applies to this project as well.

3.2.6 Environmental Impact Assessment Regulations, 1998

The procedures for conducting EIAs and guidelines for EIA practitioners and regulatory bodies are stipulated in this document. The guidelines stipulate that the EIA process will be participatory, that is the public is to be consulted widely to inform them and get their views about the proposed investment. The developer has the legal obligation to seek the views of the public, persons that may be affected by the proposed project, as well as all other stakeholders. In this case, key stakeholders have been consulted in the course of the study and their views have been integrated into the study. It also provides a framework for the preparation of a Project Brief which has been the case.

3.2.7 The National Environment (Wetlands, River Banks and Lakeshores Management) Regulations, 2000

These provide principles for sustainable use and conservation of wetlands, riverbanks and lakeshores. The relevance of these regulations in this study is embedded in the following requirements and institution of measures for protection of wetlands in the implementation of the project in wetland systems in the areas to be traversed by the project.

3.2.8 National Environment (Waste management) Regulations, 1999

The National Environment (Waste Management) Regulations, 1999 apply to all categories of hazardous and non-hazardous waste and to the storage and disposal of hazardous waste and its movement into and out of Uganda. The regulations promote cleaner production methods and require a facility to minimize waste generation by eliminating use of toxic raw materials; reducing toxic emissions and wastes; and recovering and reuse of waste wherever possible.

3.2.9 Historical Monument Act, Cap 46

This act provides for the preservation and protection of historical monuments and objects of archaeological pale-ontological ethnographical and traditional interests.

Under this Act the Minister has wide ranging powers to protect any of the above objects and under Section 8, no person whether owner or not shall cultivate or plough the soil so as to effect to its detriment any object declared to be protected or preserved, and no alteration is permitted on any object declared to be protected or preserved;

And under section 11, any person who discovers any object which may reasonably be considered to be a historical monument or an object of archaeological, pale-ontological, ethnographical, and traditional interests is required to report it to the Conservator of antiquities within 14 days of the discovery.

3.2.10 National Forestry and Tree Planting Act, 2003

Among others, this Act provides for the sustainable use of forest resources and the enhancement of the productive capacity of forests and provides for the promotion of tree planting. This law applies in areas that are traversed by the power distribution line, requiring compensation to offset any likely negative impact.

3.2.11 Town and Country Planning Act, Cap 246

This Act aims at consolidating the orderly and progressive development of land, towns and other areas whether urban or rural. The Act provides for planning areas and regulation on compensation regarding properties within planning areas among others. Both Extension and Distribution Lines have an impact on the Towns and Country Plans of the area considering that the proposed distribution line corridor passes upcoming RGC and Trading centres. Although none of the affected TC and RGC have in place a structural plan. There will be a need to anticipate their introduction in the near future. For this reason this Act is relevant to the proposed project.

3.2.12 National Environment (Conduct and Certification of Environmental Practitioners) Regulations, 2003

Section 35 (1) requires that every Environmental Practitioner who has been certified and registered under these regulations shall be subject to the code of Practice and the Professional Ethics prescribed in the Fifth Schedule. REA used certified EIA practitioners who have to comply with this requirement.

3.2.13 The Roads Act, Cap 345

The Act creates a road reserve, which is bounded by parallel imaginary lines no more than fifty feet from the centre of any road. All Developers of proposed projects must acquaint themselves with the provisions of this Act so that they do not risk prosecution or structure demolition should construction take place within the road reserve. Although the Act predates the NEA (Cap 153), it is clear that any Developer must undertake an EIA of any project that is likely to affect the road reserve. REA will respect this law while implementing the project.

3.3 The World Bank's Safeguard Policies

The Bank has ten environmental and social safeguard policies, a brief description of which is presented in Table 7. The operational policy most relevant to ERT projects is that for environmental assessment (EA), contained in Operational Policy 4.01 Environmental Assessment. Where involuntary resettlement may occur with a project, Operational Policy 4.12 will be relevant. The Bank requires an EA of projects proposed for Bank financing to ensure that these projects are environmentally sound and sustainable.

In general, most ERT sub-projects would fall within the World Bank Category B or GoU Category II project categorization. Uganda's environmental requirements are herewith assumed to largely have been to cover the Bank's requirements. On the other hand, by and large, it can be summed that, the requirements of these policies have been taken care of in the provisions of the various national environmental legal frameworks such as; the Constitution of the Republic of Uganda, the National Environment Act Cap 153 as well in the various regulations formed under this Act such as the EIA Regulations of 1998 amongst others.

Other line legal instruments that take care of World Bank Safeguard Policies include; the Land Act Cap 227, the National Forestry and Tree Planting Act Cap 8/2003 amongst others.

Table 7: World Bank's Safeguard Policies and their Applicability in the Project

No.	Safeguard Policy	Summary of Core Policy Requirements	Policy Triggered?	
			Yes	No
01.	OP 4.01 Environmental Assessment	Screen early for potential impacts and select appropriate instrument to assess, minimize, and mitigate potentially adverse impacts. In conformity, the Project Brief has been prepared and it contains ESMP that will guide implementation of prescribed mitigation measures.	√	
02.	OP 4.04 Natural Habitat	The conservation of natural habitats is essential for long-term sustainable development. The Bank support and expects borrowers to apply, a precautionary approach to Natural resources management to ensure opportunities for environmentally sustainable development. The Bank does not support projects that involve the significant conversion or degradation of critical natural habitats. The ESMP took into consideration the likely impacts on the natural habitats such as wetlands, forests, rivers and suggested mitigation measures.	√	
03.	OP 4.09 Pest Management	Support integrated approaches to pest management. Identify pesticides that may not be financed under the project and develop appropriate pest management plan to address risks.		X
05.	OP 4.10 Indigenous Peoples	Screen to determine presence of Indigenous Peoples in project area. Policy triggered whether potential impacts are positive or negative. Design mitigation measures and benefits that reflect Indigenous Peoples cultural		X

		preferences.		
04.	OP 4.11 Physical Cultural Resources	The Bank supports the preservation of cultural properties which includes sites with archaeological, paleontological, historical, religious or unique natural values. It seeks to avoid impacts on such sites. A Chance finds procedure has been prepared as part of this EA and will be used to manage the un-known PCRs. During the EA no known PCRs were encountered.	√	
05.	OP 4.12 Involuntary Resettlement	For those who are affected by projects, avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs; assist affected persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them; encourage community participation in planning and implementing resettlement; and provide assistance to affected people regardless of the legality of land tenure. A Resettlement Action Plan (RAP) has been prepared alongside this EA.	√	
06.	OP 4.36 Forests	The Bank does not finance projects that, in its opinion, would involve significant conversion or degradation of critical forest areas or related critical natural habitats. If the Bank determines that forest areas and natural habitats are not critical and that there are no feasible alternatives to the project and it's siting, and that overall benefits substantially outweigh the environmental costs, the Bank may provide project financing provided that appropriate mitigation measures are	√	

		incorporated. There are forest reserves in the project area. The ESMP took into consideration the likely impacts on the forests and suggested mitigation measures.		
07.	OP 4.37 Safety of Dams	For large dams, technical review and periodic safety inspections by independent dam safety professionals.		X
08.	OP 7.50 Projects on international water ways	Ascertain whether riparian agreements are in place, and ensure that riparian states are informed of and do not object to project interventions.		X
09.	OP 7.60 Projects in disputed areas	Ensure that, claimants to disputed areas no objection to the proposed project		X

3.4 Institutional Framework

The institutional framework under which the planned project will be implemented will involve the following agencies. They are:

3.4.1 *Ministry of Energy and Mineral Development (MEMD)*

The Ministry of Energy and Mineral Development (MEMD) is the lead agency for all energy projects in Uganda and is the PCU for ERT-III Project. However, its interests are represented in different capacities by the Electricity Regulatory Authority (ERA) which issues licenses, and by the Rural Electrification Agency (REA), which was established to initiate and bring ERT projects to fruition. REA is the FI (in its case, providing subsidies to sponsors) to which environmental monitoring and evaluation responsibilities have been delegated for the ERT programme.

3.4.2 Rural Electrification Agency

REA was established as a semi-autonomous Agency by the Ministry of Energy and Mineral Development through Statutory Instrument 2001 No. 75, to operationalize Government's rural electrification function under a public-private partnership. It functions as the secretariat of the Rural Electrification Board which carries out the Ministry's rural electrification responsibilities, as defined in the Electricity Act of 1999. REA is the project implementer and is therefore responsible for the general compliance of the project with all the environmental requirements. The Agency has an Environmental Unit responsible for ensuring that all project activities are in line with the national environmental requirements and development partner' safeguards requirements**.**

3.4.3 The Electricity Regulatory Authority (ERA)

The Electricity Regulatory Authority is a corporate body established to oversee the implementation of the electricity Act 1999. Under the Act, ERA is mandated to review proposed investments in the energy sector and guide the promoters through implementation. ERA will ensure that, the operations costing of energy from the planned line project will be in accordance with its set standards and tariffs.

3.4.4 The National Environment Management Authority (NEMA)

NEMA as mandated by the National Environment Act of 1995, is the principal agency for the management of the environment and shall coordinate, monitor and supervise all activities in the field of the environment.

NEMA has a cross-sectoral mandate to ensure that proper environmental safeguards are observed in the planning and execution of all development projects, which means that it reviews and approves all environmental impact assessment reports, referred to in its terminology as Environmental Impact Reviews (EIRs), and monitors project implementation. NEMA has prepared a set of EIA guidelines for the energy sector and potential developers should use these guidelines as supporting documentation project implementation.

The Environmental Monitoring and Compliance Department is responsible for the review and approval of EIAs, post-implementation audits and monitoring of approved projects. Although project sponsors have a responsibility for monitoring their own activities, NEMA carries out its own monitoring largely through district environment officers and environmental inspectors at NEMA's head office.

3.4.5 Local Government Administration Structures

The Administrative Framework covering the entire 33kv Distribution line as well as the associated low voltage networks will be under the Mubende District Administration leadership. Mubende District like all the other Districts in Uganda has a five tier administrative structure from the Local Council 1 at the village level to Local Council 5 at the District Headquarters, each headed by an elected chairperson. However, the relevant sub counties for this power distribution project are Kiganda, Kitenga, Kigando, Kasambya,

Nabingola and Kibalinga. The study team visited all the sub counties, established working contacts in each and it is imperative that the construction team takes advantage of the subsequent relationship for ease of their operations.

The construction and operation of the proposed Kiganda Mile 16 33kv Distribution line as well as the associated low voltage networks will be in cooperation with the said District and sub county Political and Administrative Leadership. This is most helpful in case of possible conflicts and interactions with the communities. This is why during the preparation for this study, both the leadership and communities have been mobilized and sensitized to lay ground for ownership of the project and future cooperation across all stakeholders.

Other administrative stakeholders as they relate to the environment include the National Environment Management Authority (NEMA), the Local Government especially the District Environment Office of Mubende, and Ministry of Water and Environment (MWE), Ministry of Lands, Housing and Urban Development (MLHUD), Ministry of Energy and Mineral Development (MEMD), the project developer as well as the World Bank who is responsible for the financial support. Table 8 shows the directly affected sub counties and parishes in the project area.

Table 8: Administrative Units showing the directly affected Parishes

Table 8: Administrative Units Showing the Directly Impacted Sub Counties and parishes / wards		
District	**Sub County/ Division**	**Parish / Ward**
Mubende	Kiganda	Nsozinga
		Kalonga
		Kyabyuma
	Kitenga	Kalonga
		Kagoma
		Kayebe
		Kagoma
		Bugonzi
		Kayebe
		Kagoma
	Mubende Town Council	Kisekende
	Kigando	Kiyanja
		Kigando
		Kirume
		Dyangoma
		Mugolodde
		Lusiba

Table 8: Administrative Units Showing the Directly Impacted Sub Counties and parishes / wards		
District	**Sub County/ Division**	**Parish / Ward**
	Kasambya	Kasambya (Town Board)
	Nabingoola	Kiyita
	Kibalinga	Nkandwa
		Ntungamo

Source: From Field Survey

CHAPTER 4: ENVIRONMENT AND SOCIAL SETTING

4.1 Physical Component

4.1.1 Location

Mubende District borders the Districts of Mityana to the East and South East, Sembabule and Mpigi to the South, Kyegegwa to the South West, Kibaale to the North West and Kiboga to the North and North East. The project lies on two map sheets; taking Kagoma TC along the Kampala – Fort Portal high way as the reference point, the area to the west lies on SHEET NA-36-13 (FORT PORTAL) while area to the east of Kagoma TC lies on SHEET NA-36-14 (KAMPALA).

4.1.2 Topography

The project area is in central Uganda but has characteristics of Central western Uganda being neighbour to Sembabule District. It is therefore characterised by short and undulating hills with wide valleys with expansive savannah to the south with some sharp hills to the east.

On average the district of Mubende lies at an altitude of 1,372 to 1,448 metres above sea level. Due to the fairly dry climate (the project area is within Uganda's cattle corridor), the valleys are mostly dry and the wetlands there in are mostly seasonal. Further to the south west which is the project area there lies zones of tors and innselbergs. The areas of infill that are associated with the rivers Katabalanga and Nabakazi are in the sub counties of Kasambya, Kitenga and Kiganda.

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4.1.2 Geology

The geology of the area comprises of granites, quartzites, undifferentiated acid and basic gneisses, muscovite-biotite gneisses and schists, sandstones-phyllites-schists, conglomerates-silicified rocks and swamp deposits. Fig 4.1 shows the Geological map of the project area.

There are also mineral occurrences; these include a former columbite mine at Mbale estate and three former wolfram mines at Lubanyi.

Granites: - There are two granites; the Mubende granite in the west and the Singo granite in the east. These two granites comprise the Mubende-Singo suite of Central Uganda (GTK, 2011). The Mubende granite is the larger of the two bodies and lies to the west of Mubende town. It covers a total of about 2000 Km2 and is characterized by a rocky landscape comprising hills with granite blocks or even small inselbergs - type elevations. The Mubende pluton includes two granitic phases;

i) The predominant rock type is a megacrystic granite, with the porphyritic texture locally grading into coarse and even grained varieties

ii) Subordinate medium – grained aplitic granite.

The Singo granite, the smaller pluton comprises of an arc shaped body of about 700 Km2, together with a small satellite body. The granite is uniform in mineral composition and is usually coarse in texture and porphyritic, but fine to medium grained varieties occur. The emplacement of the Singo batholith has had very little metamorphic impact on the country rocks. Some induration has taken place and tourmalinisation and silicification have occurred. The Mubende granite is more exposed than the Singo granite. Age dating has shown that the two granites are of paleo- protezoic age, about 1848 +/- 6 million years.

Quartzites: - These are part of the Buganda group and they form a prominent ridge along the main road west of Mubende town. They are often white, fine- or medium- grained weakly foliated rocks in which thin laminar bedding is occasionally visible and clastic textures are recognizable in places. Age dating suggests that these quartzites are paleo – protezoic, about 2000 million years old.

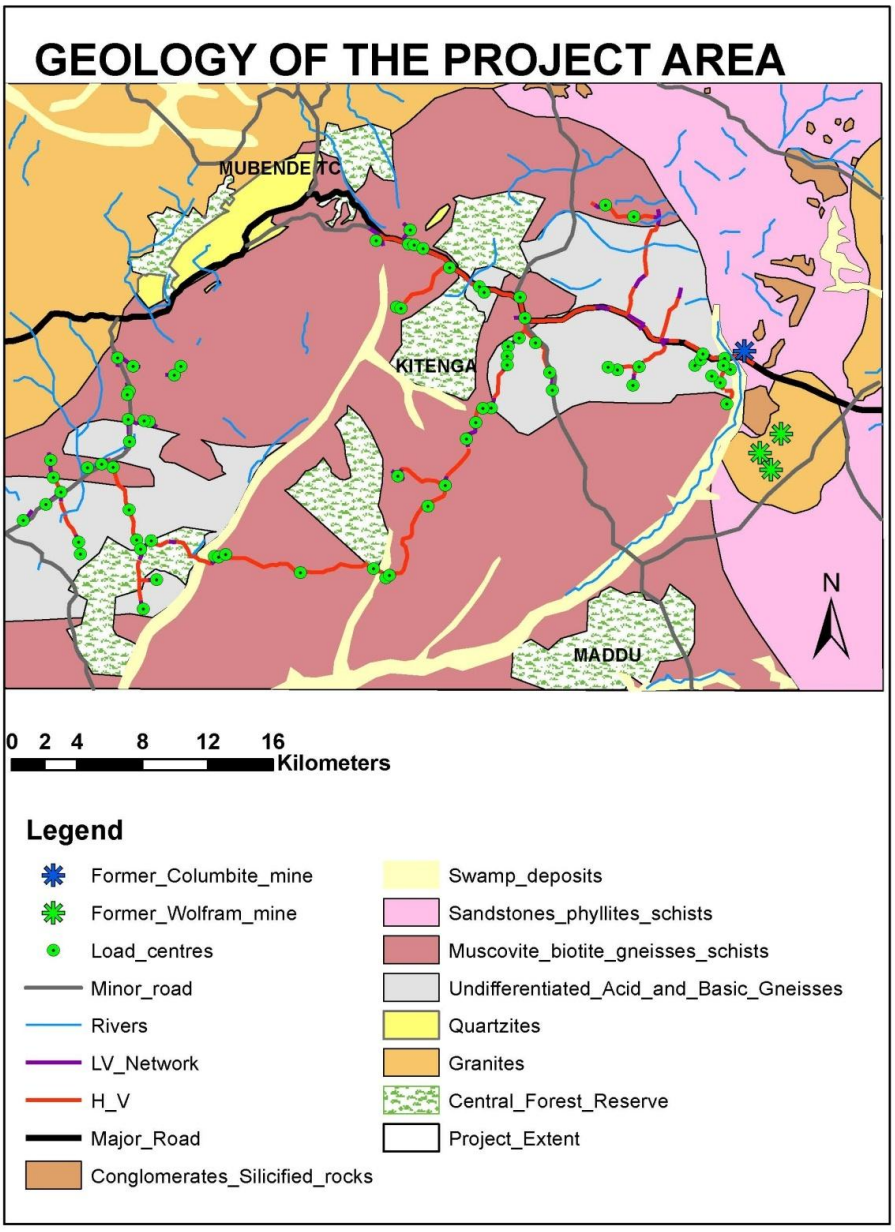

Figure 3: Geology of the Project Area

Source: Geological Survey of Uganda First Edition – 1962 Sheet NA-36-13 and Sheet NA-36-14

Sandstones – phyllites – schists: - These rocks have also been classified under the Buganda series. They are cut by numerous pegmatites and quartz veins. The sandstones and shists are frequently very thinly bedded, thus suggesting rhythmic sedimentation, and graded and current bedding on a very fine scale may occasionally be seen.

The rocks of the Buganda series have undergone two phases of metamorphism, which predate and are not related to the emplacement of the Singo and Mubende batholith. Minor structures in the rocks indicate that the first phase occurred between two periods of folding and caused the formation of muscovite, and in many areas cordierite (Turner and Verhoogen, 1951). The second metamorphism is post tectonic and caused the growth of disoriented biotite porphyroblasts.

Muscovite – biotite gneisses and schists: -Occasional out crops of these gneisses are common in the area but a typical example can be observed in a road cut of the Kampala – Fort Portal road, 1.5 Km west of Kiwumulo village. The rock is dark grey in colour and consists of narrow fine- to medium- grained quartzo- feldspathic bands. These lamella and bands were probably created by original variations in composition and may represent primary bedding. These rocks have been classified under the Toro system and they are of pre Cambrian age (Paleo protezoic, around 2200 million years old).

Undifferentiated acid and basic gneisses: - These rocks are part of the Basement complex and are of variable granitoid compositions and structures. They comprise of granites, granodiorites, and tonalites to trondhjemites. The rocks are composed of quartz, plagioclase, and K-feldspar porphyroclasts, frequently present in varying proportions, and subordinate pyroxene, amphibole and biotite in rising order.
These gneisses are of Archean age. U–Pb age determinations of zircon cores of similar gneisses at the foot hills of the Rwenzori Mountains yielded the following ages: 2584±18 Ma, 2637±16 Ma and 2611±14 Ma (Link et al. 2010).

Swamp deposits: - These mainly consist of clay, silt, sand and gravels deposited in river valleys and they are of Cenozoic, Pleistocene to Holocene age. This means their age varies from 1.8 million years to the present day, since even at this now rivers are depositing material in the valleys.

Conglomerates – Silicified rocks: - These rocks were first noted in Mityana and around Lake Wamala by Wayland in 1921. Johnson (1958) proposed the term 'Mityana Series' for these sediments. The series can be divided into a lower horizon, which consists of conglomerates, sandstones and arkoses, and an upper horizon of very fine grained silicified rocks. Either of these horizons may be absent locally. King noted that the distribution of these rocks in the field suggests that they were laid down on a very irregular surface and that the deposition took place in a series of small basins and valleys. In general, it appears that the basins and valleys were first filled with coarse conglomerates, sandstones and arkoses and the fine grained rocks were then deposited. Due to unequal erosion, the thickness of the series varies from place to place and the total thickness cannot be estimated. These rocks are younger than those of the Buganda series and their age is Mesoproterozoic.

4.1.3 Minor intrusives

Across the area, there are occasional small intrusives of pegmatites and dolerites. These include the following: -

Pegmatites: - Discrete pegmatites have been emplaced in all the metamorphosed rocks. Normally the pegmatites are composed of quartz, feldspar and muscovite with occasional tourmaline. Pegmatites in the Buganda series are well exposed on the rail cuttings between Myanzi and Musozi stations. They are 3 inches to 50 yards wide.

Dolerites: - A few dolerite dykes cut the granulitic gneisses in the Koja area and many boulders can be seen near mile 81 on the Kampala Fort Portal road. A fine grained dolerite, 6 inches wide, cuts a pegmatite near Kyampisi hill.

Economic geology: - The area around Kawungera has been extensively prospected in the past as wolfram deposits were found at Kyasampawo, Lubanyi and Kasambia with in the small satellite body that forms part of the Singo batholith. A complex pegmatite has also been found at Mbale estate. The pegmatite contains amblygonite, beryl, tantalite-columbite, augelite, lazulite, crytolite, apatite and calcite.

King reports that in 1963, a company known as Kabira Forest Mines Ltd operated a mine at Mbale estate. The principal mineral sought was columbite, however when amblygonite was found, it was also stock piled in a separate hip. A work force of forty to fifty men was employed for the operation. There are mica workings at Kinoni, 5 miles north of Madu, on the more westerly of the two summits of Kinoni hill. There is no information as to the amount of mica that has been removed from this site. In the southern half of the area, many shallow pits have been dug by the local inhabitants to extract kaolin or enoni from small, kaolinized pegmatites for the purpose of decorating the walls of houses.

Excavations and Disposal of soils

Along the proposed line (directly impacted) no preliminary works and no excavations of soils were sited by the survey team although mining activities are numerous within Mubende District. Apart from ongoing agricultural activities, for the most part the ground remains intact.

Climate

The area lies within Uganda's cattle corridor and therefore receives fairly low rainfall with relatively high temperatures. Nevertheless the area receives a bimodal rainfall pattern with totals ranging from about 800mm per annum to 920mm. The rain seasons normally occur from March to May and mid-August to October. Subsequently, the County of Kasambya is affected by very long dry periods with a temperature range of 17c-30c.

Although on average the wind is between calm to 10 knots, the onset of the rains are characterised by thundery episodes with a high frequency of lightening and wind gusts. It is

therefore necessary that the proposed grid extension can withstand the wind gusts that can be experienced at the commencement of the rainy seasons especially around August / September.

Climate Outlook

Global Circulation Models (GCM) indicate that North Eastern Districts of Uganda as well as the entire cattle corridor may experience a temperature increase of up to 2.00C in the next 20-25 years due to Global Warming (we note that more recent models indicate a further drying before an increase is realised in the area). Unlike elsewhere in Uganda where the total rainfall may increase by up to 15%, in this area, there is a likely hood for the total rainfall to decrease. Since the models used were course, it is advisable for this project to assume that the frequency of thundery activities will continue in the future so that the integrity of the physical structures is not undermined.

Air Pollution and Noise

Baseline noise levels were taken from various junctions which data will be used to monitor effects of the project implementation to the general noise levels within this area and can also be used to check the effect of the expected businesses to the general noise increase in the area.

Noise can be hazardous during operation of equipment at the construction site. Trucks carrying poles and other equipments to site will also contribute to the higher noise levels than otherwise normally experienced. This will affect workers on site and local dwellers. Regular servicing and appropriate repair of haulage trucks will mitigate the noise impact. Noise levels were taken using TES 1350A Sound Level Meter (Table 12). The findings show that the noise was within the noise levels that are recommended by NEMA (Table 9).Maximum Permissible Noise levels for the general environment

Table 9: Noise levels as taken from selected points along the proposed distribution line area

Sampled points	Noise Levels Recorded in decibels	Time Taken
Kyenda market - 36N 0333979 UTM 0055272	57.5db	2.10pm
Kasiaja ranch	Low-30-40db	2.20pm
Kisenyi market– 36N 0335646 UTM 0050839	53.5db	2.50pm
Nsengwe market – 360332060 UTM 0049889	Low-4odb	3.00pm
Kanyegaramire- 36N 0330581 UTM 0048157	46.5db	3.15pm
Butayujo -36N 0325741 UTM 0039545	57.0db	4.55pm
Katabalanga – 36N 0313965 UTM 0040663	42.5db	5.30pm
Kasalaba – 36N 0309117 UTM 0052845	45.4db	9.25am

Source: Field work

4.2 Ecological Component

Flora and fauna

4.2.1 Vegetation study

The Vegetation of Mubende District can be classified as medium altitude forests and Savanna mosaic vegetation. The medium altitude (670-1,760m) forests have moist evergreen and semi-deciduous vegetation. These form closed stands (30-50m) high with abundant lianas and epiphytes. Grasses are generally absent and are broad leaved and fire sensitive.Savanna mosaic on the other hand cover an area of common grass species like elephant grass (*Pennisetum purpureum)* and Omutete (*Cymbopogon spp*.), however there are some isolated forests and savanna trees.

Land degradation in form of deforestation and soil erosion are among the major threats to continued productivity of the land resource in Mubende. These mainly stem from poor land use and management practices such as; poor agricultural methods, uncontrolled bush burning and overgrazing. Overgrazing is more evident in the main cattle keeping areas in the district such as Kassanda and Buwekula.
Generally, main factors accelerating fragility of the land ecosystem in the district include:-

- Unreliable rainfall
- Destructive farming methods
- Deforestation, and
- overgrazing

Vegetation within the project area

Plants offer potential advantages over other taxa as biodiversity indicators because they are the primary producers. Their abundance and diversity is likely to influence the species richness belonging to higher trophic levels (Kent et al. 1996). An inventory of all plant species was carried out along the length of the proposed power line. The aim was to come up with a species list with reference to their conservation status, and to assess the impact of the project's activities on the flora.

Results and discussion

The species within this study area were mostly farmland plants with remnants of forest trees an indicator of degraded forests. The common farm land vegetation included the following; *Carica papaya, Musa spp,Zea mays, Coffee Arabica, Syzygium jambolam Phaseolus vulgalis* and *Persea Americana*. The rest of the species are common weeds of disturbance such as *Bidens pilosa,* common shrubs included but not limited to; *Lantana camara, Solanum incanum, Eichhamia crassipes and Xanthurium stramonium* among others whereas a few (i.e. *Coixlacryma-jobi, Cyperus dives, C. esculenta, Echinochloacolona, E. crus-galli, E. pyramidalis, Eichhornia crassipes Persicaria madagascariensis* and *P. senegalensis* are known species of wetlands. Among the common trees encountered includes; *Mangifera indica, Albizia spp. Bridelia scleroneura Lonchocarpus laxiflorus* and one *Milicia excels*

(Mvule) among others. A full list of encountered plant species is annexed to this document for reference as Annex 1.

None of the encountered species is IUCN red listed and so all are species of no conservation concern. The exception was the timber species *Milicia excels* (Muvule) Fig 4, which is IUCN listed in the category 'Lower Risk/near threatened'. This species is not endangered but because of over exploitation for its valuable timber, the IUCN calls for its protection because it can run into the 'threatened' category if not used sustainably

Figure 4: Muvule Tree along the T-Off to Agape Primary School (coordinates 36N 0341248 UTM 0052519)

Chamaephyte was the most common life form and was represented in all the five geographical distribution classes. However, most of the *chamaephytes* were of Afro-tropical (At) distribution.

Species abundance

The herbal layer consists mainly of grasses, which constitutes about 60 % of the plant cover. The woody species cover constitutes about 35 % for both trees and shrubs. Bare ground cover was about 5% for all the study area on average.

Wetlands/swamps

The main nature of the wetlands is comprised of Papyrus swamps where it has not been depleted. Within the project area, there are three major wetlands that may be impacted by the distribution line. The estimated distance between poles is about 100metres and most of the streams crossed are less than 50 metres. This means that the distribution poles will be put in either side of the wetland. The three wide wetlands are Nabakazi wetland as well as the Katabalanga I and II wetlands shown in the Pictures below. Elsewhere within the sub counties the design of the road network is such that it follows the contours along the hills. This tends to leave the wetlands out of the proposed distribution line path.

	This is Nabakazi River wetland which is about 120 metres to cross. Use of H or M member structures can run over such distance to avoid erection of structures in wetlands. In the worst case scenario only one structure will be placed in the wetland and there is a platform that had been placed by the road construction towards the centre that can support structures.
	Katabalanga I at the at the edge of Kasolo CFR. Which is about 80 to 100 metres. Again, the use of H or M member structures can run over such distance to avoid erection of structures in wetlands

	Katabalanga II at the Mubende Town Council Boader. The left hand side (Upstream) of this wetland is narrow about 70 metres while the down stream is wide at about 100 to 120 metres. The structures will be placed along the upstream side.

Protected areas and Forests

The Map showing the Central Forest Reserves in the project area is given as Fig 5 below. From this map at least three CFRs will be bypassed by the Distribution line. These are Kasolo, Kisombwa and Kasana - Kasamya CFRs. All these are consisting of mostly pine. They do not have species of conservation value. The CFR of Kasolo exists only in Name. It has been completely degraded and encroached. For all these CFRs except that of Kasana kasambya and Kasolo proposed Distribution line will pass on the side of the road which does not have the CFR. This is because the road forms the boundary line of these CFRs. As for the Kasana - Kasambya CFR the road passes through the CFR.

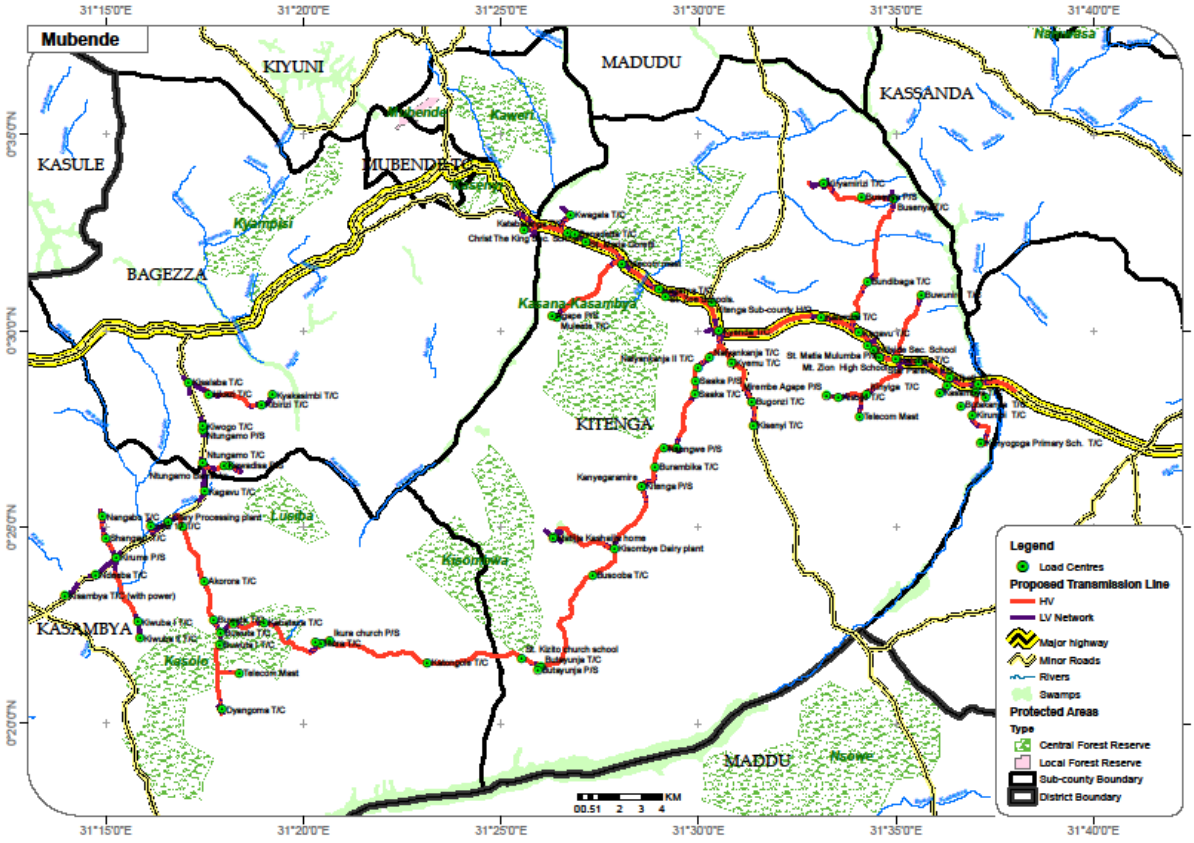

Figure 5: Map showing the Central Forest Reserves in the project area.

Termite Action and High Canopy Trees

It was observed that many areas are infested with termites which can be a danger to wooden poles despite the treatment. As the wooden poles remain in the ground for an extended period the potential for aggressive termites to attack these poles increases. Secondly trees in the neighbourhood especially plantation trees (Eucalyptus and Pine can be attacked by termites which may lead such tall trees to collapse on the distribution lines.

Figure 6: Termite mounds that could attack tall tress and poles

Figure 7: Plantation Trees on either side of the Road Reserve

4.3 Social – Economic Developments

Mubende District Local Government's mission is to serve the people of Mubende through coordinated delivery of service and focusing on national and local priorities so as to promote social and economic development in the District. It is stated in their State of the environment report that "One sure way of achieving this mission is through sustainable environment management".

The District is composed of three Counties which are Buwekula, Kasanda and Kasambya Counties with a total land area 4,621sq.km. The main project area is in Kasambya County which is composed of five sub counties of Bagezza, Kibalinga, Kasambya, Kigando and Nabingola. There is only one affected zone in Mubende Town Council which for the purpose of this report will fall under Kasambya County. The team has identified that along Most of the distribution line, most of the homesteads that will benefit are in a linear arrangement along the roads and many of them are made of bricks with a few constructed with semi – permanent materials. The following paragraphs describe specific socio economic concerns in the context of this Project Brief.

4.3.1 Land Tenure

Although Mubende District has all the four types of land tenure systems, the Project Area has mostly leasehold, mailo land and customary land tenure systems. A few rich farmers have converted their leasehold into free hold land while new land acquisitions are being directly converted into Freehold. Although there is Buganda Kingdom land under the Buganda Land Board, it is mostly found at the Sub County headquarters and will not be affected by the project. Although the Land Act of 1998 has provisions for protection of the environment and adherence to environmental laws in land management, not much has been done to enforce the different sections pertaining to the environment due to low awareness levels, limited financial and personnel resources. Subsequently Mubende District has the

third highest environmental degradation rate (both deforestation and general land degradation) in the country next to Mayuge and Wakiso. Under this project however, no land take is anticipated hence the issues of land tenure will play a minor role in this study.

4.3.2 Population

As discussed above, Mubende district is composed of 3 Counties of Buwekula, Kasanda and Kasambya. The project will be in Kasmbya County. However it should be noted that not all the sub counties in Kasmbya will be traversed by the grid extension. Using projections from the 2002 Population and Housing Census, the beneficiary population by 2012 is estimated at 161,900 people out of which the men are 80,400 and the women are 81,500 (See Table 10 below From the table, the female to male ratio in the project sub counties is **50.34:49.66** indicating that in general there are more women than men.

Table 10: Population Projections based on the 2002 Population and Housing census

District (Mubende)	**Year - 2008**			**Year - 2012**		
Parish	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
	Bagezza Sub County					
Kibalinga P	2,900	3,000	**5,900**	3,400	3,400	**6,800**
Kisekende(Mubende TC)	3,100	3,200	**6,300**	3,600	3,700	**7,300**
Ntungamo	4,300	4,500	**8,800**	5,100	5,300	**10,400**
Total in Affected Parishes	**10,300**	**10,700**	**21,000**	**12,100**	**12,400**	**24,500**
	Kasambya Sub County					
Kasambya (Town Board)	4,400	4,700	**9,100**	5,100	5,400	**10,500**
Kigando	5,100	5,200	**10,300**	5,900	6,100	**12,000**
Kirume	4,400	4,500	**8,900**	5,100	5,200	**10,300**
Kiyita	3,400	3,600	**7,000**	4,100	4,100	**8,200**
Lusiba	6,200	6,400	**12,600**	7,200	7,500	**14,700**
Muyinayina	6,000	6,100	**12,100**	7,000	7,000	**14,000**
Nabingoola	3,800	4,100	**7,900**	4,500	4,700	**9,200**
Total in Affected Parishes	**33,300**	**34,600**	**67,900**	**38,900**	**40,000**	**78,900**
	Kitenga Sub County					
Bugonzi	4,100	4,000	**8,100**	4,800	4,600	**9,400**
Busooba/kayebe	2,400	2,300	**4,700**	2,800	2,700	**5,500**
Kabyuma	4,300	4,400	**8,700**	5,100	5,000	**10,100**
Kagoma	4,900	5,100	**10,000**	5,700	5,900	**11,600**
Kalonga	7,300	7,200	**14,500**	8,500	8,400	**16,900**
Total in Affected Parishes	23,000	23,000	46,000	26,900	26,600	53,500
	Kiganda Sub County					
Nsozinga	2,200	2,200	**4,400**	2,500	2,500	**5,000**
Grand Total Impacted	**68,800**	**70,500**	**139,300**	**80,400**	**81,500**	**161,900**

Source: Adopted from 2002 Population and Housing Census projection

4.3.3 Ethnic Composition

Although the majority of the people are either Baganda or Banyoro, there is an increasing number of immigrants the majority of whom are Bafumbira, Bakiga or Banyankore from South Western Uganda. While the immigration has led to increased agricultural production in the area, a new phenomenon of environmental degradation has set in.

4.3.4 Migration trends

From the above description, the migration rates in Mubende district are dynamic with many different ethnic groups especially from south western Uganda coming to settle in the district. The number of migrants in the area may be described as high based on the discussions with the Sub County chief of Kitenga. There is an increasing number of immigrants the majority of whom are Bafumbira, Bakiga or Banyankore from South Western Uganda. While the immigration has led to increased agricultural production in the area, a new phenomenon of environment degradation has set in. There is notable increased deforestation, wetland destruction and charcoal burning among others. This fact has contributed to Mubende district to become the third most rapidly degrading district in Uganda after Mayuge and Wakiso. Nevertheless the cultures although diverse, they have learnt to live together in harmony. There were no reports of ethnic based violence or discrimination.

4.3.3 Community livelihood

Housing and settlements

In general, settlement patterns within the area are not planned and none of the RGC had a structure plan despite the fact that the whole of Uganda has (since the enactment of the Town and Country Planning Act Cap 246) become a planning region. Nevertheless there is a mixture of permanent houses, semi-permanent as well as temporary structures which serve as residential accommodation. Within the RGCs the number of permanent houses is increasing (Fig 2 – Fig 5).

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Figure 8: Permanent House at Kisojo

Figure 9: Linear Structures at Kirumbi RGC

Figure 10: Make shift Kiosks at Kibyamirizi RGC

Figure 11: Kyenda Trading Centre Off Mubende Road

However the future indicates that planned developments are likely to come to the area following the enactment of the Town and Country Planning Act Cap 246.

Energy

Firewood and charcoal are the main power sources for domestic needs across the entire project area. Apart from the need for agricultural expansion, fuel wood is a major contributor to forest degradation due to search for both fuel wood and charcoal. Scarcity of firewood is not yet an issue because the area is still forested although the forest estate is rapidly diminishing. Some of the designated CFR are fully settled with no evidence of any forest (e.g. Kasolo CFR). There are a few rich people / farmers who use either solar energy and or diesel for lighting and pumping of water from the water dams. All the grain milling plants encountered as well as the single milk cooling plant use diesel as the power source.

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Figure 12: An encroached Kasolo CFR

Figure 13: Milk Plant using a Diesel Generator

Otherwise kerosene/paraffin is the main source for lighting for most households in the project area.

Recreational facilities/Eco-tourism

For the most part there are no well-organized recreational facilities for the community. These are limited to bars and drinking joints within the RGCs. Snooker tables were common at most entertainment centres within RGCs. On the other hand there is a high potential for recreation taking into account the numerous forests which could provide nature walks and eco-tourism opportunities. These are yet to be developed. Away from the immediate project area, there are various cultural sites but none is within the project area. The nearest one is the Nakayima tree / Shrine within Mubende Town Council which can be a Tourist Attraction.

Religion and faith

From existing literature, it was found that the majority of the people (56.3%) are Catholics followed by Protestants/Anglican (21.7%) and Moslems (10%) in that order. The rest 12% believe in other faiths including traditional religions.

Health Services

In line with Government policy, the health sector in Mubende District continues to take Primary Health Care (PHC) as a priority with a view of catering for the most vulnerable groups especially infants, children, mothers and adolescents. It also continues to lay emphasis on the consolidation of the existing health services through repair, re-equipping and completion of facilities and retraining human resources, strengthening the health information system, staff and career development.

Available statistics indicate that there are 75 health units in the district. Of these 54 are

Government owned and 21 private. Some of the health units lack basic equipment and health personnel. On average about 49% of the population live within 5 km off a health facility, the distance widely recommended for a reasonable access to health care. There are also 2 nursing homes, 59 private clinics, 3 pharmacies 80 drug shops and 1 Rehabilitation centre. There is also a radio call rescue system connecting hospitals to government health centres IV and III.

The most common causes of morbidity are malaria, upper respiratory infections, intestinal worms, trauma, diarrhoea diseases, skin diseases and malnutrition (Ref State of the environment report Mubende).

The AIDS scourge has complicated the health situation to increasing opportunistic Infections and mortality. Though AIDS awareness is high (85%), there is still need to
Sensitize the public because the rate of HIV/AIDS continues to rise.

The main challenge for the health centres in the project area is lack of grid electricity. This has made storage of medicines especially vaccines difficult.

4.3.4 Social Economic Activities

The dominant economic activity within the project area is mainly subsistence agriculture and limited commercial farming. Presently Maize has become a major commercial crop and almost every household has some maize for both domestic and commercial use. The main food crops in the project area include the following: -

- Maize
- Beans
- Sweet Potatoes;
- Irish Potatoes;
- Groundnuts;
- Bananas;
- Finger millet;
- Simsim;
- Soya Bean; and
- Yams.

The cash crops within the project area include the following: -

- Maize;
- Coffee;
- Cotton;
- Tea; and
- Forest products

The area is good for the growing of different fruits and vegetables. Those seen included the following: -

- Tomatoes;
- Pineapples;
- Passion fruit;
- Avocadoes;
- Jack fruits;
- Onions; and
- Cabbages

To the South west of the project area cattle ranching as well as dairy farming are well entrenched. There a few commercial ranchers as well as some dairy cattle keepers. Goat rearing is also a common source of livelihood with some taking it as a large commercial enterprise. Limited fishing within the wetlands (Nabakazi River) was also observed and is a

source of income for those who practice it. This source is seasonal and most lucrative during the months of August to November.

There are many privately owned pine as well as eucalyptus plantations in addition to the CFR reserves some of which are under intense pressure due to degradation. Some of the economic /commercial activities are shown in Fig 8 to 13.

Within the project area there are no major industries apart from grain milling, brick making and charcoal burning. The latter two have a negative impact on the environment and have contributed to Mubende being heavily degraded. For the rest of Mubende district, the industries include: -

- Coffee processing;
- Tea processing;
- Bread baking;
- Maize milling;
- Brick making;
- Printing;
- Making of jiggery;

Figure 14: Fish Traps at Nabakazi River

Figure 15: Selling the Mudfish

Figure 16: Drying Maize for sale, Sept- 14

Figure 17: Maize Plantation, May 2014

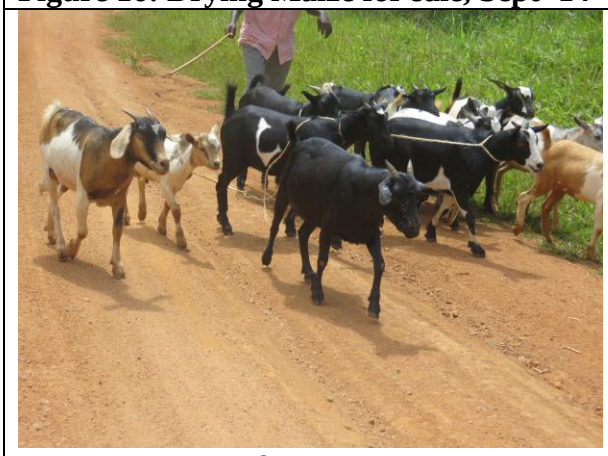

Figure 18: Goats for Sale

Figure 19: Commercial Tree Planting

4.3.5 Sources of Income

From the foregoing, the main sources of income are Agriculture, Livestock, Forestry, industry and limited fishing when in season. There is limited industrial activity within the village setting. Most of the households have some subsistence farming activity in addition to keeping either livestock or birds. Trade is also an important source of income. The tourism industry is not yet developed but there is great potential for both eco-tourism as well as visiting cultural sites.

4.3.6 Communication and accessibility

The project area can be accessed by road as it lies astride the Kampala – Mubende road. There are a number of village roads some of which are fair-weather roads that lead to the different RGCs within the project area. Although commuter taxis are few deep in the villages, the boda bodas are common and they have eased transport.

All the telecommunication companies are well represented in the area and the mobile telephone is a handy tool for ease of communication.

4.3.7 Cultural sites

Apart from River Katabalanga which is crossed by the power line, there are no other cultural sites directly affected by the project. Although Mubende as a district has a few cultural sites the rest are not within the project direct zone of impact. Table 11 below provides the cultural sites within Mubende District (including one in Mityana District)

Table 11: Cultural Sites in Mubende District

S/NO	NAME OF SITE	LOCATION		HISTORICAL BACKGROUND
		Parish	LC I Village	
1	Nakayima Shrine	Booma	Booma	A Sacred tree whose base has large root buttresses forming nooks and fissures on Mubende hill used for cultural beliefs and Practices. The ancient palace used to be here.
2	Tanda Caves and pits		Mityana	Home for Walumbe
3	Nakyegalika .	Kasota	Lubajja A.	Area where Buganda Royals performed rituals to appease Spirits
4	Lubajja	Kasota	Lubajja B.	Area out of bounds to people because of cultural spiritual powers
5	Nakayaga	Kasota	Lubajja B	Source of strong blowing wind
6	Kabanyoro	Kasota	Ggulwe B.	Place of territorial extension war between Banyoro and greatly

				challenged Baganda despite their win
7	Kiwunya (A well)	Kasota	Bunjaaya	A well to princess Tajjuuba where she ordered fot the killing of people against Kabaka ship.
8	Ndawula Kawumpuli .	Kasota	Kasota	• Where Kabaka Ndawula made cultural rituals. • Where strong fever "Kawumpuli" hid people
9	Kasota (a well)	Kasota	Kasota	Where King Kimera and his helpers drunk water, has an unbeaten snake appearing in case of abusing the well
10	Kinoni	Kasota	Kinoni	Source of stones used as chalk and immoral grinding stone.
11	Senkuba	Nfumbye	Kalyankoko	Source of rainfall. People first clean the site, perform rituals and it rains immediately on leaving site
12	Muyinayina and Butorogo Rocks	Kasambya		Rocks where the Kings of Bunyoro used are said to have come to play the Drafts (Mweso)
13	River Katabalanga	Kasambya	Mubende Town Council	This is the place where legend say that Isimbwa killed his brother Kayikuzi

Source: State of the Environment Report , Mubende and Uganda Districts Information Book, 2012

Besides Katabalanga River, the Nakayima Shrine is the one closest By about 4 kilometres from the nearest point to the project area and since it is located within Mubende Town Council, it is an easy target for recreational viewing / eco-tourism.

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No graves were identified along the surveyed line at the time of the study. However discussions with the survey team indicated that if the line/pole is targeting a grave, adjustments will be made so that the grave is not disturbed. For this reason, it is not likely that graves and burial sites will be impacted by this grid extension.

4.4 Detailed social analysis

After receiving the data sheets from the field covering the five sub counties of Bagezza, Kibalinga, Kasambya, Kigando and Nabingola, the data was edited, and coded before it could be analyzed. The data entry screen and questionnaire file were designed with the help of EpiData Version 3.1 software. Data from the field questionnaires were entered, checked for inconsistencies and validated and finally exported to the improved version of the SPSS Software version 16 for data analysis. Epi Data software was chosen because it is the best software for data entry since it designs a data entry screen to appear like a questionnaire itself, it provides an option for range and consistency checks and it is excellent in double

entry and validation for the same data and comparison of any differences. Two levels of analysis were performed. Univariate analysis involved the use of frequency distribution tables, bar graphs and pie-charts. Various measures of central tendency and dispersion like the mean, mode, median, maximum, minimum and range were also done for easy interpretation of the findings.

Secondly, Bivariate analysis was performed with the use of cross tabulations like Pearson chi square (χ^2) to establish the relationship between the dependent and independent variables. The Pearson chi Square (χ^2) was derived as follows.

$$\chi^2_\alpha = \sum_{i-1}^{r} \sum_{j-i}^{k} \frac{(O_{ij-}E_{ij})^2}{E_{ij}} \quad \text{………………………………………………………………. (i)}$$

With (n-1) degrees of freedom
Where, Oij is the observed frequency in row i and column j
Eij is the expected frequency in row i and column j.

4.4.1 Population Characteristics / Dynamics

All the respondents interviewed were adults as there was no child-headed household found among the selected groups who were interviewed. The majority of the people interviewed were males (about 75% while the rest were women). In the local community, males are the decision makers and will be the ones to make the decision whether to use the electricity in their homes or not. This is expected because of the society which is mostly patrilineal. Otherwise most of the respondents were within the working age bracket (19 – 60 years) at about 81%. There is a significant number of aged people (above 60 years) whose proportion was about 16%. From the analysis most of the respondents fall in the category of 25 to 55 years. This is a youthful population which can indulge in productive work and are therefore not vulnerable.

4.4.2 Education Status of Respondents

From the analysis of the respondents, it was clear that the number of illiterates was quite high (34%) which means that many of them will need intensive sensitisation to appreciate the security and safety concerns related to use of electricity in their homes. The majority have received with only a minority of about 5% who have gone beyond secondary school (Fig20)

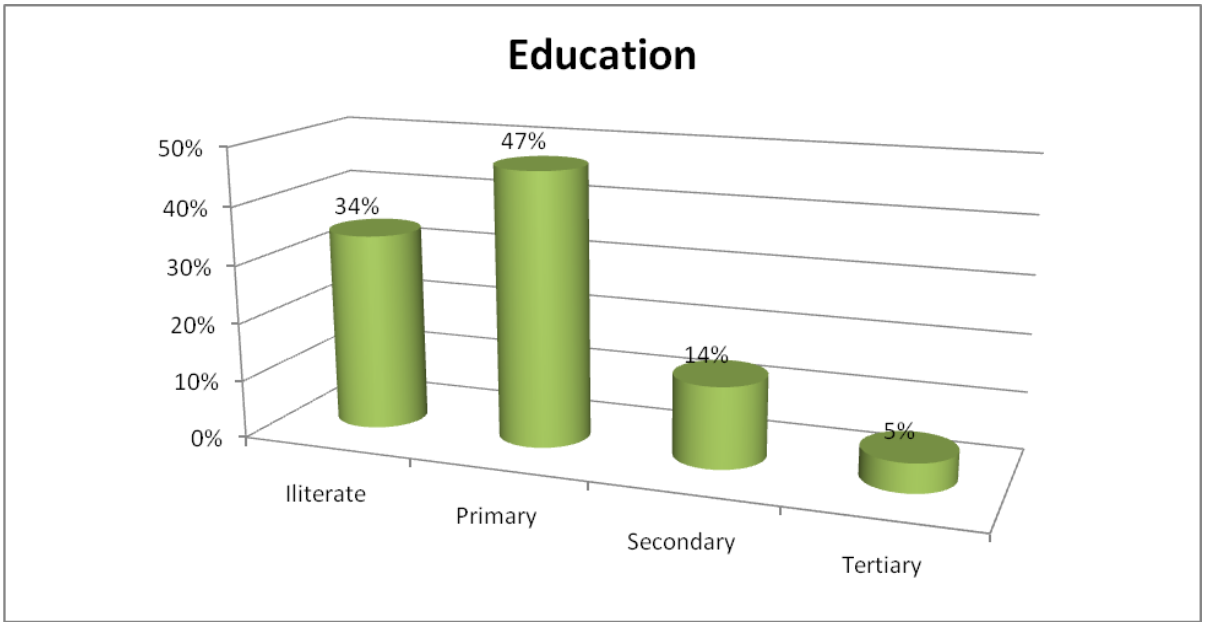

Figure 20: Percentage distribution respondents according to their highest level of education.
Source: **Field data, 2014**

4.4.4 Occupation and source of income

The majority of the respondents in the project area are farmers followed by salary earners and traders respectively. The salaried people include public servants as well as labourers. Farmers constitute 77 % of those likely to be impacted. Surprisingly although unemployment rates are high in Uganda, most of the people described themselves as employed such that the unemployed are only 5%. It is likely that these are underemployed but were not ready to admit unemployment since it is not cultural correct to say am unemployed if you are a man. From observations most of these so called farmers are actually subsistence farmers and may need support to afford grid power in form of concessions or other encouragement. There are a few commercial farmers with large herds of cattle who can afford electricity without subsidy. They include Hon Matia Kasaija who has a 5 square-mile farm and employs over 200 workers.

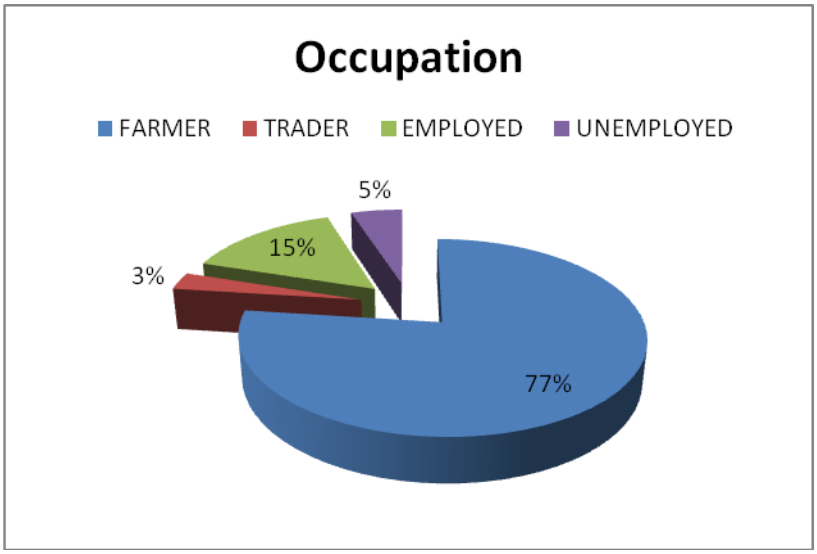

Figure 21: Percentage distribution respondents according to their Employment Status.
Source: **Field data, 2014**

4.4.5 Food and cash crops grown by the households and Incomes

The most common food crops within the project area are Beans (24 %), followed by Banana (21%) and Cassava (15%)-(Fig 18). On the other hand the most common cash crop within this agricultural community is coffee (62.5%) followed fruits (23.2%). There is an increasing use of forest products as cash crops as shown in fig 22 below. Food and cash crop processing are potential beneficiaries of the grid power.

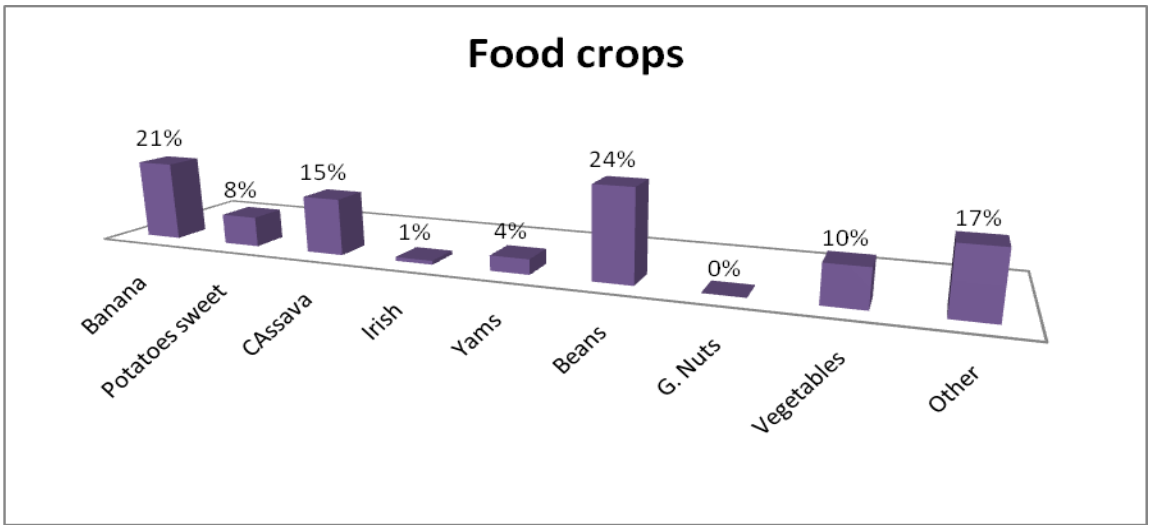

Figure 22: Proportion of food crops by households in project area

Source: Field data, 2014

On the other hand, the most common cash crop within this agricultural community is Fruits (49%) followed by Coffee (34%). There is an increasing use of forest products as cash crops as shown in fig 23 below. Food and cash crop processing are potential beneficiaries of the grid power.

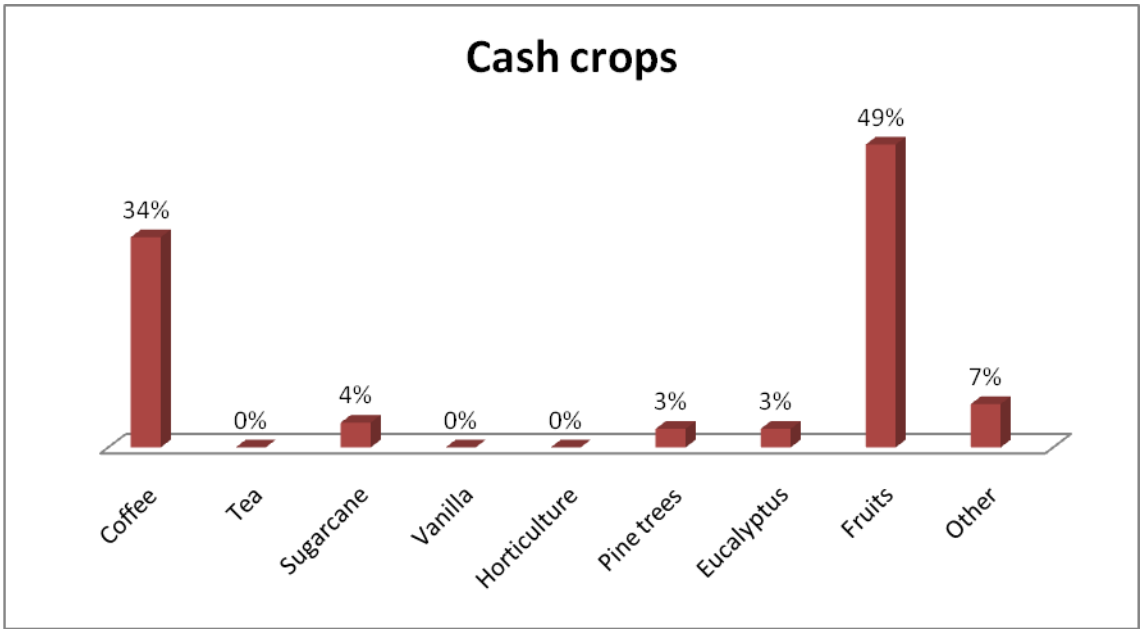

Figure 23: Proportion of Cash crops by households in project area
Source: Field data, 2014

On the other hand most respondents do keep animals and or birds. Poultry, goats and Cows are the most common animals kept in the impacted households (Fig 24)

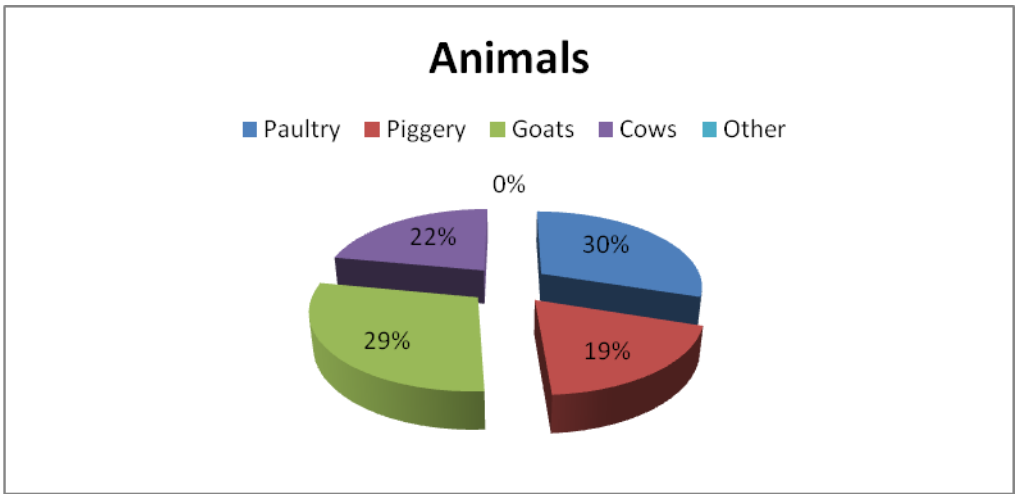

Figure 24: Percentage distribution of farmers who keep animals/birds
Source: Field data, 2014

4.4.6 Land Ownership Issues

The majority of the likely to be impacted people (98%) are living on their own land which they say that they bought. This is likely to be true since the project area has been settled in more recent years. There are a few who are renting land or inherited it as seen from Fig 25 below.

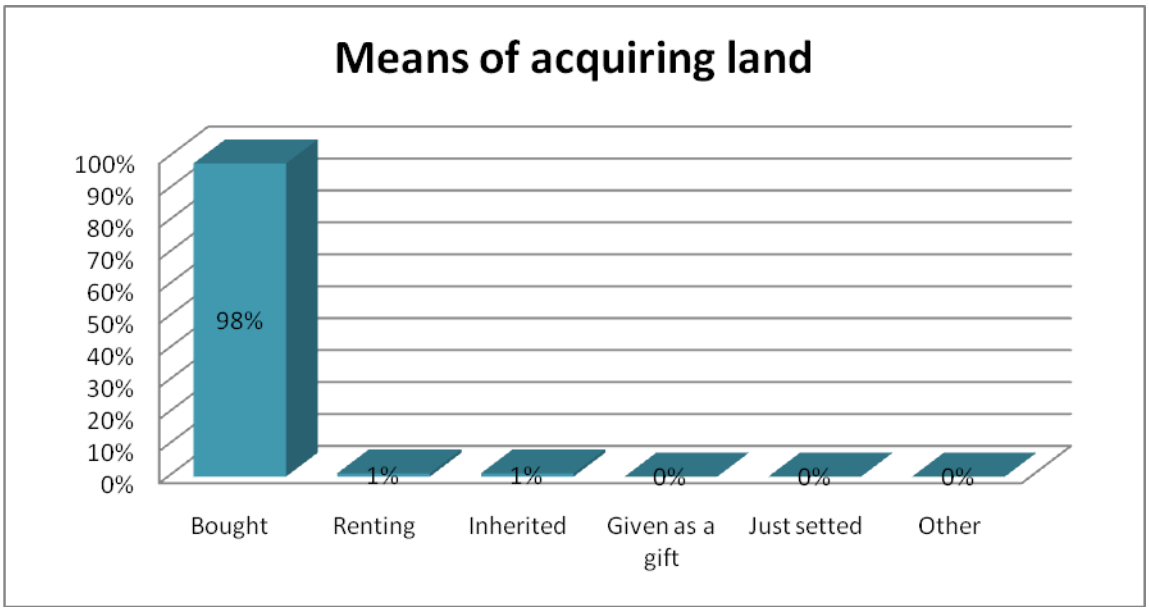

Figure 25: Percentage distributions on respondents' means of acquiring land

Source: **Field data, 2014**

Although they are owners very few of them have land titles (about 1%). They have acquired the land by agreement (73%) or other settlement arrangements. 26% of those interviewed said that although they bought they did not have documents to show the transaction (Fig26). Most of the respondents use the hoses which will be impacted for residential functions. Few are purely commercial and these are limited in RGC (3%).

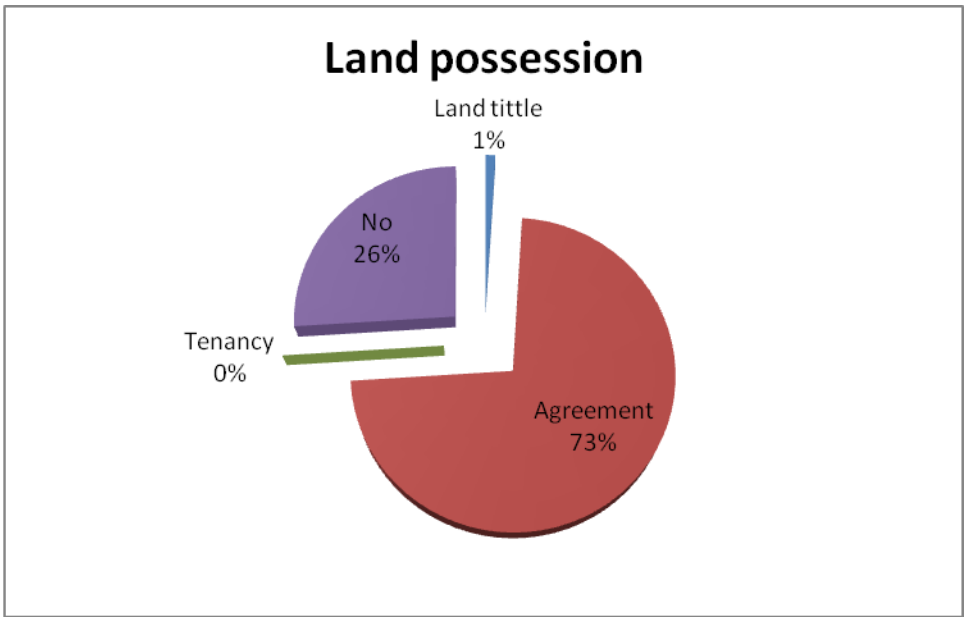

Figure 26: Percentage distributions of respondents according to land possession.

Source: Field data, 2014

4.4.6 Health and Health Services among the Potentially Impacted People

The most common causes of sickness / diseases among the potentially impacted community are Malaria (91%), Diarrhoea (5%) and (Respiratory Tract Infections (RTI) / coughs (4%) respectively. These are shown in Fig 27 below. The majority of the respondents received their treatment from health centre II (77.2%) followed by those who sought treatment from clinics (9.6%). Other residents sought treatment from Hospital / Health Centre IV (8.1%). Smaller proportions of the respondents sought from Health Centre III (5.1%) respectively.

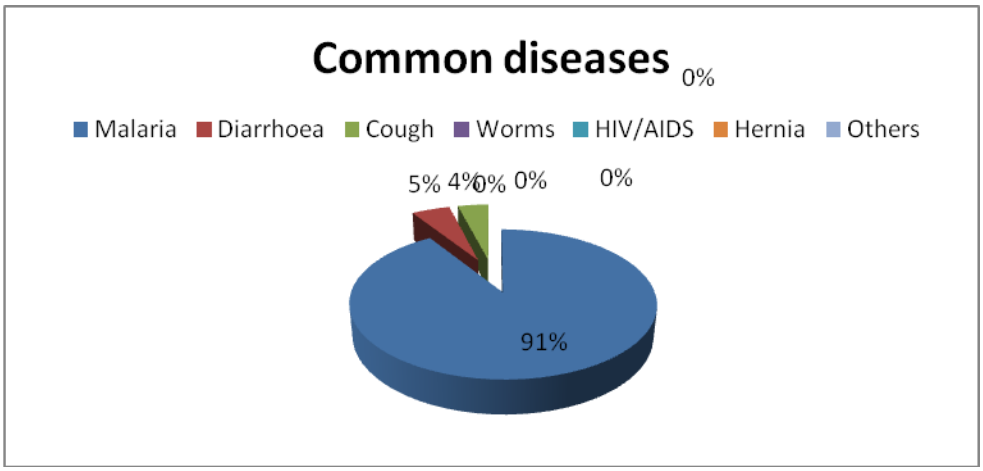

Figure 27: Percentage distribution on the common diseases faced by households
Source: Field data, 2014

Majority of the respondents received their treatment from health centre II and over 65% of them are within a Kilometres of the health facility. A significant proportion (29%) however has to walk over 4 kilometres to get to a health facility.

4.4.11 Fuel Type Used by Households for Lighting within Project Area

Within the project area and particularly among the potentially impacted households, the majority of the households (83%) reported that they use paraffin as their main fuel for lighting. There are a significant proportion of the households who use solar power to light their houses (8%) and an equal number use torches. These are mostly in RGCs or among the affluent in society as shown in Fig 28 below.

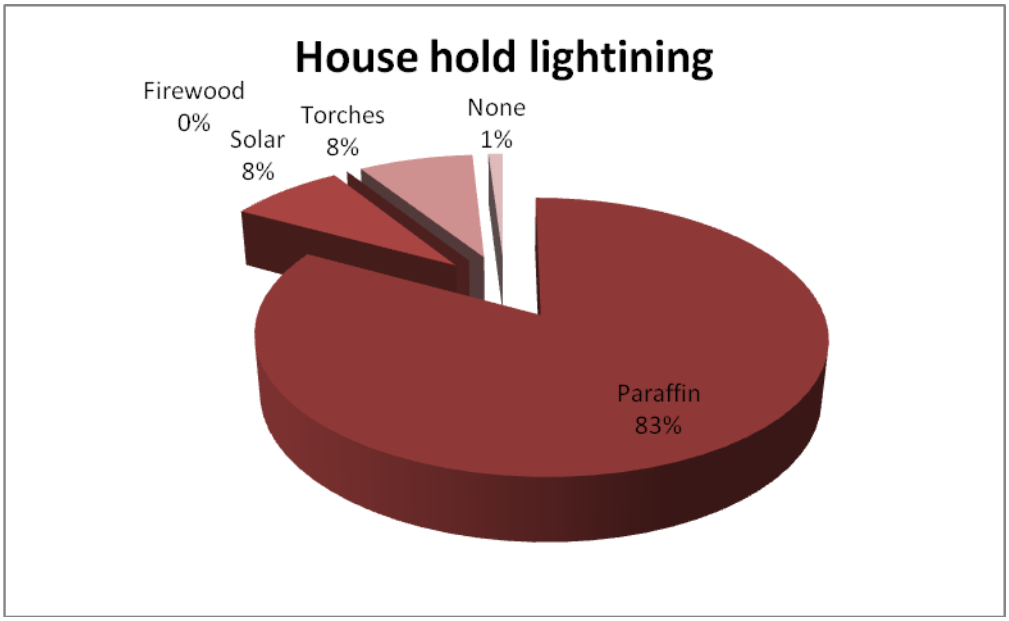

Figure 28: Percentage distributions of the households by type of lighting used.

Source: Field data, 2012

It is likely that when the electricity is installed, the majority of the households will use it for lighting only. Surprisingly during the sensitisation exercise some said that they would use it to cook and start some industries. This would be a good and welcome development.

4.4.12 Water sources and Access

Access to safe water within the area is still not good with the majority of the respondents getting their domestic water from unprotected swamps (44%) and those from other unprotected sources are 16%. Up to 40% get the water from safe sources which include protected wells, boreholes, piped water as well as rain water as seen from Fig 29 below.

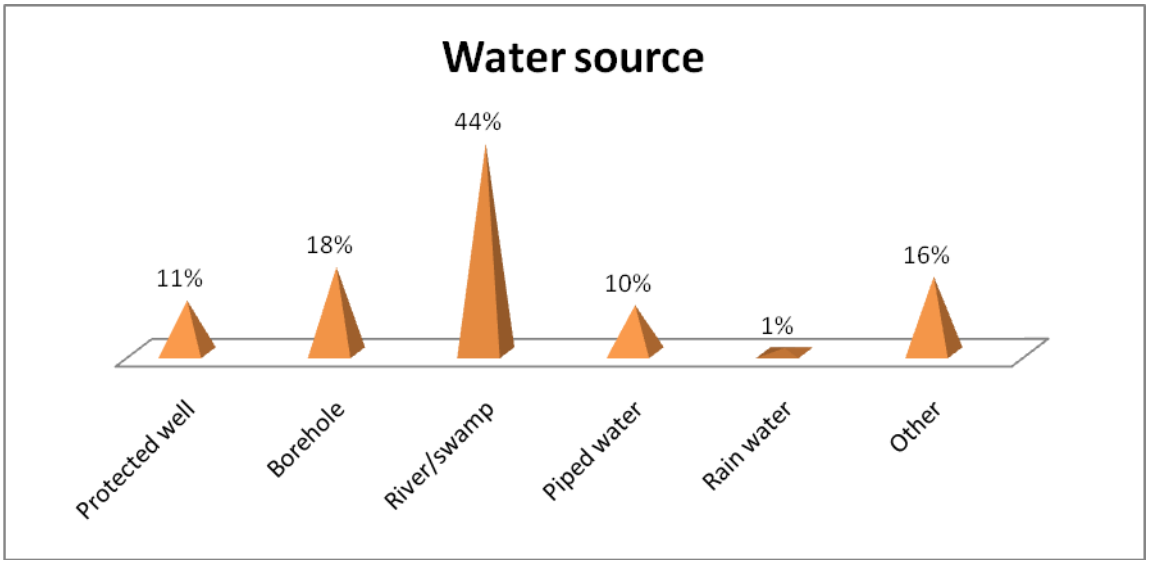

Figure 29: Percentage distributions of the households by type of lighting used.

Source: Field data, 2012

CHAPTER 5: ANALYSIS OF ALTERNATIVES

At the time of conducting the initial survey, the alternatives were not very clear. More thought has since been put into consideration of alternatives including a more involved consultation by asking stakeholders and some of the local leadership in the project area. The key questions to consider were as follows: -

A. To maintain the status quo by not extending the grid and resorting to alternatives such as thermal generators and standalone solar units;
B. To avoid some of the sensitive areas such as the CFRs and rotate the distribution line so as to keep away from any CFR,
C. To follow the designated road alignments in spite of some of the likely constraints;

The first alternative (Alternative A) which was a no action alternative was not supported especially by the stakeholders. All of the respondents without exception said that they supported the project and would like it to take off as soon as possible (ref to Annex 3 – Comments from consulted people). Moreover, the use of fossil fuels to power the generator would not be preferred since it leads to environmental pollution through the release of greenhouse gases as well as other toxic fumes. Since Uganda is a signatory to the United Nations Framework Convention on Climate Change (UNFCC), it undertakes to limit the emission of greenhouse gases. There is potential for leaking of petroleum by products from the thermal generators. While the Solar based electricity is environmentally viable, its costs cannot be sustained especially if the required panels are many to provide adequate amounts of electric power. The cost of petroleum fuels is also very high. For these reasons, this alternative could not be taken.

The second alternative (Alternative B) had some sympathy from a few technocrats especially the NFA. On further examination however it was found that only the CFR of Kasolo and that of Kasana/Kasambya were likely to be impacted. Even then there were very key settlements which were close to the CFR that would be missed by going around, or the cost of the materials would be beyond the budget of the developer. The RGCs to be missed include Kabateza, Buwata 1 and Buwata II, Maria Gorreti TC , Benadetta TC as well as some telecommunications masts. This meant that it was not possible to avoid all the CFR without denying some enclaves grid electricity. Secondly, the total length of the line would increase by over 10kilometres if the two CFRs were to be avoided. The cost for each kilometre of Distribution line was estimated to be about 50,000 dollars which would drive the cost of the project upwards by almost ½ a million dollars. On the other hand the roads had already followed the path that would lead to minimum damage to the forested areas. This alternative was not taken.

The third alternative (Alternative C) accepted that some trees will be cut along the road reserve. The technocrats from the NFA concurred that the trees that will be impacted are plantation trees and necessarily not of a conservation value and are common. They were mostly pines which could be compensated with either cash compensation or by offset planting. Secondly the CFR of Kasolo was existing only in name but had been fully

encroached. Some of the people living in this CFR were not even aware that they were on a gazetted CFR. NFA had fears that distribution of electricity to such people would legalise the encroachment. A decision was taken not to extend power to them until their status is regularized or changed. On the other hand any cut trees will be compensated for. If this is done, the NFA will do enrichment planting within the forest to substitute for any loss. This alternative was chosen and this Project Brief is on the third alternative (Alternative C).

CHAPTER 6. ANALYSIS OF POTENTIAL SIGNIFICANT IMPACTS AND PROPOSED MITIGATION MEASURES

Chapter4 above describes the environmental setting for the proposed Kiganda Mile 16 Kigando Distribution line Project and has direct bearing on the legal and institutional framework (see Chapter 3 of this report). While the power lines construction will lead to some environmental impacts, the future operation of the power system could also lead to yet a different type of impacts. It is noted that the construction of the 33kv Distribution Line has potential to impact on the sensitive ecological areas such as wetlands and the forested area in addition to possible disruption of a number of socio economic activities due to cutting of crops and trees and limiting use in the land that is within the Right of Way of the Distribution line.

Fortunately, construction of the distribution line does not require a large labour force that could lead to community disruption. The workforce at its peak may be about 20 to 30 people. Although small there is possibility that such a construction labour force could introduce a few community related impacts (both positive and negative).

This chapter therefore, serves to assess the identified potentially significant environmental impacts associated with the proposed extension of the power grid and proposes recommendations for the mitigation measures of these impacts. The purpose of identifying significant impacts is to inform the decision-makers such that an informed and robust consent decision can be made.

The detailed description of each of the identified impacts for the different phases of the project cycle is described in the following subsections. The impacts are classified as impacts during the design/survey stage, the construction phase and during the operational phase.

6.1 Positive Impacts

The positive Impacts will mostly be observed after the construction phase although there are some short term benefits during the actual construction. There are those benefits of a social nature while a few will benefit the biophysical environment.

6.1.1 Positive Biophysical Impacts

Reduced environmental degradation: The main positive biophysical impacts will be manifested in the reduced environmental degradation throughout the project area. They are indirect positive impacts. These will include the reduction in cutting of trees for firewood and the burning charcoal for fuel which currently is a potential business. This impact will be realised in the medium to long-term as the communities become more affluent. In the long term the use of electricity will ease the pressure on use of fuel-wood and charcoal and forest destruction may stop if the power generated is affordable to the population. The catch however here is that the power must be affordable.

6.1.2 Positive Social Impacts

The Proposed Kiganda Mile 16 - 33kv distribution line will generate some positive social impacts as well. The major positive impact will be job creation and improvement of skills for the local communities. These impacts are described fully in the following paragraphs.

Job Creation: During construction, the local community is likely to be employed as casual workers and service providers (e.g. food vendors). This is a direct impact of the development. During operation more power will be available through the distribution lines to boost job creation further. This will lead to new and in some cases additional industries which depend on the use of electricity. The other direct positive impacts include the extension of small scale industries such as metal fabrication, milling, furniture workshops, hair and beauty salons and Battery Charging deeper into the villages which has hither to not been the case. Presently, Mubende has a high tourism potential that is yet to be realised. This sector can benefit from the introduction of the grid electricity. Currently most entrepreneurs who require electricity use expensive thermal electricity which is not sustainable in the long term. Table 12 shows the enhancement options to increase job opportunities within the project area.

Table 12: ***Enhancement options regarding Impact on Increased Employment Opportunities***

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Short-term 1	**Low** **4**	Definite	**LOW**	+	Medium
Key optimisation measures: • Maximise the hiring of unskilled workers from the local communities and semi-skilled workers from the region; • Design mechanisms in order to ensure that the hiring and recruitment procedures are carried out in a transparent and fair way, co-ordinated with the community; • Ensure employment opportunities on an equal footing between women and men; • Identify those goods and services required by the project as may be supplied locally (for example food, cleaning), and encourage and support local enterprises in the production of these goods and services.								
With mitigation	Regional 2	High 3	Short-term 1	**Medium** 6	Definite	**MEDIUM**	+	Medium

Impact on Improved Skills for Local Communities

Unskilled labourers from the local communities employed on the project would benefit not only from increased income but also general life skills development (e.g. safety awareness), as well as from technical skills training. This will improve their ability to obtain employment in the future, with associated benefits to their families and dependants, resulting in a long-term benefit. These are indirect positive impacts of the development which could be enhanced by putting in place appropriate enhancement measures.

The potential positive impact of improved skills in local communities is assessed to be of low significance without optimisation and medium with optimisation. (Table 13).

Table 13: ***Enhancement options regarding Impact on Improved Skills in Local Communities***

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Short-term 1	**Very Low 4**	Possible	**Insignificant**	+	Medium
Key optimisation measures: • Maximise the employment of unskilled labour from local communities. • Maximise the hiring of unskilled workers from the local communities and semi-skilled workers from the region. • Carry out capacity-building and training programs for the unskilled workers so that they can increase their employability for other similar jobs								
With mitigation	Local 1	Medium 2	Long-term 3	**Medium** 6	Probable	**MEDIUM**	+	Medium

Other Positive Impacts specific to the 33kv Distribution Lines include the following: -

Improved quality of production and work: When the power is introduced at the different health centres, schools and respective administrative headquarters (e.g. at Kitenga and Kigando Sub County H/Qs) and other working areas such as workshops, the quality of work will improve as well as the comfort of the working community. This may lead to work satisfaction and improved efficiency and service delivery (Table 14). .

Table 14: ***Enhancement options regarding Impact on Increased Opportunities for Small Business Development and Entrepreneurs***

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	short-term 1	**Low** 5	Possible	**Very LOW**	+	Medium
Key optimization measures: • Put priority on Local and Ugandan contractors and suppliers of goods and services. • Encourage and support firms from the locality in producing the goods and services required. • Sensitize communities, especially youth on use of electricity in small scale craft industry such as welding, carpentry, agro-based industries etc, so that they can be encouraged to start up such industries.								
With mitigation	Regional 2	High 3	Short-term 1	**Medium** 6	Probable	**MEDIUM**	+	Medium

Impact on Education

To date the schools in the project area cannot fully exploit their potential due to lack of grid electricity. The introduction of electric power would enhance school standards enabling village schools to compete with their counterparts in urban centres (Table 15).

Table 15: Enhancement options regarding Impacts on Education

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	long-term 1	**Low** 5	Possible	**LOW**	+	Medium
Key optimisation measures: • Reduce initial connection fees to institutions of learning. • Sensitise Schools and other end-users on the use of electricity so that they can reduce costs and waste								
With mitigation	Regional 2	High 3	Short-term 2	**Medium** 7	Probable	**MEDIUM**	+	Medium

Impact on Agro-based Industries: Apart from milling, it will be possible to add value to agricultural produce using electricity supported technology and thereby improving the overall standard of living in the area (Table 16). .

Table 16: Enhancement Options regarding impact on Agro-based industries

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	short-term 2	**medium** 6	Possible	**Medium**	+	Medium
Key optimisation measures: • Reduce initial connection fees to newly established agricultural industries. • Sensitise industries , Local Government and other end-users on the use of electricity so that they can reduce costs and waste • Also educate the communities about the safety measures on electricity;								
With mitigation	Regional 2	High 3	Medium-term 2	**Medium** 7	Probable	**MEDIUM**	+	Medium

Impact on Recreational Facilities: Currently the number of recreational options is limited to field activities and those activities that do not need electricity. There were no high end recreational activities observed and yet these could be sustained if the grid electricity is availed. The availability of electricity improves the choices for recreation and extends the time for recreation enabling recreation to take place any night after work (Table 17). .

Table 17: Enhancement Options regarding Impact on Recreational Facilities

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Low 1	short-term 1	**Very Low** 3	Possible	**Very Low**	+	Medium
Key optimisation measures: • Reduce initial connection fees to newly established recreational facilities. • Sensitise end-users on the use of electricity so that they can reduce costs and waste								
With mitigation	Regional 2	Medium 2	Medium-term 2	**Medium** 6	Probable	**MEDIUM**	+	Medium

Impact on Existing Infrastructure: - The Proposed Kiganda Mile 16 - 33kv Distribution Line when fully operational will improve the existing social facilities (schools, water, and health units) in areas which have hitherto been without grid electricity. The proposed development of Infrastructure like schools, workshops, Health facilities, recreational

facilities such as playground and places of entertainment among others are some of the positive impacts that would be realised in the project area. This will improve the quality of life for the affected communities in particular and the overall population in general (Table 18). .

Table 18: Enhancement options regarding Impact on existing infrastructure

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	short-term 1	**Low** 5	Possible	**Very LOW**	+	Medium
Key optimisation measures: • Government funded facilities such as administrative units, health facilities, and school will be prioritised among those to be connected to the grid. • Sensitise end-users on the use of electricity so that they can reduce costs and waste								
With mitigation	Regional 2	High 3	Short-term 1	**Medium** 6	Probable	**MEDIUM**	+	Medium

Overall improvement in Quality of Life: - Through night time lighting within residences and the use of electrical appliances in the home, it is possible to greatly enhance the quality of life. This will also affect the services provided by health facilities such as immunization and blood transfusion. On the other hand the cost of electric power is still prohibitive for most residents to afford it. It is anticipated therefore that full scale utilization of electrical energy will be slow despite its availability (Table 19).

Table 19: Summary of measures to Enhance Positive Impacts for the 33kv line

The main challenges to electricity consumption are the following: -

- High tariffs (including the initial connection fee);
- Bureaucracy making it difficult for the ordinary person to connect to the power;
- A complicated billing system;
- Wastage of electricity due to misuse and wastage;

In order to minimize these and encourage communities to benefit from the newly introduced power in the sub counties it is proposed as follows: -

- End-Users will be sensitized on the use of electricity so that they reduce waste which could otherwise have discouraged them from enjoying the facility. For example they could be encouraged to use energy saving techniques including energy saving bulbs, efficient technologies, and only switching on when the power is in use. The

sensitisation ought to take place before the power is switched on and preferably before most people start wiring their structures / houses.
- The billing system will be explained to end users to avoid abrupt disconnections and loss of faith in the system;
- Prepayment metres will be installed so that the user can monitor consumption easily
- The Service provider will reduce on bureaucracy and hire the services of a public relations officer for effect;
- The project should reduce initial connection fees to entice end-users to connect;

6.2 Potential Impacts at Design Stage

During the design stage, the likely impacts will be minimal, except the need to sensitise and conduct consultations ensuring that the different stakeholders have made their input. This will be most appropriate in preparation for a Resettlement Action Plan (RAP) which has been done due to the anticipated removal of some crops, trees and putting limitations on the use of the ROW/Way leave. It is important to note that during the sensitisation many people's expectations may have been raised beyond what the project can deliver in the short term. .

Mitigation measures at Design Stage: -

- The main measure is to ensure that all stakeholders have been contacted and their concerns incorporated in the design. Secondly adequate consultations regarding the state of the social environment must be made and have been done.
- It will be necessary to ensure that the local government who provide the enabling environment are fully contacted at the design stage, an act which has been accomplished.
- Additional sensitisation and sharing of correct information is a recommended way of harmonising people's expectations with the project progress on the ground.

6.3 Potential Impacts during Construction

It is during construction when a few more impacts are likely to be encountered. The paragraphs below highlight these impacts as well as the potential mitigation measures starting with the Biological impacts.

6.3.1 Biological Impacts

Impacts on Flora

Clearance along the Right of Way/Way Leave and for access roads will impact on vegetation cover especially within the CFR and the private forest areas. Fortunately for the planted forests, the majority are along one side of the road except for the Kasana – Kasmbya CFR which is on both sides of the Mityana - Mubende main road as well as the Kasolo CFR which is encroached with no standing trees. It will be possible to avoid them by passing the power line along the opposite side. There are no threatened species that will be impacted by the line

apart from one Muvule tree that was seen. The tree is about 40 metres from the road and it will be avoided.

Impact on loss of vegetation / habitat

Table 20: Mitigation options regarding Impacts on Flora including Forested areas

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
Without mitigation	Local 1	High 3	Long-term 3	**High** **7**	Definite	**Medium**	–	Medium
Key mitigation measures: • Ensure that the habitats are not disturbed by limiting the Line along the road reserve of the existing road alignment. • Limit clearance for construction work and inspection to the necessary extent. • Remove as much vegetation as possible by hand and avoid the use of heavy machinery, especially in sloping areas and sensitive areas; • The Muvule tree will not be cut or disturbed in any way. • For the trees that will be cut in in the CFR which are pines of no conservation value adequate compensation will be paid; • REA shall require NFA to develop an off-set plan before compensation/money is disbursed. Based on NFA's off-set plan, an MOU between REA and NFA to ensure that replanting of forest is done will be developed • REA shall also continuously monitor implementation progress of the off-set plan by NFA • For the privately owned plantations which are either eucalyptus or pine forests full compensation will be paid to the owners and owners will be encouraged to plant new ones in adjacent land if they have it. For those not having land, the NFA is still parcelling out land for private people to plant trees and such owners will be encouraged to take advantage of such offers.							
With mitigation	Local 1	Low 1	Short term 2	**Very Low** 4	Definite	**Low**	–	Medium

Impact on Wetlands

As discussed above there only three wetlands that will require attention. These are Nabakazi wetland as well as the Katabalanga I and II wetlands. Every measure will be taken to avoid spilling soil into these wetlands as well as limiting their degradation.

Table 21: Mitigation Options regarding Wetlands

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
Without mitigation	Regional 2	Medium 2	Medium-term 2	**Medium 6**	Probable	**Medium**	**–**	Medium
Key mitigation measures: • Clearance for construction work and inspection will be limited to the necessary extent. • At completion of construction works areas not needed for the distribution process will be replanted as long as the security of the line is not impeded ensuring that indigenous species are used in the replanting; • For Nabakazi wetland, there is a platform at the centre where the transmission pole will be put. If this is done, then the wetland will be protected. For Katabalanga I and II, the upstream of the wetland is narrower than the downstream. The line will pass along the upstream bank such that H/M member poles are planted at the banks of the wetlands with none in the middle of the wetland. • If it becomes inevitable to plant a pole within the wetland, then the holes for poles in wetland areas will be back filled using imported suitable gravel material in such quantities that will be just enough to stabilize the hole with no extra soil to silt the wetland. Excess soils will be evacuated; •								
With mitigation	Regional 2	Low 1	short-term 1	**Very Low** 4	Probable	**Low**	**–**	Medium

6.3.2 Physical Impacts

Alteration to Public Health due to fugitive dust and other emissions

Due to the nature of distribution lines which use wooden poles, the excavations will be minimal. However there will be a slight increase in the movement of vehicles used in ferrying construction materials such as poles, distribution wires (conductors) and transformers which may impact on people living close to the construction corridor /zone.

The time of study coincided with the onset of the rains so that the dust levels were low. However from the Climatological considerations and the nature of the soils, the roads can be dusty during dry seasons. During the dry season, vehicles transporting materials as well as the construction workers are likely to raise considerable amounts of dust. The vehicle fleet in the project area is low apart from commuter vehicles and Motor cycles. During the harvest season however, more vehicles may be recorded as they go deep into the villages in search of produce. Such vehicles can lead to considerable dust along the road, such that dust raised by

construction traffic will be additional. Although these impacts will be moderate and of a short term nature they will need to be mitigated against.

Dust does have a tendency to alter the air quality which can have a negative indirect impact on the well-being of the neighbouring communities, possibly altering people's health status. This impact is rated as of **medium** significance in the absence of mitigation and **very low** with mitigation. It should be noted that this impact is largely confined mainly to the construction phase of the project and is likely to affect people very close to the road and near the construction zone only (Table 22).

Table 22: Mitigation options for the Impact due to dust and other emissions

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Long-term 3	**Medium** 6	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • Promote dust abatement measures such as control of construction traffic speed limits; • Maintain and inspect all equipment and machinery to ensure that they are in good working order and do not produce excessive fumes and noise, • Maintain safety measures in order to ensure the health and well-being of the workers. • Vehicles transporting materials will be required to observe speed limits especially within population centres in order to reduce dust levels; • During extremely dry conditions when dust becomes a major hazard, dust suppression measures will be undertaken near working areas especially if they are close to settlements. Such suppression measures include water spraying using water sprinkler vehicles to sprinkle the road networks leading to the locations under construction regularly;							
With mitigation	Local 1	Low 1	Medium-term 2	**Low** 4	Potential	**LOW**	**.**	Medium

Alteration to Public Health due to noise and vibration

Ordinarily, the noise levels within the project area are those consistent with a rural setting as has been shown from the measurements. Subsequently, any unusual noise would be easily noticed by the community. The main sources of noise will be any cranes if and when used to lift heavy equipment as well as heavy vehicles used in transporting the equipments and other construction materials. The characteristic noise levels for a crane are up 95dB which is already in excess of the limit as described in the Regulations. The likely impacts will be on the workers, nearby community. The consultant measured the noise levels and found that it was only at RGCs where the noise level was approaching the threshold. For the most part

there were no sources of noise beyond the limits as set up in the Regulations. The noise levels were consistent with a rural setting.

It is to be noted that the effects of noise generated during construction will be short-term and will be limited to the site. These can, however, be minimized through the use of well serviced vehicles and administrative controls like making sure the drivers don't leave the engine idling. The operational noise impacts will be minimal but if enhanced have the capacity to last the entire life span of the project

Table 23: Mitigation options for the Impact due to enhanced noise levels

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Long-term 3	**Medium** 6	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • Maintain and inspect all equipment and machinery to ensure that they are in good working order and do not produce excessive fumes and noise, • Workers who can make a lot of noise will be cautioned so that they do not make unnecessary noise during construction; • All workers will be required to wear full PPE (including earmuffs or ear plugs) especially those operating cranes and those adjacent to such noise emitters. • The developer will minimize exposure to the general population by limiting activities to daylight hours. • The developer will minimize noise through ensuring no engine is left idling when off-loading poles. • Introduce work rotation procedures to reduce cumulative exposure to noise for workers • Vehicles transporting materials will be required to observe speed limits especially within population centres in order to reduce dust levels;							
With mitigation	Local 1	Low 1	Medium-term 2	**Low** 4	Potential	**LOW**	**.**	Medium

Impacts on soil

The risk of erosion would be higher where there is an increase in land slope. This could occur in the area where the hills are steep. The North eastern side of the project area is more hilly compared to the South Western side of the project area with a higher potential for erosion should the top soil be exposed. Of concern however are the slopes that lead to rivers/ wetlands which if exposed can lead to siltation downstream. The Distribution lines will cross the wetlands / Rivers of Kasojo (Kasmbya Sub County, Rivers Katabalanga I (at the edge of

Kasolo CFR) and Katabalanga II (at the boundary of Mubende Town Council and Kitenga Sub County), Nabakazi River (at the boundary of Kasanda and Kitenga Sub Counties) and Kyabatuza stream (at the edge of Kasana Kasambya CFR). Of main concern are the main wetlands of Nabakazi and Katabalanga Rivers. The nature of the construction will not lead to serious excavation such that little soil will be exposed. Clearing of vegetation to make way for the ROW will also be limited to cutting grass/ vegetation above ground and not by excavation. Subsequently erosion due to excavations will be minimal or nonexistent. Nevertheless it is recommended that any areas which will be exposed for any reason will be rehabilitated as soon as possible to prevent possible soil erosion. ***Rehabilitation will be by replanting the area, or returning the top soil so that grass can naturally grow***. There will be some areas where equipment is kept and the grass may be stressed leading to erosion after the works. Such areas will also be replanted after the works so that erosion and degradation are controlled.

Impacts on Drainage and Water Resources

The nature of works will not lead to serious impacts on the drainage and water sources. This is because wooden poles will be used which do not require deep excavation. Although not significant, earthworks do have the potential to release suspended particles into water, which could have temporary detrimental effects on water organisms. This can happen especially close to wetlands Nabakazi and Katabalanga wetlands which are wide to necessitate the placing of transmission poles within the wetland. (Table 24).

Table 24: Mitigation options regarding Deposition into wetlands and waterways etc.

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
Without mitigation	Local 1	Medium 2	Long term 3	**Medium** **6**	Probable	**Medium**	-	Medium
Key mitigation measures: • Only the existing roads will be used and no construction of roads will be allowed; • No poles will be constructed within drainage lines; • Excavations within drainage canals will not be allowed even if of a temporary nature								
With mitigation	Local 1	Low 1	Long Term 3	**Low** 5	Probable	**Low**	-	Medium

Hazardous Materials and Waste

The issue of POPs and PCBs will not arise because the Transformers procured and used by REA do not have the said pollutants. It is noted that REA procures transformers filled to the required level with new, unused, clean, standard mineral oil in compliance with IEC 296 and free from all traces of polychlorinated biphenyl (PCB) compounds. REA will procure and

ensure delivery and use of 33Kv Transformers using the following specifications: "The transformers procured will conform to the latest edition of appropriate EC specifications and/or other recognized International Standards in particular: IEC 60060, IEC60071, IEC60076, IEC, IEC 60137, IEC 60156, IEC 60126, IEC60354, IEC 60529, IEC60551, IEC60606, IEC60616, IEC60722, IEC60733, B.S. 148 and BS5493. The specifications cover oil immersed, naturally air cooled (type ONAN), outdoor type, three phase, 50Hz, 33/0.433 KV step down distribution transformers of all capacities". For this reason, it is therefore not likely that polychlorinated biphenyls (PCBs) which has high health risks will arise. Other hazardous materials in this sector include sulphur hexafluoride as well as other fuels in addition to chemicals for wood preservation (***such as Creosote and or Tanalith that are mostly used in the region)*** especially for the 33kv Distribution line (Table 25). .

Table 25: Mitigation Options regarding Impacts due to Hazardous Materials and Waste

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
Without mitigation	Local 1	Medium 2	Short term 1	**Low** **4**	Probable	**Low**	-	Medium
Key mitigation measures: • The Stockholm Convention is a global treaty to protect human health from Persistent Organic Pollutants (POPs) of which PCBs are one of them. REA will adhere to their stated procurement guidelines (as stated above) ensuring that all their transformers will conform to latest edition of appropriate EC specifications and/or other recognized International Standards in particular: IEC 60060, IEC60071, IEC60076, IEC, IEC 60137, IEC 60156, IEC 60126, IEC60354, IEC 60529, IEC60551, IEC60606, IEC60616, IEC60722, IEC60733, B.S. 148 and BS5493; and • Poles will be pre-treated at a designated facility to ensure chemical fixation and prevent leaching into the soil among others. • Storage of oil in drums for refilling transformers that may have leaked either during transportation or storage will be undertaken in impervious lined areas, with provision for off-ground support. Saw dust shall be spread beneath the drums to soak away any spillage, for possible incineration.							
With mitigation	Local 1	Low 1	Short Term 1	**Very Low** 3	Probable	**Very Low**	-	Medium

6.3.3 Negative Social Impacts during construction of the 33kv Distribution Line

Apart from the negative physical and biological impacts stated above, the project will also lead to some negative social impacts. These require mitigation as well. This Social Impact study provides some of the proposed measures to minimize the adverse impacts.

Land Take and loss of crops and trees along the ROW and Access points: As stated above, the 33kv Distribution line will pass along the current road alignment and within the road reserves for the most part. In a few cases the Line will pass along people's gardens especially in RGC where the line will pass behind the RGC. Away from the main road, it may not be possible to strictly follow the road reserve since the feeder roads have many sharp corners which would be difficult to follow with a distribution line. For the most part, there will be no land take and the project is not mandated to take land. However trees, perennial crops and other crops like fruit trees which fall within the ROW will be removed leading to losses to the individuals affected (Table 26).

Table 26: Mitigation options regarding land take.

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Long-term 3	**Medium** 6	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • Ensure that land take is minimized by following the road alignment for the distribution line; • Compensate all crops and trees at the going rates and in line with the latest Mubende District Compensation rates; • A RAP has been conducted to ascertain the extent of compensation for each affected individual; • When it is inevitable to acquire land, the land will be valued at replacement value and the PAP compensated with an appropriate disturbance allowance.								
With mitigation	Local 1	Low 1	Short-term 1	**Low** 3	Possible	**VERY LOW**	-	Medium

Population Influx: The workforce at the project during the peak of construction will be composed of a limited number of skilled workers with about twice that number for non-skilled workers. Maximum workforce will be at most 30 people. The non-skilled workers are likely to be recruited from the local neighbourhood. On the other hand the total workforce will not be sedentary in one place as they will move along the line as they progress. This impact therefore is likely to be minimal as there will be no external people working at the site for a prolonged length of time (Table 27).

Table 27: Mitigation options regarding Population influx

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	Long-term 3	**Medium** 7	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • The Project Management will closely work with leadership especially the LCs to hire local people to do most of the casual jobs at the project in response to numerous calls by stakeholders; • Identification tags / uniform will be provided to all the workers working on the project sites and such identifications will be property of the Project management and may be withdrawn from workers when not engaged in the project work; • Good public relations will be maintained between the local community, the Local leadership and the Developer***;***								
With mitigation	Local 1	Low 2	Short-term 1	**Low** 4	Possible	**VERY LOW**	-	Medium

Security of Construction Materials

The concern about security is in respect of vandalism whereby electricity transformers are emptied of transformer oil as well as other conductors. This is bad for the project and dangerous to the lives of the would-be vandals. This impact may affect the 33kv Distribution line. The impact may be described **as Negative and moderate to serious** (Table 28).

Table 28: Mitigation Options regarding security

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	Long-term 3	**Medium** 7	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • The Project Management will sensitise the community about the negative effects of stealing and vandalising electrical installation through radio announcements and at community meetings. • During construction the developer to hire only those workers who have been vetted by their local LC councils/Chairpersons; • Equipment to be guarded during construction and all workers will be provided with identification tags to reduce intruders to working areas; • Registered Security Guards will be recruited to specifically guard project property. • Work hand in hand with local security officials including the Secretary for Defence at the local level (LC);								
With mitigation	Local 1	Low 1	Short-term 1	**Low** 3	Possible	**VERY LOW**	-	Medium

Workers Camp: Due to the nature of work in laying a distribution line it may not be necessary to have a workers camp. When worker's camps are built they can present social problems due to the high numbers of people within a rural setting which could lead to various social conflicts. The camp may also generate waste that could lead to environmental degradation. The current practice is not to build camps for the construction crew of distribution lines and this practice will be maintained. (Table 29). .

Table 29: Mitigation Options regarding the Impacts due to Equipment storage areas as appropriate

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 3	Long-term 3	**Medium** 7	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • The workers camp will not be constructed, but instead there will be ***Equipment storage areas as*** appropriate. • Proper sanitation facilities will be put in place at the ***Equipment storage areas***; • Other bio-degradable domestic waste will be dumped in a compost pit while polythene and plastic materials will be collected and recycled. There are a number of factories which have specialised in recycling plastics. • Hazardous waste such as torch batteries will be containerized and later disposed off through established waste disposal agencies; • Other hazardous waste arising out of chemicals at the storage area will be discharged in accordance with the manufacturer's instructions; • Oils and other petroleum products will be containerised so that they are not allowed to sip into the ground and into the water bodies. Instead they will be sold off or reused as appropriate; • Other recyclable waste such as metals, wood, and papers will be sold off to steel industries (metals), firewood (wood) and paper industries. The waste will be segregated onsite and sold off after economic quantities have been collected.								
With mitigation	Local 1	Low 1	Short-term 1	**Low** 3	Possible	**VERY LOW**	-	Medium

Safety of the Community and that of Workers: During the construction of the Distribution Line as well as during the haulage of heavy construction materials (poles) there is the possibility that both construction and haulage traffic will pose danger to the host communities, travellers including school children as well as to the project staff themselves. Furthermore, workers by the nature of the construction works do face possibility of accidents. The community especially children who may be anxious to watch the construction activities could be exposed to possible accidents due to the works.

Secondly, the concentration of workers with excess liquidity among the poor can lead to the spread of sexually transmitted diseases including HIV/AIDS. This is critical since the project area has a high prevalence of HIV despite the impressive awareness regarding HIV/AIDS

(ref Mubende District State of the Environment report). This is a potential impact which could start during construction and will be there long after the construction. Measures will be taken to minimise the potential spread of HIV/AIDS during construction and after (Table 30).

Table 30: Mitigation Options Regarding impacts on Community and workers safety

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	Long-term 3	**Medium** 7	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • Put in place Warning Signs on approaches to the working areas to warn the community, and travellers so that they do not get involved in related incidents/accidents since the operational areas are near the roads • Fence off storage areas and camp sites to discourage un-authorised entry to the sites; • REA will sensitise the community through the media and meetings at local levels; • Workers on project activities will be supplied with full Personnel Protection Equipment (PPE) particularly with respect to boots, gloves and helmets; • Those required to climb poles will be supplied and be required to wear harnesses to protect them from falling off the poles; • Warn School children through education and sensitisation about the likely dangers of loitering within the construction zone area. • A First-Aid kit to be provided at every active working site and at the camp. It will be supplied and managed by the Contractor; • During the construction phase workers will be sensitised about HIV/AIDS while condoms (both male and female) will be distributed free of charge by the Contractor among the workforce;							
With mitigation	Regional 2	Low 1	Short-term 1	**Low** 4	Possible	**VERY LOW**	-	Medium

Settlements: - As discussed above, for the most part, the distribution line will pass along the road reserve following the current road alignment. Effort is to be made in the design such that all housing structures are avoided ensuring that settlements are not negatively impacted. Where distribution lines were designed to pass in front of the linear arrangement of structures in the RGCs, this EA has advised that distribution lines pass behind the linear structures and only consumption lines approach structures. Subsequently this impact will be minimal especially with mitigation (Table 31).

Table 31: Mitigation Options Regarding Settlements

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Medium-term 2	**Medium** 5	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • The design of the distribution lines passes along the road reserve which are normally devoid of settlements • Where there are many houses / structures within RGCs, the lines will pass behind the RGC and only consumption lines will be directed into the network of structures. • The communities to be sensitised regarding the dangers of high voltage overhead conductors. • In the event a pole or any structure targets a house, then changes will be made in the design to avoid disrupting such a house / structure;								
With mitigation	Local 1	Low 1	Short-term 1	**Low** 3	Possible	**VERY LOW**	-	Medium

Community Stress due to failure to directly benefit from the project: From the discussions which were held at the time of sensitisation, it was clear that the community is expecting some direct benefits from the project including subsidies to the cost of electricity. The study team observed local politicians associating with the coming of the project and promising all and sundry how the electricity was due to change their lives permanently courtesy of the political effort. While the sensitisation was more guarded, there is still a high likelihood that the project will not meet the politically inflated expectations of the local community. Such disappointment can translate into local anger and distress leading to interference or even vandalizing of other resources within the project premises. This impact may be described **as Negative and slight** (Table 32).

Table 32: Mitigation Options regarding increased Electricity demand

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	Long-term 3	**Medium** 7	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • In liaison with the District Administration the Developer will extend some social benefits to the neighbouring community. This will be through the project extending power to schools and community centres such as health centres; • The developer will maintain a good corporate image by enhancing public relations between the community and the developer; and • Continuous Sensitisation and community education by REA is recommended throughout construction and operation phases. This would further manage the politically inflated expectations among the community members/project hosts;								

With mitigation	Regional 2	Low 1	Short-term 1	**Low** 4	Possible	**VERY LOW**	-	Medium

Physical cultural Resources (PCR): - As outlined in the socio-economic baseline description, the project will not affect any of the known Physical Cultural Resources within the project area. The potential of a pole targeting burial grounds / a grave does exist and this would be a negative impact. In such a case the pole will be diverted so that the grave remains intact without disruption. In this case the cultural impact will be low. Instead localities which are close to the cultural sites as well as places of local tourism may benefit if tourists expand their visiting areas due to the existence of electricity in areas which had hitherto had no grid power.

On the other hand, if places of cultural importance are encountered, they will be reported to the Department of Museums and Monuments who will handle them in accordance with the established procedures. In this case the contractor on site will be responsible for the reporting to the Department of Museums and Monuments. If there are chance finds, the following procedures will be followed:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard will be present until the responsible local authorities and the Directorate of Museums and Monuments take over;
- Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Directorate of Museums and Monuments under the Ministry of Tourism, Wildlife and Antiquities (within 24 hours or less);

- The Directorate of Museums and Monuments would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the Directorate of Museums and Monuments (within 24 hours). The significance and importance of the findings will be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;

- Decisions on how to handle the finding will be taken by the Directorate of Museums and Monuments. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;

- Implementation for the authority decision concerning the management of the finding will be communicated in writing by the Directorate of Museums and Monuments;

- Construction work could resume only after permission is given from the responsible local authorities and the Directorate of Museums and Monuments concerning safeguard of the heritage;

- These procedures must be referred to as standard provisions in construction contracts, when applicable. During project supervision, the Site Engineer will monitor the above regulations relating to the treatment of any chance find encountered are observed;

- Construction work will resume only after authorization is given by the responsible local authorities and the National Museum concerning the safeguard of the heritage; and

- Relevant findings will be recorded in World Bank Implementation Supervision Reports (ISRs), and Implementation Completion Reports (ICRs) will assess the overall effectiveness of the project's cultural property mitigation, management, and activities, as appropriate**.**

Conflict of Interest between the REA and Uganda National Roads Authority: - Discussions with the UNRA regarding the passage of distribution lines along the designated road reserve brought up the challenge that they were not fully comfortable with it. They claim that when utilities pass through their road reserve, they often become an obstacle to further road expansion. It was stated by UNRA that it is common for utilities to ask UNRA to compensate them when they wish to extend the road or make some necessary improvements. They proposed that the need a prior protocol which would protect UNRA's interest in this arrangement. This study therefore proposes that REA, the developer will discuss and come to a mutually beneficial agreement with UNRA to come to an acceptable sharing arrangement of the designated road reserve, since large utilities are usually housed in such locations.

6.4 Potential Impacts after Construction

6.4.1 Biophysical Impacts

Most of the impacts after construction and during the operation of the lines will be of a social nature and safety oriented. The main concern after construction will be the tree species that may grow within the ROW. Secondly, it was observed that some of the trees in both the CFR (especially at the Kanana kasambya CFR and in some parts of the Kasolo CFR) and the private Forest plantation (in many places) are tall (over 30 metres) and are likely to fall on the line in case of heavy winds or termite action. The 10m way leave that is to be maintained may not be sufficient even though the trees themselves are out of the ROW. For this reason, the ROW within the forested areas will be extended to up to 30 m to cater for the 30metre high trees within the forested area. Thirdly termites were common within the project area, and these could be a threat to both the wooden poles and to nearby by growing trees. Fourthly, during the operational phase, the birds might collide with the power lines and become electrocuted. This is likely within the close proximity of the CFR and at some of the wetlands (especially within Nabakazi River) (Table 33).

Table 33: Mitigation Options Regarding Biophysical Impacts

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	Long-term 3	**Medium** 7	Probable	**MEDIUM**	-	Medium
Key mitigation measures: It is recommended as follows: - • Ensure that there is a gap of at least 4.0 metres between energised lines and ground equipments/earthling. In this way the potential for electrocuting of ground based animals / humans will be reduced. • Design the line with auto-reclosers at certain points. These reclosers are designed to detect fault on the line and switch it off and try to reclose it after a certain period say 3minutes. The recloser will make three attempts and then leave the line open for someone to physically come and investigate. • Ensure the conductors are properly spaced so that collision/electrocution of birds is minimised. Horizontal alignment (parallel to the ground) of conductors is recommended in wetlands areas where large birds such as the crested cranes are usually found; • If during the clearance operations a location of important species is established (so far none was observed during the survey) that are likely to be affected/ destroyed then measures to preserve or relocate them will be undertaken; • Full compensation will be made for any trees that will be removed; • Frequent inspection to be on the lookout of weak trees or those tall trees attacked by termites will be done. Inspection will be a must especially prior to the commencement of the rainy seasons during the months of March and August.							
With mitigation	Regional 2	Low 1	Short-term 1	**Low** 4	Possible	**Very Low**	-	Medium

6.4.2 Negative Social Impacts during the operation of the 33kv Distribution line

After the construction of the 33kv Distribution Line, a number of impacts related to utilization are likely to arise. These need to be handled since they can be vicious and direct to human well being.

Specifically the following are likely to arise: -

Electrocution of people in case of line breakages or illegal access: - If people are not sensitized about the dangers of live high voltage wires they could easily expose themselves to them when they are broken or sagging. This can lead to electrocution of individuals or groups of people in the neighbourhood. This impact may be described **as Negative and serious** (Table 34)**.**

Table 34: Mitigation Options regarding possible electrocution

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Medium-term 2	**Medium** 5	Probable	**Medium**	-	Medium
Key mitigation measures: • In liaison with the Local Government Authorities, the Developer will sensitise communities about the dangers of exposed high voltage live wires. This may be done through schools and publication of relevant pamphlets in the local language. • Secondly as part of their corporate responsibility, REA may pay for advertisements on Radio /TV to sensitise communities on the dangers and safe / efficient use of electricity; • Prominent warning signs will be affixed at all installations to warn the intending intruders from touching the lines or fixtures. Warning signs will be in Bright colours such as red or yellow/amber; • Communities will be sensitised to report immediately they observe a sagging or broken wire/conductor or one that has fallen to the ground; • Maintenance personnel will be vigilant inspecting the lines regularly;							
With mitigation	Local 1	Low 1	Short-term 1	**Low** 3	Possible	**Very Low**	-	Medium

Bush Burning: - Although bush burning was not a serious concern in the project area, there is potential for bush burning especially in the savannah woodlands within the cattle corridor to the south west of the project area. Such bush fires can burn the wooden poles and may disrupt the transformers. High temperatures are also known to affect the conductivity characteristics of the overhead conductors. This impact is usually applicable to the Distribution Lines and is **Negative and Minimal** (Table 35).

Table 35: Mitigation Options regarding the impacts of Bush Burning

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	Long-term 3	**Medium** 7	Probable	**Medium**	-	Medium
Key mitigation measures: • Communities be sensitised against bush burning; • The Local Government will continue to enforce the law against bush burning; • The developer or the appointed agent to operate the power distribution may be encouraged to give incentives to people who report those responsible for starting bush fires; • The developer to put in place surveillance mechanisms to reduce this impact;								
With mitigation	Regional 2	Low 1	Short-term 1	**Low** 4	Possible	**Very Low**	-	Medium

6.4.3 Occupational Health and Safety

Electric and Magnetic fields: Although there is little evidence to suggest resultant negative effects on human health and safety, exposure to Electro Magnetic Fields (EMF) may be viewed as potentially harmful. However, the EMF decrease very rapidly with distance from the source and there will be no potential health risks for people leaving near the distribution line considering that this is a 33kv line which is considered as low. For Electricity workers, however the EMF exposure could be higher leading to possible health risks to the utility worker (Table 36).

Table 36: Mitigation Options regarding the impact of Electric and Magnetic Fields

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Medium-term 3	**Medium** 6	Probable	**Medium**	-	Medium
Key mitigation measures: • In the workplace, when conducting maintenance works, the main power will be switched off all the time; • In other words, it will be necessary to deactivate and properly ground live wire distribution lines before work is performed on or close to the live lines. • In places which have been identified as vulnerable, workers will use personal monitors during working or routine maintenance routines. • Workers will be trained in the identification of occupational EMF levels and hazards								
With mitigation	Local 1	Low 1	Short-term 1	**Low** 3	Possible	**Very Low**	**-**	Medium

Live Power lines: During operation, impacts are related mainly with electrocutions and possible induced effects from electromagnetic fields. The placement of low slung lines or line near human activities also increases the risk of electrocutions. Therefore the lines will be checked regularly, whether they are low slung, so that immediate measures are taken on time to avoid the risks along the road and residential places. Moreover workers may be exposed to occupational hazards from contact with live power lines especially during maintenance and operation activities (Table 37).

Table 37: Mitigation Options regarding the impact of Live Power Wires

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Regional 2	Medium 2	Long-term 3	**Medium** 7	Probable	**Medium**	-	Medium
Key mitigation measures: • Only allow trained and certified workers to install , maintain or repair electrical equipment • Deactivate and properly ground live wire/conductor distribution lines before work is performed on or close to the live lines. • Ensure that live wire work is conducted by trained workers with strict adherence to specific safety and insulation standards								
With mitigation	Local 1	Low 1	Short-term 1	**Low** 3	Possible	**Very Low**	-	Medium

Working at heights on Poles and structures: Workers may be exposed to occupational hazards when working at high elevations during especially maintenance activities with a high potential for accidents (Table 38).

Table 38: Mitigation Options Regarding Impacts of Working at Heights on Poles and Structures

	Extent	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
With no mitigation	Local 1	Medium 2	Long-term 3	**Medium** 6	Probable	**MEDIUM**	-	Medium
Key mitigation measures: • Poles will be tested for integrity prior to undertaking work • Develop a protection program which includes training in climbing techniques and use of fall protection measures • Regularly inspect fall protection equipment and replace those that are likely to fail • Approved Safety Belts, harnesses, Personal Protective Equipment (PPE) and tool bags will be provided to maintenance workers prior to climbing any poles and transformers;								
With mitigation	Local 1	Low 1	Short-term 1	**Low** 3	Possible	**Very Low**	-	Medium

7. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)

7.1 Introduction

It is imperative that the contractor takes note and implements this management and monitoring plan during the execution of the project to its conclusion. This provisional Environmental and Social Management and Monitoring Plan (ESMMP) for the 33kv Kiganda Mile 16 power Distribution line project, provides a critical link between the mitigation measures specified in this project brief. Almost all of the negative impacts which were identified in the Project Brief can be minimized by implementing appropriate measures during all phases of the project. The objective of this ESMMP is to provide a time bound program covering implementation of proposed environmental mitigation measures and subsequent monitoring of the emerging environmental issues during both the progress and operation of the Power Line distribution Project.

7.2 Policy, Legal and Environmental Management Framework in Uganda

This ESMMP is in line with the Policy, Institutional and legal framework which have been highlighted under Section 3 of this Project Brief. It provides a time bound program covering implementation and monitoring of the environmental issues relevant to the 33kv Kiganda Mile 16 Power Distribution line Project.

7.3 Environmental and Social Management and Monitoring Plan

This ESMMP includes schedules and methods for implementation of mitigation measures during the construction of the distribution line and during the operation of the line. This plan further recommends that, during the operational phase of the project the Developer will assign an Environmental Specialist who will ensure that the identified negative impacts are mitigated and the positive impacts are enhanced.

It is recommended that in as far as possible, such a specialist or Environment Specialist will closely monitor the project so that he/she can provide continuous guidance in line with the Certificate of Approval that will have been provided by the National Environment Management Authority.

Environmental impact monitoring will be carried out regularly at-least once every month during the construction and line inspection will be carried out every six months at the minimum during operations. Line inspection will be conducted before the commencement of the rain season to check whether the structures and nearby trees are safe enough in case of severe weather events as is common especially at the commencement of the seasons (during the Months of March and August). As may be seen from the ESMMP Table 40, implementation (including monitoring) of the management plan under this contract falls under the responsibility of the Developer, the Contractor and the Environmental specialist appointed by REA.

7.4 Public Involvement and Inter-Agency Co-Operation in Monitoring

For resettlement activities such as compensation and removal of crops/ trees and other properties that fall within the ROW, it is imperative that communities are involved in the monitoring process. This will be accomplished for example through their local leaders particularly the Local Council 1 Executive. This is necessary to ensure effective sensitisation and reduce costs of monitoring through community involvement. The other stakeholders who will be involved in the monitoring include REA, NEMA, and the Local Government. A RAP has been proposed and is under preparation. This RAP will include a grievance mechanism which incorporates representations from the impacted communities.

7.5 Contractor's Obligations versus Developer's Obligations

The National Environment Act empowers the Authority (NEMA) to issue a Restoration Order (section 67 sub section 1) requiring any person in respect of any matter relating to the management of the environment and natural resources. Subsequently, the Contractor will be the one to whom such an order would be issued in case of environmental damage during construction. This obliges the REA to institute contractual clauses that compel the contractor to take care of the environment during the 33kv Distribution line construction exercise.

The Contractor under instruction from the Client through the Environmental Specialist will initiate mitigation measures as specified in this project Brief.

7.6 Cost of Implementing of this ESMMP

The cost of implementing the ESMMP is estimated taking into account restoration of any exposed soils/surface, planting of grass and enrichment planting where necessary, supervision costs including the support to the Environmental specialist. A Resettlement Action Plan (RAP) has also been done. Table 39provides a provisional estimate of these costs.

Table 39: Estimated costs for implementing the ESMMP

Item	Area /unit	Rate per unit	Total cost (UGX)	Remark
Grass to limit erosion	3 hectares	2,000,000	6,000,000	To be planted every where the soil has been exposed especially at the equipment storage areas
Removal of storage area facilities and any other temporary structures	Demolition, Transport and removal of waste	Lump sum	10,000,000	storage areas and other working areas to be restored
Introduction of safety	4,000	10,000	4,000,000	To be put at

measures (Warning signs,)				installations
Radio announcements and Notices (about 100 Notices and 40 Radio Announcements)	140	30,000	4,200,000	To be made before compensation and disclosure and for any other matter of public interest
PPE for at most 40 people	40	400,000	1,600,000	During the construction
Provision of condoms for six months for 40 people	2,400 packets of 3 pieces each	1,000	2,400,000	Mostly to construction workers
First AID Kits	6	100,000	600,000	At work places and haulage trucks
Environment Specialist for 6 months	6	3,000,000	18,000,000	This item meets the Specialists remuneration during construction
Monitoring Plan (ESMP) inclusive of institutional collaboration - Lump sum	1	20,000,000.00	20,000,000.00	Meet the costs of monitoring in terms of subsistence, transport and fuel
Total cost excluding RAP			**66,800,000**	

7.7 Disclosure Process

This Project brief as has been stated above will be disclosed at several levels. The first disclosure is through seeking comments from stakeholders and lead agencies and NEMA. The second if the Lead agencies consider it controversial then a Public hearing will be arranged before a certificate of approval is considered (however this is deemed to be most unlikely since the initial "*Environmental appraisal during feasibility studies* established that the project did not warrant a full EIA.

Following the approval by the Authority, copies of the project brief will be kept at the Mubende Local Government offices with the District Environment Office, with the developer/contractor and any other stakeholder who may wish to ensure that the mitigations as approved are being enforced.

7.8 Summary of the RAP findings

A Resettlement Action Plan (RAP) has been conducted. The RAP has only targeted crops, trees and other perennial plants such as fruit trees and ornamentals. Deliberate efforts were made to avoid houses and other structures by remaining as close as possible to the road alignment and within the Road Reserve. The total number of Directly Project Affected People is 2150 of which 1670 are men and 386 are women whose crops and trees will be affected. In all a total of 94 Institutions will also loose crops and trees.

Based on the findings of the study carried out, the total package to meet compensation needs is Five hundred and ninety one million sixty one thousand, Ninety Uganda Shillings (UGX 591,061,090). This amount includes the 15% Disturbance and the 15% RAP implementation costs.

7.9 Grievance Redress Mechanism for the Project

Grievance redress mechanisms provide a way to provide an effective avenue for expressing concerns and achieving remedies for communities, promote a mutually constructive relationship and enhance the achievement of project development objectives. Grievance redress mechanisms are increasingly important for development projects where ongoing risks or adverse impacts are anticipated. They serve as a way to prevent and address community concerns, reduce risk, and assist larger processes that create positive social change. It has been learned from many years of experience that open dialogue and collaborative grievance resolution simply represent good business practice both in managing for social and environmental risk and in furthering project and community development objectives.

Grievance Prevention
The project will try to proactively solve issues before they even become grievances by ensuring that the Grievance redress Committee is aware and accepting that grievances do occur. They will be ready to deal with them through the following: -

- By Providing sufficient and timely information to the PAPs and stakeholder communities

- By involving the Local Leaders who will ensure that the affected community have a full understanding of the GRM and the procedures to be followed in filing complaints.

- By conducting meaningful community consultations including highlighting the range of measures that have been instituted to reduce potential negative environmental and social impacts of project activities on communities;

- By Building capacity for project staff, particularly community facilitators and other field level staff as well as the GRM committees themselves

The procedure will be to encourage dialogue in grievance redress other than resorting to Coutr procedures. This is because resorting to the judicial system often results in long delays before a case is processed. This could result in significant expenses to the complainant and might require a complex legal mechanism, involving lawyers, which maybe beyond the complainant's control. Also, courts may declare themselves incompetent for matters related to informally owned property, which is likely to be common in the project area. The following Grievance Redress Mechanism is therefore proposed as guided by ERT III

Grievance Redress Mechanism for the project
Local grievance redress committees (LGRC) will be initiated at the village and Sub County levels to record grievances and also help in mediation. This committee will comprise the LC I Chairperson, a trusted village elder, a religious representative, an elected PAP

representative and specific vulnerable group representatives of relevance to the village i.e. women and the disabled. Disputes will be resolved at the village level as far as possible. The GRC at the Sub County level will comprise the LC III Chairperson, Sub County Chief, a representative of vulnerable groups (women etc.) and the Councilor of the Parish. This project is not District wide, but the CAO will have a representative at the Sub County to ensure the presence of the district Authority. This representative will assist in setting up the Grievance Redress Committee at the district which will at a minimum comprise the LC3 representative, representatives of vulnerable groups, District Land Officer/Surveyor, District Community Development Officer and a Grievance Officer from the implementing agency who will oversee and coordinate grievance issues at the village level including setting up of LGRCs, provision of Grievance Logbooks and related logistics, training and orientation of LGRCs, and providing advice on grievance resolution as well as compiling records of all project grievances raised and their mediation for the whole district. The grievance mechanism for the implementation process is as follows:

a) The LGRC will interrogate the PAP in the local the language that is understood by the PAP (mostly Luganda, Runyankole and or Runyakitara). A Grievance Form which will be signed by the leader of the LGRC and the PAP/complainant will be lodged in the Grievance Log/Register provided by the Grievance Officer;

b) The PAP will expect a response from the LGRC within seven days of filing the complaint. If the issue is not resolved, the LGRC will forward the complaint to the GRC at the Sub County;

c) The GRC at the Sub County will be given a fourteen day notice to hold a meeting. Two days after the meeting, the Sub County GRC will call the PAP and LGRC for discussions and resolution. The resolution will be presented to the PAP in written form within the same day of the meeting. If there is no resolution to the grievance, the GRC at the Sub County and the PAP shall then refer the matter to the GRC at the District;

d) The GRC at the District will be given a fourteen day notice to hold a meeting. Two days after the meeting, the GRC will call the PAP and LGRC for discussions and resolution. The resolution will be presented to the PAP in written form within the same day of the meeting;

e) If there is no resolution to the grievance, the GRC at the district and the PAP shall then refer the matter to the District Land Tribunal for land-related issues and to REA /Implementing agency's head office for all other grievances;

Appeal to Court - The Ugandan laws allow any aggrieved person the right to access to Court of law. If the complainant still remains dissatisfied with the District Land Tribunal or

REA, the complainant has the option to pursue appropriate recourse via judicial process in Uganda. Courts of law will be a ―last resort‖ option, in view of the above mechanism.

In summary the following steps will be followed: -

Step 1: Receipt of complaint

A verbal or a written complaint from a PAP will be received by the Contractor's assigned Grievance Officer (GO) and recorded in a grievance log (electronically if possible).

Grievances can be lodged at any time, either directly to the Contractor, Sub-county/District Office or via the grievance committee member. The process for lodging a complaint is outlined below:

a) The GO will receive a complaint from the complainant.

b) The GO will ask the claimant questions in their local language, write the answers in English and enter them in English onto the Grievance Form.

c) A representative of the community and LC-1 Chairman will witness translation of the grievance into English.

d) The GO reads the complaint in English and translates it into the complainant`s local language on the Grievance Form.

e) The local leader and the complainant both sign the Grievance Form after they both confirm the accuracy of the grievance.

f) The GO lodges the complaint in the Grievance Log.

Step 2: Determination of corrective action

If in his/her judgment, the grievance can be solved at this stage and the GO and a representative of the community and LC-1 will determine a corrective action in consultation with the aggrieved person. A description of the action; the time frame in which the action is to take place; and the party responsible for implementing the action will be recorded in the grievance database.

Grievances will be resolved and status reported back to complainants within 30 days. If more time is required this will be communicated clearly and in advance to the aggrieved person. For cases that are not resolved within the stipulated time, detailed investigations will be undertaken and results discussed in the monthly meetings with affected persons. In some instances, it may be appropriate to appoint independent third parties to undertake the investigations.

Step 3: Meeting with the complainant

The proposed corrective action and the timeframe in which it is to be implemented will be discussed with the complainant within 30 days of receipt of the grievance. Written agreement to proceed with the corrective action will be sought from the complainant (e.g. by use of an appropriate consent form). If no agreement is reached, Step 2 will be re-visited.

Step 4: Implementation of corrective action

Agreed corrective actions will be undertaken by the contractors or REA within the agreed timeframe. The date of the completed action will be recorded in the grievance database.

Step 5: Verification of corrective action

To verify satisfaction, the aggrieved person will be approached by the Grievance Officer to verify that the corrective action has been implemented. A signature of the complainant will be obtained and recorded in the log and/or on the consent form (see Step 3). If the complainant is not satisfied with the outcome of the corrective action additional steps may be undertaken to reach agreement between the parties. If additional corrective action is not possible alternative avenues maybe pursued.

Step 6: Action by Grievance Committee at the district level

If the complainant remains dissatisfied and a satisfactory resolution cannot be reached, the complaint will be handled by the Grievance Committee. A dedicated Grievance Committee will be established to assess grievances that arise from disputes. The Grievance Redress Committee at the district will at a minimum comprise the LC3 representative, representatives of vulnerable groups, District Land Officer, District Community Development Officer, District Environmental Officer, Contractor's representative and a REA Grievance Officer who will oversee and coordinate grievance issues at the village level including setting up of Local Grievance Committees.

This committee must have a quorum of at least five persons. Decisions will be reached by simple majority. The Grievance Committee will be constituted for as long as no more grievances are lodged.

Once the Grievance Committee has determined its approach to the lodged grievance, this will be communicated to the GO, who will communicate this to the complainant. If satisfied, the complainant signs to acknowledge that the issue has been resolved satisfactorily. If the complainant is not satisfied however, the complainant notes the outstanding issues, which may be re-lodged with the Grievance Committee or the complainant may proceed with judicial proceedings by going to courts of law as the last resort. The decision of the courts of law shall be final.

REA will include regular updates and analysis of the GRM in their quarterly reports and also provides regular feedback to communities and other relevant stakeholders. All submitted complaints and grievances will be added to a database/project files which will be updated regularly. Each complaint and grievance will be ranked, analyzed and monitored according to type, accessibility and degree of priority. The status of grievances submitted and grievance redress will be reported through the monthly reports.

8. PLAN FOR THE IMPLEMENTATION OF THE MITIGATION/ENHANCEMENT MEASURES

These implementation measures must be read in the context of the mitigation measures discussed in the previous paragraphs (Table 40).

Table 40: Plan for implementation of Mitigation/Enhancement measures

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
A.	Land take	• Make sure that there is no land take by following the road alignment for the distribution line and remaining within the Road Reserve. Should it be inevitable to acquire land, then compensate the PAP at full replacement cost plus a disturbance allowance	• REA	• Along the distribution line;	• During design and construction	• Actual land taken • No. of Complaints from PAP	• LC executive; • REA • Mubende District LG
B. .	Population influx	• Working with LC leadership, hire local people to do	• Contractor	• Along the distribution line;	• During construction	• No of local people hired; • Number of	• REA • Mubende District LG • LC Executive

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		most of the casual jobs; • Provide project specific Identification tags / uniform to all workers on site; • Maintain Good public relations between the local community, the Local leadership and the Developer;				identity cards/uniforms given out;	
C.	Impact on Human Settlements	• Ensure that houses and structures are not impacted by passing the line through the road reserve; • In RGC pas distribution line behind linear structures; • Sensitise communities on dangers of high	• Contractor; • designer	• Along the distribution line;	• During construction; and • During design;	• No of complaints recorded • Frequency of sensitisation;	• REA • Environmentalist • Mubende District LG • LC Executive

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		voltage; • Poles to be guided away from buildings or graves;					
D.	Security of Construction materials	• Sensitise the community about the negative effects of stealing and vandalising electrical installation; • Local workers to be vetted by the LC executive; • Guard equipment and limit intruders onto working sites; • Cooperate with local security officials including the Secretary for Defence at the local level (LC);	• Contractor	• Along the distribution line;	• During construction	• No of sensitisation messages given out; • Number of identity cards/uniforms given out;	• REA • Mubende District LG • LC Executive
E.	Community and workers health	• Put in place Warning Signs on approaches to the	• Contractor; • REA	• Along the distribution line;	• During construction	• No of sensitisation messages given	• REA • Environmentalist • Mubende District LG

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		working areas to warn bona fide travellers • Fence off storage areas and camp sites to discourage idlers to the sites; • Provide full Personnel Protection Equipment (PPE) to workers; • Sensitise community and schools about construction hazards as well as HIV/AIDS; • A First-Aid kit to be provided at every active working site;				out; • Number of warning signs • No and types of PPE; • Presence of First AID Kits	• LC Executive
F.	Issues of Equipment storage areas/ camps	• The workers camp will not be constructed • However, equipment storage areas to be	• Contractor • Environmentalist	• At the campsite;	• During construction	• No of bins at site • Presence of sanitation facilities;;	• Environmentalist • Mubende District LG • LC Executive

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		provided; • Compensate or promptly lease land / space for Equipment storage; • Provide adequate Proper sanitation facilities at Equipment Storage Areas; • Segregate waste into biodegradable, non biodegradable and hazardous and dispose appropriately;					
G.	Air Quality (Increased Dust and air pollution)	• Limit construction traffic speed; • Keep all equipment and machinery in good working order to limit excessive fumes and noise, • Maintain safety measures (PPE) for the health and well-	• Contractor	• Construction sites and work areas; • Along the haulage route especially in the vicinity of settlements ;	• During construction and transportation of construction materials;	• Occurrence of dust in the air. • Complaints from other residents	• Environmental Specialist on behalf of REA • Mubende District LG

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		being of the workers. • Ensure workers use full PPE.					
H.	Deposition into wetland and sensitive ecosystems	• No construction of other roads will be permitted • Use existing roads to ferry ; • No poles will be planted within drainage lines; • No excavations within drainage canals will t be allowed; • For the wider wetlands use of H/M structures will ensure that no poles are constructed within the wetlands	• Contractor	• Close to wetlands and other sensitive ecosystems	• During construction	• Number of depositions if any; • Existence of poles in drains;	• Contractor and Environmental Specialist • Mubende District LG • LC Executive
I.	Biological Impacts	• Ensure that there is a gap of at least 4.0 metres between energised lines and	• Contractor	• Along the entire line in susceptible areas.	• During construction	• Actual width between conductors • Presence of	• Contractor • REA

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		ground equipments/earthling. • Design the line with auto-reclosers at certain points. • Ensure the conductors are properly spaced so that collision/electrocution of birds is minimised.				Auto - reclosers;	
J.	Impacts on Forested areas (CFRs)	• Pay adequate compensation for trees in CFR; • REA shall require NFA to develop an off-set plan before compensation/money is disbursed. Based on NFA's off-set plan, an MOU between REA	• NFA • Private individuals	• Within the project area if the land can be found	• During the first rainy season after compensation	• Amount compensated • Number of seedlings planted	• NFA

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		and NFA to ensure that replanting of forest is done will be developed(NFA will use the compensation money to plant another area within the project area) • REA shall also continuously monitor implementation progress of the off-set plan • Encourage Private owners to replant using the compensation or get an NFA concession to plant more;					

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
K.	Hazardous materials and waste	• REA will adhere to their stated procurement guidelines (as stated above) ensuring that all their transformers will conform to latest edition of appropriate EC specifications and/or other recognized International Standards in particular: • Do not accept PCB as part of the working materials; otherwise replace them environmentally acceptable insulators. • Pre-treat Poles at a designated facility to ensure chemical fixation and prevent	• REA for standards enforcement; • Contractor for pole treatment and importation of insulating materials;	• At Policy level for program; • At pole treatment plant for poles;	• Before commencement of works and during construction; • Even during maintenance after construction for pole treatment;	• Existence of policy document; • Existence of treatment plant offsite; • Number of poles treated	• Environment specialist

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		leaching into the soil among others.					
L.	**DURING OPERATION OF THE LINES**						•
M.	Potential for electrocution in case of line breakages	• Sensitize communities about the dangers of exposed high voltage live wires; • Provide prominent warning signs at all installations to warn the intending intruders from touching the lines or fixtures. • Sensitize Communities to report a sagging wire or one that has fallen to the ground; • Vigilance of Maintenance personnel essential;	• Operator • REA	• In project area	• During construction and after	• Frequency of sensitization; • No of warning signs;	• REA/Environmental Specialist • Mubende District LG • LC Executive
N.	Bush Burning	• Sensitise and enforce the law against bush	• Operator • REA	• In project area	• During construction and after	• Frequency of sensitization; • No of warning	• REA/Environmental Specialist • Mubende District LG

Item	Environmental Impacts	Mitigation Measures	Responsible Party/implementer (Who)	Site of Implementation (Where)	Optimal Timing for Implementation (When)	Monitoring Indicators	Monitoring (Who)
		burning; • Propose incentives to those reporting a fire;				signs;	• LC Executive
O.	Occupational health	• Switch off and fully deactivate the main power while maintenance works are on; • Use personal monitors in vulnerable areas to detect EMF; • Use only well trained Workers;	• Operator • REA	• At installations;	• During construction and after	• Records of maintenance (maintenance log book) ;	• REA/Environmental Specialist

9. CONCLUSION AND RECOMMENDATIONS

This Project Brief report highlights the potential impacts to the environment particularly as they relate to the 33kv Kiganda Mile 16 Power Distribution Line. A number of benefits have been highlighted and this Project Brief proposes measures to enhance these benefits as they affect the stakeholder community. Mitigation measures and a proposal to put in place implementation plan have been proposed to ensure that the development is done within the confines of the law with minimum damage to the environment. The cost of implementing the resulting Environment Management and Monitoring Plan was estimated to be Uganda Shillings **66,800,000**exclusive of the compensation.

If the proposed mitigation measures are enforced, the development may go on without significant long-term impacts to the neighbouring communities and environment.

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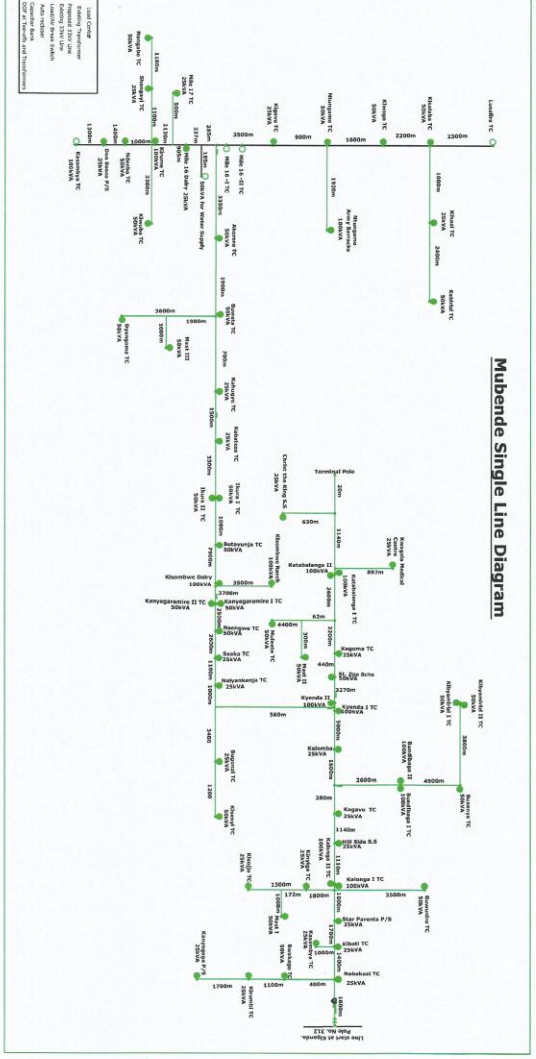
11. ANNEXES

Annex 1:List of Encountered Plant Species in the Project area

Genus	Species	Genus	Species
Asystasia	*Gangetica*	*Gardenia*	*ternifolia*
Achyranthes	*Aspera*	*Teclea*	*nobilis*
Lannea	*schimperi*	*Harrisonia*	*abyssinica*
Chlorophytum	*Cameronii*	*Solanum*	*incanum*
Asparagus	*Africanus*	*Cissus*	*rotundifolia*
Balanites	*Aegyptiaca*	*Cyphostemma*	*adenocaule*
Kigelia	*Africana*	*Cyphostemma*	*serpens*
Stereospermum	*Kunthianum*	*Setaria*	*sphacelata*
Chamaecrista	*Mimosoides*	*Sporobolus*	*pyramidalis*
Chamaecrista	*Nigricans*	*Securidaca*	*longipedunculata*
Tamarindus	*Indica*	*Talinum*	*portulacifolium*
Boscia	*Angustifolia*	*Gardenia*	*ternifolia*
Cadaba	*Farinose*	*Teclea*	*nobilis*
Capparis	*Tomentosa*	*Harrisonia*	*abyssinica*
Setaria	*sphacelata*	*Euphorbia*	*candelabrum*
Sporobolus	*pyramidalis*	*Flueggea*	*Virosa*
Securidaca	*longipedunculata*	*Phyllanthus*	*Amarus*
Talinum	*portulacifolium*	*Hoslundia*	*Opposite*
Abutilon	*mauritianum*	*Orthosiphon*	*sp.*
Hibiscus	*Cannabinus*	*Chloris*	*Gayana*
Pseudocedrela	*Kotschyi*	*Cynodon*	*dactylon*
Chasmanthera	*Dependens*	*Hyparrhenia*	*Filipendula*
Acacia	*Sieberiana*	*Hyparrhenia*	*Rufa*
Albizia	*Zygia*	*Hyperthelia*	*Dissolute*
Jasminum	*Fluminense*	*Panicum*	*Maximum*
Desmodium	*Salicifolium*	*Setaria*	*Sphacelata*

Genus	**Species**	**Genus**	**Species**
Desmodium	*Velutinum*	*Sporobolus*	*Pyramidalis*
Eriosema	*psoraleoides*	*Securidaca*	*longipedunculata*
Lonchocarpus	*Laxiflorus*	*Talinum*	*portulacifolium*
Tephrosia	*Linearis*	*Gardenia*	*Ternifolia*
Tephrosia	*Pumila*	*Teclea*	*Nobilis*
Teramnus	*Labialis*	*Harrisonia*	*Abyssinica*
Teramnus	*Uncinulatus*	*Solanum*	*Incanum*
Vigna	*Vexillata*	*Cissus*	*Rotundifolia*
Adenia	*sp.*	*Cyphostemma*	*Adenocaule*
Piper	*Umbellatum*	*Cyphostemma*	*Serpens*
Brachiaria	*Brizantha*	*Genus*	*Species*
Asystasia	*gangetica*	*Combretum*	*molle*
Achyranthes	*aspera*	*Aneilema*	*petersii*
Lannea	*schimperi*	*Commelina*	*benghalensis*
Chlorophytum	*cameronii*	*Cyanotis*	*foecunda*
Asparagus	*africanus*	*Ipomoea*	*acuminata*
Balanites	*aegyptiaca*	*Ipomoea*	*wightii*
Kigelia	*africana*	*Kalanchoe*	*densiflora*
Stereospermum	*kunthianum*	*Cucumis*	*figarei*
Chamaecrista	*mimosoides*	*Cyperus*	*alba*
Chamaecrista	*nigricans*	*Cyperus*	*rotundus*
Tamarindus	*indica*	*Sansevieria*	*dawei*
Boscia	*angustifolia*	*Acalypha*	*bipartita*
Cadaba	*farinosa*	*Euphorbia*	*bongensis*
Capparis	*tomentosa*	*Euphorbia*	*candelabrum*
Crateva	*adansonii*	*Flueggea*	*virosa*
Maerua	*subcordata*	*Phyllanthus*	*amarus*
Maytenus	*senegalensis*	*Hoslundia*	*opposita*
Combretum	*aculeatum*	*Orthosiphon*	*sp.*
Combretum	*collinum*	*Abutilon*	*mauritianum*



	Species
nia	*dactylon*
	filipendula
nia	*rufa*
ia	*dissolute*
	maximum
	labialis
	uncinulatus
	vexillata
	sp.
	umbellatum
a	*brizantha*
	gayana
tor	

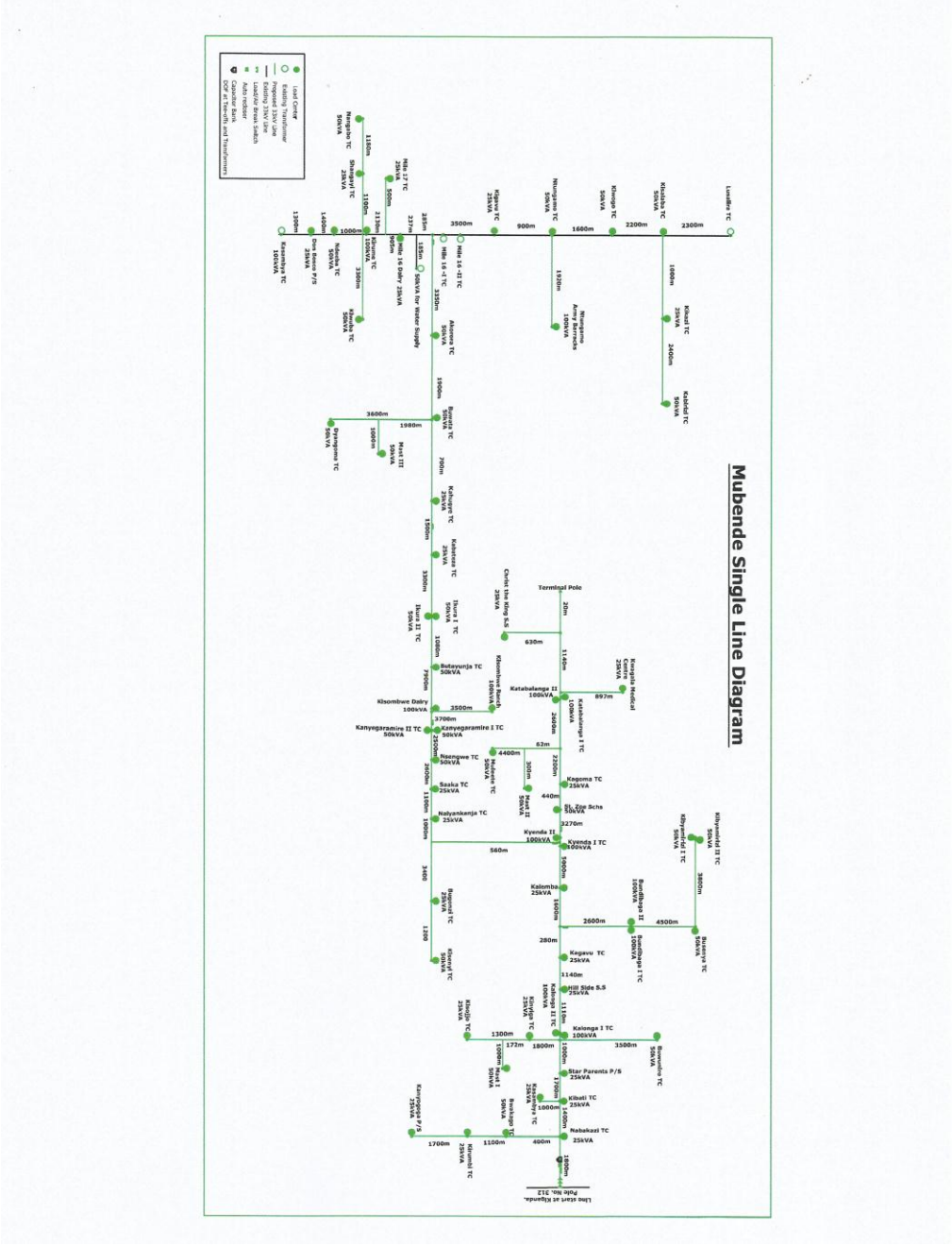

Mubende Single Line Diagram
Load Center
Existing Transformer
Existing 33kV Line
Existing 33kV Lines
Load/Air Break Switch
Auto recloser
Line start at Kiganda Pole No. 312
Terminal Pole
Lundira TC
Kisasira TC
Kiboga TC
Nkungumo TC
Ngoma TC
Rwengulo TC
Shinagyo TC
Mile 17 TC
Kasenda TC
Kabaka TC
Mile 16 TC
Mile 16 Dairy 25kVA
Mile 15 -1 TC
Mile 15 -2 TC
50kVA for Water Supply
Nkungumo Army Barracks
Kibaal TC
Kalebeta TC
Atuneza TC
Bigando TC
Dyengoma TC
Mwai III
Kafunyo TC
Kalenga TC
Chirio Sta Kling SS
Thuro I TC
Thuro II TC
Bulayunja TC
Kisombwe Dairy
Katabalenga II
Katabalenga I TC
Kanyegaramire II TC
Kanyegaramire I TC
Ngengwe TC
Nalweno TC
Kagoma TC
Mwai II
St. Ese Scha
Saaka TC
Nalyankanja TC
Kyenda II
Kyenda I TC
Kilyamidol II TC
Kilyamidol I TC
Kalomba
Bwandhaya II
Bwandhaya I TC
Bulenya TC
Ringoud TC
Kisoya TC
Kegavu TC
Hill Side S.S
Kisojjo TC
Kisojjo TC
Kalonga I TC
Bumasiko TC
Star Parenta P/S
Kibati TC
Kisoya TC
Nabakazi TC
Kanyanda P/S
Kisomiti TC

Table 41: Annex 3 PROJECTED TIME FRAME FOR SENSITIZATION MEETINGS THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN FOR THE LOT 2:33KV POWERLINE KIGANDA- MILE 16 WITH TEE-OFF TO KATABALANGA AND KIBYAMIRIZI - BY RESCO PROPERTY CONSULTANT SURVEYORS.

District	Sub County/ Division	Parish / Ward	Village LC 1/ zone	Venue	Meeting date and time	Contact person(s) & Telephone
Mubende	Kiganda	Nsozinga	Nabakazzi LC1	Josephats Nsubuga's Home in Kyamweru Trading centre	23/07/2014 at 9am	Karubanga Vincent 0700803049 Ssewanyana Fabiano 0774165511 Nantume teopista 073122494 / 0700122529
			Kyamweru LC 1			
		Kalonga	Bwakago LC1	Bwakago Trading cenntre	24/07/14 at 9am	Mr Kintu Stephen 0772990728 Mr. Muwanga Ahamed 0704700566
			Kirumbi LC1			
			Bukongo LC1			
			Kyabaduuma LC1	Kyabaduuma Trading centre	24/07/14 at 11am	Mr Ntahushira leonard 0700386364 Mr Ssebugiobye Michael 0753252099
			Misenda LC1			
			Budibaga East LC1	Budibaga Trading centre	24/07/14 at 12pm	Mr. Tukuze John 0753054533
			Budibaga West LC1			Mr Mulindwa Isaac 0754876562
		Kyabyuma	Bussenya LC 1	Busenya Trading centre	24/07/14 at 2pm	Mr Mulindwa John (Area Councillor

Table 41: Annex 3 PROJECTED TIME FRAME FOR SENSITIZATION MEETINGS THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN FOR THE LOT 2:33KV POWERLINE KIGANDA- MILE 16 WITH TEE-OFF TO KATABALANGA AND KIBYAMIRIZI - BY RESCO PROPERTY CONSULTANT SURVEYORS.

District	Sub County/ Division	Parish / Ward	Village LC 1/ zone	Venue	Meeting date and time	Contact person(s) & Telephone
						0782/0701933691
			Mpasana LC1			
	Kitenga	Kalonga	Kibyamirizi LC1	Kibyamirizi TC Boda boda stage	24/07/14 at 3pm	Mr Kabasiime Philepiru 0701119302 Mr Kagwe Edward (Area Counsellor) 0787094902
Mubende			Lwemiigo LC 1			
			Ssunga Lc 1			
			Kiteredde LC 1			
			Kisonga LC 1	Kagabu Trading Centre	24/07/14 at 4pm	Mr zziwa Matia 0754360288 / 0775459168
			Kalembe LC 1	Kalembe Trading centre	24/07/14 at 5pm	Mr Kwefugga Christopher 0787944470
			Kisojjo LC 1	Kisojjo Trading centre	25/07/2014 at 9am	Mr Bwayo Gabriel 0750908648
			Kinyiga LC 1	Kinyiga Trading centre	25/07/2014 at 11am	Mr Lutwama Deo 0752807048

Table 41: Annex 3 PROJECTED TIME FRAME FOR SENSITIZATION MEETINGS THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN FOR THE LOT 2:33KV POWERLINE KIGANDA- MILE 16 WITH TEE-OFF TO KATABALANGA AND KIBYAMIRIZI - BY RESCO PROPERTY CONSULTANT SURVEYORS.

District	Sub County/ Division	Parish / Ward	Village LC 1/ zone	Venue	Meeting date and time	Contact person(s) & Telephone
			Kalonga A LC1	Kalonga Trading centre	25/07/2014 at 2pm	MrKawuma peter 0705041030
			Kalonga B LC 1			Mr Byamukama Francis 0777412728
			Kalonga Trading Centre LC 1			Mr Mbaziira Ssula 0751777796
			Kyakatule LC 1			Mr Malunya david 0703258454
		Kagoma	Kyenda LC 1	Kyenda trading centre	25/07/2014 at 4pm	Mr Benjamin Habimana 0704913600 Mr
			Mujunwa LC 1			Seruggo Constance 0753076558
			Kagoma LC 1			Mr Katende Haruna 0752514155 Ntalo Nsamba Posiano 0784045321
		Kayebe	Bugonzi LC 1	Kisenyi Trading centre	28/07/2014 at 9am	Ms Kakome Florence 0771948556
			Kisenyi LC 1			
		Kagoma	Nalyakanji LC 1	Ssaka trading centre	28/07/2014 at 10am	Mr Tumusiime Robert 0788299861 Mr. Wagaba Tito 0754332296

Table 41: Annex 3 PROJECTED TIME FRAME FOR SENSITIZATION MEETINGS THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN FOR THE LOT 2:33KV POWERLINE KIGANDA- MILE 16 WITH TEE-OFF TO KATABALANGA AND KIBYAMIRIZI - BY RESCO PROPERTY CONSULTANT SURVEYORS.

District	Sub County/ Division	Parish / Ward	Village LC 1/ zone	Venue	Meeting date and time	Contact person(s) & Telephone
			Ssaka LC 1			
		Bugonzi	Buzoba LC 1	Nsengwe trading centre	28/07/2014 at 11am	Mr Bikorweomuhangi John 0778530460
			Nsengwe LC 1			Mr Kyebagambi Sulaiman 0752812570
		Kayebe	Lusikizi LC 1	Kanyegalamile Trading centre	28/07/2014 at 2pm	MR Katiti Joshua 0755820480
			Lwamasengero LC 1			Mr Turyahabwe Jerevazio 0779697788
	Kitenga	Kagoma	Mutambwa LC 1	Katabalanga Community Hall	28/07/2014 at 4pm	Mr Twine Abel 0701/0774447713
			Muleete LC 1			
			Katabalanga A LC 1			Mr Mugerwa Badru 0772023085
			Katabalanga B LC 1			Mr Luyima Andrea0751780370
	Mubende Town Council	Kisekende	Bakijulula LC 1	Neptune paradise Guest House	28/07/2014 at 5pm	Mr Ssempijja Fred Tusuubira 0704229450

Table 41: Annex 3 PROJECTED TIME FRAME FOR SENSITIZATION MEETINGS THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN FOR THE LOT 2:33KV POWERLINE KIGANDA- MILE 16 WITH TEE-OFF TO KATABALANGA AND KIBYAMIRIZI - BY RESCO PROPERTY CONSULTANT SURVEYORS.

District	Sub County/ Division	Parish / Ward	Village LC 1/ zone	Venue	Meeting date and time	Contact person(s) & Telephone
	Kitenga	Kayebe	Busooba LC 1	Busoba trading centre	29/07/2014 at 9am	Mr Kaloba Ezekiel 0784918277
			Butayunja LC 1	Butayunja Trading centre	29/07/2014 at 11am	Mr Muhoozi Charles 0779075730 Mr Friday Steven 0774116587
	Kigando	Kiyanja	Katongole	Katongole Trading Centre	29/07/2014 at 1pm	Mr Namanaya David 0783400469
			Ikula LC1	Ikula Trading centre	29/07/2014 at 3pm	Mr. Babaine Yosam 0777771679
		Kigando	Kabateza A	Kabateza Trading centre	29/07/2014 at 4.30pm	Mr Sabiti Stewart 0788646410
			Kabateza C			Mrs Barunuka Cleophas 0788323737
		Kirume	Nsambya LC1	Kirume trading centre	30/7/14 at 9am	LC 3 C/M Kahindi Winston 0752894503
			Kirume East LC 1			Mr Timanaya Deo 0783051649 / 0706329640
			Kirume West LC 1			Kakande Augustine 0756671403
			Ndeeba LC1			Mr Kaweesa 0750760557

Table 41: Annex 3 PROJECTED TIME FRAME FOR SENSITIZATION MEETINGS THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN FOR THE LOT 2:33KV POWERLINE KIGANDA- MILE 16 WITH TEE-OFF TO KATABALANGA AND KIBYAMIRIZI - BY RESCO PROPERTY CONSULTANT SURVEYORS.

District	Sub County/ Division	Parish / Ward	Village LC 1/ zone	Venue	Meeting date and time	Contact person(s) & Telephone
			Kiwuba LC 1	Collin Junior School	30/7/14 at 11am	Mr Mugema Boaz
			Kacungiro LC 1			Antonio Mukibi salongo VC/M LC1 0785367222
			Kamirangoma LC 1			Ssenyanga Juklius 0756734302
	Kasambya	Kasambya (Town Board)	Kasambya A LC 1	Kasambya Trading centre	30/7/14 at 1pm	Mr Nsamba C Ssalongo 0752590574 Ssekago 0752821440 / 0777295020
	Nabingoola	Kiyita	Nangabo LC 1	Nangabo Trading centre	30/7/14 at 3pm	Ngaruye James 0779862811
	Kigando	Dyangoma	Dyangoma LC 1	Dyangoma trading centre	31/07/14 at 9am	Mr Musinguzi Nathan 0788076110
		Mugolodde	Butawata B	Akolola trading centre	31/07/14 at 1pm	Mr Kayaga Francis 0783120268
			Kisita A	Kisita Trading Centre	31/07/14 at 2pm	Mr Munyaruguru Ndazarahe 0776550120
		Lusiba	Mile 17 or Kiwomya LC 1	Mile 17	31/07/14 at 3pm	Mr Mwebembezi Justus 0753695833
			Kyamuguluma LC 1	Kyeyune ' Home Kigavu trading centre	31/07/14 at 4pm	Mr Kyeyune Augustine

Table 41: Annex 3 PROJECTED TIME FRAME FOR SENSITIZATION MEETINGS THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN FOR THE LOT 2:33KV POWERLINE KIGANDA- MILE 16 WITH TEE-OFF TO KATABALANGA AND KIBYAMIRIZI - BY RESCO PROPERTY CONSULTANT SURVEYORS.

District	Sub County/ Division	Parish / Ward	Village LC 1/ zone	Venue	Meeting date and time	Contact person(s) & Telephone
	Kibalinga	Nkandwa	Kabirizi LC 1	Kabirizi Trading centre	1/08/14 at 9am	Mr Bakale Posian 0702411659
			Nkandwa Lc 1			Mr Mugisha Amos 0779970426
			Lwensambay LC 1			Mr Tushabe Everest
			Nyakiruma LC 1			Mr Lukema Julius 0784949664
		Nutngamo	Kiwogo LC 1	Mzee Kappa Charle's Home	1/08/14 at 1pm	Mr. Warren
			Ntungamo LC 1			Nkwanga Matia 0703604142
			Kisalaba LC 1			Mr Basiima Robert 0705710038 / 0752455891
	Kigando	Kiyanja	Butawata East LC 1	Kiganda Sub County HQ	2nd August 2014 at 9am	Mr Kahindi Winston LC 3 Chairperson 0752894503
			Rwenshama LC 1			
			Kigando LC 1	Kigando Villabe	2nd August 2014 at 2pm	

Table 42: Annex 4: ***List of sensitized and consulted people along Kiganda Mile 16 33Kv Distribution Line***

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 29/07/2014 –

LEAD AGENCY/KEY STAKEHOLDER

No	Names	Sex	Lead agency.	Ministry/Department	Title/Designation	Contact Address.....
1	CHRISTINE NAMIREMBE KAJENDO	F	UNRA	MOWT	RIGHT OF WAY SPECIALIST	
2	David Kyaddondo	M	UNRA	Safeguards Unit	Safeguards Manager	
3	RUKUNDO TOM	M	NFA	MWE	EIA Specialist	tomr@nfa.org.ug
4	Patrick Kamanda	M	UNRA	MOWT	EIA Specialist	
5						
6						
7						
8						
9						
10						

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KYABIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 21st May 2014 DISTRICT: [redacted] MUBENDE

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address.....
1	Babinge Teddy	F	Kitenga	Kagoma	Kyenda	Sub County chief	0703565292 0772464589
2	Katangwa Yawasi	M	Kitenga	Kagoma	Kyenda	chairperson LC III	0785537134
3	Kabasinwe Philip	M		Kibyamiri TC	" I		0701119302
4	Takuze			Budibaga East	"		
5	Bugyeni			Budibaga East	"		
6							
7							
8							
9							
10							

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 22nd JULY 2014 **DISTRICT:** ***MUBENDE***

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address
1	SSEMIYINGO RICHARD	M	KIGANDA	KALAMBA	KIWOGO	LCIII C/P KIGANDA	0772373162 0706125364
2	Nnantume Teo	F	KIGANDA	NSOZINGA	KYAMWERO	S/C women chairperson	0703122494 0700122529
3	Nakato Helen	F	KIGANDA	KIGANDA		S/C Chief	0772440652
4	YOWASI KALANGWA	M	KITENGA	KALONGA -	BUAIBAGA	C/MAN LCS	078553713
5	Bantebya Goreth	F	Kitenga	Kagoma	Kyenda	CDO	078264743
6	BARIRIE TEDDY	F	KITENGA	KAGOMA	KYENDA	S/C CHIEF	07724645 8
7	NAGADYA PASCHALINE	F	CAO	CAO	CAO	O/A	0779878476.
8	NAKANYIKE PENELOPE		DIS HEADQUATERS	DISTRICT	DIS CIMAN	SEC. TO CIMAN	0782-43223
9	KATHURIA WINSTON	M	KIGANDA S/C			c/p LC III	0789920175 0752894502.
10	MUHOOZI PATRICK	M	KIGANDA S/C	MUGWANDO	KAGUNGA	A/C Kiganda	977961164 6 0701331919

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VENUE : NEPTUNE PARADISE

VILLAGE NO 1 - BAKIJULULA

TIME : 5:00 PM

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 28th JULY 2014 **DISTRICT:** ***MUBENDE***

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address
1	NSanSa DAVID		muBende T.C	Bukijjera Kisagazi	Bakijjulula	[signature]	07513903[illegible]
2	Lubega Jhn		muBende T.C	Bukijera	Bakijjulula	LUBEGA [illegible]	
3	LUTALO JOSEPH		muBende-TC	BakiJJulula	Bakijjulula	Lutalo	070563853
4	Bachwa		Mubende	Kisagazi	Bakijjulula	MTN	0771342
5	Musumbira F. Ssempijje		Mubende T.C.	Kisekende	Bakijjulula	e/person	0704229410
6	Katalemwa Zwaliza		Mubende TC	Kisekende	Bakijjulula		078394650
7							
8							
9							
10							

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THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 24 JULY 2014

LEAD AGENCY/KEY STAKEHOLDER

SUBCOUNTY PARISH VILLAGE

No	Names	Sex	~~Lead agency.~~	~~Ministry/Department~~	~~Title/Designation~~	Contact Address.....
1	Tumwebaze ...	M	Kitenga	Kalonga	Budibaga	0753943493
2	MANIRAGU	M	KITENGA	KABONGA	BUDIBAGA	
3	AMUZAT	M	K-	K	BUDIB...	
4	KASIRYE. M	M	KITENGA	Kalonga	Budibag	0789752895
5	Dibya . F	M	KITENGA	KALONGA	Budibaga	0784 944589
6	Katusabe .R		KITenga	Kalonga	Budibaga	
7	Mbonigaba S.	M	KITENGA	KALONGA	Budibaga	
8	Semarito F	M	KiTenga	Kalonga	Budibaga	
9	Mahirwe Robati	M	Kitenga	Kalonga	Budibaga	0753114217
10						

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BISENYA LC1

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 24 JULY 2014 **DISTRICT:** *MUBENDE*

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address.....
1	MULINDWA JOHN	M	KITENGA	KABYUMA	BUSENYA	Subcounty Speaker	0782/0701/93360 0700174878
2	Katongole	M	KITENGA	KABYUMA	BUSENYA	FARMER	
3	SSEVUMA J	M	KITENGA	KABYUMA	BUSENYA	FARMER	
4	SSEMPIJJA	M	KITENGA	KABYUMA	BUSENYA	FARMER	
5	BYAASI	M	KITENGA	KABYUMA	BUSENYA	FARMER	
6	KALIGOMAN J.	M	KITENGA	KABYUMA	BUSENYA	FARMER	
7	Twarbe mary	F	KITENGA	KABYUMA	BUSENYA	FARMER	
8	NAKALIZA ANNET	F	KITENGA	KABYUMA	BUSENYA	FARMER	
9	Nabukenya	F	KITENGA	KABYUMA	BUSENYA	FARMER	
10	Nabunya T.	F	KITENGA	KABYUMA	BUSENYA	FARMER	

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THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 29th JULY 2014 **DISTRICT:** *MUBENDE*

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address.....
1	NTAHURA SIMON	M	KITENGA	KAYEBE	BUTAMUNJA	DOCTOR	0782441488
2	BAMANYA JAMILU	M	KITENGA	KAYEBE	"	PEASANT	~~BUSINESS MAN~~
3	SSENTONDO FRANK	M	"	"	"	TRADER	0787608516
4	WASSWA ALEX	M	"	"	"	BUSINESS	0776295400
5	KAGIWA SSEKATIE	M	"	"	"	BUSINESSMAN	—
6	BYAKATONDA V	M	"	"	"	"	0785509945
7	KATABARI JOHN	M	"	"	"	"	0778798871
8	TWAYAHEBWA DANIEL	M	"	"	"	MANAGING	0779113740
9	P. Kahinichi	M	KITENGA	KAYEBE	BUTAMUNJA	Pissant	
10	MUCUNGUZI L	M	KITENGA	KAYEBE	BUTAMUNJA	BUSINESSMAN	

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 28th JULY 2014 **DISTRICT:** ***MUBENDE***

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address
1	Mugalula Hannah	m	Kitenga	Bugonzi	Buzooba	-	0776143841
2	Ssenkindu Godfrey	m	Kitenga	Bugonzi	Buzooba	C/person youth council	0906406689/0774[illegible]
3	TWESIGYE D	m	Kitenga	Bugonzi	Buzooba	-	07[illegible]992149
4	ASIIMWE CARRICK	M	KITENGA	BUGONZI	NSENGWE	Resident	0779352981
5	Kyarimpa Geoffrey		KITENGA	Bugonzi	NSENGWE		0784019792
6	KAGYENZI G.		KITENGA	BUGONZI	RUSIKIZI/NSENGWA	FARMER.	0702602[illegible]
7	TWINEMATSIKO EDWIN		KITENGA	BUGONZI	NSENGWE	FARMER	077718844[illegible]
8	Kasujja Maria	M	KITENGA	BUGONZI	BUZOBA	Farmer.	0754374213
9	SSEKITOLEKO		JULIUS	BUGONZI	BUZOBA	Farmer	07796976[illegible]
10	Hindiya Moses		Kitenga	Bugonzi	NSENGWA	[illegible]	07[illegible]66745

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THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 24 JULY 2014 **DISTRICT:** *MUBENDE*

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address.....
1	Nakawooya Margret	m	kitenga	kalonga	Bwakaggo	mulimi	077434537
2	Kisingembe Francis	m	Kitenga	Kalonga	Bwakaggo	Mulimi	0754544490
3	MPOZA - S	m	Kitenga	Kalonga	Bwakaggo	mirimi	
4	Nanyonga bena	M	Kitenga	Kalonga	Bwakaggo	Murimi	0751580993
5	Kikulwe G.	m.	Kitenga	Kalonga	Bwakaggo	mulimi	
6	Nakintu topisita	m	Kitenga	kalonga	Bwakaggo	Mulimi	
7	kinene Joice	m	kitenga	kalonga	Bwakaggo	Mulimi	0705257277
8	Kyambadde Patrick	m	Kitenga	Kalonga	Bwakaggo	manager	0788435588
9	monday senJose	m	kitenga	Kalonga	Bwakago	mulimi	0703253
10	SENYONGA JOSHUA	m	Kitenga	KALONGA	BWAKAGO	Bodaboda	0778377756

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VENUE: Kalonga Trading Centre.
TIME: 2:00 PM
VILLAGES: KALONGA A, KALONGA B, KYAKATULE

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 25.07.2014 **DISTRICT:** *MUBENDE*

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address.....
1	Kaggwe Edward	M	KITENGA	KALONGA	KALONGA TC	Area Councillor	0787941902
2	Baguma John Bosco	M	KITENGA	KALONGA	KALONGA T/C	CITICEN	0782748
3	Tumwine Elias	M	KITENGA	KALONGA	KALonga	Farmer	0783815594
4	Nantaba Margret	F	Kitenga	Kalonga	Kalonga	B/woman	0756067b6
5	Ngabirano nowa	M	Kitenga	KALonga	misenda	Famer	
6	Rutagisire said	Mu	KitenGa	KaLonGa	KaLonGa	Famer	0703256306
7	Lumwago Patrick		Kitenga	Kalonga	Kalonga	Citizen	0782547770
8	Kyaligonza B.		kitenga	kalonga	kalonga B	Fermer	0701411417
9	Nagobi Rachael	F	Kitengo	Kalonga	Kalonga-hca	Citizen	0752998685
10	Mukasa Augustino	M	Kitenga	Kalonga	Kalonga hca	Citizen	0752375566

VILLAGES: KIBYAMIRIZI LC1

TIME: 3.00 PM
VENUE: BODA BODA STAGE AT KIBYAMIRIZI TRADING CENTRE

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 24. JULY 2014 **DISTRICT:** ***MUBENDE***

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address
1	Niyirebga Epaphra	M	Kitenga	Kabyuma	Kibyamirizi	Teacher	0776208973 0703015558
2	Muhereza Jamiru	M	Kitenga	"	"	Bussiness man	0782266798 0703858136
3	Kabasiime Phelipin		Kitenga Kibyamirizi	Kabyuma	Kibyamirizi	C/P Kibyamirizi	0701119302
4	Mwumvaribonye		Kitenga			Bussiness man	
5	Nkungi Eniyo	M	Kitenga	"	"	"	
6	Abaho Keneth					"	
7	Masiko Banada		Kibyamirizi			"	
8	Sunday Robert		Kitenga			Bussiness man	0777640868
9	Asaba John		kitenga			"	
10	Byamukama		Emmanuel			"	
11	Makula Gerald	M	Kibyamirizi	Kabyuma	Kibyamirizi	self employed	0[illegible]870
12	Ssendawula Patrick. M.		Kitenga	KABYUMA	Kibyamirizi	BODABODA	078106[illegible]

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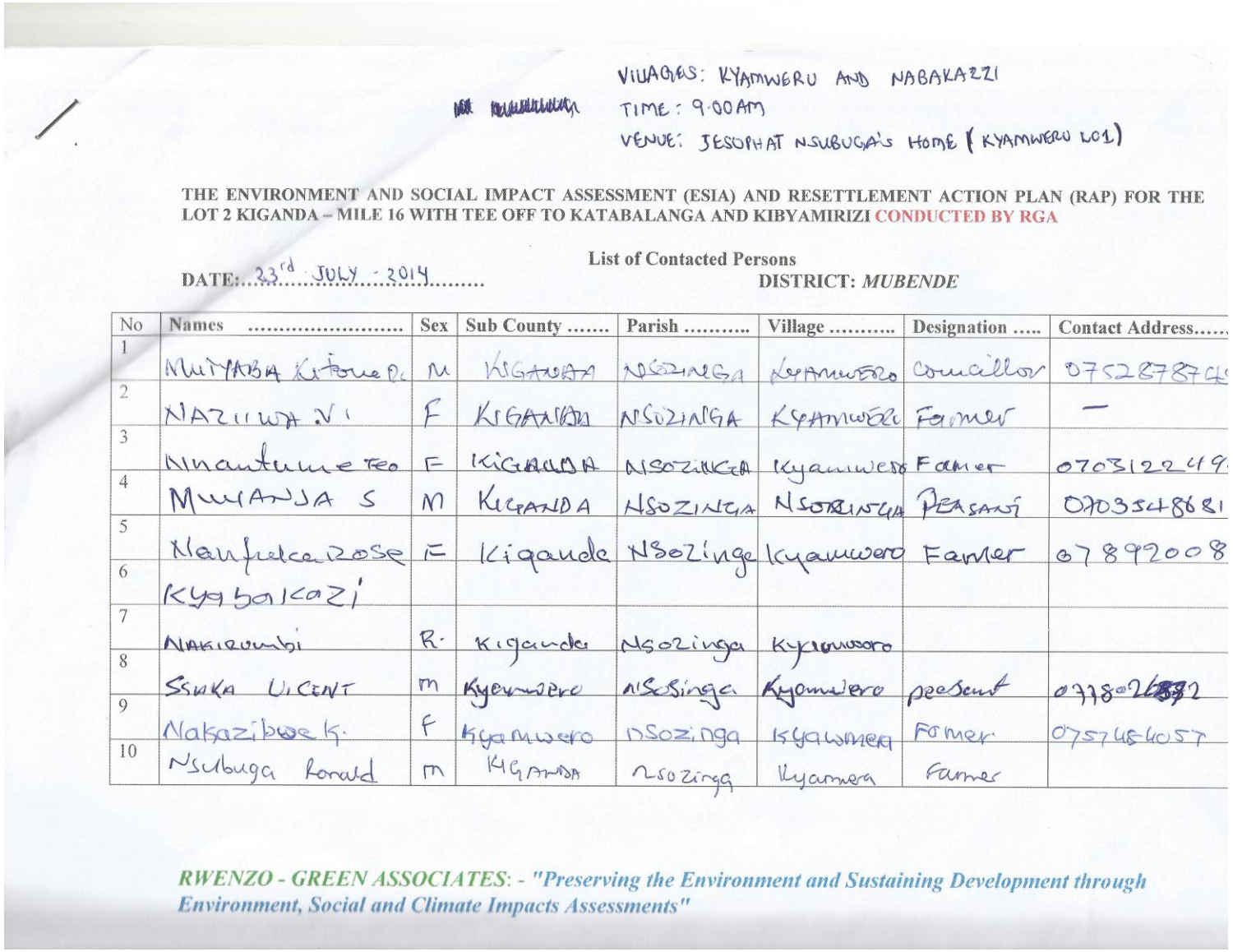

VILLAGES: KYAMWERU AND NABAKAZZI
TIME: 9.00AM
VENUE: JESOPHAT NSUBUGA'S HOME (KYAMWERU LO1)

THE ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) FOR THE LOT 2 KIGANDA – MILE 16 WITH TEE OFF TO KATABALANGA AND KIBYAMIRIZI CONDUCTED BY RGA

List of Contacted Persons

DATE: 23rd JULY - 2014 **DISTRICT:** *MUBENDE*

No	Names	Sex	Sub County	Parish	Village	Designation	Contact Address.....
1	NUWABA Kitone P.	M	KIGANDA	NSOZINGA	KYAMWERU	Councillor	0752878746
2	NAZIIWA V.	F	KIGANDA	NSOZINGA	KYAMWERU	Farmer	—
3	Nnantume Teo	F	KIGANDA	NSOZINGA	Kyamwero	Farmer	0703122449
4	MWANJA S	M	KIGANDA	NSOZINGA	NSOZINGA	PEASANT	0703548681
5	Nanfuka Rose	F	Kiganda	NSozinga	Kyamwero	Farmer	0789920088
6	Kyabakazi						
7	Nakirumbi	R.	Kiganda	NSozinga	Kyamwero		
8	SSUKA VICENT	m	Kyamwero	NSozinga	Kyamwero	peasant	0778026892
9	Nakazibwe K.	F	Kyamwero	NSozinga	Kyamwero	Farmer	0757464057
10	Nsubuga Ronald	m	KIGANDA	NSozinga	Kyamwero	Farmer	

RWENZO - GREEN ASSOCIATES: - "Preserving the Environment and Sustaining Development through Environment, Social and Climate Impacts Assessments"

Annex 5: Table 43: RECORDS OF THE COMMENTS FROM SOME OF THE CONSULTED LEAD AGENCIES FOR THE KIGANDA MILE 16 DISTRIBUTION LINE.		
Composition, activity, or Issues	Concerns, comments , Observations	Responses , Remarks
Meeting with the lead agency responsible for Road reserves (Uganda National Roads Authority (UNRA) and National Forestry Authority (NFA) on 29th July 2014)		
Composition of the consulting Team	1. Mr. Stephen A.K.Magezi – 0772-878322.	N/A
Composition of the members present	1. Dr David Kyadondo (Safeguards Manager - UNRA) 2. Ms. Christine Namirembe Katende (Right of Way Specialist - UNRA) 3. Mr. Patrick Kamanda (Environment Specialist - UNRA) 4. Mr. Tom Ruukundo (EIA specialist – NFA)	N/A
Purpose of meetings	Each specialist was met individually at his / her desk to discuss the implications of passing the distribution along the road reserves that belonged to UNRA.	N/A
Programme Activity Schedule (Agenda)	One Agenda item as discussed above.	N/A
Consultants comments	The consultants introduced the subject by showing the line route map as well as the environmental challenges regarding the Kiganda Mile 16 distribution line.	
Open discussion.	**The different officers expressed their views on the subject matter**	
Dr David Kyadondo (Safeguards Manager (UNRA)	Noted that sometimes when infrastructure passes along the road reserve, UNRA is made to compensate at the time they wish to expand or upgrade the road. This has not gone well with UNRA. He advised that REA should write to UNRA who will give the Conditions of use of the road reserve in writing.	REA to be informed accordingly in the report and also directly.
Ms. Christine Namirembe Katende (Rights of Way Specialist – UNRA)	As a rights of way specialist, she strongly felt that there was need for UNRA to put down the conditions of use of the Road reserve. She too advised REA to request for the conditions of Use in writing from UNRA.	REA to be informed accordingly in the report and also directly.

Annex 5: Table 43: RECORDS OF THE COMMENTS FROM SOME OF THE CONSULTED LEAD AGENCIES FOR THE KIGANDA MILE 16 DISTRIBUTION LINE.		
Composition, activity, or Issues	Concerns, comments , Observations	Responses , Remarks
Mr. Patrick Kamamda (EIA Specialist UNRA)	He was not a Rights of Way specialist and the question should be put to the Rights of Way Specialist. The consultant should confirm whether the land is already owned by UNRA. All trees that will be cut in the Road Reserve will need to be compensated for.	Compensation for trees cut to be effected
Mr. Tom Rukundo (EIA Specialist NFA)	For the forestry reserves that will be impacted, NFA and the private owners must be compensated. REA will need to be careful not to provide power to people who are encroachers in the Central Forest Reserves (CFR). Otherwise this will be like legalizing their encroachment.	The matters noted and to be included in the report. However the consultant noted that Most of Kasolo CFR where the line will pass had been taken over by encroachers. NFA insisted on cash compensation for the trees cut.
Meeting with the Mubende District Officials (District Environment Officer(DEO) and District Physical planner on 10th September 2014)		
Composition of the consulting Team	Mr. Stephen A.K.Magezi – 0772-878322.	N/A
Composition of the members present	1. Mr. Kinene Vincent ()Mubende District Environment Officer (DEO)) 2. Ms.Namande Hildah (Physical Planner – Mubende District)	N/A
Purpose of meetings	Each specialist was met individually at his / her desk to discuss the implications of passing the distribution along the road reserves that belonged to UNRA.	N/A
Programme Activity Schedule (Agenda)	One Agenda item as discussed above.	N/A
Consultants comments	The consultants introduced the subject by showing the line route map as well as the environmental challenges regarding the Kiganda line 16 distribution line.	
Open Discussion	**The different officers expressed their views on the subject matter**	
Mr. Kinene Vincent (Mubende District	There are very many corners so it may not be possible to always pass along the Road reserve especially for the section from Byangoma to Kitenga. Moreover there	As for the corners, the line will have to be relatively straight

Annex 5: Table 43: RECORDS OF THE COMMENTS FROM SOME OF THE CONSULTED LEAD AGENCIES FOR THE KIGANDA MILE 16 DISTRIBUTION LINE.		
Composition, activity, or Issues	Concerns, comments , Observations	Responses , Remarks
Environment Officer (DEO)	is need to think of the future so that the power line will not complicate road making in the future. It may be good to make a contribution to the community by helping to get them seedlings among others. In my view compensation should have been in kind (Tree seedlings). This is better than cash compensation. The installation should ensure that warning signs are in place to protect the community from exposure to high voltage electricity. There should be an HIV plan for the people working on the project. Both workers and the community should be sensitized and whenever possible the condoms should be distributed especially to the workers. We do agree with the NFA proposal about passing through the road Reserve. There is no wild life of concern that will be affected by the line. Moreover Mubende is the 3rd most deforested district following Mayuge and Wakiso respectively.	since following the road reserve in some places will be costly. Besides the road reserve in upcountry roads is not demarcated. It is only assumed. Along the main Mityana Mubende road, REA is encouraged to discuss with UNRA to see the best way of utilizing the Road Reserve.
Hildah Namande (District Physical planner)	There has been no complaint regarding possible threat to the power line. I need to know those areas which are left out so that when complaints come in, we can see how to address them. The complaints will usually come to the Political leaders.	A copy of the Map will be sent to the officer via the internet.

Table 44: Minutes of the sensitization and consultative meetings along Kiganda Mile 16 33kv Distribution Line

RECORDS OF THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN SENSITIZATION MEETINGS FOR THE LOT 2:33KV POWERLINE KIGANDA- MILE 16 WITH TEE-OFF TO KATABALANGA AND KIBYAMIRIZI – 23rd July to 2nd August 2014		
KIGANDA SUB- COUNTY : NSOZINGA PARISH		
Meeting with: Residents from the villages of **Nabakazzi, Kyamweru** and **Sub-county staff.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		23rd July 2014, at Kyamweru Trading Centre [Josephat Nsubuga's Home] Time: 9.00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Musa Mukasa	Will the line be sent to the trading centres after the survey has been done?	The line will go through the towns which were considered during the feasibility study. In the event that towns have been missed, it's an indication
Mr.Ssaka Peter Chairperson LC2	If the line has passed along the road, and has passed a school or church, can they give power if it's about 2km away?	Yes, the institutions can have power through the distribution lines.
	Supposing the school or church is alone in an area where the power is going through, cant the programme of Rural Electrification Agency support these institutions?	It's not easy to give power to a single entity without a transformer. It also depends on the strength of the transformer and the concentration of the population that will consume the power.
	We applied for power but Ferdsult has not yet responded	
	We are being sensitised about this power project, but where is this power coming from? Can't we use the same line from Kiganda?	The power will be tapped from Kasambya to Kiganda. It was thought best that the line will have more energy from Kasambya compared to the one from Kiganda.
Mr. Mutyaba Eria Ronald	You said that the power can get to areas depending on the concentration of the population.	You need to express interest in wanting to use this power so that Rural Electrification Agency can extend the grid to areas of interest.

	Supposing the population increases after the power lines have been put up, what can we do?	

KITENGA SUB- COUNTY : KALONGA PARISH		
Meeting with: Residents from the villages of **Bwakago** and **Kirumbi LC1**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		24th July 2014, at Bwakago LC1 Trading Centre Time: 9.00AM
Present		1 Mr. S A K Magezi Tel; 0702 878322 2. Binta Magezi Gertrude 0752441844 3. Mr.Banga John 0772473934 4. Mr. Isingoma Joshua. 0751044935 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Muwanga Ahmed Chairman LC1 Kirumbi	If you we are going to be using cards to access this power, won't I scratch it like an airtime card and the power is consumed so fast like this airtime on our phones?	It depends on the amount that you use and yes you will only consume for what you have paid for. The airtime on the card only expires when it is used.
Mr. Kintu Stephen Chairman LC1 Bwakago	Doesn't it take a lot of money to put this power in the house	But you will need to ask the electrician about the cost of wiring the house. You will be lucky if your house had the pole placed during the feasibility study so that you can just pay for the solid wire to get power at your residence. Otherwise you will need to apply for power so that you can have it at your residence.
Mr. Damulira Ahmed	The power will pass through my place after my trees have been cut. But supposing I die what happens to my money? How shall we be sure that we don't have con men during this	No, we pray that doesn't happen However in the event that we return for identification and disclosure, and realize that you are not alive, then we shall give to the person who will have taken up after you or inherited after you. You will need to work with the local leadership to identify the people who are coming to work in the village just like we introduced ourselves

	programme that you shall be carrying out?	when we were coming to have this meeting.
Mr. Ssebulime Gerald	How shall we be sure that we don't have con men during this programme that you shall be carrying out?	You will need to work with the local leadership to identify the people who are coming to work in the village just like we introduced ourselves when we were coming to have this meeting.
Mr. Kyambadde Patrick	I might need power at my place but don't have an electric pole at my place. If I pay for the poles to bring power to my place and someone else wants to tap power from the same pole what happens? Do they have to go through REA or the Contractor or they have to seek my permission first?	In the event that your neighbors want to place a solid wire to tap power from your pole then they have to seek permission from you as a requirement to access this power from your electric pole.
Mr. Kalawanyi Bruno	Ssebo, supposing one is far away from the route of the power line; won't it be expensive to pull power to my place?	Yes, it's unfortunate that we shall be following a particular route according to our power line but you can work with the neighbors close to you so that you can be able to tap power for such distances. It will be much easier and cheaper for all of you.
Mr. Ndyanabo Patrick	If we are to get power, how much shall we pay for each unit?	You will pay for what you can afford since they might adopt the pre paid meter system.
Mr. Mubala Johnson	In which year will the power come?	We can't know when the actual power will be put in place but the project has already started and would take is work of about five to seven months so that we can pave way for the contractor to start his work of actual construction of the power lines.

KITENGA SUB- COUNTY : KALONGA PARISH	
Meeting with: Residents from the villages of **Kyabaduma LC1, Bukongo LC1, and Misenda LC1.**	
Purpose of meeting	Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place	24th July 2014, at Kyabaduma Trading Centre Time: 11.00AM
Present	1 Mr. S A K Magezi Tel; 0702 878322 2. Binta Magezi Gertrude 0752441844, 3. Mr.Banga John 0772473934 4. Mr.

		Isingoma Joshua. 0751044935 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Sabasto Celestine	You said that the power is coming. When is this project likely to start?	We can't know when the actual power will be put in place but the project has already started and would take us work of about five to seven months so that we can pave way for the contractor to start his work of actual construction of the power lines.
Mr. Mugisa Emmanuel	Of course, there is a cost for putting power in the house. But is it possible to know the actual cost of putting this power in the house?	No, we cannot know the actual cost of putting power in the house. You will have to ask the companies assigned for that purpose which will have all the details. Our assignment is about compensation of trees and perennial crops. You can hire an electrician to do all the work of wiring your households in the entire village which will be cheaper for you.
Mr. Ntahushira Leonard. , Chairperson LC1 Kyabaduma	Eeeeeeh!!!You should hurry and fix the poles; the trees in my area were all cut. It seems that there is nothing to compensate.	We have taken note of that but we still need to be on ground so that we can ascertain whether there is no tree or crop for compensation.
Mr. Mbazira Sula, Chairperson LC 2	Supposing there are no trees or crops for compensation where the line has passed, will they still pay me? If the power line passes at the top of the house, doesn't this house need to be relocated to a safer area? If the pole is placed near the house, won't the house need to be moved?	We are only paying for trees and perennial crops. We shall only compensate for these in the 10 meter corridor which is 5meteres on either side. We shall avoid buildings at whatever cost. There is no money to pay for land and buildings. The pole having the service line is okay except that we shall treat a plot with a transformer as a special case in the event that the plot is all consumed. In addition, these service lines will me move in the road reserve.

KITENGA SUB- COUNTY : KALONGA PARISH	
Meeting with: Residents from the villages of **Budibaga East LC1** and **Budibaga West LC1**	
Purpose of meeting	Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv

		Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		24th July 2014, at Budibaga Trading Centre Time: 12:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Byakatonda Bernard	If the line is at the centre of your house and at the entrance of the house, what happens to me?	We shall avoid buildings at whatever cost. There is no money to pay for land and buildings. The pole having the service line is okay except that we shall treat a plot with a transformer as a special case in the event that the plot is all consumed. In addition, these service lines will me move in the road reserve.
	I'm happy that we shall be using cards. If I put power in my house and fail to pay for it, won't they disconnect me permanently? Is the line just passing through town?	You will pay for what you can afford since they might adopt the pre paid meter system. Yes, the service line is passing through the town
Mr.Ssekyanzi Peter	If the service line pole is at the front of the house, is it possible for one solid wire to work for all the houses nearby?	No each Household nearby needs to have its own solid wire for connection
Mr. Ssebugobye Michael Chairperson LC 1 Misenda	The line will be constructed before compensation but will there be evidence to show that there is a time that the destroyed stuff will be paid for? I was requesting that we have some power lines going to Misenda because the distance from the boundary is far and will be expensive.	There will be a copy of an assessment form showing all the damaged trees and perennial crops as evidence left behind Concern has been noted.
Mr. Tuzze John Chairperson LC 1 Budibaga East	People have their trees that they have planted. Can they use the trees for the power lines?	The electric poles used for this purpose are treated to withstand ants, termites and bad weather and are very long. The local people can sell these poles to the companies that buy them if they meet that standard. In addition, the poles that are going to be used have already been purchased for this particular purpose.
Byamugisha	The line will be built passing	No, the map we have has only catered for the

Moses	through the town. Can't they extend the lines further into the village?	centers nearby. The villages which are far-off will not have transformers and will be considered in a future phase if the population that can be able to use has grown.

KITENGA SUB- COUNTY : KABYUMA PARISH		
Meeting with: Residents from the villages of **Bisenya** and **Mpasana LC 1**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		24th July 2014, at Bisenya Trading Centre. TIME: 2:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Baligomwa Jackson	The line will be constructed before compensation but will there be evidence to show that there is a time that the destroyed stuff will be paid for? W ho shall we demand?	There will be a copy of an assessment form showing all the damaged trees and perennial crops as evidence left behind. You will need to deal with the local leadership on this.
Ms. Nakayizza Annet	If the power line passes at the top of the house, doesn't this house need to be relocated to a safer area?	We shall avoid buildings at whatever cost. There is no money to pay for land and buildings.
Mr.Ssande Alex	What is the cost of this power which we are going to use?	You cannot determine the cost now but can wait to spend on the amount that you can afford to pay for power.
Mr. Singirankabo Ibrahim Vice Chairperson Bisenya LC1	If the power line is affecting my crops how will know the value of my crops and trees?	The rates of these plants are determined by the District Compensation Rates.
Mr.Mauda Kizza	Do they pay for trees and crops only? What about the house?	Yes, they pay for trees and crops and not the house. We shall avoid buildings at whatever cost. There is no money to pay for land and buildings.
Kaberaho	For someone to put power in the	This amount of money will be determined by the

Adonia	house, how much do they need to pay?	one who will be responsible for putting power in the houses.

KITENGA SUB- COUNTY : KALONGA PARISH		
Meeting with: Residents from the villages of **Kibyamirizi, Lwemigo, Ssunga** and **Kiteredde**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		24th July 2014, at the Boda Stage in Kibyamirizi Trading Center. TIME: 3:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Twesigye Cleofas	Will the power come with a single phase or three phase?	The transformer provided at the centre will determine the phase and strength.
Mr. Barigye Abdu	In the event that my plot has been consumed by the entire pole, what happens?	They are only going to compensate the people whose perennial crops and trees fall in the 10 meter corridor where the power lines are going to be constructed. In the event that one's plot is all consumed up by the transformer or pole, then one will be treated as a special case.
Ms. Namuyanja Mary	I heard on radio that the power which has been put by government for people to use will be connected freely to ones house. Is this true?	Yes, it is true but it only applies to those who have not been able to connect to this power for the last eighteen months since the power was taken to ones area. It cannot apply for you at this particular stage.
Mr. Muheki Jamira	Supposing I am far from getting this power easily, what estimates do you have so that I can prepare myself financially to have this power? For instance, how much does each pole cost? What is the cost of a solid wire?	We have no idea on that. You will need to wait until the actual time of construction so that you can get your estimates from the contractor.
Mr.Pafura N	The power will pass through my place after my trees have been cut. But supposing I die what happens to my money?	No, we pray that doesn't happen However in the event that we return for identification and disclosure, and realize that you are not alive, and then we shall give to the person who will have taken up after you or inherited after you.

Mr. Matsiko Bernard	Which chance will you get to ensure that it will not affect buildings?	We shall avoid buildings at whatever cost. There is no money to pay for land and buildings. We shall mainly concentrate on the road reserve.
Mr. Chairperson LC1 Kibyamirizi	The Contractor will put power in the areas that are concentrated with a high potential to consume this power.	Comment Noted
Mr. Dativa Barigye	Supposing the pole has been put in my compound, can anyone get power from it?	Yes, they can get power from it because we are the ones who put the pole in your compound but if you had paid for it, then it would have been a different case.
Mr. Sabastiano Luyimo	I was just thinking that the power line would follow the pattern of the road but which is not the case.	Comment Noted.
Mr. Lusigalire Richard	I am curious about this poles .Wont they rot and fall water?	No the poles are treated to withstand such conditions.
Mr. Ntungi Eriya	They have said that we can be able to get power from the pole if they are the ones that placed it in your compound.	Comment observed.

KITENGA SUB- COUNTY : KALONGA PARISH		
Meeting with: Residents from the villages of **Kisonga.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		24th July 2014, at Kagavu Trading Centre in Kisonga LC1 TIME:4:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Sekisawo Collinali	I hear that when power has passed at your place, you need to be compensated but who will be paid?	None of the people is neither going to be paid for being a landowner or Kibanja holder since we are not compensating for land but for only perennial

	The landowner or kibanja holder?	crops and trees damaged.
Mr. Amumpiire Chrispus	Can't we easily fail to use this card system of power since we are not familiar with it? We have been hearing about it since 2007.	No, but you can learn slowly.

KITENGA SUB- COUNTY : KALONGA PARISH		
Meeting with: Residents from the villages of **Kalembe LC1**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		24th July 2014, at Kalembe Trading Centre in Kalembe LC1 TIME: 5:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Happy Expeditious	If someone is far away from the main, how much will it cost for one to pull power to one place?	We have no idea on that. You will need to wait until the actual time of construction so that you can get your estimates from the contractor.
Mr. Nyanzi John Mary	We hear that people are going to work. Will the local people be involved? In Kampala, the card or prepaid meter is not used by small scale industries. The card is only used by homes. What's the intended plan for machines?	Yes, the hardworking local people through their local leadership might have an opportunity to work like doing casual jobs for the contractor setting up the lines. The machines will continue to operate normally. They will be given preferential treatment.
Mr. Kalema Ssebastaiane	We hear that people are going to work. Will the local people be involved?	Yes, the hardworking local people through their local leadership might have an opportunity to work like doing casual jobs for the contractor setting up the lines.
Mr. Byamugisha Tarsis	Will this voltage be able to accommodate small scale industries?	Yes, it will depend on the capacity of the transformer that they put in an area.
Mr. Matovu	The card that is used for this power,	Yes, you will be able to get another card to use

Muhammed	what happens in case I lost it? Will I be able to get another card to use?	from the contractor but you still need to be extra careful with it.
Mr. Kwefuga Christopher	If the power has come, will it pass at the road reserve?	Yes, the power will use the road reserve.

KITENGA SUB- COUNTY : KALONGA PARISH		
Meeting with: Residents from the villages of **Kisojjo LC 1**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		25th July 2014 at Kisojjo Trading Centre, Kisojjo LC1 TIME:9:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Kizito John	Shall you compensate buildings if you have made the power lines pass over them?	We are avoiding any building at whatever cost and we are not compensating for any land or buildings except if the transformer has taken up the entire plot of an individual. There is no money for compensating land and buildings and that is why we are moving in the road reserve.
Mr. Kalongo Sam	Supposing the owner refuses one to put power on ones plot, what happens?	There is a law which states that land will be acquired in the event of public interest as it is stated in the constitution.
Mr. Kabandize Mesharch	Supposing the power line is going to pass on my land and they have cut my crops, will I still be allowed to use that plot?	Of course, you will be allowed to use for growing seasonal crops like maize and beans and they will be no structures that should be constructed in that corridor.
Mr.Kikanga Joseph	With the coming of power, don't you think the town can have access to a flag light to light up the town? Don't you think that the power line might force people to move since they consider it dangerous?	The Coming of the flag light is a community arrangement and not for government. No the power line will not force anyone to move since it is avoiding structures at whatever cost.
Mr. Kafeero Possiano	Supposing the power line is going to pass on my land through my	Of course it is considered an accident and , you will be allowed to use the corridor for growing

	plantations and I get shocked who will be responsible for this accident? , will I still be allowed to use that plot?	seasonal crops like maize and beans and they will be no structures that should be constructed in that corridor. One should always help in keeping the corridor free from wild growth.
Mr. Kaggwe Edward Area Councilor	Can we gather people like Apollo to lobby for power in the remaining areas?	Yes, since the demand for power is driven by quantity and expanded needs.
KITENGA SUB- COUNTY : KALONGA PARISH		
Meeting with: Residents from the villages of **Kinyiga LC1**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		25th July 2014 at Kinyiga Trading Centre, Kinyiga LC1 TIME: 11:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Lutwama Deogratious Chairperson LC1	You said that there might be people who might steal the transformer, how do we go about that? Can you be able to give us an estimate of how much it would cost to put power in the house?	You need to be vigilant and security conscious because these transformers are on high demand. We cannot be sure of such costs. You will need to wait for the contractor concerned with such to give you a good estimate. It's okay to start saving money for that purpose.
Mr.Bamada Josephat	What happens to my plot in the event that I build after the proposed plan to put a transformer has not yet been executed?	We shall look for another alternative on where to put the transformer in case that we find that the plot has now acquire a structure.
Mr.Nyanzi Matayo	They said that we are getting power because of the Mirembe School. In the event that the day I die, who will take over my details of pay.	The person who will have inherited your property will be the one considered for this payment.
Ms. Nalubowa Juliet	When do you think this programme will start since we had already planned to buy solar panels? Should we wait or still go ahead and buy the solar panels?	We can't know when the actual power will be put in place but the project has already started and would take us work of about five to seven months so that we can pave way for the contractor to start his work of actual construction of the power

		lines.
Ms. Nakabira Maria	Thank you for the power but we have grown up in the village and we hear that this power is dangerous. How shall we be educated on the dangers of this power?	The company responsible for placing the power will let you know about the dangers of this power but you also have to be extra careful with it since it can kill instantly.
Mr. Mugisha George	Shall we get power at this centre or shall we have to pull it from Mirembe School?	This centre has its own transformer and therefore does not need to pull power from Mirembe School.
Mr. Kafeero Possiano	Of course it is considered an accident and , you will be allowed to use the corridor for growing seasonal crops like maize and beans and they will be no structures that should be constructed in that corridor. One should always help in keeping the corridor free from wild growth.	Comment Noted
Ms. Nansubuga Agnes	For this power passing in the road reserve, does it mean that the road will eventually be expanded since I have always seen it passing long major roads?	A road can change any time but we are placing the power lines in strategic areas so that they cannot easily be tampered with since it is expensive to shift power lines from one place to another.

KITENGA SUB- COUNTY : KALONGA PARISH		
Meeting with: Residents from the villages of **Kalonga A, Kalonga B, Kalonga Trading Centre** and **Kyakatule.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		25th July 2014 at Kalonga Trading Centre, Kalonga LC1 TIME: 2:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Kivumbi Peter	You have talked about using the road reserve to distribute the service lines. Will I be	No, you will not be compensated for using the road reserve. Besides its self explanatory.

	compensated for using the road reserve?	
Mr. Tumusiime Eliphaz	When is the work starting?	We can't know when the actual power will be put in place but the project has already started and would take is work of about five to seven months so that we can pave way for the contractor to start his work of actual construction of the power lines.
Mr. Byaruhanga Brazaville	Shall you compensate buildings if you have made the power lines pass over them?	We are avoiding any building at whatever cost and we are not compensating for any land or buildings except if the transformer has taken up the entire plot of an individual. There is no money for compensating land and buildings and that is why we are moving in the road reserve.
Mr. Kyaligonza B	Is the power line only passing through the existing main road or it will also be spread to the villages?	Yes, the power is passing along the existing highway and it also has tee off to Kibyamirizi, Katabalanga , Kasambya and Mile 16 and Mile 17 trading centre's.
Mr. Ssebugobye Micheal Chairperson LC1 Misenda	The houses are along the slopes. Supposing they are affected will the owners be paid immediately or after the line is built?	We are avoiding any building at whatever cost and we are not compensating for any land or buildings except if the transformer has taken up the entire plot of an individual. There is no money for compensating land and buildings and that is why we are moving in the road reserve.
Mr. Kawuma Peter Chairperson LC1 Kalonga	Supposing there is load shedding, what does the government do for the extra power that has been generated?	Government sells off the excess power produced at the dam to other countries like Kenya and Tanzania so as to prevent al ot of energy loss.
Mr. Lukwago Patrick	I heard on radio that the power which has been put by government for people to use will be connected freely to ones house. Is this true?	Yes, it is true but it only applies to those who have not been able to connect to this power for the last eighteen months since the power was taken to ones area. It cannot apply for you at this particular stage.
Mr. Kaloli Matabalo	We always pay for the units that we have used. Supposing there is load shedding, will the units on the card be used up?	No, the units on the card will be there until you decide to use it. Load shedding doesn't affect it.
Mr. George William Ssazi	People are claiming that the power Is not beneficial but it helps them directly or indirectly for instance if it is placed at a health centre and school then ones child can benefit	Commented Noted.

	from this power indirectly.	
Mr. Leonard Ntahushira	Made appreciations	

KITENGA SUB- COUNTY : KAGOMA PARISH		
Meeting with: Residents from the villages of **Kyenda, Mujunwa** and **Kagoma**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		25th July 2014 at Kyenda Trading Centre, Kyenda LC1 TIME: 4:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Katende Haruna	Supposing the power is passing and is already fixed, when do you start to use it?	You will be advised on when to start to use it because it goes through a number of testing phases so that it is made safer for the populations to use.
Mr. Simon Peter Kambuga	Who is concerned with distribution of power and how much will it cost? How can we be able to differentiate con men from the genuine men?	Rural Electrification Agency is concerned with all this power issue but we would no know how much it would cost. It's not easy to differentiate the con men from actual staff but whoever will have come to work in the area should have sought permission from the local leadership to operate in that area. This is one of the ways that one can identify the right personnel
Mr. Mwesige Sam Secretary for Defence.	Things will be cut and put on paper. What shall we use to determine the rates and cost?	You will be able to use the current district compensation rates to determine the cost of the damaged trees and perennial crops.
Mr. Tonny	Supposing we cut ten pawpaws and other crops are damaged before payment is made, what happens?	. There will be a copy of an assessment form showing all the damaged trees and perennial crops as evidence left behind.
Mr.	Will the entire line cover all the	The feasibility map has a defined route which we

Habyariman a Benjamin Chairperson LC1 Kyenda	villages?	are going to use.

KITENGA SUB- COUNTY : KAYEBE PARISH		
Meeting with: Residents from the villages of **Bugonzi** and **Kisenyi.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		28th July 2014 at Kisenyi Trading Centre, Kisenyi LC1 TIME: 9:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Kalungi Henry Ssali	Who is in the road reserve and who is not in this reserve? I hear that it is only people in the radius of 2kilometres that will get power. Is this true?	The road covers about 30 meters by law and it is 15 meters on either side. So if you do not fall in this 30 meter corridor, then you are not in the road reserve. People who are far away from the main line need to pay for the power because power is not distributed according to kilometers but only according to the concentration of people in an area.
Mr. Kalunda Pasca	Will the power be enough to run small factories like the maize mills and dairies or welding machines?	Yes, a provision could be put for such activities though a phase 3 line.
Mr. Ssazi Edward	You said that the service line will pass on the road reserve, supposing I am not in the reserve, will I pay for the poles up to my place?	Yes, it's your duty to pay up for the poles up to your residence.

KITENGA SUB- COUNTY : KAGOMA PARISH	
Meeting with: Residents from the villages of **Nalyankanji** and **Ssaka.**	
Purpose of meeting	Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power

		line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		28th July 2014 at Ssaka Trading Centre, Ssaka LC1 TIME: 10:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Besigye Dan	How can we protect this transformer from being stolen or tampered with? Supposing the power line is passing through the building, can they pay for the land?	You need to be alert as a community in monitoring this transformer so that it is not stolen. This is the reason why it is placed at centre's that highly populated. We are avoiding any building at whatever cost and we are not compensating for any land or buildings except if the transformer has taken up the entire plot of an individual. There is no money for compensating land and buildings and that is why we are moving in the road reserve.
Mr. Apollo Riz	Supposing the power line has passed on the official route and I am far away from it, what should I do in case in power?	You will have to look for money to pay up for the power to get to your place. It would be wise to work with the contractor who is setting up the power lines at that time.
Mr. Kizza Yowana	Is the transformer free or we needed to pay for it?	The transformer is free at this centre.
Mr. Natukunda Fred	Who should we call in the event of managing a transformer?	You will work with the company that will be responsible for managing the transformers and service lines.

KITENGA SUB- COUNTY : BUGONZI PARISH	
Meeting with: Residents from the villages of **Buzooba** and **Nsengwe.**	
Purpose of meeting	Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Powerline Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place	28th July 2014 at Buzooba Trading Centre, Buzooba LC1 TIME: 11:00AM

Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Ssenkindu Godfrey	Shall the contractor just place the transformer in ones land or one will need to negotiate over the transformer places?	There is no negotiation for the land where the transformer is placed since it is done in accordance with public interest.
Mr. Hussein Kaborogozo	What happens when the matooke is out of the corridor, will I eat?	You will be able to use the corridor to plant seasonal crops like beans and sweet potatoes.
Mr. Ssentongo Girigoli	How much will it cost to do the wiring of the home?	We don't know about such costs but it depends on the size of ones house. The electrician that you hire will be able to tell you of the cost of doing so.
Mr. Kagyenzi Geofrey	Are you stopping in Nsengwe or are you extending to Kanyegalamire Trading Centre? Can I be able to buy a transformer of my own if I don't have one placed in my area?	Yes, we shall extend to Kanyegalamire Trading Centre. Yes, it's possible to pay for a transformer of your own if you were not considered in the feasibility study. We have seen this being done by a gentleman called Garuga Musinguzi in Kanungu who paid for power for a distance of 30 kilometres.
Mr.Bahati Ezra	What I wanted to know is for you to explain to the people, that when one is using the airtime on the card, how can someone know that the power is reducing since one might have a saloon? How does one know the rate at which power is reducing?	You can know that the power is reducing by looking at the metre unit which would have been given to you.
Mr.Habib Jammary	Supposing you are connecting, do they immediately start charging you for the power?	No, they start testing this power in phases before they can start charging people for it.
Mr. Magala Abel.	My issue is about the radius of the corridor of the power line. How big is it and can I continue to use that land which is in the corridor?	Yes, the corridor is 10 metres wide and you will still be able to use corridor to plant seasonal crops.
Ms. Kassande Beatrice	What happens when the plot has been cleared, what will I eat?	We are only interested in the 10 metre corridor of the power line and so you will still be able to use the land to plant only seasonal crops.

KITENGA SUB- COUNTY : KAYEBE PARISH
Meeting with: Residents from the villages of **Lusikizi** and **Lwamasengero.**

Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		28th July 2014 at Kanyegalamire Trading Centre, Lusikizi LC1 TIME: 2:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Tusingwiire Sam	I wanted to know where the power is going to pass for easy and proper planning.	The power is going to pass on the right side of the road in this particular village.
Mr. Sande Patrick	You said that you are giving us a service line, are you giving us a main switch as well?	No, the wiring and installation of power is done at your own cost.

KITENGA SUB- COUNTY : KAGOMA PARISH		
Meeting with: Residents from the villages of **Mutambwa, Muleete, Katabalanga A** and **Katabalanga B.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		28th July 2014 at Katabalanga Trading Centre, Katabalanga A LC1 TIME: 3:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Twiine Abel Area Councilor	Where is the line coming from and where is it going? When is the actual programme starting?	33kv Powerline is starting from Kiganda to Mile 16 with tee-off Katabalanga and Kibyamirizi The work has already started, It will take us about five to seven months since it involves collecting data for about two months in a total

		distance of about 95km of 33KV overhead lines, 52.2km of low voltage net work and 27 distribution transformers with a total installed capacity of 1,550 Kva serving at least 23 loaded centre's or more including towns and villages. The other two months would be used to compile data in the office and then the other two probably for making the draft and final report to pave way for the contractor to start putting up the power lines.
Mr. Ssekiyizu Deo	When the contractor puts up the line, does this mean that we shall have a situation in which there is no load shedding? Since we shall have two points of power from Kasambya and Kiganda	The power will be tapped from Kasambya so it is not possible that there will be no load shedding since the sources of power are different.
Mr. Lutaayi Sungwa	For the people who are putting up power, are they concerned with also wiring and installation of the power in the house?	No the people putting up the power are not concerned with wiring and installation of the power. That will be done at a later stage by a company which would be chosen to do the connection of power to the house.
Ms. Nakacwa Maria	Will the one wiring the house give us a certificate?	Yes, the one who is going to wire your house must give you a certificate.
Mr. Lubega Yesophat	There was a heavy line moving to Kibale.Will this line be the same?	No, this line is a low voltage line of 33KV while the one heading to Kibale is a high voltage line of 132KV.
Mr. Luyima Anderea Chairperson LC1	I'm just praying that if the contractor comes, will some f our children work?	Yes, there might be opportunities for casual laborers to work if they are ready to do so.
Mr. Kintu Isma	Supposing the line hits the house, what happens since it is considered as dangerous?	We are trying to avoid all the buildings at whatever cost and we are not going to affect any since there is no money to compensate for land and houses.
Mr. Baziriyo Besigwa	Shall we pay for the poles ourselves or we shall have it free?	You will need to pay for the poles if you were not given one during the feasibility study>

MUBENDE TOWN COUNCIL : KISEKENDE PARISH	
Meeting with: Residents from the villages of **Bakijulula**	
Purpose of meeting	Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga

		and Kibyamirizi
Date held & place		28th July 2014 at Neptune Paradise , Bakijulua LC1 TIME: 4:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Ssempijja Fred Tusubira	The power line will marginally affect people. There will not be much damage. The people involved are just five in number.	Comments Noted

KITENGA SUB- COUNTY: KAYEBE PARISH		
Meeting with: Residents from the villages of **Busoba.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		29th July 2014 at Busoba Trading Centre, Busoba LC1 TIME: 9:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Kankiriho George	So will this power come after voting or before voting?	It's unfortunate that the timings are about the same but we are here or serious work which has nothing to do with voting or not. The dams are being constructed at a very fast rate and so the power needs to be consumed to avoid excessive energy loss.
Ms. Robina Businge	Supposing the power passes though my plantation is it at that point where they will cut my banana plants?	Yes, the banana plants in the 10 mettre corridor will be cut down and we shall also ask you to keep the corridor free from such banana plants.
Mr. Rwakituru Patrick	Supposing you put the transformer near the diary, do I need to pull power from the church or from the transformer its self?	You need to get power from a secure source and not the main line.

	I need to understand the card business of paying for power, explain it to me. Does the diary require such a card or a maize miller?	The maize miller and the diary may continue to operate without cards, however, the advantage of using the card is that you can pay for what you can afford which is not the same for the ordinary metre. In the old metre system, they could always bring you a bill at the end of the month for you to pay up whether you liked it or not while in the card system, you have to purchase airtime which you can afford to use. We don't know whether you will use the card system or whether you will use the ordinary metre system. That will be determined by the team that will come to connect you to power.
Mr.Karobo Ezekiel Chairperson LC1	I am just happy and I thank Rural Electrification Agency for its work.	Appreciation noted.

KITENGA SUB- COUNTY: KAYEBE PARISH		
Meeting with: Residents from the villages of **Butayunja.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		29th July 2014 at Butayunja Trading Centre, Butayunja LC1 TIME: 11:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Bashaija Stephen	How long do you think it will take before they construct?	It will take us about five to seven months since it involves collecting data for about two months in a total distance of about 95km of 33KV overhead lines, 52.2km of low voltage net work and 27 distribution transformers with a total installed capacity of 1,550 Kva serving at least 23 loaded centre's or more including towns and villages. The other two months would be used to compile data in the office and then the other two probably for making the draft and final report to pave way for the contractor to start putting up the power lines

Mr. Asiimwe Alex	Don't you think this power will cause a problem?I can see poles with earth wires and lightening Conductors.	No, it's safe and the earth wire and its lightening conductor help us during the rain.
Mr. Kitibwa Joseph	Supposing my plot is behind the centre, cant I use my own pole to tap power inot my house?	No, you cannot use your own pole to tap except if the company has connected you to power.
Mr. Byaruhanga Tadeo	The line which is called the solid cable, is it mine or it is for the government.	The solid cable is for the government although you have paid for it to be in your custody.

KIGANDO SUB- COUNTY: KIYANJA PARISH		
Meeting with: Residents from the villages of **Katongole.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		29th July 2014 at Katongole Trading Centre, Katongole LC1 TIME: 1:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Mugume Nathan	What I needed to understand is how I can be helped to take power home.	You need to be patient and wait for the contractors setting up the power lines to come and guide you
Mr. Mutalyabe Robert	If I am 2 kilometres a way, can I be able to take power to my home?	Yes, you can be able to take power to you home depending on the capacity of the transformer in place.
Mr. Mwebaze Julius	What size of the transformer do they give a trading centre?	The size of the transformer given to the trading centre depends on the carrying capacity according to the needs of the surrounding population.
Mr. Taremwa Fred	What's the distance between the poles?	The poles are about 50 metres apart.
Mr. Kwikiriza Benon Area Councilor	When, the feasibility study was being carried out, it seems the town had not yet grown but there is need to consider that this town gets a transformer.	We have noted your concerns and we shall relay the communication to Rural Electrification Agency.

KIGANDO SUB- COUNTY: KIYANJA PARISH		
Meeting with: Residents from the villages of **Ikula.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		29th July 2014 at Ikula Trading Centre, Ikula LC1 TIME: 3:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Bamugyeya Tadeo	Thank you, How come you have not talked about Eucalyptus? Can you use the same main line to distribute power?	Yes, Eucalyptus is also compensated for in the event that it is tampered with. Yes, you can use the same main line to transmit and distribute power.
Mr. Mutabazi Alfred	For the ones who did not fill the forms during the feasibility study, what is our fate?	It's still okay because the forms that were filled were used as part of evidence to show that the village needed power.
Mr. Kyamagwa Daniel	When do they hope that the poles will be put? This will be in how many months?	It will take us about five to seven months since it involves collecting data for about two months in a total distance of about 95km of 33KV overhead lines, 52.2km of low voltage net work and 27 distribution transformers with a total installed capacity of 1,550 Kva serving at least 23 loaded centre's or more including towns and villages. The other two months would be used to compile data in the office and then the other two probably for making the draft and final report to pave way for the contractor to start putting up the power lines
Ms. Namande Zaituni	We hear that wiring has become wiring. Won't you end up doing this job after the 2016 elections?	Our assignment will have been completed within five to seven months whish will pave way for the contractor to start constructing the lines. This might happen before the next elections.
Mr.	Depending on the map, what	Depending on the map, it will cover a total

Tumusiime John Bosco	distance are you likely to cover?	distance of about 95km of 33KV overhead lines, 52.2km of low voltage net work and 27 distribution transformers with a total installed capacity of 1,550 Kva serving at least 23 loaded centre's or more including towns and villages
Mr. Babaine Yosam Vice Chairperson Ikula	Supposing the school is a single entity and is available, will it get power?	It might be difficult except if it is government aided and has some home stead's around it.
Mr. Nsamba Abdu Bashir	Supposing that there are three poles required to get to my house, what happens? Do I pay for the three poles?	Yes, you will need to pay for the three poles although a discount might be given to you.

KIGANDO SUB- COUNTY: KIGANDO PARISH		
Meeting with: Residents from the villages of **Kabateza A** and **Kabateza C.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		29th July 2014 at Kabateza Trading Centre, Kabateza LC1 TIME: 4:30PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Asiimwe D	What is the distance between the poles which are distributing power to homes? Supposing the plot is consumed by this power line, what happens?	The distance is about 50 metre intervals between the poles. We are trying to avoid all the buildings at whatever cost and we are not going to affect any since there is no money to compensate for land and houses.
Mr. Kishijja William	Supposing the power passes through mu house, will you pay me or not?	We are trying to avoid all the buildings at whatever cost and we are not going to affect any since there is no money to compensate for land and houses.
Mr. Pastori	For the things that have been destroyed, when do you think they	We cannot be sure of the date. In fact it might take a long time since they are still paying off the

	will pay for them?	people they started constructing lines for. Even the people of Myanzi Kiganda line have not yet been paid as well as those of Lusalira and Lwemiyaga.It might take a long time but you will surely be compensated
Mr. Mujuni Emmanuel	For the things that have been destroyed, when do you think they will pay for them?	We cannot be sure of the date. In fact it might take a long time since they are still paying off the people they started constructing lines for. Even the people of Myanzi Kiganda line have not yet been paid as well as those of Lusalira and Lwemiyaga.It might take a long time but you will surely be compensated
Mr. Tumusiime Wilber	For the things that have been destroyed, when do you think they will pay for them?	We cannot be sure of the date. In fact it might take a long time since they are still paying off the people they started constructing lines for. Even the people of Myanzi Kiganda line have not yet been paid as well as those of Lusalira and Lwemiyaga.It might take a long time but you will surely be compensated
Mr. Sabiiti Cleofas Chairperson LC1 Kabateza	Supposing I have my forest, can't I cut some of the trees and use them to take power to my place?	No, you cannot because they are not treated and there is a particular size that is required for this job.

KIGANDO SUB- COUNTY: KIRUME PARISH		
Meeting with: Residents from the villages of **Nsambya, Kirume West, Kirume East**, and **Ndeeba.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		30th July 2014 at Kirume Trading Centre, Kirume East LC1 TIME: 9:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Ms. Ephrance Katalakire	If I have 5000/=, will I be able to pay for the power?	Yes, you will be able to pay for the power that you can afford to buy since it might be pre paid arrangement.
Mr. Kafeero	When is this programme starting?	The work has already started, It will take us

George		about five to seven months since it involves collecting data for about two months in a total distance of about 95km of 33KV overhead lines, 52.2km of low voltage net work and 27 distribution transformers with a total installed capacity of 1,550 Kva serving at least 23 loaded centre's or more including towns and villages. The other two months would be used to compile data in the office and then the other two probably for making the draft and final report to pave way for the contractor to start putting up the power lines.
Mr. Moses	When are we starting?	The work has already started, It will take us about five to seven months since it involves collecting data for about two months in a total distance of about 95km of 33KV overhead lines, 52.2km of low voltage net work and 27 distribution transformers with a total installed capacity of 1,550 Kva serving at least 23 loaded centre's or more including towns and villages. The other two months would be used to compile data in the office and then the other two probably for making the draft and final report to pave way for the contractor to start putting up the power lines.
Mr. Jamada Katwesigye	Since I want to put power in my house,how much will it cost?	We have no idea on that. You will need to wait until the actual time of construction so that you can get your estimates from the contractor and the electricians that will wire your house.

KIGANDO SUB- COUNTY: KIRUME PARISH		
Meeting with: Residents from the villages of **Kacungiro, Kamirangoma** and **Kiwuba.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		30th July 2014 at Colline Junior School, Kiwuba LC1 TIME: 11:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**

Mr. Byamugisha Edison Chairperson LC2	Supposing I am far from getting this power easily, what estimates do you have so that I can prepare myself financially to have this power? For instance, how much does each pole cost?	We have no idea on that. You will need to wait until the actual time of construction so that you can get your estimates from the contractor.
Mr. Namanya Godfrey	They don't pay for food. What happens when I plant more food in the farm and it is damaged during construction?	You will be advised not to plant when the time for constructing the power line is due.
Mr. Mugerwa Boaz Chairperson LC1Kiwuba	Can you pay for the crops and trees in the found in the farm where the power line could have passed? Supposing you find my building, what happens?	Yes, we shall assess the perennial crops and trees found in the farm where the power line will pass. We are trying to avoid all the buildings at whatever cost and we are not going to affect any since there is no money to compensate for land and houses.

KASAMBYA SUB- COUNTY: KASAMBYA PARISH/KASAMBYA TOWN BOARD		
Meeting with: Residents from the villages of **Kasambya A**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		30th July 2014 at Kasambya Town Board , Kasambya A LC1 TIME: 1:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Nsamba C Salongo Chairperson LC1 Kasambya A	This is only a low voltage line which will not affect much. It's an institution that is located in that area. However the institution has moved.	We have noted that and will contact you for further information when we return for data capture.

NABINGOOLA SUB- COUNTY: KIYITA PARISH	
Meeting with: Residents from the villages of **Nangabo.**	
Purpose of meeting	Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga

		and Kibyamirizi
Date held & place		30th July 2014 at Nangabo Trading Centre, Nangabo LC1 TIME: 3:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Twongyeiwre Justus	When is the work starting?	The work has already started, It will take us about five to seven months since it involves collecting data for about two months in a total distance of about 95km of 33KV overhead lines, 52.2km of low voltage net work and 27 distribution transformers with a total installed capacity of 1,550 Kva serving at least 23 loaded centre's or more including towns and villages. The other two months would be used to compile data in the office and then the other two probably for making the draft and final report to pave way for the contractor to start putting up the power lines.
Mr. Byesero Deogratius	In the past, offices for power connections were in Mityana town. Will it be the same for these power lines?	We are hoping that the contractor responsible for power connections will have some offices in this area for easy reach. We shall pass it on as a recommendation in our report.
Mr. Mutabazi Jonathan	Which company or institution is carrying out this programme?	Rural Electrification Agency which is mandated by government to distribute power to rural areas is the institution carrying out this programme and at this particular time, we are carrying out the Environmental and Social Impact Assessment and the Resettlement Action Plan which comes after the feasibility study.
Mr. Kiiza Yasin	How shall we be able to differentiate conmen from the genuine workers? In terms of security for the transformers, we hear that there will be protection for the transformers. Shall we be paid for keeping the transformer or shall we	You need to be security conscious. Any company which needs to work in the area needs to be known by the local leadership. It's through the local leadership that security at this time can be enhanced. Keeping the transformer safe and secure is everyone's responsibility. We shall not pay anyone to keep the transformer from being tampered with and that is why we place in centre where it can be seen by everybody?

	pay to keep the transformer?	
Mr. Kasheera John	I needed something to say about opportunities for work. Will the contractor be able to give some of our local people the jobs to do?	Yes, there will be work for casual labourers and the contractor might ask the local leadership to select for him or her casual works for the job. This is usually done for security reasons.
Mr. Afrika Siraje	I'm on that issue of work. Supposing the Contractor decides not to pay us after working, what happens in this case?	The Contractor has an obligation to pay you for the work that you will have done. It's advisable that you have the local leadership involved in getting you this job so that they can be able to pay you without having to cheat you.
Mr. Kakuru Richard	We have a huge water pump, many government aided schools, churches, health centre's just to mention but a few that have not been given power. What will happen? Is this the plan the government has?	These centre's that were left out will be considered probably in the next phases. However our feasibility map shows that we are meant to stop at this town.

KIGANDO SUB- COUNTY: DYANGOMA PARISH		
Meeting with: Residents from the villages of **Dyangoma.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		31st July 2014 at Dyangoma Trading Centre, Dyangoma LC1 TIME: 9:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Nuwagaba Robert Area Councilor	At what distance will you plant the transformer? Will the poles pass through the town?	The transformer will be placed in the centres where there are many people so that it can be protected from being stolen or tampered with by wrong elements. Yes the service line will pass through the trading centre so that people can connect power easily into their houses. These are placed in the road reserve.
Mr. Baguma Benon	You have said that where the lines will pass over the houses, then the houses will not be required in that area and hence compensation. What will really happen?	I think you did not get us right during this explanation. We are avoiding structures at whatever cost and that is why we are passing behind the bush to avoid all this.

Mr. Nsenga Henry	I believe that we shall be using cards or airtime for this power. Shall we be directly loading this airtime unto our phones or directly on the card? Will it just get finished if I am not using it?	No, you will be given a card on which you can load this airtime onto a metre that is pre paid. However, if you do not use the airtime on your card, then you will still have it but it will only get used up if you decide to use it.
Mr. Nuwankunda John	Supposing the transformer has taken up my entire plot, what happens to me? Do I have to wait to be compensated with other people whose trees and crops have just been cut?	In the event that the transformer has consumed the entire plot, then that person is treated as a special case and will be paid within a short time without having to wait for the time to compensate perennial crops and trees
Mr. Tumwebaze Yowasi	How can we be able to get a bigger size of the transformer?	The size of the transformer is demand driven and depends on how largely the population in an area is concentrated.
Mr. Sempa Samuel	This question of mine regards power being distributed in the different areas. What is the cost for instance of poles being required to take power to ones place at a distance of 2 kilometres?	This question is tough. We do not have answers because we don't have expertise in that section and the cost varies from distance to distance. You will need to wait for the contractors coming to construct the power line on ground. These might have the actual costs involved.
Hon Kahindi Winston LC3 Chairperson	Introduces Bishop Grace Katureebe of the Pentecostal Church	Noted

KIGANDO SUB- COUNTY: MUGOLODDE PARISH		
Meeting with: Residents from the villages of **Butawata B.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		31st July 2014 at Akorora Trading Centre Butawata B LC1 TIME: 1:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Ngambeki Milton	Supposing the power line passes through houses, what will happen?	The line will not pass through houses. It will avoid all the houses through creating angle points.
Mr. Ssekatte	Since the power will involve use of	The two things are not related. The cards for

Mark	cards, will the same card be used for accessing piped water? Can't they work together?	power are just for the electricity and the water issue is something else.
Mr. Byaruhanga	Supposing the power line cuts through my land what happens?	The power line will stick to the road reserve but you can still be allowed to use the 10 metre corridor to plant seasonal crops only in your land.
Mr. Amanya Abdu	Will the cost of the unit of power be brought down since we are in a village and are not like the people in big towns like Kampala having a lot of gadgets and money in their houses?	There will be no discounts in the paying for power. The rates are the same throughout the country despite of your location. It does not consider one in village and leave out one in the city. All parties are treated equally.
Mr. Kamushwa David	What will happen, Shall the owners of the houses have their houses connected to power at no cost or we shall pay for the houses to have them connected to power? What about wiring of the house?	The Government through Rural Electrification Agency has brought the power nearer to the people. It is therefore upon the people to connect their houses to power through paying for it. In addition, the cost of wiring is still paid for by the owner of the house and not government.

KIGANDO SUB- COUNTY: MUGOLODDE PARISH		
Meeting with: Residents from the villages of **Kisita A.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		31st July 2014 at Kisita Trading Centre, Kisita A LC1 TIME: 2:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Kakuru Innocent	What I needed to understand is the issue of using cards and the old metre system.What is the difference between the two systems?	The advantage of using the card is that you can pay for what you can afford which is not the same for the ordinary metre.In the old metre system, they could always bring you a bill at the end of the month for you to pay up whether you liked it or not while in the card system, you have to purchase airtime which you can afford to use. We don't know whether you will use the card system or whether you will use the ordinary metre system. That will be determined by the

		team that will come to connect you to power. The pylons are the ones that are used to carry power from the dam to the substation. However, we might use the same poles that we used in Kiganda and Lusalira to distribute this power.
	Which type of poles are you going to use when transmitting this power? Is it the same as the ones used in carrying this high voltage power like the one heading from Masaka to Mutukula?	
Mr. Kalengana Rauben	People have been shifting from Kisiita B because of no power. Why is it that our village is lacking a transformer and yet we have been applying for it for such a long time?	The transformer can be put if it is applied for at this time. Perhaps the team that carried out the feasibility study could have overlooked this town. We shall present your concerns to the responsible party.
Mr. Yiga Tadeo	Can't I build after the power lines have been constructed?	Yes, you can build, only on condition that you have not tampered with the 10 metre corridor of the power line.
Ms. Faith	Shall you compensate buildings if you have made the power lines pass over them?	We are avoiding any building at whatever cost and we are not compensating for any land or buildings except if the transformer has taken up the entire plot of an individual. There is no money for compensating land and buildings and that is why we are moving in the road reserve.
	How long do you think it will take to complete this exercise?	It will take us about five to seven months since it involves collecting data for about two months in a total distance of about 95km of 33KV overhead lines, 52.2km of low voltage net work and 27 distribution transformers with a total installed capacity of 1,550 Kva serving at least 23 loaded centre's or more including towns and villages. The other two months would be used to compile data in the office and then the other two probably for making the draft and final report.
Mayor	I am happy about the issue of power in our village. It's just been long. I will also collect people from Kisita B to come and join us. I thank this team from Rural Electrification Agency for this good	Appreciation Noted.

	news.	
Mr. Munyarugur u Ndazarahe Chairperson LC1 Kisita A	We would like to express our gratitude for having had this team from Rural Electrification Agency. We hope that they will extend our concern of having a transformer in our area since there is already one at Mile 16	Appreciation and Concern Noted

KIGANDO SUB- COUNTY: LUSIBA PARISH		
Meeting with: Residents from the villages of **Mile 17 [Kiwomya Trading Centre].**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		31st July 2014 at Mile 17 [Kiwoomya Trading Centre, Mile 17 LC1 TIME: 3:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Mugenyi J	When does this programme start?	The programme is ongoing since we are now doing the Environmental and Social Impact Assessment and the Resettlement Action Plan for this power line.
	How does this airtime card for power work?	The airtime card for power works like the airtime that is loaded onto a phone. You can be able to load the amount of power that you can be able to pay for which is so different from the ordinary metre. The power is consumed only when you use it.
Mr. Baikirize Stephen	What about the water issues in the area, what are you going to do about them?	That is not our mandate. We are here for only the power lines that we have been talking about. The LC3 Chairperson will handle your issue.
Mr. Ssemata Mande	I hear that they compensate for crops. Do they also compensate for plots [Kibanja]?	No, they do not compensate for plots since the power is going to be used by the same people. In the case where land is compensated is when there are high voltage lines like that of 132KV, 220KV and 400KV where they cannot accept anyone to reside or be under that kind of power line coming from the dam. This 33KV power line is a service

		line.

KIGANDO SUB- COUNTY: LUSIBA PARISH		
Meeting with: Residents from the villages of **Kyamuguluma**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		31st July 2014 at Kigavu Trading Centre, Kyamuguluma LC1 TIME: 4:00PM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Augustine Kyeyune Chairperson LC1	Which people are they going to compensate?	They are only going to compensate the people whose perennial crops and trees fall in the 10 metre corridor where the power lines are going to be constructed. In the event that one's plot is all consumed up by the transformer, then one will be treated as a special case.
Ms. Agnes Kasjja	Will the cards for power be available like?	Yes, the cards for power will be available. Infact we have noticed that company's usually contracted to connect one to power and sell this power usually have offices around the area.
KIBALINGA SUB-COUNTY: NKANDWA PARISH		
Meeting with: Residents from the villages of **Kabirizi, Nkandwa, Nyakiruma and Lwensambya.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		1st August 2014 at Kabirizi Trading Centre, Nkandwa LC1 TIME: 9:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.

Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Mr. Tukwasibwe Silvano	Will evidence be left behind to show that our crops have been damaged and whom shall we consult for compensation? Secondly, since the donors are giving us money to construct these lines, won't they cheat us and refuse to give you money which in turn makes you fail to compensate us?	There will be a copy of an assessment form showing all the damaged trees and perennial crops as evidence left behind. The funds meant for compensation come from the tax payer's money and this will take a while since they are first paying off the people where they first constructed these power lines. In addition the donors are proving funds for construction and not compensation.
Mr. Kiiza Wilberforce	You said that you will be using the road reserves to extend power to people's homes. Supposing the person has the capacity to use this power and is far away from road reserve, will it be possible for Rural Electrification Agency to take power to this one person who is far away from the road reserve? Will the cards for power be available like the airtime cards that we use every day or one has to travel up to Mubende to access these cards? Shall we have power by the end of this year?	It's quite expensive to take power to one person who is far away except if it is a very big factory. However power is taken to places where the population is highly concentrated and that it can be used. This so because power cannot be stored like water and once it has been produced, it must be used immediately. Yes, the cards for power will be available. Infact we have noticed that company's usually contracted to connect one to power and sell this power usually have offices around the area. We are not sure, but we shall have completed our part within seven months to eight to allow the one responsible for constructing the power lines to start after we have handed in our report.
Mr. Boniface Beshubeho	Supposing there is an UMEME person who has come to fix me on power and something gets messed up by the Umeme person, How will I be helped? Who is responsible at that time? Is it me or the company responsible for connecting me to power?	The company will be responsible for the mess since it will be one of their staff that has caused the problem and not you.
Mr. Bernado Ahimbisibwe	Government has said that it's bringing services nearer to the people. Can't they buy the electric poles from the local people and use them for this same purpose within this area?	The electric poles used for this purpose are treated to withstand ants, termites and bad weather and are very long. The local people can sell these poles to the companies that buy them if they meet that standard. In addition, the poles that are going to be used have already been

		purchased for this particular purpose.
Mr. Ndagize David	They are using ordinary metres at Mile 16.What happens when one is using a card like yaka to access power? Shall we be given bills like it is everyday or we shall be treated like the people in Kiganda?	The advantage of using the card is that you can pay for what you can afford which is not the same for the ordinary metre. We don't know whether you will use the card system or whether you will use the ordinary metre system. That will be determined by the team that will come to connect you to power.
Mr. Arinaitwe Ambrose	Shall we have transformers in the deeper villages?	No, the map we have has only catered for the centres nearby. The villages which are far-off will not have transformers and will be considered in a future phase if the population that can be able to use has grown.
Mr. Tumwesigye Banarbus	I didn't understand something. You said you shall compensate trees, what about seasonal crops like sweet potatoes?	We shall not value seasonal crops because you will have already consumed them by the time the power lines are being constructed. We only consider perennial crops for this case.
Mr. Philemon Tushabeom we	Shall we be compensated for seasonal crops in the event that the actual construction of the power lines has started?	No, we shall have only compensated for perennial crops and trees in the 10 metre corridor that we are going to use when passing the power lines. We believe that you would have consumed the seasonal crops before we start constructing the lines. In addition, you will still be allowed to use the corridor to plant seasonal crops only.
Mr. Justus Rukema Chairperson LC1 Nyakiruma	How can we be able to differentiate con men from the genuine men?	It's not easy to differentiate the con men from actual staff but whoever will have come to work in the area should have sought permission from the local leadership to operate in that area. This is one of the ways that one can identify the right personnel.

KIBALINGA SUB-COUNTY: NKANDWA PARISH & NTUNGAMO PARISH	
Meeting with: Residents from the villages of **Kisalaba , Kiwogo , Ntungamo , Kateete**	
Purpose of meeting	Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place	1st August 2014 at the Home of Mzee Kappa Charles [Ntungamo LC1] TIME: 1:00PM
Present	1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.

Remarks		
Name & designation	**Issues Raised, Comments and fears**	**Responses by consultant to issues raised**
Ms.Kyampu mwiire Pamela	On the issue of wiring ones house, what do you think it would cost for me to do that?	It depends on the number of rooms in ones house and the type of appliances one intends to use. However we cannot establish what it would cost to wire your house except if you hired a qualified electrician to do the job.
Mr. Tumukiiza Aron	You said that they are going to construct lines before we get paid. How shall we know the cost of our damaged crops and trees?	You can get to know the cost of these damaged crops and trees which have been established under the District Compensation rates by law. The document is free and can be accessed by anyone interested in it at District Land Board offices.
Mr. Agaba Samuel	I have a church where I work from and supposing I'm using a card and it runs out of airtime over the weekend when the offices are closed, what happens to me? Do I have to wait for a Monday to have my power restored?	We shall make recommendations to the Client to extend the services through mobile money like it has been done by UMEME.
Mr. Galitawo Noah	I'm just happy with the programme of power. However I hope that it can be executed in a short time and not after the 2016 elections.	Comment was noted.

KIGANDO SUB- COUNTY: KIGANDO PARISH		
Meeting with: Residents from the villages of **Butawata East, Rwenshama** and **Kigando.**		
Purpose of meeting		Records of the Environmental and Social Impact Assessment and Resettlement Action Plan Sensitization meetings for the lot 2: 33kv Power line Kiganda- Mile 16 with tee-off Katabalanga and Kibyamirizi
Date held & place		2nd August 2014 at Butawata Market [Rwenshama Trading Centre] LC1 TIME: 9:00AM
Present		1. Mr. Isingoma Joshua. 0751044935 2. Mr. Banga John 0772473934 See List of participants attached.
Remarks		
Name &	**Issues Raised, Comments and**	**Responses by consultant to issues raised**

designation	**fears**	
Mr. Ashaba Richard Chairperson LC2	What I needed to understand is the issue of using cards and the old metre system.What is the difference between the two systems?	The advantage of using the card is that you can pay for what you can afford which is not the same for the ordinary metre.In the old metre system, they could always bring you a bill at the end of the month for you to pay up whether you liked it or not while in the card system, you have to purchase airtime which you can afford to use. We don't know whether you will use the card system or whether you will use the ordinary metre system. That will be determined by the team that will come to connect you to power.
Ms. Kyomuwhezi Jovinta	You have said that where the lines will pass over the houses, then the houses will not be required in that area and hence compensation. What will really happen?	I think you did not get us right during this explanation. We are avoiding structures at whatever cost and that is why we are passing behind the bush to avoid all this.
Dr. Tumusiime Elias	I believe that we shall be using cards or airtime for this power. Shall we be directly loading this airtime unto our phones or directly on the card? Will it just get finished if I am not using it?	No, you will be given a card on which you can load this airtime onto a meter that is pre paid. However, if you do not use the airtime on your card, then you will still have it but it will only get used up if you decide to use it.
Mr.Wegulo Tadeo Chairperson Butawata East LC1	On the issue of wiring ones house, what do you think it would cost for me to do that?	It depends on the number of rooms in ones house and the type of appliances one intends to use. However we cannot establish what it would cost to wire your house except if you hired a qualified electrician to do the job.