



APPENDIX H

Social Impact Assessment Study for a Proposed 100MW Wind Energy Project, Kajiado District, Kenya

Report Prepared for

Kipeto Energy Limited

March 2012

Social Impact Assessment Study for a Proposed 100MW Wind Energy Project, Kajiado District, Kenya

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List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
CAPEX	Capital Expenditure
CLO	Community Liaison Officer
CSR	Corporate Social Responsibility
DOHSS	Directorate of Health and Safety services
EIA	Environmental Impact Assessment
EMCA	Environmental Management Coordination Act
GDP	Gross Domestic Product
GGP	Gross Geographical Product
GPS	Global positioning System
HIV	Human Immunodeficiency Virus
HSE	Health, Safety and Environment
ICT	Information and Communications Technology
KG	Kilograms
KIHBS	Kenya Integrated Household Budget Survey
KSHS	Kenya Shillings
MT	Metric Tons
NEMA	National Environment Management Authority
OPEX	Operational Expenditure
SEIA	Socio Economic Impact Assessment
SMP	Social Management Plan
STD	Sexually Transmitted Diseases
USD	United States Dollars

Definitions

Word	Definition
Community	An assemblage of people characterized by a distinctive combination of attributes occupying a common geographical area and interacting with one another
County	Same as a District as per the New Kenyan Constitution
Economic	Related to measurements of living standards the community has determined as good acceptable according to agreed monetary measures.
Population	Population is defined as the total number of individuals in a community, county, district or Nation
Social	Related to welfare of the community or population.

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- g) Esilanke Youth FGD 12th August 2011
- h) Donyo Sidai Youth Meeting 16th August 2011
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- j) Esilanke Elders and Youth meeting 25th August 2011
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- l) Esilanke Baraza October 7th Esilanke Meeting

1 EXECUTIVE SUMMARY

1.1 Introduction

Kipeto Energy Ltd proposes to establish a commercial wind energy facility by constructing about 67 wind turbine generators within an area of about 70km², with a maximum generating capacity of 100 MW. The Kipeto area is located about 70 km south-west of Nairobi in Kajiado County. It is predominantly a rural area with the economy dominated by livestock farming as the key driver and employer. Kipeto Energy Ltd is a wind farm energy generation company established by three partners who propose to use wind turbines constructed within a common area to generate electricity and supply it to the national grid.

In addition, Kipeto Energy (the Proponent) plans to construct auxiliary facilities including internal and external access roads, cabling system and a site internal sub-station. The Proponent wishes to develop the wind energy facility to sell electrical power to the Kenya Power through a Power Purchase Agreement (PPA).

The project will be undertaken in three phases namely:

- Phase I – feasibility stage in which wind measuring masts are erected and land leases acquired from the local landowners;
- Phase II - The construction stage in which internal and external road networks, over 60 turbines are erected with system cabling to an internal sub-station is built.
- Phase II – Operations and maintenance phase where electricity is generated from the turbines and sold to the national grid through a purchase agreement.

This Social Impacts Assessment (SIA) is a component of an EIA Study of the project and is being coordinated on behalf of the Proponent by Kurrent Technologies Ltd. (NEMA registered Firm of Experts possessing license number 0191). The Firm of Experts has been appointed by the Proponent to complete the EIA Study in accordance with Legal Notice (L.N.) 101: Environment (Impact Assessment and Audit) Regulations 2003 promulgated under the Environment Management and Coordination Act, 1999. The proposed project will also be required to comply with the Energy Act, 2006 and its subsidiary legislation.

The proposed project aims to contribute to the energy needs of the country's development plans within the Vision 2030 development framework. The reasonable level of economic growth experienced in recent years and projections of continued growth point towards Energy supply from installed capacity out-stripped by demand. The Ministry of Energy is congruent with the Proponent's plan of expanding Wind energy as one of the renewable energy sources additional to other traditional non-renewable sources.

1.2 Project description

The project comprises construction of up to 67 wind turbines within the project area, upgrading access external roads and building internal access roads to individual turbines laced by power cables all to an internal sub-station (Figure 1).

¹Figure 1: Approximate location of the proposed Kipeto Wind Energy Facility



¹ Image courtesy of Google Earth 2011

1.3 Characteristics of proposed wind energy project

Key components and features of the Kipeto Energy Project include:

- A Turbine Corridor: design has identified several areas suitable for turbine placement. Several concentrations of turbines will be located within these corridors to achieve the distance from households and achieve the MW required.
- Turbine Configurations: up to 67 GE Model 1.6-100 turbines (maximum hub height 80m) will be installed within the turbine corridors defined as per the provisional turbine layout.
- Internal Roads: roads constructed within the Kipeto Wind Farm Site for transporting wind farm components, materials and personnel within the Site and to allow access around the Site for construction and operational activities.
- Electrical Balance of Plant: All electrical structures and equipment related to the collection and reticulation of electrical power around Kipeto Wind Farm to the point of connection to the External Transmission Line. Plant includes an Internal Transmission Line, 33kV overhead lines, 33kV underground cables, a Main Substation and Satellite Substation, an optional Switching Station and switch gear huts along with other associated electrical equipment.
- Monitoring masts: up to 3 monitoring masts to collect on-going meteorological information during the operational life of the Kipeto Wind Farm.
- External Roads: Public roads near the Site that are planned to be used for traffic associated with the construction and operation of the Kipeto Wind Farm and by Over-weight and Over-dimension Vehicles (OW/OD Vehicles).
- Earthworks associated with the construction and maintenance of the Kipeto Wind Farm.
- Temporary construction infrastructure: components required for construction of the Kipeto Wind Farm including Concrete Batching Plants, Central Lay down Areas, Excess Fill Areas, Contractor Compound, quarrying and crushing facilities and water storage and abstraction facilities.
- Operations infrastructure e.g. operations and maintenance buildings (O&M facilities). The Turbine Corridor, Turbine Clusters, Internal Roads, Substations and the Internal Transmission.

The generation capacity of the Kipeto Wind Farm is in the order of 100MW. The maximum capacity will be dependent on the type of turbine eventually selected for the site but current site and wind turbine analysis indicates a potential capacity of up to 100MW.

1.4 Social characteristics of the wind energy facility

The turbines manufacturing standards meet various safety thresholds; Turbine layout is as participatory as possible for household health and safety; turbine micro-siting takes into consideration other key factors affecting the environmental balance of the area; some of the health and safety measures integrated into the project design include the following:

- a) Turbines are constructed with the latest health and safety technology including minimum noise management with maximum efficiency in power output. They also include other safety facilities like lightening arresters; automatic high wind speed braking systems, high efficiency with minimum maintenance needs,
- b) Minimum effect on current land use (livestock farming) by ensuring efficient and well timed turbine foundation construction which is then re-instated to at least match pre-existing condition;
- c) Reduce impacts on farming operations through keeping fencing to a minimum and designing fencing to maximize efficiency of livestock movements;
- d) Participatory and consultative construction and operations process that provides comprehensive and accurate information to local residents on the final project configuration, timelines for construction and other relevant information such as turbine layout, disruption to road traffic;
- e) Produce and implement a comprehensive communications and consultation program covering the period up to project commissioning;
- f) Build community partnerships through strategic funding of community based projects. These could be nominated by a committee set up to distribute funding from the project;
- g) Minimize social impacts over the construction period, behaviour of all contractors working on the project should be governed by a code of conduct tailored to the project (e.g. drivers respect for livestock);
- h) Implement a policy of preferentially sourcing local labour for construction, small sub-contracts and maintenance activities. This should be incorporated into tender documentation;
- i) The design and equipment standards for the wind farm will comply with international standards and best practices codes and standard. These have been designed to meet certain health, safety, environment, reliability and quality requirements. Additional standards may be employed or cross referenced in certain instances where the engineers deem necessary.

1.5 Construction phase activities

Preparing the site requires major earthworks; forming access roads; building turbine and substation foundations and platforms; building substations including cable trenches and internal transmission.

Turbines will be purchased and manufactured offshore. Once shipped to Kenya, they are expected to be transported from the Port of Mombasa to the Kipeto Wind Farm site. The likely sequence of construction works for the Kipeto Wind Farm site is provided below. It is noted that several activities will take place in parallel and the actual order of construction may be subject to change in order to enable the individual steps to be completed in a coordinated manner:

- a) Upgrade External Roads required for access to Kipeto Site
- b) Install erosion and sediment control measures
- c) Establish temporary Construction Compound
- d) Develop on-site quarries or use existing quarries in the area
- e) Construct water abstraction and storage facilities
- f) Construct or upgrade internal roads providing access to individual turbines within the Site
- g) Establish, utilise and rehabilitate the Excess Fill Areas
- h) Upgrade or construct appropriate storm water management structures
- i) Establish the central construction compounds areas
- j) Establish Concrete Batching Plants
- k) Excavate and construct reinforced concrete Turbine Foundations
- l) Construct the substation foundations
- m) Install Electrical Balance of Plant components
- n) Staged delivery of turbine components
- o) Install and commission turbines
- p) Remove temporary services and site offices
- q) Rehabilitate Contractor Compound, Central Lay down Areas and general site reinstatement

The project manager is committed to completion of turbine construction activities within the shortest time possible. It is estimated that each turbine will take about five days to erect depending on prevalent weather conditions. Impacts estimates therefore conclude significant impacts from internal and external road networks construction activities than from turbine erection construction activities. Construction works will be completed progressively. Once the construction works in a particular area are completed, site rehabilitation will commence.

Some construction materials and works required will be sourced locally or nationally from existing commercial suppliers, although most turbine components will need to be imported. Special turbine transport vehicles and supersize turbine erection cranes used during construction will come with the Turbines.

Construction activities can generate high noise levels and should therefore comply with limits stipulated under relevant H&S legislation in Kenya.

During construction, water will be required for mixing of concrete for turbine foundations. This water is expected to be sourced from local sources such as boreholes.

It is anticipated that a about 50 to 100 jobs will be created during the construction phase.

1.6 Operational phase activities

Operations and Management: under a long-term lease with land owners in the project area, Kipeto Energy Limited plans to generate electricity and sell to Kenya Power. The power will be sold to the Kenya Power at an agreed power Tariff agreement in accordance with a Power Purchase Agreement. 5% of the annual returns will be given to a community Trust that will be used for community projects as defined by the trust controlled by the local stakeholders.

Noise impacts are not expected to exceed the World Health Organization guideline at the nearest receptor off-site.

Approximately 10 – 20 long-term job opportunities will be generated through the operation and maintenance of the wind farm. Skilled labor will be required in technical fields as well as in wind farm operations and management. Local people will be employed and trained wherever possible.

1.7 Decommissioning phase

It is envisaged that the wind energy facility will be operational for a minimum of 25 years, and it is likely that this period will be extended. Currently there is limited legislation in Kenya which requires that funds be set aside for the rehabilitation of the area and associated infrastructure when decommissioning a project.

1.8 Motivation, need and desirability of the project

The Country's demand for energy far outstrips supply especially within Vision 2030 development goals. The emerging trends in climate change further strains dependency on fossil fuels as sources of energy. This means that as much as Kenya has significant development needs, it cannot meet all its energy targets using petroleum sources. The demand for building alternative sources of energy not only augments fossil fuels sources but also ensures sustainability of development programs.

1.9 SIA process and timing

The Social Impact Assessment (SIA) process comprised two broad phases: scoping and Social Economic Impacts Assessment. During the scoping phase the process included amongst others, the identification of social and economic issues and the consultation with and participation of the public/stakeholders. The SIA phase involves specialist investigation and assessment of the proposed project.

1.10 Public consultation

Public participation is integral to the SIA process, and as such stakeholders are afforded a number of opportunities to provide comment. To date, comments from the stakeholders have been solicited as follows:

- Project meetings were held between the Client and the Firm of Experts (March 2011 – to date);
- Desktop review of preliminary design information (April 2011);
- Formal Stakeholder engagement meeting with national agencies relevant to energy at national, District, local/provincial administration and Municipal Council (July 13th, 2011);
- Notification letters to stakeholders for public participation including preparation of interview questionnaires (June 23rd, 2011);
- Meeting with the Director of Kenya National Bureau of Statistics for gathering secondary demographic data around the project area (May 30th, 2011);
- Public/stakeholder consultation meeting with residents of Esilanke area chaired by the District Officer of Kikonyokei South (June 17th, 2011);
- Public/stakeholder consultation meeting with residents of Esilanke area (June 6th, 2011);
- Public/stakeholder consultation meeting with residents of Donyo Sidai area (June 28th, 2011);
- Administering of Stakeholder Interview Sheets by Sociologist (July 4th to July 8th, 2011);
- GPS referenced Household Survey on the Esilanke and Donyo Sidai area June and July 2011.
- Key Informant Interviews and Focus Group Discussions with Women, Youth and Elders in Esilanke, Donyo Sidai and Olepolos area in August 2011.
- Collation of comments from the public/stakeholder consultation meetings and updating of specialist studies (September 2011);
- Undertaking a Social and Economic impact assessment based on the findings of the specialist studies (October – November 2011); and
- Development of an SIA Study report including an SMP (November 2011).

1.11 Key findings of the SIA

The proposed wind farm project site falls under the Kajiado County which had an estimated population of 218,000 people at the time of the 2009 census. Most of the dwellings in the vicinity of the project area are households scattered in individual plots. The unemployment rate especially among the youth is high.

A number of potential impacts arising from the proposed wind firm project development have been assessed by the specialists and the Firm of Experts. The significance of potential impacts identified during the process was assessed by the Firm of Experts according to assessment criteria (severity, spatial scope, duration and frequency of activity and impact). Using an established methodology, impacts were assigned a significance rating on a scale from very low to very high and as positive and/or negative. Each potential impact was rated twice; prior to and after management measures had been implemented. Design and planning considerations informed impact management.

2 Introduction

The purpose of this report is to present the results of the Socio-Economic Impact Assessment of the proposed Kipeto Wind Energy Facility and associated infrastructure to be located in Kipeto area of Kajiado County/District in Kenya. This study interprets the positive and negative socio-economic impacts that have been identified and their implications on social and economic lives of local communities and the nation in general. It then provides recommendations with regards to minimizing adverse effects and maximizing positive impacts.

The socio-economic impacts have been viewed in terms of their duration, or the phase of life cycle the development takes place. The current study analyses three phases of the proposed wind energy facility life cycle, i.e. Construction phase, Operational phase and Decommissioning phase. The construction phase impacts are of temporary nature, thus they have a temporary effect. On the other hand, the operational phase of the proposed wind energy facility would be approximately 25 years; hence the impacts during this phase would be of sustainable nature. The decommissioning phase impacts are similar to the construction impacts.

The information provided by various stakeholders and secondary data available is used for the socio economic impact assessment of the proposed project. The general stakeholders' expectations to the wind farm project are positive especially if there is sufficient generation of employment available for the youth; negative impacts expected involve the interference with the social and economic lifestyles, health and safety of the residents.

Based on the socio-economic analysis of building the wind farm in the Kipeto site as compared with not constructing it, it can be concluded that the establishment of the proposed wind farm in the Kipeto site will generate higher socio-economic benefits such as creation of employment, diversification of income, improved security and start-ups in local businesses.

The effects on the local and regional social structures and economies, which are both directly and indirectly attributed to the establishment of the proposed Wind Farm, are evaluated in this report.

The Socio-Economic Impact Assessment forms part of the Environmental Impact Assessment process prescribed under the EMCA act (1999), the Environmental (Impact Assessment and Audit) Regulations, 2003 and requires obtaining the approval from the National Environmental Management Authority (NEMA).

2.1 Project description

Kurrent Technologies Ltd. was commissioned by Kipeto Energy Limited to undertake a Environmental Social Impact Assessment (ESIA) for the Kipeto Wind Energy Project. This Social and Economic impact assessment has been undertaken to inform the subsequent Environmental Impact Assessment (EIA). The aim of the Socio-economic impact assessment study is to carry out an in-depth study of scoped impacts by assessing their potential social and economic impacts. The assessment characterizes the social, cultural and economic consequences to human populations of the Kipeto Wind Energy project.

The methodology of assessment describes the process followed to carry out the assessment. A description of the process of community engagement is provided including the various activities carried out to collect data. The process taken in the Household survey which included using a Juno SB Trimble to geo-reference positions of the households is explained. Finally the process of developing the turbine layout is explained given the constraining parameters determining the provisional turbine layout.

Baseline social data shows there is high dependency on firewood for cooking and bush latrine. Malaria and flu are some of the key health concerns. There is very little reported crime as alcohol and substance abuse is still low within the local shopping centres. These among other social impacts are assessed from the baseline profiles. Baseline economic data is captured under the economic baseline profile for Kipeto.

The proposed Kipeto Energy Project is predicted to have positive and negative impacts expected during the different project phases. The Construction impacts and issues will be similar for decommissioning impacts in terms of temporary land and employment impacts. There are likely to be economic multiplier effects in the wider Kajiado County from use of local construction material goods and services. Negative impacts may arise from the influx of non-local workers on site, either directly on the surrounding environment or indirectly to the community at large. Construction activities may result in temporary disruption of grazing land (currently a key concern of the local Maasai Community), and there is also likely to be some noise and visual disturbance with the introduction of the wind farm.

During operation, social impacts include direct employment and the potential for associated training and skills development. There are also likely to be economic multiplier effects from use of local goods and services. The Kipeto Energy Project will probably increase the profitability and value of the land and will provide an additional income for the landowners. It will also provide the local economy with an opportunity to diversify. The presence of turbines will significantly intrude on the beauty of the landscape currently dominated by Savannah grassland laid on waves of soft hills and short trees called 'whistling' Acacia tree, sparsely populated by wild animals.

Noise generated by the turbines is a potential negative impact. Property prices may be impacted by the development and the change of land use may impact on the community identity. Polygamous household harmony may be affected by land subdivisions where succession did not factor-in how to allocate revenues from turbines located in the plot. Shadows from the sun on the hilly plains embracing the escarpment may give reason to consider sunset and sunrise shadow flicker impacts.

The social impact assessment was guided by a public consultation plan. This report incorporates a literature review, inputs from all the stakeholders, cross-reference to the other specialist findings and primary data collection. The consultation was done through interviews, general and group meetings and stakeholder workshops. A Household survey, geo-referenced analysis, site visits and observation also contributed to the collection of data. Broad stakeholder groups include Kipeto Area landowners and general local communities. The data collected and documented from the range of stakeholders also include 'social facts' which reflect the key issues and concerns as raised by stakeholders on the proposed wind farm project.

This SIA provides an assessment as to how significance of issues or impacts have been assessed and mitigation measures provided where relevant. These are captured under the assessment of impacts topic. They are assessed according to a list of parameters and modeling defined under methodologies.

In summary, the SIA focused on the collection of primary data to identify and assess social issues and potential impacts. At this stage there are no fatal flaws anticipated with regards to the social aspects of the Kipeto Energy Project.

2.2 Kipeto study area map

The proposed Kipeto Energy Project is located in two divisions of Kajiado County, Ngong Division and Kajiado Central, on the edge of the lower Kenya parts of the Great Rift Valley. The large portion of the site is located within the Oloyiankalani and the Enjororoi sub-locations of South Kikonyokei Location in Ngong Division, while the other is in Oloyiankalani sub-location of Ildamat location of Kajiado Central. The project site is 18km north-west of Kajiado town and some 70km from Nairobi Metropolitan City. The project area is further situated between the C58-Magadi Road and A104 –Namanga Road

Figure 1 showed the aerial Google map extract of the proposed project area. The images below show the typical setting of the project area.

Figure 2: Images showing typical setting of the proposed project area in Kipeto



The map below (Figure 3) shows the study area on a plot by plot basis.

Figure 3: Kipeto Study Area Map



2.3 Study goals and objectives

The overall aim of this study is to provide an analysis of the social and economic environment of proposed Kipeto project area. The study provides an assessment of the opportunities and constraints associated with the construction and operation of the wind farm on the site.

2.3.1 Household survey

A household survey was undertaken to map all existing structures within the project area. The objective of the Household Survey Objective was to delineate locations of turbines away from households.

To achieve this objective each of the households in the project area were visited and geo-located to determine their GPS addresses. A Juno SB Trimble was used to determine the GPS Addresses for each household. The team walked into the household and a GPS Enumerator would go to each dwelling in the household and determine the GPS position of the dwelling. In recording the GPS Address, the plot number would be used to indicate where the dwelling is located and also the type of materials used to build the dwelling. The GPS Enumerator also took pictures of each of the dwellings in the household. Pictures taken would include all structures and activities found within the households.

Characterization of the socio-economic baseline data was done on each of the households based on a map containing the plot and collecting data through administering a questionnaire. Household pictures and a questionnaire were used to determine the socio-economic characters of each household. A questionnaire was administered by an assistant.

The pictorial mapping of the household indicated the socio-economic activities the household engaged in and was significant in determining the space-use variance among the households. These would include cattle sheds, subsistent crop farming, and fertilizer heaps, and other structures found in the household like toilet facilities and cow salt basins.

The images below are indicative of the data that was collected during the household survey.

Figure 4: Images showing data collected during the household survey



2.3.2 Public/stakeholder consultation meetings

As part of the ESIA process, public stakeholder consultation meetings were held with the communities and legislators in the project area. The format of the meetings was as follows:

- Formal stakeholder meeting;
- Public meetings known as barazas;
- Focus group discussions; and
- Key informant interviews.

The table below provides the statistics of the meetings conducted as part of the SIA and the number of participants for each meeting.

Table 1: Interview categories and participant numbers

Category	Number of interviews and FGDs	Number of participants
Formal stakeholders	2 meetings	20 participants
Kajiado County Council	1 meeting	5 participants
Community stakeholders		
a) General Barazas	5 meetings	Average Of 30 participants
b) Men FGDs	3 meetings	Average 15 Participants
c) Women FGDs	3 meetings	Average 15 Participants
d) Youth FGDs	3 meetings	Average 15 Participants
e) Key Informant Interviews (Male Elder)	2 meetings	Average 15 Participants
f) Key Informant Interview (Female Elder)	1 meeting	Average 10 Participants
g) Key Informant Interview (local leader)	3 meetings	Average 4 Participants

2.4 Methodological approach to the SIA

2.4.1 Overview of the proposed Kipeto wind project (stage 1)

The purpose of this step was to provide basic information with regard to the economic and social aspects of the proposed wind farm. In this context, the following outcomes were envisaged;

- Value of capital investments and estimated number of employed people during the construction phase;
- Value of operational expenditure and estimated number of sustainable jobs involved during the operational phase

The Proponent was consulted to provide the estimates of the construction and operational costs of the proposed wind energy facility.

2.4.2 Orientation and baseline profile

The study commenced with client consultations regarding particulars of the project, its goals and objectives. During this step, all relevant existing information was collected, in particular data related to the construction of the proposed wind energy facility.

The baseline profiling involved a compilation of the social and economic indicators of the local and regional areas. The indicators of this phase are listed below.

- Population bio data
- Gender
- Income distribution
- Employment profile
- Occupation profile
- Sector growth
- Housing
- Public Health
- Crime and security
- Sources of water and sanitation facilities

The socio-economic baseline analysis was performed based on data collected during the orientation, household surveys and secondary data available from various sources including the proponent, Government ministries, local and provincial administration and the Kajiado County Council. The baseline analysis provides a broad understanding of the economic trends and social structure in the area, where the proposed wind energy facility is to be located. The main tools used were desk reviews, key informants interviews, public stakeholder meetings (Barazas), and informal discussions with various key stakeholder representatives.

2.4.3 Social Impact Assessment (SIA)

The impact assessment exercise refers to identification and evaluation of socio-economic impacts resulting from the establishment of the proposed wind farm in the area. The analysis of impacts was performed for two phases of the wind farm project life cycle, i.e. construction and operational phases respectively.

The main objective of this step is to determine the gain or loss to the local communities' welfare, as well as extent of impact on the economy in the area. It includes the identification and assessment of positive impacts and opportunities for enhancing the socio-economic well-being of the people who live and work in the project's area of influence. This phase also involved collection of socio-economic data to provide basis for identification of social impacts.

2.4.4 Social management plan

The purpose of this step was to highlight implications of the establishment of a Wind farm in the Kipeto area on the social welfare of the local communities and the regional economy. Interpretations were based on the outcomes of the impact assessment exercise.

The step concluded with a list of recommendations that specify possible mitigation measures to maximize the positive effect and minimize adverse effects of the construction and operations phase. A social management plan has been developed for the operation phase to ensure that the wind farm is run in a socially acceptable manner. It includes mitigation measures that cannot be included in the design phase of the project.

2.4.5 Assumptions and limitations of the study

The main source of data was secondary (Economic survey 2011, Population and Housing census Surveys) including reports from other related studies. The project site falls within Kajiado District.

Most of the statistics obtained were on a district level (Kajiado District) and area specific (Kipeto location) information was only available from the household surveys conducted.

The study was done with information, timeframes and budget lines available to the consultants at the time of the study. The sources consulted are not exhaustive and additional information which strengthen arguments, contradict information in this report and/ or identify additional information might exist. However, the consultant did endeavor to take an evidence-based approach in the compilation of this report and did not exclude scientific information relevant to the assessment within stated limit options.

People’s actions can never be predicted with 100% accuracy, even when circumstances are similar and predictions are based on rigorous research results.

2.4.6 Household survey instruments

GPS data was collected using a Juno SB Trimble, a Household Census Questionnaires was administered to profile the socio-economic characters of the community and a digital camera was used to define a pictorial map of individual households and social amenities available.

Juno SB Trimble GPS

A Juno SB Trimble installed with the Arcpad software was used to collect household GPS data. The Trimble has an accuracy of between 1-2 metres. The Trimble is a handheld GPS Receiver. It is a handheld computer, integrated with a internal GPS system and hosts Windows Mobile Version 6 software operating system.

There are two ways you can use the Trimble to collect data: i) use the Open Terra Sync: ii) Using the Arcpad Software.

The survey team had the Kipeto Shapefiles installed into the Trimble and used the Arcpad to identify each household according to the plot boundaries data added into the map. We also had the contours and the control points layers added into the Plot Boundaries Map to help improve the quality of the data collected and improve field navigation.

The settings for Trimble receiver which includes the coordinate system, datum and time zone were fixed at Latitude, Longitude, WGS84, GPS Week 1150 and in the UTC Time Zone respectively. This means that the team was able to collect the following data:

A latitude:	X- coordinates
A Longitude:	Y- coordinates
A Altitude:	Z- coordinates

Since the data collection did not include desktop analysis, the survey depended on real-time differential correction and left post-processed correction to layout mapping experts.

3 Overview of the proposed wind energy project

Kipeto Energy Ltd proposes to establish a commercial wind energy facility by constructing about 67 wind turbine generators within an area of about 70km², with a maximum generating capacity of 100MW. The project associated infrastructure includes one on-site substation, which will step up power from 22kv to 66kv via a transformer. This power will then be transmitted from the project site through 35km of overhead power lines to connect to the national grid at the sub-station in Matassia in Ngong. The project lifetime is estimated to be 25 years. The estimated cost of the project is approximately 221 million Euros (2011 prices).

The purpose of this section is to provide a brief description of the proposed wind energy project. The following information is provided in this section:

- i) Economic effects of the proposed project
- ii) Total value of investments during the construction phase(CAPEX)
- iii) Employment creation during the construction and operational phase
- iv) Cost benefit analysis
- v) Stakeholder views
- vi) Corporate Social Responsibility (CSR)

3.1 Introduction

Kipeto Energy Ltd: the proponent of the project is a joint venture company made up of three partners: A local wind energy company called Craftskills Wind International Ltd which owns 25% of Kipeto Energy Ltd; General Electric GE, an American Multinational Company with wide experience in Wind energy projects and owns 70% stake in Kipeto Energy Ltd. and Kipeto area land owners have an ownership of 5% equity. The pre-construction stage include the erection of the wind masts to measure the potential wind resource in the area and also to mobilize the local land owners into taking up lease for the project.

The following describe the key activities and infrastructure of the project:

The Wind Farm: The proponent proposes to construct Kipeto wind farm, to have a generating capacity 100 MW and will comprise about 67 wind turbines, each of generating capacity of 1.6MW. The hub height is about 80 m with turbine blade length of 50m. The wind farm is planned to operate continuously for 25 years.

The Sub-station: the underground cables from each turbine will connect to a small site sub-station to step-up power from 22KV to 66 KV for feeding into the national grid.

The Access Road: project site internal access routes and two main access roads will be required for delivery of the turbines to the construction site. Each wind turbine will have individual access routes that will be used during construction and during operations for maintenance of the turbines.

Power Cables: each individual turbine will be connected to the substation through underground cables that will be constructed about one metre below ground along the individual turbine access roads. Overhead cables will transmit power from the sub-station situated at the project site, to the substation at Matassia in Ngong town, about 35km away.

Transport: it is proposed that the wind turbine components will be delivered to the site in Kajiado from Mombasa Port by road. Special vehicles will transport the knocked down parts, which will finally be assembled at the project site. Special cranes will also be transported to the site and assembled to be used in the erection of the huge turbine components.

Construction: The Project is planned for construction commencing mid-2012 and construction is planned to take a duration of about 18 months; the construction phase will require temporary yard areas that will be used to store machinery and equipment as well as consist of such facilities as vehicle parking areas, diesel storage, toilets and eating facilities.

Operations and Maintenance: under a 25 year lease with land owners over the area, the proponent plans to generate electricity and sell to Kenya Power for the period. The power will be sold to the Kenya Power at an agreed power Tariff agreement. 5% of the annual returns will be given to the local Masaai community Trust that will be used for community projects as defined by the trust controlled by the local stakeholders.

Decommissioning of the Project: after the project contract period expires, subject to other factors it will be decommissioned. The description of impacts both positive and adverse could be similar to construction impacts though it is assumed the population in the area would be significantly different and therefore household survey characters would have changed and become more dense.

3.2 Socio-economic effects of the project

Both positive and negative social effects of the proposed wind farm during the two phases under study are mainly related to the impacts of the changes in income levels to the family unit, education, health and social changes as a result of either immigration or emmigration.

Challenges to social cohesion as a result of the land owners associated with the other proposed wind farm verses those associated with the Kipeto energy may continue to divide the community and affect its cohesion.

The economic overview during construction and operational phases is in terms of a change to the following:

- Job creation: Increases personal income and enhancement of general well being;
- Infrastructure development: improved accessibility through better internal and external road network;
- Start-ups and improved local market economy: Increases in the local businesses' start-ups and offering market to their services like restaurants and retailing.

Any of these measures can be an indicator of improvement in the economic well-being of residents, which is generally the goal of any investment project. The net economic impact is usually viewed as the expansion or contraction of an area's economy.

In order to quantify the economic impact of the proposed project, the direct effects were considered the focus being on the receipts and expenditures which are directly connected with the realization of the proposed project. The indirect effects are divided into tangible and intangible effects. The focus is on the tangible effects which amount to direct monetary effects to the regional income.

3.2.1 Estimated capital expenditure

The estimated capital expenditure required to establish the proposed Wind Farm including the support infrastructure is estimated to be about US\$223 Million in 2011 prices (1US\$=Kshs.95.00).

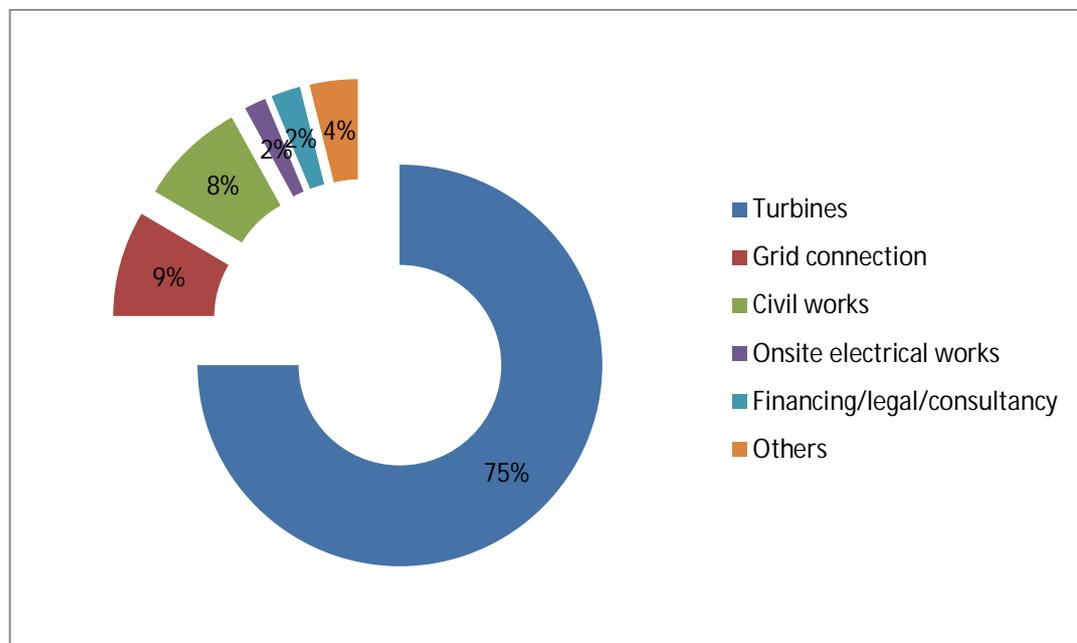
The Wind Farm involves construction of 67 Turbines of 1.6 MW capacity each with a total capacity of 107.2 MW and a unit MW cost of USD 2.1 Million/MW and total cost of US\$225 Million. The distribution costs associated with the project are broken down as follows:

Table 2: Estimated breakdown of project costs

Component description	Cost (Million US\$)
Turbines	168.0
Grid connection	19.0
Civil works	19.0
Onsite electrical works	4.0
Financing/legal/consultancy	5.3
Others	8.6
TOTAL COST	223.6

The distribution of costs is shown below graphically.

Figure 5: Percentage distribution of Project Costs



The construction materials will be sourced from local suppliers while turbine equipment will be imported.

3.2.2 Job creation associated with the project

It is anticipated that approximately 50-100 people will be employed during the construction phase. Assuming that 100 workers are employed, the breakdown of various categories of workforce for the construction phase is estimated to be as follows:

Worker category	Approximate number required
Highly skilled staff – 14%	14
Skilled staff – 14%	14
Semi-skilled/unskilled staff – 62%	62
Total construction phase staff	100

For purposes of the proposed project, *highly skilled* people include occupations such as turbine installers, engineers, crane operators, electricians and technicians will be assigned from GE's wide staff; *skilled* workers include welders, surveyors, plumbers and supervisors; *semiskilled/unskilled* include masons, carpenters and painters. It is expected that most of the semi-skilled/unskilled labor will be sourced locally. This includes those who will work on the road networks and basic labour during the concrete foundation works.

The establishment of the proposed wind farm is estimated to have a total capital cost of US\$223 million. The total civil works budget is about 19 million US\$ or 7% of the total capital budget amount. This includes the access road networks, turbine concrete foundations and materials to be purchased from local sources for the one year of construction.

The workforce during the operations phase is estimated to be limited as the turbines require minimal maintenance.

Increased business will be considered locally in Kajiado district and in Nairobi. The increase in construction materials business sales will mainly be noticed in the construction sector, as the demand for gravel, sand, water, concrete, pipes, reinforcement, electrical cabling, etc. will increase.

The increase in direct business sales will have positive spin off effects on the supporting businesses, for example, businesses that extract or manufacture construction materials and other inputs required for constructing a wind farm.

3.3 Stakeholder perceptions about the project

During the social surveys, the Sociologist administered a questionnaire for collecting baseline data about the community. This questionnaire was customized from the Kenya 2009 National Census as it provides detailed information about a community.

Through various types of fora (public/stakeholder consultation meetings, focus group meetings and key informant interviews) in which socio-economic information about the proposed wind energy facility project was collected, given below is an outline of the positive and adverse stakeholder perceptions. It must be noted that these are purely perceptions and not concerns associated with the project. Most local Masaai communities support the Kipeto Wind Energy facility.

3.3.1 Positive perceptions

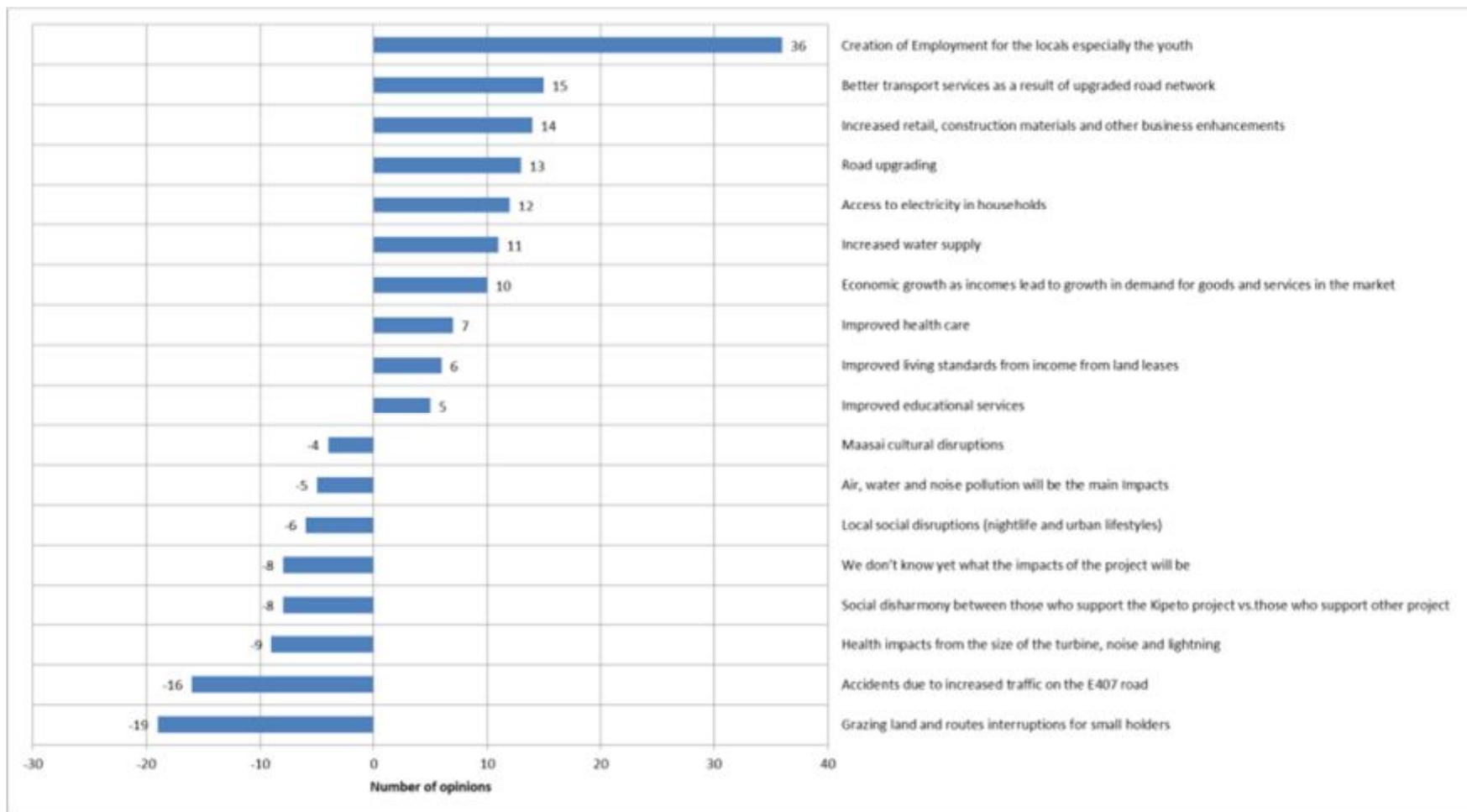
- Creation of employment for local communities;
- Access to electricity;
- Increased retailing, construction materials sales and other business enhancement;
- Transport services as a result of the upgraded access roads network;
- Economic growth as a result from better incomes and demand for goods and services;
- Improved living standards as a result of income from land leases;
- Improved health care;
- Increased water supply; and
- Road upgrading.

3.3.2 Negative perceptions

- Increased social disharmony between project supporters and those who support the other project;
- Local Social disruptions and Maasai cultural disruptions;
- Grazing land and routes interruptions especially for small holders;
- Accidents due to increased traffic on the E407 road;
- Health hazards including size of the turbines, noise and lightning; and
- Potential air, water and noise pollution during construction.

The graph below is representative of the perceptions of the local Masaai community with respect to the impacts of the proposed wind energy project.

Figure 6: Perceptions of local Masaai community about project impacts



4 Baseline socio-economic profile

4.1 Introduction

A vast portion of the county of Kajiado is inhabited by the Maasai, whose livelihoods depend on livestock, which in turn rely on the sustainable use of the rangeland. While this land was traditionally Group Ranch land in the mid 1980s, the process of sub-division was undertaken with little thought about the negative impacts of the sub-division on the well-being of the land, the Maasai or Wildlife. The sub-divisions were hastily finalized without a sound framework for further use of common resources, which has greatly decreased the pastoralists' resilience to droughts and other ecological shocks. The Kipeto Wind farm lies in Zone D of the Kitengela-Isinya-Kipeto development plan area. The Land use Master Plan (LUMP) is an effort to coordinate development within the area.

Delineation of the baseline profile for the Kipeto wind farm found several key economic and social aspects. The objective of the Social Impact Assessment (SIA) was to determine issues driving the support for or rejection of the wind farm project, guided by issues internationally determined to affect wind farms and those directly unique to the Kipeto Project. The existence of an alternative perceived competitive wind power project was also a key consideration in driving opinions of the community both before and after they had significant information about wind energy. The key advantage of the alternative wind energy project was the increase in social education as the debate about both wind projects raged on. The perceived competition between the two projects affected the social and economic attitudes towards the project.

Being a major project which will affect the economic and social aspects of the Kipeto area during all the stages of pre-construction, construction, and operations, it was borne to attract significant attention, support and opposition. The measure of change it will bring however depends on the baseline situation before the project begins. The area is still predominantly Maasai community, sparsely populated and mainly involved in livestock farming.

Economically, the area has less diversified economy mostly dependent on livestock farming. Transport is low and unreliable and mostly private using strong four-wheel vehicles. Upgrading of the existing road network is expected to have a significant impact in opening up the area. Most community members travel for various economic activities in the four surrounding towns of Ngong, Kiserian, Isinya and Kajiado surrounding the Kipeto area. The local market activity takes place in Esilanke every day but more so on Thursdays which is a market day.

The amenities in the project area include a few educational and health facilities. It was also established that the Kipeto area experiences low levels of crime rates.

4.2 County geographical context

The project is located in the Kipeto area, in the Kajiado County, about 70km south-west of the capital city of Nairobi. The project area is located to the north-west of Kajiado town and is enveloped between Isinya-Kajiado Road towards the east and Kiserian-Isinya Road towards the north. The Rift Valley escarpment runs on the westward border of the project area. It provides a scenic view of the bottom of the valley and has several footpaths and livestock path links with the valley below.

The Kajiado County is the administrative centre but a larger contribution to the economy comes from the northern urban centres of Isinya, Kiserian and Ongata Rongai. The main markets for the livestock from the Kipeto area are found in these fast growing urban centres and is also the focus of non-agricultural economic activities in the County. The County economy is fairly diversified with economic activities found including manufacturing, trade and services sectors. The current main urban centres feeding the Kipeto area in terms of markets are Isinya to the east; Kiserian to the North, and Kajiado town itself to the southern side.

This development trend also affects other demographic parameters of the area. Various sections of the Kipeto area population market their products in these towns. Most people from the Kipeto area work and shop from either of these urban centres. The rate of migration to these towns in search for jobs, education and better livelihoods for the younger generation is significantly evident.

Over the last 30 years, the human population of Kajiado District has increased four-fold, or by 4.7% a year (Republic of Kenya, 1982). At least half of this increase was due to immigration. In 1979 the population of Kajiado County was estimated at 149,000, or an overall density of 7.6 people/km²; the population density in pastoral areas was approximately 5 people/km² (CBS, 1981).

The economy of Kajiado County is still dominated by the Maasai, who are largely pastoralists, but rain fed farming largely by non-Maasai has taken over as a significant economic activity in higher agricultural potential areas. Irrigated cropping has also been increasing along river valleys and in swampy areas. The main areas for irrigated cropping are along the Ngong Hills, along the Nolturesh River in the Kimana area, in the Kilimanjaro foothills and around Namanga.

Other major economic activities in the county include tourism from the Amboseli National Park and mining of soda from Lake Magadi. The National Park is a major tourist attraction, but provides limited revenue for the County and generates little employment for the local people. The soda ash mine employs about 600 people, with several employees being immigrants from other districts.

Kajiado county is well served by a network of all-weather roads and by a railway. In addition, numerous roads that are passable in the dry season penetrate the interior of the County. This network effectively links the urban and trading centres in the County, and public transport is readily available.

By virtue of its proximity to Nairobi, Kajiado County is a major supplier of various types of raw meat products. However, the County's livestock marketing system is well developed only for cattle. Only the western and northern parts of Kajiado seem to supply small stock to the Nairobi market; there are no small stock markets in the southern and eastern parts of the County.

4.3 Overview of the project area

The Kipeto area is predominantly a rural area with the economy dominated by the livestock farming sector as the dominant economy and employer. However, OIKejuado as the administrative centre is the focus of non-agricultural economic activity in the County. The urban economy is fairly diversified with other contributors including manufacturing, trade and services sectors. The Kipeto economic growth has been stifled by the lack of sufficient transport and communication, low productivity and poor diversification of economic activities. Livestock farming is still the main source of economic life selling milk and beef as the major products.

There are an increasing number of locals who travel to the three main towns in the area to sell small quantities of other products. In fact, sources say that mainly women were not involved in looking for money in the area until the severe drought of year 2000. Daily, there are women who carry and sell handmade Maasai traditional wares to the surrounding towns of Isinya, Kajiado and Kiserian. Women increasingly mix activities like grazing, child rearing etc with making belts, hand bands and traditional Maasai women regalia, which are then sold when there are market days. Although tourism does not play a major role, the potential is significant and has seen many white in-migrations. They buy strategic pieces of land and build small touristic cottages where they can enjoy scenic views very common in the high altitude area. A number of attributes of the Kipeto will allow for growth in this sector such as:

- i). Its scenic beauty;
- ii). Its rural qualities that offer opportunities for relaxation and touristic view of the Rift valley escarpment;
- iii). Its many tourist attractions (such as game farms, 4x4 trails, bike trails);
- iv). The advancement of its reputation as an area with diverse wild animals;
- v). Attractive places with potential to build places of accommodation; and
- vi). It's cultural and historical ties with the Maasai renown all over the world.

In general, the population of the Kipeto is less formally schooled than both the District and the Province respectively and this is partly attributed to the high rates of out-migration of younger more schooled generations.

However, the uptake of business opportunities by the local youth's in the small market place town of Esilanke is startlingly encouraging. Esilanke is the main market place consisting of about two streets of mabati houses where business booms every day for selected shops and is open more widely on Thursdays, when the open market sellers come to display their wares. The town attracts daily business to youth dominated businesses like battery charging, shopping for household fast moving goods, barbers, butchery, etc. Esilanke, is surrounded by a Primary school, Esilanke Primary school with about 800 children. They are seen adding to the market population every time they are on break or out for lunch. There are open public toilets, churches and water points within the vicinity of the town. On a good Thursday, it's easy to meet quite a number of people, organize a public meeting as quite a number of other businesses go on at the same time. There is also an open area market for livestock between the town centre and the school. This is where livestock, mainly sheep, goats and cattle are sold.

4.4 Climatic overview

Relationships between climate, vegetation and land-use potential have long been used to assess the suitability of land for different uses. The major elements of climate that affect herbage growth are the intensity and duration of rainfall, the ratio between annual rainfall and potential evaporation, and the year-to-year variation in rainfall.

The semi-humid to arid regions (zones IV, V, VI and VII) have indexes of less than 50% and mean annual rainfall of less than 1100 mm. These zones are referred to as the Kenyan rangelands and account for 88% of Kenya's land area.

The short-term and long-term trends in seasonal rainfall and the resulting fluctuations in grazing resources, carrying capacity and safe stocking rates thus affects the demand for land and number of livestock.

4.5 Land Use Master Planning Framework (LUMP)

Kajiado county has developed an integrated Land Use Master Plan covering the areas of Kitengela, Isinya and Kipeto. This is the first plan of its kind to be developed in Kenya.

The master plan was developed as a result of concern over the disappearing rangelands in Kajiado which significantly affects both livestock and wildlife. Over time the reduction in grazing land has been influenced by both overgrazing and unplanned sub-division of rangelands into uneconomical land use structures that are incompatible with sustainable livelihoods supporting livestock and wildlife.

The master plan is a solution mooted by a forum comprising local communities and local authorities through developing a participatory land use planning framework. The Kitengela – Isinya - Kipeto land use master plan was borne out of the need to share the future responsibly by guiding and promoting sustainable development in the area: It is a vision for the future.

Given below are extracts of the LUMP document which will be useful in understanding the context of the Kipeto wind energy project.

4.5.1 Background to the LUMP

Kajiado county inhabitants: A vast portion of the county of Kajiado is inhabited by the Maasai, whose livelihoods depend on livestock, which in turn rely on the sustainable use of the rangeland. While this land was traditionally Group Ranch land, in the mid 1980s, the process of sub-division was undertaken with little thought about the negative impacts of the sub-division on the well-being of the land, the Maasai or Wildlife. The sub-divisions were hastily finalized without a sound planning framework for further use of common resources. This has greatly decreased the pastoralist's resilience to droughts and other ecological shocks.

The problem of sub-division and land fragmentation: Land in the Kitengela-Isinya-Kipeto area has been significantly privatized and sub-divided into sizes incompatible with traditional land use systems that supported wildlife and livestock grazing. Most of the land in the high potential and better-watered areas is being sold at a high and unsustainable rate. Currently there are no regulations on sub-division and to-date sales and sub-division continue unabated.

The land has been completely fragmented with fencing, development and incompatible land use, which makes it unsustainable for pastoralism and wildlife. If the current rates continue, the future of these lands, the local people, livestock and wildlife they support are bleak. The present generation may be the last to see these open grazing lands. These changes will likely disrupt the Maasai socio-economic and cultural status in a profound manner. As the fragile environment they depend on changes rapidly, pastoral livestock keeping and wildlife movement may cease.

Nairobi National Park Endangered: The Maasai have long co-existed with wildlife. The Kitengela-Isinya-Kipeto plains lie just south of the Nairobi National Park and the wildlife moves freely between the park and the open rangelands. However, as result of the intensive sub-division, development and land sales, the open rangeland has become severely fragmented. Wildlife movement is blocked with fences, incompatible land use and development. As a result the wildlife decline in this area has been severe and the viability of Nairobi National Park, one of Kenya's greatest assets, is endangered.

4.5.2 The LUMP as a development planning solution

After the acknowledgement of the need for a comprehensive plan that would enable sustainable economic growth alongside land conservation and pastoralism, the Department of Physical Planning (DPP), at the request of the County Council of Olkejuado (CCO), embarked on a planning process in 2004. The development of the plan included the full engagement of the community, and the Kitengela-Isinya-Kipeto Zoning plan, also known as the 20-year land use master plan was finalized and formally adopted by the Ministry of Land in February 2011, and by the CCO in July 2011 through a full council Resolution. This 20 year master plan therefore implies all development projects (including the Kipeto wind Farm project) within the planning areas will have to be defined within the framework of the plan. The Kipeto Wind Farm project lies on Zone D (Kipeto Region) of the Integrated Development Master Plan.

The Master Plan is within the framework of the Physical Planning Act Cap. 286, which empowers local authorities to control, guide and prohibit developments, while recognizing individual stakeholders and community participation in spatial plan making process. The LUMP was done with the following objectives:

- Develop a balance between, conservation, development and pastoralism.
- Promote sustainable utilization of natural resources within an environmentally and culturally acceptable framework.
- Provide a framework for guiding and controlling urban development, and runaway sprawl and minimize environmental degradation.
- Provide a basis for participation of all stakeholders in planning.
- Provide a basis for wildlife conservation and promotion of the local economy especially livestock keeping.

The Master Plan includes a zonation plan for the region, which limits sub-division in the various zones and outlines the allowed expansion zones for urban areas, to stop the increasing encroachment of human settlement on agricultural and pasture areas. The LUMP designates areas for livestock and wildlife as well as urban development.

4.5.3 The LUMP and Kipeto Wind Energy project

The proposed Kipeto wind farm will be developed within the LUMP framework for Zone D (Kipeto Region) under which the site falls. While the project description and technical components do not go against the premise of the integrated development planning, it calls for strict management of the environment to ascertain certain standards proposed in the integrated development master plan are respected.

According to the LUMP, general the Permitted Land Use for Region D includes:

- a) Livestock production minimum Land size 24 Ha.
- b) Wildlife Production/Promotion – Minimum Land size 24 Ha.
- c) Limited Farming
- d) Restrict Commercial Activities in Oletapes
- e) Promote Eco-Tourism
- f) 10% of the Land to be planted with Environmentally-Friendly Trees.
- g) Prepare Action Plans
- h) Prepare Environmental Action Plans (EAP) for Environmental Sensitive Areas.
- i) Permit Eco-Friendly Development in selected Areas.
- j) Primary access roads size 9m;
- k) Wildlife promotion and Eco-Tourism
- l) Annual Environmental Audits.

These are to be considered in assessing impact that needs to be assessed in the three phases of construction, operations and decommissioning.

Building permits for construction of the 67 turbines will have to be approved by the council guided by among other documents the Land Use Master Plan.

The project is currently located in an area designated as agricultural land under the Master Plan. For the project building permits to be considered; the land has to be converted into commercial land.

4.6 Social profile of the Kipeto area

The social baseline profile demarcates the household characters, social demographics, the education levels, employment levels and labour force, housing, transport, services, health and crime to provide an overview of the socioeconomic context of the study area.

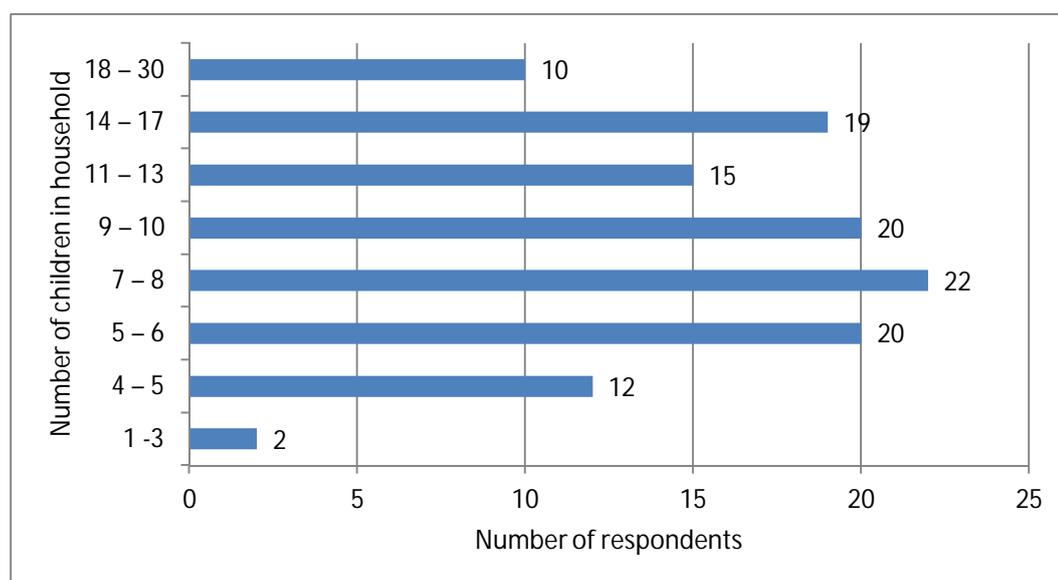
The social survey teams administered questionnaires which were used to collect baseline socio-economic data in the project area. Additionally, results from the 2009 national census (the most recent source of official secondary data available) was used to supplement data collected using the questionnaires where possible.

4.6.1 Demographic profile

The Esilanke area accounts for larger percentage of the total population in the Olooyiankalani area despite being a rural area (80%). The Enjororoi area has about 7000 people distributed within the larger northern part of the project site. The migratory aspect of the younger generation and long distance cattle grazing brings the perception that very few households have more people. The graph below shows the number of children that an average family has within the Kipeto area.

The 2010 projected population in the Kipeto Division is about 28,300 people, with approximately 1,000 people residing in Esilanke area which is the ward in which the project is located. The Kipeto area is predominantly comprised of the Maasai people (98%).

Figure 8: Average number of children in a household



4.6.2 Maasai household

Maasai socio-spatial organisation is composed of five basic units: household, boma, neighbourhood/locality, section and Maasai society. The household is the primary unit of production. The nuclear family of husband, wives and unmarried children was often extended to include married sons and their wives, the husband's mother (and his siblings if their father is dead) and impoverished dependants.

The word for dependent implies someone who has no animals or so few that they cannot support themselves. Although a man may support his mother and her children, they are not, strictly speaking, dependants, as the man's animals were once his mothers. True dependants are often members of households that have lost all their animals, commonly through alcoholism.

4.6.3 Background of a Maasai household

Until recently, Maasai households lived together in large compounds or *bomas* of 6 to 12 households. Over the last 20 years however, the average size of the *boma* has declined markedly and the single family boma has become increasingly common as the Maasai became sedentary and move towards individualisation in terms of production.

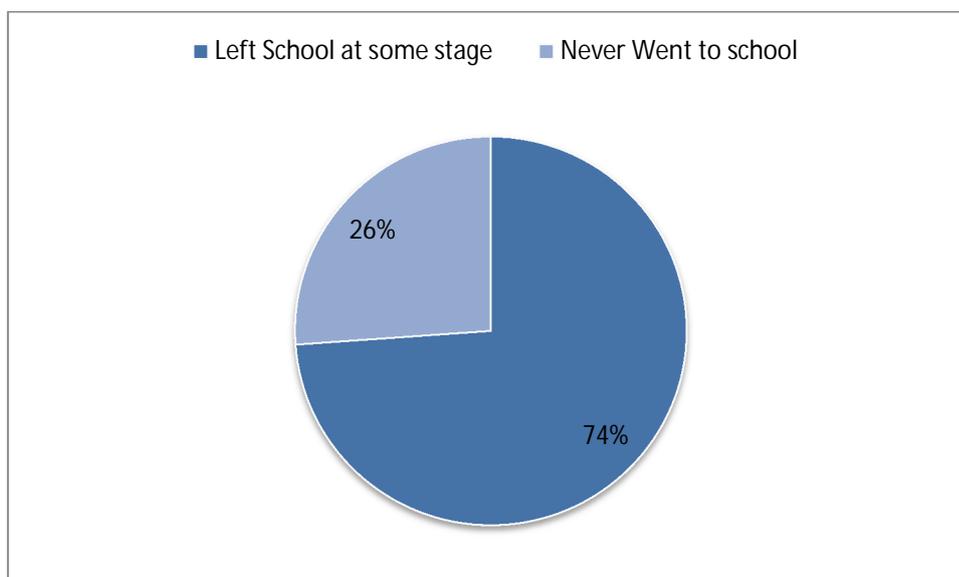
Bomas were grouped into larger units or neighbourhoods, which controlled such local resources as grazing and watering facilities. About 67% of the Maasai households are polygamous families while only 28% are monogamous. A neighbourhood is described as a cluster of bomas usually within a kilometre of each other. Each neighbourhood is usually centred around a permanent water point and although membership varies over time, it has a core number of people who reside there permanently. Neighbourhoods are in turn grouped in "localities" which controlled enough wet and dry season grazing and water resources to support their population in normal times. The predominant religion in the area is protestant with Dominion churches having a widespread branch network around the larger Kipeto area.

4.6.4 Education

The household survey results show a large percentage of older generation have either no schooling or did not finish primary school. Over 90% of the younger population is either in school or has 'some primary' or 'some secondary' education. Girls' enrolment is relatively high at primary school compared to boys. There is generally poor level of education and can be attributed to limited access to secondary schooling (linked to a high dropout rate at the secondary level) and an exodus of skilled people, coupled with an influx of unskilled persons. The number and quality of primary and secondary school is a limiting factor.

26% of the adults living in the Kipeto area 'never went to school', while another 74% 'left school' at some stage, during their early education as shown in the graph below.

Figure 9: School attendance



4.6.5 Health

The Kipeto area currently lacks local health facilities, with the distance to the nearest health facility significantly high. The health facility at Olooyiankalani is also very limited both in staff and medical facilities and drugs. There is a school in Donyo Sidai area, which has a section left for basic health services. With the decrease in support and belief in traditional Maasai herbs among the young generation, health services are a key concern for the majority. HIV/AIDS awareness is also limited.

4.6.6 Crime

According to the various locals youths and elders, crime in the Kipeto area has been estimated to be very low, as the community is small and people know each other. The lack of open alcohol selling centres is also attributed to low crime rate, though there is recognition that there are significant generation gaps and lifestyles between the older and younger age groups.

4.7 Economic profile of the Kipeto area

The economic baseline profile demarcates the employment levels and labour force, housing, transport, services, and crime to provide an overview of the economic context of the study area. The household remains a major economic production unit. Increasingly women also join economic activities especially for predominantly polygamous Maasai households. Male sons are considered economic assets as they inherit both land and livestock which are the main production units. Male children also provide labour services to the household production units.

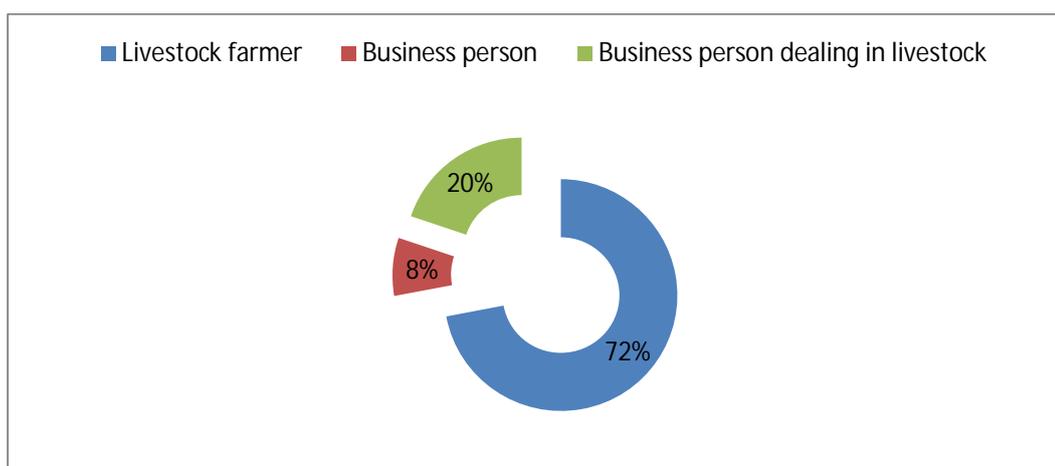
4.7.1 Maasai household as a production unit

Like many Pastoral societies, the Maasai community in the project area are composed of autonomous family production units or households, the size of which is determined by the labour needed to manage the herds and flocks that support the household. These households compete for pasture and water; the more livestock a household has the larger the part of the common resources it exploits.

However, in other ways the pastoral households cooperate. In the past they organised to fend off aggression or to wage war to acquire more resources. In times of stress they cooperate to assist less-fortunate households by giving them food and by giving and loaning them animals. Individual households are thus the basic units of pastoral production, and their production activities, decisions and interactions with society and the environment were the focus of the study reported here. A household is here defined as an independent male producer and his dependants.

Each pastoral producer manipulates the resources under his control to provide subsistence for his household and ensure its viability during periods of drought. If he succeeds he increases his social status and may accumulate wealth and gain prestige. The household's livestock are thus the basis of its material and social well-being. The Maasai community living in the project area are involved in various types of activities; predominantly they practice livestock farming and associated businesses. A limited number of Maasai household are involved in running their own retail or other type of business. The graph below shows the main economic activities that a household is involved in.

Figure 10: Main economic activities of households within Kipeto



4.7.2 Kipeto Maasai livestock

Livestock holdings in this survey refer to the number of animals under the management of a household. These include all livestock not yet owned, or those borrowed or allocated but not transferred to sons living independently in *bomas* other than those in which their fathers resided.

Livestock are an important medium of social exchange. A pastoralist with many animals can be generous to his friends and relations, giving them animals during ceremonies, when they are ill, or purely as a sign of friendship. He can help poorer households by giving or lending them animals. A man with many animals can afford to marry more wives and have more children. He can also take in impoverished friends or relatives as dependants, adding to his prestige and his labour force. Maasai say a successful man is like a tree on a hot sunny day; he shelters many people under his shade.

Pastoral households interact with each other through livestock and resource management activities. The inter-household interactions begin with encampments (*bomas*), and grow into larger units of neighbourhoods, clans, sections and tribes. Modern government structures have supplanted much of the traditional social and warrior organisations of the Maasai.

A primary livestock production goal for the Maasai is to produce milk for consumption by the household. Little milk is sold. Animals are sold for cash primarily to buy subsistence goods, services and production inputs. Cash may also be lent or given to relatives and friends as part of social transactions.

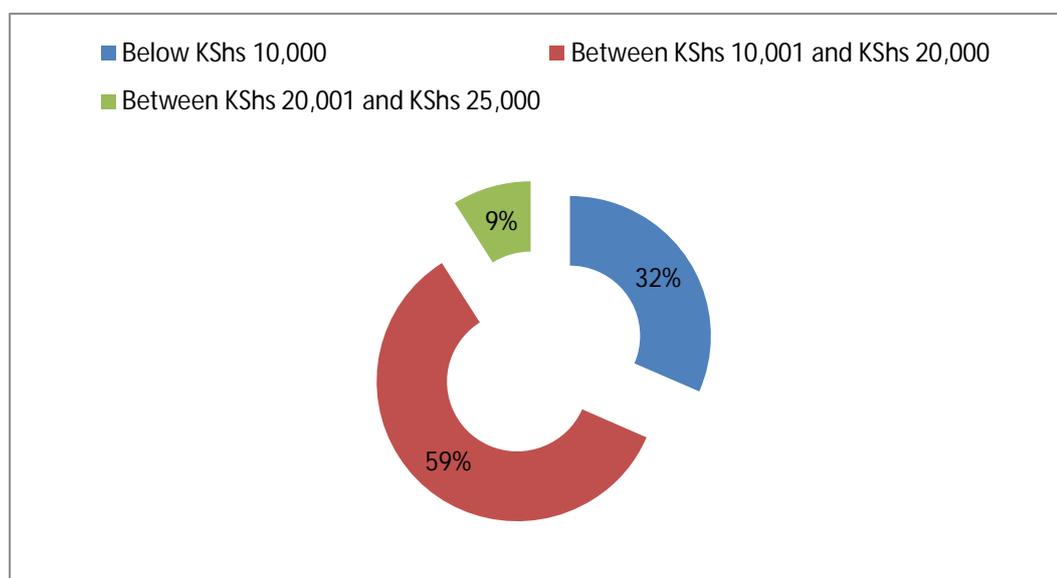
The productivity of a Maasai pastoral livestock production system depends largely on animal management, availability of water and the distribution, productivity and quality of forage. Forage and water resources are largely determined by the geomorphology and soil types of the grazing area, altitude and rainfall. Of these, rainfall has the greatest effect on forage production. The amount and distribution of rainfall received in Kajiado rangelands varies widely between seasons and years and results in large fluctuations in forage productivity, and hence in livestock productivity.

4.7.3 Employment levels and labor force

A large number male adults living in the Kipeto area engage predominantly in grazing cattle while a number of children miss school for the same activity. The economy is less diversified and very little subsistence agriculture is seen in many household compounds mainly due to lack of skills or water. There is a particularly high level of people who are 'Not Economically Active', or work in the urban centres around the area. Women are increasingly involved in handmade Maasai artifacts for sale mixed with keeping their sheep as wives and doing household activities.

The individual monthly income is mainly generated from livestock farming and most Maasai would not give you a clear statistic of the number of livestock they have. However the wealthy Maasia are locally known; wealth is measured by the number of land owned by a household and livestock inventory. Initial household studies show that about 59% of the household earn incomes ranging between KShs 10,000 and 20,000 mainly from the sale of livestock. Some of the larger wealthier households generate much higher incomes. The graph below gives an indication of the average monthly income generated by the Maasai community living in the project area.

Figure 11: Average monthly income of households in the project area



4.7.4 Housing

The most common type of materials that several households are constructed out of currently are galvanized iron sheets (referred to as *mabati*). The traditional Maasai *manyatta* house is still found in houses where there is still an older generation of parents. All houses are owned, self constructed and fully paid off. There has been an increase of recently built *mabati* houses as Kipeto Energy Limited continues to make payments for land leases. However there are also a large number of new houses as a result of sons building their '*bomas*' on land parcels inherited from their parents. The number of stone houses is also on the rise but mainly for the more established locals, working in the surrounding urban areas, or White residents who have bought pieces of land in strategic locations and constructed tourist-attractive homes.

4.7.5 Services

Most of the population residing in the Kipeto area have limited access to water in the form of piped water inside their dwellings. The construction of water tanks and rain-water harvesting is on the rise. The majority have access to the Esilanke Dam which is a significant distance away from most Maasai households and others still have to use local streams to access water. There is increasing privatization of water use from private dams as is grazing land. Community water dams are also being built. Initial results show sanitation levels are still low with 'Bush' still being the main toilet facility.

Firewood is used for basic needs such as cooking and heating. A large population approximately 99%, residing in Kipeto area use paraffin for lighting and firewood for cooking. There is a significant expectation that the local community will have access to electricity in their homes once the wind energy project is complete.

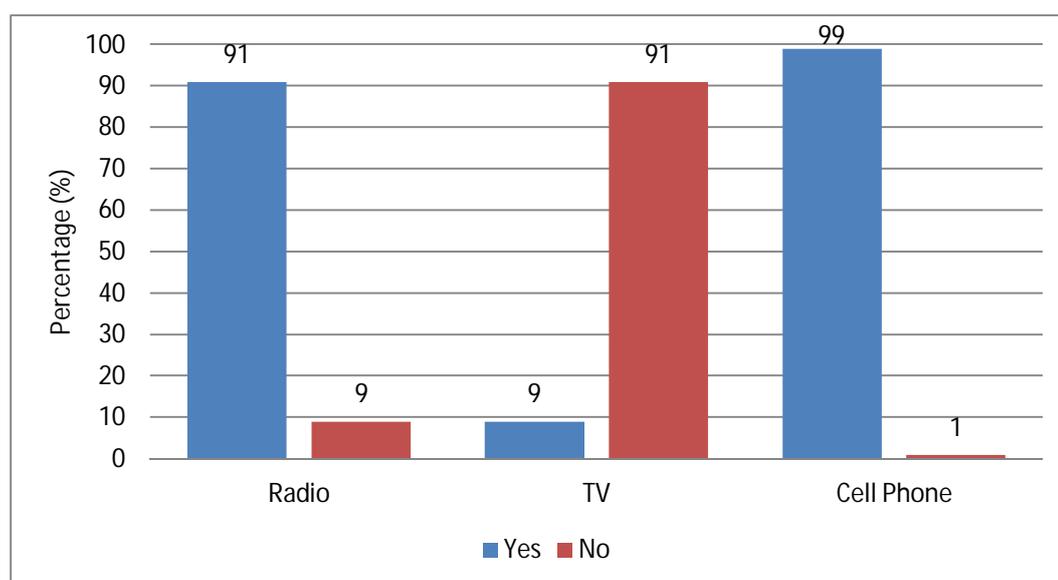
4.7.6 Transport

According to observations and interviews, the predominant mode of travel which individuals use to travel to work and school is foot (60%). This is followed by travel by private vehicle of a local (30%), and by car as a driver (6.2%). The time taken for local travel on foot is a large burden especially on women and men and also on school going children. The distances covered are very high per day. Being a passenger in a private vehicle is used for travel to local towns. However, there is still the requirement to upgrade much of the local road infrastructure and the Project will significantly change this. Transport is therefore a constraint to employment in terms of access.

4.7.7 Communication

Cell phones are the main mode of communication and the most widely held asset in each household. Almost everybody owns a cell phone. 100% of the households said they have a mobile phone, while almost 99% said they own a radio and only 10% said they own a television as shown below.

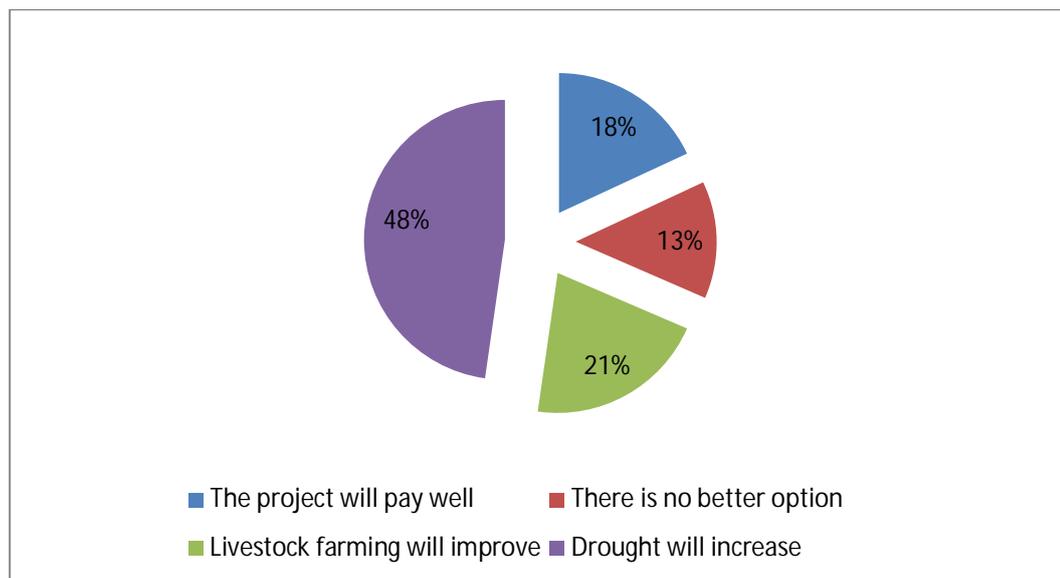
Figure 12: Percentage of communication gadgets owned by individuals in the project area



4.8 Attitudes towards the wind energy facility

There is considerable variability in how individuals and communities respond to wind-farm projects such as the proposed one. Understanding these responses is integral to the process of building an effective management plan. Project discussions between and with neighbors' together with how a proponent presents wind farm projects, can play an important role in how communities perceive proposed changes like wind farms. Resistance can be due to individual barriers to change, negative perceptions of wind farms, place attachment and/or inadequate processes of community engagement in local decision making. The attitudes of people living within the project area towards the proposed wind energy facility are shown below.

Figure 13: Percentage showing attitudes towards the wind energy project

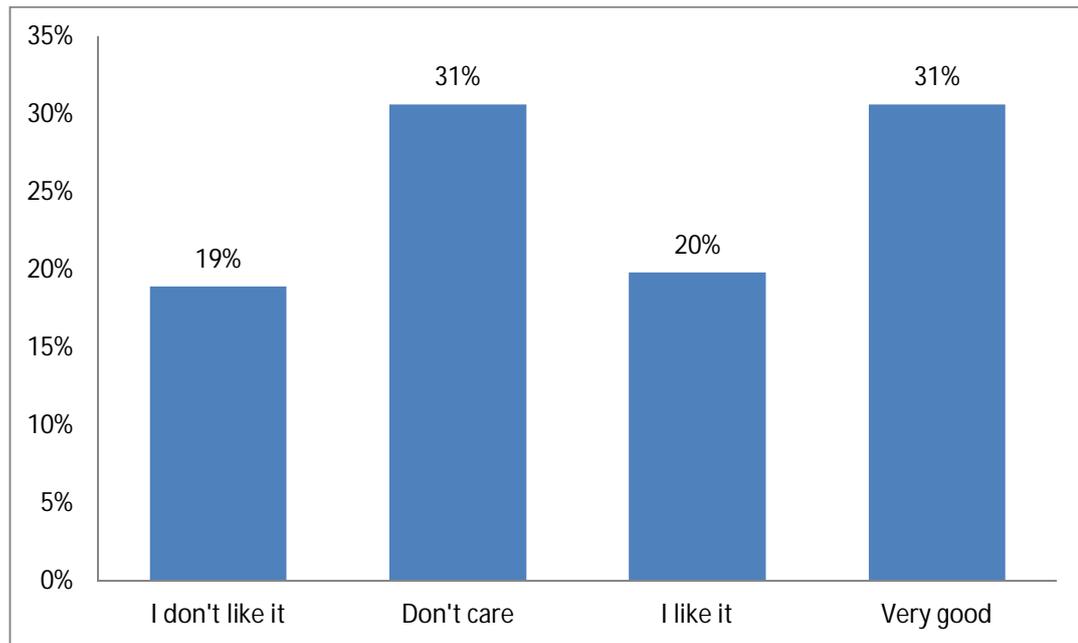


Respondents' opinions in relation to the project showed that the support for the wind projects was driven mainly by dwindling alternative sources of income and the prospects that it will bring in new income but not take away the land resource.

48% of the respondents said they support the proposed project as past droughts have made diversification of income sources necessary. Few people practice agricultural farming in the area and the wind energy facility would provide a suitable alternative income stream.

The views of the Maasai community living within the project area were also gauged on any issues or concerns they have with respect to the proposed project. Most community members raised issues with regard to safety and, working and living with wind farms. The graph below shows the views of the respondents sampled with regard to the proposed wind energy facility.

Figure 14: Respondents views about the wind energy project



Respondents who are positive towards the project ("I Like the project" and the project is "Very Good") are more than those who are negative about the project ("don't like the project"). Those that do not like the project have begun changing their minds as they begin to understand and discover that the alternative company does not have prospecting rights for the Kipeto area. The majority of those who are negative about the proposed Kipeto wind energy facility are those that are associated with the alternative company. The majority of residents "who don't care" are those sitting on the fence and waiting for what they think is the clear result.

5 Public/stakeholder consultation process

5.1 Introduction

As part of the ESIA study, a public/stakeholder consultation program was undertaken in order to:

- Ensure early public notification of the wind energy project;
- Communicate the process for consultation and completion of the environmental and social assessment;
- Provide information available to the public; and
- Receive information on public and stakeholder comments and concerns about the proposed wind energy project

The public consultation was focused on engaging community residents, professionals from the area, local/public authorities, community leaders, government departments as well as other individuals or groups that express a specific interest in the project. The Proponent is committed to effective and open consultation to ensure that potentially affected members of the public are fully aware of the project and have the opportunity to make their views known. The receipt of information on public and stakeholder comments and concerns will help ensure that all important issues are considered in the environmental assessment.

The public consultation program included:

- Preliminary consultations
- Meetings with stakeholders

It is important to note that stakeholder consultation is an ongoing process and further consultations will be conducted as the project progresses. Minutes of the meetings held and a public consultation and digital photographs taken during the meeting are appended at the end of this report.

5.2 Preliminary consultations

The Firm of Experts had a kick off meeting with the Proponent in April 2011 to discuss the general environment issues arising from a wind energy project. The first meeting targeted the formal stakeholders within government agencies, ministries relevant to energy and environment, communication, lands and roads among others. Follow-up meetings were held with individual agencies to discuss in detail their specific contribution and provide more specific issues to be considered in the EIA. Community meetings started in July 2011 with various introductions as to what the project involved and provision of basic information as provided in an information package developed. In August a meeting was held with the project designers to discuss the preliminary turbine layout design. Various specialists were mobilized in the field for collecting data on households and other environmental aspects; this contributed to the iterative process of defining a turbine layout.

The sociologist also assisted in identification of other stakeholders, organizing public barazas and provision of secondary data of the area, such as culture of the community, conditions of water supply and human waste disposal.

The Kenya National Bureau of Statistics was consulted in order to get guidance on how to obtain secondary data such as maps, surveys, research reports and available documentation on demographic trends and the history of the people and the area.

5.3 Socio-economic data collection

Various methods were used to collect baseline socio-economic data for subsequent analysis. Data collection methods included public meetings (barazas), Focus Group Discussions (FGDs) and Key Informant Interviews. Public barazas, focus group discussions and key informant interviews were held at various locations within the project area. The meetings were held within market areas in Esilanke and the schools in Donyo Sidai and Onjororoi areas. These locations were representative of the stakeholders that stay within the vicinity of the proposed site for the wind project and in consideration of the areas where most project impacts will be felt. Barazas were for the general population mixture of all gender and age groups. Then focus groups were held for youth, women and men separately in each of the areas.

The Firm of Experts and local/provincial authority were in attendance to provide information to the public and to receive and address comments. Using handouts and verbal discussions, each baraza, FGD and Key Informant interview was presented with information on:

- Description of the project (project design and location);
- The requirements of EMCA for new projects in Kenya;
- The environmental assessment process;
- Baseline environmental studies being undertaken as part of the ESIA;
- Potential environmental and social impacts associated with the proposed project; and
- Safety and Risk Management.

The barazas were on average attended by 10-30 individuals at each location. After describing the project, the firm conducted a household survey with each attendee representing a particular household. In the household survey sheet the respondents were able to comment on the project, highlight the potential positive and negative impacts of the project and if they were for or against the project. Information obtained from the household surveys was used for the baseline profiling of the area.

5.3.1 Process of stakeholder identification

During the initial site visit in May 2011 the Experts sought to locate the local/provincial authorities to aid in the public consultation process. With the help of local guides, the District Commissioner, District Officer and the local councilor were contacted and informed of the upcoming project.

A meeting was held at the Esilanke area on July 12th, 2011 and one in Donyo Sidai on July 28th, 2011. Among those who attended were: the area District Officer (DO), area councilor, chief and sub chiefs of the areas and youth groups. The agenda of the meeting was to solicit the identification of stakeholders, ironing out issues of two wind projects proposed in the area; how to go about setting barazas and the way forward.

For stakeholder identification, opinion leaders were identified with the help of area chiefs. Local guides, leaders, teachers, and land owners were among the major stakeholders in the community. Publicity of the meetings was done by the chiefs and sub chiefs and subsequently invitations were made through invitation letters to the respective stakeholders.

The meetings were attended by 10-40 people on average. Facilitation was done through the District Officer's office while the chiefs, sub chiefs and area headmen assisted in community mobilization.

5.3.2 Disclosure of project information

As discussed earlier, dissemination of project information was done through verbal discussions, information documents, surveys, house to house visits and large posters. The documentation was prepared prior to the meetings with pertinent project information that the Experts was prepared to disseminate. For the formal lead agencies meeting held at the Fairview Hotel in July 2011, a technical brief about the wind energy facility including potential environmental effects was prepared and distributed to all participants. For the initial site wide public/stakeholder consultation meetings, the same technical brief was summarized and distributed to stakeholders.

Posters were also used to disseminate information about the proposed wind energy project and this was found to be an extremely useful medium especially for those wemi-illiterate and illiterate audiences. Simple English highlighting the most important aspects followed by interpretation from trained local guides (interpreting in Kimaasai) was used in the public barazas.

In addition, the following support materials were prepared for stakeholder dialogue:

- Public comment and registration forms;
- Household survey questionnaires;
- Large pictures of the construction process and turbines to be used;
- Stakeholder invitation letters;
- Minutes of previous meetings.

To kick off the public barazas, a letter was sent to the DC requesting for authorization to hold the meetings and help publicize the meetings. More invitation letters were sent to the stakeholders to attend the public barazas FGDs and Key Informant interviews.

The public barazas were conducted in Kiswahili language and Kimaasai traditional language. The verbal discussions during project presentation were done in Kiswahili translated to Kimaasai language. Questions and comments were received and noted down.

5.3.3 Issues raised during public/stakeholder consultation

A variety of issues and concerns were raised during the public consultation program described above. In most cases the issues were resolved through provision of project information (e.g. at the public barazas FGD and Key Informant interviews). The proponent is committed to addressing other issues and concerns through this environmental and social assessment which will become a public document once released to the NEMA.

A description of the issues raised during the public barazas, FGD and Key Informant interviews is provided in an attachment of comments and minutes of stakeholder meetings at the end of the report.

5.4 Socio-economic impact assessment

The Socio-Economic Impact Assessment (SEIA) of the proposed wind energy facility is the study of the way in which direct benefits and costs will affect the local, regional, or national economy and to determine and assess potential impacts of the project on local communities and society as a whole, as well as to develop appropriate mitigation measures.

Economic impacts are the effects on the level of economic activities in a given area because of some form of external economic intervention.

Social impacts refers to the consequences to human populations of any public or private actions that alter the ways in which people live, work, relate to one another, meet their needs and generally live and cope as members of society.

The socio economic impacts in this regard are defined as effects on the levels of economic activity in a given area and people's well being, such as generation of additional jobs, business sales and improved quality of life and/or disposable income resulting from capital investment.

5.5 Social impacts

The proposed wind energy facility will result in various social impacts associated with health, improvement in educational services and social cohesiveness. The social impacts are associated with the construction and operational phase activities.

5.5.1 Health impacts

The community stakeholders associated the wind farm with various health impacts associated with several of its characteristics including its size, noise electromagnetic radiation among others. Each turbine will be located at least 750m from a household as a requirement of the design layout. The health impacts associated internationally with wind farms do not significantly affect health as the community currently perceives.

The environmental noise levels from the Kipeto wind energy project are expected to be about 45dB(A). This is below what can affect human health and is congruent with the WHO noise guidelines.

5.5.2 Social cohesion associated with the "other" wind energy company

The wind prospecting activities of the "other" wind energy company is causing adverse social cohesion impacts. The "other" wind energy company appears to have paid a few land owners money without signing any lease agreement.

The challenges of the land leasing process between the opposing companies led to misinformation related to the project. The positive impact was increased community debate, consultation and information on wind projects in general and the Kipeto Wind project in particular.

5.5.3 Education impacts

It is anticipated that there will be increased interest in educational subjects related to wind energy in the area when the proposed wind energy facility is complete. An increased interest and awareness of the local pupils in primary and secondary school education on courses related to wind energy including sciences, renewable energy, environment and social work will improve specifically in Kipeto, the larger Kajiado area and the country in general.

5.5.4 Changes in social lifestyles and family unit

An increase in demand for modern entertainment and night activities is expected in the Esilanke area resulting from the development of the proposed wind energy facility. Potentially, there will be an increased need for restaurants and recreation facilities including bars in the market area as the disposable income increases. Demand for on-site catering and accommodation may be satisfied by building several self contained (one room) accommodation that include bars and restaurants. These are likely to find demand post construction as the land owners begin spending their income locally also. The youth engagement in alcohol, drugs and commercial sex may also rise.

5.5.5 Increase in crime

Diversion of activities in the Esilanke urban centre, increase in demand for entertainment and night clubs, influx of prospecting migratory workers seeking temporary accommodation fuelled also by an increase in efficiency of transport services to and from the surrounding towns including Isinya, Kiserian, Ngong and Kajiado will probably remove the criminal virginity of the area.

Currently, the youth in the project area live in towns surrounding the project area such as Isinya, Kiserian, Ngong and Ongata Rongai. These youths do not generally visit the rural areas due to the attractions present in the above towns. Subsequently there is a potential likelihood that if more amenities are built as a result of the proposed wind energy facility, more youths from the local area may return home during their school holidays and stay around to enjoy the increased day and night entertainment activities.

5.6 Economic impacts

The economic impact of the proposed Kipeto Energy Wind Farm reflects impacts as a result of expenditures related to the construction and operation activities of the proposed wind farm. These activities are assumed to cause increased economic activity within the project area, the Kajiado County and the country's economy. The value of these impacts have been estimated using information provided by Project Manager detailing expected costs of construction and operation and the expected labour demand in each phase split by the location of these expenditures.

The project is expected to create employment among the youth, increase demand for construction materials available locally, cause demand for local retailing and catering services in the local market; other economic impacts include an increase in agriculture, land values and local tourism.

The local economy defined as including the townships of Isinya, Kajiado and Kiserian, are likely to be additional sources of labour and or accommodation for the labour force. Expenditure on construction labour from that area is treated as expenditure. The economic impacts include the value of:

- a) The local economy share of construction costs,
- b) Local share of wind farm operational costs,
- c) Land lease payments and demand for goods and services from this income
- d) The value of business startups and expansion as a result of the wind farm construction and operations.
- e) The value of skilled and unskilled labour directly and indirectly due to the project

5.6.1 Creation of employment

The project is expected to create employment for the locals. The construction phase is expected to provide employment for locals' especially unskilled labour by the youth. There are opportunities for unskilled labour provision in construction of access road and turbine foundation construction works.

5.6.2 Demand for construction materials

The project is expected to create demand for large quantities of locally available supply of construction materials including sand and ballast. It is hoped that contractors will negotiate individually with local land owners who are ready to sell their materials as available in the land they own.

5.6.3 Transport services

The access roads to individual turbines and the upgrading of the main road are expected to significantly open up access to the area. This will improve transport service and offer opportunities for matatus to replace the current four wheel vehicles providing transport services to the surrounding towns as members go on their daily activities.

5.6.4 Improved local economy

The local market is limited both in demand and supply of goods and services. As increased employed labour and income from land leases raise local Esilanke market demand for goods and services the local retailing, services and businesses are expected to increase.

5.6.5 Agricultural impacts

The loss in grazing land as a result of land sub-divisions into units incompatible with large livestock production and loss of interest among the youthful Maasai's in the economic activities of their fathers is a major concern for agricultural activities in Kipeto assessed on the basis of changes in gross income generated from the livestock production per size of land (the predominant economic activity). The exponential reduction over years in space and labour available for pure pastoralist economic activity with large numbers of livestock has reduced both sub-divisions, grass output per acre, climatic changes and lack of labour to cater for livestock.

5.6.6 Impact on land values

In preparing this study, information was already widespread with anecdotal evidence about increase in prices of land per acre in the Kipeto area. The wind farm may contribute to increased prices of land in the project area mainly indirectly through the transport infrastructure, the increased value generated by the external road network and, the expected conversion from agricultural land to commercial land. Land increase pressures already seen in Isinya, Kisaju and Kajiado area may extend into Kipeto area as the demand for land for people from Nairobi expands southwards, while the future of ranch based livestock production reduces.

5.6.7 Tourism potential

There are tourism related potential impacts of the escarpment and the increasing number of escarpment view cottages; better transport may improve frequency of visitors and potential for expansion of domestic tourism.

5.7 Operational phase impacts

The proposed wind energy facility will provide ongoing local economic activity in terms of operation and maintenance. While exact figures are currently unavailable, the turbines are expected to be maintained by a trained team at least twice a year; consequently such specialist teams may spend time in the Kipeto area during the maintenance period thus promoting the local economy.

5.7.1 Impact of Kipeto Trust

In the long term the activities of the community led trust would significantly develop and change the infrastructural character of the Kipeto project area. With an annual budget of 5% of the income from the proceeds from the wind farm, the Kipeto Trust would change the quality and diversity of social and economic services available in the Kipeto project area.

Estimates of up to KShs 10 million annually progressively growing as output grows will significantly help improve educational, health and other community services as defined by the local community in the form of the Trust.

5.7.2 Impact to landowners in the project area

In terms of economic impact, it is expected that the majority of income received by Kipeto wind farm associated landowners will be spent within the local economy. The closest towns within the project area are Kajiado to the south, Isinya to the east and Kiserian, Ngong and Ongata Rongai to the north east.

Wind farms can co-exist with other rural activities including livestock farming and generate benefits for farmers and landowners, including a new income stream and improved site access to market. The majority of land use in the Kipeto Wind Farm is predominantly in livestock farming (sheep, goats and cattle). There is unlikely to be a visible decrease in stocking rates due to the Wind Farm activity, whereas there are some issues around grazing land for small plot holders, this may not be significant as the post turbine construction grazing land impact is insignificant.

6 Social impact assessment

6.1 Introduction

The projected impacts are considered within the context of experience with projects like wind farm, as well as our understanding of likely socio-economic impacts arising from a major infrastructure project in a rural community.

Subsequently the proposed wind energy facility should:

- a) Use collaborative and participatory planning approaches, and prioritise community influence and control in local decision-making processes, including input into decisions about wind farm placement.
- b) Take into cognizance local development planning needs and guidelines
- c) Undertake social and environmental impact assessments that incorporate local (place-based) and psychological assessments (e.g., of group environments or community attitudes).
- d) Facilitate local ownership of the process and outcomes of wind farm projects

6.2 Impact assessment

Socio-Economic Impact Assessment (SEIA) is the study of the way in which direct benefits and costs of a proposed project affect the local, regional, or national economy and to determine and assess potential impacts of the project on local communities and society as a whole, as well as to develop appropriate mitigation measures.

Economic impacts are the effects on the level of economic activities in a given area because of some form of an external economic intervention.

Potential Economic Impacts	Potential Social Impacts
Creation of employment	Social cohesion impacts associated with other company
Demand for construction materials	Educational impacts
Improved Transport services	Changes in social lifestyles and family unit
Improved local economy	
Decrease in livestock farming	
Land values	
Improved tourism potential	

Social impacts refer to the consequences to human populations of any public or private actions that alter the ways in which people live, work, relate to one another, meet their needs and generally live and cope as members of society.

The socio economic impacts in this regard are defined as effects on the levels of economic activity in the Kipeto Wind Farm area and people's well being, such as generation of additional jobs, business sales and improved quality of life and/or disposable income resulting from capital investment.

6.3 Criteria for assessment

Criteria for assessment, a significance rating, and mitigation ratings were used to determine the significance of potential impacts are shown below.

Figure 15: Criteria for assessing significance of Impacts

CONSEQUENCE		LIKELIHOOD	
Magnitude of impact	Rating	Frequency/duration of activity	Rating
Negligible	1	Annually or less	1
Minor	2	6 monthly/temporary	2
Marginal	3	Monthly/infrequent	3
Significant	4	Weekly/life of the operation	4
Catastrophic	5	Daily/permanent	5

CONSEQUENCE		LIKELIHOOD	
Geographic Extent of impact	Rating	Frequency of impact	Rating
Activity specific	1	Almost impossible	1
Project specific	2	Highly unlikely	2
Local area	3	Unlikely	3
Regional	4	Possible	4
National	5	Definite	5

CONSEQUENCE	
Duration of impact	Rating
<1 month	1
1 - 12 months	2
13 - 36 months	3
37 - 72 months	4
>72 months	5

Definitions	
Activity:	Distinct process or task undertaken by an organization for which a responsibility can be assigned
Frequency of activity:	Refers to how often the proposed activity will take place
Frequency of impact:	Refers to the frequency with which a stressor (aspect) will impact on the receptor
Magnitude of impact:	Refers to the degree of change to the receptor status in terms of reversibility of the impact
Geographic extent of impact:	Refers to the geographical scale of the impact
Impact duration:	Refers to the length of time over which the stressor will cause a change in the resource or receptor

Figure 16: Significance Ranking Matrix

SIGNIFICANCE

		CONSEQUENCE (Magnitude+Geographic Extent+Duration of impact)														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LIKELIHOOD (Frequency of activity + Frequency of impact)	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	
	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	
	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	
	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	
	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	
	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	

POSITIVE/NEGATIVE MITIGATION RATINGS

Significance Rating	Value		Negative impact management recommendation	Positive impact management recommendation
Very High	126-150		Propose mitigation measures	Maintain current management
High	101-125		Propose mitigation measures	Maintain current management
Medium - High	76-100		Propose mitigation measures	Maintain current management
Low - Medium	51-75		Maintain current management	Propose mitigation measures
Low	26-50		Maintain current management	Propose mitigation measures
Very Low	1-25		Maintain current management	Propose mitigation measures

6.3.1 Creation of employment

Creation of employment opportunities was perceived to be the most important benefit of the project by the communities in Kipeto. This is mainly expected to benefit the unemployed youth living within and around the project area.

The youth unemployment levels are generally high in the Kipeto area and expectations on job opportunities are significant. As the wind turbine technology is expected to be the latest from a company such as GE, there will be minimal jobs during the operational phase. In the construction phase, it is expected there may be between 50 to 100 jobs mainly semi skilled and casual labour that will be created.

Creation of employment will generally improve the living conditions of the locals. It is expected that due to the increase in income distribution, the locals will be able to afford better housing, healthcare and entertainment.

Formal and informal income from the resulting business growth is expected to increase the value of income compensated in the area directly. The following are the specific impacts:

a) Provision of local labor during construction

It is expected that the project will create employment opportunities for unskilled, semi-skilled and skilled labor during the construction phase of the project. Skilled labor will include professions such as welding and machine operation, while semi-skilled labor will include drivers, mechanics and watchmen, among others. Unskilled labor will be required mostly during site clearance, (trenching), excavation, painting and fencing.

It is likely that the skilled and semi-skilled workers will be hired for longer periods and will move along the line together with the construction activities. However, unskilled labor will be hired on a short-term basis during the construction phase specifically.

b) Direct Local Labor during the Operations Phase

Local labor required during the operations phase will be very minimal. Most of the jobs will be related to wind turbine maintenance, while the technology used is self maintenance. Local participation will be very minimal.

c) Procurement of Goods and Services

Availability of markets for local products and improved business opportunities were some of the perceived benefits by the affected communities. Both goods and services such as food supplies, catering services and construction materials will be required during construction as well as operations. As rightly perceived by the local communities, this will lead to secondary employment and creation of small supporting businesses. Procurement of other construction materials sand, ballast and stones will also improve

Construction phase

Benefits without enhancement: Creation of employment				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	4	2	2	3
Result: LOW(+40)				
<i>Comments:</i>				
Employment is the main expectation among the youth and also a cause for a lot of social conflict with the competing wind farm project. The Proponent should give the first priority for any jobs to qualified persons living within the project area especially the youth. Provision of				

first priority to the youth for jobs has been a subject of discussion at most stakeholder consultation meetings.

Communication and information programs should be used to manage expectations and target local service providers. Local authorities should be consulted when recruiting local workers and service providers.

Benefits with enhancements: Creation of employment				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	3	3	2	5
Results: MEDIUM HIGH (+63)				

Operations Phase

Benefits without enhancement: Creation of employment				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	2	4	4	4

Result: LOW (+72)

Comments:
The proposed wind energy project requires low O&M systems and may not benefit locals significantly during operations. There are various expectations including providing security services to turbines that can enhance benefit.

Benefits with enhancements: Creation of employment				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	2	4	4	5
Results: LOW MEDIUM (+81)				

6.3.2 Demand for construction materials

Currently, the demand for construction materials is negligible as there are minimal permanent structures visible in the project area. The construction phase of the proposed wind energy facility will require a large amount of construction materials including sand, cement, water, ballast, reinforcement, electrical cabling, etc. some of which is readily available in the broader project area. There is an expectation that the main contractor will purchase some of the locally available construction materials (sand, stone, ballast) through land owners that can supply such construction materials.

During the operational phase, there will be minimal requirements for construction materials and therefore this impact is not considered for that phase.

Construction phase

Benefits without enhancement: Demand for construction materials				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	2	2	3	3
Result: LOW(+36)				
<i>Comments:</i>				
In order to promote local businesses in the project area, the main contractor should consider purchasing construction materials from those land owners that can supply such materials cost effectively. Any construction materials that cannot be sourced within the local area, should then be sourced from other locations.				
Benefits with enhancements: Demand for construction materials				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	4	2	3	4
Results: MEDIUM HIGH (+63)				

6.3.3 Improved transport infrastructure

Currently the roads running through the project area are generally classified as “E” roads by the Kenya Rural Roads Authority. These roads are passable during the dry seasons but can be challenging during the wet season as the soils comprise black cotton. Access tracks from one plot to another are not delineated and subsequently vehicles create their own tracks when moving from one plot to another.

During the construction phase, heavy wind turbine components will be transported from Mombasa along the A109 (Mombasa – Nairobi highway) to the A104 (Athi River – Namanga highway) then to E407 (Kajiado – Kiserian Road). While limited upgrading of the A109 and A104 is expected, the E407 is expected to be a major beneficiary of the access road upgrade component of the project. In addition to this, access tracks are expected to be created leading to each cluster of turbines from roads such as the E407. These new access tracks will be developed by Kipeto Energy Limited as part of the construction and operational phase of the project respectively.

During the operational phase, there will be minimal road construction activities, however the proponent will maintain the developed E407 and all other access tracks to the wind turbines for accessibility purposes. It is expected that with the consistent maintenance of E407, economic activities will increase between the towns of Kajiado, Kiserian, Ngong and Ongata Rongai.

Construction and operations phase

Benefits without enhancement: Improved transport infrastructure				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	3	2	2	3
Result: LOW(+35)				

<i>Comments:</i>				
The proposed E407 road upgrade including new access tracks to each turbine should be constructed in accordance with laid down road standards. The road should be maintained in a good state of repair at all times.				
Benefits with enhancements: Improved transport infrastructure				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	4	4	4	4
Results: MEDIUM HIGH (+88)				

6.3.4 Improved local economy

The landowners in the project area have signed leases with the proponent for erection of wind turbines on their plots. The lease amount is disposable income that the land owners now have and it has been observed that a number of them are beginning to utilize the funds received for upgrading their homes from the traditional manyattas to mabati houses.

During the construction phase, it is envisaged that some of the youths residing in the project area will be considered for semi-skilled and unskilled work associated with the wind energy project. This will increase the disposable income available to such youths who will most likely spend such resources in the project area. In addition to this, demand for construction materials which are readily available within the project area will provide an opportunity for land owners to profit from the sale of such materials to the contractor(s).

During the operational phase, landowners who have leased their land will receive 5% equity from generation of electricity from the project. This income will be managed by a trust fund which will decide the projects upon which to spend the money. Subsequently it is envisaged that the local economy will improve as a result of these funds being available in the project area.

It has been observed that an increase in disposable incomes generally leads to an increased demand for goods and services in Kenyan local economies with low savings culture. There is already significant increase in housing construction using modern materials and this trend is expected to increase.

Construction phase

Benefits without enhancement: Improved local economy				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	2	2	2	3
Result: LOW(+30)				
<i>Comments:</i>				
The main contractor should give opportunities for supply of readily available construction materials to local land owners living in the project area. Youths living in the project area should be given the first priority to provide skilled, semi-skilled and/or unskilled labor for the project. The central yard to be set up within the project area should consider purchasing their groceries and meats from the locals living within the project area.				

Benefits with enhancements: Improved local economy				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	3	2	2	4
Results: MEDIUM HIGH (+48)				

Operations phase

Benefits without enhancement: Improved local economy				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	3	3	3	3
Result: LOW(+48)				

Comments:

The community Trust Fund should identify suitable projects which can be executed using resources locally available within the project area. This will enable funds generated by the project to generally circulate within the Kipeto area and the wider Kajiado county thus improving the local economy.

Benefits with enhancements: Improved local economy				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	3	4	3	3
Results: MEDIUM HIGH (+60)				

6.3.5 Decrease in livestock farming

The loss in grazing land as a result of land sub-divisions into units incompatible with large livestock production and loss of interest among the youthful Maasais' in the economic activities of their fathers is a major concern for agricultural activities in Kipeto. Their exponential reduction over years in space and labor available for pure pastoralist economic activity with large numbers of livestock has significantly reduced due to sub-divisions, reduced grass output per acre, climatic changes and lack of labour to cater for livestock.

For the small land owner who gets a turbine in his plot, the proposed project may provide an alternative source of income to supplement livestock farming or even to change the number of livestock kept especially due to poor climatic patterns.

A decrease in livestock farming goes against the grain of Maasai traditions as the community strongly believes in retaining this culture. This effect is likely going to be experienced by small land owners during the construction and operational phases respectively who have limited grazing pastures for their livestock and may want an alternative source of income to supplement their livelihood.

Construction and Operations phase

Benefits without enhancement: Decrease in livestock farming				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	3	3	4	4
Result: LOW (-64)				
<i>Comments:</i>				
As part of their CSR program, the Proponent should consider providing education targeting the youth on Maasai cultures in order to preserve traditional practices including livestock farming.				
Benefits with enhancements: Decrease in livestock farming				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	3	2	3	3
Results: MEDIUM HIGH (-42)				

6.3.6 Increase in land value

Land value in most parts of Kenya is on the upward trend including the proposed project area. It is envisaged that with the proposed upgrading of the E407 road and construction of new access tracks to each turbine in the project area, land value will further increase. The demand for housing, communication transport and financial services is thus expected to increase and present a likelihood of increasing land values.

The increase in land value will most likely be felt during the construction and operations phase of the project.

Construction and Operations phase

Benefits without enhancement: Increase in land value				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	2	2	2	4
Result: LOW (+42)				
<i>Comments:</i>				
During the construction phase, the Proponent will upgrade and maintain the E407 within the project area and construct new access tracks leading to each set of turbines in the project area.				
During the operational phase, the Proponent will maintain the access tracks to each turbine for ease of maintenance.				
Land prices can significantly increase if utilities such as water and electricity are available nearby. The Community Trust should consider spending their 5% equity on the installation of utilities such as electricity and water to the local communities homes.				

Benefits with enhancements: Increase in land value				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
4	3	4	3	4
Results: MEDIUM HIGH (+77)				

6.3.7 Potential for eco-tourism

The Ol Doinyo Narok plateau is located on top of the eastern edge of the Great Rift Valley thus providing scenic views of mountains and lakes within it. The western edge of the plateau also contains built viewpoints which open up views of the Great Rift Valley floor. A few people have purchased land on the western edge of the project area and have constructed small cottages.

In addition to the above, the plateau hosts a number of herbivores including zebras and gazelles. There are also a few shallow caves within the project area. The Maasai women within the project area are involved in making various types of ornaments for sale at the Esilanke market.

The above features make the proposed project area feasible for eco-tourism. The Kitengela/Isinya/Kipeto Land Use Master Plan (LUMP) sets out the physical planning framework for development within the Kipeto area. Within this development planning framework coupled with the upgrading of the E407 and the features mentioned above, the project area demonstrates the potential for eco-tourism facilities that can be constructed near the western edge of the project area.

The proponent may wish to consider a visitor education center within the sub-station footprint area to promote knowledge about wind energy projects.

Operations phase

Benefits without enhancement: Potential for eco-tourism				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	3	2	3	3
Result: LOW (+42)				
<i>Comments:</i>				
<p>The community trust fund should consider working with the Ol Kejuado County Council in identifying areas of potential eco-tourism facilities and facilitating the land use change process. The community trust fund should consider building proper stalls for Maasai women to market their ornaments to local and foreign visitors visiting the Kipeto area.</p> <p>The proponent should consider incorporating a visitor education center in the sub-station footprint area.</p>				
Benefits with enhancements: Potential for eco-tourism				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	5	4	4	4

Results: MEDIUM HIGH (+96)

6.3.8 Increase in educational services

With the completion of the project, it is envisaged that there may be increased interest in educational subjects related to wind energy in the area. An increased interest and awareness of the local pupils in primary and secondary school education on courses related to wind energy including sciences, renewable energy, environment and social work will improve in Kipeto specifically, the larger Kajiado area and the country in general.

CSR in the community and operations of the Kipeto Trust is also expected to provide more built educational facilities and provide equipment and facilities for such institutions.

Operations phase

Benefits without enhancement: Increase in educational services				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	2	2	2	2
Result: LOW (+24)				
<i>Comments:</i>				
As part of the CSR program, the Proponent should consider sponsoring awareness programs jointly with the community to identify areas of educational needs and the facilitation of the same.				
Benefits with enhancements: Increase in educational services				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
3	3	4	4	4
Results: MEDIUM HIGH (+80)				

6.3.9 Changes in social lifestyles

Currently social lifestyles in the Kipeto area are governed around church activities in the Esilanke area and subsequently residents generally partake in church related activities.

However with the project becoming operational and residents potentially having increased disposable income, it is anticipated that there may be additional social amenities such as bars, restaurants, etc. that may mushroom; these may potentially impact the existing lifestyles in the Kipeto area.

Demand for on-site catering and accommodation may be satisfied by building self-contained accommodation facilities that also include bars and restaurants. Increase in disposable income may lead to demand for spending on alcohol and social recreation associated with urban centres. The youth engagement in alcohol, drugs and commercial sex may also rise.

Construction and Operations phase

Benefits without enhancement: Changes in social lifestyles				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
2	3	2	2	3
Result: LOW (-35)				
<p><i>Comments:</i></p> <p>The proponent and/or Trust Fund should consider setting up financial education programs for the Maasai community in the project area as they will have new sources of income arising from the proposed project. Such programs include prudent financial management courses, how to invest, etc. Additionally it is recommended that peer education be provided on sexually transmitted diseases, alcohol and drug abuse.</p>				
Benefits with enhancements: Changes in social lifestyles				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of impact
1	3	4	1	2
Results: VERY LOW (-24)				

7 Social mitigation and management plan

The social mitigation measures will be implemented during the construction phase and will target to manage identified impacts that can be mitigated during construction period. The plan includes measures identified as significant to ensure the beneficial participation, safety and education of the community. The objective is that the project should have as much overall positive benefits as possible. The education component not only reduces myths about the project's negative impacts, but also opens the community to maximize beneficial opportunities available at construction phase.

The Social Management Plan is an organized response to identified and specific social impacts that may occur throughout the operations activities for the Wind Farm project. It is necessary for adequate management of these social impacts.

7.1 Social Economic Mitigation Plan

The contractor is committed to ensure the participation and safety of the community through a list of measures defined to mitigate the identified impacts. The measures are given below.

1. Public list of available opportunities and requirements should be made available to the local community in a common area and communicated by the community liaison officers.
2. The public list should include categories and requirements of the opportunities for a) unskilled labor number and type of work; b) skilled labor number and type of work; c) raw materials needed and their quantities and any requirements for the local youth groups should they need to take advantage of the opportunities;
3. A batching plant should be considered in the project area to enable locals supply construction materials to the project as a way of participation in the construction phase.
4. Public education should be provided on various ways in which locals could maximize their grazing and livestock keeping training; additionally shows could be organized to help livestock farmers improve their yield.
5. Public education and training sessions on planting grass for their livestock as a way to protect their livestock from drought and maximise on land parcels available.
6. Public education sessions on maximising milk production and marketing given the better transport infrastructure.
7. Roads construction materials like stones, and unskilled labor opportunities should be provided to the local communities as a priority;
8. Trainings on basic entrepreneurship and small business management for the youth businesses working with the project.
9. Peer education and counseling on HIV/AIDs, drug abuse.

10. Educational programs for the schools and public promoting clean energy, sciences including organizing wind energy shows.
11. Eco-tourism preservation of Maasai traditional culture and practices and making Maasai ornaments for sale.

7.2 SOCIAL MANAGEMENT PLAN

The Social Management Plan (SMP) predicts and plans responses for certain common and specific social impacts that may occur throughout the operations activities for the Wind Farm project in Kipeto. A social management plan is necessary for adequate management of these social impacts.

This SMP contains the measures to be implemented in the Operations phase of the project, in order to promote positive outcomes and decrease or minimize the adverse impacts that may arise. It incorporates some recommendations on how to handle community safety throughout the project life.

The proponent of the wind farm should consider the following measures to facilitate smooth flow of operations in the project:

7.2.1 Promote employment creation

1. Consider the option of providing security for the physical turbine structures and employ trained locals to under a security company of choice.
2. Consider employing locals youths in road maintenance jobs.
3. Train and employ locals to man the power substation to be established in the local area.
4. Consider employment training programmes for locals youths employed in construction works to be able to provide the same labour services under the Kipeto Trust projects and other available opportunities.

7.2.2 Promote sustainable supply of local construction materials

1. Entrepreneurship and small business training for youth and groups businesses who supplied construction materials for the project.
2. Consider locals youths in road maintenance works and contracts.
3. Financial and investment education programs for all including youths, landowners, and all members of the community interested.

7.2.3 Promote improved transport infrastructure and services;

1. Maintain the road network for the operations phase of the project.
2. The proponent can build a street lighting project along the main road E407 and the Esilanke market center to improve night vision and the local security and economy.

7.2.4 Promote the local economy

1. The proponent should consider providing electricity to the local communities markets and residential homes.
2. The project should consider constructing more boreholes and provide piped water to common drinking water points for livestock and humans.
3. The project should continue or promote other sanitation projects currently on-going like the public toilets and sanitation facilities that would significantly improve the health status of the local community and reduce the use of bush toilets.

7.2.5 Promoting Eco-tourism

1. The proponent should provide public educational programs preserving local traditional Maasai cultures and practices like the meat camp and promoting local ornaments business by local women.
2. This should include developing escarpment based view points, including developing potential of the local caves and rock outcrops available in the area;

7.2.6 Educational impacts

1. The proponent should develop training materials sessions, facilities and sites to educate the public, including schoolchildren, youths and public on wind energy, sciences and all related subjects to promote educational tourism.
2. The proponent should promote educational tours to the turbines including climbing to the nacelle and taking pictures.

8 Conclusion

The SEIA study has presented benefits and impacts that can be mitigated by the proponents with a view to ensuring that the wind project is upgrading and upholding the existing social and economic structures of the local Kipeto area the Kajiado County and regional areas.

A significant benefit may be the gains made on local, County and national economies primarily from:

- Direct financial contributions through the payment of land leases.
- Increased local economic growth from infrastructural developments especially road networks.
- Indirect benefits from provision of social services including water and educational services, or directly should they consider to provide electricity to the area.
- Decreased unemployment levels.

While the issue of alternative company promoting a wind project presents possibilities for short term conflict and social cohesion, the significant promotion of community beneficial participation in the project pre-construction and construction phase especially participation that maximizes youth employment and sourcing of construction materials locally would reduce the negative impact of the conflicts.

Public education and information management programs targeting and encouraging those land owners associated with the other company to overcome hurdles that bind them and join the project.

An effective Social Management Plan (SMP) is however cognizant of the possibilities related to the risks as defined by all stakeholders. The community fears should be addressed in a way the community feels heard and part and parcel of the project throughout the construction and operational phase of the project. A participatory approach to the SMP would help mitigate this issue especially misinformation about the risks related to wind projects wide spread in the area. By providing effective and targeted information and participation structures for delivery of social services under CSR, the community would feel the project added value to community.

KIPETO WIND ENERGY - SOCIO-ECONOMIC ASSESSMENT QUESTIONNAIRE

A. Information about persons

- 1. Household Plot Number Name** (_____)
- 2. Name:** _____ **3. Relationship to HH head:** (Head/Spouse/son/daughter/grandchild/brother or sister/father or mother/nephew or niece/in-law/grandparent/other/non relative).
- 4. Sex:** - Male (01) Female (02). **5. Age** (____). **6. Tribe/Nationality** (_____)
- 7. Religion:** (Christian/ Muslim/ other Christian/Muslim/Hindu/Traditional/ Other religion/No religion)
- 8. Marital status:** (Never married/Married Monogamous/married polygamous/Widowed/Divorced/Separated; Don't Know;
- 9. Duration of residence** (_____); **10. No. of Children** (_____);
- 11. Ophanhood: YES NO; Father alive 1** (____) **12. Mother Alive** (_____);

B. Information regarding persons with disability

- 13. Type of Disability?** (Visual/Hearing/Speech/Physical/Mental/Self care/Other/None:
- 14. Difficulties:** How many children 0 – 5 Years Live here? (_____)

C. Education

- 15. School attendance status:** (_____) (at School/left school/Never went to school);
- 13. Highest level reached:** (_____)
- 17. Highest level of education completed** (_____);

D. Labour Force Particulars

- 18. Economic Activity Involves:** (_____); **19. Total Monthly Income:** (_____)

E. Information Regarding ICT

- 20. Able to get service from in the last one month?** Radio (___), TV (___); Cellphone (___); Landline (___); Computer (___); **YES=1 and NO=2 for each;**
- 21. Frequency of Usage:** (_____); **22. Source of Internet** (_____);

F. Information regarding livestock:

23. Livestock (Number): Exotic Cattle (___);/Indigenous Cattle(___)/Sheep(___)/ Goat(___)/Donkeys (___)/Pigs (___)/ Commercial Chicken (___);Other (___); **YES=1 and NO=2 for each;**

G. Housing Conditions and amenities;

25. Number of dwelling units (___); 26. Number of habitable rooms (___). 27. Tenant status of the main dwelling unit: Purchased/Constructed/inherited/rented.

28. Construction Materials of dwelling unit: Roof (___); Floor (___); Wall (___); Tiles/corrugated sheets/concrete/asbestos/grass/Makuti/tin/Mud/Dung. **YES=1 and NO=2 for each;**

29. Source of Water: Pond/Dam/lake/River or stream/protected spring/unprotected spring/protected well/unprotected well/borehole/piped into dwelling/piped/ jabia/rain harvest/water vendor; **YES=1 and NO=2 for Chosen;**

30. Mode of human waste disposal: Main sewer/septic tank/ cesspool/ VIP pit latrine/ Bucket Latrine/Bush;

31. Type of cooking Fuel: Electricity/paraffin/LPG/Biogas/Firewood/Charcoal/Solar/other;

32. Type of lighting fuel: Electricity/paraffin/LPG/Biogas/Firewood/Charcoal/Solar/other;

33. Ownership of Household assets: Radio/TV/Mobile phone/Landline/computer/Bicycle/Motorcycle/Car/Lorry/refrigerator/boat/animal drawn cart/canoe/Tuktuk; **YES=1 and NO=2 for each;**

KIPETO STAKEHOLDERS ENGAGEMENT MEETINGS

COMPREHENSIVE ISSUES LIST

	ISSUE IN THE COMMUNITY	SOCIOLOGISTS RESPONSE	KIPETO COMMENTS
	PRECONSTRUCTION QUESTIONS		
1.0.	LEASE/TITLE DEED		
1.1.	Can you have any other development on the plot, when your land is under the lease?	Yes, The land is still yours and you can have other developments on the land for those who will have turbines in their land, only the area where the turbine is located has been limited according to the lease.	You Can have other developments in you plot. The only restrictions are as said in the lease.
1.2.	Can you sell the plot or part of the land when your plot is under the lease?	Yes, you can sell the plot of land even when you have leased it to the company. The only issue is any transaction must be also accepted by all that it does not breach the lease.	Yes, you only need to inform Kipeto Energy Prior so that the buyer and is also aware of the conditions of the lease.
1.3.	Can you use the title as security in a hospital when you have a patient there who has a serious Bill as you look for money?	Yes you can use the Title as security to get a patient from hospital while you go and raise money.	Yes.
1.4.	Is anything done to the title deed when it is taken for the lease process? What exactly is done to the title during the process of lease?	Nothing is done to the title. The process only includes taking the title to confirm if it is genuine and is according to the record at the Ministry of Lands. After that a lease is attached to it and payment is made. These are legal processes that the Lawyer should be called to explain.	We only attached the terms of the lease to the Title as agreed to help establish the project.
1.5.	Can we engage another lawyer?	I cant answer yes or NO on that because I don't know how it all started. But I don't see a problem with that. Legal representation is your right.	YES
1.6.	Can we sit and discuss the lease again?	For now I may not be able to answer that. But I think as land owners you need to call the lawyer and get better understanding of areas you are not satisfied with.	Yes, Within yourselves, otherwise it is already signed
1.7.	Can the lease be renegotiated?	Renegotiation may not be necessary if you get to understand that there is nothing in the lease that	We are yet to identify reason for that.

KIPETO ENERGY PROJECT – ESIA STAKEHOLDERS ENGAGEMENT REPORT

	ISSUE IN THE COMMUNITY	SOCIOLOGISTS RESPONSE	KIPETO COMMENTS
		negatively affects you or your plot. The lease protects not destroys.	
1.8.	Can the Lawyer come to explain to the land owners on the details of the lease?	I think that is a good idea. We need to find a way and a date the lawyer come meet with land owners who have a lease and explain the lease and you ask questions.	You can arrange that with the lawyer
2.0.	KIPETO TRUST		
2.1.	Will the there be special resource allocation for youth preferred activities?	I may not answer in affirmative. I think it is open for representation for all members of the community youth women and it is you as youth to make effort and get your representatives in the Trust.	The Community Trust will have Trustees representative of all including women and youth. They will decide how budgets will be specially allocated.
2.2.	Will the Youth have control over resources targeting their preferred activities?	That also depends on you the youth. If you negotiate strongly for control of resources allocated for your activities it is possible. I think there is time for your interests to be presented when the terms of the Trust will be negotiated.	That will again be decided at the time the Trust is established and trustees chosen.
2.3.	Will there be special resources in the Trust allocated for women preferred activities? We want water, boreholes, health facilities, markets for our goods and small loans	These days the constitution provides for more gender equity and I don't see why you cannot get the representation you need and ensure resources are used to do activities that are of your choice.	The Community Trust will have Trustees representative of all including women and youth. They will decide how budgets will be specially allocated.
2.4.	Will the Youth and the Women be represented in the Trust?	Yes if you as the youth negotiate representation otherwise the older generation will take it all up.	That will be borne in mind when the trust is being formed.
2.5.	Is the Trust deed for the community or for the land owners who have signed in for the lease?	It should benefit the whole community I believe. I mean there is no way you can build a hospital or a school and deny those who are not in the lease for the project.	It should benefit the whole community.
3.0.	LAND		
3.1.	There are too many vehicles running around for too long, please hope there are no other issues being done that would affect our land that we done know?	There are many areas the Environment law requires that we study for a project of this magnitude. Soil, rocks, water, birds, air, noise, households, wild animals, insects, vegetation, etc. each area has a group of experts who come in those vehicles you see around. They will all write	There are very many activities in this project feasibility, EIA surveying, etc and all will involve the same kind of vehicles and field work

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	ISSUE IN THE COMMUNITY	SOCIOLOGISTS RESPONSE	KIPETO COMMENTS
		their report and submit. Nothing else apart from that is happening.	
3.2.	Will we be able to use our land for other development activities after the turbines are constructed? Do the turbines affect the quality of the land in any way? Is the land useful after turbines have been constructed?	We only need space to build the turbine and an access road. Any other part of the land can be used for other development activities like grazing and such like activities. The land is still useful for other activities and use is only limited by the lease.	For normal developments as per the lease there is no problem.
3.3.	Are we still going to have quality grazing land after we have allowed turbines to be installed in the land?	Yes, the land will be returned to how it was before construction. I mean soil will be returned to areas dug for construction and grass replanted.	YES
3.4.	Can someone sell a piece of his/her land after signing in for the lease?	As long as it does not affect the limits as defined by the lease I think so. It is always important to learn what the lawyer says about where you are selling. It is not a restriction as such but we always check with our lawyers to ensure we don't infringe on the lease we entered.	YES
4.0.	PAYMENTS		
4.1.	What criteria for making the payments? There are people who are paid per title while others are paid per acre. Some people therefore want to sub-divide their land first before handing in so that they get paid per title. Then you will find a person has 500 acres under one title and he gets 250,000 while another has 3 titles of 30,000 each and gets 100,000 per title.	I am not very conversant with the payment process and I think it will be explained as you get through the process. What I can say is I will write that down and seek the guideline from the concerned people. So they can explain the criteria clearly.	Payments are made to each landowner a) who has signed lease; b) depending on the size of his land; c) depending on the wind potential in his land etc
4.2.	Why are payments taking too long? There are people who sent their Titles a long time ago and have not been paid. Is there favoritism in this? The competing company pays very fast as	Again that I cant answer satisfactorily. I am going to write it down and present to the concerned people. We are a big team and different people are responsible for different things. So please bear with me. I will inform them of your concerns and somebody will take care of it.	Before you sign a lease, your title deed has to be verified, registered by lawyers and government offices who work within their timeframe's.

	ISSUE IN THE COMMUNITY	SOCIOLOGISTS RESPONSE	KIPETO COMMENTS
	opposed to Kipeto Energy? Why? You know people are hungry for money and when they are paid they may move to the other company?		
5.0.	RESETTLEMENT		
5.1.	Why should we be resettled and this is only a lease? Are we selling our land?	The issue of resettlement came from the fact that somebody wanted to see more turbines in his plot. It is an voluntary decision and each plot owner depending on the layout of the turbines proposed will be given an opportunity to decide individually should the case arise.	Not all people will be moved. Only those people who feel they can be relocated within their land so that they can get a turbine, should it be identified that its worth it.
5.2.	What criteria to determine who is to be removed from their land to put a turbine and who decides?	A team of experts and the masts you see measuring wind are doing that work of making a turbine layout. Because we want more power to sell we have to get the best locations so that the turbines run all year through and we have a good harvest.	Very may experts working on different characteristics of the project.
5.3.	What if a person refuses to move? What will happen?	Turbines will be built 500 m from the household at least and as a standard.	It is voluntary. So nothing happens.
5.4.	Will there be compensation for resettlement? How is the compensation paid?	Yes, for those whose houses are located where it would be beneficial to locate a turbine according to the layout and they agree to move. They will be compensated according to the laid out law.	Yes, there will be compensation and it depends on factors to be determined then. But it will be done within the law and for those who have accepted.
5.5.	If we move can we come back later and build on our land near the Turbines? Or if we move we never comeback to use the land?	Moving does not mean moving from your plot. Moving means just going to a location in you plot where you are not in a place a turbine can be located and you are 500 m from a turbine. It can also mean move to a different plot.	You are not moving out of the plot, but to a different location in the plot.
5.6.	Will we choose where to go should we be resettled?	Some will choose others if it is in the plot will be shown a location adequate depending on locations of the turbines.	Yes as long as it is within good considering other indicators
5.7.	Will we be built for the homes where we move? Will we choose the type of houses to build?	Yes compensation will be enough to build new homes where you move to.	Compensation will include buildings in the new part for the few who will move.

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	ISSUE IN THE COMMUNITY	SOCIOLOGISTS RESPONSE	KIPETO COMMENTS
6.0.	TURBINES		
6.1.	Do the turbines affect animals and children in any way? Does it affect the grazing land?	The turbines do not affect the animals in any way and neither do they affect the children. Normal activities will continue. Only there will be a bit more noise.	No they Do NOT affect animals
6.2.	Can we choose where to locate turbines?	There are experts responsible to do that guided by the masts measuring wind and the best location given the character of the land here.	That is determined by experts measuring the wind to get maximum wind energy to run the turbines
6.3.	Can someone say how many turbines should be in his/her plot?	Again it depends on the character of the wind and land which determine location of the turbines, and even me I do not know where which turbine will be located.	Again determined by wind experts
6.4.	Do the turbines emit electromagnetic waves?	The turbines do NOT emit any electromagnetic waves significantly harmful to anyone or animals.	NO, the turbines do not emit any EM waves
6.5.	Do turbines affect us with too much noise? How can the noise be managed?	There will be a slight increase in the noise in areas where there are turbines but again not so much to affect the community.	Most of the Noise will be within the legal requirements which does not affect you.
7.0.	EIA		
7.1.	How long will this process take and what exactly are we measuring?	The EIA should be ending around December 2011 after which it is submitted and we hope to get a license around February 2012, after which construction will start.	Estimated dates: December 2011 to February 2012
7.2.	Will we have access to this report and if so where can we get a copy?	Yes it is a public document we can all engage with, read and use for managing and engaging with the project as it is implemented. We will give a copy to the lawyer, to help the community understand. But also the youth who understands the internet there are various websites where you will be able to access the EIA document.	YES
7.3.	What happens if what has been recorded in the EIA as an negative IMPACT happens? Where do we complain to? Who is responsible?	There will also be a environment management plan. This will answer the details of how to manage any impact that arises from the project during the construction and operations stages of the project.	The reason for the EIA is to know what can happen so that it can be managed.
8.0.	THE COMPETING WIND PROJECT		
8.1.	What happens if the other wind	I don't think I can answer that because I know the	They will not affect our work in

ESIA STAKEHOLDERS ENGAGEMENT MEETINGS – COMPREHENSIVE ISSUES LIST

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	ISSUE IN THE COMMUNITY	SOCIOLOGISTS RESPONSE	KIPETO COMMENTS
	company also go ahead and make their turbines?	government has given only Kipeto Energy the license to operate a wind generation facility here. Maybe they will come up with wind mills for personal use.	any way.
8.2.	What happens to people who have signed leases for the other company and finds that they have been cheated? Can they be accepted into KIPETO Energy? Will they get turbines?	If they feel that they want to join they are welcome. The amount they are paid they can use to reimburse the debts they incurred as a result of the other project leases payments.	Any body who meets the terms required and wants to join is allowed to join. Even if a turbine will not be put in your land.
8.3.	Why are the existing turbines different from the turbines you want to erect?	They are different because as mentioned earlier there is more wind the further high you go. We want to take advantage of this too and our turbines a therefore tall enough and large enough to give us enough electricity for the required estimates.	Depending on different technology and capacity, different turbines have different characteristics and requirements
8.4.	What happens to the investment of the other company should it be found that they will not be accepted here by the government?	I cannot answer that because they will make that decision.	They will make that decision.
9.0.	CONSTRUCTION		
9.1.	Will there be sufficient grass for grazing during constructions of turbines? If not what is the best way to inform the farmers?	With a good plan there will be sufficient grass for all the animals. And we will make plans to inform livestock farmers about the small disruptions early so they are ready.	There will be sufficient grass for all to graze
9.2.	Can there be plans to maybe educate the farmers a little more about this so that it does not cause confusion and panic?	I will make note of that and present to the people responsible for planning construction so that some more public education is carried out before the start of construction.	There will be prior sensitization meetings before the construction starts.
9.3.	Can we have supply of grass for people who will be significantly affected?	I have made note of that and will present it to those in authority. But all will be done to ensure all is smooth during construction.	If the need is there which I do not see for the moment.
9.4.	We need more education about how to manage this construction impacts because we depend on land for	That has been noted and will guide the construction plans.	There will be Liaison officers who will help manage the social issues arising during the

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	ISSUE IN THE COMMUNITY	SOCIOLOGISTS RESPONSE	KIPETO COMMENTS
	grazing?		construction stage.
9.5.	Will the youth be given special opportunities for jobs during construction?	Yes there will be skilled and unskilled employment opportunities for all the youth who are interested and can work.	Yes and on merit.
9.6.	Can we have access to any support so that we can benefit directly from the construction works? E.g if I have land for a construction Yard?	Yes those with land available in good areas can provide their land for consideration as construction yards. You can also organize yourselves and supply materials like sand and ballast.	Cannot answer that until the final contracts are drawn.
9.7.	How will we confirm the things you have been telling us? Will you be here or a different person who didn't know what answers you gave us? Can we have the notes you write so that we will follow-up on the answers.	I will make the minutes and provide them to you at appropriate time and also they will be attached to the EIA report. So any person who comes will be able to refer to them and answer questions and manage issues as guided.	Liaison officers will still be available.
9.8.	Will we youths be given opportunity to apply for supply of construction materials?	Yes, the Youth and women can also organize yourselves and supply materials like sand, water and ballast depending on the needs of the construction and the terms set. But again I have noted this and will present to the people concerned.	Will discuss that with the constructors.
9.9	Will we women be given opportunities to deliver anything during construction works?	Yes the women will be given opportunities to work and provide materials according to requirements and needs of the construction process.	Will discuss that with contractors if the amount required of anything can be locally availed.
9.91	Where will we make applications for work and jobs? Nairobi is very far and we cannot come just to seek work.	We will have a construction site office here which will handle a lot of these issues on a daily basis. Where we will have someone who understands our needs and will attend to us well.	There will be a construction office and some of that information will be available there.
10.0.	OPERATIONS		
10.1.	Will there be employed watchmen on site for each turbine or for the turbines and can we apply for them and will they be paid well?	I also cannot affirmatively say yes or No, but will note it and present to the concerned people. I have heard that this was promised earlier and they should be able to explain it.	That will be discussed at a later point.
10.2.	How will the payments be made? Will	It will be an open and transparent process and there is no	Open and transparent

KIPETO ENERGY PROJECT – ESIA STAKEHOLDERS ENGAGEMENT REPORT

	ISSUE IN THE COMMUNITY	SOCIOLOGISTS RESPONSE	KIPETO COMMENTS
	we have access to the books of accounts to know how much exactly are we entitled to?	need to worry. There will be official communication channels and you will have access to books of the company either through various public means available.	operations within the legal requirements
10.3.	Will there be other employment opportunities for locals youths during operations?	Yes there will be opportunities for maintenance under a local company. Local youths will be trained and they will be part of a team who will do the maintenance.	More youth should go to school and learn skills and disciplines related to wind energy and there will be opportunities for them

Formal stakeholders Engagement Meeting

Meeting 1: Discussions and Comments Thereof;

Sanjay: Now the floor is open for questions comments, identification of additional sources of data to assist us conduct the ESIA study; potential problems which we need to mitigate; stakeholder's we have missed and any other relevant feedback in respect to the project;

Mr. Manthai: looking at the project team, do we have a geologist and a soil specialist. Are you thinking of the precious minerals that may be in the site?

Sanjay: Yes we have a geologist, a soil specialist and an hydrologist on the team. The Turbines have a large foundation taking up almost 500 tonne of cement; we are looking at it from the point that such a foundation may have certain surface and subsurface impacts that may need to be managed. Again the rock outcrops and their impact on the foundations when building wind turbines;

Mr. Manthai: you have mentioned caves and rock outcrops, which also indicate the possibility of seminal rocks and fossils materials found in archeological sites. Its our proposal that you engage the NMK as much as possible.

Herman: theoretical layouts worldwide influence turbine locations. We are looking at developing several theoretical layouts that then help to determine where exactly a turbine will be located and of course we will include all aspects including archeological impacts identified.

Dr. Muchai: on the scoping study did you include noise quality scoping? There is scoping noise impact of noise on humans and there is impact of noise on animals. Given the cliffs and escarpment, this would be key. How does noise affect birds breeding and migration?. Study of bird's behavior and impacts of the project should be comprehensive. Colour of the blades wind turbines need to contrast for effective visibility and to avoid mortality.

Dr. Muchai: on species mortality, you are doing well, but we need to know more details of the study and how its effects birds behavior are mitigated during breeding and non-breeding periods.

What about Bats? Presence of caves means we will find bats. What is their behavior during the day and night?

What about other species insects, vertebrates and other water bodies' and animals?

Light and illumination to species have an impact on birds and bats too. Have we considered the impacts of shadow flicker on Birds and Bats in your scoping?

Mr. Manthi: General habitat alterations should be studied in detail over time.

What about cultural heritage of the local communities? Have we engaged an ethnographer (*Ethnography is a scientific studies people, ethnic groups and other ethnic formations, their [ethnogenesis](#), composition, resettlement, social welfare characteristics, as well as their material and spiritual culture*)?.

-you should engage one who will then document Maasai culture in the area and the impacts of the project on the same.

Sanjay: yes, Thanks a lot we will be in touch with the Department in National Museums of Kenya and engage an ethnographer. Thank you for that.

Mr. Manthi: again micro-habitats should be included in the study, they are key parts of the ecosystem and should not be left behind. Rodents and rats are very sensitive to changes in micro-environments.

Mr. Malusha: what was the justification for picking the area Kajiado for the project/ I mean there are many areas that would have been equally ideal? Why Kajiado. You did mention has done some project of some magnitudes, so can we have access to how they have mitigating various aspects in wind projects. I know also there are energy radiation impacts from turbines.

Mr. Sanjay: which radiation?

Mr. Malusha: Electromagnetic radiations and its impact?

Mr. Herman: Most wind turbines which produce low energy, but there is no evidence that this energy affects human beings or animals for that matter. What maybe you mean is radiation which affects communication networks. What we are talking about here is communication masts and radio masts.

Non impacts on human beings or animals that are directly emitted from the wind turbines

Mr. Malusha: I think it is important to Involvement of local leaders in early stage, so that leaders like Members of parliament and councilors have sufficient support of the project.

My second question is "how many will be involved during operations and maintenance"

Mr. Sanjay: We still don't have exact figures. We are still developing the details necessary for finding out such figures as employment and it will be communicated.

Mr. Herman: there will be need maintenance and train local people to do maintenance. There are many O& M that are standard enough to train locals so that they can manage it themselves.

Malusha: we are wish to know a little more about how much noise will be produced and how it's going to be managed.

Guyo: Ministry Of Energy are the main regulators in relation to green energy and have a very wide capacity in terms of providing data for those looking for various potential sites. We therefore got our data from MOE among other sources. But again, if you go to the area you can see it's a place meant for wind energy. In terms of: - Height - 2000

- Wind data - 8m/s at 30f; - olooyangalani is a big area and an area very Good for the wind harvesting. These data can be found at the Ministry of Energy.

Engineer – MOE

The Ministry has a lot of interest in both in Wind Energy and in promoting private sector partnerships. We need more power in the Country, and to us we need this project like yesterday.

To get these approvals at the Ministry is not very easy. By the time you have a yes, they have done a lot to show us you are not just anybody. You have to convince MOE ,you can do this.

MOE is good in prospecting and we have all the data that can be used by all investors to get their projects running. We are also keep that there could be speculators out there and we have means to be convinced about who is and who is not a speculator.

Thank you so much the proponents of this and I would encourage you to listen to as many stakeholders as possible. Listen to them include what /who is not here into your future plans. This is important so that we have so we have all we needed & their input.

Again in relation to the wind project; I hear people talking about it as some very big things up there in our areas doing wonders. But if we want a clear view of this, its important that we check out the Kengen project. We have a project in the Ngong area the Kengen project which is about the thing we are talking about here. So that you have feeling of what it has in terms of impact and reality.

Maybe it is necessary to have sight visits local leader so we have real feeling

On other Stakeholders maybe consider Ministry of Roads, and push them so that you move can move during the construction stage.

MOE, we need this project like yesterday. Renewable Energy are better and cleaner; especially after what we have heard about Japan and the challenges and limitations of Hydro Power.

The Political point of view- local MP, assistant minister, is also important to consider given this is an election season and given politicians and their influence in socio-politics of projects.

Geoffrey Minasi ketraco

Are you thinking about resettlement of households?

Mr. Sanjay: 1st preliminary layout will determine resettlement process should if it arises. The sub-station and transmission lines will be done according to standard guidelines.

Mwende: will you be connecting to the sub-station as a whole turbine or per turbine?

Herman: it can be done either. As a whole or one at a time so to the sub-station.

Simon Kenya Power:

Thank you for identification of Kenya Power as a stakeholder in this process and thank you for doing it early in the project. We need the 100mw in grid as capacity is not enough.

Its important to involve Kenya from this out of the process up to sub-station, distribution lines and decommissioning

Another point – stakeholders to consider: have you thought of the Kenya Civil Aviation?

Mr. Sanjay – they were already invited for the stakeholder’s workshop.

Simon Kenya Power: otherwise, we need the power like yesterday.

DO 1: Additional stakeholders in the local leadership is very important and their local involvement is key.

Many locals have this expectation that Power is coming direct to the houses. It’s key to explain how locals will get power in their houses.

Beatrice: The police stations are known to using “a lamp” and our support for more power is unequivocal. Concerning special vehicles; could we have the specifications of the vehicles for the purposes of our research and preparations of the bridges and to help us with planning?

Mr. Sanjay – will show video on project during meeting to show the kind of vehicles and also to the police responsible for the planning. This will help a lot with understanding the process and preparing for it.

Its true that road users for the time of the transportation will be inconvenienced and we will inform them through the media.

Specifications? laws in relation to movement of large loads? We will check the specifications out and share them with the Police department as part of our preparations.

Some road parts may have to move or be changed, but we will get there after details are in place and complete. Some traffic flow analysis will help define details.

Ochillo: I looking at emergency services and given and planned to be used, one piece of legislation would be key: the Legal Notice No. 160 First Aid Rules, 1977.

Dealing with Heights and falling objects is also important to take into consideration.

Malusha: that area has springs, water harvesting for Kajiado. We should involve District Water Officer to ensure that it is integrated into the Planning.

Mr. Sanjay: we have noted that and would get in touch with the Kajiado water services. We also hope to engage with local Medical centres around the area and follow-up on the health of the community as a result of water impacts if any.

Water catch point hydrology will tell us catchment size future planning boreholes and field data to help

Nyaga: Talking of Noise and Water quality is important, but we should also consider: i) Dust Emissions during construction and its impacts and Mitigation: ii) Lorries and vehicles waste oil or smoking zones

iii) The project involve culture crossing; Immigration of workers and mixing of cultures; its important to educate locals about diseases and impacts; iv) Funders of project and there regulation framework should consider IFC standards and project guidelines for these kind of projects.

Karuri: Major land-use change will be seen in the area which may generate a lot of issues. There is need to apply to committee for change of User in the area so that the project can run smoothly.

The EIA – should include waste generated during the works.

The Master plan for the Council is like a city; what does a 25 years plan mean to the Council's Planning.

Useful life can be after the stipulated 25 years, but depending on Maintenance, it can go for a much longer period.

What is the project design life:- what is the value after 25 years? Maybe there would be changes about the project after those years, maybe there would be different technologies.

Mr. Sanjay: We would be including all these issues in the Wind Turbines Footprint and land-use future planning studies.

Kariuki: Would there be fencing around turbines? Considering there is great need for pastures and livestock farming is a key part of economic life?

Sometimes earthworks can impacts on species and micro-environments and planning mitigation is important.

We are doing mapping of migratory corridors for planning wildlife migration and Kajiado is part of the Corridors.

Mwangi: Dr. Muchahi raised important issues on Wild life..but I have other issues to add which include the following:

Benefit sharing and what agreement will be drawn between the stakeholders, which take care of locals effectively.

What ways are we putting in place to protect the Locals from speculators who may buy land and take advantage of the project to the loss of the locals.

What determines the optimal Wind Towers, so that the more the towers the bigger the impact.

We already have Ngong within the same area, has the Ministry mapped the area to build synergy so that we reduce impacts on other areas?

Ornithologists – should study the impact on flight of birds should both Kipeto Wind Energy and the Ngong Project be put into consideration. What is the compounding impact?

What are the paleatric impacts? bird species with long term birds traveling from Magadi to Norton flight paths using specific areas and ornithological

studies. Birds try monitoring should be at least 6 months. Consider Ecological work with national parks and the impacts for wildlife.

Herman: Migratory corridors for species are created in projects. They determine the layout design and machine choice. The machine we are using is one that Maximizes energy, is fairly large rotor, low rating and high capacity. Installed capacity will increase to the expected level.

Guyo: There is standard distance between turbines and the dwellings that is allowed to ensure noise impacts is minimal at least to the WHO standards.

Dr. Ken Namunje: There are legal and administrative issues being taken up to ensure not only locals are taken care of but their interests are considered.

The local chief is very aware and involved, so is the whole administrative set-up.

Land owners are getting into some form of organization. But again land is also owned by members who are polygamous and this can create issues that we are also dealing with on an individual basis.

The objective is safe-guarding the community interests.

The issue of 25Years is also pegged on the 25-Year Power Purchase Agreement with the Kenya Power and therefore that is what informed the lease agreements. We couldn't make leases with the land-owners without effectively determining the client guarantees to buy the power for how long.

Land owners are cautious to selling their land so that they keep benefits. Remember also the community will participate in long term royalties in form of the Community Trust. This is different from the land owner benefits on an annual basis. Trust will also benefit of the wider community.

Presidential consent on this issue was necessary so that the project would continue, as international person not allowed to own land in Kenya. Chapter on Land defines land such that foreigners owning equity to find how to make it possible

Morris Olkejuado County Council: appreciate the efforts being made to ensure participation and to involve the opinion of many as possible.

For clarity and as land owners, I don't know if our expectation is at level we see here now.

There is need to engage the locals more on the magnitude and impact of this project so that not to take the people by surprise. I have heard of a site visit and maybe even a show videos. These would help improve the understanding.

Studies on Land use effects critical. And it is important to familiarize ourselves with **Kitengela-Kipeto Master Plan**. This is a critical document for the effective management of the wider picture of the area impacts. We should also mind cultural Issues as indicated here by others.

Migration or displacement of people we should consider the psychological preparation and how to ensure smoothness of such operations.

We need to be fair as some people may not understand leases and may see this in different lights.

We should engage, more and define a little more of the impacts of the project in this area.

What are the issues and what impacts if any, in relation to house movements.

The Leases should be explained to people to ensure better understanding.

Wildlife is key: the should be well considered and studied and issues mitigated.

The life style and culture of the Maasai like any other culture is evolving but, they should be prepared. It is also important to understand that there are two groups' people here: those landowners who have signed the leases and land owners who have not signed the leases.

Yet one way or the other, ALL land owners would be affected one way or another by the project.

It's important that all understand why, where, when of project to prevent conflict in the any stage of the project.

Land is a very emotive issue and its important all on board and understands each other.

It's also important that Impact both direct and indirect are considered and factored into the mitigation strategy and well implemented.

The other key issue is the Youth. This is very important that we consider how to engage them and at what point.

But not only that but both old and young alike, so we have people sharing same thinking about the project. They must see how their interest is taken care of.

How can they contribute on issues of project and are those issues being taken care of? People must see tangible results.

And the level of council:

Involvement of the Council Committee (Town Planning Committee) is critical in the process. They give policies and directions and how we engage in projects like these.

We hope engage as many people as possible – good plans to engage community as one and avoid dealing with land owners alone or we should now deal with whole groups.

Amachek of Ketraco: mandate to distribute power to through lines. We have a proposal for a sub-station at Isinya, which is well in advance and would work well with the project.

There seems to be a lot of local concern which should be addressed. Our experience with Kenya Power is the same. If you don't deal with local concerns it becomes very difficult. Consider:

1. On CSR: The community Trust royalties may not be enough; people are thinking "What will I get personally". What is the direct benefit to the community in form of classrooms, water, health facilities?
2. Social impact: HIV/AIDS and culture changes or influence.
3. Job creation for locals in the project workforce and in the general project.

Thank You

Nyaga: Other than consulting locals to build ownership we should also consider the type of towers. Why for example are we using the lattice type (like Safaricom Towers)?

Herman: Lattice towers have been found to attract nesting birds and they are considered inappropriate in those terms.

Dr. Martin: proposals for beneficial dumping. There is need for effective CSR in terms of classrooms, health facilities etc.

Dr. Kenneth Namunje: We are marshaling a large CSR program. What we are doing is marshaling South Kikonyokei area.

Trust is owned by the wider community; Land owners and the wider community in the area. Its important to expand its scope, so that they see beyond the current leadership and also include future needs. Will include the Youth in the management of the Trust. We need to see the current old age and issues of the youth are equally included. They are sensitive also and should be defined within time scope: short term, medium and long term issues of the whole community.

GE Sub-Saharan office responsible for the region is moving to Nairobi and they are keen for the project as its flagship project.

On the issue of the Lease, the locals choose a lawyer who is Maasai and he read through the lease and was satisfied that it was fine and favourable to the community and land owners.

Simon Guyo: The Landowners are leasing land. They may get turbines in their land and this will be a big source of income with significant changes in disposable income for the community also.

There would be significant social economic impact. There would be huge benefits in terms of monetary earnings per annum and can cause change in social behavior and many other issues.

We have seen old men who have money and the impact of their money in terms of HIV/AIDS. They are unable to deal with these issues and the impacts affects including the youth. There is need for financial training – how do you handle this money and how do you make same that it beneficial to better life styles and investments.

Muchahi: NMK – Heritage Management Act No. 06 2006; Deals with Culture, Monuments and biodiversity. This should be well defined and included in the studies. Mitigation measures especially for wildlife are important just as it is for humans.

Kajiado being a major migratory path for many wildlife, this area is large and the environment should be safer. Mitigation measures should be adhered to.

Colour issues with the towers are also critical. I have a question in relation to this: what is the configuration and placement of the tower? What about if it faces the direction the migratory paths of the birds?

Herman: That will surely be taken into account. However experience has shown that many birds get to know machines and can change direction of flight; though not all birds can change direction after they identify a machine.

We have to know birds and then height they fly and their characters. We are seeking the data on how to deal with such and each type found in the area.

Maurice: social economic changes that need to be carefully studied:

i) Assessment

We as Maasai's are used to cow business. People getting big money will affect them in which way? Perhaps the financial issues need to be taught. There are cases where the Samburu people got some compensation which destroyed their livelihoods. We need to consider this reality and deal with it.

ii) Process of acquisition of land and release we should focus on project viability and project realization. We should be sure we are doing correct issues and reason with all to ensure all is well.

The Lawyer did not adequately represent our interests as a community, but again we are past that.

iii) Local leadership should be involved and we have to engage with politicians; We need to engage and local leadership including all stakeholders. Stakeholders meeting with local leaders are critical (political leaders); Chiefs and how they have been engaged. Bring together talks to them and how they can participate.

iv) Issues of water, school, dispensary. The nearest health facility is in Oloyiankalani health centre, but also its ill equipped.

Consider

v) We need to go back to community; probably we need to find a way to revisit some of the issues which are not satisfactory: we need to interrogate those issues; This is a massive project and can we re-engage; we need to define the ownership percentages;

Mwangi: Animals studies and impacts need to be revisited. We need to think also about CSR for the animals. Maybe organize some research to determine long term impacts of the project on wildlife.

Charles: When we sat down we made decisions which defined ownership in capital terms; We decided the 5% as a CSR free rider for the land owners and the community in general. There is investment payment by the other investors; and its paid for; Each of the others GE and Craftskills Ltd paid their share of the Kipeto Ltd.

Educate on succession planning, Financial planning and disposing income in a manner beneficial to the County and the community. There should be better options for spending money and for saving some of it too. If you currently go to Kipeto project area and wished to say some kshs 10,000; it may not be very easy. There are also issues in relation to say transport and safety for the disposable income coming in the area.

These are opportunities for local county to planning, spending issues give me money does the county have plans and build facilities and infrastructure to help locals spend.

Daudi: Thanks all for attending the meeting and contributing very helpfully.

We as GE now have an Head office in the region and a new CEO based in Nairobi; We work together for Vision 2030. We value your input and candid ideas as we continue with the discussions. We understand there are many issues and different ways to address them. What we learn here helps us as a country to do it better. THANK YOU.

Project Activity Report

Project: Kipeto Wind Project

Activity: Endonyio Sidai Woman Baraza

Date: 23rd August 2011

Venue: Endonyio Sidai Primary school

Target audience: woman whose husbands have taken up the lease and those with interest but have not made up their minds about taking up the lease were mobilized for the focused group discussion.

In attendance were the following:-

- | | |
|-------------------|---------------------|
| 1. Sarah Nkoitiko | 7. Alice Ngusur |
| 2. Mary Mirisho | 8. Susan Mirisho |
| 3. Pauline Maseto | 9. Fairuz Chepkorir |
| 4. Alice Mayianto | 10. Ezekiel |
| 5. Susan Nepatao | 11. Wilson |
| 6. Esther Reuben | 12. Joel |

Opening prayer by Wilson Saitaga, and introductions, he made a brief explanation to the woman, the purpose of the meeting and all about the project. He also told them that this meeting was very important because women are also very important to the society. And that's why we need to hear their views concerning this project. Any negative or positive effect is welcomed.

Omondi: - apologized for not turning up last Thursday as was scheduled for the meeting. He told the woman that; we would like to discuss in short about the turbines that will be brought here, so that you may be able to decide on your own, what you feel is best for you. There is no difference between these turbines and that in Silange that you all know of, the only difference is this ones will be very big and tall, thus we discovered that the higher you go, there is a lot of wind, and from the masts, we also discovered that there is a lot of wind over this sides, that's why we go round taking the GPS measurements and asking if we can rent your lands.

These turbines will be placed 750m from the households, the distance is to help you in term of noise, for most of you are not used to it, that's why we go to each and ever house taking measurements. There are also different groups who go round checking on how animals live

here, and also those that check out on the rocks, thus the reason for different groups, for different purposes.

The government says that we have to take care of the environment.

At the construction stage, we might end up destroying grass from your animals but after the turbine is erected we are going to plant it back. And will also repair any other damage that we would have made.

These turbines have no effect to animals or human beings, in fact animals can even graze around it, it is made of high protective materials. The only thing that can cause destruction is the noise it makes, and that's the reason why we place it further from the house. And also at the time of construction we might cause destructions by needing space to work, but its going to be a short period and we will agree with you on what to do not to cause destructions.

Question 1:- by Ester:- I think that you need to teach them a little about the project, when we went to her boma, we didn't talk to her, but she says that wazee's talk about it and they haven't heard anything bad, although sometimes they are not involved in this so she is happy for this involvement.

Sarah: - says that if they were to say anything now, wasn't it too late? Because women were not involved from stage one?

She also fears that if by any chance accidentally if the turbine falls what would happen?

Response: We are not too late to call you woman, in the beginning we needed land, yet we haven't decided where to place the turbines, you woman should. We had to consult with your husbands first, so as it is discussed as a family before we took another step. We are sorry about that but you are still very important.

These turbines,(by a show of the pictures we had),the important thing is the construction,the foundation will be done with a lot of technology, since they are very tall and the good thing about this place is the rocks, a very big foundation, and a lot of wires and stones almost 20 tracks would be used. And also the company that produces this turbines, has never had any history of any falling anywhere, it is constructed with a lot of technology. They have done it for several countries.

The electric wires will be dug 1m below the ground, each turbine has a road and at the roadside, that's where we will dig to pass the wires, then they meet at the main road, and raised like any other you know,e.g kplc wire posts.

As the blades rotate, it produces electricity, and then passes it to KPLC, they pass us then we now pay you the land owners.

Not every land taken, turbines will be placed, it will depend with the speed and the strength of the wind, and the production of the wind will also depend with the wind, sometimes high sometimes low, thus the payments too.

For those who wont have turbines, we would advice them to join the kipeto trust, you are needed to come together and decide what you need from the trust, 5% of the electricity money goes to the trust. You woman should have someone as your leader so that if you need anything, you use her as your spokesperson in the trust. The same applies to the youth and the elders.

We are still doing the SEIA until October; we talk to families, so that the turbines are placed by how you need it.

Some woman had asked if 2 or 3 turbines can be placed, will you be forced to move, but we said that moving depends on you, you will even be helped to move if you are willing to.

Question 2:- If a mast shows that there is a place where there is wind, and the land owner doesn't want a turbine placed in their land, will they be forced?

If the project is placed in your land, how long will it take?

Response: The reason why we sign a lease is to come to an agreement, we wont force anybody, if it would have been amust, we wouldn't be talking to you, we would have started work already. The government wants us to talk with you and come to an agreement. And you also choose whom you want to do the project with, nobody will force you.

The agreement for the project is 30years, but that doesn't mean that, the whole of your land is held for those 30 years. It's just but a small part of land that will be rented for those years but your activities will go on as usual. Even in the agreement it says; we request to rent a small portion and the road, but as for the rest of the land you do anything you want to with it. You can even continue using your title deeds, in any other ways because it's not being held in any way. As for the rented space, it will be of help to us and also you, because you will be paid.

Question 3:- The funds that is to help us, when can we start getting it? This kipeto trust?

Response: The construction will start next year around May, after the construction, and we have erected the turbines, is when the trust is built too, and that's when it will start helping you.

Project Activity Report

Project: Kipeto Wind Project

Activity: Esilanke Wazee and Youth Baraza

Date: 25th August 2011

Venue: Dominion Chapel Esilanke (church building)

Target audience: Elders who have taken up the lease and those with interest but have not made up their minds about taking up the lease were mobilized for the focused group discussion.

In attendance were the following:-

1. Ezekiel Nkanooi
2. Wilson Saitaga
3. Nchuuria Nanka
4. Kuka Dikirri
5. Joseph Serpepi
6. Simangua Nkuuku
7. Mukwe Pulei
8. Tirda Mamitu
9. Tikoge Kiria
10. Ole Nanka
11. Kurash Saitaga
12. Samuel Memusi
13. Nkanoni Nkuuku
14. Benjamin Kuka
15. Jonathan Nkanoni
16. Joseph Nanka
17. Ole Ngabul
18. Stephene Sonoine
19. Luketa Pulei
20. Matee Koitee
21. Christopher Iankisa
22. Ole Ngussur
23. John Sironka
24. Borke Koitee
25. Pastor Tepela

A word of prayer was offered by Wilson Saitaga, and welcomed all to the meeting. He said this was a continuity of meetings going on and we've been talking about this project and that's why we are all here today. It's a very big project that requires a lot of things thus we need a lot of sittings to see how things are going.

Every time we meet as kipeto group to discuss how the project goes on, and we ask you not to be tired no matter how many times some things are repeated, we need you to get to know the truth and the depth of the projects so that you don't end up making a wrong choice.

This is a meeting for both those who've signed the lease and those who haven't, and the door is still open. Our officers are here to tell us where we have reached and the next step to take. If you have any questions, this is the right time to ask them, so that we may get to know the importance of the project and its importance to us. It's very good that today we have Mr. Simon with us here today so that he may tell us what's going on the other side.

Omondi:-

Thanked all for turning up for the meeting for the second time, and reminded them that in the previous meeting there were some things that were discussed and they had agreed to clarify them today with the youths. We had agreed that some things you go and discuss with the youths, then we meet again. The youths are to help you with the reading of the meetings and any written document about this project; they are to help you understand about this project better.

There are some information on how the turbines looks like, in terms of its size, depth, its effect, advantages and even the disadvantages, that's why we sit in this meeting to tell you about this project, such that when you go back home and sit with your families, you know well what you are getting into. Like, some woman were asking if the turbine falls, what is going to happen, since it is said that it very big, does it mean that it is going to suck water from underground, and is it going to affect grass growth for animal feed? Some people tend to think that these turbines have an effect on human beings and even animals, both wild and domestic. That's why we need you when you are called for this meeting, to tell you the advantages and disadvantages' of these turbines. We expected both elders and youth today for them to say that we tell them a different story from what we tell you.

The reasons why we bring elders together, is because you have your respect and there are some things that are discussed by just them, although the woman complained that the elders had already made decisions concerning the project without their consent, and as we all know about today's constitution, we have to balance gender equality. They even asked some questions that we all needed clarity, i.e issues about land and inheritance, but that's a family thing and we will not be involved in it. Youths too have issues that we need to talk about and elders need to hear of it too

This project is a project like family, and it's our duty to talk to friends who haven't joined to sign the lease to join, because those we work with are still youths and it will be best if you elders talk to them who haven't joined.

I thank you for the turnout of the previous meeting, and the questions you asked, shows your cooperation, it was also asked if the land can be given for inheritance or the use of title deeds, nothing is going to change in your title, its just a process that the government follows in this

procedure of signing the lease, and your titles are returned just the way you gave them, we've heard people saying that when we take titles they will be returned without strength, and that is not true, you can still use your titles as you used to, to pay fees, hospital bills, ask for loans or in inheritance process, it will still be ok.

The rented place, as the lease states, we rent a small portion and its road passage, but you can use the rest of your land for anything else. We plead with you to understand this because its bringing confusion, the technologists measuring wind haven't told us yet where the turbines will be placed exactly. But we had told you they will be 750m from your household, that's what we are sure of for now. These turbines are almost the same with the ones you see at the communication masts; it's just that these ones will be very big and tall. Those masts taking up wind measurement are very tall, thus we discovered that the higher you go, the more the wind.

As the blades of the turbines rotate, its when it can produce electricity, but when there will be no wind completely, there will be very minimal production of electricity to sell to KPLC and that's where we will be getting the money to pay the land owners, that's why the payment was discussed differently from 750,000 to 1million. so as the time goes by and we end up getting different payment, we don't ask where the rest of the money went, i.e if you have been getting 1million, then there comes a time the production was low and you get like 700,000, you shouldn't ask where the 300,000 went. It's good you understand this now, such that when we get the payment and share the amount you end up getting a certain amount. Just the same thing will apply to the trust, because, 5% of 10 will not be the same as 5% of 20.

And also the issue that were brought forward in the previous meeting we had with you, we said that it will be according to you if you want to move, but incase technologists tell us that where your household is, we can get more wind, we will talk to you and come to an agreement, if you agree to move, then you will be compensated, but if you wont, then we will find another place. It will still be ok.

Youths also asked that as for now the land belongs to the elders, and the money they get wont benefit them as such, how were they to benefit in this?? And we told them that at the construction stage there would be a lot of employment opportunities to both youth and woman, and also the trust money will benefit them too

Some woman asked that; for them that are in polygamous families and their husbands haven't divided land yet, and the turbine is placed in a place, then in time of inheritance it goes to one person, it will look like favourism and will cause hatred between them so they were asking if land can be divided before the project goes further, although we told them that that's a family issue that we cant interfere with. These turbines will be placed according to the flow of the

wind and not a homestead. Also there were those who wanted a number of turbines in their bomas, but its not us to decide on that as at now but the technologists later.

I have tried to review with all the previous meetings' questions, and we've told you that these turbines have no effect. By the show of a picture, showed how the turbines looks like, its height, and the blades, how it's going to be placed and the construction. Told them that this was the kind of a turbine that is going to be placed in the rented portion of their lands.

Simon:-

Today we talk to you elders because you are the final decision makers, and the youths to ask as many questions so as to help them understand further and their elders too. These turbines, we see countrywide is as a development, because its going to produce electricity that is going to be sold to KPLC and will be used by the whole nation, of late there have been cases of power rationing due to lack of water and rain, you need to understand that this electricity production is for the whole country, and its going to come from you. The government gave us authority to do this project and promised to buy the power from us, the company that is going to but this electricity is KPLC and you all know of it from kipeto energy limited.

Incase of cases of no wind completely which is not possible, but if the blades wont rotate even for a day, you will still be paid ksh200, 000, despite the will be no electricity production. You need to start seeing yourself as big people, because you will b the ones giving power to the whole country.

There is no effect from these turbines and wires that passes underground, he demonstrated from where he stood, 1m down the ground nobody knows what going on down there. And it made sense to the elders. The lighting in Nairobi, we have wires underground, others passing up, and even in the walls of our houses, and you all know how busy Nairobi is, but we haven't heard any cases of death from it.

He even used a phrase; don't plant bread that God gave you, eat the bread and plant the seed, this is the seed now and the bread will be the electricity sold to KPLC.when money starts coming, you will be different people, and all your questions will get answers.

Incase of moving, that is if a turbine will be needed to be placed where your house is, how hard will you be to move and you will be compensated? It's at your advantage.

ksh700,000 – 1million is a calculation we did, by the show of a picture of a turbine that produces 2.5kilowarts,he told them that 1.5 shs is a payment for 1 kilowatt per hour.1 megawatts= 1000 kilowatts so multiply by 1.5shs per hour. And he said that that was just a rough calculation.

After all measurement and construction, unless God says there will be no more wind in kipeto, but we always pray so it wind will be there, things will be ok for you here.

This project still needs a lot of people to join, Eziekiel and Wilson are here to help lead us to those who haven't joined and you too need to talk to them. We will be reaping the same things over and over again for those who are already here will end up understanding even better. He told them of a story of his grandfather who would ask him a question several times, and even repeat it after a number of days, just to see if he will get the same answer, he sad that, its not that he dint understand in the first place, but he needed to see if you say the truth by giving the same answer, and if you give a different story, and end up urging, he would know that you are lying.

The lease you read with your lawyers, is still the same lease we are using, we haven't changes anything in it. What is needed is your title deeds, your sign, your identity card, for the government to see if the names are the same and the title is really yours, after its passed through, your original title is returned the same way you gave it, and its strength still the same. So long as you don't end up doing against the lease agreement, i.e, building a tall building near the mast that will stop the wind from getting to it. And if you sell a part of your land where the turbine is, you have sold the turbine too. Because many people will come and want to buy that part of your land, they will trick you into it and without you knowing you will end up loosing, so be very careful with your titles and the lease.

The other group is really spoiling our names, despite the fact that we are being good to them, they tell you that we are going to grab or land, they say that we return your tittles without strength, which is all a lie, we took your titles and returned them the way they were. in today's government, if you sign anywhere that means you have agreed, so be very careful, case of anything, the government will follow the letter that you sighned, those who think that there are two groups, and have signed with the other, by the time you discover the truth, it will be too late, because if the other group will want the money they had given you, in 21 days, with fail they have a right to bring auctioneers, because you had signed with them. Talk to the others and tell them of the future danger that they might not see now. Let this sitting not be like a chama, when you go out there talk to the rest what we discussed. todays government is open and t will listen to you and protect you from fighting.

And incase it happens that you wont have a turbine in your land, there is kipeto trust that you will benefit from. And as for the youths, we will give the first priority at the construction stage depending with their education and knowledge of what they can do. Plus there are those issue that are family matters and we are not supposed to interefere, discuss it as a family and come to an agreement, that's why a house has walls, to protect the inside matters to the family.

As at now, we are not supposed to offer sponsorships, but we took one boy who was doing something similar to this project, and also youths and those in school need to work hard to get better grades and sponsorship opportunity, we can't sponsor someone who isn't willing to work hard.

Technologists from outside this country will be the ones doing the construction, but we will need local supporters too. They will need a place to sleep, food to eat and many other things that will offer you an opportunity to work and earn. And after construction there will be many things going on, visitors will be coming to see the turbines, they will want to buy the Maasai beaded ornaments and clothes; you will even make friends and be selling them directly abroad. This place will be very beautiful, although you still have some fears; it's because of not knowing and worry.

Question 1:-

What would be the distance between turbines?

What will be the circumference covered by the machine?

If one land has been signed and the next hasn't, how will the turbines pass through?

Response

The distance is 750m but there is a possibility to bring them closer, 400m that's if there is no boma. the blade rotates 100m thus we count 4 times, because as the wind flows and the blades are closer, they might cause wind blockage for one another, and takes each others strength, just like the way when trees are closer and the wind flow, it produces a certain sound if its blocking the wind. Also 750m from boma due to the noise the blade produces; NEMA assured us that at 750m from household the sound is reduced. The shadow that the blade produces too can cause discomfort.

Every plot has an access road

18m at the foundation stage and by show of picture showed how it could be then after erection of turbine, it will only take 2-3 m.

Question 2

Someone needed a demonstration of 750m by show of distance

If you have signed the lease and don't have a turbine, will you be paid?

Response

Those who have signed the lease and won't have turbines in their land will be in the kipeto trust, which will be getting 5% of the electricity pay from KPLC, you are kipeto trust, sit down and form a committee, those who haven't joined the project will not be on the trust, they won't benefit from it.

Question 3

Is it possible for land owner to decide on where the turbines should be placed?

Response

That's is not possible because the turbines will be placed according to the flow of the wind, and as we had told you, as at now even us don't know where it can be placed, that's a part of the technologists to decide.

Question 4

Since am now on lease, and the construction coming, is it possible I sell murram and stones from my land?

Response

Constructors are given permission to see where to get stones and water, they will talk to you and you come to an agreement, if the stones in your land won't be enough they will get from the next person too, this construction is very big.

Question 5

Will the project destroy roads and grass for our animals? Is there a way that we will be helped during construction, it will be important to consider grass supplements for the people and plots that have/will be significantly affected by the construction. Supply grass for the cows.

Response

The machines won't destroy the roads, we will just follow a path that will be considered the passage and that's how we will get a road.

As for grazing if you can organize for your animals to graze somewhere as construction takes place. Or if it can be possible to buy hay from some of you for the animals

They ended up saying that grazing wont be a problem, because there was a time when there was drought and animals were taken as far as Tanzania to feed.

Question 6

If there will be water shortage, will it be possible to start a project to dig boreholes for the villagers?

Response: We will look into it at construction time, but after that, we as kipeto trust will sit and decide to work on getting tanks and even taps to bomas.

Thanks giving were given by **Kurash Saitaga**, he said that he is going to talk to those who haven't signed the lease yet and he is asking those who haven't entered the project to go and think about it. He is afraid that there will be those who will cry in future due to lies and wrong information. More meetings are important to us, he said. And also they are going to find a way of talking to the youth and bring them to the future meetings. Those who have already signed the lease are already in a group as kipeto trust, the trust is only for those who have signed the lease and not for the community.

Although he wants the whole community to benefit.

Project Activity Report

Project: Kipeto Wind Project

Activity: Esilanke Baraza

Date: 7th October, 2011

Venue: Esilanke

Target audience: elders who have taken up the lease and those with interest but have not made up their minds about taking up the lease were mobilized for the focused group discussion.

In attendance were the following:-

- | | |
|----------------------|-------------------------|
| 1. Malano Koitei | 19. Matei Koitee |
| 2. Sonto Koitei | 20. Ole Ngabual |
| 3. Barke Koitei | 21. Ole Kamau Nkinyie |
| 4. Korash Saitaga | 22. Pastor Saitaga |
| 5. Simangu Nkuuku | 23. Ole Sorkote |
| 6. Lerionica Somoine | 24. Misia Sorkote |
| 7. Nkanoni Nkuuku | 25. Ole Naigada |
| 8. Ezekiel Nkanoni | 26. Tepel Sitelu |
| 9. Samuel Memusi | 27. Francis Dikiir |
| 10. Jeremiah Llantei | 28. Joha Ngabulal |
| 11. Kayiok Simangua | 29. Pastor Tepela |
| 12. Joseph Serpepi | 30. Hanna Dikirr |
| 13. Moses Tikoyei | 31. Mrs. Koitee |
| 14. Kadipo Mpishi | 32. Mrs. Sankaire |
| 15. Ole Karerei | 33. Ole Keresiek Turume |
| 16. Benja Korash | 34. Mrs. Nanka |
| 17. Kuka Dikirri | 35. Mrs. Letuya |
| 18. Ole Koitee | |

The meeting was opened with a vote of thanks by Ezekiel and a word of prayer by Wilson. He also welcomed all those who came for the meeting, and appreciated a lot because they left their work and come to listen to what they would be told.

He explained about the project and where the journey has reached, and what is still ahead as we go together. We discussed about the project and we have been meeting all the time, especially Mr.Omondi who has been here most of the time and he knows kipeto well enough.

And also mama (referred to Catherine) who has been here before, it was not her first time.

Wilson pleaded with them to listen to the visitors because they had something important to tell us.

Mr.Omondi – greetings, we know each other well enough now, and you have welcomed me to your houses, we have eaten meat and drank milk in this land, I have sat with many wazee's and I have been taught a lot of things. He introduced Catherine too since they knew her. Today you are going to know her specifically because she is the one in charge of the project.

We have different stages in the project, feasibility stage, which was wind measuring thus the masts you see around, environmental impact assessment stage, is what we are still doing now, incase you have any impact on the project or any issues to raise.

The time of construction, incase of any environmental destruction, i.e. grass and plants, it will be planted back after construction. Thus the many vehicles you see around, some are to measure water, see how animals live and birds too, that's how we will come to an agreement on where to place the turbines away from your houses.

Catherine – said she was very grateful for the turnout in the meeting, and the EIA is to finish by December, for the different groups. We will see where the houses are and decide where the turbines should be. NEMA requirement is the turbines should be faced further from households to reduce noise. These turbines are safe and have got no danger to human beings or animals. Its construction will start from March next year for 9 months, from the foundation stage until when the turbines is erected. At this time is when you will get employment opportunities, and also the time when the road will be constructed too.

If you have any questions concerning the project, that you need answers, this is the time to explain everything.

Road will be built from here to Kajjado, and there will be a lot of excavation, road used by animals and human, these construction will bring an impact.

The construction of the turbine will cause challenge for animal grazing, but there will be a fence round the turbine to reduce destruction, a 20 by 20 m space and a road to the from the turbine to the main road.

The construction and road as explained in the lease is the only part that is being affected as we make agreements everywhere where else is still your land.

Catherine is the one who deals with construction, and she said it will only take 5 days to build a turbine, our initial thinking was that it would take a longer period and a lot of work, but she said that even for people who live in a small piece of land, the construction will not affect how they live, and also for the animals too, grazing wont be affected that much.

The construction part of land will be fenced for safety and that nothing will interfere with construction. And after construction, the fence will be removed. Otherwise everything else will go as normal.

And as we had told you earlier, not everybody will get a turbine, but different people, will be affected differently, if a road or a cable passes through your land, general cables at way leave at the general road ,road and a cable for a piece of land that is private, you will also be compensated.

Questions

1. What would be the space taken at the foundation stage?
-about 80m, but after construction, it will be about half of that.
2. What would be the distance between one turbine to the next?
-at least 300m or maybe more
- And 750m from the households
3. What would be the link from the main road to the turbine/construction?
-in conjunction to the highway, the road connects to the turbine.
5. At the time of the road construction, what would be an alternative road to be used?
- A diversion will be used.
6. How are you going to liaise with the land owner for a private diversion road?
-it's the responsibility of the constructor to negotiate with the land owner.
7. What would be the condition of the road from the main road to the turbine?
-it will be a murrum road
8. What about the risk of lightening to the turbine?

-there would be lightening arrestors

9. if a land owner has fenced his land and we need a through road from the turbine? How are you going to act to it?

-there is always a way leave to every plot, even if a plot is sub divided, there is always a road to it. We will use the road that goes to each plot then incase of fenced plot, we come to an agreement with the land owners.

10. After the land owner has already had a turbine in his land, is subdivision possible?

-we had already discussed and told you that a land owner has a right to do whatever he wants with his land, we will not interfere because that is a family matter.

11. The borehole at Esilanke, will it be considered to reduce the operation cost?

-that would now be the time to make use of the trust, to improve schools, health facilities, more boreholes etc put all these forward before the trust.

Ezekiel closed with a word of thanks giving and a prayer by pastor tepela

Key Informant Interview 1

KIPETO STAKEHOLDERS MEETING

Interview Done By: **Joel Omondi**
Maasai language Interpretation done by: **Wilson Saitaga.**
Date: **26th July 2011**

Name: Mzee Saitaga,

Participants: About 8 *Wazees* (Elders) who were participants in the camp on that Day

Event: Maasai Moran “Meat Camp”;

Venue: Bushes of Plot Number 16 on a hidden hillside facing the school in plot 24

WHAT IS A “MEAT CAMP”?

A meat camp is traditional Maasai cultural event common among Maasai Morans. It’s an annual cultural way to build the body (make the body ready) when they were getting ready for long distance wars that would take long periods of time without adequate food and water in far places. The event has been handed over for many generations.

I did my first meat camp in 1987 and have consistently been committed to the even every year since. It usually takes about a month (mostly these days depending on the cows contributed and the people involved) three weeks to one full month.

We build special houses with twigs and leaves and live in those houses for the entire period of the meat camp. Boys and younger men are allowed into the camp to help in work and to learn and to make soup.

This is a very special event in which we eat special Cows, and ONLY and Very strictly MEAT is what is eaten here. The Cow is slaughtered by two men in a special way. They are very choice

cows and people contribute cows for the meat camp. The meat is stored in one of the camp compound special corners elevated from the ground. The meat is laid on fresh leaves to keep them fresh. Meat is cooked in different ways.

The camp is usually built in a area where a tree considered holy by the Maasai has grown. The camp has several houses at the edges of the camp and forming a circle. There are men sleeping in each shelter and their spears are grounded on the side of the door of the shelter house. The spears are made of very strong metal and the very heavy. This is important so that it can be thrown with vigour to be able to kill a large animal.

Each meat part has its own name and is called by its name specifically. There are meat parts for the visitors and those also meat is eaten according to the different days of the entire period.

The days are calibrated/counted using cuttings ion a special trees within the camp.

We also serve different forms of herbs which help in different ways for the purposes of health and for removal of diseases in the body.

Youth who have passed through this event are trusted by elders for serious undertakings. The Moran meat camps were very very strict. And people would follow very many strict laws and be very disciplined. Women are no allowed into meat camps. Women were not allowed into Moran Meat camps.

THE AGE-GROUPS

Project Activity Report

Project: Kipeto Wind Project

Activity: Endonyio Sidai Community Meeting

Date: 28th July 2011

Venue: Endonyo Sidai Esilanke

Target audience: Elders who have taken up the lease and those with interest but have not made up their mind about taking up the lease were mobilized for the focused group discussion.

Mr. Wilson Saitaga opened the meeting with a word of prayer.

Mzee Ole Sengada whose boma (*Swahili word for homestead*) is next to the silange welcomed the visitors and thanked them for coming.

Moses Nepai; who is a youth representative, said that the youth in the community are suffering because they do not have jobs. They only rely on “Vibarua” (*a Swahili word for casual jobs*) which are not reliable. He asked for jobs for the youth, and said that they were looking forward for the youth next meeting.

Wilson Saitaga:-

Explained to the people the reason for the “baraza” which was to talk about the electricity project that is going to be implemented in the area. He said that there have been many other “barazas” held in different other villages but this particular one was for the people of Edonyo Sidai because it has a lot of people.

He thanked the people for attending the meeting despite the fact that it was market day in the area, he knew some of the people who had attended the meeting but others were new to him but thanked everyone for attending the meeting.

Mr. Ezekiel:- introduced the sociologist Mr. Joel Omondi, the assistants, Chepkorir and Lauraine with the driver, Mr. Ochieng’. He explained that the main agenda for the meeting was to explain more about the project to the people, there were those who knew about it and those who didn’t and that it was good because the directors of the project were present in the meeting.

He recognized the presence of the directors in the meeting, Mr. Simon and Dr. Namunje; That they were the best people to explain the project and will answer any questions concerning the

project. There are many different questions about the project ranging from land, employment opportunities, evictions, why the project has delayed, why some people are being paid, and why some area are being favored (e.g. Esilanke than others), the advantages of the project to the owner of the land and the community as a whole, what the presence of the mast is all about, because people confuse the turbines or the masts.

Wilson; asked the people to understand about the project so as not to be involved blindly and regret later. He told the people to carefully understand the benefits of the project. He stated that “we are what we are because of the choices we make” this meant that it is good if people decide on what they know about. He welcomed Mr. Simon to talk about how wind is turned into electricity.

Mr. Simon. Thanked God and the people of Donyo Sidai for coming to the meeting. He introduced himself and his home village is in Taita. He said that he works for Craftskills Company which manufactures small wind turbines for making electricity and he has been in the company for 10 years. That the company has gone beyond Kenya i.e. countries like Nigeria, Cameroon among many others.

With this experience, the government needs to improve energy supply, the company and Government together decided to seek ways to improve energy supply for to help build Kenya. The government provided the policy and regulatory environment and Craftskills experience in wind energy as any other private sector participant in the energy business. When the environment improved, they got other partners so as to be able to produce enough energy for the country. That is how GE came into the picture. After this there was an agreement on where to place the energy producing wind machines and the technology for bigger turbines was brought in by GE.

The government had to be in agreement and make policy needed for a private company to make leases with the community members to give land for the project. This is because the wind machines we are talking about are very big as compared to the ones Craftskills manufacture. They require a space on people’s plots of land. GE is an international organization with wide experience in making very large Wind Turbine machines for many years.

Form the Ministry of Energy we were told that Kipeto area in Kajiado district was the best for the wind energy project. This project uses wind to produce electricity. This is done in many parts of the world, we use wind energy to make electricity which is sold to the Kenya Power, under an agreement by the government.

To implement the project we had to look for donors and other partners in order to carry out the project, because it is very expensive and we could not do it alone. We and General Electric Company partnered and came up with Kipeto Energy Ltd. We are now doing an Environmental

and Social Impact Assessment as required by the Kenyan law before the project is implemented. The environmental and social impact assessment will help us as to know the advantages and disadvantages of the project.

Simon said that Kipeto Energy has put up Masts in three different areas. The work of the masts is to measure wind for a year because it is from the wind that we will be able to generate electricity. The Masts height would almost be the same as the height of the turbines.

One activity going on in the ESIA is to talk to the community; this is for all including land owners who have signed and those who have not signed up the leases. This is simply to get information about how the land is used so that we can be able to place the turbines. The Turbines are to be located on the land of people who have signed the leases. The leases are a confirmation that we can consider your plot for location of turbine. If there are any issues maybe we can get the lawyers to help us understand. That is why the lease was done under a law and got a lawyer to confirm that, that is what they wanted. With the lease we agree and are satisfied that the project would last for 25 years. The lands have been rented and already 40 pieces of land had leases signed. This should not interfere with the communities' activities.

The project is big and that the technology needed is not available in Kenya. The purpose of the Masts is to measure wind so that the exact places to put the turbines are known by the help of experts from an international company. The turbines would be placed 750m from any household. The height of the turbines would be between 83 - 100m and that the blades would be about 50m. With these a lot of energy would be produced. That is the reason why there are data collectors who are going round from household to household to note the various facilities in the area, to help us locate the turbines.

Simon continued to say that in some area the data collectors were being chased away by the owners just because the owners are not part of the project, but this was wrong because it is a requirement by the government to collect data of all households in the area regardless of whether they are part of the project or not.

The main advantage of the project would be to generate power and that power rationing will be decreased. Let us accept the project, because of its advantages and that the whole community will benefit. He asked the youth to remain calm and be careful on deciding about the project and ask questions that would help them in future. Lastly he asked the people to use their funds wisely and gave an example of Laikipa where people misused their funds by going to bars and drinking. We should have financial education to help us benefit fully from the payments we are going to receive.

Dr. Namunje Kenneth: Thank you very much for coming and let me introduce myself first. I come from Budalangi in Busia, and I am a surgeon by profession. I thank Simon for the history and background of Craftskills which manufactures wind mills.

I thank God for the journey of Kipeto Energy which started way back in 2009, when we started scouting for land in Kipeto land for the project. This is when people like Mr. Ole Kipapeyi were walking around seeking land for the project. It has been a long journey. Now we are measuring characters of the wind the speed, direction and strength of the wind as the climatic changes within a year and would be done for 1 year. I want to sincerely thank you for accepting and appreciating the project.

Talked about the benefits of the project and said that there is profit for the land owners, those with land between 1 acre to 100 acres, will get Ksh. 50,000. Those with between 100 acres to 150 acres will get ksh.150, 000 and those whose acres are above 150 will get Ksh.250, 000, during the measuring of the wind.

After the measuring of the wind the payments would go up. 1 turbine produces 1.5 megawatts and that Kenya power will pay a lot of dollars and that 1.4% of the net revenue payments will go to the land owners.

Dr. Namunje said that it would be according to the wind that is generated in a year. If the wind would be consistent throughout the year and quality enough to produce electricity, then 1 turbine is expected to give out Ksh. 700,000 or even Ksh. 1,000,000. This also means that the more the land the more turbines and the payments.

The lawyer would be asked to talk to the community members for it to be simple to understand about the lease because the lawyer is part of the community. This will make them have more knowledge because this is a long term project.

This meeting is just the first and there would be more. He said the government is considering the community and the MP and the DC have also appreciated the community for accepting the project and are aware of the project. He said that a lot of money has been involved because there would be around 67 turbines. The turbines would not affect the cattle or humans in any way because they would be designed in such a way that the wires would not be in the open, but would be built underground.

Those whose land would not be used would also benefit from the project through the Kipeto Trust Deed. In that 5% of the profit would go to Kipeto Trust in which the whole community benefits from. The community members would decide on what to do with the money from building hospitals, schools in the area, taking children to school and any other thing. The money can reach Kshs 50 million a year. Youths would benefit from the Trust as well. He concluded by

assuring the people that the government has given them a go head for the project and that the community members should embrace it.

Questions Micheal Simel asked six questions which were:-

- 1) This company lease 25 years, can it be more or less years than that?
- 2) Are the payments for the underground wiring and the location of the turbines the same?
- 3) How will the school benefit?
- 4) Would there be a fence around the turbines?
- 5) What is the fate of those who had given their title deeds to other projects?
- 6) What happens to a person with a small land and the areas where there are public facilities?

Answers Simon; answered the **first question** by saying that the decision of 25 years lease came from the government and it is according to the time of the project contract. It can be more but it is contracted for 25 years and may be extended.

He answered the **second question** by saying that according to the mapping the turbines are placed according to the plot boundaries. With this there have to be access roads in the turbines. These access roads would be used for the underground wiring. The people whose land would not be used they would be free. These are roads leading to the turbines and alongside these roads underground wiring would be done constructed. From there the main roads would be used to construct power lines from Kipeto to **Corner Baridi** and then sold to Kenya Power Company.

Question three: - the school would benefit from the Kipeto Trust. It is a must for the community to benefit. The profit made would be a lot and that the community would require financial and investment advisors and educators so as to manage the money. He said that the area can even be a tourist attraction site, and this would be a link to the outside world. He advised the people not to look down upon themselves, and said the school would benefit under the Kipeto Trust and even hospitals could be constructed. He stated that the roads would be built before the turbines are constructed.

For question four he said that there would be no fence around the turbines. He added that different Lorries would be used to carry different machines from Mombasa. That it would take 1½ years for construction and that some people may be asked to move houses so as to pave way for more turbines.

He gave an answer to **question five** by saying that it is upon an individual to decide which group to join. And said that this particular project has been given to Kikonyei area. That they have a

letter showing that they have been allowed. The other group went to ask for support to do the project and they were given a letter but long after this group had been given. He confirmed that the government cannot put up two projects, and that craftskills had been permitted because it is bigger and better.

For **question six** he said that Kipeto Trust would do a person with a small land good. He said that the size of the land does not really matter but where the turbines would be placed. For the centers and other facilities they areas would be avoided.

Key Informant Interview 2

KIPETO ENERGY PROJECT – STAKEHOLDERS ENGAGEMENT

Interview Done By: **Joel Omondi**
Maasai language Interpretation done by: **Ezekiel.**
Date: **2nd August 2011**

Biodata

Name: Sangou Ole Saguda

Age - 60

Number of Children - 15;

Marital Status: Was Polygamous 3 wives but now has only 1 as 2 died.

Plot Number: 448

The interview began with a brief introduction in *kimaasai* language done by Ezekiel. We found him basking in the sun as the sheep were grazing from a distance some 500 meters away. It was a windy august afternoon and dressed in traditional Massai red *shuka*, with trademark 2 long shepherds' sticks. We had met earlier and though at that time he hadn't got his payment for the lease, he was fully in support and cognizant of the details benefits and impacts of the project. We had been there earlier for a stakeholder engagement meeting where a lot was discussed about the project. We had also met earlier in 450 where again we had discussed issues of the project. So we kicked in straight into the discussion.

Joel: can you share with us something about the past life of the maasai in this area?

1. The past

Maasai life when i was young was much easier as compared to today. There was more grass for our cows, we obeyed our parents, there was less diseases and strains to make it in life as compared with today.

There were diseases but not as many as there are today. There was more social harmony and Maasai's didn't have to demand so many things in life as is today. Grazing land was communal. People shared many things including water and lived with a togetherness that is not there today.

Malaria was there and 'homa' as the main diseases. There were a lot of dawa ya kimaasai which helped in treating these diseases. Even when a person had serious sickness, we could use something from the intestines of a sheep would make the person vomit the bad thing causing the sickness.

Society was well structured and people were very responsible. We talked to and spent a lot of time with our parents. They taught us a lot of things on how to grow up and how to become good Maasai men and women. We maintained our culture and people respected what decision made by either their parents or the elders.

Another thing is there was a lot of rain then as compared to today. There was a lot of grass and grazing was much easier. There was drought but as the years have passed the rain has become more and more scant.

The life and wealth of a traditional maasai was determined by the number of cows a man has. Wealth is not determined by anything else apart from the number of cows a man has. Further back in the year's wealth was also determined by the number of children a man has. But slowly this has reduced and having many children is no longer a proof of being a 'man' among the maasai.

The power structure among the Maasai was strongly defined by the man in the family. There were few decisions which were done by the women or the daughters. Sons were more and to some extent still are key decision makers when it comes to important family issues like land.

2. The present Maasai life

We are currently required to travel longer and longer distances for grazing and we would many times spend only one year at home. Cows stay away for many months, travelling upto Nairobi and Machakos just to look for pastures and would stay there for many more months.

These days more and more children have gone to school and many don't follow up on the issue of taking care of cows. They have left the maasai culture in the context of our belief and concentration on livestock as part and parcel of our way of life.

The future of grazing and livestock farming is very small. And may actually end with the current old generation. The notion that we sell land nearer town and go deeper into the rural areas to buy land for grazing is only among a select few. Majority are selling land to satisfy needs including fees and such like.

It may also not be possible to have maasai grazing cows in a small piece of land as you can find in certain areas of Kenya.

There are big changes in maasai society these days. All my children are in school as I mentions. Life is more complicated and many people prefer more modern medicine and

shun most of our traditional Maasai culture. DOT COM generation is keen to do things different way. They are less accepting of the traditional culture even as we sit with our children and teach them who we are. It's the culture of Maasai for Fathers to sit with their sons and mother's sit with their daughters.

Joel: we are hoping that even as this project comes we will be able to maintain our rich culture as the Maasai. What are the current things we do that helps to maintain the culture?

Its true there are many changes in Maasai society today that have deteriorated its traditional culture. There are fewer people participating in moranism for example. There are fewer times in which we as parents find time to sit with our children. But I still do it even if the time is little.

The expectations of the project

We expect to see a lot of funds coming to households from the project. We however do not have any communal structures defining many things for example land sales. Sale of land is a purely households affair. Many times we don't consult anybody. The land is subdivided and everyone has his/her piece of land.

Within households we consult a lot with my wife first and then the sons later if we want to sell a piece of land. The daughters have yet very little say even though.

I take all my children to school equally and as long as the daughters "ajatoka shule" (meaning has not become pregnant and left school in which he gets married) she can continue with her education as far as she would wish to go.

Even where there are subdivisions in a piece of land to the sons, I still as the mzee of the family call them and we make the decisions as a group, yet the final decision is still mine.

As far as life and embracing other cultures is concerned, it's a little difficult to control the Dot com generation. They have their own thoughts even as much as we talk soo much to them. They have embraced town/city life too much and do not accept or participate in tradition maasai cultural activities, dressing or rites.

Even in the way we build our houses, there is a marked difference between how we used to build and how we build these days. Due to rain there is a mabati roof which has been introduced even in manyatas, but inside the house there is very little difference for the older maasai people. The younger Maasais tend to embrace new building materials and have different more difference in the way inside the house is arranged.

Project Activity Report

Project: Kipeto Wind Project

Activity: Esilanke Elders Baraza

Date: 4th August 2011

Venue: Dominion Chapel Esilanke (Church Building)

Target audience: Elders who have taken up the lease and those with interests but have not made up their mind about taking up the lease were mobilized for the focused group discussion.

In attendance were the following:

- | | |
|-----------------------|--------------------|
| 1. Matee Koitee | 10. John Ngabuol |
| 2. Parsimari Nkoitiko | 11. Wilson |
| 3. Lukeeta Pulei | 12. Ezekiel |
| 4. Kamau | 13. David Turme |
| 5. Sempeyo Ololochu | 14. Parke Koitee |
| 6. Pelo Ngusil | 15. Niisia Sokorte |
| 7. Mukwe Pulei | 16. Gari Ngusil |
| 8. Pastor Serpepi | 17. Joel Omondi |
| 9. William Kasirimo | |

Opening Prayers were led by Wilson.

The meeting began with introductions and names were mentioned by Mr. Ezekiel. We learnt that it is not considered correct for an Elder to mention his name at the introduction phase.

The meeting then began with some project background information by Wilson. The project started way back last year with the feasibility studies which are still continuing. The three Masts we see are making wind readings that are useful to determine the potential of the wind resource in the area.

Wilson also said that the current phase is the phase where an Environmental Impact assessment is carried out. This is a requirement of the government and any project must as law have an environmental impact assessment. The impacts are many and have to be measured to determine which they both good and bad impacts are. After this will be the construction stage in which the construction of the wind projects will be done. These are large wind turbines that

are very long and would be distributed along the land in different plots according to some technical details still being developed.

The final stage will be the stage of the management and operations which will take about 25 years and is the phase we hope to harvest electricity and sell to Kenya power. This phase is where we hope to be paid amounts we have heard ranging from Kshs 700,000 to 1,000,000 per turbine erected in locations to be identified.

Wilson Saitaga: Joel Omondi here is responsible for social impacts and is here so that we share information about the project and anything you may wish to know about the activities that have been taking place all this while and those that are coming. Lets ask as many questions as possible, so that we get informed and make decisions based on correct information about the project.

The question and answer sessions was an exchange between Joel and Ezekiel speaking in Kiswahili for those who were able to understand and interpretations were done in *kimaasai* by Wilson, with clarifications and examples added by Ezekiel.

Mukwe Pulei Question: It is true we have seen your vehicles running around the land and doing very many measurements. We are hoping that these are only related to the wind project and there is no any other motive.

Joel Omondi: *(Joel speaking in Kiswahili and Wilson interpreting in Kimaasai)* Thanks for the good question. It is true very many times we have moved around your plots and very many times you have seen us, and others measuring different things, some of which we may not have been explained to. To say the truth, this is a very big project, and the government has a very strict legal requirement in relation to projects like these and thee way the relate with the environment.

I also want to say thank you, for your patience as members of the community. You have entertained many visitors, some of which you did not understand, what they are doing. I am only one of the people responsible for community issues. There are very many other experts who come in those same vehicles and measure many different things. For example there are experts who come to measure soils, rocks, birds and the way they live now before the project comes. The idea is we are hoping to ensure there is nothing from the project that affects the environment significantly.

These are found in very different parts of our plots here and may require the expert to go to very far places, some of which we may find puzzling. People who measure birds life for example have to go where birds are live and have their nests. In those large rocks we see all in our plots have very many small animals and insects which are important for the life of plants and grass.

We have to identify them and know how they live. This is what is called the environment. For, example when we were making the road to Esilanke, we had to remove some rocks there. Removing those rocks affects many small animals we as residents don't see or relate with. The project needs to identify where to locate turbines without affecting these small animals.

Many of you have also noticed I have visited some of your homes several times. We have to identify where the homes are located, which materials are the building made of and they geographical locations.

Otherwise we have completely nothing we are doing to the land or measuring that is related to any other motive but environmental impact. Hope I have answered you,..Ok. Any other question?

Parsimari Question /Comment: This is just to say that maybe it would be important that before these experts come to our plots some prior notification is given to avoid situations where we see people in our land that create unnecessary fear.

Second Comment: I wish to mention that it would also be important that we have these minutes shared. So that we can go and sit with our educated sons and daughters so they can read them and are able to answer the questions they always present to us after these kind of meeting. So they also don't say we old men are being cheated.

Joel Omondi: I completely agree with you, it is our hope that we have a great working relationship and I am sorry for cases where prior notice has not been given. At times we are many and working on a schedule and we may easily forget. I am only one of the experts, I will pass that information to my boss who will pass the same to all the experts who come here. I am also grateful the community officers are here Wilson and Ezekiel; they are going to make the necessary notices should any expert be coming to your plots.

On the issue of sharing these minutes, I will definitely bring them later after they are properly typed. Right now they are written in formats that only can read. But we will be having another meeting on 25th August. We will have copies of the minutes for today and you will be able to know what we talked about and share with our families. I hope that is fine with all of us?

William Kasirimo Questions/Comment: we are all aware that this is a very new kind of project for all of us. We are also aware that there are many stories that have been said about this project and its impact to the community. We have heard very any stories, like the turbines have many bad effects on our community and livestock. People have said that grass will not grow any more in this area. Some have said that the machines cause our livestock to have miscarriage. Others have said that the machines will cause all the wind in the area to disappear. What is the truth about these *Chuma* (Wind Turbines)?

Joel Omondi: Shieeee..... (*... is a popular local expression of surprise*). *Laughter among the participants..*

I am happy you have asked this particular question, because there is a lot of new stories about what exactly are the (*Chuma*) wind turbines, yet we have lived with them here for very many years. Just here at the communication masts where Telkom and Safaricom have their own masts we have seen a small wind tower. The only difference with what we have in this project is the size. The wind towers we are talking about are very very tall with arms very long. As I had mentioned we have erected wind three masts in this area since early this year.

These wind turbines will be as tall as these masts. The closest we have to the type of machines we are building is also in Ngong for those of us who have been to Ngong. There are larger wind turbines there and there are many people living and working around the area and nothing has happened to them.

The masts we have here are reading strength of wind, they are telling us that the farther up we go the stronger the wind. We are to install turbines tall enough to be where the wind is so that we can have it rotating every day and night to harvest electricity and sell to Kenya Power. We have given you the land owners payment ranges between Kshs 700,000 and Kshs 1,000,000. The reason is that sometime there will be no wind.

When we say turbines we don't mean anything but just tall pipes that are made with very deeply dug foundations, just like tall trees have very deep roots. This are tall so that we keep them where we have found more wind and to keep them rotating as many times in the year as possible so that we can sell more electricity to Kenya Power and get more money. When there is more wind, the project will be able to sell more electricity to Kenya Power and therefore pay more money to land owners than when there is less wind.

Many times you have seen me coming to your homes with a small hand computer. The aim is to identify where each household is located in the plot. So that we can measure where is the best place to locate the turbines. The Pastor also talked of 750 meters what we are doing is to ensure the turbines are located 750 meters from the houses where we live. The reason is not because the machines have any bad effect. The reason is because they have a lot of noise we are not used to. But we have the same machine small ones all over, yet we have not seen any cows having miscarriage or grass refusing to grow. We have these small wind turbines next to our house collecting electricity.

We have another near the communication masts and the man working there always also gazes cows around the place. There has not been any effect. When you stand there the effect most heard is noise. That is why we make the turbines special, to be able to collect a lot of electricity with any wind available and make little noise.

We will come and construct a turbine and then return the land to be as it were before for the livestock to continue grazing. Cows would be able to lean on the turbines. They are tall pipes but inside is only a stair so that it can be maintained and oiled.

Someone asks: How long is 750 metres?

A debate ensues to determine what one metre is and goes on for some time. People wanted to know what is the 750 distance in real terms.

Ezekiel gave a sample size of one meter measurement using the trademark Maasai shepherd stick. It is about this length... *(Showing the approximate length of one metre using the stick)*

Wilson: one metre is about one step of a person of average height. So you make 750 metres by walking and counting your steps up to 750. This is about one kilo metre.

Joel Omondi: a normal door is about two metres. So this other measures are true of what one metre is. And one of the reasons I was walking around in your *boma's* standing with the hand held computer, was to measure the exact location of each house in the dwelling so we can define the exact distance on all sides when locating these turbines.

Question Matee Koitee: what type of wind is available here and do you think that it is enough to go ahead with the project?

According to the measurements so far, there is good wind and many people will be able to benefit in terms of wind turbines. Maybe the time of constructions of the turbines will be different but many will be able to see turbines soon. The project is already going on, since it is only after you know the wind is good that you go ahead and carry out an environmental assessment. I hope that is clear enough.

Mukwe Pulei Question 3: what happens with our titles now that we have signed a lease? Are we able to go and give the title to be held as security should someone become very sick?

Joel Omondi: The title is still yours and wondering also given the money that you will get if you will need to do that. With that kind of money you will be able to go to the bank and negotiate a small loan when the next payment has not come and the bank manager will not think twice about it.

Ngusil Question: what about if someone is in hospital and he needs to deposit the title.

(Joel Omondi took time to understand the practice that people deposit titles when they do not have money and then go out and look for the money and come back and rescue the title. Apparently word had gone round that those who have taken up the lease have lost significant use of the value of their title). After various explanations and re-evaluation of the question.

Wilson Saitaga: what about the title itself? They are asking does it mean you cannot use it for any other activities. Does it mean we cannot make any other developments in the land that we want as owners of the land? Does it mean we cannot even go and deposit the title should a hospitalized person need help when urgent bills have accrued?

Joel Omondi: ahaa... I am not seeing any problem with anything you are asking that is why am trying to reply with the furthest that could happen. But the land is still yours; the lease did not alter anything in the title. Nothing was altered. Completely nothing was altered. You can deposit the title in anything you are doing. You can use the title for a loan. You can do anything in your land except what affects the terms of the lease. I mean when we have installed the expensive wind turbines in your piece of land the lease say what you can and cannot do. Like you cannot wake up tomorrow and say I don't want this machine here, nor can you put the title to a person who can do that.

If a wind turbine is located in your plot, as the lease shows, we will need the plot area where the turbine is located and a small access road to the turbine. These are covered as areas where for you to do anything it would be advisable to get in touch with the project lawyers. Otherwise the other areas are still open to normal use like grazing and developments.

So in cases where there are agreements with another person who is not in the lease, if the agreement affect the project as defined in the lease it is good to inform the project lawyers, so that you are advised accordingly. Land owners also have a lawyer who will be available to explain some of the individual cases as they arise. But you can subdivide the land and give to your wives as tradition requires. You can give the title as security as you seek finance to remove someone from the hospital.

Pastor Serpepi Question: what determines the location of the turbines and what happens if you find a household where you wanted to locate the Wind turbine? What happens when the 750 metres end up in another person's household or *boma*.

Joel Omondi: The measured so far is good and comes from many sides. There is wind from the south and from the east. There is also wind affected a lot by the escarpment. But within plots wind is affected by the hills and valleys. They drive the way it moves and so the wind turbines will be located according to these and many other factors, including the location of the household.

The wind turbines are located according to very many factors including and mainly where the wind is best found and away from the household. They are made in lines and should a line meet with a household it will not be located where the household is.

But again I want to clarify here that the map of where the wind turbines are located is not final. We will come with it here and will talk with each one of the plot owners where we propose to locate a turbine. If the owner feels they do not want a turbine located in a proposed area, they have the right to say no and we move it to another place.

Ezekiel: We will be making proposals about where to locate the turbines to landowners. But again when a proposal is made to you have to think. What if I make a small move of my house to another place so that I get two turbines? How much do I get when I have two turbines and when I have one? That is what we use to make decision if we say it can be located here or not.

John Ngabuol: that means I can say why don't I move to another place or delay sub-divisions, to enable more wind turbines to be located in our plot so that I can get more benefit. I think that is fine.

Joel Omondi: Yeah it all depends on you and the decisions you make should a proposal be made to you. You are free to make any decision positive or negative about location of turbines proposed. Any other questions..

When there was no any other question

Ezekiel: we will also be having more meetings with the youth and women in the community. So please make sure you tell your sons to come for the meetings scheduled for 11th of August so that we can discuss the same issue with them. And remember we will be meeting again on the 25th August for another meeting also so call others and come.

Pastor Serpepi closed the meeting with prayers.

Project Activity Report

Project: kipeto Wind Project
Activity: Esilanke Woman Baraza
Date: 9th August 2011
Venue: Dominion Chapel Esilanke (church building)

Target audience: woman whose husbands have taken up the lease and those with interest but have not made up their minds about taking up the lease were mobilized for the focused group discussion.

In attendance were the following:-

1. Elizabeth Mutunkei
2. Esther Parsapiyio
3. Lorna Turume
4. Kuya Sankaira
5. Yianik Nkanoni
6. Joyce Teto
7. Elizabeth Rayian

With;

1. Joel Omondi
2. Wilson Saitaga
3. Ezekiel

Wilson opened with a word of prayer and made an explanation to the woman the purpose of the meeting.

He said that some woman knew about the project and how it's going on but some didn't know about it. And there are those who have signed the lease and the ones who have not, but this meeting is for all because at the end we are all going to be affected in one way or another. Your opinion here is very important, you have to talk now and ask any questions for clarity and incase of any developments or an addition it's welcomed. It's an opportunity for woman to give their views, so as not to be left behind.

Wilson also said there were several projects running in the Kipeto areas that are almost the same as what is planned and he gave an example of the wind mills at the communication masts and the local Esilanke Primary school, a stone throw away. The only difference he said was the size of the Wind turbines to be constructed in this project are much bigger.

Joel Omondi: - we'd really like to hear the women's opinion, anything that you've heard in the community that you need clarification, this is why we really have to talk to you. We need to go on with

the project as per your views and ideas, especially considering you woman, i.e. 'What builds, what destroys or what you think.' Because we are not coming to destroy your environment or your daily activities as they should be going on. The project is in its second phase now which is the environmental impact assessment. The first phase is the phase called the feasibility study. The second phase is the phase of measuring the environment as it is now and also ensuring that we plan everything in a manner that does not affect the community or environment. Where it affects then due compensation or mitigation is made to ensure the environment is safe. The new constitution gives us the right as community to protect and manage our environment. So a project like this has to engage and work with the community to succeed. that is why we are here. That is why you have seen many vehicles with experts in you homes and land. We have to make sure even the birds, animals, plants, rocks. We have to know where your houses are. We have to know where the water and schools, church and grazing land are. Please ask as many questions as possible.

Questions/comments:

Lorna Turume:- We have heard about the project, but we are afraid that things might change in future that could cause pain or cries.

Although some husbands don't involve their wives in the things they do, we appreciate your involving us to it. And we don't believe that the project has any negative effect in future, and we hope there will be no regrets.

Response

Joel Omondi: - our purpose of running around is to make sure we know how the environment is before the project starts and find places to put the turbines, such that there would be no harm. The purpose of these meeting is to inform you how the project is and since you have leased land for the project and you will be the eye to see incase anything you see changes and affects the environment. Giving an example of the telecom mast, you see a vehicle regularly comes to check it up and to make sure that everything is ok.

We are here to explain all the issues so that tomorrow or in future we can together work on anything in the environment we think is being changed by the project. Some people say that we are explaining hard things to people who have not gone to school. We discussed the issue last time with elders. We agreed that the reason we take our kids to school is to help us discuss issues. We will share the minutes of these meetings so that what we discuss is written and our youths can help us understand.

The lease agreement is an agreement that shows what can be and what cannot be done by each side. The project cannot do things that will cause cries and pain to the community. The government would not allow it. The constitution does not allow it. That is why we have to sit and talk and share information about the project. And the community chose a lawyer to help explain the lease and that if a problem (any effect) exceeds, it has to be corrected e.g. if there is too much noise.

Example, the only difference between the wind masts that we all see around and the new turbines is the size. These new wind turbines will be very big, and we have to make the foundation very deep so that they stand. This is normal as tall trees also have deep roots. Where grass is removed when we are making turbines, the grass will be planted back when we have finished.

The pictures of the turbines to be constructed are shown

Elizabeth Mutunkei:- Since we've heard that the turbines are very big, will it suck water from underground, that will cause us have water shortage in future?

Second question is: And we have also heard that some families will be displaced is it true?

Response

Joel Omondi: - There is a group which takes water measurements and their levels around here, although there is little water, we will bring water from outside to use in construction because it will need a lot of water. We will give opportunities to women who have excess water to sell to the project where possible, but remember you must have enough for the family first. We will not be using water from the area. And the machines foundations are just made of cement, wires and stones and they do not suck water, as she asked. There will be even more water in the future if we are able to use our available funds well and dig more Boreholes and maybe even put pipes to our houses.

On the second question about weather households will be displaced. The question arose during the meeting for elders. When we were discussing the issue of how turbines will be constructed in some lines and the distance between the turbines and the house. There are people who said considering that its better to have two or three turbines in their land they are ready to move. The project is a voluntary activity. Even when the turbine layout is established, We will still come and discuss with each plot owner where we propose to put a turbine. If s/he feels its ok, we will put it there, if they feel it is not ok we will move it to another place. We will negotiate with the land owners on these issues. If we propose three turbines in you land and one is within the 750 meters to your household and you feel you don't want to move the household, you can stay. If you feel you can move the household a little we will compensate for moving the household and put the turbine.

Esther Parsapiyo:- Question 1: For those who have small portions of land, will the turbines be placed in their lands? **Question 2:** And also there is rumor that those lands that turbines will be placed, no other project can take place? **Question 3:** the 30 years is a lot time, and we have other things to do, and our families will expand and grow, how are we going to do about it in terms of land inheritance or relocating to other parts of your lands?

Joel Omondi: - **Answer to Question one:** Turbines are being planned based on various factors including and mainly where the wind is strongest. Remember we said that we have found wind to be strongest higher up the sky and also in certain areas than in others. The turbines are going to be arranged to ensure we collect the highest amount of electricity in a year. This is why we are giving a range of Kshs. 700,000 to 1,000,000 for a turbine. There are days when it will be low and days it will be high. To ensure

we have high electricity all the time in a year we have to locate the turbines very well. So the concerned experts will show us where in your small or large piece of land is best to have a turbine. It can be small and get a turbine, and those who do not get a turbine still benefit more when they are in the project rather than when they are outside the project.

Answer to question 2: I will repeat again we only need a small space to install a turbine. We are talking of the 750 meters because of the noise it produces. But it does not mean it has some serious effect that nothing else can be done in your land. The project has leased that small space where we will put a turbine and then the place where we will have a road so that we can go to the turbine when we want to maintain it. It is also by the same road where we will have the cables running to the take power to the main power lines to be sold to Kenya power. All other space in the land can be used for all other things.

We have said this again and again, we only leased the land area where the turbine is located. The other parts can be used for other developments. Cows can graze, houses can be built and farming can be done.

Answer to Question 3: As a family weather one or many wives, you will have to sit and agree when a turbine is put somewhere in your piece of land it benefits all the people in the family. I have heard about the challenge of sub-divisions of our land after we take-up the lease. There are incorrect stories that we cannot sub-divide our land when we have taken up the lease. I will say here and now the land is still yours and you can sub-divide it to your sons and daughters. Households with two or three wives can still sub-divide their land among the wives even when they have signed the lease.

So people who have not taken up the lease because of the sub-division issue, please do not worry about the issue of sub-division. You can take the lease and still later sub-divide or sell part of your land where there is no turbine. If you sell land before the turbines are put you may loose some turbines to the person who buys because as we said we still waiting to know where the turbines will be placed.

It you are in the lease and sub-divide the land then you find your land is located only one turbine, you need to sit down as a family and decide that the turbines benefit the whole household. But you will be free to of these projects should help the whole family as at now. Wives can build on their land and make development in their allocated land. Sons can build their households in their land. There is no problem with that.

Ester Parsapiyo:- Question 1: In future, if you want to sell the part of your land where the turbine is, whoever buys it, should they be on the lease too? we agreed that when you want to sell your land it is good to get in touch with your lawyer who made the leases and inform all parties concerned so that the sale is done in a way that does not make someone come and destroy the turbines or break the terms of the lease.

Question2: And why dint you call a meeting of all people especially woman in the beginning before the signing of the lease? Why dint you consult with the woman first?

Wilson Saitaga: - you shouldn't think that it's too late, this is a period to consult all and it's a major time to change anything. It's even important now that the time of the lease signing.

Kuya Ankaira:-Will there be a difference in power between the telecom masts and the turbines in terms of generating electricity?

Qn1: Will it have effect to children or animals in terms of shock due to power?

Answer: The tower has no effect you can even lean on it, and the wires will be sealed and will be 1m below the ground. These as we have seen the pictures are just normal pipes that need a stand made of foundation like that of a house. It has to be deep because it is very tall, but it has no effect on any person, animal, grazing land or children.

Qn2: Incase if you want to move, and you have more than one turbine in your land?

Answer: You can move to any area in you land that you feel that is fine. By then we will have a lot of information and you will not need to worry. You can still develop, use and do what you like with your land as long as its within the lease. As in you don't interfere with where the turbine is located.

Qn3: Is it true that electricity will be sold to Kenya power? Now who will pay us?

Answer: yes we will harvest electricity and then that electricity is sold to Kenya power. They will pay us then from that money we will pay 5% to the trust and also pay each land owner who has a turbine in his/her land. Remember the amount depends on how much power we make every year. We hope to make 100 MW of power. Again the details will come slowly soon.

Qn4: Will it be easy for the land owners to get electricity to their bomas?

Wilson: There will be an easier way maybe but since it is a private company we will work out the methods to get power to our homes.

Qn5: Since the project is going to take a lot of years, how will the woman benefit from it? They can be employed to fetch water, can cook and sell food to the constructors, get a place to rent for accommodation....and various other employment opportunities will arise.

Qn6: Will this project give the community the benefit like boreholes, schools and health facilities?

Answer: We have a trust which you are and should be members. The trust would help a lot in some of the activities you asked about. Maybe we should get the people concerned to help us understand more about the trust?

Women: Yees, we should and they should come with you so that we have clear information in simple way as you have done.

Qn7: When electricity comes, is it going to change the way of living? We need to benefit from it. Will we be cooking with electricity in our homes?

Answer: The project and the benefits will grow in years if we all plan well. Yes a lot of those benefits will come during the operations stage depending on how we manage the trust. Make sure we all join the lease and therefore are able to benefit from the trust.

Qn9: We need markets for our Maasai products that we make? Will the project help us sell these or even export Maasai products outside Kenya? We need market to sell our products, will we benefit on that too. Under the Kipeto Trust Deed you would be able to work out the details of specific development assistance you need like the marketing of your products.

Project Activity Report

Project: Kipeto Wind Project

Activity: Esilanke Youth Baraza

Date: 11th August 2011

Venue: Dominion Chapel Esilanke (Church building)

Target audience: Youth whose elders have taken up the lease and those with interest but have not made up their minds about taking up the lease were mobilized for the focused group discussion.

In attendance were the following:-

- | | |
|--------------------|--------------------|
| 1. Sleit Nkasoito | 7. Pastor Samoine |
| 2. William Tiramū | 8. Steve Solio |
| 3. Kayok Nkukuu | 9. Stephen Kitewaa |
| 4. Isack Matura | 10. Ezekiel |
| 5. Litei | 11. Wilson Saitaga |
| 6. Olokwaya Miisia | 12. Joel Omondi |

Wilson Saitaga opened with a word of prayer, and explained to the youth the purpose of the meeting (wind farm).he said it was the talk of the place and some of you have already attended some meeting before.

It started with the government, and then got to companies before it got here. There are many ways to generate electricity, he explained, i.e. solar, water, wind etc.the government need wind now and gave prioritization to do it.the second step was to agree with the land owners, the research study showed that Esilanke has wind.

The masts that are put around are to measure the quantity and the speed of wind, that's the procedure going on now. And it's going to go on for at least 1 year.

The next step was SEIA, so as we don't get complains in future incase of any environmental distraction, reports are needed from different groups, so as to compile study difference. if the report reach the NEMA standards then the turbines will be placed .

We have talked to wazees, woman and now this is the day to hear from the youth, we need to hear your views about the project and any questions or comments. We need to hear if maybe you have plans or how you want things to be, because if we will need to target those educated,

we will still target the youth, to help us in explaining to your elders, what's going on. You are very important to this project, especially at this stage.

Omondi: - the constitution says that the youth are the leaders of today not tomorrow, we need to hear youths add to this projects development.

You will be the owners of tomorrow, thus important to you, in 10 years to come all land will belong to you youths, that's why we need you to contribute in all aspects of environment. It's good to plan now for the future, there are 3 more sections for the project.

The first stage was the feasibility stage, the masts you see around help in measuring wind.

The wind speed and quantity will vary for the amount of electricity produced, this turbines have to be erected somewhere and we have to talk to land owners, and it depends on your will, it's not a must.

If by any chance there is a turbine in your boma and your neighbor doesn't have, it will still have an impact to them; it will affect them in one way or another.

And any ground and grassland damages that might be made at the construction stage will be repaired, ie grass will be planted back

Question 1: You have called us as youths, how are we going to benefit before wazees (Elders) die in the next 30 years? The Lands belong to our fathers, as at now, we benefit indirectly, we want employment and education from the project.

Response: At the construction stage which will take 18 months, there will be a lot of employment opportunities; it will be difficult to build if the locals do not participate in it, because you know your area so well. There will be all types of work, unskilled and skilled depending with the level of your education and the needs of the construction. There will also be training and work for the operations stage, and it will be good for those who have some education to also apply for these opportunities. As part of the project under the Trust to construct a training facility i.e. to train about wind turbines, electricity and general repair and maintain turbines and electrical systems.

Question 2: We don't have anyone who has the technology to do this work, and they might bring people from outside, the highest level of education most youth have here is form 4.

Response: The importance of the training facility is to educate us the youth to work with electricity that is generated by wind mills. Those that are still in school will benefit a lot especially from std 7 to form 4, we encourage hem to study hard in order to qualify for university and college to do electrical engineering and such topics. But we who are past school

here can still benefit during the construction stage. Look for opportunities. As for you youths, you will benefit in other means not especially schooling.

Question 3: For those youths who have not gone to school completely, how will they benefit from the project?

Response: you can seek jobs unskilled jobs. You can also asone of you mentioned form cooperatives and companies to pool together and seeks capital and small tenders. It doesn't mean that to open a cooperative you have to be educated, or opening a company. These are things you can learn if you ask around in the relevant offices.

You all have to come together and some people learn a lot just by seeing, they can do casual work, you don't have to go to school to do some work. You will all shift all for a greater opportunity, and for those who are still in collage can do an electrical engineering part time if they are interested. It is very possible to use our brains get together and supply materials or provide labour or prove a service like food or build accommodation facilities in Esilanke here.

Question 4: Can the project sponsor us?

Response: As at now no, only one person has already been sponsored but in future, the training facility will help. And also as the Youth we can facilitate a lot of sponsorship through the Kipeto Trust. As for the construction stage, if you want sub-contracts, the best would be to seek opportunities in the banking sector for any capital you may need, if you get a contract.

Question 5: Sponsor part-time studies for future recommendations, it will motivate the youth and help them love all about the project. That's a great idea, but it is still too early in the project and we would be better off working to establish the project first, then let each person understand where s/he can work or benefit from the project and then it would be easy to seek the same benefit through the Trust.

Question 6: Natural calamities like lightening, are you securing? Are the turbines secured in relation to lightening given that they are very tall?

Response: In this kind of a project, there is always lightening arrestors. And the machines will be installed with lightening arrestors.

Question 7: What about shock from electricity? Shock to animals? Or the people like children or youths playing around?

Response: They use electrical cables are underground almost one mete down. There are no shock on the pipe that is standing. There are no way any animal or child can get shock from the

turbines. Somebody can lean on the pipe and it would not shock him or her. And it also is insured and in case of anything although we are not expecting any, you will be compensated.

Get a good time to educate us on how to do the application and we could get the knowledge.

Wilson; - in time we are going to do that and help you get prepared and have enough information.

Prayers and Closing

KIPETO PROFESSIONALS STAKEHOLDERS MEETINGS 1

DATE: 12TH AUGUST 2011

VENUE: KISERIAN LAWYER OFFICE

Present: Joel

Naikuni

Landan

Wilson

Ezekiel

James

Absent with Apologies:

Joseph

Maurice

AGENDA 1: ISSUES ARISING from the KIPETO Energy Project:

1. How best to engage with the KIPETO PROJECT:

- a) There are issues that needed a better approach e.g. the Lease process.
- b) Are we thinking clearly about this project as professionals from Kipeto?
- c) What can we do to improve the project implementations and be responsible to our community who we are responsible to, since we understand these issues better?
- d) What was the basis for the original agreements and were our interests well represented?
- e) Are there areas we can renegotiate and are there areas we can look differently? Are there issues in the lease that are re-negotiable?

2. Communication channels are weak or non-existent

a) Lawyer with Landowners:

There is need for better periodical communication between the lawyer and the landowners who have signed up the lease to help clear the many issues arising and to explain the lease to lease owners who don't understand the many issues arising.

b) KIPETO with Community:

There is need for a more structured communication channels with the community. Maybe locals employed with the landowners who can engage with the KIPETO ENERGY LTD more directly and be able to explain issues to the community about the project on a continuous basis.

c) Among landowners and community:

There is a lot of misinformation about the project which has caused a lot of acrimony and differences between the community and the competing wind project. There is need for a clear organization of landowners who have signed up the KIPETO ENERGY lease to organize and support and protect their interests.

3. How do we engage during the coming phases of the Kipeto Wind Project?

- a) Are we well informed about the construction stage that we can effectively explain to our community and also effectively take advantage of opportunities arising?
- b) Are we communicating well in relation to any impacts of the project and are we doing well enough to work with the EIA process for effective management of the environment?
- c) Are we ensuring that our members are not going to sell all the land when the project comes and we end up not benefiting from the project as local Maasai community?
- d) Are we well represented in key decisions about the project as Kipeto Energy Ltd stakeholders and how can we enable a better engagement within Kipeto Energy Ltd? We should be able to be represented in decision-making process of the KIPETO ENERGY LTD.
- e) How is the Community Trust stake to be managed? Are we only to be informed of the proceedings or is there a formal way in which all this is structured and we have reliable representation with official communication structures to ensure we are well engaged?

- f) Can we have an official communication structure to enable sufficient official communication with the landowners as key stakeholders?
- g) Can we organize ourselves as landowners and professionals and what would we be registered as?
- h) Can we differentiate between the landowners who have signed up the KIPETO leases and the other KIPETO landowners who have NOT signed up the lease but are members of the KIPETO community?
- i) Can this difference be expressed in terms of control of the Kipeto Energy Trust management and resources?

The meeting concluded that:

- a) An organization representing the interests of land owners and professionals should be established
- b) The organization format and functions would be defined
- c) The organization would be responsible to helping community manage issues it does not understand and need clarification.

Project Activity Report

Project: Kipeto Wind Project
Activity: Donyo Sidai Youth Baraza
Date: 16th August 2011
Venue: Donyo Sidai Primary School

Target audience: all youth members from the Donyo Sidai area were invited to attend the meeting.

In attendance were the following:-

- | | |
|----------------------|----------------------|
| 1. Amos Nainguda | 10. Josephat Nasieku |
| 2. Emmanuel Simotei | 11. John Kipapei |
| 3. Peter Nkoitiko | 12. Timothy Nkoitiko |
| 4. William Nkoitiko | 13. Moses Simel |
| 5. Steven Nkoitikoi | 14. Moses Sakuda |
| 6. Emmanuel Shempere | 15. Collins Nkoitiko |
| 7. Douglas Marrika | 16. Solomon Ngusur |
| 8. Jackson Nkoitiko | 17. Jackson Ngusur |
| 9. Victor Nkoitiko | 18. Fransis Nkaitoko |

With;

1. Joel Omondi
2. Wilson Saitaga
3. Ezekiel

Prayers by Ezekiel

Introduction by Ezekiel

Brief project background was given by Wilson in which the project phases and activities in each phase were explained. A) Feasibility stage; b) EIA stage; and the coming next is the c) Construction stage; and then finally; d) operations. In each stage activities that are and will be going on were explained. This was done exclusively in Ki-maasai, to ensure adequate understanding in local dialect.

When Wilson finished, Ezekiel took the meeting through the previous meeting we had with the directors of Craftskills. There were some issues which were discussed and it is important for all to know what these issues were discussed about the project and what explanations were made about the history and the progress of the project.

Ezekiel then invited at least two youths who were in the previous community meeting held at Donyo Sidai in July to come and explain to the others what was discussed.

Moses Simel stood up and made several points about what was discussed during the meeting held on the 28th July 2011. He listed the benefits of the project, the process of the project, and the details of the project as he understood them and as was explained during that meeting.

Josephat Nasieku who was also in the meeting stood and explained to the youth what he heard during the meeting and how

After these Ezekiel then stood and invited Joel Omondi who was to give some more details about specific issues about the project and also answer any questions that may arise. He encouraged the youth to ask as many questions as possible.

Joel Omondi began by repeating a few facts about the project phases and the activities involved. He explained about the environmental Impact Assessment. He said it is a requirement of the law these days that every time you do a project that is known to have some environmental impact the law requires that an EIA be carried out and that the report be given to NEMA who then provides the license to do the project. The importance of the EIA is to ensure that project positive and negative impacts are defined and reported and means to manage those impacts spelled out clearly. One of the key activities in an EIA, Joel Omondi said was discussing the project with the community. This means that both the project owners and the community must have full knowledge about what impacts the project will have in the community and they work together to share the benefits while managing the adverse impacts.

Joel then went to explain what the wind turbines look like and what is involved in making them. He explained that they are very big machines, but they are just the same as the ones we see locally. We have machines like these in Ngong and also very small ones in the Esilanke area.

The sizes he said are about 81 meters high, while the three blades are 50 metres each. We will need to make the road so that they can be delivered from Mombasa. Construction will take about one year and half. We have taken leases from as many people as possible but not all will be able to get turbines in their plots. The plots which will have turbines are defined by the wind measurement currently going on under the feasibility study. The behavior of the wind under the study will define the location of the turbines but again the all who take up the leases will benefit.

Jackson: WHAT ARE THE DIRECT BENEFIT TO THE YOUTH, we have heard too much about what our parents are getting out of this project, but we youth don't seem to be targeted in anything. Why should we support this project?

Joel Omondi: the purpose of today's meeting is actual that. Try and tell you more about the next series of activities coming and how the youth can take advantage. It's true the plots are our parents and we may not directly benefit from what is being paid currently or what will be paid during the operations.

But as indicated earlier, the project next stage is the construction stage. I have heard a lot of stories that the youth will not get any jobs in this project. That is NOT TRUE!. There are a lot of jobs and opportunities for all the available youths in both Donyo Sidai and Esilanke to take advantage of. Again it depends on the individual and her education and her ability to see opportunity and take advantage.

But the construction stage has many activities we have listed that we can benefit from even before the elders start getting their money for the lease when the project turbines start.

Question: Are there opportunities we can work together and provide some materials like stones and sand? Can we start organizing ourselves open companies and bid for small jobs like bush clearing and things like that? Will we be given preference in these things? Or people from Nairobi and other big people will take all of them?

Question: Are there opportunities for providing security to the turbines when they have been erected? The other company when they installed their masts built houses for the security people and paid them. We expect the same after the turbines are established for this company?

I cannot say if they will actually seek security personnel during the operations of the turbines. That is something I will list and ask those concerned in planning at that stage. What I am sure about is there will be some jobs during the operations. Maybe some company will employ a few youths who will be trained to maintain the turbines. Maybe some of you depending on the qualifications they will need can apply for those jobs.

Question : Are there serious effects from these turbines? Like electromagnetic waves that can affect us? The new constitution says we have right to know.

There aren't any electromagnetic waves from the turbines. Please check some of these things' last time when I came to your household you asked me the same question. Please, try confirm through the internet. There are no electromagnetic waves emitted from the turbines that are harmful to humans. Again make sure you look for the final report and read. We will try to make it as open as possible so that you will all read and explain to your parents and those who can't understand. Then you will make sure that as the turbines run your eyes are open to implement the environment management plan. We have our contacts all over so you will be able to ask any questions about whatever you feel is not correct.

The new constitution if you have read it well again says you have right to full information and also you have obligations. One of those is to make sure that we responsibly seek information about environmental issues. The NEMA act also guides on how the environment management should be done by both the private sector investing in any project. That is the reason we are here today. Part of the

requirement is to give information prior to the project so that we discuss and agree on what impacts and how to manage them.

Question: What are the main benefits directly to the youths during construction and during operations? Are there jobs during construction dedicated to the youth? Are there jobs during operations dedicated to the youth?

Question: What about the youth's participation in the Trust? Will we get opportunities in the trust to be apart and parcel of it and make decisions about it. We want a section of the funds to be used for Youth activities. Can you assure us about this? Will we be able to bid for some of the jobs that the trust will be doing as the youth in this area?

Joel Answer: for the Trust I think its important we bring in the people concerned and organize meetings for them to explain some of these things. What I can say is that when you hear about these meetings please don't miss.

Question: where will these meetings be? Will they come to the grassroots like you have done? Why don't you look for that information and come and explain to us? Who will be explaining this things to us?

Answer: for now I will only write them down then will hand over all your submissions to my bosses then they will act on them. So lets be patient with some things ok? I also have a limit as to what I know and I don't know some of the answers to some of those questions. But they are very good questions and you need to ask as many as possible.