Socio-economic Impact Assessment

Report Prepared for

Gulf Power Ltd.

NEMA Reference No. NEMA/PR/5/2/6972

Report No. 201004-EIA-004

July 2010

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1 Executive Summary

The purpose of this study is to interpret the positive and negative socio-economic impacts that have been identified and their implications on local and regional social and economic lives of communities. It also provides recommendations with regards to minimizing adverse effects and maximizing positive impacts. The Social Economic impacts have been viewed in terms of their duration, or the stage of life cycle the development takes place. The current study analyses three stages of the proposed MSD power plant 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 power plant would be between 20 and 25 years, hence the impacts during this stage would be of sustainable nature.

The level of information of the proposed Athi River Power Plant was limited to less than 50% of the respondents while the general expectation was positive especially if there was sufficient generation of employment, negative impacts were expected as interference with the health and safety of the residents.

Based on the opportunity cost benefits analysis of building the MSD power plant in the selected site as compared with not constructing it, it can be preliminarily identified that the establishment of the proposed MSD Power Plant in the selected site will generate higher socio-economic benefits than the opportunity cost of constructing the power plant in an alternative site.

The effects on the local and regional social structures and economies, which are both directly and indirectly attributed to the establishment of the proposed MSD power plant in the Athi River division, are evaluated in this report and are outlined briefly as follows;

Employment and training opportunities

The MSD power plant would provide significant employment both at the construction and operation phases. It is also expected that there would be direct and indirect employment opportunities for the locals and for other jobseekers drawn from the region including Nairobi. This may have a positive impact in the sense that in the short term most of the construction phase job requirements require unskilled labour which is readily available.

The community expects to learn more from the power plant. Many college students would benefit from the power plant in terms of attachment and employment. The plant management is also expected to engage the community in environmental and business education which would significantly benefit the community knowledge and skills. The presence of a University in the area significantly raises the prospect for higher business/academic linkages that are the beginning of real economic growth.

The fact that more local people would be directly or indirectly employed in the area through the Athi Power Plant there would be more purchasing power for a bigger basket of goods and services leading to a wider distribution of wealth and higher demand for better infrastructure including housing.

Growth in business (Industries and small business)

The MSD power plant would provide direct and indirect business opportunities to the local population. Individual, small, medium and large sized businesses are expected to benefit from the contracts offered by the power plant. Individual and small business are expected to benefit from direct and indirect business like selling goods and services to workers, supplying materials to the power plant or providing transport services to both goods and people.

The town is envisaged to significantly grow as a result of the construction of the plant in the selected site. Growth in business will be responding to increased population and demand for social and economic services like housing, food, education and health facilities thus promoting development of business which are in line with providing these services

General economic growth and Increased value of land

The value of land in the area will be better suited for more industrial and service activities resulting from the construction of the power plant in the area. This is expected to raise the value of land in the area and benefit land owners. However, it may be difficult to determine this in a prospective manner due to the apparent mixed land uses in the area. There is expected improved infrastructure due to the construction of the power plant in the area. These include new access roads, street lights, some form of environment landscaping by planting of ornamental plants and trees around the site.

The construction of the power plant is also envisaged to improve the visual beauty of the area due to the increase in buildings and landscaping that replaces the bare undeveloped area.

There will be better night lighting and more night activities due to increased traffic and other upcoming buildings in the area. This will improve the security situation in the area that the power plant will be located.

SUMMARY OF SIGNIFICANCE OF POSITIVE IMPACTS				
IMPACT	Construction and Decommissioning phase		Operational phase	
	Without Enhancement	With Enhancement	Without Enhancement	With Enhancement
Employment for Locals	Low-medium	High	Medium-high	High
Growth of business in the area	Low	Medium-high	Low	Medium-high
Improved security	Low	Low-medium	Low	Low-medium

SUMMARY OF SIGNIFICANCE OF POSITIVE IMPACTS				
IMPACT	Construction and Decommissioning phase		Operational phase	
	Without Enhancement	With Enhancement	Without Enhancement	With Enhancement
Improved visual beauty	Low-medium	Medium-high	Low	Medium-high
General Economic growth and Increased land value	Low-medium	Medium-high	Low-medium	Medium-high

Conflicts due to Negative public perceptions and low locals participation

The potential competition for opportunities, the potential for environmental risks, and the lack of public information and awareness on the nature and facts on the risks involved has the potential to easily lead to negative public perception especially if the local expectations are not seen to be realized.

The high costs of electricity could also easily spin off as a negative perception by the local population. There are many people who may relate the KPLC power bill issues with the proposed power plant. There is also the possibility the locals would consider any shortage of diesel to be caused by the plant.

The significance of this impact is easily determined by an analysis of the perceptions aired by a random sample of the local population. The presence of many industries in the area has raised the average public awareness on environmental impacts.

Conflicts due to locals missing jobs and preferential project benefit access

Although one of the main impacts is the provision of employment to local population, the expectations may not be realized especially in the long term.

The power plant is expected to generate about 28 low and medium skilled employment in the operational phase. This may soon challenge the expectations of the locals and may lead to increased scrutiny of the number or percentage of employees who are from local area as opposed to those from outside the region.

However, this impact is expected to be reduced during the construction phase where jobs are created such as local building material suppliers and opportunities for 100 employees to work on the site. The spin-off is expected to increase the number employment opportunities as more are engaged to provide goods and services to the workers.

Increased social issues and disease increase due to influx of jobseekers

Another negative impact is that the increased night life especially from the truck drivers and their touts would attract large numbers of commercial sex workers and this would contribute to the spread of HIV/AIDS due to casual sexual activities. The night life may also increase drunkenness and petty crimes. This impact would be a natural outcome of the development of many towns in the region along the Nairobi-Mombasa road and should be mitigated with requisite public education and distribution of protective materials like condoms.

Increased Incidences of Accidents

Likely incidences of road accidences may be due to; the influx of construction workers leading to an increase in the traffic population (pedestrian and public service vehicles), increased numbers of building materials delivery vehicles and increased numbers of fuel supply tankers (There was no information provided on number of tankers which will access the site per day).

The longer distance of the Fuel Depot assumed to be in Mombasa, the condition of the roads, and the pedestrians in the area would be affected but it is not foreseen that the additional traffic from Gulf Energy supplier tankers and site activities would have sole responsibility for accidents on the road, but could contribute to road congestion and accidents.

Incompatibility with existing and proposed land uses

The area is zoned for light industries. However, there seems to be a mixed land use with the proposed site being surrounded by Athi River Steel Mill Plant, East African Portland Cement Company and Green Park Residential estate which raises an uncertainty on the nature of user in the undeveloped plots next or adjacent to proposed power plant site. The power plant is expected to exert pressure on the limited local resources like water meant for domestic purposes and access of various social amenities.

The proponent should apply for an extension of user authorization to obtain council approval and create awareness on intended land use.

SUMMARY OF SIGNIFICANCE OF NEGATIVE IMPACTS				
IMPACT	Construction and Decommissioning phase		Operational phase	
	Without Mitigation	With mitigation	Without Mitigation	With Mitigation
Conflicts due to locals missing jobs and preferential project benefit access	Low-medium	Low	High	Low-medium

SUMMARY OF SIGNIFICANCE OF NEGATIVE IMPACTS				
IMPACT	Construction and Decommissioning phase		Operational phase	
	Without Mitigation	With mitigation	Without Mitigation	With Mitigation
Increased social evils and disease increase due to influx of jobseekers	Medium-high	Low-medium	Medium-high	Low-medium
Accidents due to increased traffic	Medium-high	Low	Medium-high	Low
Incompatibility of existing and proposed land use	Medium-high	Medium	Medium-high	Medium

The proposed MSD power plant has both positive and negative impacts characteristic of any other investment of similar context. In an era of sustainable development and in the spirit of participatory community involvement which is the root of any socio-economic assessment, circumstances surrounding the implementation of any project require proactive public/stakeholder perceptions that critically defines and seeks to mitigate the expected social economic impacts.

2 List of Acronyms

Acronym	Definition
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act, 1999
EMP	Environmental Management Plan
ERC	Energy Regulatory Commission
GGP	Gross Geographical Product
GNP	Gross National Product
GWH	Gigawatt hours
IPP	Independent Power Producer
JICA	Japanese International Cooperation Agency
KAIS	Kenya Aids Indicator Survey
KenGen	Kenya Electricity Generating Company
KIHBT	Kenya Integrated Household Budget Survey
KP&LC	Kenya Power and Lighting Company
LCPDP	Least Cost Power Development Plan
MSD	Medium Speed Diesel
MW	Megawatts
PPA	Power Purchase Agreement
SEIA	Socio-economic Impact Assessment

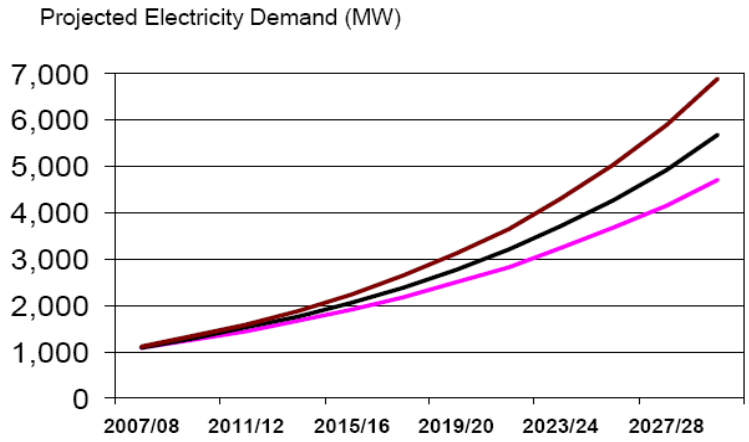
3 Introduction

This report presents the results of a Socio-Economic Impact Assessment (SEIA) conducted on the proposed MSD Gulf Energy Power Plant and associated infrastructure to be located in Mavoko Municipality, Machakos District in Kenya. The Socio-Economic Impact Assessment forms part of the Environmental Impact Assessment process prescribed under the EMCA, the Environmental Impact Assessment and Audit Regulations (2003) and involves direct participation of *locational* stakeholders.

3.1 Project background

As the country gears to growth within the vision 2030, the demand for electricity has steadily outstripped supply, especially within the background of the economic downturn, recent drought and declining business impact due to the socio-political instabilities.

The country's present installed electricity capacity is 1,500 MW. Power demand was 885MW in 2005 increased to 1,200 MW in 2009. Kenya Power and Lighting Company (KPLC) is the primary distributor of power while power generation is mainly produced by KENGEN. Recent changes in demand and supply has seen an increase in number of generators and use of alternative power generation technologies according to the energy needs strategic planning.



Source: Master Plan Study for Kenyan Industrial Development (MAPSKID),JICA(2007)

Principal operators in the electricity industry are the Kenya Electricity Generating Company (KenGen) which accounts for close to 80% of generation, the balance being provided by six (6) Independent Power Producers (IPPs), namely Iberafrica Power (EA) Ltd, Tsavo Power Company Ltd, OrPower4 Inc and Mumias Sugar Company Ltd and Rabai Power Ltd. The Kenya Power and Lighting Company (KPLC) is responsible for transmission, distribution and retail supply of electrical energy to end users.

KPLC purchases power in bulk from KenGen and the IPPs through bilateral contracts or Power Purchase Agreements (PPAs) approved by ERC. Other power operators include James Finlay, Sotik Tea Company, Sotik Highlands Tea Estate, Oserian Development Company, Pan African Paper Mills, Unilever Tea Kenya Ltd and Tiomin, who are licensed to generate electrical energy for own use.

The proposed MSD Power Plant is part of alternative technologies, to be operated by independently commissioned generators, to fill in the gaps in electricity demand. The demand for electricity is expected to rise exponentially in the next 25 years during the period when the proposed power plant will be operational.

With this background, Gulf Energy and KPLC have proposed the construction of this power plant and commissioned the SEIA process on activities pertaining to the establishment of the proposed MSD Power Plant. Local participation in the certification of the project is defined through a socio-economic impact assessment of which their input will enable an effective mitigation structure integrated into the Environmental Management Plan.

3.2 Study Area

The land identified for the construction of an MSD Gulf Energy Power Plant is located in the Athi River town area, within Mavoko Municipality. Land suitability, land availability, nearness to the main road and general infrastructure and proximity to a growing labour base were some of the considerations made in site selection. The site is situated about 25 KM from Nairobi City and covers the junction between the Old Mombasa Road and the new Mombasa road within land approximately 10 Hectares registered as L.R.17842 and 17843. Stoney Athi River lies to the East of the site approximately 200 meters away.

Figure 1: Approximate Site Location in relation to Athi River town

Arrow shows areas where household survey was conducted

The site is located in an area with whose current land use is either determined or undetermined plots. Development planning defines land supposed to be used for commercial, industrial, residential or other purposes. The main challenge of the site currently is the unpredictability of the land use expected on the adjacent plots. There are a few residential estates coming up in the neighborhood, Green Park, super homes is approximately 1 KM away, North East Wards of the site and there is possibility of more residential areas in other plots.

Comparative alternative site analysis was not considered due to decision matrix that considered the challenges of development land planning such as limited access to alternative land. Availability of alternative site would require commitments that significantly raise the costs (time and resources),of the site acquisition for a site by site SEIA comparison.

The socio-economic impact assessment (SEIA) has been prepared to examine the project-wide impact areas, identify and prioritize relevant stakeholders' views, outline potential impacts, provide mitigation measures and recommendations to address the potential negative impacts and enhance the positive effects of the project. The scope of this work is limited to the project area and surrounding Athi River town area.

3.3 Study goals and objectives

The **goal** of this study is to investigate the potential impacts of the construction, operation and decommissioning of the proposed Medium Speed Diesel Power Plant on the net welfare of the local communities and economic development in the area.

In this context, the objectives of the study are as follows:

i) Develop an understanding of the strategic national importance of the proposed MSD Power Plant.

ii) Develop an economic profile of the local and regional areas.

iii) Develop a basic social impact of the communities located in the local and regional areas.

iv) Identify potential impacts (direct, indirect and cumulative)

v) Interpret the results in relation to impact on the net societal welfare and economic development

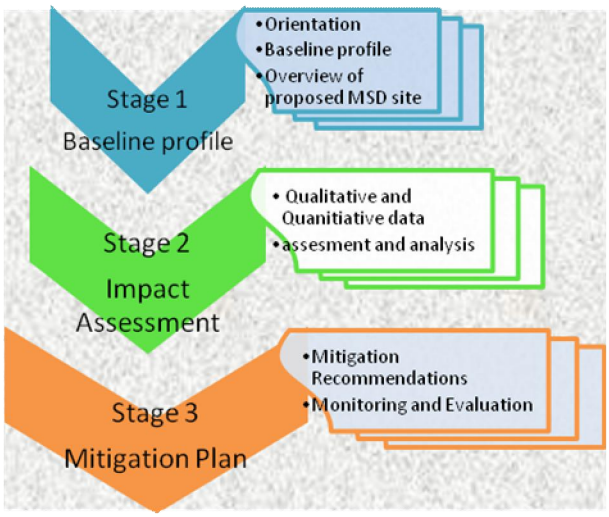
vi) Make recommendations pertaining to possible mitigation measures.

3.4 Methodological approach

The following diagram conceptualizes the approach used by the study.

3.4.1 Stage 1: Orientation & Baseline Profiling

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 MSD Power Plant.



The baseline profiling involved a compilation of the social and economic profiles of the local and region areas. The indicators of this stage are listed as:

- Population Bio data
- Occupation profile
- Size of the economy
- Economic Structure
- Employment;
- HIV/AIDS situation

The above mentioned indicators were then comparatively analyzed with regard to the target areas of Mavoko Municipality; Machakos District and nationally as Kenya.

The socio-economic baseline analysis is performed based on the secondary data available from various sources including government ministries, development partners and the local District and Municipal Council Data sources. The baseline analysis provides a broad understanding of the economic trends and social structure in the area, where the proposed power plant site is located. The main tools used are desk reviews, key informants interviews, Public stakeholder meetings (Barazas), and informal discussions with various key stakeholder representatives.

A stakeholder identification exercise was undertaken as part of the development of the stakeholder consultation plan. Following the identification of project stakeholders, each stakeholder group was assessed on the basis of their likely interests and how their interests will be impacted by the project. The project stakeholders included:

- Mavoko Municipality Planner
- Provincial Administration-District Commissioner, District Officer and Area Chief, OCPD Athi River Police
- Athi river town community/General public
- Pastoralists community(Maasai)
- Social groups
- Local Industries
- KPLC staff

The stakeholder interviews were conducted to provide qualitative stakeholder information and provides valuable context to the baseline characterisation.

A household/residents survey was conducted where a random sample of over 100 local residents of different occupational status and gender were engaged. A questionnaire was administered to generate some baseline information, assess the respondents knowledge and attitude to the establishment of the proposed MSD power plant in the area. The data collected was analysed using SPSS software and information presented in some graphs displayed in this report.

Information that contributed to the baseline analysis and stakeholder perceptions was also obtained through a public meeting hosted by the Provincial Administration at the Proposed MSD site in Athi River area on the 12th March 2010, attended by approximately 145 people (see attached attendance lists). All stakeholders were informed about the proposed MSD power plant project and allowed to ask questions covering three broad areas – project knowledge, key issues and values as perceived by the stakeholder participant. Questions specifically targeting each key stakeholder's area of interest and influence were also asked and answers provided by the SEIA team.

Annexed to this report are minutes of the Public stakeholder meeting, minutes of individual stakeholder interviews, copies of the stakeholder interview form and select results of household survey data analysis.

3.4.2 Stage 2: Impact Assessment

The purpose of this stage is to provide basic information with regard to the economic and social aspects of the proposed MSD Power plant. In this context, the following outcomes are defined:

a) Value of capital investments and estimated impacts during the construction phase.

b) Value of operational expenditures and estimated impacts the operational phase.

Primary and secondary data are used to estimate construction and operational statistics of the proposed MSD Power Plant.

The impact assessment **analysis component** exercise refers to identification and evaluation of socio-economic impacts resulting from the establishment of the proposed power plant in the area. The analysis of impacts will be performed for three phases of the MSD Power Plant life cycle, i.e. Construction, operational and decommissioning phases.

The main objective of this stage is to determine the loss/gain of the local communities' welfare, as well as extent of impact on the economy in the area. The analysis of the strategic importance and impact of the proposed MSD power plant on the development of the national economy also forms part of the study.

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

Table 1.0: Criteria for assessing significant of Impacts

Consequence 1

SEVERITY OF IMPACT	RATING
Insignificant /non-harmful	1
Small / potentially harmful	2
Significant/slightly harmful	3
Great / harmful	4
Disastrous / deadly harmful	5

Consequence 2

SPATIAL SCOPE OF IMPACT	RATING
Activity Specific	1
Within right of way	2
Local area/Mavoko Municipality	3
Machakos District	4
Eastern Province and Nationally	5

Consequence 3

DURATION OF IMPACT	RATING
One Day to One Month	1
One Month to One year	2
One year to ten years	3
Life of Operation	4
Post closure and permanent	5

Likelihood 1

Frequency or Duration of Activity	RATING
Annual or Less/Low	1
6 months / Temporary	2
Monthly/ Infrequent	3
Weekly/life of operation/regularly/likely	4
Daily/permanent/ high	5

Likelihood 2:

Frequency of Impact	RATING
Almost never/Almost Impossible	1
Very seldom/Highly Unlikely	2
Infrequent/unlikely/seldom	3
Often/regular/likely/possible	4
Daily/Nightly/Definitely	5

Table 1.1: Significance rating matrix

CONSEQUENCE (Severity + Spatial scope + Duration)															
LIKELIHOOD =(Frequency of activity +Frequency of Impact)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	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

Table 1.2: Positive/Negative Mitigation ratings

Color code	Significance rating	value	Negative impact management recommendation	Positive impact management recommendation
	Very high	126-150	Improve current management	Maintain current management
	High	101-125	Improve current management	Maintain current management
	Medium-High	76-100	Improve current management	Maintain current management
	Low-Medium	51-75	Maintain current management	Improve current management
	Low	26-50	Maintain current management	Improve current management
	Very low	1-25	Maintain current management	Improve current management

3.4.3 Stage 3: Mitigation plan

The stage concludes with a list of recommendations that specify possible mitigation measures to maximize the positive effects and minimize adverse effects of the construction, operation and decommissioning phases of the proposed MSD power plant on the social welfare of the local communities and the regional economy. Interpretations are based on the outcomes of the assessment exercise.

3.5 Assumptions and limitations of Study

a. The main source of data was secondary including reports from other related studies and Statistical Abstract 2009. The latestnational population census results (2009 national census) had not been released at the time of the study, subsequently most population figures are estimates from various sources but indicative of projections.
b. 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.
c. People's actions can never be predicated with 100% accuracy, even when circumstances are similar and predictions are based on rigorous research results.
d. It was assumed that the motivations for planning of the project were done with integrity and that information provided by the project proponents was accurate.
e. It was assumed that the decommissioning phase would be similar to the construction phase and would include visual restoration equal to or better than current at terms 25 years later than the dates of the assessment.
f. It was assumed that all indicative and relevant legislative requirements were duly followed and with such due process as are necessary for the total safety of the investment and the populations are established and guided by local and international guidelines.
g. After rigorous discussion of the options and the alternatives available, a comparative analysis approach in relation to the alternative sites was not done. The analysis was purely focused on the site provided by the proponent and the result was a comparison between having the investment in the area as opposed to not having it in the site identified.
h. It was assumed that the infrastructure facilities including utility services like water and Municipal services required at the site would be provided within

the general conditions available.

4 Baseline Social Setting

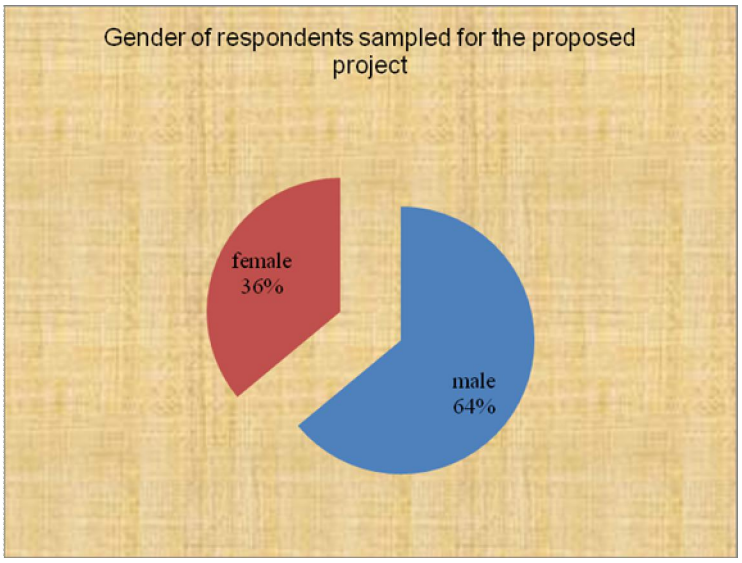
The purpose of this section is to provide a socio-economic profile of the study area by reviewing the demographic trends and economic performance of the area.

4.1 Population dynamics

The population of a geographical area is the cornerstone of the development process, as it affects the economic growth through provision of labour and entrepreneurial skills, and forms the demand for the production output. Thus, the analysis of its dynamics, including size and growth pattern, is imperative for understanding the future population growth trends.

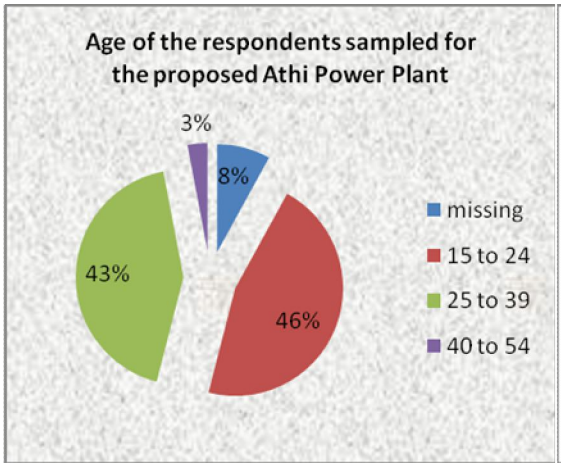
The Kenyan population grew by 2.5% percent per annum between 1997 and 2002 and is projected to grow by an estimated 2.0% per annum. In Mavoko Municipality, about 65,000 people resided as per 2008 estimates. However the recent residential development both of the slum and middle class housing suggests that population growth in the area is set to increase further around the site location. Machakos district has a population of 416,415 with a population density of 139 per/km^2, this is projected to increase to 147 per/km^2 in 2010 and to 155 per/km^2 in 2012. The Athi Division has the lowest population density compared to other divisions due to its expansive area. The population density is expected to rise to 72 per/km^2 in 2012. The population is however, concentrated in Athi River Town due to the presence of industries which acts as a source of employment.

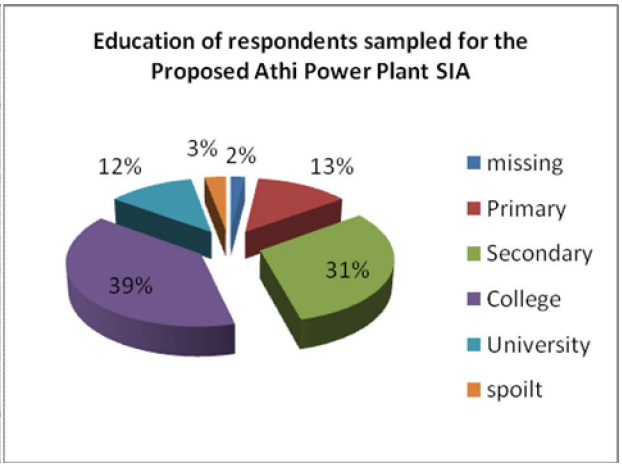
The Machakos District is estimated to have 49% of male population and 51% female population. However, during the SEIA study more males than females were sampled during the study household/resident interviews on the proposed plant as shown in the figure below.



With the uncoordinated land development planning, the adjacent undeveloped plots could also easily see eruption of slum or planned housing structures, again affecting the population density within the actual site location. Population trends are greatly affected by HIV/AIDS, thus the analysis of the geographic heterogeneity provides insight to future shortage of skills in the area.

The age and education of the respondents sampled for this socio-economic assessment are as shown in the figures below with most respondents being youths of ages 15-39.The educational levels of most respondents is mainly secondary and college.





4.2 Income Distribution & Poverty

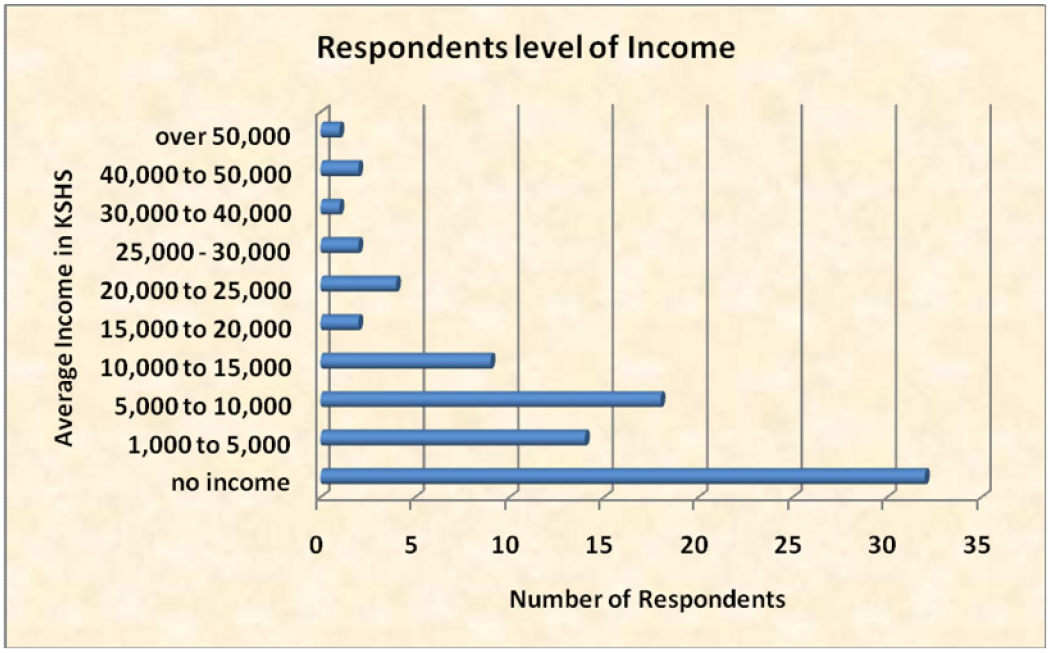
Income distribution is one of the most important indicators of the regional welfare. Income level determines the ability to meet basic needs and provide information on the poverty rates in the area. Figure 2 indicates a summary of the income distribution in Kenya and is similar to that of respondents residing in the analyzed region.

In 2005, the biggest income group in Kenya comprised households with no income which constituted almost 56% of the total Kenyan population. In the Athi River Mavoko area, the lowest income group earns between KSHS 3000 and 5,000 per month (UNHABITAT,2006).

Nairobi which is the capital city of Kenya and a short distance from the Mavoko area has a higher income average with a higher diversity and living standards, and thus has a significant positive impact on the area.

According to the Welfare monitoring survey (WMS II) of 1994 and WMS III of 1997, the Machakos district had 68.7% and 63.3% respectively of its population below the poverty line. The poverty assessment exercise carried out in 2000 estimated 66.2 % of population as poor. However, most of the surveys were conducted at the two extremes either when there was extensive drought or bumper harvest.

The income distribution of the SEIA household respondents is shown in the graph below.



One third of the respondents said that they have no monthly income with 18% of the respondents living with an income of less than KShs 10,000.

For the town based economies like Mavoko Municipality which primarily depends on Athi River town, the measure of poverty is mainly defined by the number of people able to access gainful employment from the local industries.

4.3 Employment Profile

The Kenyan labor force comprised approximately 21 million economically active people in 2000; more than 8% of this population resides in the eastern province. While 70% of the population living in Machakos district was absorbed by the rural agricultural economies, the rest migrated to major urban areas and in Mavoko Municipality especially to Athi River Town, where unemployment was still relatively high. The labour force absorption capacity or the ability of the economy to provide employment to its labour force nationally was 44%, in Machakos District 33% and in Mavoko Municipality 28% (Economic Survey,2007).

Socio-economic indicators of Machakos District, 2001

Total Number of Households	186,297
Average Household size	4.9
Absolute Poverty (Rural & Urban)	63%
Income From Agriculture	70%

Income from Rural self employment	10%
Wage employment	11%

Source: Machakos District Development Plan 2005-2010

In Machakos District, 70% of the incomes come from the Agricultural sector in the district, while about 11% from wage employment according to the Machakos District Development Plan. Athi River Town which is the main town around Mavoko Municipality provides the majority of urban income and employment.

The comparison of income distribution in the analyzed areas, highlight the fact that, on average, households in urban areas are better off than households in rural areas. More households are able to live with some income in urban areas unlike in rural areas. This may also be reason behind the large migrations into urban areas and increase in sex workers in the major highways and towns.

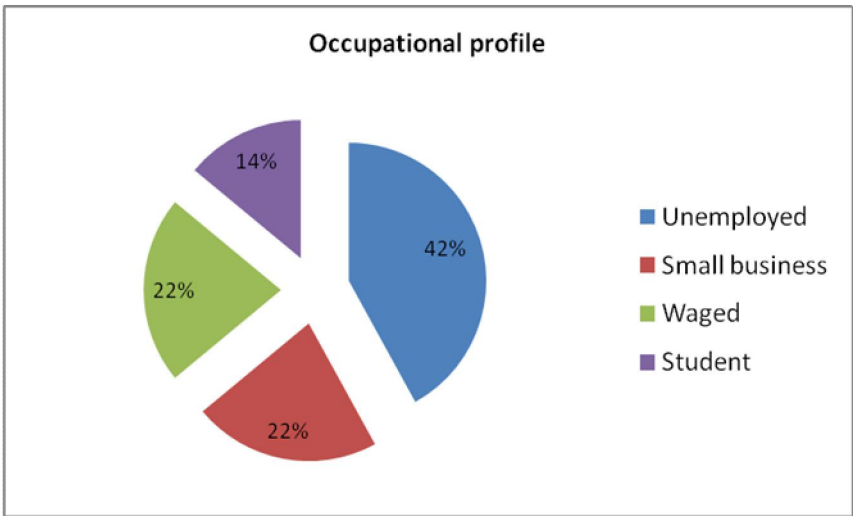
The high increase in labor force has led to increase in unemployment and this could lead to escalation of crime as a result of non-absorption of this active population in services of gainful employment.

4.4 Occupational profile

The occupational profile is an indicator of the quality of the labor force in the target area. It provides information on the employability of local workers and their proficiency level, and assists in identifying the shortage of skills in the economy by matching the demand with supply.

The Kenyan labor force comprises of large groups of semi-skilled population engaged in elementary occupations. There is also an abundance of craft related trades workers, service workers and clerks. The informal sector provides almost 70% of all the occupations nationally and also in Machakos District.

SEIA study obtained the general occupational profile of the residents as represented in the graph below.



42% of the respondents were unemployed. 22% of the respondents are self-employed or engaged in small businesses mainly small retail trade, hawking, carpentry, furniture making and hairdressing. A similar proportion (22%) is engaged in some form of waged employment. 14% of the respondents are students.

4.5 Economic performance

The economic performance of an area can be measured by means of the Gross Geographical Product (GGP). It is the measure of the value of final goods and services produced within the geographical area targeted.

The Kenyan economy between the year 2000 and 2007 grew at almost 7% which fell significantly to 1.7% in 2008 due to the aftermath of 2007 election politics, the global financial meltdown, high fuel prices and a drought which led to food shortages and high food prices. This has reduced the 2009 - 2010 growth rates as key sectors made cut backs in a wait and see stance. The main drivers of growth were agriculture, manufacturing and transport and communication sectors. However, the role of the informal sector is significant comprising over 70 percent of employment and income generated. Kenya is highly dependent on agricultural economic activities with over 23% of the GGP coming from agriculture related activities.

The economic sectoral structure is as shown in the table extracted from the 2009 Kenya Economic survey.

Sector	2004	2005	2006	2007	2008
Agriculture and Forestry	24.4	23.8	23.4	21.6	23.4
Manufacturing	10.0	10.5	10.3	10.4	10.6
Electricity and Water Supply	1.9	2.0	1.8	1.5	1.5
Construction	3.8	4.0	3.9	3.8	3.8
Wholesale and Retail, Repairs	9.2	9.2	9.3	9.7	10.0
Hotels and Restaurants	1.3	1.4	1.5	1.6	1.1
Transport & Communication	9.9	10.3	10.6	10.6	10.2
Financial Intermediation	3.5	3.5	4.0	4.7	4.7
Real Estate, Renting and Business Service	5.7	5.6	5.4	5.3	5.1
Public Administration and Defence	4.2	4.5	5.4	5.8	5.0
Education	7.9	7.4	7.0	6.8	6.3
Health and Social Work	2.6	2.6	2.5	2.5	2.4
Other Communication, Social and Personal	3.9	3.8	3.6	3.5	3.4

Source:Economic Survey 2009

Machakos District has some similarities to this although dominance of the primary sectors like agriculture is low. Manufacturing and trade especially informal trade is however growing in towns like Athi River where industrial base of the District is located. Mavoko therefore to a large extent is mainly comprised of Secondary sectors like manufacturing, trade and large informal sector based trade and service sectors.

In Machakos District, the poor[1] and non-poor populations are engaged in various sectors of the economy, with the poor largely working in manufacturing industries while the non-poor engage mainly in wholesale and retail trade as determined by the KIHBT survey conducted in 2005 and 2006 shown in the table below.

Contribution to sectors growth in Machakos District		
Sector	**Poor**	**Non-Poor**
Agriculture/Forestry/Fishing	10.8	-
Manufacturing	54.6	13.4
Wholesale/Retail Trade	30.0	63.5
Community/social services	4.6	13.7
Transport/storage/communication	-	3.1
Not stated	-	6.3

Source: Kenya Integrated Household Budget survey (2005/06)

Compared to the formal sector, the informal sector benefits the economy more in terms of employing or absorbing labour from the economy. It is expected that informal sector will also employ more people from the area than those who will be employed directly by the investment.

The growth of Nairobi is best expressed by the number of new housing estates in the wider suburbs areas like Mavoko, Kitengela, Thika and Kiambu. The challenges these areas face relate mainly to poor systems for development land planning, energy and housing provision. The result is uncategorized land use; lack of sufficient decent housing for employees leading to higher labour costs and slums dwelling, high demand for energy by cross section of commercial and residential users with little supply side or demand side growth.

4.6 Electricity Sector growth

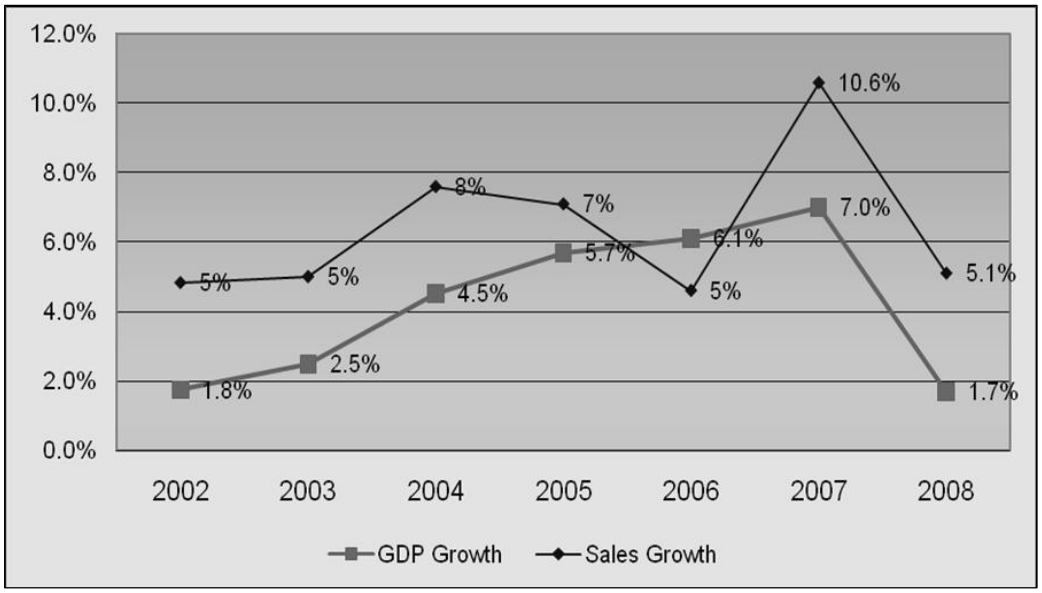
The growth in electricity demand in Kenya in the last two years has shrank from 8.5% in 2006/07 to 3.5% in 2007/08 and 1.6% in 2008/9 primarily due to the depressed performance of the domestic economy over this period (LCPDP,2009).

In addition, electricity sales in the country have also been affected by the implementation of a load shedding programme that has been occasioned by poor hydrology in the country's seven forks cascade that account for over 40% of the total installed capacity.

The figure below presents the trend of electricity sales against the economic growth pattern for a period of 2002-2008 where it's apparent

[1] The term **Poor** defines persons having incomes below a certain level of income equivalent to an estimated USD 1 a day while the **Non-Poor** are persons who earn/can access a reasonable amount of income (above USD 1) for maintaining basic human necessities.

that electricity sales have exemplified a higher growth rate than the GDP growth rate.

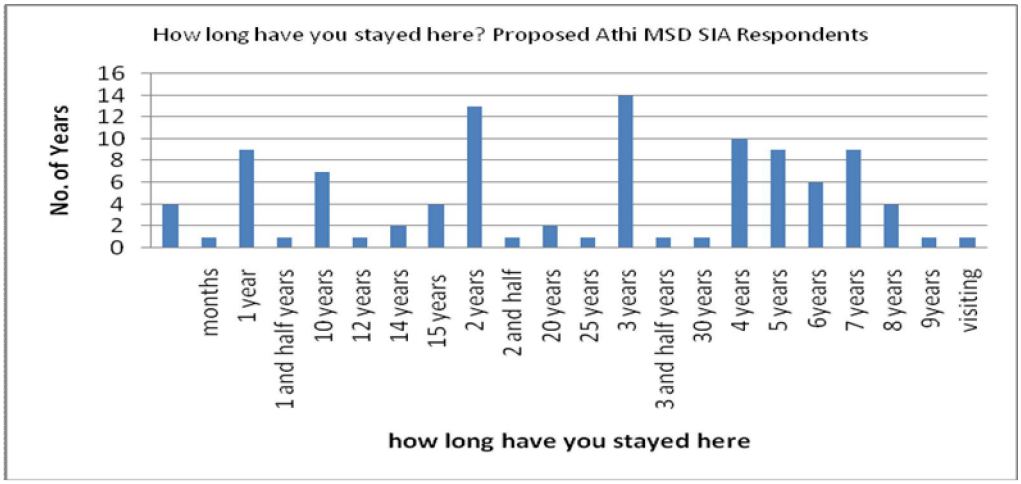


Source: Least cost power development plan (LCPDP) (2010-2030)

4.7 Housing

Housing is increasingly a challenge in both urban and rural centres in Kenya. The need to provide decent housing is a challenge both municipal and central governments have been unable to effectively deal with. Mavoko provides a significant housing opportunity to many people working in Nairobi. This is expressed in the number of new homes that have developed in the area all the way to the neighbouring Kitengela areas. However this has significant impact on both investment and employment. These issues affect the investment structure in relation to environmental management planning.

The figure below shows the length of residency of the SEIA respondents where most of them moved into the area within in the last 10 years with the highest influx occurring in the last 3 years.



Urban poverty is prevalent in Mavoko as a large proportion of its residents live in informal settlements, and the income gap is growing larger. This unequal development is noticeable in Mavoko which houses a growing number of luxurious residential estates. The result is fast growth in slum housing just as planned residential houses also come up.

As an indictment of the regulatory framework prior to regulatory guidelines for urban upgrading, in urban centres like Nairobi, up to 60% of residents live in less than 5% of the designated for residential purposes. In Mavoko, the informal settlements cover only 0.2% of the total municipal area yet they house the larger part of the population. The increased focus on pro-poor planning in local government and budgeting is important as it places equity in the forefront of development considerations.

4.8 HIV and AIDS prevalence

Prevalence of HIV/AIDS is one of the key factors posing a threat to employment. Despite national declines in HIV prevalence, the HIV epidemic in Kenya is heterogeneous – the epidemic has different dynamics (and possibly different drivers). The revised 2007 KAIS preliminary estimates put HIV prevalence at 5.5% in men and 8.8% in women in the age 15-49. Age related and geographic heterogeneity is also significant. There are currently about 2 million people living with HIV in Kenya in 2007. The revised KAIS estimates an annual incidence of around 0.5% of the population - that translates into 55,000 to 100,000 new infections per year. However, a significant number of the population is current accessing ART and are living longer. There is also an increase in workplace based support structures for employees who are infected.

These trends show that the negative productivity effect of HIV/AIDS can be reduced if well managed employee support structures are integrated into the human resource management system.

While Eastern province HIV/AIDS prevalence is below national average, the Mavoko area is both a high potential area due to the Mombasa-Nairobi highway. Sex workers and truck drivers are identified as one of the core group and bridge for the infection to spread to the general population. This means that the transmission between Nairobi and Mavoko area could easily be linked to the behaviors of workers between the workplace and the dormitory.

The table below shows the prevalence ramifications with Nairobi being one of the high infection provinces at 37.4% within heterosexual sex within union/regular partnerships; 23% casual heterosexual sex and 14.7 sex workers and clients. Truck drivers from Coastal region where most of the petroleum supplies are to be sourced could also be affected by the provinces' high prevalence rates of 14.9% for casual heterosexual sex and especially for sex workers and clients at 18.2%.

HIV/AIDS PREVALENCE	National	Nairobi	Coast	Machakos	Mavoko
Heterosexual sex within union/regular partnerships	44.1%	37.4%	37.9%	27%	26.1%
Casual heterosexual sex	20.3%	23.0%	14.9%	16.3%	21%
Sex workers and clients	14.1%	14.7%	18.2%	16%	27%
Number of New Infections	76,315	10,155	6,656	4,342	2,123
HIV Prevalence (Truck drivers & Assistants)	N/A	N/A	26% Mariakani 1999)	N/A	27% (Athi River 1994)

Source: The Kenya HIV Prevention Response and Modes of Transmission Analysis, 200

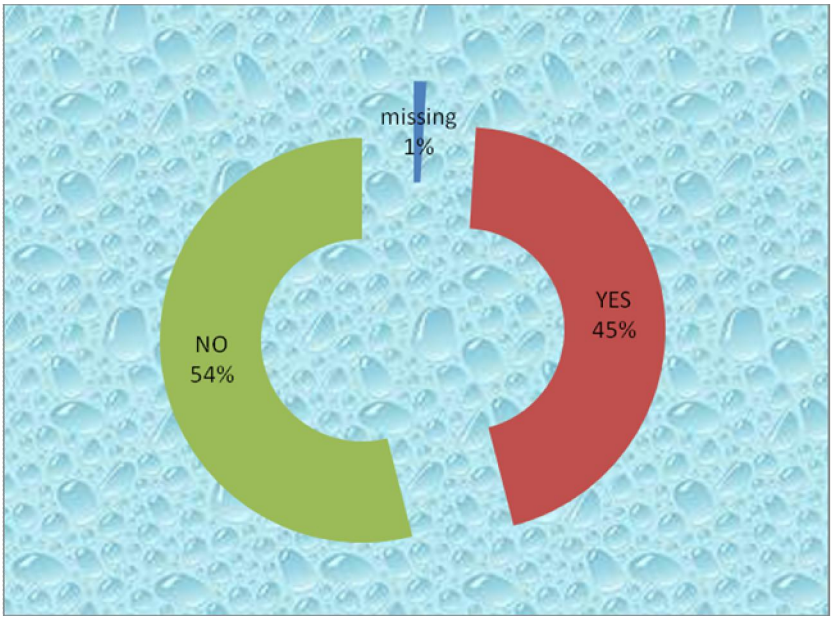
5 Overview of the proposed MSD Power Plant

5.1 Introduction

The purpose of this section is to provide a concise description of the proposed Medium Speed Diesel (MSD) power plant project.

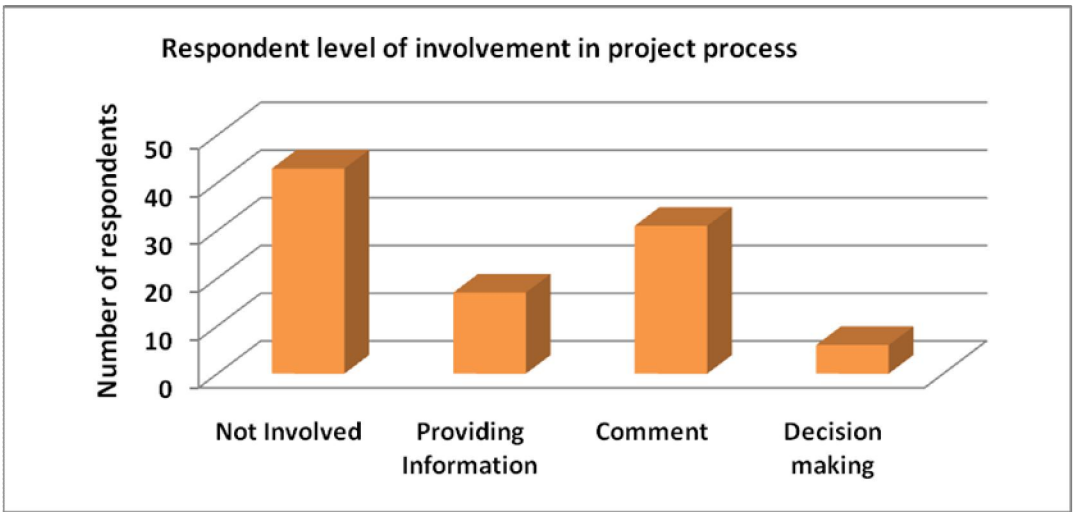
Due to the fact that construction and operational context of the proposed MSD Power plant has not yet been finalized, the information with regard to its operational and construction phases is limited. In particular it refers to information on the size of economic activities, number of people employed, value of input materials, etc. By the time the SEIA was being conducted 45% of respondents sampled were aware of an upcoming power plant project being started in the area as represented in the figure below.

Figure 2: Figure showing respondents knowledge about the Athi River Power Plant



The operator is expected to provide and install all plant equipment, including 7 Caterpillar type 16 CM43 4-stroke-cycle medium speed diesel engines with a total output of 84 MW, Transformers, Cables, switchgear, protection and metering equipment for the takeoff at 66KV. The engine will be housed together with the steam turbine. It is proposed that low sulphur Heavy Fuel Oil will be used to power the engines. The project lifetime is estimated as 25 (twenty-five) years. The estimated cost of the project is approximately 125 (one hundred and twenty five) million US dollars (2009 prices).Approximately 100 jobs will be made available during the construction phase and 28 jobs during the operational phase.

The SEIA sought to determine whether the residents had any prior involvement in the project feasibility process. The figure below shows that 17% of the respondents have been asked to provide information, 31% given comments, 6% had a 'decision-making' level of involvement while 43% of the respondents indicated that they have not been involved in any prior process.



The level of involvement at the beginning of the project stimulates the indirect impacts of a capital investment both in terms of quantity and quality. Where higher participation planning is experienced, additional economic activity (both formal and informal) multiplies the gross geographic product.

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

- Job creation
- Value-added (or GGP)
- Personal Income and General well being
- Business output (sales volume)

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, resulting from the induced changes.

5.2 Industry outlook

Energy is a critical factor in Kenya's socio-economic development. The increase in population and economic growth has subsequently created an increase in demand for electricity which cannot be met by the current power supply. The situation has led to persistent power outages. Thus there is need to boost the country's power capacity in order to cope with the ever rising demand.

The sector recorded decelerated growth in real value added supply of 5.2 per cent in 2008 compared to 9.1 per cent in 2007.The decelerated growth was due to a reduction in electricity production from hydro sources which declined by 8.9 per cent from 3,591.5 GWh in 2007 to 3,271.8 GWh in 2008. The decline in hydro electricity generation was attributable to inadequate rainfall experienced in the catchment regions for the water used in electricity generation. Total installed capacity rose by 6.0 per cent in 2008 compared to an increase of 1.7 per cent in 2007 as a result of an increase in thermal oil and hydro installation (Economic survey,2009).

The economic risk in hydropower projects can be large, because they are capital intensive. There is uncertainty with regard to power prices in the future, and the costs of building and producing hydropower vary strongly from power plant to power plant with some of the main variables being the size and location of the plant.

In this regard, the Kenya Government has committed to the development of a rolling twenty year least cost development plan (LCPD) for the year 2010 to 2030, that is updated annually to take into account new information and any promising technologies with potential to generate power at competitive costs.

It is with this background that Gulf Energy Limited proposes to construct an independent power plant which will generate 80MW of power. The proponent intends to sell power to Kenya Power and Lighting Company limited. By investing in this project, Gulf Energy will fulfill its strategic role of providing energy in order to power the Kenyan economy.

5.3 Value of alternative socio-economic activities being replaced in the selected site

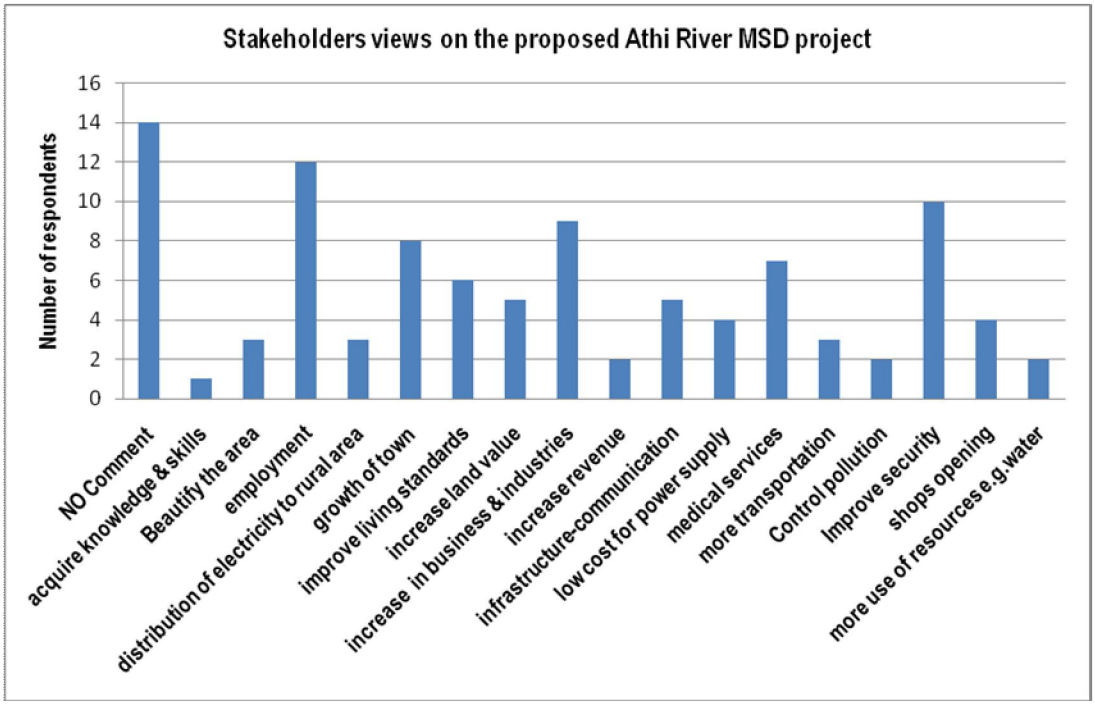
a. The site currently has no economic activities being undertaken on it however, there are traces of pastoralists cattle routes bordering the site which may have to be rerouted or displaced.
b. The study was not presented with alternative sites within or without the vicinity for purposes of comparative investment potential analysis. The site was selected based on basic requirements of development planning, land site selection and acquisition.

5.4 Stakeholder Views

The following section describes the stakeholder views received during the study, which were generally a reflection of both actual and perceived impacts about the proposed power plant. The stakeholder interviews identified some key impacts as;

- Creation of jobs for locals
- Protection of health and safety of residents
- Non-tribal allocation of project benefits like jobs and business opportunities
- Improved housing and infrastructure development for communities(drill borehole, construct church, hospital/medical clinic, sponsoring local football clubs)
- Increased road traffic congestion during fuel deliveries
- Increased security in the area,
- Increased supply of electricity in the area and in Kenya
- Provision of market for supply of building materials
- Informal sector benefits like setup of food kiosks
- Optimal use of land and improved visual intrusion as a result of the change in the existing landscape with introduction of new structures.
- Improvement in security as a result in night lighting
- Strain on local resources including water, health, housing facilities is likely due to the increase in population

These impacts are described by the graph below where 14% of the respondents did not provide any information regarding likely impacts.. 12% of the respondents felt that the proposed plant would increase employment opportunities.10% of the respondents think that the plant would improve security in the area. 9% believe that there would be increase in growth of business and industries with 8% saying that there will be general growth of the town.



5.5 Corporate Social Responsibility

To increase the stakeholder confidence on the project activities, strong views were received on the need to involve the community/stakeholders in project planning and operational strategies. There is a need to increase information sessions for the community to improve awareness about the project especially for the youth who are termed as idle and unemployed. The proponent is requested to participate and promote environmental social responsibility projects in the area such as;

a. Afforestation
b. Participate in community environmental education programmes
c. Providing a communal water abstraction facility to the nearby community
d. Working with the local industries to build more environment friendly social activities
e. Champion or promote rural electrification – as most locals are from the surrounding areas of Machakos District areas they supported electrification to the rural areas.
f. Participation in business development for the youth and small business

The proponent(Gulf Energy) should take the direct initiative to show they are mindful of promoting locals benefits from the investment and this could be done by increasing awareness of opportunities to the largest unemployed group especially the youth.

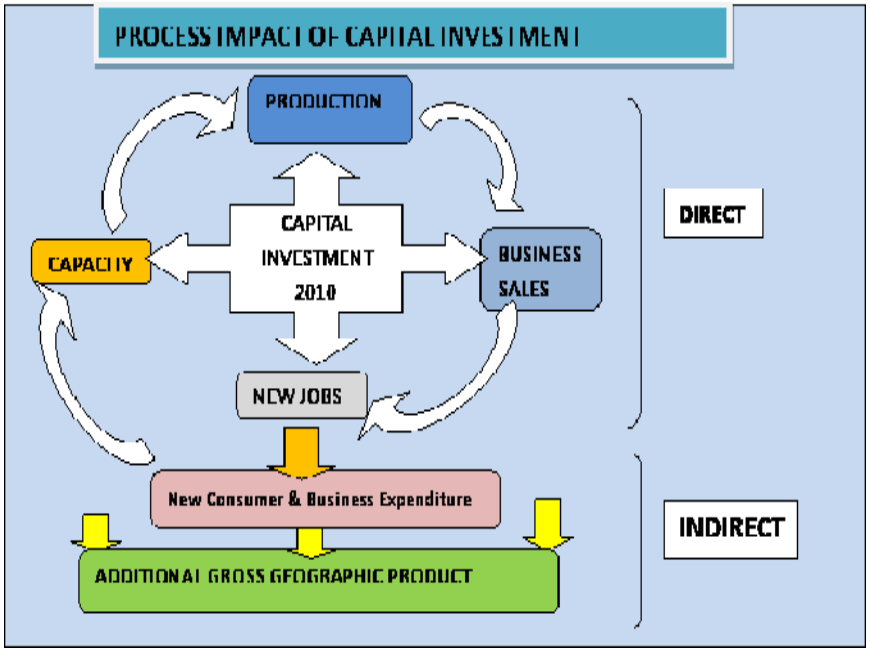
6 Social Impact Assessment

The purpose of this section is to estimate and quantify the potential positive and negative effects on the societal and economic welfare as a result of the establishment of the proposed MSD power plant in the Athi River area, Mavoko Municipality. The analysis is based on the received stakeholder information and economic estimates provided in the previous section.

6.1 Background to Social Impact Assessment

Socio-economic Impact Assessment (SEIA) is the study of the way in which the direct benefits and costs of a proposed project affect the local, regional, or national economy and to determine and assess potential impacts of a project on local communities and society as a whole, as well as to develop appropriate mitigation measures. **Economic impacts** refer to the effects on the level of economic activity in a given area because of some form of external intervention in the economy. **Social Impacts** refer to the consequences to human populations of any public or private actions (these include policies, programmes, plans and/or projects) that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of society. The intervention can be in a form of a new investment in infrastructure, new development, or adoption of a new policy or services.

Recent advances in socio-economic forecasting and modeling techniques not only consider the direct benefits of the proposed development on its users, but also the broader influences the local and regional economy. 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, improved quality of life, and/or disposable income resulting from a capital investment.



The **direct social economic effects** are generated when the new business creates new jobs and purchase goods and services to operate anew facility. Direct impact results in increase in job creation, production, business sales and household income. The **Indirect social economic effects** occur when the suppliers of goods and services to the new facility/businesses experience larger markets and potential to expand. Indirect impacts result in an increase in job creation, GGP and household income.

a) Positive Impacts Assessed:	**b) Negative Impacts Assessed:**
i. Employment for locals ii. Growth in business (industries and small business and opening new business) iii. Improved security iv. General economic growth and Increased value of land	i. Increased social evils and diseases due to influx of jobseekers ii. Social divisions due to unfair employment practice iii. Accidents due to increased traffic iv. Incompatibility with existing and proposed land uses

The following sections provide an assessment of the impacts using the significance rating criteria described in the methodology section of this report:

6.2 General economic growth and increased land value

The total economic transactions in Machakos district which includes the Athi River Division is expected to improve significantly. The quantity of economic activities will increase both in volume and diversification due to the power plant construction in the district. An increase in urban economic activities in Athi River will have a positive impact also on the agricultural economy in the district in terms of increased demand for food, rural income due to money transfer incomes and also increase demand for non-agricultural goods in the rural Machakos district economy.

In the urban economy of the district the demand for housing, communication, transport and financial services will significantly increase and thus present a likelihood of increasing the land values within the area due to the economic opportunities provided by the new investment.

Construction, Operations and Decommissioning stage:				
Benefits without enhancements: General economic growth and increased land value				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
2	3	3	3	3
Result: LOW-MEDIUM (+48)				
Benefits with enhancements:				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
3	4	4	4	4
Result: MEDIUM-HIGH(+88)				
Mitigation/Comments: Choice of the site will increase value of land in the area and promote overall development of the area. Adherence to Municipal's planning and development plans. The direct project workforce will be accommodated within the Athi River town area and larger Mavoko Municipality.				

6.3 Impact on Business Development

The establishment of the power plant will have implications on the business development in the local and district economies. This impact could be grouped according to the following elements:

- Local and district during the construction phase
- Local and district during the operational phase
- Local and district during the decommissioning phase
- Site specific.

The procurement pattern of sourcing the labour force and materials during the construction phase will see the local Mavoko Municipality and Machakos District benefit most. The implications of the construction phase will unfold alongside the following developments:

- Increase in production capacity of existing firms: the construction of the power station will require a substantial amount of masonry stone blocks, metal and concrete products most of which are available in the local industries in Mavoko municipality area. The increase in demand for these materials is anticipated to be of such an extent that the local manufacturing companies will have to increase their production capacities to meet the deadlines.
- Establishment of new SMEs: alongside the increase in production capacity of the existing firms, the demand for services and products produced during the construction period of the power plant will provide opportunities for new small and medium size enterprise development.

- Improved competitiveness: Growing number of SMEs and increased production output by the existing firms will contribute to improvement of competitiveness among companies by means of supplying new technologies and providing better service.
- Change in the size of the local economy: the establishment of the power plant will directly and indirectly increase the size of the local economy in Mavoko Municipality and Machakos District in general. Firstly, the capital expenditure spent on the construction will generate additional local economic value. Secondly the demand for construction materials followed by the extension capacities of the existing firms and establishment of new firms will result in growth of the District economies.

Construction, Operations and Decommissioning stage:				
Benefits without enhancements: Growth in business in the area				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
2	3	2	2	4
Result: LOW (+42)				
Benefits with enhancements:				
Severity.	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
3	4	4	3	5
Result: MEDIUM-HIGH(+88)				
Mitigation/comments: The direct and indirect impact on growth in business can be significant to the local community given most of materials used in the construction and some operations stage can be sourced within the municipality.				

6.4 Creation of employment

The construction of the power plant on the site will have an impact on the income livelihoods as it will create opportunities for those people who will be employed by the power plant during the construction, operation and decommissioning phases. The area did not show any significant employment activities that would be displaced by the construction and operation of the proposed power plant.

Mavoko's economic landscape is dominated by the presence of numerous industries varying from distillers to cement companies and flower farms. These industries are major employers in the area. The Export Processing Zone (EPZ) alone, for example, employs around 10 percent of Mavoko's total population (UNHABITAT,2006). Despite the presence of various industries, unemployment rates are high and it is often the unskilled local population who are left out when jobs are given to people coming from other areas.

Formal and informal employment will be available from material transporters and suppliers servicing the plant during the construction and operational phases. The informal sector will contribute the highest share of indirect income as more people will find jobs either near the site or in residential areas where formal employees live. Increased demand for commuting transport and communication services by the plant employees will result in creation of additional employment opportunities within the transport and communication sector of the area.

Construction, Operations and Decommissioning stage:

Benefits without enhancement: Employment provided by the project.

Severity.	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
2	3	4	4	4

Result: LOW-MEDIUM(72)

Benefits with enhancement:

Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
3	4	5	5	5

Result: HIGH (120)

Mitigation Comment: Communication and information programmes should be used to manage expectations and target local service providers including those registered through the Public Participation process. Management and enhancement measures for local employment to be included in labour and human resources plan. Local authorities and employment hubs should be consulted when recruiting local workers and service providers.

6.5 Social Conflicts over limited jobs and perceived preferential access

Unemployment is high the area and the local municipality as a whole. The project is therefore likely to contribute to expectations of employment creation as well as expectations to better current income levels. Both skilled and unskilled labour will be required in the construction works, operations and management. It is anticipated that approximately 100 jobs will be created during the construction phase. During the operational phase (approximately 25 years) 28 people will be employed. Local people are expected to be employed wherever possible.

However, given the high skill levels generally required for the construction and operation phases, the number of jobs generated at the local community level is likely to be limited. This is likely to lead to discontent in communities if it is perceived that preferential treatment is being given to outsiders, both in terms of procurement and jobs. This impact is likely to be of similar significance during the construction and operation phases, especially for transportation companies.

Tribalism is seen as one cause for preferential access to employment and could cause social conflicts if residents feel that one tribe is favored for opportunities than another.

Construction, Operations and Decommissioning stage:

Negative impact without mitigation : Social Divisions due to Preferential access to project benefits

Severity.	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
3	3	3	2	4

Result: LOW-MEDIUM(-54)

Impact with Mitigation:

Severity.	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
2	3	3	1	3

Result: LOW (-32)

Mitigation/Comment: Communication and information programme should be used to maximize procurement from local service providers; management and enhancement measures for local employment in the labour and human resources plan.

6.6 Impact on Social Activities and Disease Increase due to Influx of Jobseekers

Increase in disposal income raises the standard of living for the local residents and induces a greater demand for entertainment and recreational services. This is especially due to the increase in truck drivers and assistants delivering products in to the area, who would also require food and accommodation services. Entertainment and recreational facilities are likely to increase especially at the junction of Namanga road and Mombasa road which is a short distance (200m) from the proposed plant site.

There will be increased night life in the area with its associated entertainment, criminal and commercial sex activities normal with transit areas.

It is envisaged that the risks in the spread of HIV and AIDS will be highest during the construction and operational phase when employment opportunities in the project area are at their highest, and there is a likelihood of in-migration. These health impacts are likely to continue during the operational phase, as a result of the number of tanker drivers that will be delivering fuel to the power plant.

Construction, Operations and Decommissioning stage:				
Negative impact without mitigation: Increased social evil and Diseases due to Influx of Jobseekers.				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
2	4	4	4	4
Result: MEDIUM-HIGH (-80)				
Impact with Mitigation:				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
1	3	3	4	4
Result: LOW-MEDIUM(-56)				
Mitigation: Better awareness and a workforce policy that is linked to suppliers and partners would significantly reduce the impact of the pandemic to be contained in the EMP. Set-up temporary Voluntary and Counseling treatment(VCT) centres on the site or facilitate frequent health personnel visits to the site.				

6.7 Accidents as a result of an increase in traffic

The influx of construction workers will also entail an increase in the traffic population as construction vehicles will have to go to the site for construction purposes. The increase in the number of road users is not an impact, but merely a *change process*. However, the number of construction vehicle road users may change the movement patterns of other road users in such a way that their movement patterns are disrupted, and their safety levels are impacted. During the operational phase, a number of tankers will be used to transport fuel for plant operational activities. This is likely to contribute to increased traffic and road safety hazard. However, the proposed plant would not be the sole road safety hazard due to its location on an already busy highway connecting two major towns, Nairobi and Mombasa.

Construction, Operations and Decommissioning stage:				
Negative impact without mitigation : Accidents as a result of increase in Traffic				
Severity.	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
4	4	4	4	4
Result: MEDIUM-HIGH (96)				
Impact with Mitigation:				
Severity.	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
2	3	4	2	3
Result: LOW (45)				
Mitigation/Comments: Management and mitigation measures for minimising damage of transport infrastructure will be included in the construction, conduct and management programme contained in the EMP. Safety of pedestrian and road traffic will included in the EMP. Road upgrades to be discussed with relevant authorities and implemented where feasible.				

6.8 Incompatibility with existing and proposed land uses

The area around the power plant appears to be zoned for light industries. However the Mavoko Municipal Council does not have a formal master plan indicating the various types of land uses around the power plant site. The site consists of degraded grassland which appears to be intermittently used for grazing of livestock as evidenced by traces of cow dung on the plot. The locals in the area are nomadic in nature and the power plant is not expected to cause any inconvenience to grazing patterns. To the north-west there is presence of light to heavy industries which include a Steel Mill and a Cement production factory. To the south-east, across the Mombasa road highway, there are upcoming middle class residential estates.

The construction of the power plant on the site may affect a) the movement pattern for the pastoralists who use a path behind the power plant site.

Construction, Operations and Decommissioning stage:				
Negative impact without mitigation : Incompatibility of Land uses				
Severity	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
4	3	4	4	5
Result: MEDIUM-HIGH(-99)				
Impact with Mitigation:				
Severity.	Spatial scope	Duration of impact	Duration of activity	Frequency of Impact
3	3	4	4	5
Result: MEDIUM- HIGH(-90)				
Mitigation: Compliance with municipal zoning requirements, regional and national laws (including water use) and adherence to land use approval processes should be monitored. Extension of user to be followed up by the KP&LC.				

6.9 Summary of Impacts

The table below presents the significant ratings of impacts assessed for the proposed MSD power plant project.

POSITIVE IMPACTS				
IMPACT	Construction and Decommissioning phase		Operational phase	
	Without Enhancement	With Enhancement	Without Enhancement	With Enhancement
Employment for Locals	LOW MEDIUM	HIGH	MEDIUM HIGH	HIGH
Growth of business in the area	LOW	MEDIUM HIGH	LOW	MEDIUM HIGH
Improved security	LOW	LOW-MEDIUM	LOW	LOW-MEDIUM
General Economic growth and Increased land value	LOW MEDIUM	MEDIUM HIGH	LOW MEDIUM	MEDIUM HIGH
NEGATIVE IMPACTS				

	Construction and Decommissioning phase		Operational phase	
IMPACT	Without Mitigation	With Mitigation	Without Mitigation	With mitigation
Conflicts due to locals missing jobs and preferential project benefit access	LOW MEDIUM	LOW	HIGH	LOW MEDIUM
Increased social evils and disease increase due to influx of jobseekers	MEDIUM HIGH	LOW MEDIUM	MEDIUM HIGH	LOW MEDIUM
Accidents due to increased traffic	MEDIUM HIGH	LOW	MEDIUM HIGH	LOW
Incompatibility of existing and proposed land use	MEDIUM HIGH	MEDIUM	MEDIUM HIGH	MEDIUM

Expected negative impacts during construction are temporary in nature which can be mitigated by effective management and regular monitoring and evaluation of the project to ensure that corrective measures are taken immediately to prevent adverse impacts on the infrastructure itself, or on the people living in the area.

The permanent direct impact of the project is the impact on land use. When considering current and future land use compatibility, the site is currently not in use and due to presence of other industries in the area accelerates the zoning of the area for industrial activity. This impact can be mitigated by employing state of art technology to maintain healthy and safe environments for residential estates coming up in the area. The negative impacts may be realized in terms of poor health of the local communities as a result of effects of the expected change in environment, especially if there would be no effective continuous follow-up of the EMP. Another would be the impact of persistence in uncoordinated land development. This would multiply the negative effects caused by environmental impacts of the power plant even if there would be effective site specific EMP. It may also cause an increase in costs of managing the plant, especially if the number of residential areas will increase in quantity and proximity to the site.
The proponent should consider the following;

- The needs of vulnerable groups and/or indigenous peoples.
- Focus on poverty reduction and always seek to improve the local employment scales.
- Be aware of and preserve the existence of social diversity.
- Maintain community integrity and viability.
- Develop enhancement programmes that stimulate a range of activities in the community and encourage diversity of economic, cultural and social activity even if it requires cross subsidization from other activities.
- Recognise that SEIA should be a process of navigation rather than prediction.

7 Mitigation Plan

To optimise the socio-economic benefits of the project, the proponent of the MSD project should consider to the following:

a) Develop and implement a local procurement plan which will based on preferentially sourcing labour, goods and services from/within the Mavoko Municipality and Athi River Town area region to build business, industry and community economic base.

b) Aim to use local (Mavoko or Athi River Area) businesses to fill contract positions such as catering, cleaning, construction, material supply, light vehicle maintenance, security provided the contractors are competitive and appropriately skilled.

c) Consider local contractors or incorporate social and economic opportunities for the Local contractors when assessing and granting contracts.

d) Develop the project as quickly as practicable, having regard for the necessary regulatory approvals and prevailing economic conditions.

e) Continue to work with the Local Authorities and government agencies, Mavoko Municipal Council and local businesses to build community capacity by working with schools and training providers to develop curricula and pathways to employment in the resource sector. Also establish relationships with other independent power providers in the region to determine skill requirements, potential traineeship and apprenticeship programs.

f) Place a high emphasis on stakeholder consultation to foster and maintain good relationships.

g) Develop guiding principles for determining how the company selects which causes to support the local community that will contribute to sustainable benefits for the community and participate in community-driven development initiatives, which may involve donation of people's time, skills and knowledge.

h) As part of the stakeholder consultation plan, the proponent should make the local community aware of the types of jobs that will be required and the skills and qualifications people will require to fill them, as well as when opportunities for tender will be available.

i) A project-specific traffic management plan will be developed to set procedures targeted at limiting the potential for vehicle accidents. All vehicle operators will be trained and licensed appropriately for the vehicles they are operating, and will be inducted to ensure they are aware of the project specific traffic management plan.

j) Contractors will be required to comply with Gulf Power Limited's procedures and the relevant codes and standards for transport, storage and handling of hazardous materials, including emergency response. Contractors will be required to adhere to Kenyan/Highway road rules at all times.

k) Future road upgrades will be the subject to government funding arrangements and the proponent will contribute to the maintenance of roads through licence fees, fuel excise, taxes and royalties paid.

l) The project will be managed in accordance with Gulf Power Limited's workplace

health and safety processes and procedures throughout all phases of the project to minimize risks to the health and safety of both workers and the general public by;

- Consulting with local emergency services as part of the stakeholder consultation plan to ensure that any issues identified regarding additional strain on health services are identified and resolved.
- Providing first aid and facilities for emergency medical at the Power plant.
- Setup a VCT centre on the site and facilitate periodic awareness campaigns on HIV and AIDS prevention.

m) Gulf Power Limited will continue to liaise with the Mavoko Municipality and Local Government to assist with future planning and development activities. Any necessary expansion or new facilities required to address increased demand will need to be built into town planning processes.

8 Conclusion

The SEIA study has presented both positive benefits and adverse impacts that can be mitigated by the proponent with a view to ensuring that the new investment is upgrading the existing social and economic structures of the local and regional areas. A significant benefit may be the gains made on local and national economies primarily from:

- Direct financial contributions through the payment of taxes.
- Increased gross domestic product from electricity sales revenue.
- Indirect financial contributions through the payment of taxes by people employed either directly or indirectly by the power plant, and also by companies that service the project directly or indirectly.
- Decreased unemployment levels.

The site location presents possibilities of future conflicts with resident in housing estates within the vicinity especially as the awareness of greenhouse gas emissions continue to threaten the climate and the government seeks to acquire carbon credits for reduction interventions.

An effective Environmental Management Plan (EMP) is however cognizant of the possibilities related to the risks as defined by all stakeholders. A participatory approach to the EMP would help mitigate this issue by providing effective governance structures for collective information, responsibility and action. The following recommendations suffice:

- The proponent participates in resident association activities that deal with local issues like security, environment, education and health to ensure the

  co-ordinated existence of residential and industrial land uses.
- That voluntary public education is provided at the earliest possible times to avoid misinformation and negative through participation in local development as a commercial resident.
- That the proponent participate in more social responsibility activities in the surrounding areas so that people can count more than employment as a benefit of the investment.
- Develop a project-specific traffic management plan will be developed to set procedures targeted at limiting the potential for vehicle accidents.
- Installation of signage for motorists on Mombasa road to inform them on the type and frequency of heavy vehicle, transport route and phone number for concerned community members to call if they believe a truck is being driven unsafely.

Based on the impact significance assessment, the socio-economic impacts associated with the project will be generally low or moderate if the management and mitigation/enhancement measures are adhered to.

RESOURCES

Environmental and Social impact Assessment Project Report for the Proposed Mombasa road –Athi River MSD Power Plant- January - 2010

The Kenya HIV Prevention Response and Modes of Transmission Analysis 2009

The Master Plan for Kenyan Industrial Development (MAPSKID) in the Republic of Kenya 2007.

Regulatory Guidelines for urban upgrading project: A case Study of Mavoko – Kenya.

Addressing the Social Dimensions of Private Sector Projects: A Good Practice Note: International Finance Corporation (IFC) World Bank Group: Environmental and Social Development.

Socio-economic Impact Assessment of the Proposed Eskom Power Station in the Witbank Geographical Area

Mavoko Municipal Council website www.mavokomunicipal.co.ke

Energy Regulatory Commissionwebsite www.erc.ke.org

Website of the Kenya Power and Lighting Company Limited www.kplc.co.ke

WORLD BANK DOCUMENTS: Operational Policy 4.01, Environmental Assessment (January 1999) − Operational Policy 4.01, Annex A, Definitions; − Operational Policy 4.01, Annex B, Content of an Environmental Assessment Report for a Category A Project; − Operational Policy 4.01, Annex C, Environmental Management Plan.

Least Cost Power Development plan 2010-2030

Central Bureau of Statistics (2005),(2009) *Statistical Abstract* Republic of Kenya Publication

Economic Survey of Kenya (2006),(2007),(2009) Government of Kenya Publication.

Mavoko Urban sector profile(2006) UNHABITAT

9 Annex I: Minutes of Stakeholder Meetings and Attendance Sheets

PROJECT: Proposed Construction of Gulf Power Plant on at KMC area, Athi River

DATE OF MEETING: 22nd February 2010

CLIENT: Gulf Power Limited

VENUE: Athi River Police Station, Athi River

START TIME: 12.00 pm

MEMBERS PRESENT

	NAME	COMPANY
1.	J. M Njiiri, OCPD	Athi River Police
2.	Gilbert Chirchir, ESIA Team Representative-HSE Advisor	Nutek Solutions Ltd
3.	Hottensia Kabuki, ESIA Team Representative- Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the KPC Gulf Power Plant project.
3. Solicitation on Security in the KMC ward
4. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team and the OCPD of Athi River Police

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The OCPD was briefed on the proposed Gulf Power Plant project by Gilbert Chirchir. He highlighted:

1. The objectives of the Project
2. What the proposed project entails

MINUTE 03/10: SECURITY OF THE PROJECT AREA

The ESIA team wanted information regarding the security of the area how the police station helps in maintaining security.

The Sociologist inquired on the following:

MINUTE 04/10: NUMBER OF POLICE STATIONS IN THE PROJECT AREA

The OCPD confirmed that the KMC ward is served by one police station though there are other police stations in the EPZ area.

This particular one is in Athi river town near the Mavoko Municipal Council, a few kilometers from the project site.

MINUTE 04/10: RESOURCES AVAILABLE IN THE POLICE STATION

The OCPD could not disclose in detail the kind of equipment that is used in the Police Station as it is classified but confirmed that it is served by about 50 police men who are armed.

MINUTE 05/10: SECURITY COMMITTEE

The OCPD informed the ESIA team that the community had formed a security committee operating in different parts of the area. The functions of the security committee are as follows:

- Organize night patrols of the area
- Provides the police with “inside” information.
- They help make arrests

He added that the security committee is not in possession of any fire arms.

MINUTE 06/10: A. O. B

The OCPD pointed out how the security of the area has improved over the last ten years. Previously, there were cases of armed robbery but security has been tightened by placing road blocks and Appointed Police after every 200 meters along the highway at night.

Currently the only insecurity the community faces is petty thieving.

There being no other business, the Advisor thanked the OCPD for his cooperation and the meeting ended at 12:30 pm.

PROJECT: Proposed Construction of Gulf Energy Power Plant on at KMC area, Athi River

DATE OF MEETING: 22nd February 2010

CLIENT: Gulf Power Limited

VENUE: Athi River Healthcare Center

START TIME: 2.30 pm

MEMBERS PRESENT

	NAME	COMPANY
1.	Mr. Kilonzo, Clinical Officer	Athi River Health Center
2.	Gilbert Chirchir, ESIA Team Representative- HSE Advisor	Nutek Solutions
3.	Hottensia Kabuki, ESIA Team Representative- Sociologist	Nutek Solutions

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the KPC Gulf Power Plant project.
3. Solicitation on KMC Ward Healthcare services
4. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team and the Athi River Healthcare Clinical Officer

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The Clinical officer was briefed on the proposed Gulf Power Plant project by the HSE advisor. He highlighted:

1. The objectives of the Project
2. What the proposed project entails

MINUTE 03/10: HEALTHCARE PROVIDED IN THE CENTER

The ESIA team wanted information regarding the health center so as to establish the condition of health of the community.

The sociologist inquired on the following.

MINUTE 04/10: SERVICES AVAILABLE IN THE CENTER

The Clinical Officer stated that the services being offered in the Center are as follows:

- Outpatient services

- Maternal Child Healthcare(MCH)
- Maternity services
- Comprehensive Care Clinic
- VCT services
- TB treatment
- Laboratory services
- Admission services(for maternity cases only, with a bed capacity of six)

MINUTE 05/10: NUMBER OF MEDICAL CARE GIVERS IN THE FACILITY

The medical care givers include:

- 2 clinical officers
- 10 nurses
- 1 pharmacist
- 3 lab technicians
- 6 public health officers
- 8 doctors

MINUTE 06/10: FREE HEALTHCARE SERVICES AVAILABLE

The following services can be accessed for free in the facility:

- HIV/AIDS services-this includes awareness, testing, counseling, treatment and protection
- Malaria treatment
- TB treatment
- Maternity care
- Epidemics

MINUTE 07/10: COMMONLY TREATED AILMENTS/DISEASES

The 10 most treated diseases in the facility include (in order of frequency):

- Malaria
- Respiratory diseases
- Diarrhea
- Skin diseases
- Eye infections
- Intestinal worms
- Accidents
- Urinary infections
- Pneumonia

- Typhoid

MINUTE 07/10: A.O.B

The Clinical Officer explained that the percentage of people suffering from HIV/AIDS in the community is slightly higher than the National percentage. He attributed this to poverty and rural-urban migration.

He also explained that diseases like diarrhea, typhoid and skin diseases were caused by unclean water as most of the residents relied on water hawking.

The Municipal also provides piped water but it is not accessible to most residents.

He highlighted other government health facilities that serve the area which are:

- Katani Dispensary
- Kinani Dispensary

There being no other business, the Advisor thanked the Clinical Officer for his cooperation and the meeting ended at 3:00 pm.

PROJECT: Proposed Construction of Gulf Power Plant on at KMC area, Athi River

DATE OF MEETING: 22nd February 2010

CLIENT: Gulf Power Limited

VENUE: Municipal Council of Mavoko, Athi River

START TIME: 3.15pm

MEMBERS PRESENT

	NAME	COMPANY
	Samuel K. Makali, Municipal Planner	Municipal Council of Mavoko
	Gilbert Chirchir- HSE Advisor	Nutek Solutions Ltd
	Hottensia Kabuki- Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the KPC Gulf Power Plant project.
3. Solicitation and guidance on Mavoko Municipal requirements
4. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team and the Mavoko Municipal Planner

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The Planner was briefed on the proposed Gulf Power Plant project by Gilbert Chirchir. He highlighted:

1. The objectives of the Project
2. What the proposed project entails

MINUTE 03/10: POINTS TO CONSIDER DURING THE STUDY

The Planner began by inquiring if the ESIA team was planning to do a full EIA or it was an EPR. After confirming it was a full EIA he went on to outline a few points that should be considered in the course of the study, so as to produce a comprehensive ESIA report.

Before the project commences, the project sketch layout should be submitted to the Municipal for its approval and authorization of the project

The proponent should also ensure that the Land rates charges are paid

When holding the baraza, the ESIA team should invite the Mavoko Municipal to present their views as a stakeholder in the project.

After the EIA is complete, the report should be submitted to the Municipal for scrutiny.

MINUTES 04/10: ENVIRONMENTAL IMPACTS OF THE POWER PLANT

The Planner explained that there were no perceived adverse impacts on the environment that will be caused by the project. He believes that the impacts are manageable. He however made some recommendations for the project which include:

- The Proponent should make some improvements on the infrastructure especially on the roads leading to the site.
- The Proponent should ensure that the project is fenced all round.

MINUTE 05/10: CONCLUSION

The meeting ended cordially with the Planner urging the ESIA team to contact him if they needed any further assistance.

There being no other business, Gilbert thanked the Planner for his cooperation and the meeting ended at 3:30 pm

PROJECT: Proposed Construction of Gulf Power Plant on at KMC area, Athi River

DATE OF MEETING: 23rd February 2010

CLIENT: Gulf Power Limited

VENUE: Office of the Chief, Athi River

START TIME: 11:30 am

MEMBERS PRESENT

	NAME	COMPANY
1.	Joel Mula Mukwa, Chief	Local administration
2.	Gilbert Chirchir- HSE Advisor	Nutek Solutions Ltd
3.	Hottensia Kabuki- Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the KPC Gulf Power Plant project.
3. Solicitation and guidance on Local administration requirements
4. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team and the Chief of Mavoko.

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The Chief was briefed on the proposed Gulf Power Plant project by the HSE Advisor. He highlighted:

1. The objectives of the Project
2. What the proposed project entails

MINUTE 02/10: PROPOSAL FOR A BARAZA

The advisor requested the Chief to help organize a baraza as part of the stakeholder consultation. The aim of the baraza is to seek the views of the community members on the proposed project.

The Chief highlighted that there has been previous rejection of new developments but the community members eventually co-operated when they were made aware of the benefits.

He also explained that the community members are usually reluctant to attend barazas and it usually requires persuasion for the people to attend the meeting. This involves bringing the village elders on board for assistance.

MINUTE 03/10: CONCLUSION

The Chief apologized for having to attend to other engagements and proposed another meeting on 3rd March 2010 to discuss further on how to organize the baraza.

The meeting ended cordially with the Chief promising to keep in touch with the ESIA team.

EIA STUDY FOR THE GULF POWER PLANT PROJECT

MINUTES OF A MEETING HELD WITH KP&LC AT STIMA PLAZA

1st MARCH 2010 AT 9:30 A.M

PRESENT

1. John Guda – Deputy Manager - Safety, Health & Environment
2. Walter Barongo Nyatwang'a – Environmental and Social Specialist
3. Thomas Omwega - Environmental and Social Specialist
4. Sanjay Gandhi – Nutek Solutions Ltd- EIA Team Lead
5. Gilbert Chirchir – Nutek Solutions Ltd- HSE advisor
6. Hottensia Kabuki – Nutek Solutions Ltd – Sociologist

AGENDA

1. Introductions
2. EIA process to be followed by Nutek Solutions Ltd.
3. Comments from KPLC on the EIA process to be followed.
4. KP&LC expectations from the EIA team in terms of issues to be studied
5. KPLC to provide socio-economic data and any other planning documentation that will assist the EIA team
6. A.O.B

APOLOGIES

1. Raphael Mwaura – Power System Development Manager

MINUTE 01/10: INTRODUCTION

The meeting began with introductions between the ESIA team and the KP&LC officials.

MINUTE 02/10: OVERVIEW OF PROPOSED STUDY

The EIA team lead began by highlighting the objective of the meeting which was to understand the background of the project. The ESIA team was concerned with the socio-economic perspective of the project and was mainly interested with:

- the scoping of issues related to the project,
- KPLC requirements on the ESIA
- areas of concern with regard to HSE policy
- legislation involving the project

MINUTE 03/10: BACKGROUND OF THE ENERGY SECTOR

The KPLC deputy manager gave a brief introduction of the energy sector. He began by explaining that the energy sector is very active. Currently, the government is on a mission to increase the access of electricity by 18-20%.

It has also created other entities i.e. GDC - to tackle Geo-thermal projects, KenGen – to tackle wind projects, KETRACO for transmission of electricity.

The demand for power in the country exceeds the installation capacity hence the government has began 3 power plant projects to install 240 MW of power which will be run by IPP's.

The projects are worth $125 million and are to be funded by the World Bank (IFC).

The Athi river-Mombasa project will generate 84 MW of power.

He also added that KPLC together with NEMA had done a scoping study for the three proposed projects and no significant impacts were identified.

MINUTE 04/10: LEAST COST POWER DEVELOPMENT

KPLC has developed a least cost power development plan which contains a 30 year span plan of which power plants are to be retired and which are to be brought on-stream.

The reason why KPLC tendered the project to an IPP is to reduce costs on the consumers as the costs of building the transmission lines would be transferred to them.

The IPP will also construct sub-stations nearby from where KPLC can tap the power.

MINUTE 05/10: SITE SELECTION

The EIA team lead inquired on who chose the site and what criteria was used to select it. It was confirmed that the site was selected by KPLC which was influenced by the following factors:

- Nairobi has the highest demand of power. This means that KPLC had to look for land in/near Nairobi to make connectivity easy.

KPLC has also constructed a 220 KV reign in Nairobi to stabilize the power installation capacity.

- Availability of land.: the project area had available and adequate land
- Connectivity: KPLC has a 90 MW power plant in Mombasa
- Selected an area where there would be less impact: The area is dominated by industries and little human settlement.
- The project area is zoned for industries hence no major impacts will be felt.

KPLC had initially chosen one site for the three power plants combined but later considered the cumulative impacts which would have made the area unsuitable for habitation.

MINUTE 06/10: EXTENSION OF USER

The area is designed as a light industrial area. The EIA team lead stated that it was necessary to apply for an extension of user as the proposed project is of heavy industrial nature.

Since there are housing estates and an upcoming residential place, the area is more of a mixed use industrial place. The residential places are sensitive receptors when it comes to the construction and operation of the Plant.

It is also necessary that the project takes into consideration the land use and future planning of the area. It is of importance that KPLC finds out how the government plans to utilize the land in that area.

The Specialist explained that the property managers were in charge of the extension of use and would later submit it to the ESIA team.

MINUTE 07/10: FINANCIAL FEASIBILITY

The EIA team Lead inquired if a financial feasibility had been done initially to establish what costs would be incurred and the amount of funds required for building and running the project.

No feasibility studies were done and KPLC is working using the master plan which contains a 3 year plan of what is to be done concerning power plants.

It also has a development team that is involved in implementing and running new developments.

MINUTE 08/10: SCOPING STUDY

The E&S specialist gave a brief explanation on how the scoping study was done. He began by confirming that KP&LC have done a lot of projects with World Bank. This means that they are familiar with the WB safe guard policies which are over and above similar to those of NEMA.

He confirmed that the study was not a full EIA but more of public stakeholder consultation of the residents and the companies neighbouring the project.

They also did some noise, air, and soil measurements with the help of SGS Kenya. They later prepared a report based on the findings which was later submitted to NEMA.

MINUTE 09/10: PERCEIVED IMPACTS

Road accidents were highlighted as the main perceived impact. Two of the power plant projects will be located on plots fronting Mombasa road. This will increase congestion on the already busy Nairobi- Mombasa highway. It may also create an accident spot because of the heavy trucks and their speed.

The Ministry of Roads should be consulted regarding the access roads to the project. A traffic analyst is also going to be brought on board to take traffic counts and collect data from the Ministry of Roads.

A pipeline can also be an alternative to roads transportation. The investment/costs would be high but it is more efficient compared to road. He advised Mr. Sanjay to recommend it to the proponent.

There was an agreement that the most outstanding issues will involve air, noise and traffic.

MINUTE 10/10: RECOMMENDATIONS

The following were the recommendations made by the KP&LC:

- The specialists who are important in the ESIA include: traffic analyst, socio-economist, waste analyst, health and safety advisor, a physical planner and a biology specialist.
- The major companies that should be consulted as stakeholders include: East Africa Portland, Mavoko Municipal, EPZ ,Mombasa Cement, Bamburi Cement and Ministry of Roads and Public Works
- The ESIA team to visit the Tsavo Power Plant to get an idea on how to control the noise levels.
- To consider the height of the power plant so as not to interfere with the birds' migratory routes.
- To create a buffer zone to mitigate on noise as an IFC demand.

MINUTE 11/10: A.O.B

The E&S specialist promised to work together with the ESIA and send copies of the following reports/documents:

- A geo-technical report of the project area
- Data on lines of other sub stations in the area (capacity)
- Minutes of the stakeholder meetings held.
- Extension of user

There being no other business, the EIA team Lead thanked the KP&LC staff for their cooperation and the meeting ended at 10:15 am.

PROJECT: Proposed Construction of Gulf Power Plant on at KMC area, Athi River

DATE OF MEETING: 3rd March 2010

CLIENT: Gulf Power Limited

VENUE: Office of the Chief, Athi River

START TIME: 11:30 am

MEMBERS PRESENT

	NAME	COMPANY
1.	Joel Mula Mukwa, Chief of Mavoko	Local Administration
2.	Hottensia Kabuki, ESIA Team Representative-Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Solicitation and guidance on organizing a Public Baraza.

MINUTE 01/10: RE-INTRODUCTION AND CONFIRMATION OF THE PROPOSED PROJECT.

After the greetings, the Sociologist proceeded to re-introduce the proposed project by giving an overview of what the project entails.

MINUTE 02/10: BACKGROUND OF PERCEPTION ON PROJECTS

The Chief began by giving a history of how other projects have been received by the community people.

He pointed out that the reception of new developments was fairly good but there have been cases where a few people have resisted.

He advised on the importance of making the residents fully aware what the project is all about and emphasize on the long and short term benefits it will bring to the society.

He felt that since the proposed project will offer employment in large scale, it is likely to receive little resistance as most people in the area are out seeking jobs.

MINUTE 03/10: AGENDA

The Sociologist sought to know how best to go about organizing the baraza.

The Chief advised on the following:

- To first visit the District Officer and inform him of the proposed project for him to give a go-ahead of the baraza.

- The meeting is best held at the site so that the people attending the baraza can see where the land is located and what could be the potential impacts.
- The Chief would make an announcement one week prior to notify the people on the baraza.
- He also thought it was best to involve the village elders to make the announcements and convince people to attend the baraza
- He advised on providing refreshments to woo people to attend the baraza
- He explained that it was necessary to invite other people not just the ones settled next to the site.

MINUTE 04/10: A.O.B

The Chief suggested that another meeting should be organized to discuss the budget for the baraza. He proposed it to be held on 5th March 2010.

There being no other business, the Sociologist thanked the Chief for his cooperation and the meeting ended at 12:30 pm.

PROJECT: Proposed Construction of Gulf Power Plant on at KMC area, Athi River

DATE OF MEETING: 3rd March 2010

CLIENT: Gulf Power Limited

VENUE: Office of the District Commissioner, Athi River

START TIME: 1:00 pm

MEMBERS PRESENT

	NAME	COMPANY
1.	L. E Kibaara, District Commissioner of Athi River	Local Administration
2.	Hottensia Kabuki, ESIA Team Representative-Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the Gulf Power Plant project.
3. Solicitation and guidance on the District Commissioner's Office requirements
4. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team representative and District Commissioner

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The D.C was briefed on the proposed Gulf Power Plant project by the Sociologist. She highlighted:

1. The objectives of the Project
2. What the proposed project entails

MINUTE 03/10: POINTS TO CONSIDER DURING THE STUDY

The D.C inquired whether the ESIA team had consulted the Chief and whether there were any plans of holding a baraza to seek the views of the community concerning the upcoming development

It was confirmed that in conjunction with the Chief the ESIA team is making the necessary preparations for a baraza.

The D.C explained that his major concern is the public awareness of the project.

The Sociologist assured him that the ESIA team is working towards ensuring all the interested and affected parties are consulted before the project commences.

MINUTE 04/10: A.O.B

The D.C excused himself as he had other commitments he had to attend but scheduled another meeting to be held on 5th March 2010, 9.00 a.m.

There being no other business, the Sociologist thanked the D.C for his cooperation and the meeting ended at 1:20 pm.

PROJECT: Proposed Construction of Gulf Power Plant on Plot No. at KMC area, Athi River

DATE OF MEETING: 5th March 2010

CLIENT: Gulf Power Limited

VENUE: Office of the District Officer, Athi River

START TIME: 12:45 pm

MEMBERS PRESENT

	NAME	Company
1.	Ken. G. Murungi, District Officer	Local Administration
2.	Hottensia Kabuki, ESIA Team Representative-Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the Gulf Power Plant project.
3. Description of EIA process
4. Solicitation and guidance on Local administration requirements
5. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA representative and the District Officer.

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The D.O was briefed on the proposed Gulf Power Plant project by the Sociologist. She highlighted:

1. The objectives of the Project
2. What the proposed project entails

MINUTE 03/10: ISSUES ARISING

The Sociologist informed the D.O that in conjunction with the Chief the ESIA team was making plans of holding a baraza and had already set a date.

She also explained how the ESIA team was conducting the public consultation process.

The D.O felt that a single baraza was not enough for creating public awareness and

suggested a public hearing after the baraza.

He gave a go-ahead but stated that he should be consulted after the baraza so as to advise on the way forward.

MINUTE 04/10: A.O.B

The Sociologist promised to send the D.O a letter of invitation to the baraza.

There being no other business, the Sociologist thanked the D.O for his cooperation and the meeting ended at 1:15 pm.

PROJECT: Proposed Construction of Gulf Power Plant on at KMC area, Athi River

DATE OF MEETING: 5th March 2010

CLIENT: Gulf Power Limited

VENUE: Office of the Chief, Athi River

START TIME: 3:45 pm

MEMBERS PRESENT

	NAME	COMPANY
1.	Joel Mula Mukwa, Chief of Mavoko	Local Administration
2.	Hottensia Kabuki, ESIA Team Representative-Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Solicitation and guidance on organizing a Public Baraza

MINUTE 01/10: BUDGET FOR THE BARAZA

After the greetings, the Sociologist proceeded to highlight what equipment would be needed during the baraza. They would include:

- A marquee tent
- A hundred plastic seats
- One table
- 3 crates of sodas
- Scones

The Chief pointed out that he had already found a place where the ESIA team can rent the tent and chairs at a reasonable fee.

The Sociologist promised to pay the place a visit and approve.

With the help of the Chief, the sociologist calculated how much the whole activity would cost and prepared a budget plan.

The Sociologist then requested the Chief to make sure that the following groups of people were invited for the baraza as their views and concerns were equally of great importance:

- Village elders
- Youth groups representatives

- Security (community policing committee)

MINUTE 02/10: DATE OF THE BARAZA

The Sociologist proposed that the baraza be held on 12th March 2010 preferably during the morning hours to which the Chief had no objections.

It was decided that it be held at around 10.00 am on the proposed date.

MINUTE 02/10: A.O.B

The Chief requested that the ESIA team prepare a sheet where people can sign after the baraza to show that they support the project.

He also noted that a Programme would be necessary to show how various activities would flow at the baraza.

He proposed another meeting on 10th March 2010 at 10.00 a.m to make final preparations.

There being no other business, the Sociologist thanked the Chief for his cooperation and the meeting ended at 4:30 pm.

PROJECT: Proposed Construction of Gulf Power Plant on at KMC area, Athi River

DATE OF MEETING: 5th March 2010

CLIENT: Gulf Power Limited

VENUE: Office of the District Commissioner, Athi River

START TIME: 2:15 pm

MEMBERS PRESENT

	NAME	Company
1.	L.E Kibaara, District Commissioner	Local Administration
2.	Hottensia Kabuki, ESIA Team Representative-Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Solicitation and guidance on Local Administration requirements

MINUTE 01/10: RE-INTRODUCTION AND CONFIRMATION OF THE PROPOSED PROJECT.

After the greetings, the Sociologist proceeded to re-introduce the proposed project by giving an overview of what the project entails.

MINUTE 02/10: ISSUES ARISING

The D.C advised on the following:

- The project should offer employment to the locals
- It should be environmentally friendly
- The proponent should engage in Corporate Social Responsibility: contribute to development issues in the District

MINUTE 03/10: A.O.B

The Sociologist promised to send the D.C a letter of invitation to the baraza.

There being no other business, the Sociologist thanked the D.C for his cooperation and the meeting ended at 2:30 pm.

EIA STUDY FOR THE GULF POWER PLANT PROJECT

MINUTES OF A PUBLIC CONSULTATION MEETING AT PROJECT SITE, ATHI RIVER

12TH MARCH 2010 AT 11.00 A.M

PRESENT

ESIA TEAM (Nutek Solutions)

1. Sanjay Gandhi – EIA Team Lead
2. Priscilla Kinyari – Socio-Economist
3. Angela - Archaeologist
4. Hottensia Kabuki - Sociologist
5. Hamza Abass- HSE Advisor

COMMUNITY MEMBERS

Mr. Ken Murungi (District Officer, Athi River), Mr. Joel Mula (Chief of Athi River) and 148 other community members.

MINUTE 01/10: INTRODUCTION

The meeting began with introductions between the ESIA team and the community members.

The District Officer gave a speech on the history of the power industry. He highlighted on how the power industry has evolved from depending on rivers for generating power to using fuel oil.

He proceeded to give a brief introduction of the proposed power plant. The purpose of the public stakeholder is to solicit the views, comments, and queries on the proposed project from the interested and affected parties.

He also informed the community members that the ESIA Team would write a report, after the consultations are over, which will help the developer acquire a license to implement the project.

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The EIA Team Lead thanked the community members for turning up in large numbers and proceeded to give an overview of the proposed project in details. He highlighted with reference to the BID (Background Information Document) that had been issued to the community a few days prior to the meeting:

1. The objectives of the Project
2. What the proposed project entails
3. The purpose of the public stakeholder consultation

He described the three proposed upcoming projects giving an example of Iberafrica in Nairobi that is involved in the same activities as the upcoming power plants.

He explained the process of EIA (Environmental Impact Assessment) as one the

regulations of EMCA (Environmental Management Coordination Act) with public stakeholder consultation being an integral part of the EIA.

He highlighted the benefits of the project, with employment (direct or indirect) being at the top of the list.

MINUTE 03/10: ISSUES ARISING

After the briefing on the proposed power plant, the D.O invited comments and queries from the public. The issues arising include:

- Employment of locals
- Proposed CSR Programs
- Perceived environmental impacts
- Other issues arising

MINUTE 04/10: EMPLOYMENT OF LOCALS

In the past when new developments are coming up, the community has been given false promises in terms of receiving preference on employment opportunities. They usually end up locked out of employment in the project and the developer sourcing labour outside the community.

They were assured that this would not be the case and the developer will ensure that he uses the local community especially the youth to work as casuals which does not

Through indirect employment the developer should think of sub-contracting the community members to supply building materials specifically sand.

During the construction of the project, small retail shops (such as food kiosks) will come up due to support the large workforce. The community requested that the developer sees that the kiosks get licensed and be under the management of the local women's group.

Some of the community members inquired how the employment issue would be implemented. The issue would be confirmed through the Chief's office.

MINUTE 05/10: PROPOSED CSR PROGRAMS

The community members wanted to know how else they would benefit from the proposed project.

They proposed CSR (Corporate Social Responsibility) projects that will be implemented before or after the power plant project.

Some of the proposed CSR projects include:

- Building a church for the community at Gimo area
- Dig a borehole: this would be of great help as water is great challenge to the community

MINUTE 06/10: PERCEIVED ENVIRONMENTAL IMPACTS

Some of the perceived negative environmental impacts raised include:

- Air pollution caused by the exhaust gases released during power generation
- Noise pollution caused by the vibrations from the generating machines

- Explosions of the tanks

A typical example of extreme environmental degradation can be seen in the surrounding land of the East Africa Portlands Company where no vegetation can grow due to the toxic exhaust gases released from the facility.

The community members felt that it was important that the developer come up with mitigation measures to control the perceived environmental impacts.

They were assured that the proposed power plant would be designed in a way that would control air and noise pollution i.e.

- a concrete bunded wall round the plant to contain the noise
- a fire water tank in the event of a fire outbreak

MINUTE 07/10: OTHER ISSUES ARISING

The community members proposed a written agreement between them and the project persons to ensure that the developer keeps his word.

This is due to past experiences where developers have failed to fulfill the promises made before implementation of the project.

Before the expansion of the Nairobi-Mombasa Highway began, the community was assured that the road would be watered during construction to reduce dust but the developer is yet to keep his word .The area is very dusty with the heavy trucks plying along the highway aggravating the situation.

The EIA Team Lead explained that the developer in this case would honor their agreement as it was in his interest to involve the community till the decommissioning phase of the plant.

MINUTE 08/10: PROJECT ACCEPTABILITY

The community reckoned that generation of power (electricity) is important not only to the residents but also to the entire nation.

More jobs shall be created hence improving the livelihoods of people. In this respect they would not resist such development and offered to cooperate in the implementation of the same.

MINUTE 09/10: CONCLUSION

The issues raised in the meeting were confirmed as what were the community's concerns and what is now is emphasis on the implementation as agreed.

The D.O thanked the community for the attendance and cooperation and the socio economist urged them to sign the attendance sheet to show that they are in support of the project.

There being no other business the meeting was concluded at 1:30pm with a word of prayer by the local pastor.

PROJECT: Proposed Construction of Gulf Power Plant on at KMC area, Athi River

DATE OF MEETING: 17th March 2010

CLIENT: Gulf Power Limited

VENUE: KPLC, Stima Plaza

START TIME: 11:10 a.m

MEMBERS PRESENT

	NAME	COMPANY
1.	Raphael Mwaura- Power System Development Manager	KPLC
2.	Sanjay Gandhi- EIA Team Lead	Nutek Solutions Ltd
3.	Hottensia Kabuki- Sociologist	Nutek Solutions Ltd

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the Gulf Power Plant project.
3. Solicitation and guidance on the KPLC Planning department requirements
4. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team and the PSD Manager (plays the role of procuring the power plant)

MINUTE 02/10: BASIS FOR SITE SELECTION

The EIA team lead began by describing the nature of the meeting which he described as an engagement meeting similar to the previous one held with the KPLC officials.

He went on and inquired on the criteria used for site selection

Nairobi having the highest power demand in the country, KPLC saw it best to construct three power plants (Gulf Power being one of them) in Nairobi.

KPLC sought out to look for available land in Nairobi and its environs. This was to make tendering of the plant easier. An advertisement for available land on sale was put in the newspaper and from the several offers they got they chose this particular one.

The particular site was chosen also because:

- Minimal potential environmental impacts

- It was available and on sale
- Adequate land

There are no alternative sites for the power plant. Initially, one site was selected for the three power plants that are to be constructed but later ruled out as it was not possible to meet the environmental guidelines.

MINUTE 03/10: LAND USE AND FUTURE PLANNING

The Project area is zoned for light offensive industries. This is characterized by the presence of the industries in the area which include; Stony Athi, Athi River Steel Plant, Mombasa Cement among others.

This will require KPLC to apply for an extension of user as the power plant is of heavy industrial nature.

The extension of user will enable the construction of the power without going against any guidelines.

It is also necessary to know how the government plans to utilize the area. If the government plans to make it a settlement area, it is necessary to establish how the power plant will impact on the settlement and also ensure that it is constructed in consideration of this.

When tendering the work, one of the requirements from KPLC was that the proponent should be able to meet the World Banks' guidelines as well as the local requirements.

MINUTE 04/10: SOCIO-ECONOMICS

The proponent will find ways of financing the project. World Bank, specifically IFC, plays a role in guaranteeing investors in the plant. IFC will also protect the plant against termination in case of political risks.

Return on investments will be felt by the proponent as KPLC will just be involved in buying power from the proponent.

MINUTE 05/10: INDEPENDENT POWER PLANTS

KPLC opted to contract an IPP to construct the power plant as its objective is to sell not to produce power.

An IPP is a power producer selling to a single buyer/entity. The IPP enters into a contract with a buyer and becomes the sole supplier of power for the particular buyer.

KPLC has a standard procedure for purchasing power from the IPPs. A power purchase agreement draft highlights the process of how KPLC purchases power from the IPPs.

KPLC as a power generator supplies power to a large market setting it apart from the IPPs.

Examples of IPPs are: Tsavo power plant, Rabai, and Ibera Africa and AGREKKO which is an emergency power producer with a life span of a year or less.

All these power plants use medium speed diesel.

KPLC has a 20 year contract with Gulf Power after which there will be re-

negotiations where KPLC will decide extension of the plant or to decommission it.

MINUTE 06/10: COGNIZANT ISSUES

The planning department requires the following from the contracted proponent:

- The proponent to do an environmental study before constructing the power plant. This is a requirement from the IFC for the guarantee of investors
- The diesel engines to be used at the plant for generating power should be convertible to be able to use gas. This is because the government is on currently on a mission to generating power using gas

The power manager also confirmed that KPLC has developed a least cost development plan that states the upcoming projects and is revised every year.

There being no other business, the EIA team Lead thanked the Power development manager for his cooperation and the meeting ended at 11:50 am.

PROJECT: Proposed Construction of Gulf Energy Power Plant on at KMC area, Athi River

DATE OF MEETING: 24th March 2010

CLIENT: Gulf Power Limited

VENUE: Superior Homes, Athi River

START TIME: 10:30 am

MEMBERS PRESENT

	NAME	COMPANY
1.	Catherine Muita- Assistant Sales Administrator	Superior Homes
2.	Seynabou Ba- Environmental Specialist	IFC
3.	Richard Egobi- Investment Officer	IFC
4.	Sanjay Gandhi- ESIA Team Lead	Nutek Solutions
5.	Hottensia Kabuki, ESIA Team Representative- Sociologist	Nutek Solutions

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the KPLC Gulf Power Plant project.
3. Solicitation on Superior Homes views on the project
4. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team, the IFC official and the Assistant sales administrator.

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The Sales Administrator was briefed on the proposed Gulf Power Plant project by the EIA Team Lead. He highlighted:

1. The objectives of the Project
2. What the proposed project entails
3. The agenda of the meeting

MINUTE 02/10: BACKGROUND/SETUP OF SUPERIOR HOMES

Superior Homes is a housing estate built on an acreage of 40 acres that is located nearby the proposed project site. It has been in existence since the beginning of 2009 and is made up of bungalows and mansionnettes. There are currently 67 houses of which 26 are already occupied.

The estate houses high and medium income families. More houses are yet to be

built to make a total of two hundred houses. It is managed by the Greenhouse Management Company where each resident is a shareholder in the company.

The estate has piped water from the Mavoko EPZ fresh water and a borehole where the water is first treated before use. Its sewer system is connected to a septic tank which is then connected to the main municipal sewer.

Upon completion of the estate, a police post, a fire department and a health center will also come up. This will help boost the living conditions of the residents of the area.

MINUTE 03/10: CONCERNS ON THE PROPOSED PROJECT

Asked why the residents chose to reside at Superior Homes, the Sales administrator stated that the most of the buyers being from Nairobi want to get away from the congestion, air and noise pollution of the city. Superior Homes is a serene place to live as it is located away from the pollution and the congestion of the city.

One of the concerns of the estate was that the proposed project will cause noise and air pollution especially during the construction phase and being in close proximity to the project site; this will negatively impact on their residents. This might also translate to poor sales of the houses.

The EIA Team Lead assured that the mitigation measures would be taken to ensure that there is minimal pollution.

Another issue of concern is that is that the residents have not been consulted on the proposed project and are not aware that a power plant will be coming up. Earlier consultations had been made by SGS to the office but none had been made to the residents.

The EIA team Lead apologized for the oversight and promised to hold a consultation meeting with the residents as soon as possible.

The superior homes estate has been experiencing power outages and has no back up on power supply. The proposed project may benefit the housing estate as there will be additional power available to the national grid that may potentially lead to less load shedding.

MINUTE 04/10: SOLICITATION ON THE PROPOSED PROJECT

The Sales Administrator sought to understand more about the proposed project. She was given a typical example of Iber-Africa IPP situated in Nairobi in which the proposed power plant will carry out similar operations.

IFC being the main financier of the proposed project had sent the Environmental and Social Specialist as their representative whose duty was to ensure that the project will take into consideration the IFC guidelines and will not be threat to the social and physical environment.

There being no other business, the EIA Team thanked the Sales Administrator for her cooperation and the meeting ended at 11:20 am.

PROJECT: Proposed Construction of Gulf Energy Power Plant on at KMC area, Athi River

DATE OF MEETING: 24th March 2010

CLIENT: Gulf Power Limited

VENUE: Mavoko Municipal Council, Athi River

START TIME: 11:45 am

MEMBERS PRESENT

	NAME	COMPANY
1.	David Kinoti Areithi- Deputy Municipal Planner	Mavoko Municipal Council
2.	Seynabou Ba- Environmental Specialist	IFC
3.	Richard Egobi- Investment Officer	IFC
4.	Sanjay Gandhi- ESIA Team Lead	Nutek Solutions
5.	Hottensia Kabuki-ESIA Team Representative-Sociologist	Nutek Solutions

APOLOGIES

None

AGENDA

1. Introductions
2. Overview of the KPLC Gulf Power Plant project.
3. Solicitation and guidance on the Municipal's requirements
4. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team, the IFC officials and the Deputy Municipal Planner.

MINUTE 02/10: OVERVIEW OF THE PROPOSED PROJECT

The Sales Administrator was briefed on the proposed Gulf Power Plant project by the EIA Team Lead. He highlighted:

1. The objectives of the Project
2. What the proposed project entails

MINUTE 03/10: ZONING OF THE MAVOKO AREA

The IFC environmentalist sought to know what the area around the project was zoned for: residential, industrial or mixed use.

The zoning of the area has been a great challenge to the council as there is no master plan (official documentation) showing how the area is zoned and what kind of activities should take place in the area.

The estimated zoning budget adds up to a hundred million Kenya Shillings of which the Council is not capable of raising. The council has recently approached the Nairobi Metropolitan for assistance but action is yet to be taken.

The municipal has developed in-house regulations in determining how the land in the area will be utilized.

For example the area all the way from KAPA industries to the Machakos junction has been zoned for industries to an extent of five hundred meters to a kilometer on both sides of the highway.

The neighbouring land use also determines how a piece of land will be utilized. The project area is characterized by light inoffensive industries, hence the area has techichnically been zoned as a light-inoffensive industrial area.

The contradiction comes in as Superior Homes, a housing estate, is situated in the same area and is less than a kilometer away from the project site.

The council has limited control on the land utilization due to lack of the official zonal maps.

Every upcoming project in the area pays a development fee of twenty one thousand shillings to the council.

MINUTE 04/10: CHANGE OF USER

The proposed power plant is of a heavy industrial nature. For the council's approval of the proposed project, the proponent has to apply for a change of user from light to heavy industrial.

This will involve the use of a registered planner who will place a notice of intent of 14 days in the print media. This will then be reviewed by the council then the approval document is submitted to the commission of lands.

MINUTE 05/10: WATER AND SEWERAGE

The IFC environmentalist inquired on how the water and sewerage system operated in the area.

The Mavoko area is supplied with water by the EPZ Water and Sewerage Company. The water is pumped all the way from Nairobi to the EPZ which is supplied to the whole area.

Mavoko and the surrounding areas of EPZ get the surplus water from the EPZ and this means the area is usually characterized by water shortage.

The Mavoko area is under the Tana-Athi Water Services Board which issues permits for water piping and digging of boreholes.

A sewer line runs close by the project site to Kinani area where it is treated. This means that the project will not require a septic tank as it will connect to the main sewer.

Mavoko Water and Sewerage Company (MAVWASCO) is also in charge of the sewerage and supply of water in the Mavoko area.

MINUTE 06/10: REQUIREMENTS OF THE COUNCIL FROM THE PROJECT

The council requires the following from the project proponent:

- a development application submitted
- a copy of the title deed with a user title
- a change of user license
- maps and design layout of the proposed project

The planner assured the ESIA team that the council in general is very receptive new projects in the area.

The meeting ended cordially with the EIA Team Lead thanking the Planner for his cooperation and the meeting ended at 12:30 pm.

PROJECT: Proposed Construction of Gulf Energy Power Plant on at KMC area, Athi River

DATE OF MEETING: 24th March 2010

CLIENT: Gulf Power Limited

VENUE: Office of the Chief, Athi River

START TIME: 12:45 pm

MEMBERS PRESENT

	NAME	COMPANY
1.	Joel Mula Mukwa- Local Chief	Local Administration
2.	Jeremiah Marula Jeremiah Matura Jonathan Mutua Richard Angulu Namale	Village Elders
3.	Seynabou Ba- Environmental Specialist	IFC
4.	Richard Egobi- Investment Officer	IFC
5.	Sanjay Gandhi- ESIA Team Lead	Nutek Solutions
6.	Hottensia Kabuki-ESIA Team Representative- Sociologist	Nutek Solutions

APOLOGIES

None

AGENDA

1. Introductions
2. Solicitation on Traditional Authorities' views on the project
3. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team, and the village elders with the Chief being their leader.

MINUTE 02/10: RE-INTRODUCTION AND CONFIRMATION OF THE PROPOSED PROJECT

The EIA Team lead proceeded to re-introduce the proposed project by giving an overview of what the project entails.

The IFC Environmentalist went ahead to inquire on the following

MINUTE 03/10: ROLE OF VILLAGE ELDERS

The role of a village elder involves:

- Conflict resolution

- Educating the public on new projects in the area
- Ensure security in their communities
- Mobilization of people(in the event of public meetings)
- Generally head and guide their communities in their day to day living.

The village elders are very important in the community. They handle issues at the grass root levels before the local authorities get involved.

They operate under the local chief where they act as connectors between the community members and the local authorities. They assist the chief in distributing resources (i.e. relief food) equally among the people.

MINUTE 04/10: TERMS OF SERVICE OF A VILLAGE ELDER

A village elder is elected by the community members. Two individuals are usually proposed then elections are held, the one with the most votes gets the position. The position of a village elder is never hereditary.

There is no specified amount of time to serve as a village elder .a re-election would take place if the existing village elder does not meet the expectations of the community members.

The village elders don't get paid as this is a voluntary service to the community. They take pride in representing the people and seeing that harmony is achieved.

There are twenty seven elders in total heading a minimum number of 600 people and a maximum of 3,800 people.

MINUTE 05/10: THE AGENDA OF THE PUBLIC BARAZA HELD ON 12/03/2010

The public baraza was well attended by the all communities neighbouring the project site having being mobilized by the village elders who were also in attendance.

The IFC environmental specialist sought to know if the village elders understood what the public baraza was about and if they got to air their views concerning the proposed project.

The aim of the baraza was to raise awareness on the proposed project and to solicit the views and concerns of the community members as stakeholders of the project.

They understood that the proposed project will bring power to the town and minimize power shortages. The community members will benefit from the project through employment (direct and indirect) and corporate social responsibility of the development.

The negative impacts understood raised include:

- Possible explosions caused by the fuel oil tanks
- Air and noise pollution

The elders were concerned, as it has been in earlier cases that the project may lock out the community residents out of employment opportunities in the project.

They are also grateful for the transparent stakeholder consultation as it was the first public consultation they and their communities have been involved in. The community is usually left out when new developments are coming up.

MINUTE 06/10: COMMUNICATION OF THE PROJECT THROUGH THE VILLAGE ELDERS

The IFC environmentalist inquired if the elders had communicated the proposed project to the community.

After the public baraza, the elders mobilized as much people they could and informed them of the proposed development .The purpose of the mobilization were to enlighten those who were not able to attend the public baraza.

The mobilized group then communicates to the rest of the community.

This was also the format used to communicate on the public baraza that was held. A number of the community people that were available at the time were mobilized; they were informed of the upcoming project and the public baraza. A small group was chosen to represent the community in the visiting the site and attending the relevant meetings.

The baraza contained all villages represented by a number of community members and all the village elders. From the baraza they got information on what the project was about and the perceived adverse implications it will bring about.

MINUTE 07/10: EMPLOYMENT OPPORTUNITIES

Employment is the best way the community can benefit from the project. The village elders requested that the community be given first priority when it came to employment. Casual employment (security jobs, constructors) which requires little or no skills at all should be given to the community people.

They also understand that if the people do not have the skills required for skilled employment then they will have no expectations.

When the developer is ready to offer jobs to the community members, he can communicate through the chief's office. The Chief will then pass the information to the elders who will mobilize the people available.

MINUTE 08/10: CORPORATE SOCIAL RESPONSIBILITY

The community is looking forward to the developer implementing CSR programs. This can be a program of the developer's choice or one that will be proposed by the community. They will forward the list to the developer who will decide on what program to implement.

MINUTE 09/10: CONCERNS OF THE VILLAGERS.

The village elders were all in support and had no major concerns on the proposed project.

Their only concern was employment opportunities to the community.

There being no other business, the EIA Team thanked the village elders for their co-operation and the meeting ended at 1:50 pm

PROJECT: Proposed Construction of Gulf Energy Power Plant on at KMC area, Athi River

DATE OF MEETING: 24th March 2010

CLIENT: Gulf Power Limited

VENUE: Mantrac, Nairobi

START TIME: 2:30 pm

MEMBERS PRESENT

	NAME	COMPANY
1.	Shareef Adel-Team Leader, Medium Speed Team	Mantrac
2.	Mike Howarth- H&S Manager	Mantrac
3.	Nabil Abdel Salam- Project Management, Team Manager	
4.	Seynabou Ba - Environmental Specialist	IFC
5.	Richard Egobi- Investment Officer	IFC
6.	Sanjay Gandhi- ESIA Team Lead	Nutek Solutions
7.	Hottensia Kabuki-ESIA Team Representative- Sociologist	Nutek Solutions

APOLOGIES

None

AGENDA

1. Introductions
2. Solicitation and guidance on ESIA Team requirements from Mantrac
3. A.O.B

MINUTE 01/10: INTRODUCTION

The Meeting began with introductions between the ESIA team, the IFC officials and the Mantrac Officials

MINUTE 02/10: MANTRAC'S PROFILE

Mantrac is an engineering company involved in designing and construction of upcoming developments.

It consists of a sales unit in the USA and maneuvers across the continent.

Mantrac also makes tenders for contractors based on past experiences.

Motorways Company is usually contracted for civil works and Motor -Hauliers for Transport.

With respect to the proposed project, Mantrac will be involved in:

- Design of the plant
- Construction Phase Methodology

- Operation of the plant

The ESIA Team Lead proceeded to inquire on the following:

MINUTE 03/10: LAYOUT/DESIGN OF THE PLANT

The design of the plant will be in consideration of the EIA outcomes.

Mitigation on the noise and air pollution will be included in the design structure. The Noise Prevention and Control measures stipulate for both residential and commercial areas a maximum of 50 decibels during the day and 45 during the night.

The current design for the plant has a limitation of 70 decibels. The EIA Team Lead together with the IFC environmentalist advised on the following:

- The project site has mounds of soil which the ESIA Team Lead advised should be taken off site to the quarry for backfilling.
- Mantrac should consider acquiring a lay down area, next to the project site, for maneuvering.
- Bumps should be constructed at the truck off loading area in case of spillages and a drainage leading to the OWS.
- The drainage plan should be include a drainage system that slopes for easier drainage of the waste
- A septic tank should be constructed to where the sanitary water will drain.
- Recycling of waste water should be considered as an alternative
- The plant should have a concrete bunded wall round it containing 110% of the largest tank.
- Rehabilitation of the rough road leading to the project site should be considered.

Mantrac is awaiting the EIA outcomes to do the final design of the power plant

MINUTE 04/10: ALTERNATIVES CONSIDERED FOR THE CONSTRUCTION OF THE POWER PLANT

The alternative considered involves a 180 degrees flip of the stacks in the power plant depending on the wind direction, to mitigate on air pollution.

MINUTE 05/10: TECHNOLOGIES, PROCEDURES AND PROCESSES

The ESIA Team inquired on the on the technologies, procedures and processes that will be carried out during the construction.

The Mantrac officials promised to send them a copy of Preliminary Equipment Listing which will contain:

- The noise levels of the plant
- The equipment that will be used during construction
- What materials will be used and where they intend to source them: the quantity of the materials
- The preliminary for constructing a power plant

MINUTE 06/10: ORGANIZATION CHART FOR THE CONSTRUCTION PHASE

The organization chart for the construction phase had been presented in the previous meeting

MINUTE 07/10: RECOMMENDATIONS

The ESIA Team advised on the following when it came to construction and operation of the power plant:

- The contractor should consider sourcing labour from the local community
- He should also consider contracting the local community in supplying building materials i.e. sand
- Ensure that the workers are provided with PPE(Personal Protective Equipment) and trained how to use it
- Ensure that strict measures are placed on the use of PPE and penalties are set

Mantrac should also draft the following documents and submit them to the EIA Team:

- Health hazard prevention plan
- Water treatment plan
- Accident prevention plan
- Fire risk assessment plan
- HSE management framework
- Construction environmental plan

Mantrac was also advised to obtain IFC Occupational Health and Safety (OHS) guidelines for thermal power plants.

There being no other business, the ESIA Team thanked Mantrac Officials for their co-operation and the meeting ended at 4:50 pm.