

Chapter 6 Financial Analysis of KPLC

6.1 Current Financial Status

6.1.1 Introduction

This survey is being conducted in cooperation with KPLC as it has been in charge of the entire transmission business in Kenya. In December 2008, however, the Government of Kenya established a wholly state-owned transmission company named the Kenya Electricity Transmission Company (KETRACO). To start operation in the near future, KETRACO is now conducting preparatory tasks such as staff recruiting and office installation. While KETRACO will handle the newly built transmission lines from now on, KPLC will continue to take charge of the existing facilities.

Nevertheless, KPLC now represents the counterpart for the preparatory survey on Kisumu-Lessos-Olkaria Transmission Line Upgrading Project. When KETRACO will take over the project from KPLC is undetermined. Thus it is necessary to check the financial stability of KPLC in any case.

In this section, the team analyzes KPLC's financial situation, referring to KPLC's annual reports in the last ten years. Since the financial statements of KPLC are based on the International Financial Reporting Standard (IFRS), they can be compared with other foreign competitors on the same basis, and an objective financial analysis is possible. The fiscal year (FY) of KPLC is between July and the next June. The latest data used in this report are those of FY2009.

The Government of Kenya is the largest shareholder of KPLC, but the percentage of its shareholding is gradually falling: the government's share is 40.4% at the end of August 2009. More than half of KPLC's shares are currently owned by private capital. KPLC is listed on the Nairobi Stock Exchange, and, along with KenGen that was listed in 2006, is highly valued as one of the excellent companies in Kenya.

6.1.2 Financial Results

At the beginning of the 2000s, KPLC's financial performance was sluggish, posting a net loss for four years in a row from FY2000. However, since 2005, sales have rapidly increased with the recovery of the domestic economy, and KPLC has regained its profitability by continuous cost reduction. With the stable growth in recent years, KPLC now achieves good financial results in general.

In FY2009, sales were 66.4 billion Kenyan Shillings (Ksh) (about Japanese Yen (¥) 80 billion), up 58.9% from the previous year and the operating profit was Ksh 5.7 billion (about ¥6.8 billion), up 61.1%. They result from the good sales to households and small-medium enterprises

around Nairobi, raised the electricity tariff and the strengthened bill collection. Cost reduction measures in the distribution and customer service sections also increased the profit margin to 8.6%. After a long stagnation, both sales and profit are now growing rapidly with the recovery of the Kenyan economy.

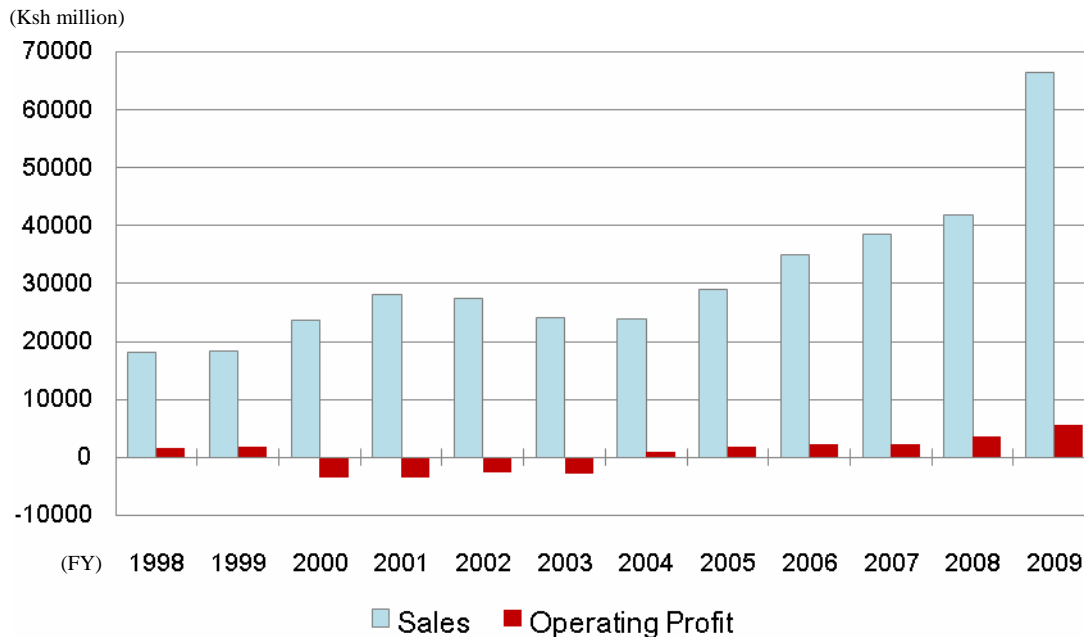
With the business process restructuring, efficiency in operation has also improved, particularly in the back-office section. The number of employees that had exceeded 10,000 in the mid 1990s was reduced to 7,015 at the end of June 2009. The total amount of personnel expenses is increasing as prices rise. However, in FY2009, the sales per employee rose to Ksh 9.46 million (about ¥ 12.3 million), an increase of 260% in the last ten years. Labor productivity, which means added value per employee, also rose by 920% for the same period, reaching Ksh 2.74 million (about ¥ 3.6 million).

Table 6-1.1 Overview of KPLC's Financial Results

	FY1999	FY2005	FY2006	FY2007	FY2008	FY2009	Average Growth in the last ten years	Average Growth in the last four years
Sales (Ksh million)	18,423	29,013	34,955	38,445	41,767	66,363	—	—
Annual Growth (%)	1.9%	21.6%	20.5%	10.0%	8.6%	58.9%	13.7%	23.0%
Operating Profit (Ksh million)	1,902	1,841	2,206	2,382	3,522	5,675	—	—
Annual Growth (%)	18.4%	115.1%	19.8%	8.0%	47.8%	61.1%	11.5%	32.5%
Operating Margin (%)	10.3%	6.3%	6.3%	6.2%	8.4%	8.6%	—	—
No. of employees	7,099	6,130	6,202	6,399	6,668	7,015	—	—
Sales per employee (Ksh thousand)	2,595	4,733	5,636	6,008	6,264	9,460	13.8%	18.9%
Labour Productivity (Ksh thousand)	268	1,738	1,851	1,927	1,970	2,743	26.2%	12.1%

*Ksh: Kenyan Shillings

Source: KPLC Annual Reports 1999-2009



Source: KPLC Annual Reports 1998-2009

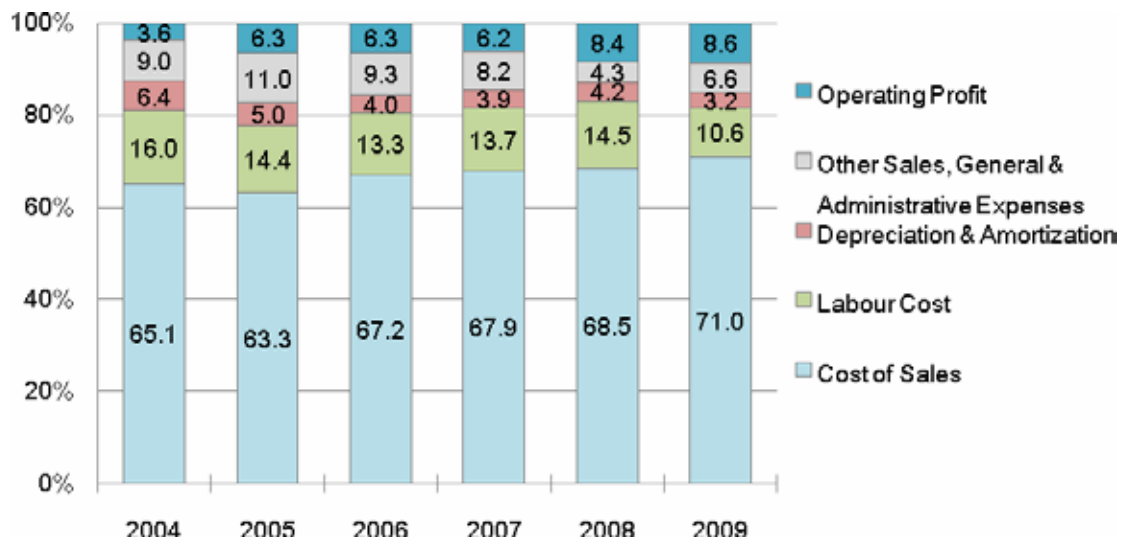
Fig. 6-1.1 Earnings for the Last Decade

6.1.3 Cost Structure

As a result of overhead cost reduction, the overall profitability of KPLC has improved since FY2004 despite the increasing power purchase expense.

The gross profit margin, which declined every year from 36.7% in FY2005, was 29.0% in FY2009. The main reason is that the fuel cost has more than quadrupled since 2005. Meanwhile, as for the administrative expense, the ratio of labor cost and depreciation remained flat. The overhead cost items such as sales expense have decreased. Thus the overall administrative expense ratio to sales declined from 31.4% in FY2004 to 20.4% in FY2009.

The increase in the power purchase expense has been offset by the reduction of the administrative expense, raising the operating margin from 3.6% in FY2004 to 8.6% in FY2009. It is fair to say that KPLC has become more profitable due to the sales growth and the reduction of fixed expenses including labor and administration costs.



Source: KPLC Annual Reports 2004-2009

Fig 6-1.2 Cost Structure of KPLC

6.1.4 Management Indices Analysis

As shown above, KPLC maintained good financial performance in recent years through continuous cost reduction and other measures. Furthermore, to judge whether the profitability and balance sheet of KPLC are at an appropriate level as an electric power company, the survey team reviewed its financial ability in terms of profitability and financial stability.

KPLC has sharply increased its sales due to the rapid electricity demand growth in Kenya. Average annual sales growth from FY2005 to FY2009 is 23.0%. Operating margin is 8.6% in FY2009, and it is improving as the sales increase.

The instant coverage ratio¹ shows the interest coverage ability of a company. The average instant coverage ratio of KPLC from FY2005 to FY2009 is 7.3. In short, KPLC acquires the net operating profit far exceeding interest payment, which is enough to reinvest in further growth after paying the interest. At present, the interest payment has little negative impact on KPLC's management. Public utility companies including electric power companies tend to secure stable and long-term loans, and KPLC is no exception. KPLC takes advantage of its status as a developing-country public utility firm that can be funded by donors with low-interest loans. However, the large investment in FY2008 thereafter imposed a heavy burden of interest payment on KPLC, and hence, the company will have to be more cautious about financing in

¹ Instant Coverage Ratio (times) = (Operating Profit + Finance Income) ÷ Interest Expense. This shows how much interest expense is covered by income through operations. The average is around 3-4 (times) for manufacturers in Japan. If the instant coverage ratio is below 1.0, that means that the income through operations is unable to cover

the future.

The current ratio² and the quick ratio³ are indices of the short-term financial stability of a company. In these indices, KPLC even outperforms some major electric power companies having strong financial ground in developed countries. In the electricity industry, it is generally quicker and easier to collect debts than in other industries, and it does not necessarily matter if short-term financial stability is low. KPLC is stable enough to pay short-term debts, albeit its current ratio and quick ratio in recent years are below 100% and 80% respectively, which are considered as acceptable levels in all industries.

Meanwhile, the fixed ratio⁴ and the fixed assets to fixed liability ratio⁵ are common indices of long-term financial stability. Infrastructure industries that need enormous capital investment such as electricity, gas, and railways are inferior in these indices, especially the fixed ratio, to other industries. In most infrastructure enterprises, fixed assets cannot be covered by equity alone. The fixed ratio of KPLC is also above 100%. However, since KPLC is superior to other major electric power companies in the equity ratio and has secured long-term and low-rate loans from donors, the fixed ratio is much lower than that of these companies. The fixed assets to fixed liability ratio is below 100%. As a whole, it can be said that KPLC has secured long-term stability, which is an important management index for electric power companies.

Among the indices which show the efficiency of capital investment, the average return on assets (ROA)⁶ of KPLC from FY2005 to FY2009 is 7.1%. The average return on equity (ROE)⁷ for the same period is 8.7%, which is not necessarily credible. However, electric power companies often leverage small equity to boost ROE, and their ROE are less than half of KPLC. The electric power industry tends to depend on debts to cover huge investment, but KPLC still manages to make use of equity to gain sufficient profit without leveraging excessively. It is thus fair to say that, in financing, KPLC is sounder than others in some ways.

all the interest expense.

² Current Ratio = Current Assets ÷ Current Liabilities × 100(%). This shows the extent to which assets receivable within one year exceed liabilities payable within the same year. Generally, a current ratio above 150% is regarded desirable, but it is not a problem for short-term interest payment if it is above 100%

³ Quick Ratio = Quick Assets ÷ Current Liabilities × 100(%). This shows the extent to which negotiable current assets such as cash and deposits, bills and accounts receivable, and securities, exceed current liabilities. A quick ratio above 100% is desirable, but it makes little difference if it is around 80%.

⁴ Fixed Ratio = Fixed Assets ÷ Equity × 100(%). This shows the ratio of fixed assets that are covered by equity. A fixed ratio below 100% means that all fixed assets can be covered by equity without repayment obligation.

⁵ Fixed Assets to Fixed Liability Ratio = Fixed Assets ÷ (Equity + Fixed Liabilities) × 100(%). This shows the ratio of fixed assets that are covered by equity and fixed liabilities. In this ratio, not only equity but fixed liabilities with long repayment term are included in stable funding, so the ratio's condition is less strict than the fixed ratio. A desirable level of this ratio is below 70%.

⁶ Return on Assets (ROA) = (Operating Profit + Finance Income) ÷ Total Capital × 100(%). This shows how much profit a business activity makes by using total capital (equity + debt). ROA judges total capital efficiency. ROA varies depending on the industry. An average ROA is about 7% in western countries, and 3% in Japan.

⁷ Return on Equity (ROE) = Net Income after Tax ÷ Total Capital × 100(%). While ROA focuses on the capital efficiency in a business activity, ROE judges the efficiency of investment, which means how much profit equity finally makes. Many western companies make 10-20% of ROE; that of most Japanese companies is below 10%. Like ROA, ROE varies depending on the industry. The average ROA of all listed companies in Japan is 9.32% in FY2006, and 7.56% for electricity and gas companies.

As for these indices, the financial performance of KPLC is not inferior to world's leading electric power companies. Considering difficulties in doing business in developing countries, it can be said that KPLC is well managed. Nevertheless, with the high expectation for economic growth in Kenya, donors and investors have recently funded KPLC in a large scale. KPLC's revenue is expected to grow rapidly, but KPLC needs to be more careful about the balance sheet and the decline of profitability caused by overinvestment.

Table 6-1.2 Management Indices of KPLC

	FY2005	FY2006	FY2007	FY2008	FY2009	2005-2009 Average
Annual Sales Growth	21.6%	20.5%	10.0%	8.6%	58.9%	23.0%
Operating Margin	6.3%	6.3%	6.2%	8.4%	8.6%	7.4%
Instant Coverage Ratio	22.8	12.0	20.7	4.1	5.6	7.1
Current Ratio	128.1%	131.5%	106.7%	112.1%	87.2%	108.8%
Quick Ratio	107.7%	107.3%	78.6%	76.6%	58.6%	80.4%
Fixed Ratio	117.9%	110.8%	127.1%	163.5%	187.4%	144.7%
Fixed Assets to Fixed Liability Ratio	88.2%	85.7%	96.0%	94.6%	106.3%	95.8%
Equity Ratio	52.7%	53.1%	47.0%	39.9%	38.0%	44.6%
Return on Assets (ROA)	6.1%	7.3%	6.4%	6.7%	8.9%	7.1%
Return on Equity (ROE)	7.0%	8.3%	8.0%	7.7%	12.7%	8.7%

Source: KPLC Annual Reports 2005-2009

6.2 Tariff System

6.2.1 Overview

KPLC's tariff system consists of power purchase tariff from power plant operators and retail tariffs to consumers.

KPLC buys electricity at a fixed rate based on the power purchase agreement (PPA) with each plant operator. The basic rate is around Ksh 2-3/kWh, but the fuel cost will be added if the plant is oil or gas thermal. Therefore, it costs much more to buy power from independent

power producers (IPPs) with oil or gas thermal plants than from hydro or geothermal plants. In some cases, it costs over Ksh 10/kWh.

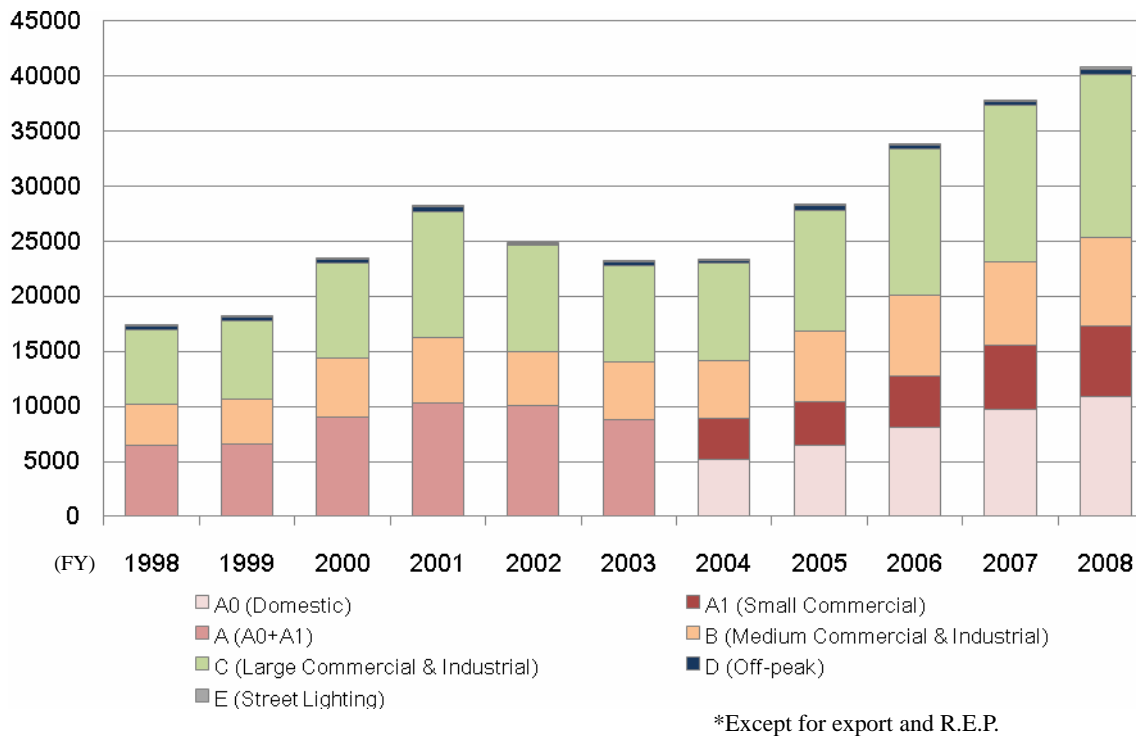
Retail tariffs are divided into five categories by purpose and scale, and two more categories, i.e., for export and the Rural Electrification Programme (R.E.P.) conducted by the Government of Kenya. Tariffs for customers in Kenya are categorized as DC (domestic), SC (small commercial), CI (commercial and industrial) IT (off-peak) and SL (street lighting). Before FY2008, tariffs were as follows: A (households and small commercial); B (irrigation and medium commercial/industrial); C (large commercial/industrial); D (off-peak demand); and E (street lighting). The categories B and C were also divided into subcategories by voltage. Tariffs for small consumers consist of a fixed charge and unit charge, while those for medium and large enterprises consist of a fixed charge, unit charge, and demand charge. As customers pay fuel costs which KPLC paid to electricity producers, they bear the risk of fuel price fluctuations as well. Moreover, effects of foreign exchange volatility and inflation are adjusted by retail tariffs so that KPLC can mitigate the risk of cost fluctuations. KPLC also has some programs for lower income households. For example, KPLC provides customers with loans which cover the initial cost for electricity connection, and with the quick and easy bill payment service by mobile phone money transfer system. For loan system to provide low income consumers with easier access to power, 3.4.3 of Chapter 3 gives more detail.

6.2.2 Electricity Demand by Customer

By customer category before FY2008, about 40% of the KPLC sales are A, 20% are B, and 40% are C, while D and E are about 1% each. In the last few years, the share of the category A0 (domestic) has been gradually increasing because the improvement of electrification and living standards may boost the electricity demand in households. For the category A, as the unit cost per kWh is higher than B or C, this tendency is more remarkable in sales than in kWh.

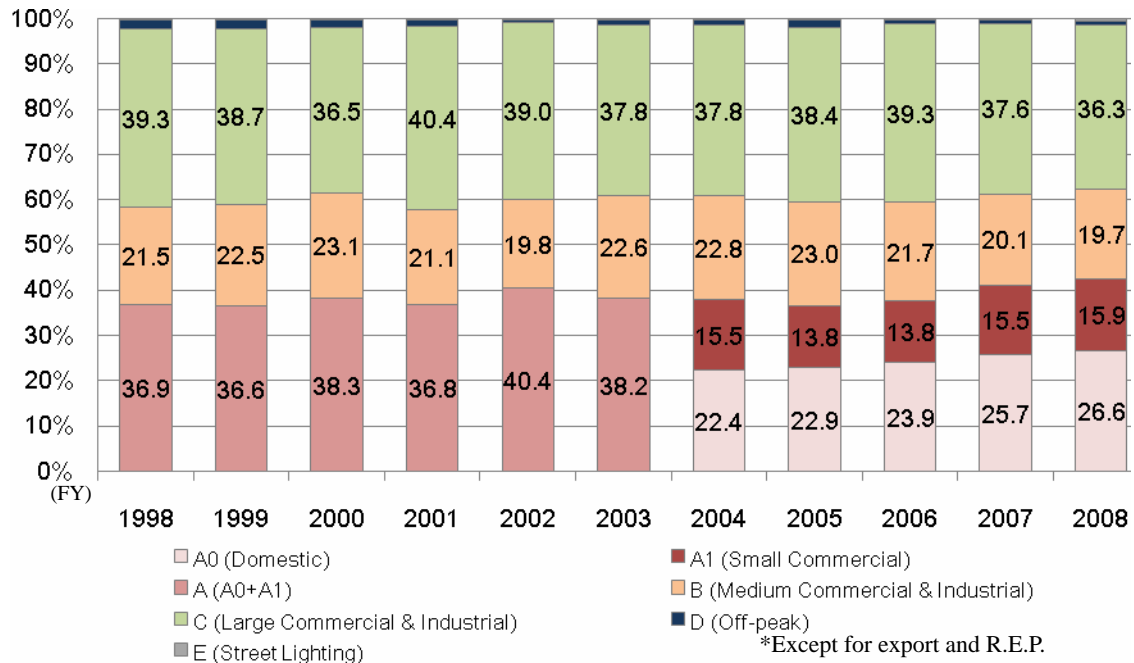
Since Kenya is a relatively industrialized country in Africa, the electricity demand for large industrial and commercial use is stable. However, rural areas are still much less electrified than cities. It means that rural areas will have a potentially large demand if electricity infrastructures are improved and electric appliances such as television and washing machine are widespread in households. Accordingly, strong electricity demand in households is expected to play an important role in KPLC's sales growth for the time being.

(Ksh million)



Source: KPLC Annual Reports 1998-2009

Fig. 6-2.1 KPLC's Sales by Customer (in Ksh)



Source: KPLC Annual Reports 1998-2009

Fig 6-2.2 KPLC's Sales by Customer (in % of Ksh)

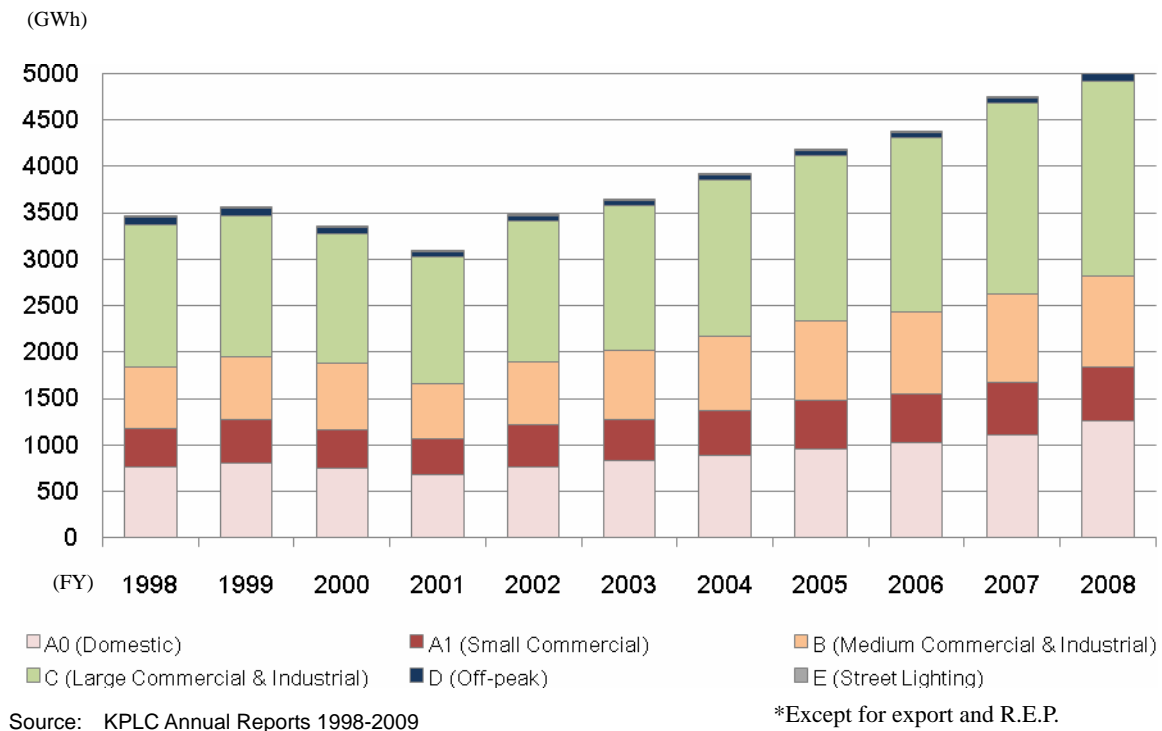


Fig. 6-2.3 KPLC's Sales by Customer (in GWh)

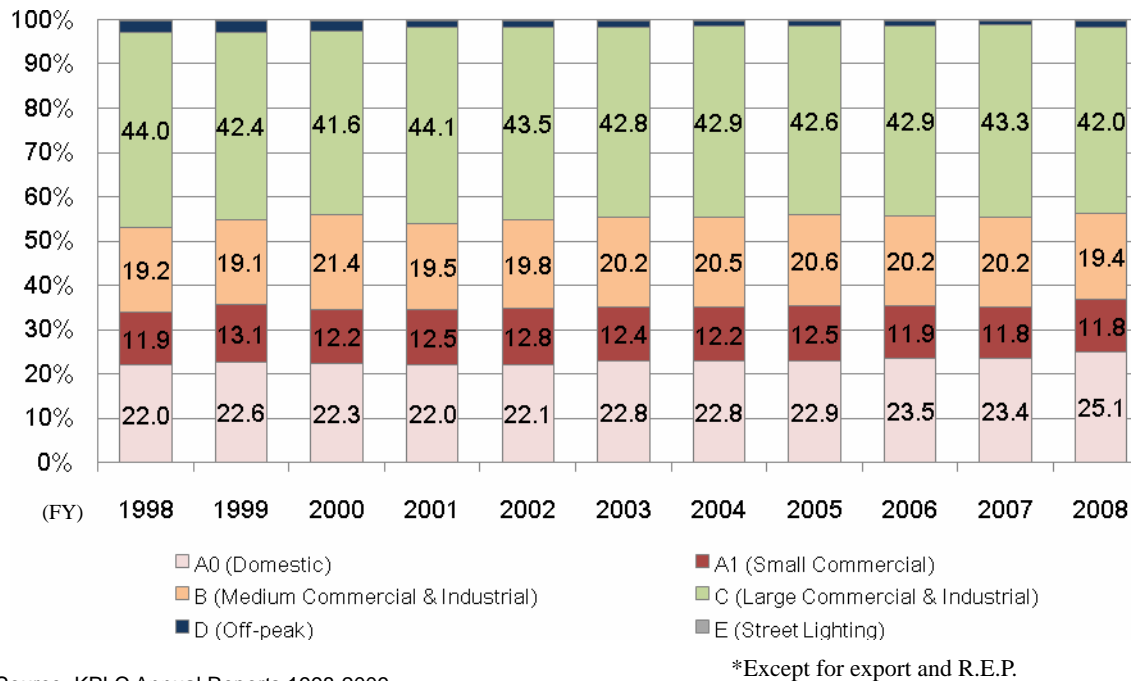


Fig. 6-2.4 KPLC's Sales by Customer (in % of GWh)

6.3 Loan Repayment Ability of KPLC

6.3.1 Capital Expenditure and Cash Flow

The capital inflow to KPLC has increased rapidly in recent years. Since the resumption of foreign aid to Kenya in around 2004, KPLC has acquired a number of low-interest loans, which tripled the amount of its long-term debts in five years since FY2004.

Consequently, KPLC has rapidly increased the capital expenditures mainly on distribution system enhancement. The amount of capital expenditures in FY 2009 was Ksh 12.7 billion (about ¥ 15.0 billion), which quadrupled in only three years. The capital expenditure to sales ratio reached 19.2%, while it usually remained at less than 10% until FY2006.

Here is the state of KPLC's cash flow. Although KPLC gains cash flow from operations every year, the investment cash flow, which is the cash disbursement to investment, greatly exceeds the operating cash flow. The free cash flow⁸, or cash income from business activities, resulted in a large deficit. Ksh 9.11 billion (about ¥ 11 billion) of cash flowed out in FY2008. This amount is nearly 20% of annual sales. Meanwhile, the financial cash flow has greatly increased since FY2007. It means that KPLC borrowed a huge amount of money to cover the burgeoning capital expenditures. The total amount of the financial cash flow in the last two years was Ksh 9.75 billion (about ¥ 13 billion), which is approximately double the operating cash flow in the same period. In FY2009, however, free cash flow turns positive as operating cash flow largely increases despite KPLC made massive investment, the same level as the previous year.

It is not unusual for a rapidly growing company to increase borrowing for a large investment. However, it is still necessary to examine the cash planning, profitability on investment, and interest payment.

⁸ Free Cash Flow = Operating Cash Flow (Inflow) + Investment Cash Flow (Outflow). If it is negative, cash flows out through business activities. However, that might be due to a temporary increase of investment for future growth, as long as operating cash flow is positive.



Source: KPLC Annual Reports 1998-2009

Fig. 6-3.1 Amount of Capital Expenditure and Percentage to Sales

Table 6-3.1 Cash Flow (CF) of KPLC

(Ksh million)	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
CF from Operation	942	3,258	1,498	2,050	5,346	4,350	1,151	3,454	15,180
CF from Investment	-1,422	-1,412	-1,073	-2,173	-1,818	-2,953	-7,263	-12,569	-12,544
Free CF	-479	1,846	425	-124	3,528	1,397	-6,113	-9,115	2,636
CF from Financing	201	-461	80	1,119	-275	-541	3,473	6,281	1,385

Source: KPLC Annual Reports 1998-2009

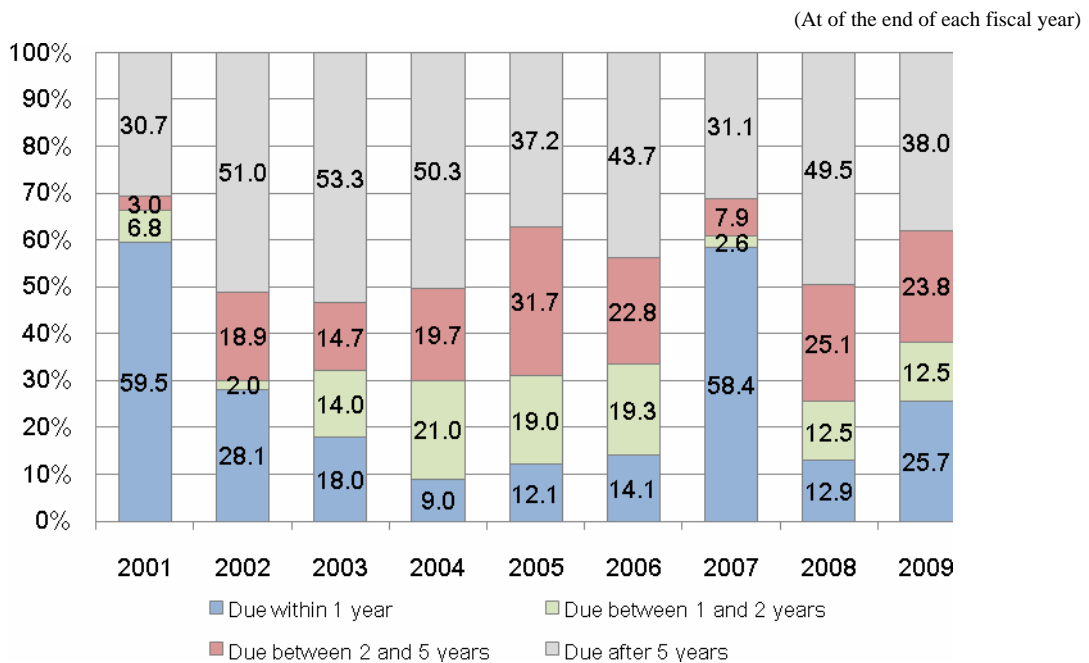
6.3.2 Funding

In recent years, KPLC invests most of its huge capital expenditures on developing the distribution system for electrification. The development of such system is vital to meet the increasing demand for electricity from the economic growth. The electrification rate is below 20% in Kenya as a whole; the figure is even lower in rural areas. If more households are electrified to boost the potential demand, KPLC can increase its revenue and recover the investment easily.

Since the balance between the electricity demand and supply in Kenya is still tight, KPLC is expected to continue the large investment mentioned above. Thus it will be very important for KPLC to secure stable long-term and low-interest loans. KPLC has been recently shifting

funding sources from short-term loans by commercial banks to long-term funds by international donors. In FY2007, KPLC managed to meet a sudden cash demand with temporary short-term loans. However, in 2008, it acquired some low-interest long-term funds by Japan, Europe and China. The loan by the Japan Bank for International Cooperation (JBIC) was at an annual interest rate of 0.75%, and the loans from Europe and China were at interest rates per annum of 2.5% and 3.97%, respectively. As of 2009, about 60% of KPLC's borrowings are long-term loans with more than two years of repayment term. The average annual interest rate is less than 5%. As borrowings increase rapidly, the instant coverage ratio (see 6.1.4) is getting lower. Nevertheless, that does not become a serious problem because the interest expense is still low.

In summary, KPLC is likely to keep growing with a high electricity demand and a stable profit structure. It will not face any major difficulty in repayment if funded properly.



Source: KPLC Annual Reports 2001-2009

Fig. 6-3.2 Repayment Term of Borrowings (%)

Table 6-3.2 Sources of Funding

(Ksh million) (Each loan is not funded for specific projects unless otherwise stated)	(At of the end of each fiscal year)						
	2003	2004	2005	2006	2007	2008	2009
Japan Bank for International Cooperation 2007-2043 (36 years) / 0.75% Japanese Yen	-	-	-	-	-	830	1,064
Kenya Government/Canadian loan 1990-2020 (30 years) / 5.0% US Dollar	680	-	-	-	-	-	-
Kenya Government/ IDA (International Development Association) 1997-2017 (20 years) / 7.7% US Dollar	6	163	163	186	186	186	188
Kenya Government/IDA 2004-2024 (20 years) / 4.5% US Dollar	-	-	32	113	220	390	830
Kenya Government/European Investment Bank 2006-2025 (19 years) / 3.97% Euro	-	-	-	-	-	870	1,845
Kenya Government/Export Import Bank of China 2007-2026 (19 years) / 2.5% Chinese RMB	-	-	-	-	-	313	373
Kenya Government/Nordic Development Fund 2006-2024 (18 years) / 4.5% Euro	-	-	-	-	94	441	669
Kenya Government/ Agence Francaise de Development 2006-2024 (18 years) / 4.5% Euro	-	-	-	-	132	619	1,711
Kenya Government/European Investment Bank - Olkaria Loan 2005-2020 (15 years) / 4.0% Euro	1,245	2,935	2,801	2,386	2,096	2,208	2,152
Kenya Government/Finnish loan 1998-2003 (5 years) / 10.0% Euro	11	-	-	-	-	-	-
Indosuez Bank, Belgium 1991-2004 (13years) / 2.5% Belgian Franc	53	21	-	-	-	-	-
Kenya Government/Swiss mixed credit 1996-2007 (11 years) / 6.125% Swiss Franc	193	209	162	147	127	148	166
East Africa Development Bank (Kiambere-Nairobi 220KVA line) 2003-2007 (4 years) / 7.83% US Dollar	354	381	243	118	2	-	-
FMO (Kipevu - Rabai line) 2003-2007 (4 years) / 4.0% US Dollar	501	418	286	166	50	-	-
Standard Chartered Bank Loan 2008-2012 (4 years) Kenyan Shillings (Ksh)	-	-	-	-	-	7,000	6,222
National Industrial Credit Bank - Limited loan 2003-2004 (1 year) / 11.0% Kenyan Shillings	76	-	-	-	-	-	-
Standard Chartered Bank - Limited loan 2003 / 10.0% Kenyan Shillings	300	-	-	-	-	-	-
Bamburi Cement - Limited loan 2003 / 4.615% Kenyan Shillings	24	5	-	-	-	-	-
Standard Chartered Bank - Money Market (KSh)	-	-	-	-	3,000	-	-
Barclays Bank - Money Market (KSh)	-	-	-	-	500	-	-
Kenya Government/Escrow loan 7.5% (KSh)	222	-	-	-	-	-	-
Accrued Interest	27	11	8	29	38	52	321
Total borrowings	6,701	4,143	3,697	3,146	6,444	13,057	15,542
(Less: amounts payable within 12 months)	(1,206)	(374)	(445)	(444)	(3,761)	(1,689)	(3,997)
Non current	5,495	3,769	3,249	2,702	2,683	11,368	11,545

Source: KPLC Annual Reports 2003-2009

Chapter 7 ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

7.1 EIA & RAP Procedure and Relevant Legal Documents of the Republic of Kenya

7.1.1 EIA System in the Republic of Kenya

The statutory Environmental Impact Assessment (EIA) system in Kenya was established by the Environmental Management Coordination Act (EMCA) of 1999 and further strengthened by the Environmental (Impact Assessment and Audit) Regulations of 2003. The EMCA specifies the projects which are subject to the full EIA in the second schedule and also requires the Environmental Audit (EA) under Sections 68 and 69 and the Strategic Environmental Assessment (SEA) for specific fields under Part IV Section 37 – 41 of the Act.

The following are the 7 objectives of the EIA described in “Draft Environment Impact Assessment Guidelines and Administrative Procedures¹” prepared by the National Environment Management Authority (NEMA) in November 2002.

- *To identify potential environmental impacts of proposed project, policies, plans and programmes;*
- *To assess the significance of these impacts;*
- *To assess the relative importance of the impacts of alternative plans, designs and sites;*
- *To propose mitigation measures for the significant negative impacts of the project on the environment;*
- *To generate baseline data for monitoring and evaluation of how well the mitigation measures are being implemented during the project cycle;*
- *To present information on the impact of alternatives; and*
- *To present results of the EIA in such a way that they can guide informed decision-making.*

7.1.2 Project Types which require EIA

The project which is subject to EIA is specified by project type in the second schedule of the EMCA (See Annex 7-1). The EMCA does not specify any threshold of the project which undergoes EIA, and whether EIA should be conducted is decided by NEMA based on the context of the Project Report (PR) which is initially required by NEMA.

As for the Kisumu-Lessos-Olkaria Transmission Upgrading Project, it is categorized under (b) Electrical transmission lines of “No. 9. Electrical Infrastructure” in the Second Schedule of

¹ “Draft Environment Impact Assessment Guidelines and Administrative Procedure” is an effective document since introduced as a guidelines at NEMA’s website at http://www.nema.go.ke/images/stories/pdf/EIAGUIDELINES202002_latest.pdf

EMCA. Therefore, the project is considered to be subject to a full EIA.

7.1.3 EIA Procedure and Required Documents

(1) Project Report (PR)

All the project proponents of the project under the second schedule of EMCA are initially required to submit a PR consisting of the contents in Annex 7-2. NEMA shall send the PR to lead and relevant agencies and request them for their comments within 21 days after the lead and relevant agencies' receipt. If there is no comment received from the concerned agencies by the end of the period of 30 days from the PR's receipt date, NEMA shall proceed to determine the project report. As a total, 45 days after the submission of the PR, NEMA will issue a decision letter to the concerned agencies and the project proponent. If the project is considered to have no significant environmental and social impacts or have sufficient mitigation measures by NEMA based on the contents of the PR, the project is approved without conducting the EIA. On the other hand, if any adverse impacts or inappropriate mitigation measures are identified by NEMA, it requires the project proponent to conduct a full EIA study or submit additional information.

7.1.4 Requirements of the EIA Study

(1) Projects which require the EIA Study (EIAS)

Although the second schedule is the list of the project types which are subject to EIA, whether the project needs EIA shall be decided by NEMA.

As described in the previous section, once NEMA requires the project proponent to conduct the EIA, the project proponent needs to 1) submit the EIA's TOR as a part of the scoping report, 2) obtain NEMA's approval of the TOR, 3) submit the names and qualification of the EIA experts including a Lead EIA Expert registered by NEMA, and 4) conduct the EIA in accordance with the TOR as described in Part III of the Environmental (Impact Assessment and Audit) Regulation 2003.

(2) Contents of the Scoping Report

According to "Draft Environment Impact Assessment Guidelines and Administrative Procedure of 2002," there are twelve (12) items to be covered by the Scoping Report (Refer to Annex 7-3).

(3) Contents of the EIAS

According to "the Environmental (Impact Assessment and Audit) Regulation 2003," there are 18 items to be covered by the EIA Study Report in Table 7-1.1.

Table 7-1.1 Contents of the EIA Study Report

No.	Contents
-	Non-technical Summary
(a)	A proposed location of the project;
(b)	A concise description of the national environmental legislative and regulatory framework, baseline information,
(c)	And any other relevant information related to the project; the objectives of the project;
(d)	The technology and processes to be used, in the implementation of the project;
(e)	The materials to be used in the construction and implementation of the project;
(f)	The products, by-products and waste generated by the project;
(g)	A description of the potentially affected environment;
(h)	The environmental effects of the project including the social and cultural effects and the direct, indirect, cumulative irreversible, short-term and long-term effects anticipated;
(i)	Alternative technologies and processes available and reasons for preferring the chosen technology and processes;
(j)	Analysis of alternatives including project site, design and technologies and reasons for preferring the proposed site, design and technologies.
(k)	An Environmental Management Plan proposing the measures for eliminating, minimizing or mitigating adverse impacts on the environment; including the cost, time frame and responsibility to implement the measures;
(l)	Provision of an action plan for the prevention and management of foreseeable accidents and hazardous activities in the cause of carrying out activities or major industrial and other development projects;
(m)	The measures to prevent health hazards and to ensure security in the working environment for the employees and for the management of emergencies;
(n)	An identification of gaps in knowledge and uncertainties which were encountered in compiling the information;
(o)	An economic analysis of the project;
(p)	An indication of whether the environment of any other state is likely to be affected and the available alternatives and mitigating measures; and
(q)	Such other matters as the Authority may require.

Source: Part IV of the Environmental (Impact Assessment and Audit) Regulation 2003

7.1.5 EIA Preparation & Review Procedure

The project proponent shall conduct an EIA and prepare an EIA report in accordance with the approved TOR. The stages of the procedure of the EIA preparation and review are summarized below and Figure 7-1.1.

Step 1: Assemble the team of experts

Step 2: Examine the TORs for each expert and:

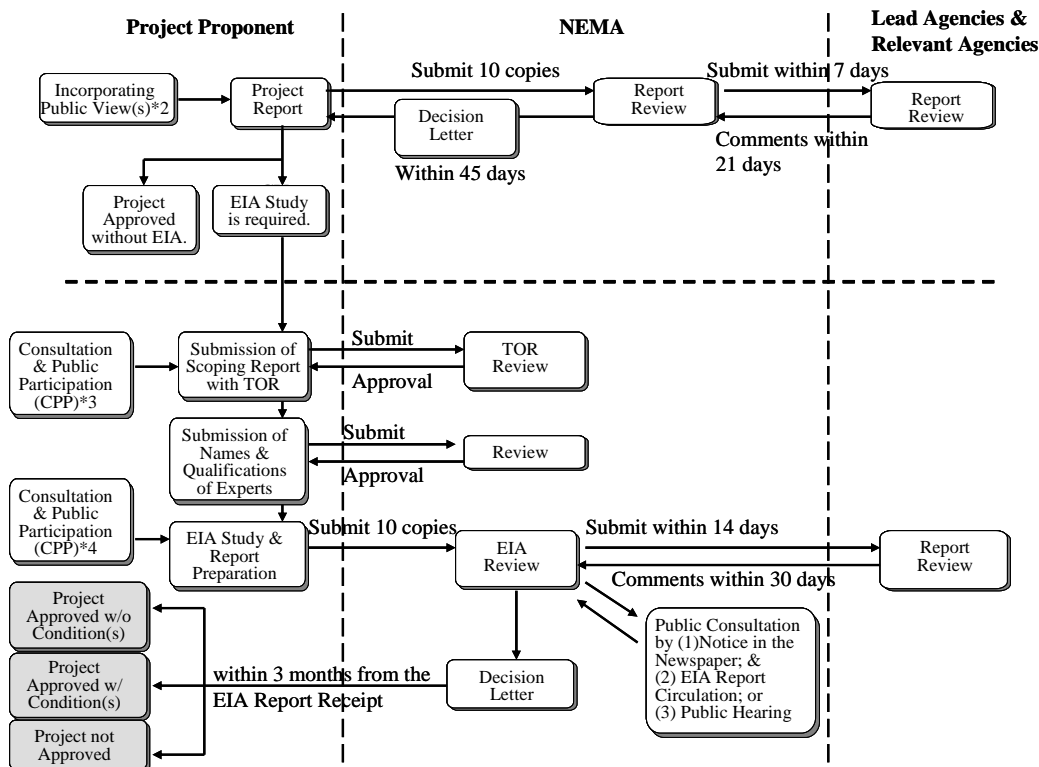
- 1) Assign responsibilities of each member of the team;
- 2) Specify that the lead expert shall be responsible for the study; and
- 3) Agree on time schedule.

Step 3: Plan field work including consultations and public participation and provision for:

- 1) Collection of baseline data and information;
- 2) Awareness creation;
- 3) Generation of primary data;
- 4) Ecological, socio-cultural and economic surveys;
- 5) Designing of EMP to implement the mitigation measures and involving all the affected persons

Step 4: Report writing

Source: Section 2.6 of Draft Environment Impact Assessment Guidelines and Administrative Procedure, Nov. 2002



Source: Prepared by JICA Survey Team based on the Environmental (Impact Assessment and Audit) Regulations 2003; and the Draft Environment Impact Assessment Guidelines and Administrative Procedure, Nov. 2002

Fig. 7-1.1 EIAS Report Preparation & Review Procedure

² Section 2.4 of the Draft Environment Impact Assessment Guidelines and Administrative Procedure, Nov. 2002 states that “[t]he views of the public on all these activities [within the project cycle] should be incorporated in the project report” by “indicating representativeness of the potentially affected people.”

³ Section 2.5.6 of the Draft Environment Impact Assessment Guidelines and Administrative Procedure, Nov. 2002 specifies that CPP for the scoping report should target the affected persons, the methods of CPP include a) securing written submission from Lead Agencies and the public; (b) public opinion; (c) holding community meetings and public hearings; (d) conducting preliminary fields study/site visits; (e) conducting workshops/seminars; and (f) establishing inter-sector task forces.

⁴ Section 2.9 of the Draft Environment Impact Assessment Guidelines and Administrative Procedure, Nov. 2002 requires that the CPP for EIAS should “involve the affected person, lead agencies, private sector, among others” and complementarily explains that “[its] methodology [to obtain the public views] may include (a) meetings and technical workshops with affected communities; (b) interpersonal contacts; (c) dialogue with user groups and local leaders; (d) questionnaire/survey/interview; and (e) participatory rural appraisal or rapid rural appraisal (PRA/RRA) techniques.

As for the EIA license fee, the payment of 0.1% of the total cost of the project was required for the project proponent in the both the private and public sectors by the Environmental (Impact Assessment and Audit) Regulation 2003. However, it was amended as described in the following table by the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2009 dated 11th February 2009. Additionally, 50% of the license fee shall be paid upon submission of the project report, and the rest shall be paid when collecting the EIA License.

Table 7-1.2 EIA Report Reviewing Fee

Range of Project Cost	Amount of the License Fee
Less than KSh 200,000	Minimum Payment of KSh 10,000
KSh 200,000 – KSh 20,000,000	0.05% of the total cost of the project
More than KSh 20,000,000	Maximum Payment of KSh 1,000,000

Source: Prepared by JICA Survey Team based on the Environmental (Impact Assessment and Audit) (Amendment) Regulations 2009

7.1.6 Consultation and Public Participation (CPP) and Information Disclosure

As Consultation and Public Participation (CPP) is required at each stage, namely preparing the PR, the Scoping Report and EIAS report, the Environmental (Impact Assessment and Audit) Regulations specify only CPP for EIAS report in Section 17 of the Regulations. The CPP for the PR and scoping report is described only in the Draft Environment Impact Assessment Guidelines and Administrative Procedure, Nov. 2002.

(1) CPP for the Project Report by the Project Proponent

Although the public consultation for the project report is not specifically required by the Environmental (Impact Assessment and Audit) Regulations, it is described in Section 2.2.4 of the Environmental Impact Assessment Guideline and Administrative Procedure of Nov. 2002 that the public view on the project activities shall be incorporated in the project report by indicating representativeness of the potentially Project Affected Persons (PAPs).

(2) CPP for the Scoping Report by the Project Proponent

Section 2.5.6 of the EIA Guideline and Administrative Procedure of Nov. 2002 states that “scoping must ensure continuous consultation between the proponent, the experts, the public (especially PAPs) and the Authority.” There are 6 methods for public involvement and information collection which are identified by NEMA:

- Securing written submissions from Lead Agencies and the public;
- Public opinion;
- Holding community meetings and public hearings;
- Conducting preliminary field study/site visits;
- Conducting workshops/seminars; and/or
- Establishing inter-sector forces.

(3) CPP for the EIAS Report by the Project Proponent

The Environmental (Impact Assessment and Audit) Regulations of 2003 specified 4 means to publicize the information disclosure during the EIAS in Section 17 of Part III as shown below. As for the methods to obtain the public views, Section 2.9 of the Draft Environment Impact Assessment Guidelines and Administrative Procedure, Nov. 2002 listed 5 specific methods (see Footnote 4 on p. 7-4).

- (a) Publicize the project and its anticipated effects and benefits by-
 - i. Posting posters in strategic public areas in the vicinity of the site of the proposed project informing the affected parties and communities of the proposed project;
 - ii. Publishing a notice on the proposed project for 2 successive weeks in a newspaper that has a nation wide circulation; and/or
 - iii. Making an announcement of the notice in both official and local languages in a radio with a nation wide coverage for at least once a week for 2 consecutive weeks.
- (b) Hold at least 3 public meetings (per project site) with the affected parties and communities to explain the project and its effects, and to receive their oral or written comments;
- (c) Ensure the appropriate notices are sent out at least one week prior to the meetings and that the venue and times of the meeting are convenient for the affected communities and the other concerned parties; and/or
- (d) Ensure, in consultation with the Authority that a suitably qualified coordinator is appointed to receive and record both oral and written comments and any translations thereof received during all public meetings for onward transmission to the Authority.

(4) Information Disclosure and Public Hearing for the EIAS Report by NEMA

After the submission of the EIAS report, NEMA shall publicise the EIAS report by the newspaper and radio for comments and may organize a public hearing if it is considered necessary by NEMA. Details are described below as specified in Section 21-22, Part IV of the Environmental (Impact Assessment and Audit) Regulations of 2003.

- (a) Publish 2 successive weeks to gazette and in a newspaper with a nation wide circulation and in particular with a wide in the area of the proposed project, a public notice once a week inviting the public to submit oral or written comments on the environmental impact assessment study report;
- (b) Announce such notice in both official and local languages at least once a week for 2 consecutive weeks in a radio with a national wide coverage; and/or
- (c) Upon receipt of both oral and written comments, the Authority may hold a public hearing if it is considered necessary by NEMA.

7.1.7 EIA Approving Agency

NEMA is the EIA approving agency in Kenya as prescribed in the EMCA. Since December 2008, the review system of the EIA reports was decentralized, and in principle, the PR and/or EIA report shall be reviewed and approved by the provincial office of NEMA where the project is going to be implemented.

7.1.8 Resettlement Action Plan (RAP) Preparation Procedure and Relevant Organizations

There is no law or policy on resettlement except relevant legal documents on land acquisition in Kenya. When the RAP needs to be prepared for a project in Kenya, the World Bank (WB) Operational Policy (OP) 4.12 Involuntary Resettlement is generally adopted in practice. Additionally, the project proponent is required by NEMA to submit the RAP report together with the EIA report in order to obtain the EIA approval if the project involves involuntary resettlement even though the EMCA and Environment (Impact Assessment and Audit) Regulations do not specify.

Moreover, regarding the compensation method, replacement cost is applied for the RAP as required by OP 4.12 even though the Land Acquisition Act of 1983 specifies full compensation which is equivalent to the amount of the market value and an additional 15% of the market value as compensation for disturbance.

As for the approval of the RAP, it is understood from meetings with environmental consultants that there is no official government/agency which approves the RAP in Kenya, and the RAP is commonly prepared in accordance with the donor's requirements such as the WB/International Finance Cooperation (IFC) and needs to be agreed amongst the project proponents and the affected persons. Moreover, in practice, the Land Valuer who is in charge of compensation/asset evaluation within the EIA/RAP Team should be registered at the Ministry of Lands.

7.1.9 EIA & RAP-related Legal Documents (Laws, Regulations & Environmental Standards)

The following section briefly describes the legal instruments which are relevant to the proposed Transmission Upgrading Project during the construction, operation and decommissioning. More descriptions of the instruments which are considered less relevant are provided in Annex 7-4.

(1) EIA-related Laws and Regulations

The following table describes a brief summary of the EIA-relevant legal documents.

Table 7-1.3 Summary of the Relevant Laws and Regulations on EIA

No.	Name of Laws and Regulations	Summary
1	Environment Management and Co-ordination Act (EMCA), 1999	The act makes provision for the establishment of an appropriate legal and institutional framework for the environmental management. It also provides principles of EIA/EA, a list of the projects to undergo EIA and define the role of NEMA to establish environmental standards.
2	Environmental Impact Assessment and Audit Regulations, 2003	It provides the further guidance on the EIA process. It lists issues to be considered for the EIA study and provides the general guidelines such as the report contents, the methodology of consultation and public consultation.
3	The Environmental Management and Coordination (Waste Management) Regulations, 2006	It describes the responsibility of the waste generator in Section 4 of Part II, regulations under the Pest Control Product Act in Section 24 of Part V and pesticide disposal in Section 25 of Part V.
4	Energy Act	It provides the power to the licensee to lop trees and hedges which interfere with the construction, maintenance work, working of any electric supply line. 7 days notice shall be given to the owner or occupier of the land to request to lop or cut trees and hedges at the cost of the licensee.
5	Public Health Act (Cap. 242)	It specifies that the local authority is responsible for the prevention of any pollution to any water supplies used for human and domestic consumption in Part XI and prohibits any nuisances in Section 115.
6	Physical Planning Act (Cap286)	The applicant shall be required to submit together with the application an environmental impact assessment report for development activities such as; for industrial location, dumping sites, sewerage treatment, quarries or any other development activity considered as having an injurious impact on the environment by the local authority in accordance with Section 36.
7	Forests Act, 2005	It prohibits cutting and removal of any forest produce, cultivating land, capturing any animals without the license in Section 8.
8	Wildlife Conservation and Management Act Cap 376	It makes provision for the protection, conservation and management of wildlife in Kenya (Republic of Kenya, 1976).

Source: Prepared by JICA Survey Team based on the legal documents.

(2) Relevant Environmental Standards and Regulations

NEMA currently has 2 standards, namely water quality standards (2006) and noise & vibration standards (2009), and draft standards on air quality which is expected to be gazetted within 2009 under the EMCA. Additionally, the EMCA specifies the establishment of standard criteria on hazardous waste, standards of pesticide toxic substances, standards of ionising and radiation, standards of odour by NEMA; however, they are not yet established. The relevant noise standards during construction are summarised in the following table, and the details and/or the other less relevant standards are attached in Annex 7-6.

Table 7-1.4 Summary of the Relevant Environmental Standards

No.	Name of Standards/Regulations	Summary
1	Noise and Vibration	NEMA's Environmental Management and Coordination (Noise & Vibration) Regulations, 2009 established noise and vibration standards including standards of noise for construction (Second schedule) which is relevant to this project. The second schedule specifies that the maximum permissible noise level in the day time is 60 dB (A) for residential areas and health & educational facilities and 75 dB (A) for the other areas. The detailed standards are shown in Annex 7-5.

Source: Prepared by JICA Survey Team based on the legal documents.

(3) RAP-Related Laws and Regulations

The legal instruments on land acquisition which are specifically relevant to the proposed project are briefly described in the following table. More descriptions of the instruments which are considered less relevant are provided in Annex 7-4.

Table 7-1.5 Summary of the Relevant Laws and Regulations on RAP

No.	Name of Laws and Regulations	Summary
1	The Constitution	Section 75 of the Constitution of Kenya enshrines the right to property. It prohibits compulsory acquisition of property except in strictly defined circumstances. One of the circumstances in which compulsory acquisition is permitted relates to "the development or utilization of property so as to promote the public benefit".
2	Government Land Act Cap 280	It makes provision for regulating the leasing and other disposal of Government lands, and for other purposes.
3	Land Titles Act Cap 282, 1908	It makes provision for the judgment of claims in land, the adjudication and registration of title in land and other related issues. Its subsidiary legislation includes the Land Titles Rules.
4	Registration of Titles Act Cap 281	It provides for the transfer of land by registration of titles and Section 35 sets out the procedure with regard to transfer of land.
5	Land (Group Representatives) Act Cap 287, 1970	It provides for the incorporation of representatives of groups who have been recorded as owners of land under the Land Adjudication Act.
6	The Trusts of Land Act Cap 290, Revised edition 1982	This is the act relating to the trusts of land.
7	Land Control Act 302, Revised Edition 1989 (1981)	It provides for controlling transactions in agricultural land.
8	Land Planning Act Cap 303 (Revised Edition 1970)	It makes provision for planning the use and development of land. Its subsidiary legislation includes the Development and Use and Land (Planning) Regulations, 1961.
9	Land Acquisition Act, Cap 295	The preconditions for compulsory acquisition are that the Minister must be satisfied that (1) land is required for the purposes of a public body; (2) the acquisition is necessary in the interests of ".....the development or utilization of any property in such a manner as to promote the public benefit"; and (3) the necessity therefore is such as to afford reasonable justification for the causing of any hardship that may result to any person interested in the land.

No.	Name of Laws and Regulations	Summary
		Additionally, Section 9 stipulates that where land is compulsorily acquired, “full compensation shall be paid promptly to all persons interested in the land.” An inquiry shall be held into claims to compensation by all persons interested in the land. The value of the land shall be assessed on the basis of the market value at the date of the publication of the notice of the intention to acquire the land. To the amount of compensation so determined shall be added a sum equal to 15% of the market value.
10	Valuers Act Cap 532	It provides for the registration of valuers and for connected purposes. Section 12 lists the conditions and qualifications for registration of valuers.
11	Rating Act Cap 267, 1963	It provides for the imposition of rates on land as defined by the Valuation for Rating Act and related issues. Its subsidiary legislation includes the Rating Rules.
12	Energy Act	Section 54 enables a licensee to acquire land compulsorily for any of the purposes of a license at the cost of the licensee, and the licensee may apply to the Minister to acquire the land on his behalf.
13	Wayleave Act	It provides for wayleaves in favour of the government on private lands for the public work projects such as a sewer, drain or pipeline into, through, over or under any private land without the consent of the owner. However, if an owner, lessee or occupier of the private land notifies the objection to the competent District Commissioner, the work shall not proceed without the sanction of the Minister.

Source: Prepared by JICA Survey Team based on the legal documents.

7.1.10 Comparison between the Kenyan EIA & RAP Procedure and the Requirements of the Former JBIC Guidelines

The comparison of the EIA and RAP requirements for the proposed project between Kenyan and the former Japan Bank for International Cooperation (JBIC) Guidelines are summarised in the following sections.

(1) Land Acquisition

According to the Safety, Health and Environmental (SHE) Department of KPLC, KPLC does not purchase land for transmission towers or transmission corridors, but signs a wayleave agreement between KPLC and the land title holders. Compensation to the landowners and occupiers is paid for their losses such as land, structures, crops, trees, etc. depending on the needs of the land title holders and occupiers. For instance, the landowners whose farmland is only affected by transmission lines are not compensated for land but for the crops in the affected farmland, while the landowners whose residential structures are affected by transmission lines or a tower are compensated for (1) the relocation of the residential structure within their land plot if the land plot is large enough to accommodate the structure or (2) the relocation of the residential structure to a resettlement site if their land plot is too small to accommodate the affected structures; however, the land title of the affected land is not transferred to KPLC but belongs to the

original land title holder.

(2) **Public Consultation Meetings**

NEMA requires at least 3 public consultation meetings per project site, while the former JBIC Guidelines specify 2 stages of the public consultation when scoping and preparing the draft final report of EIA. According to the meeting with NEMA, there is no detailed regulation regarding the timing or location besides the minimum number of the public consultation meetings. Therefore, to meet the former JBIC's requirement on public consultation, it was suggested to conduct the public consultations at accessible venues at 2 stages, namely when scoping and when preparing the draft ESIA report in the TOR of the ESIA Study of KPLC. Details of the suggested specification of the public consultation meeting are described in Section 7.3 (1).

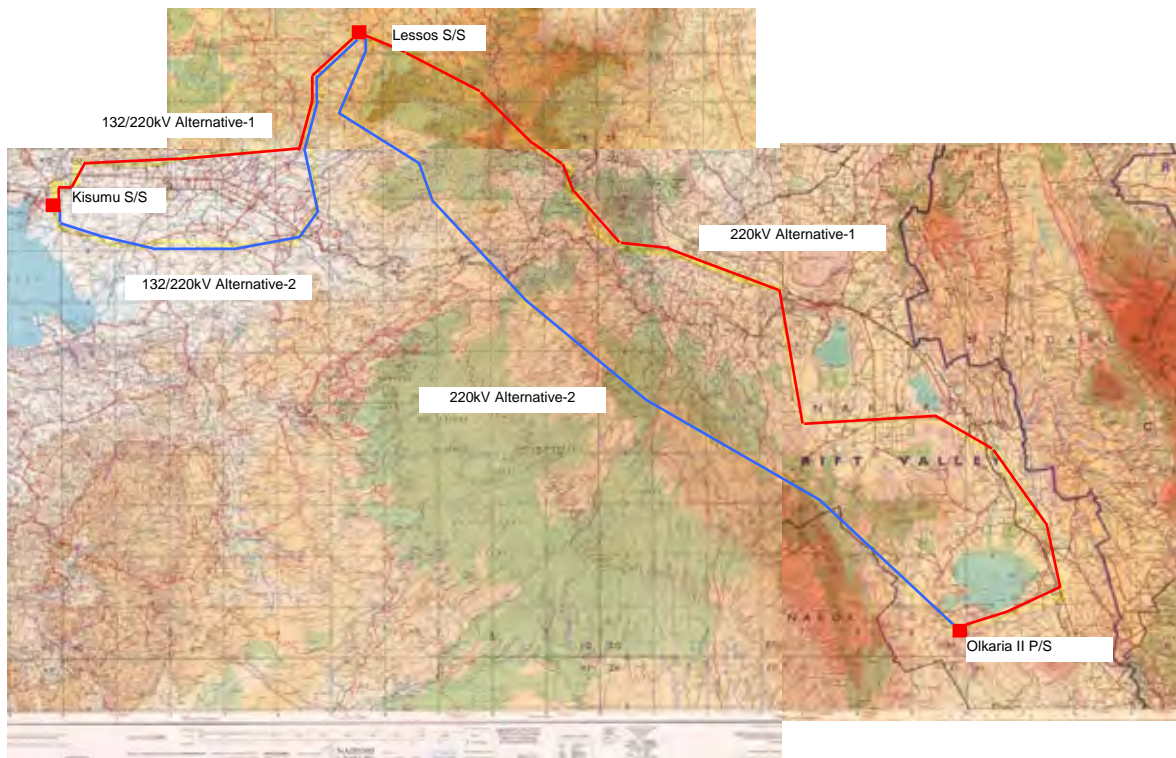
(3) **RAP Procedure/Requirements**

Since the Kenyan resettlement procedure follows the WB O.P. 4.12 there are no fundamental discrepancies between the Kenyan procedure/requirements and the former JBIC guidelines.

7.2 Alternative Considerations on the Transmission Line Alignment

(1) **Alternative Alignment Considerations in the Previous Feasibility Study**

Two alternative alignments of the transmission line between Olkaria and Lessos as well as Lessos and Kisumu were proposed and studied in the Feasibility Study conducted in 2003 with the financial assistance from the US Trade Development Authority. In the present JICA Study, the alternatives suggested in the F/S were re-examined in terms of technical, economic, and environmental & social impacts, as a part of Strategic Environmental Assessment (SEA) as required by the Kenyan EIA regulations and the former JBIC Guidelines for Confirmation of Environmental and Social Considerations. In this section, environmental and social aspects of the alternative considerations are described in the following table, and the comprehensive results of the alternative considerations are described in Section 8.1.1. The proposed alternative alignments are shown in Figure 7-2.1.



Source: JICA Survey Team

Fig. 7-2.1 Alternative Alignments of the Transmission Line

(2) Preliminary Evaluation of Alternatives by JICA Survey Team

The results of the alternative alignment considerations in the Feasibility Study were preliminarily re-examined based on JICA Survey Team's Topographic Survey, the existing data, findings of the site visits of relevant KPLC staff and the JICA Survey Team.

Between Olkaria and Lessos, Alternative 2 which is a new line and short-cut route is considered economically and technically advantageous; however, it has 3 environmental and social issues, and is not considered preferable. First, the length of the wayleave in the forests is estimated to be approx. 75.5 km, and longer than Alternative 1. Second, it is planned to pass through the Mau Forests Complex, which is an environmentally, socially and politically sensitive area in Kenya due to the landownership and forest degradation issues in the past several years. Due to the complexity of the problem, it was considered that the implementation of the project, including the wayleave agreement, would be significantly difficult and time-consuming (as for the location of wayleave in the forests and the status of its surroundings, see Annex 7-8 and 7-9). Third, the number of residential structures along route Alternative 2 has been estimated to be approx. 642 by the topographic survey, which is considerably more than that of Alternative 1. Therefore, Alternative 1, which runs in parallel to the existing transmission line except near Lake Nakuru and Lake Elementaita, was preferred. This conclusion was also agreed amongst relevant KPLC staff during the meeting with JICA Fact-finding Mission Members/JICA

Survey Team on 28 July 2009.

As for the transmission route between Lessos and Kisumu, Alternative 1, which is a new line and short-cut route, will affect a smaller number of residential structures (approx. 268 structures) compared with Alternative 2 (approx. 375 structures). Therefore, Alternative 1 is also preferred between Lessos and Kisumu in terms of environmental and social aspects, which was also initially agreed by the meeting participants on 28 July 2009.

In the KPLC's ESIA report prepared by GIBB Africa, the Alternative 4, an additional alternative of a power line laid underground around Elementeita village, was suggested in order to minimise the potential negative environmental impact on the migratory birds based on a local resident's comments. However, it was not selected since any bird accident records were not identified in the area, and the cost of the underground 220kV transmission line is expected 4-6 times more expensive than that of the overhead transmission line.

Table 7-2.1 Results of Alternative Considerations (Environmental and Social Aspects)

Impact	Olkaria-Lessos		Lessos-Kisumu	
	Alt. 1 (Existing Line)	Alt. 2 (New Line)	Alt. 1 (New Line)	Alt. 2 (Existing Line)
Corridor Length in Forests ¹	Approx. 35.5km: Passing 4 forests (Northern Tinderet; Nabkoi; Timboroa; and Mt. Londiani Forests)	Approx. 75.5km: Passing 3 forests (Eastern Mau; Western Mau; and Tinderet Forests)	0	0
Forest Status	More plantation forests	More degraded and non-degraded natural forests	-	-
Number of Residential Structures ²	Approx. 262	Approx. 642	Approx. 268	Approx. 374
Social Issue	-	A complicated land title issue exists	-	-

Note 1: The length of the transmission wayleave in the forests was estimated based on the existing topographic maps with the scale of 1:250,000 (issued in 1973, 1979 and 1981).

Note 2: .The number of the residential structures was estimated based on the results of the topographic survey as of 15 Sept. 2009. The final number of the residential structures to be affected for Alternative 1 between Olkaria and Kisumu via Lessos (see Section 7.3.3. (2) on p. 7-12) differs from the above-mentioned number because the alignment was fine-tuned to minimize the affected structures after the alternative considerations,

Source: Prepared by JICA Survey Team

7.3 Expected Environmental and Social Impacts

Scoping for environmental and social impacts of the project was conducted, based on existing information and data, field visits along the entire lengths of all alternative routes, meetings with relevant organisations, and discussions with some Project Affected Persons (PAPs). The results of scoping are summarised in the following sections. The subsequent detailed assessment

will be updated and finalised in the KPLC's RAP Study which has been commissioned by KPLC.

7.3.1 Approach of Scoping

'Scoping' of the environmental and social effects of the project was conducted to provide an initial identification of the main potential impacts of the project, in order to narrow down the issues requiring further detailed study in the subsequent ESIA. The scoping was conducted with reference to the relevant laws, regulations and standards of Kenya (see the previous section 7.1 (9)) and the 'Guidelines for Confirmation of Environmental and Social Considerations' of the former JBIC. For the scoping assessment, 30 potential environmental impact items were ranked from A+/- (positive/negative) to "blank/-" depending on their significance in accordance with the rating criteria listed below.

Rating Criteria

- A+/-: Significant positive/negative impact is expected.
- B+/-: Some positive/negative impact is expected to some extent.
- C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)
- Blank: No negative impact is expected.

7.3.2 Summary of the Scoping Results for the Kisumu-Lessos-Olkaria Transmission Upgrading Project

The scoping results on environmental and social impacts of the proposed Project are summarized in Table 7-3.1. The potential positive/adverse impacts are discussed in the section that follows.

Table 7-3.1 Summary of Scoping Results on Environmental & Social Impacts of the Project

Phase	Impacts																														
	1. Involuntary Resettlement	2. Local Economy such as Employment & Livelihood, etc.	3. Land Use & Utilization of Local Resources	4. Social Institutions such as Split of Communities	5. Existing Social Infrastructures & Services	6. The poor, indigenous & ethnic people	7. Misdistribution of Benefit & Damage	8. Cultural Heritage	9. Local Conflict of Interest	10. Water Usage or Water Rights & Rights of Common	11. Sanitation	12. Hazards (Risk), Infectious Diseases such as HIV/AIDS	13. Topography & Geographical Features	14. Soil Erosion	15. Groundwater	16. Hydrological Situation	17. Coastal Zone	18. Fauna, Flora & Biodiversity	19. Meteorology	20. Landscape	21. Global Warming	22. Air Pollution	23. Water Pollution	24. Soil Contamination	25. Waste	26. Noise & Vibration	27. Ground Subsidence	28. Offensive Odor	29. Bottom Sediment	30. Accidents	
	Social Environment										Natural Environment										Environmental Pollution										
Planning Phase	A-					C-	B-		C-																						
Construction Phase		B+/B-	B-		B-	C-		C-			B-	B-		B-				A-		B-	B-	B-	B-	B-	B-					C-	
Operation Phase		A+	B-			C-	B-		C-			B-		B-				B-		B-											C-

A+/-: Significant positive/negative impact is expected.

B+/-: Some positive/negative impact is expected to some extent.

C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)

Blank: No negative impact is expected.

Source: JICA Survey Team

7.3.3 Description of Scoping Results

The scoping was conducted based on the results of the site visits of JICA Survey Team in Jun.-Jul. 2009 (for details, see Annex 7-9) and the review of the existing data. The scoping results for the Transmission Line Upgrading Project by stage are summarised in the paragraphs below, and are then described in more detail in Table 7.3.2.

(1) Overall Positive Impacts

Overall, the Project will contribute to both the national and local economy and livelihood by providing a stable electricity supply, as well as local employment during construction in the project site (Impact No. 2).

(2) Overall Adverse Impacts

There are 2 significant adverse impacts (A-), related to Involuntary Resettlement during design and Fauna, Flora and Biodiversity during construction in the project area, particularly in relation to Forest Reserves and a National Park. For the Alternative 1 between Olkaria and Kisumu via Lessos, approximately 330 residential structures⁵ to be relocated by the wayleave agreement were identified by the final result of the topographic survey (Impact No. 1). Additionally, vegetation will be removed from the wayleave during construction, and will then be limited to a certain height during operation, which

⁵ According to Table 7-2.1, the alternative considerations concluded that approx. 530 residential structures would be affected for the Alternative 1 between Olkaria and Kisumu via Lessos; however, the selected alignment between Olkaria and Kisumu via Lessos, Alternative 1, was fine-tuned to minimize the affected residential structures, which resulted in approx. 330 affected residential structures.

would adversely affect flora & fauna (Impact No. 18). The potential nature and degree of such effects will be reviewed within the ESIA, and will be investigated in some detail by the Flora & Fauna Specialist Study which has been commissioned by the JICA Survey Team.

There are less significant adverse impacts (B-), during design, construction and operation. For example, during design, misdistribution of benefit and damage (Impact No. 7) is expected. The effects of the project on PAPs (e.g. landowners/occupiers affected by the wayleave agreement) and beneficiaries of the project (electricity users) will be very different.

Moreover, during construction, there are 12 less significant impacts such as impacts on Local Economy, Land Use & Utilisation of Local Resources, Existing Social Infrastructure & Services, Sanitation, Hazards (Risk), Infectious Diseases, Soil Erosion, Landscape, Air Pollution, Water Pollution, Soil Contamination, Waste, and Noise and Vibration during construction (Impact Nos. 2, 3, 5, 11, 12, 14, 20, 22, 23, 24, 25 and 26).

During operation, there are 6 less significant impacts on Land Use and Utilisation of Local Resources, Misdistribution of Benefit & Damage, Hazards (Risk), Infectious Diseases, Soil Erosion, Fauna, Flora & Biodiversity, and Landscape (Impact Nos. 3, 7, 12, 14, 18 and 20).

Regarding unknown adverse impacts (C-), there are 3 impacts to be clarified at the later study stage, namely the Poor, Indigenous and Ethnic People during design, construction and operation (Impact No. 6), Local Conflict of Interest during design and operation (Impact No. 9), and Accident during construction and operation (Impact No. 30). Unknown impacts will be re-examined at the later stage of the JICA Survey using the results of KPLC funded ESIA and Specialist Studies commissioned by the JICA Survey Team.

(3) Impacts of the Alignment between Olkaria, Lessos and Kisumu

Table 7-3.2 Descriptions of Scoping Results of the Transmission Line between Olkaria Lessos and Kisumu

No.	Likely Impacts	Ranking			Description
		Design	Construction	Operation	
1	Involuntary Resettlement	A-	-	-	The number of residential structures to be relocated was initially estimated to be approximately 470 by the JICA Survey Team's topographic survey conducted from mid-July to early Oct. 2009. A further iteration of this survey was undertaken at the end of September to realign parts of the route, the result of which was to reduce the potential number of residential structures affected to 330. This number will be refined by KPLC's RAP which was commissioned by KPLC in Dec. 2009 and is due to be completed at the end of Feb. of 2010.
2	Local Economy such as Employment & Livelihood, etc.	-	B+/B-	A+	The project would contribute to the overall local economy and livelihood by creating local casual labour job opportunities and also business opportunities for local people due to the presence of construction workers during construction. However, in the short-term, farming in the transmission corridor would be halted by clearance and construction works, and livelihoods could be adversely affected. (Financial compensation by KPLC is expected.) During operation, the provision of a stable electricity supply would contribute to the overall national economy and livelihoods.
3	Land Use & Utilization of Local Resources	-	B-	B-	The land use would be changed in the transmission line corridor, especially in forests. However, the width of the transmission line corridor is approx. 40m, so the impacts on land use during construction and operation are not expected to be great. Moreover, for much of the route, the new line will run parallel to an existing line, which will minimise the land take required.
4	Social Institutions such as Split of Communities	-	-	-	As the land under the transmission lines is accessible by local people, there is not expected to be any disturbance of local people's access to social institutions or any split of communities (severance).
5	Existing Social & Infrastructures / Existing Public Facilities	-	B-	-	Access to existing social infrastructure such as roads, schools, churches, police posts and other public facilities could be disturbed only during construction. During operation, since the land under the transmission lines is accessible by local people, there is not expected to be any disturbance of local people's access to existing social infrastructure and services. Additionally, the attention needs to be paid if the project causes to interference with radio and TV reception of nearby-residents, though the possibility is low.

Social Environment

No.	Likely Impacts	Ranking			Description
		Design	Construction	Operation	
6	The poor, indigenous and ethnic people	C-	C-	C-	The potential impact on the poor, indigenous and ethnic people is not yet known. There is a possibility that minority tribes, the poor, especially the landless farmers, the women-headed households, the elderly and the physically challenged, may be affected by (1) disturbance in current land use such as farming due to the wayleave agreement, and (2) relocation of houses during the design and construction phases. According to the KPLC's ESIA and JICA Survey Team's socio-economic survey of landowners and occupiers, no potential negative impacts on the indigenous people were identified, but some impacts on vulnerable people, such as the widow-headed households in Nyando District were identified by the socio-economic survey. This should be further studied by KPLC's RAP when special attention shall be paid to vulnerable people.
7	Misdistribution of Benefit & Damage	B-	-	B-	Inequality between beneficiaries of the project and PAPs would occur. Most of the land owners and occupiers who would be adversely affected by the wayleave agreement or/and relocation of structures will not be beneficiaries of the project because they do not have a mains electricity supply.
8	Cultural Heritage	-	C-	-	No historical or cultural heritage sites were identified within the transmission line corridors by observations during JICA Survey Team's scoping visits. However, there will be the possibility of chance finds of archaeological remains, burial sites, etc., during construction. A procedure will be required to have such finds reported and checked by an appropriate specialist from the National Museum of Kenya.
9	Local Conflict of Interests	C-	-	C-	The potential for local conflicts of interest is not known. Conflicts of interest could occur between those landowners and occupiers who will receive compensation from the wayleaves agreement or relocation of structures, and those who will not receive any compensation. In the ESIA, it was identified that the cumulative impact of wayleave agreements on the same landowners needs to be considered. The further potential impact will be considered within KPLC's socio-economic survey for RAP and through public consultation meetings.
10	Water Usage or Water Rights & Rights of Common	-	-	-	Since the project itself does not require water, the impact on water usage is not relevant. The project will require water during construction for the mixing of concrete for tower foundations, for the watering of access tracks to control dust, and for the provision of water for drinking, cooking and washing for construction gangs. This water demand will be relatively small, and should be able to be satisfied without affecting existing water rights.
11	Sanitation	-	B-	-	During construction, deterioration of the sanitary condition could occur in & around the construction sites during construction. During construction, proper sanitation facilities must be provided for labourers at construction sites. This must be written into the EMP.

No.	Likely Impacts	Ranking			Description
		Design	Construction	Operation	
12	Hazards (Risk) Infectious Diseases such as HIV/AIDS	-	B-	B-	It is expected that construction workers would be hired from both inside and outside the project area. This is likely to increase the transmission of infectious diseases, particularly Sexually Transmitted Diseases (STDs) such as HIV/AIDS. Local people and animals would only be at risk of injury/electrocution if the transmission lines and towers were not designed and constructed in accordance with Kenyan and/or international standards. There may be concerns about the risk of electro-magnetic effects of power transmission lines on humans, although adverse effects have not been proven. It can be expected that KPLC will use appropriate engineering standards in development of the project to avoid the risks mentioned.
13	Topography & Geographical Features	-	-	-	The project will only need small excavations for tower foundations and will not change the topography or geographical features other than the landscape.
14	Soil Erosion	-	B-	B-	During construction, excavations for tower foundations could cause soil erosion. However, the impact is expected to be minimal as the area of the tower foundations is relatively small, and they will be designed appropriately for the soil conditions and slope characteristics. It is expected that the ESIA will make recommendations for mitigation measures to minimise soil erosion due to the construction and use of access tracks and the construction of transmission towers on slopes. During operation, the soil erosion should be minimised by retaining a cover of vegetation in the transmission corridor.
15	Groundwater	-	-	-	The project itself will not require groundwater, and the construction of tower foundations will not be deep enough to affect groundwater.
16	Hydrological Situation	-	-	-	The water demand during construction will not be sufficient to affect the hydrological situation.
17	Coastal Zone (Mangroves, Coral Reefs, Tidal Flats, etc.)	-	-	-	The proposed transmission route does not pass through or near any coastal zone. It will also be sufficiently far away from Lakes Elmenteita and Nakuru not to affect them.
Natural Environment					

No.	Likely Impacts	Ranking			Description
		Design	Construction	Operation	
18	Fauna, Flora and Biodiversity	-	A-	B-	Vegetation such as trees, shrubs and crops will be cleared during construction. In addition, tall trees near to the wayleave will be cut to maintain the clearance of the transmission lines during operation. The planned transmission line routes (both Alternatives 1 and 2) start from the Hell's Gate National Park and pass through protected areas of the Mau Forest Complex. Alternative 2 passes through some undisturbed indigenous primary forest of the Eastern Mau, Western Mau and Tinderet Forest Reserves. Alternative 1 passes through parts of the Mount Londiani, Timboroa, Nabkoi and Northern Tinderet Forest Reserves. The cutting of forest would also have an effect on associated animal populations. However, in all of the reserves on Alternative 1, the new transmission line will be running parallel to an existing line, and virtually all of the forest consists of plantations of exotic tree species. The towers and power lines could have an adverse impact on large birds unless appropriately designed. According to the JICA Survey Team's specialist study on fauna and flora, in the project site of Alternative 1, only a stretch of about 4-5 kilometres of indigenous forest in the Timboroa forest was identified. The rest of the forest stands are plantations of exotic tree species planted from the Kenyan colonial era. The potential negative impact on one of the Red List species (Vulnerable), <i>Prunus Africana</i> (Red Stinkwood) was also identified in Londiani, Mau Summit and Timboroa Forests.
19	Meteorology	-	-	-	No significant meteorological impact due to the project has been identified.
20	Landscape	-	B-	B-	During construction, the landscape would be degraded in the short-term, particularly by the construction of temporary access roads. During operation, there is a possibility that the project would adversely affect the landscape, as there are some scenic sites and tourist sites in/near the transmission route, namely Hell's Gate National Park, Lake Naivasha, Lake Elementaita, Lake Nakuru National Park, and the Nandi Escarpment. According to the JICA Study Team's specialist study on landscape, no serious impact on landscape was identified in Alternative 1 but some moderate negative impacts are expected around the west side of Lake Nakuru (moderately significant), Mau Summit and the Escarpment (highly significant).
21	Global Warming	-	-	-	The power transmission project itself will not affect global warming (but generation of the electricity may have an effect depending upon its source).
22	Air Pollution	-	B-	-	A temporary deterioration of ambient air quality will occur during construction, particularly due to the dust caused by the construction and use of access roads. The EMP of KPLC's ESIA proposes adequate mitigation measures to minimise this impact.

No.	Likely Impacts	Ranking			Description
		Design	Construction	Operation	
23	Water Pollution	-	B-	-	Some negative impacts on water quality are expected during construction. However, the impact is expected to be small as water usage and effluent generation at the construction sites would be very limited. The EMP of KPLC's ESIA proposes mitigation measures to minimise this impact. During operation, there will be no sources of water pollution arising from the project, apart from an initial low level leaching of zinc from the galvanised tower components during rain.
24	Soil Contamination	-	B-	-	Soil contamination could possibly be caused by the accidental spillage of oils and fuels during construction, but the amounts are likely to be small. However, contractors' fuel and lubricant tanks will need to be properly banded in order to contain any spills or losses, including the accidental rupture of a tank. The required protection measures are discussed in the EMP of KPLC's ESIA and will be defined in the Contractors' EMPs.
25	Waste	-	B-	-	Small quantities of construction waste (excavated soil) will be generated during development of the project. In addition, cleared vegetation will need to be disposed of. Domestic refuse will also be generated by the construction camps. All of these wastes will have to be disposed of properly. The burning of wastes should not be permitted. In the case of cleared vegetation, arrangements will have to be made to ensure that local communities will benefit from the temporary supply of firewood, which would have to be equitably distributed. All of these matters are addressed in the EMP of KPLC's ESIA.
26	Noise and Vibration	-	B-	-	During construction, noise and vibration would be temporarily increased due to the use of construction machinery and vehicles. The EMP of KPLC's ESIA includes usual measures to minimise such disturbance. During operation, noise (buzzing) could be caused by the transmission lines, particularly during humid conditions, though the possibility is low. The ESIA recommends some design requirements to minimise this effect.
27	Ground Subsidence	-	-	-	No ground subsidence due to the project is expected.
28	Offensive Odor	-	-	-	Limited amounts of offensive odours could be generated in the short-term by construction machinery/vehicles or waste disposal during construction, but the impact is expected to be negligible.
29	Bottom Sediment	-	-	-	As construction activities will be well away from the lakes in the project area, there will not be any impact on bottom sediments.
30	Accidents	-	C-	C-	The likely risk of accidents is not yet known. There is the possibility of an accident during construction (particularly men falling from towers), or electrocution during operation, unless KPLC Safety, Health and Environment Policy is implemented. Health and Safety protection is addressed within the EMP of the ESIA.

Source: JICA Survey Team

7.4 Provided Assistance for the ESIA/RAP Study Implementation

The JICA Survey Team has provided technical assistance to KPLC in preparation of the ESIA study, such as 1) development of the ESIA's TOR for NEMA's approval; 2) technical assistance to KPLC to review the ESIA and 3) commissioning supplementary specialist's studies on fauna & flora, landscape and socio-economic status of the landowners/occupiers. The ESIA study of the proposed project was competitively tendered by KPLC and was awarded to a local consulting firm, GIBB Africa. The work of the ESIA was started on 18th August 2009, completed on 22 Dec. 2009 and submitted to NEMA on 29 Dec. 2009. On the other hand, the RAP was started by another local consulting firm, Eco Plan Management Limited from Dec. 2009 and is planned to be completed by Feb. 2010.

7.4.1 Preparation of the TOR and Schedule

Based on the results of scoping and reviews of the relevant legal documents, KPLC's draft TOR and draft study schedule were reviewed by the JICA Survey Team. The TOR of the ESIA was submitted to NEMA for approval.

(1) Proposed TOR for the ESIA Study

The proposed TOR of the ESIA excluding RAP is summarized below. The detailed TOR is attached in Annex 7-7.

Table 7-4.1 Proposed TOR of the ESIA for the Project

Item	Description	Remarks (Standards and References)
Alternative Consideration	<ol style="list-style-type: none"> (1) Consideration of 2 alternative alignments proposed in the F/S prepared in 2003 in terms of economic, technical and environmental & social aspects. (2) Zero option shall be considered in accordance with the former JBIC's guidelines. (3) Review and justify the selection of the alternatives suggested by KPLC and JICA Survey Team. 	Minimize the number of households to be relocated and the magnitude of the split of communities as well as maximize the project benefits.
Fauna & Flora	<ol style="list-style-type: none"> (1) Field study and hearings with relevant officers/local experts in the entire project areas. (2) Special attention shall be paid to (1) impacts on fauna and flora in the protected areas (Hell's Gate National Park and part of Mau Forests Complex including Northern Tinderet Forest, Nabkoi Forest, Timboroa Forest, Mount Londiani Forest, Eburru Forest, Eastern Mau Forest, Western Mau Forest and Tinderet Forest) and its surrounding and (2) collisions of birds. 	* A specialist study will be conducted separately by JICA Survey Team
Landscape	<ol style="list-style-type: none"> (1) Overall impacts on landscape in the entire project area shall be studied by the field study and desk-based study. 	* A specialist study will be conducted separately by JICA Survey Team

Item	Description	Remarks (Standards and References)
Public Consultation Meetings	(1) The public consultation meetings at 2 stages are required at minimum. (2) To introduce the project and discuss on the scope of the study in the early study stage (when scoping); (3) To feedback the results of the ESIA and discuss on the results and further recommendations at the latter study stage (when preparing a draft ESIA report).	The former JBIC Guidelines require 2 stages of public consultation when scoping and preparing the draft report of the EIA/RAP report.
Impact of Land Acquisition and Resettlement	(1) Impacts of Land Acquisition and resettlement shall be studied as a part of Social Impact Assessment (SIA).	Once the resettlement was identified, a detailed study shall be conducted within KPLC's RAP Study

Source: JICA Survey Team

(2) Proposed TOR for the RAP Study

JICA Survey Team reviewed and provided comments on the KPLC's TOR for the RAP Study in early Oct. 2009. The proposed TOR of the RAP is summarized in Table 7-4.2 below. Additionally, the sample table of contents is shown in Table 7-4.3.

Table 7-4.2 Proposed TOR of the RAP for the Project

Item	Description	Remarks (Standards and References)
Census/Asset Inventory Survey	(1) Census of the resettlers household and asset inventory of the resettlers household shall be conducted at 100 % of the resettlers' households.	-
Socio-economic Survey	(1) Socio-economic survey shall be conducted by household at minimum 20-25% of the resettlers.	-
Public Consultation Meetings	(1) The public consultation meetings at 1 stage are required for RAP at minimum. (2) To explain the compensation and resettlement policy including the entitlement matrix, redress grievance system including the contact info. and the schedule, and monitoring plan to the PAPs such as resettlers, landowners and formal/informal occupiers. (3) To discuss on the results and further recommendations at the latter study stage (when preparing a draft RAP report).	The completed RAP report shall be disclosed at local chiefs office after completion.

Source: JICA Survey Team

Table 7-4.3 Proposed Table of Contents of the RAP Report

Proposed Table of Contents of the RAP Report	
1. Introduction	8. Implementation arrangement
2. Scope of land acquisition and resettlement	9. Implementation schedule
3. Measures to minimise land acquisition and losses	10. Participation and consultation
4. Socio-economic features of the project affected people	11. Monitoring and supervision
5. Resettlement policy & entitlement	12. Grievance Redress
6. Relocation site	13. Cost Estimates
7. Income restoration program	

7.4.2 Approval of the ESIA's TOR from NEMA

The Scoping Report together with the proposed TOR of the ESIA Study was submitted to NEMA by KPLC for its approval on 31 July 2009. The TOR was successfully approved without any conditions by NEMA. The approved scoping report is attached in Annex 7-7.

7.4.3 Reviews of KPLC's Draft ESIA Study Report

As part of the technical assistance to KPLC, the JICA Study Team reviewed a draft ESIA report, provided comments and suggestions, and discussed them with KPLC and GIBB Africa several times. The detailed comments are attached to KPLC's ESIA report. The ESIA report was completed on 22 Dec. 2009 and submitted to NEMA on 29 Dec. 2009.

7.4.4 Outcomes of the Public Consultation

Public consultation meetings, which are often called Consultation and Public Participation (CPP) in Kenya, of the first stage were organised at 11 venues by GIBB East Africa Ltd., between 28 Sept. 2009 and 4 Oct. 2009 in accordance with EIA regulations and guideline of Kenya. However, the first stage of CPP was organised as Focus Group Discussions (FGDs) and hearings which targeted local leaders, local government officials and selected local people who would be potentially affected in accordance with Kenyan regulations. Therefore, additional two stages of public consultation, organized as public consultation meetings, were conducted between 29 Sept. and 4 Oct. 2009, and 26 and 31 Oct. 2009 respectively. The summary of proceedings is provided in the following table. The locations of the public consultation meetings are shown in Annex 7-10.

Table 7-4.4 Summary of Public Consultation Meetings

	1st Public Consultation Meetings	2nd Public Consultation Meetings	3rd Public Consultation Meetings
Dates	21 – 29 Aug. 2009	28 Sept. – 4 Oct. 2009	26-31 Oct. 2009
No. of Venues	11 Venues	12 Venues	12 Venues
Venues	<ul style="list-style-type: none"> - DCK at Olkaria, Naivasha; - Sanctuary, at Olkaria, Naivasha; - Kayole Centre, Naivasha; - Mitimongi Centre, Elementaita; - Jogoo Centre, Elementaita; - Ngata-Salgaa area, Nakuru District; - Mau Summit, Molo District; - Timboroa Market; - Lessos area; - Nandi Hills Town; - Kibos area, Kisumu; and - Mamboleo area, Kisumu. 	<ul style="list-style-type: none"> - DCK Market Centre, Olkaria, Naivasha; - Olkaria Sanctuary, Naivasha; - Baba Ciru Grounds, Kayole B Area, Naivasha; - Mitimongi Centre, Elementaita including preliminary meeting with Chief; - Jogoo Centre, Elementaita; - Delamere Manea Farm, Naivasha (4 Delamere representatives); - Salgaa Area, Nakuru District; - KPLC North Rift Regional Office, Nakuru District (with 2 representatives of KPLC Nakuru); - Jogoo Primary School, Mau Summit Area; - (Assistant) Chief's Office, Timboroa; - Lessos Centre, Wareng District; - Nandi Hills Town Hall; - Kibos Village, Miwani Location, Winam Division, Kisumu District; and - Mamboleo area, Kisumu District*.MM missing 	<ul style="list-style-type: none"> - Olkaria Sanctuary, Naivasha; - Kayole B Centre, Naivasha; - Chief's Office, Bagaria Centre, Elementaita; - Telkom-Ngata- Kirobon area, Nakuru District; - Chief's Office, Kamara Location, Mau Summit; - Mau Summit Centre, Chief's Office; - AIC Church, Seguton, Timboroa; - Chief's Office, Mumberes Location, Koibatek District; - AIG Church, Lessos Centre; - Chairman's Compound, Taito Location, Nandi East District; - Kibos Village, Miwani Location; and - Trading Centre, Mamboleo, Kisumu District.
No. of Participants	79	495	435
Used Languages	English and Kiswahili		
Major Comments	<ul style="list-style-type: none"> ✓ Need for comprehensive public consultations; ✓ Avoid cumulative impact of wayleaves on same people; ✓ Handle resettlement issues sensitively; ✓ Concern of possible resettlement; ✓ Consideration of social cost when resettlement 	<ul style="list-style-type: none"> ✓ Exact route of the transmission line; ✓ Need for comprehensive public consultations and sensitization before the project; ✓ Transparent way/leave acquisition procedure; ✓ Resettlement and adequate compensation; ✓ Lessos-proposals for compensation and 	<ul style="list-style-type: none"> ✓ 1999-David Komina (mrefu) struck by sparks from existing transmission line during heavy rains; ✓ Community sensitization & education before construction; ✓ Do not rush compensation process;

	1st Public Consultation Meetings	2nd Public Consultation Meetings	3rd Public Consultation Meetings
	<p>is inevitable;</p> <ul style="list-style-type: none"> ✓ Relocation of a village (Kabati) in Naivasha; ✓ Mandatory and fair compensation for property and trees to PAPs; ✓ Considerations of Vulnerable groups during compensation and resettlement; ✓ Major impacts on investments-flower farms in Naivasha; ✓ Loss of sensitive ecological habitats; ✓ Bird migratory routes in Elementaita area; ✓ Existing airstrips in Elementaita area; ✓ Effect of transmission lines on sensitive habitats such as Lakes Naivasha, Nakuru and Elementaita, National Parks, and animal sanctuaries/conservancies; ✓ Consideration of risk landslides at Maji Mazuri as experienced 3-4 years ago; and ✓ CSR activities. 	<ul style="list-style-type: none"> ✓ resettlement packages by the local community; ✓ Bird migratory route in Elementaita area; ✓ Soysambu conservancy impact on 3 airstrips in area; ✓ Vandalism of towers compromises community safety; ✓ Incremental impact of EMF from converging electrical infrastructure at Lessos substation; ✓ CSR programs of KPLC; and ✓ Need for employment. 	<ul style="list-style-type: none"> ✓ Concerns on compensation discrepancies with past projects (e.g. Kenya Pipeline); ✓ Suggestion to follow the existing road instead of acquiring new land; ✓ Consider sharing wayleaves with existing infrastructure to reduce land requirement; ✓ Special attention to unique community in Kibos (Muslims & Christians) if displaced; ✓ Exact route and wayleave size; ✓ Employment of locals during construction; ✓ Destruction of buildings within wayleave; ✓ Positive development of country; ✓ Land acquisition & resettlement procedure; ✓ Concerns on sparks and lightning attraction to existing transmission line during rains; ✓ Adequate compensation required; ✓ Is electricity available locally?; ✓ Hold public meetings (barazas) for sensitization; and ✓ CSR activities.

Note: * the minutes of meeting is missing in the ESIA report.

Source: Prepared by JICA Survey Team based on the KPLC's ESIA Report Vol. 1 & 2

7.4.5 Topographic Survey Conducted by the Local Consultant

Due to the lack of the accurate and latest existing data on the land title, a preliminary survey of the affected residential structures was conducted as a part of the Topographic Survey of JICA Survey Team. The survey was commenced from mid-July 2009 and was planned to be completed by mid-Sept. 2009.

Given the lack of existing data on settlement along the route, a preliminary survey of the 40m wayleave of all alternative routes was conducted as a part of the JICA Survey Team's Topographic Survey, in order to identify residential structures that are likely to be affected by the project. The survey, which was conducted by Geomatics Civil Engineering Surveyors Ltd. was commenced in mid-July 2009 and was largely completed by mid-September 2009. However, some additional fieldwork was required to reroute some parts of the selected route (Alternative 1) in order to:

- Avoid the flower farms to the south of Lake Naivasha;
- Avoid the small town of Elmenteita;
- Avoid the southern end of Lake Nakuru National Park; and
- Avoid the heavily settled areas near the Kisumu sub-station.

The survey fieldwork was finally completed on 24th September 2009. The survey results were submitted as GIS maps indicating all structures within the 40m wayleave, with accompanying tables of the different types of buildings concerned in mid-Oct. 2009. In the Alternative 1, 229 residential structures were identified within the wayleave between Olkaria and Lessos, and 101 residential structures were identified in the Alternative 2 (330 structures as a total in both Alternative 1 and 2). Additionally, the regional breakdown of the affected residential structures is shown in Annex 7-11. This is being followed up by the socio-economic survey team (see Section 7.4.6) who are firstly purchasing copies of official survey maps along the route to identify the plots affected, and are then obtaining land registry tables to identify the owners of the plots.

7.4.6 Specialist Studies on Fauna & Flora, Landscape and Socio-economics

To supplement KPLC's ESIA, the impacts which were considered relatively significant were examined simultaneously as specialist studies commissioned by the JICA Survey Team. The specialist studies consisted of a fauna and flora study in selected forests, a landscape study in/near the scenic sites and tourist sites, and a socio-economic survey of the landowners and occupiers. The TOR of the three studies are summarised in the following table. The specialist studies were initially planned to be commenced from early Aug. 2009; however, they was delayed to the end of Sept. 2009 due to the realignment of the transmission routes. The studies were finalised by early Feb. 2010.

Table 7-4.5 Environmental and Social Specialist Studies

Item	Description	Remarks (Standards and References)
Fauna & Flora	Baseline data collection for the selected forests in the study area. Discussion between ESIA team and local natural environment experts. Field visits and sampling survey in the selected forests.	UK Joint Nature Conservation Committee (JNCC) ecosystem classification methodology and IUCN Red Data List shall be referred.
Landscape	Baseline data collection of the selected scenic and tourist sites. Photographic survey along the major road near the selected scenic and tourist sites. Analysis of the magnitude and significance of the impact (e.g. ranking, matrix and/or photocollage).	Proposed methodology discussed and agreed with local consultants Norken.
Socio-economic	Conduct a survey of 20-25% of the total number of the official land title holders regarding their socio-economic status and potential impacts of the project.	Questions on PAPs' socio-economic status, needs, and concerns on safety and health shall be included.

Source: JICA Survey Team

(1) Results of the Specialist Study on Flora and Fauna

The study was conducted to examine the impacts on forest reserves along the transmission routes, in order to supplement KPLC's ESIA report. The study concludes that in the project area, indigenous forest was only found along a stretch of about 4–5 kilometres in the Timboroa Forest. The rest of the forest stands are plantations of exotic tree species planted during the Kenyan colonial era. A potential negative impact on one of the Red List plant species (but the status is "Vulnerable", <http://www.iucnredlist.org/apps/redlist/details/33631/0>), *Prunus Africana* (Red Stinkwood), was also identified in Londiani, Mau Summit and Timboroa Forests (see Addendum 1-1 Flora and Fauna Specialist Survey Report for details).

(2) Results of the Specialist Study on Landscape

This study also aims to supplement KPLC's ESIA study and especially focuses on potentially negative impacts on landscape in selected scenic/sightseeing sites. The study included site visits, a photographic survey including photocollage, and the systematic evaluation of landscape and visual impacts (ranked major, highly, moderately, minor or not significant). The study identifies some negatively affected areas such as south of Mount Londiani Forest, Sinedet Area towards Dorereine Forest, Kibwoso Tea Estate and Kapsumbweiwa of Nandi Hills, and suggests minor local diversions and minimum tree clearing. The outcome is summarised in the following table (for details, see Addendum 1-2 Landscape Specialist Survey Report).

Table 7-4.6 Brief Results of Landscape Study

Scenic Sites	Impact Assessment Results	Remarks
Lake Naivasha	Not significant	To be constructed in parallel to the existing transmission line.
Lake Elementaita	Not significant	Minimum tree clearing and low visual impacts on receptors.
Lake Nakuru	Moderately significant	The transmission line does not pass Lake Nakuru National Park. Towers will be located within settlement or farming land and whereby vegetation clearance for tower foundation.
Mau Summit /Escarpment	Major significant	Tree clearing in the dense forest areas especially where a new transmission line will be constructed away from the existing transmission line.
Nandi Hills to Nandi Escarpment	Minor significance/ Not significant	To be constructed in parallel with the existing transmission line.
Nandi Escarpment to Kisumu Sub-station	Moderately significant	Construction of a new transmission line but less tree clearing.

Source: Prepared by JICA Survey Team based on the Specialist Study on Landscape

(3) Results of the Specialist Study on Socio-economics

The socio-economic study of landowners and occupiers was primarily conducted to understand the social impacts of the project and estimate the scale of potentially PAPs. The study identified 319 registered land title holders who would be potentially affected in the Alternative 1 and 344 registered land title holders in the Alternative 2 based on the title deed survey plan. It was initially planned to sample 20-25% of the potentially PAPs within the Alternative 1 (319 land title holders); however, it was changed and increased to 160 land title holders by the expert judgement of Norken (I) Pvt. Ltd. which is equivalent to approx. 50% of the affected land title holders of the Alternative 1. Several negative impacts of the project were identified according to the respondents: 60.6% are likely to lose their residential house(s)/building(s); 41.3% will lose their commercial building(s); 51.3% will lose agricultural land, 32.5% will lose incomes and livelihoods; 20% indicated there will be a loss of scenic beauty; 19.4% feared diseases; 23.1% feared loss of security and 19.4% thought they would not be able to access certain public facilities due to the project (for details, see Addendum 1-3 Socio-economic Specialist Survey Report).

7.5 Recommendations Provided for the KPLC's ESIA and RAP Study Implementation

Various recommendations for the ESIA were continuously provided by the JICA Survey Team during the first input (June-July 2009) and second input (Sept.-Oct. 2009) of the JICA Survey Team. Major recommendations provided in the past are described in the following sections.

7.5.1 Proposed Study Methodologies for the ESIA and RAP Study

(1) Fauna and Flora Survey in the Forests

The planned transmission line routes (both Alternatives 1 and 2) start from the Hell's Gate

National Park and pass through protected areas of the Mau Forest Complex. Alternative 2 passes through some undisturbed indigenous primary forest of the Eastern Mau, Western Mau and Tinderet Forest Reserves. Alternative 1 passes through parts of the Mount Londiani, Timboroa, Nabkoi and Northern Tinderet Forest Reserves. However, in all of the reserves on Alternative 1 the new transmission line will be running parallel to an existing line, and virtually all of the forest consists of plantations of exotic tree species (for the location of the forests in the Mau Forest Complex, see Annex 7-8).

Owing to the lack of recent published forest data (such as detailed boundaries, forest status and identification of primary/plantation forests), a field survey shall be conducted as part of the ESIA.

Additionally, the information for both rain and dry seasons shall be collected by hearings with relevant experts. Recent and accurate information should be obtained from the Kenya Forest Service (KFS). Data on the flora and fauna associated with these forests should be obtained in discussions with appropriate government bodies such as the Kenya Wildlife Service (KWS), and with local specialists. If the available baseline data on the forests of the study area is inadequate to properly assess potential impacts, a quantitative survey (e.g. plot sampling survey) must be conducted.

(2) Public Consultation Meeting Arrangement on ESIA

Public consultation meetings shall be properly organised to invite any interested people. First, the invitation and notice of the public consultation meetings shall be delivered well in advance to meet the Kenyan Environment (Impact Assessment and Auditing) Regulations (1 week before the meeting). Second, any interested people shall be welcomed to the public consultation meetings, and the potential participants are as follows.

- Residents in/near the project site;
- Land title holders/occupiers likely to be affected by land acquisition;
- Relevant local government and local leaders (e.g. local chiefs) in the project areas;
- Local Community Based Organizations (CBOs) and NGOs in the relevant fields such as environment and social issues; and
- Vulnerable groups such as the elderly, women, widows, youth, the poor and minority tribes, if any.

Moreover, the topic of the public consultation meeting shall be carefully examined in order to provide adequate information at each stage as listed in the following table. Lastly, the minutes of meeting, agenda, any presentation handouts, the list of participants including participants' social groups (e.g. the occupation and tribe) and photos of the meeting shall be attached to the ESIA report.

Table 7-5.1 Topics of the Public Consultation Meetings on ESIA

1 st Stage of Public Consultation Meetings on ESIA planned in Late Aug. or Early Sept. 2009	2 nd Stage of Public Consultation Meetings on ESIA planned in Late Sept. or Early Oct. 2009
<ul style="list-style-type: none"> • Project Scope • Expected environmental & social impacts • Scope of the ESIA • Comments & suggestions from meeting participants 	<ul style="list-style-type: none"> • Outcomes of the ESIA Study • Proposed EMP & EMoP including responsible organization(s) • Comments & suggestions from meeting participants

Source: JICA Survey Team

(3) Public Consultation Meeting Arrangement on RAP

Public consultation meetings shall be properly organised to invite resettlers and any interested people. First, the invitation and notice of the public consultation meetings shall be delivered well in advance to meet the Kenyan Environment (Impact Assessment and Auditing) Regulations (1 week before the meeting). Second, any interested people shall be welcomed to the public consultation meetings, and the potential participants are as follows.

- Residents in/near the project site;
- Land title holders/occupiers likely to be affected by land acquisition;
- Relevant local government and local leaders (e.g. local chiefs) in the project areas;
- Local Community Based Organizations (CBOs) and NGOs in the relevant fields such as environment and social issues; and
- Vulnerable groups such as the elderly, women, widows, youth, the poor and minority tribes, if any.

Thirdly, the contents of the draft RAP listed below shall be well informed to the potential resettlers.

Lastly, the minutes of meeting, agenda, any presentation handouts, the list of participants including participants' social groups (e.g. the occupation and tribe) and photos of the meeting shall be attached to the RAP report.

Table 7-5.2 Topics of the Public Consultation Meetings on RAP

Public Consultation Meetings on RAP planned in Dec. 2009 or Jan. 2010
<ul style="list-style-type: none"> • Resettlement and Compensation Policy • Entitlement Matrix • Future Schedule of Wayleave Agreement and Resettlement • Grievance Redress Mechanisms • Proposed Monitoring Plan including responsible organization(s) • Contact of Project Proponent/ (if applicable) RAP consultant • Comments & suggestions from meeting participants

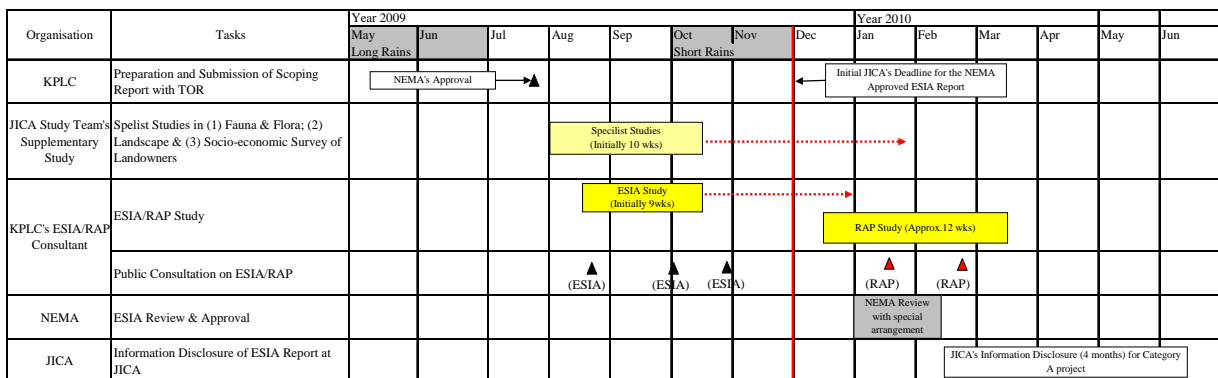
Source: JICA Survey Team

7.5.2 Proposed ESIA and RAP Study Schedule

The ESIA and RAP Study schedule was reviewed by the JICA Survey Team with KPLC. The revised schedule is proposed to conduct the ESIA and RAP Study in a timely manner by considering the time constraints as shown in Figure 7-4.1.

The ESIA Study was initially delayed due to realignment of proposed transmission routes. However, it was completed by 22 Dec. 2009 and submitted to NEMA on 29 Dec. 2009. Moreover, the public notice of the ESIA’s disclosure for 30 days was advertised in one of the nation-wide newspapers, Daily Nation, on 12, 13, and 19 Jan. 2010 in accordance with Kenya’s EIA regulations (for the public notice dated 19 Jan. 2010, see Annex 7-12). The ESIA report is available at 4 venues, namely Ministry of Environment & Mineral Resource, NEMA in Nairobi, Nyanza Province Office and Rift Valley Province Office for 30 days after the public notice in accordance with the EIA Regulations of Kenya. Therefore, it is expected that the ESIA approval would be issued in mid-Feb. 2010 at the earliest after the information disclosure.

On the other hand, the RAP was started by another local consulting firm, Eco Plan Management Limited from Dec. 2009 and is planned be completed by Feb. 2010. At this moment, the RAP schedule is suggested by JICA Survey Team as shown in Figure 7-4.1.



Source: JICA Survey Team

Fig. 7-5.1 ESIA Schedule and Proposed RAP Study Schedule

7.5.3 Proposed Outline of the Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP)

(1) Environmental Management Plan

An Environmental Management Plan (EMP) is required as part of the ESIA report. A good EMP would normally be expected to include monitoring requirements, and in Kenya, the EMoP is often proposed as part of the EMP. However, for this project, it is recommended to prepare a separate EMoP to make sure that the parameters, period, frequency, responsible organization(s) and budget are specified for each monitoring action. The Kenyan EIA Regulations (2003) require that the EIA Report should include (k) ‘an environmental management plan proposing the measures for eliminating, minimising or mitigating adverse impacts on the environment; including the cost, time frame and responsibility to implement the measures’. While the former JBIC Guidelines for Confirmation of Environmental & Social Considerations (April 2002) require an EMP which: ‘describes mitigation, monitoring and institutional measures to be taken during construction and operation to eliminate adverse impacts, offset them, or reduce them to acceptable levels’. These two definitions are similar and can be put into practice for preparation of the EMP using the following outline:

All of the mitigation measures should be brought together in two tables, one for Construction and the other for Operation. For each mitigation measure, the table should indicate:

- The specific actions to be taken;
- The organisation / person responsible;
- The timing / duration of the mitigation measure;
- The estimated cost of the mitigation measure; and
- Any institutional strengthening that will be needed in order to implement the mitigation measure.

The outlines of the management measures for EMP are suggested as shown in Table 7-5.3. The below is the minimum management and monitoring plan. The outlines shall be reviewed and finalized by GIBB Africa Ltd. based on its results of EIA Study, the outcomes of the stakeholder meetings and any future orders/conditions from NEMA.

(2) Contractors’ Environmental Management Plans

EMPs will also be needed for the activities of the transmission line construction contractor and ultimately for the transmission line operator, KETRACO. Contractors should normally prepare their own EMPs, which should be approved by the project client / owner, and then attached to their contract.

Recommendations for the preparation of these EMPs both for Contractors and the Proponent are provided below. This is in the form of an outline master EMP, but it is

important that each of the contractors and sub-contractors working on construction or operation tasks should prepare their own 'daughter' EMPs, which take account of their specific activities. Indeed, contractors should not be allowed to work on the OLK transmission line until they have in place an EMP approved by KPLC. This requirement should be applied to all contractors and major suppliers whether or not they are working on the line itself (i.e. tower component suppliers, civil contractors, transport contractors, waste management contractors, and fuel suppliers must all have approved EMPs). Copies of the EMP must be provided to each of the contractor's managers working on the OLK transmission line project, and the technicians, labourers, etc., must be provided with a verbal explanation of the provisions of the EMP.

Moreover, most contracting companies have Health and Safety (H&S) Management Plans. There are links between the disciplines of H&S management and environmental management, so where H&S is already well managed, some contractors may find it convenient to combine the two in a management plan for Environment, Health and Safety (EHS). It should be noted, however, that the environmental management function will require additional and different skills from those of H&S management.

Lastly, the EMPs of the main transmission line construction contractor and the operator should preferably be implemented within a company Environmental Management System (EMS). This should be certified to ISO 14001, or capable of being certified to this international standard in future.

(3) Contents of the Contractors' EMP

It is recommended that the contractors' EMPs should include the following elements:

- (a) **Environmental Policy:** Each EMP must start with a statement of Environmental Policy. This should be a simple statement of the contractor's intent with respect to the environment and the management of environmental affairs, which can guide all other aspects of the plan.
- (b) **Management Responsibility:** The policy should be followed by a statement of management responsibility for environmental affairs. This should name the most senior manager in the contracting company or at their transmission line construction site as having overall responsibility for environmental management, with an explanation that such responsibility is also delegated down to each level of management. In addition, it should name the Environmental Manager who will be responsible for day-to-day environmental management, supervision and monitoring, and will have company authority to stop construction works or operations if environmental non-compliance is observed. At each active construction site there must be at least one named person with delegated responsibility for environmental management on each shift. This person may also be responsible for Health & Safety issues, and would then be referred to as the Environment, Health & Safety

Officer (EHSO).

Environmental affairs include social issues. The principal contractors should therefore also have a named Community Liaison Officer (CLO) to deal with relations with people who may be affected by construction, commissioning or operation of the OLK transmission line.

- (c) Management Contacts: The office and mobile telephone contacts should be listed for all named persons having environmental management responsibility.
- (d) Management Measures: See Table 7-5.3.
- (d) Training: All contractors' EMPs must include defined arrangements for dissemination of the EMP within the workforce, and any staff training necessary for their effective implementation. Where contractors do not have existing environmental management staff, arrangements must be made for adequate capacity-building within the company. For the primary construction contractors, that will include arrangements for the induction of their Environmental Manager and Community Liaison Officer.
- (e) Implementation: All contractors' EMPs must include defined and costed arrangements for their implementation.

Table 7-5.3 Proposed Outline of the EMP (Provisional)

No	Significant Negative Impacts	P	C	O	Proposed EMP	Implementing Org.	Responsible Org.
Social Environment							
1	Involuntary Resettlement	X	X	X	<ul style="list-style-type: none"> - Adequate public consultation with the PAPs and the Resettlement Action Plan shall be prepared in accordance with the World Bank's Operational Policy 4.12. - The RAP shall include consideration of information disclosure to resettlers and discussions with resettlers, appropriate plan of the resettlement and compensations, and livelihood assistance. - Special attention shall be given to the vulnerable, such as the minority tribes, lower-income residents, the elderly, the physically challenged, women and children. - The livelihood restoration program and/or compensation shall be planned in the RAP and provided to those who have business affected by construction and operation of the project. - Job opportunities for casual labor shall be provided to local resident as much as possible by the contractor. - In the case of temporary land take in agricultural areas, the positions of all walls, fences and hedges should be recorded, and they should be replaced at the end of construction. 	KPLC	KPLC
2	Local Economy such as Employment & Livelihood, etc.	X	X	X	<ul style="list-style-type: none"> - All land used temporarily during construction must be restored to its pre-construction condition. - All plant, equipment and wastes must be removed at the end of construction, and each site must be restored to its original condition. - Topsoil must be removed and stored for future use, before any further excavation work. - Cut and fill volumes must be planned to minimise the generation of spoil. - Water pumped out of excavations should be passed through a settlement facility before disposal. - The use of heavy machinery should be minimised to avoid soil compaction. 	Contractor	KPLC
3	Land Use & Utilization of Local Resources		X		<ul style="list-style-type: none"> - Management & monitoring the revegetation of cut, fill, spoil and other former construction areas, and undertaking further restoration where needed. 	Contractor	KPLC
5	Existing Social Infrastructures & Services such as Traffic ⁶		X		<ul style="list-style-type: none"> - Provide sufficient staff to control traffic during construction. - Temporary bridges or diversions must be provided wherever existing footpaths, tracks or roads are to be cut by construction works (especially access to existing social infrastructures such as schools, churches, and hospitals). - Public roads must be promptly cleaned if affected by material loss. - Temporary water supplies are to be provided where either an existing water source is to be interrupted by construction, or access to the existing supply is severed. 	Contractor	KPLC
6	The poor, indigenous and	X	X	X	<ul style="list-style-type: none"> - Consultation is required with all relevant individual communities before the start of further construction, to identify any notable features or issues of local concern. 	Contractor	KPLC

⁶ As for the impact on existing social infrastructure & service, the impact on radio/TV near the transmission line during operation could be caused by the project even though the possibility is very limited.

No	Significant Negative Impacts	P	C	O	Proposed EMP	Implementing Org.	Responsible Org.
	ethnic people						
7	Misdistribution of Benefit & Damage	X	X	X	- Adequate public consultation and agreement between the government and PAPs are needed. Special attention shall be given to the vulnerables, such as the minority tribes, the lower-income residents, the elderly, physically challenged, women and children if any.	KPLC	KPLC
8	Cultural Heritage		X		- Arrangements must be made for the halting of work and the consultation of specialists from the National Museum, in the event that any potential archaeological remains are uncovered during excavation. - Issue a Code of Practice which requires behaviour to comply with defined local cultural and religious sensitivities for construction workers. - Features that are to be protected during construction (cemeteries, mature trees, sacred places, buildings) should be marked with brightly coloured tape.	Contractor	KPLC
9	Local Conflict of Interest	X	X	X	- Adequate public consultation and agreement between the government and PAPs are needed. Special attention shall be given to the vulnerables, such as the minority tribes, the lower-income residents, the elderly, physically challenged, women and children, in any.	KPLC	KPLC
11	Sanitation		X		- Provide appropriate waste water treatment facility, toilet and waste collection at the workers' camps and project site.	Contractor	KPLC
12	Hazards (Risk), infectious Diseases such as HIV/AIDS		X		- Drinking water, toilet and washing facilities must be provided at each active site. - Provide education on infectious disease such as HIV/AIDS to the community - All employees must be given printed information on the health implications of their work and how to avoid problems. This should incorporate advice in the field of sexually transmitted diseases (STDs), including HIV/AIDS.	Contractor	KPLC
Natural Environment							
14	Soil Erosion				- Where soil stability is likely to be a problem, the soil surface should be reinforced, e.g. using coir netting pegged to the slope surface. - Completed spoil heaps must be profiled, covered in topsoil and grassed to maintain stability. - The gradients of cuttings and embankments must not exceed the stable maximum for the given medium. All completed cuttings and embankments must be covered with topsoil and grassed. - All excavations below ground level should be banded to prevent water inflow or outflow.	Contractor	KPLC
18	Fauna, Flora & Biodiversity		X	X	- Management & monitoring the revegetation of cut, fill, spoil and other former construction areas, and undertaking further restoration where needed. Issue a Code of Practice which bans unauthorised cutting of trees or branches for construction workers. Issue a Code of Practice which bans hunting or fishing for construction workers.	KPLC	KPLC
20	Landscape		X	X	Management & monitoring the revegetation of cut, fill, spoil and other former construction areas, and undertaking further restoration where needed. Temporary screens shall be introduced if necessary.	Contractor	KPLC
				X	Management & monitoring the revegetation of cut, fill, spoil and other former construction areas,	KPLC	KPLC

No	Significant Negative Impacts	P	C	O	Proposed EMP	Implementing Org.	Responsible Org.
Pollution							
					and undertaking further restoration where needed.		
22	Air Pollution		X		<ul style="list-style-type: none"> - All emissions (e.g. from engines, crushers, and batching plants) must comply with local or international environmental standards. In the absence of relevant national standards, international standards should be applied, e.g. as published in the World Bank Pollution Prevention and Abatement Handbook. - Active construction sites and construction access tracks must be watered to suppress dust whenever appropriate during the dry season. Water tankers should be permanently available for this task. - Truckloads of construction materials must be covered to prevent dust or losses. - Unsurfaced haul roads must be watered to suppress dust whenever appropriate during the dry season. Water tankers should be permanently available for this task. - The running of machinery in the vicinity of housing must be limited to normal working hours. - Adopt low air pollution emitting equipment, vehicles and methodology for construction, if available. - Provide temporary barriers or screens during construction, if necessary. - Equipment and vehicles shall be well-maintained to keep air pollution at a minimum. 	Contractor	KPLC
23	Water Pollution		X		<ul style="list-style-type: none"> - All effluents must comply with local or international environmental standards. In the absence of relevant national standards for a certain parameters, international standards should be applied, e.g. as published in the World Bank Pollution Prevention and Abatement Handbook. - A drained concrete area must be provided for vehicle washing; the drainage of which should have an oil interceptor and a sediment trap at construction sites. - Washing of vehicles must only be conducted in proper places, and not in rivers. - All site drainage water must be passed through a sediment trap. - All sewage must be treated before discharge, e.g. using septic tanks. - Issue a Code of Practice which bans disposal of any kind of waste into water courses for construction workers. 	Contractor	KPLC
24	Soil Contamination		X		<ul style="list-style-type: none"> - All liquid fuel and lubricant storage tanks must be banded to retain the entire contents of the tank at construction sites 	Contractor	KPLC
				X	<ul style="list-style-type: none"> - Optimal use of pesticides to avoid soil contamination by the excess use in the RoW. 	KPLC	KPLC
25	Waste		X		<ul style="list-style-type: none"> - Waste generation is to be minimised. The treatment of waste should follow the hierarchy: Avoid > Minimise > Reuse > Recycle > Treat > Dispose. - All domestic refuse is to be disposed of to a recognised and properly managed waste disposal site, i.e. a landfill site with daily covering of the working face with sand or soil. Where a market exists for recycled materials (e.g. glass, cans, plastics, paper) these should be separated 	Contractor	KPLC

⁷ Initial low level leaching of zinc from the galvanized tower components would be caused by the project during rain though the possibility is very limited.

No	Significant Negative Impacts	P	C	O	Proposed EMP	Implementing Org.	Responsible Org.
					<p>and recovered. Vegetable waste should be composted.</p> <ul style="list-style-type: none"> - Spoil must only be disposed of in the planned spoil disposal sites. - Toxic and hazardous waste must be either returned to its source, or stored and disposed of separately in consultation with NEMA; this includes oil filters, empty paint cans and the packaging of toxic materials. - The empty containers of toxic or hazardous liquids must be punctured or crushed to avoid them being used subsequently for drinking water. - Waste lubricating oil is to be stored and sold to an oil recycling company or refinery. - Vehicle batteries are to be stored and sold to a battery recycling company. - Vehicle tyres are to be stored and sold to a tyre recycling company. - Wood, paper, glass bottles, cans, plastic and other recyclables for which there is a market are to be separated and recycled. - No waste is to be burnt. 		
				X	<ul style="list-style-type: none"> - Management and monitoring the disposal of wastes generated during operation, e.g. lubricating and cooling oils, oil filters, batteries, domestic refuse, sledges, waste toxic and hazardous materials and their containers. 	KPLC	KPLC
26	Noise & Vibration ⁸		X		<ul style="list-style-type: none"> - All vehicles must comply with Kenyan regulations on emissions and noise. In the absence of relevant national standards for a certain parameters, international standards should be applied, e.g. as published in the World Bank Pollution Prevention and Abatement Handbook. - Adopt low noise and vibration emitting equipment, vehicles and methodology for construction, if available. - Avoid nighttime construction activities near communities. - Provide temporary barriers or screens during construction, if necessary. - Noise and vibration standards of industrial enterprises shall be enforced to protect construction workers. If there is strong noise, earplugs shall be worn, and working time shall be limited. - Equipment and vehicles shall be well-maintained to keep their noise/vibration at a minimum. - All motor-driven generators, compressors, pumps, etc., must be properly silenced. 	Contractor	KPLC
30	Accidents		X		<ul style="list-style-type: none"> - During construction, the contractor needs to comply with Kenyan and international laws and regulations and Kola's Safety, Health and Environment Policy on working conditions. - Toxic and Hazardous Materials – Contractors must not use substances which are illegal in Kenya, or which are internationally banned. - All liquid fuel and lubricant storage tanks must be bundled to retain the entire contents of the tank - All (legal) toxic or hazardous materials (e.g. water chlorination agents) must be stored in a locked, waterproof, ventilated enclosure. - All compressed gas bottles must be stored, chained in the upright position, in a locked 	Contractor	KPLC

⁸ During operation, noise (buzzing) could be caused by the transmission line particularly during humid conditions, though the possibility is very limited.

No	Significant Negative Impacts	P	C	O	Proposed EMP	Implementing Org.	Responsible Org.
					<p>ventilated enclosure.</p> <ul style="list-style-type: none"> - Explosives (if needed) must be stored in accordance with Kenyan regulations. - Timely public warnings must be issued concerning operations which may affect the public. - All excavations below ground level should be marked with posts and tape. - Provide the perimeter fence around the residential areas. - Where public roads are to be used, an official 'construction route' is to be defined, avoiding settlements as much as possible, and this route should be marked with road signs. - Excavation works below ground level in the vicinity of settlements should be marked with posts and tapes for safety. - International occupational health standards must be applied to all contractors' workplaces. Small contractors who do not have existing H&S Management Plans should consult the World Bank / IFC General Health and Safety Guidelines. - All construction workers must be provided with a set of protective clothing and equipment (hard hat, hard boots, leather gloves, ear defenders and dust mask). Certain workers may need additional safety equipment e.g. harnesses for working at height and respirators for working in enclosed spaces. Workers are required to wear appropriate protective equipment before being allowed on active construction sites. - All construction workers must be given a medical examination (including sight and hearing tests) before being accepted for employment. This must be repeated annually. The results of these medical examinations must be kept by the contracting company. - All construction workers must be given H & S training. - A 'permit to work' system is to be instituted for all work in enclosed spaces or other hazardous locations. - Issue a Code of Practice which bans unauthorised entry onto private property for construction workers. - Issue a Code of Practice which bans lighting of fires for construction workers. - All vehicles must be in a safe and legal condition with respect to all of their systems. - All drivers must be properly licensed for the class of vehicle they are driving. - All vehicles must have audible indicators for reversing. - Each active site must be equipped with a comprehensive First Aid kit and eyewash bottle. - All vehicles must carry a fire extinguisher and first aid kit. - An Emergency Plan must be prepared for each active site to cope with accidents, emergencies and upset conditions during construction. Most Probable Accidents should be identified. This plan should include contact details for all emergency services, hospital / clinic and senior management. Actions in case of fire, flood or accident must be specified. It must include an evacuation plan / route for each working site. Emergency procedures should be practiced occasionally. - All construction vehicles must have upward facing exhaust pipes. 		

No	Significant Negative Impacts	P	C	O	Proposed EMP	Implementing Org.	Responsible Org.
				X	<p>An Emergency Plan must be prepared in accordance with KPLC SHE Policy for operation of the transmission line to cope with accidents, emergencies and upset conditions. Most Probable Accidents should be identified. This plan should include contact details for all emergency services, hospital / clinic and senior management. Actions in case of fire, flood or accident (e.g. electrocution) must be specified. It must include evacuation plans / routes for buildings and structures within the substation sites. Emergency procedures should be practiced from time to time.</p> <ul style="list-style-type: none"> - Monitoring the storage, use and disposal of any (legal) toxic or hazardous materials. - Management and monitoring public safety issues. This would include the timely issuing of public warnings of emergencies or operations which may affect the public. - Management and monitoring of workforce health and safety issues, including the annual medical examinations. 	KPLC	KPLC

Note: P: Planning Stage; C: Construction Stage; and O: Operation Stage

Source: JICA Survey Team

(1) Environmental Monitoring Plan (EMoP)

Environmental monitoring of the construction works and their surrounding environment must also be conducted throughout the construction period and if necessary the operation period. The contractors will be responsible to conduct the monitoring of their works, and will be required to prepare a detailed Monitoring Plan for approval by the client. Arrangements for such monitoring must be included in each of the contractors' EMPs. It is strongly suggested that the results of monitoring shall be regularly reported to NEMA, though the EIA Regulations of Kenya officially do not require it.

As previously stated, the EMoP could form part of the EMP. The former JBIC Guidelines for Confirmation of Environmental & Social Considerations (April 2002) state that: Items requiring monitoring shall be decided according to the sector and nature of the project, with reference to the following list of items:

1. Permits and approvals, explanations; Response to matters indicated by authorities
2. Anti-pollution measures:
 - Air quality: SO₂, NO₂, CO, O₂, soot and dust, suspended particulate matter, coarse particulate matter, etc.
 - Water quality: pH, SS (suspended solids), biochemical oxygen demand (BOD) / chemical oxygen demand (COD), dissolved oxygen (DO), total nitrogen, total phosphorus, heavy metals, hydrocarbons, phenols, cyanogen compounds, mineral oils, water temperature, etc.
 - Waste
 - Noise and vibration
 - Odours
3. Natural environment: Ecosystems-Impact on valuable species, countermeasures, etc
4. Social environment: Resettlement and Lifestyle and livelihood

For air and water quality, it must be specified whether the monitoring relates to emission levels or levels in the receiving environment. It is also noted that the items which require monitoring will differ depending on whether the impact in question will occur during construction or during the operation of the project.

Additionally, Clause 31-41, Part V of the Environmental (Impact Assessment and Audit) Regulations (2003) of Kenya set out the monitoring that will be carried out by NEMA concerning a project that has been the subject of EIA (see Annex 7-5).

The detailed Monitoring Plan should define the locations, parameters, frequency, responsible organisation(s) and budget of monitoring. Sampling should generally be at monthly intervals, but 'spot' sampling should also be undertaken whenever non-compliance

is apparent, or when a complaint is received from a member of the public.

Based on the scoping results, the outlines of EMoP are suggested as shown below. The below is the minimum monitoring plan. The outline needs to be modified and finalised by GIBB East Africa Ltd. based on its results of ESIA Study, the outcomes of the stakeholder meetings and any future orders/conditions from NEMA.

Table 7-5.4 Proposed Outline of the EMoP (Provisional)

Significant Negative Impacts	Proposed EMoP		
	Stage	Internal Monitoring	Auditing (External Monitoring)
1. Involuntary Resettlement	P, C, O	- Monitoring of resettlement and compensation shall be formulated separately in the RAP by KPLC.	Environmental Auditing shall be conducted as required by the Environment (Impact Assessment & Auditing) Regulations within 12 months of the commencement of the operation and not more than 24 months after the completion of a project which ever is earlier.
5. Existing Social Infrastructures and Services	C	- Regular inspection to determine compliance with mitigation measures with respect to community facilities, land acquisition, compensation and resettlement.	
14. Soil Erosion	C, O	- Regular inspection to determine compliance with stated mitigation measures with respect to excavation, spoil disposal, treatment and revegetation of land.	
18. Fauna, Flora & Biodiversity	C, O	- Monitoring vegetation whether it is cleared wider than the wayleave or trees/vegetation is removed unnecessarily (vegetation needs to remain to minimise soil erosion).	
22. Air Pollution	C	- Air quality monitoring (TSP) at active construction regularly (at least once a day). - Regular inspection to determine compliance with defined truck routes.	
23. Water Pollution	C	- Water quality of the discharged water from the construction site and workers' camps shall be monitored regularly (at least once a month). - Suggested parameters for effluent waters provisionally include: physical indicators (water temperature (C°), Suspended Solid (mg/l) & Conductivity); chemical indicators (pH, Alkalinity, Dissolved Oxygen (mg/l or % satn.), Ammonia N (mg/l), Nitrite N (mg/l), Nitrate N (mg/l), Phosphate P (mg/l), BOD (mg/l), COD (mg/l) & Oil (mg/l)); and biological indicator (Faecal coliforms (Prob. No./100ml), & chlorophyll C (mg/l)). - Above-listed parameters shall be reviewed and modified by considering applicability of Kenyan water quality standards in the Environmental Management and Coordination (Water Quality) Regulations, 2006 (e.g. Third Schedule of Standards for Effluent Discharge into the Environment and/or Fifth Schedule of Standards for Effluent Discharge into Public Sewers) and the assessment results of the ESIA study.	
26. Noise & Vibration	C	- Noise and vibration during construction shall be monitored near settlement and sensitive receptors regularly (at least once a day). - Detailed measurement requirements shall be determined in consultation with NEMA in order to meet the maximum permissible noise levels for construction sites (Second Schedule) and the vibration limit in the Environmental Management and Coordination (Noise & Excessive Vibration Pollution) (Control) Regulations, 2009.	

Source: JICA Survey Team

(2) Environmental Auditing

Arrangements must be defined for environmental auditing at the end of construction and the reporting of the results, as required under the Environmental (Impact Assessment and Audit) Regulations, 2003. This must be conducted between one and two years after the completion of construction. The ToR of the audit must be approved by NEMA. In outline,

the audit should address the following:

- The past and present impacts of the project;
- The responsibility and proficiency of the operators of the project;
- Existing internal control mechanisms to identify and mitigate activities with a negative environmental impact;
- Existing internal control mechanisms to ensure the workers' health and safety; and
- Existence of environmental awareness and sensitization measures, including environmental standards, and regulations, law and policy, for the managerial and operational personnel.

More details of the required audit procedure and standards are provided in the Regulations.

(3) Decommissioning Plan

A Decommissioning Plan must be prepared to plan for the ultimate dismantling and removal of the transmission line at the end of its operational life. This should include plans for the safe removal and disposal of major items of plant which may need to be replaced during the normal life of the project, e.g. transformers at substations.

7.5.4 Proposed Outline of the Entitlement Matrix and Monitoring Plan of RAP

(1) Outline of the Entitlement Matrix for RAP

The outline of the entitlement matrix is suggested as shown in the following table. It shows the minimum outline of the entitlement matrix. The outlines shall be modified and finalised by the RAP consultant based on results of the RAP Study as well as the outcomes of stakeholder meetings.

The Project Affected Persons (PAPs) for the Project are defined as those who are affected by resettlement and whose land is affected by the wayleave agreement of the Project. To be eligible for compensation, one should have formal legal rights to land or other assets or should prove informal occupancy with the reliable records or with the help of local chiefs.

Table 7-5.5 Proposed Outline of the Entitlement Matrix of RAP (Provisional)

No.	Types of Loss	Entitled Persons	Compensation/Assistance
Structures	Loss of residential/industrial structures of residents and the formal occupiers within RoW (including the residents and the formal occupiers whose landownership is not updated and registered by the government)	All owners of the structure(s) who is/are able to be moved within the same plot.	Compensation of the structures at full replacement cost
		All owners of the structure(s) which is/are not able to be moved within the same plot.	Provision of land by KPLC. Compensation of the structures at full replacement cost.
	Loss of residential/industrial structures of the informal occupiers (e.g. squatters) within RoW	All owner of the structure(s) *.	Compensation of the structures at full replacement cost
	Loss of Tenants' residential/commercial structures	All owner of the structure(s)	Compensation of the structures at full replacement cost
Tenants		Transitional livelihood assistance	
Crops and Trees	Loss of Crops and Trees	All owners	Compensation equivalent to value of trees/fruit/crops based on the official/market price of Ministry of Environment or Ministry of Agriculture
Public & community infrastructure	School, hospital, religious centers	All owners	Relocation, rehabilitation or compensation at full replacement cost
Employment	Loss of Employment	All affected employees, wage or daily labours	Transitional income support. Compensation equivalent to lost income required for the duration of impact.
Others	Cost of Moving	Displaced people	Allowance to enable displaced households to move to the new structure

Note: * According to KPLC, if an informal occupier is affected, he/she is not able to be relocated in the same plot and are entitled to the compensation to the immovable assets they invested such as structures and trees only besides other applicable assistances mentioned in Table 7.5.5.

Source: JICA Survey Team

(2) Outline of the Monitoring Plan for RAP

The outline of the monitoring plan is suggested as shown in the following table. It shows the minimum outline of the monitoring plan. The outlines shall be modified and finalised by the RAP consultant based on results of the RAP Study as well as the outcomes of stakeholder meetings.

Table 7-5.6 Proposed Outline of the Monitoring of RAP (Provisional)

	Internal Monitoring	External Monitoring
Frequency	- Every milestone in the RAP	- At minimum twice a year
Monitored Impacts	- Budget & time frame of resettlement - Delivery of entitlement to PAPs - Frequency of consultation and usage of the grievance redress procedure - Social and economic benefits of the resettlers and the host communities	- Compensation payment shall be monitored - Socio-economic impacts of resettlement shall be monitored in terms of both resettlers and the host community.
Responsible Organization	- Conducted by Resettlement Action Implementation Team consists of SHE Dept staff and the other officers of KPLC such as Team Leader: Land	- Supervised by the Task Force of Compensation & Resettlement Committee which would consist of representatives of resettlers, local leaders/chiefs, relevant governmental organization (e.g. local government,

	Internal Monitoring	External Monitoring
	Economist, Dept. of Property; Legal Advisor; Accountant; Building Technician; Environmental & Social Specialist; Socio-economist; Land Economist/Valuer; Electrical Engineer; Electrical Engineer; Wayleaves Officer; Surveyors; and Others.	NEMA, Min. of Land), local NGOs/CBOs, knowledgeable person, councillors, Member of Parliament, and KPLC. - The actual work could be contracted to an outside research or consulting agency or a development NGO.

Source: JICA Survey Team

7.6 Evaluation of KPLC's ESIA Report

Overall, the KPLC's ESIA is well prepared compared with the average EIA reports in Kenya. It is considered by JICA Survey Team that the contents of the ESIA report meet the requirements of the Kenyan EIA regulations. However, there are 7 major items which need to be clarified or updated, as shown in the following table.

Table 7-6.1 Descriptions in the ESIA that need to be Clarified/Updated

Item	Assessed Results	Description	Actions to be taken by KPLC
Individual Survey (Impact Assessment and Assessed Results)			
Alternative Considerations	<ul style="list-style-type: none"> - KPLC's and JICA Survey Team's considerations were not incorporated in the ESIA because the ESIA's approval was prioritised. - It is not inappropriate since the description of alternative considerations was not adequate and the justification was not clear. 	<ul style="list-style-type: none"> - There is a discrepancy between understanding of KPLC and JICA Survey Team and GIBB Africa's. The ESIA states that alternative 1 is the alignment along the existing transmission line, and alternative 2 is a new alignment in Section 5.1 of the ESIA report. However, the KPLC and JICA Survey Team's understanding is that alternative 1 (the selected alignment) consists of the alignment along the existing transmission line between Olkaria and Lessos, and a new alignment between Lessos and Kisumu. - Some of the results (e.g. the number of the persons to be displaced) do not have adequate supporting data or stated data source. 	<ul style="list-style-type: none"> - The alternative considerations discussed between KPLC and JICA Survey Team need to be referred.
Comprehensive Ecological Study	<ul style="list-style-type: none"> - It does not have adequate results of the field survey. - There are some unclear descriptions which need to be clarified. - JICA Survey Team's flora and fauna specialist survey was not incorporated in the ESIA because the ESIA's approval was prioritised. - As a result, although the report methodology is not adequate, overall the mitigation measures are considered to be adequate since JICA Survey Team's flora and fauna specialist survey also concludes that the impacts on fauna and flora are not significant. 	<ul style="list-style-type: none"> - Whilst the ESIA report includes an ecological study, the results of the field survey are not adequate since they do not specify the number and location of fauna & flora to be affected. - It states "None of the species of the RoW are rare / endangered IUCN Red Data Book listed". However, <i>Prunus africana</i> (a Red Data Book species) is mentioned later on with reference to the Mau Forest Complex. Therefore, it needs to be clarified whether <i>P. africana</i> is present in the forest of Alternative 1 or 2. 	<ul style="list-style-type: none"> - KPLC needs to clarify with GIBB Africa whether the rare and endangered species were found in Alternative 1 or 2. - JICA Survey Team's Flora and Fauna Specialist Survey needs to be referred.
Landscape Study	<ul style="list-style-type: none"> - The evaluation method is not clear. - The assessment is more qualitative and not adequate. - JICA Survey Team's landscape specialist survey was not incorporated in the ESIA because the ESIA's 	<ul style="list-style-type: none"> - The result was not evaluated in a systematic way. - Additionally, Figure 7-5 indicates the views from the transmission lines, not the views from scenic sites toward the proposed transmission line. 	<ul style="list-style-type: none"> - JICA Survey Team's Landscape Specialist Survey needs to be referred.

Item	Assessed Results	Description	Actions to be taken by KPLC
	<p>approval was prioritised.</p> <ul style="list-style-type: none"> - As a result, although the report methodology is not adequate, overall the mitigation measures are considered to be adequate since JICA Survey Team's landscape specialist survey also concludes that the impacts on landscape are not significant. 		
Impact on Forest	<ul style="list-style-type: none"> - There is a misunderstanding on the alignment of the transmission line near the Lake Nakuru National Park, and the impact on the forest in the national park was identified in the ESIA, which is not appropriate. 	<ul style="list-style-type: none"> - The impact on Lake Nakuru Forest is identified, but it will actually not be affected by the project, since the alignment does not pass through Lake Nakuru National Park. 	<ul style="list-style-type: none"> - The right alignment needs to be referred.
Mitigation Measures for the Expected Negative Impacts (Including Responsible Organisation(s) and Budget)			
Overall EMP	<ul style="list-style-type: none"> - Due to the nature of the project (i.e. transmission lines), significant negative impacts caused the project type are not identified, and the proposed EMP is considered to be overall adequate. - As for the estimated budget, it is also considered to be adequate because (1) most mitigation measures can be implemented by the engineering design during planning within the internal project cost, and (2) the rest which requires the separate budget such as tree planting, education on safety and HIV/AIDS, and waste management are included in the EMP. - However, the project proponent will be not KPLC but KETRACO, the actual implementation organisation of EMP needs to be clarified with KPLC and/or KETRACO. 	<ul style="list-style-type: none"> - Since several mitigatory actions are just listed under a negative impact, it is not clear who, how and how often they are to be implemented or monitored. The parameters, method, timeframe, frequency and responsibility need to be stated for each mitigatory action. 	<ul style="list-style-type: none"> - The actual implementation organisation of EMP needs to be clarified with KPLC and/or KETRACO.
Monitoring Plan (including Responsible Organisation(s) and Budget)			
EMoP	<ul style="list-style-type: none"> - Due to the nature of the project type (i.e. transmission lines), significant negative impacts caused the project type are not identified, and the proposed EMoP is considered to be overall adequate. - However, it is appropriate since in the EMoP, the measurement of air quality, water quality and noise are suggested, but the monitored parameters, measurement locations, frequency are not specified. - Additionally, it is not adequate since the initial external auditing which is required by NEMA is not proposed. - Again, the project proponent will be not KPLC but KETRACO, the actual implementation organization of EMP needs to be clarified with KPLC and KETRACO. 	<ul style="list-style-type: none"> - The measurement is suggested in the EMoP; however, the detailed actions are not clear because no parameters, measurement locations and frequency to be monitored are suggested. - The practical monitoring methods on air, water and noise need to be prepared by considering the environmental standards of Kenya and practices in Kenya because there are no significant negative impacts of the project during construction and the negative impacts to be monitored are regional or temporary. - For the EMoP, the internal and external monitoring (auditing required by NEMA) need to be proposed. 	<ul style="list-style-type: none"> - The practical monitoring plan on air quality, water quality and noise level (e.g. parameters, measurement locations, and frequency) needs to be clarified with GIBB Africa - As for water quality and noise level, NEMA's existing water quality standards and noise level standards and KPLC's noise level standards need to be met. - The external monitoring plan (i.e. the external auditing required by NEMA) needs to be clarified. - The actual implementation organization of EMoP needs to be clarified with esp. KETRACO.
Status of the Public Consultation Meetings			
Minutes of Meetings	<ul style="list-style-type: none"> - It is considered that the public consultation meetings were organised in accordance with the requirements of JBIC Guidelines (e.g. the number 	<ul style="list-style-type: none"> - Minutes of the 2nd stage of the public consultation meeting at Mamboleo area, Kisumu District is not included. - The minutes of meetings of the 2nd 	<ul style="list-style-type: none"> - The minutes of the meeting at Mamboleo needs to be added and submitted to JICA.

Item	Assessed Results	Description	Actions to be taken by KPLC
	of venues and the stages).	round and 3rd round public consultation meetings are misplaced in Appendices.	

Source: JICA Survey Team

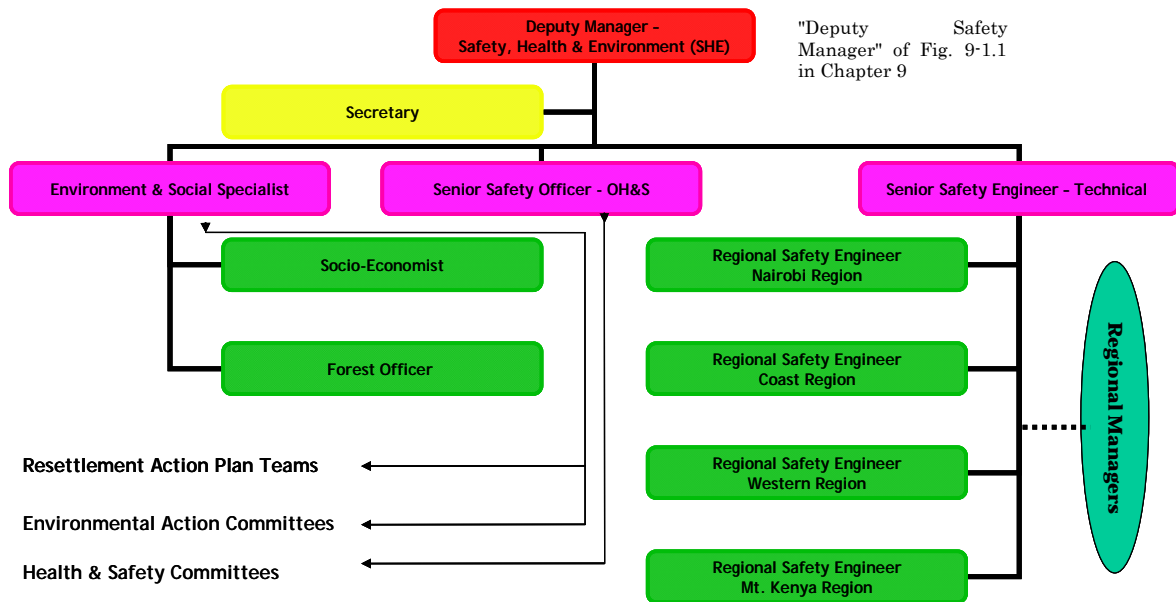
7.7 Organisational Framework for Monitoring

KPLC currently has a Safety, Health & Environment (SHE) Department for implementation and monitoring of the ESIA, and a Resettlement Action Implementation Team for implementation and monitoring of the RAP which also consists of staff of SHE Department and relevant departments (see the following two figures). Since the project proponent is expected to be not KPLC but KETRACO, similar organisations for ESIA and RAP need to be organized within KETRACO.

7.7.1 Safety, Health and Environment (SHE) Department

The role of the SHE Department is listed below:

- Reviewing environmental & social priorities for KPLC in collaboration with other stakeholders with a view to managing associated risks;
- Designing, implementing and tracking progress on environmental and social performance systems with a view to ensuring compliance with corporate standards;
- Participating in review of objectives, policies and procedures pertaining to environmental, social, health and safety development and operational management systems for KPLC;
- Preparing environmental & social impact statements and obtaining environmental permits for developing projects and existing sites;
- Participating in preparation of consultation and compensation plans for development projects including organizing consultative meeting with general public on matters affecting KPLC;
- Interacting with the donor organizations to facilitate compliance with national environmental/social laws and regulations and other agreed performance standards;
- Facilitating establishment and subsequent management of Environmental Action Committee;
- Designing and implementing operational Environmental & Social Management Systems and sustainability systems for KPLC in liaison with various stakeholders; and
- Provision of training on Safety, Health and Environmental Policy.



Source: KPLC

Fig. 7-7.1 KPLC SHE Organisational Structure for ESIA

7.7.2 Relevant Organisations within KPLC

The roles of the organisations which are relevant to environmental and social considerations are as shown in the following:

(1) Resettlement Action Plan Team

KPLC has a functional Resettlement Action Plan team which mandate is to implement and monitor RAP. The team members are drawn from different KPLC departments, and SHE Department coordinates and manages activities of the team. The minimum number of team members is 10 (see Figure 7-5.3). For the proposed project, the team will:

- Confirm the details of the PAPs;
- Prepare PAPs compensation and resettlement schedules;
- Coordination of PAPs compensation and resettlement;
- Oversee the implementation of the RAP;
- Oversee the formation of PAP Committee (PC);
- Ensure maximum participation of the affected people in the planning of their own resettlement and post resettlement circumstances;
- Accept financial responsibility for payment or compensation and other designated resettlement related costs;
- Ensure detailed valuation of the structures in order to determine the case to case value of

- each component of the project and agree upon a value for compensation;
- Pay the affected people compensation to the amounts agreed;
 - Ensure monitoring and evaluation of the PAPs and the undertaking of appropriate remedial action to deal with grievances and to ensure that income restoration are satisfactorily implemented; and
 - Address PAPs grievances.

(2) Environmental Action Committees

These are ad hoc committees formed to address various environmental issues in KPLC. The members consist of KPLC staff who are registered Lead Experts with NEMA. The committee is activated when addressing environmental issues which may results from the project implementation. The minimum number of team members is 6.

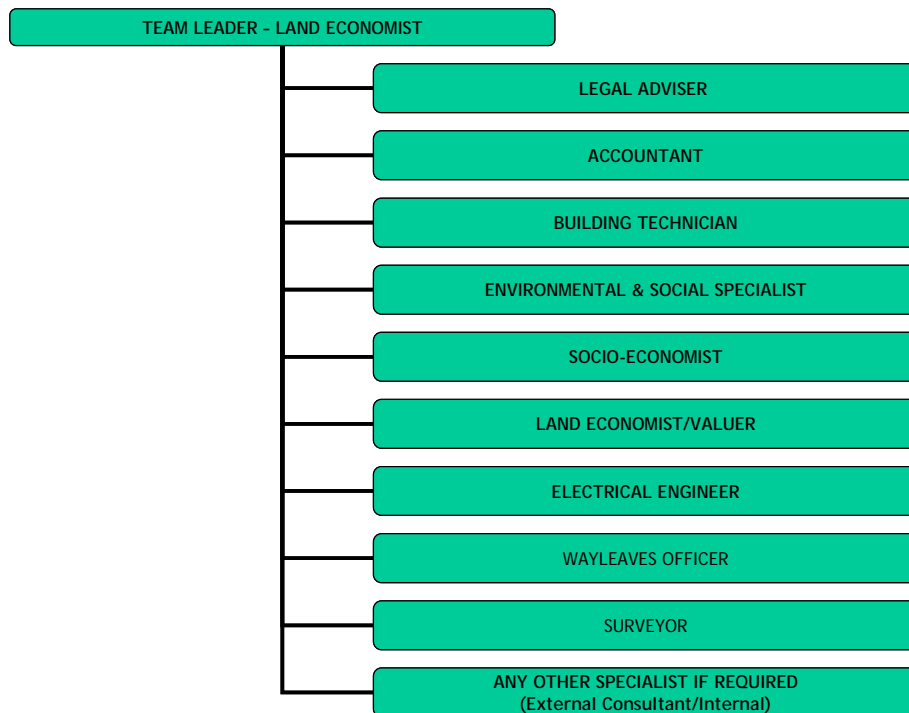
(3) Health & Safety Committees

Several Health and Safety committees exist within KPLC. The mandate of the committees is to address occupational health and safety concerns in KPLC. The aim is to make the workplace safe and conducive. During the implementation of the project, such committee will be formed. The minimum number of team members is 6 for a workforce of between 20 and 100.

(4) Regional Safety Engineer

Regional Safety Engineer, indicated as "Nairobi Region", "Coast Region", "Western Region", and "Mt. Kenya Region", consists of 1 engineer for each region. Normally 1 or 2 assistants will be deployed for the 1 Regional Safety Engineer.

Structure of Resettlement Action Plan Team is shown in Figure 7-5.3.



Source: KPLC

Fig. 7-7.2 KPLC Organisational Structure for RAPs

7.8 Environmental Checklist in Accordance with the JBIC Guidelines for Confirmation of the Environmental and Social Considerations

The Environmental Checklist No. 14 for Power Transmission and Distribution Lines (Annex 7-13) was prepared assuming that the proposed mitigation measures will be implemented. However, for resettlement related items, the checklist needs to be revised by KPLC based on the final outputs of the RAP Study to be finalised in Feb. 2010.