



The Kenya Power & Lighting  
Co. Ltd.

# **Kenya Power & Lighting Company Ltd. (KPLC)**

## **TERMS OF REFERENCE OF AN ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA)**

### **The Proposed Kisumu-Lessos-Olkaria Transmission Line Upgrading Project**

**July 2009**

*The Proposed Kisumu-Lessos-Olkaria  
Transmission Line Upgrading Project*

## 1.0 DEFINITIONS OF TERMS

**“The Project”** means the whole development of Kisumu-Lessos-Olkaria transmission line project as specified in Section 2.0.

**“The Project Area”** means the whole project site consisting of the transmission lines and necessary infrastructures such as transmission line bay extensions as specified in Section 2.1 & 2.2.

**“The Study”** means a study of the Environmental & Social Impact Assessment (ESIA) for the Project.

**“The Study Area”** means the area to be affected environmentally and socially, and namely the following four transmission lines as specified in Table 1 and its left and right areas of approx. 2 km from planned transmission lines route. However, some additional information should be collected on not only the Study Area but also surrounding areas if any significant indirect adverse impact is identified by the initial site visit of the Consultant.

**“The Client”** means the Kenya Power & Lighting Co. Ltd.

**“The Consultant”** means a consultancy awarded by the KPLC for the Study.

**“Japan Bank for International Cooperation (JBIC)”** means a former Japanese governmental bank, which used to be in charge of bilateral Official Development Assistance (ODA) loans and has merged into “New JICA” since 1 October 2008.

**“JICA Study Team”** means a team of experts assigned for a former JBIC/New JICA-funded study on the Project.

**“Project Affected Persons (PAPs)”** mean persons to be affected by the Project including the owners losing their property, the local residents to be relocated and residents to be disturbed by negative impacts caused by the Project.

**“Resettlers”** mean direct PAPs who are going to be relocated by the Project.

## 2.0 THE PROJECT

The Project is to construct the transmission lines including alternative routes and 4 transmission line bay extensions between Kisumu-Lessos-Olkaria in Nyanza Province (Kisumu and Nyando Districts) and Rift Valley Province (Kericho, Uasin Gishu, Nandi, Baringo, Nakuru and Naivasha Districts).

### 2.1 THE PROJECT AREA

The Project Area is shown in Figure, and the length of the targeted transmission lines is approximately 255 km, namely approx. 170 km between Olkaria and Lessos and 85 km between Lessos and Kisumu as described in Table 1.

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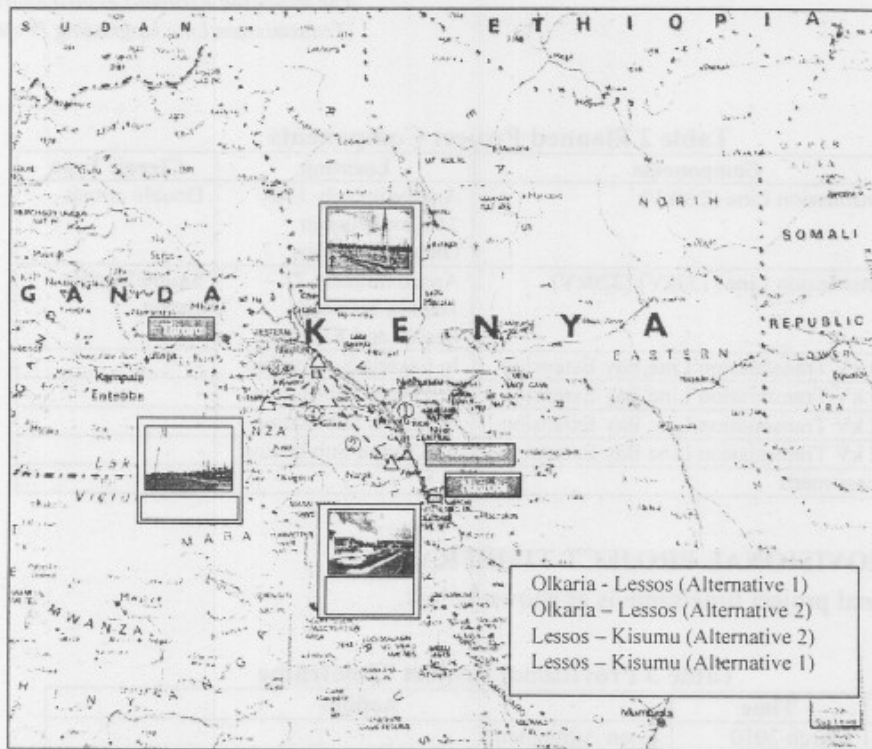


Figure 1 Target Transmission Lines

Table 1 Project Area

No.	Route		Type	Length	Districts
1	Olkaria – Lessos	Alternative 1	Double circuit	Approximately 213 km	Naivasha District, Nakuru District, Baringo District, Uasin Gishu District and Nandi District
2		Alternative 2	Double circuit	Approximately 178 km	Naivasha District, Nakuru District, Kericho District and Nandi District
3	Lessos – Kisumu	Alternative 1	Single /Double circuit	Approximately 103 km	Kisumu District, Nyando District and Nandi District
4		Alternative 2	Single/Double circuit	Approximately 77 km	Kisumu District, Nyando District, and Nandi District

## 2.2 THE PROJECT COMPONENTS

The project components are listed in the following table. The components are preliminarily designed and have been reviewed by the JICA Study which is planned to be finalised by November 2009.

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**Table 2 Planned Project Components**

No.	Components	Location	Circuit Type
1	Transmission Line (220kV)	Approximately 178-213 km between Olkaria & Lessos	Double circuit
2	Transmission Line (132kV) (220kV)	Approximately 77 – 103 km between Lessos and Kisumu	Single/Double circuit
3	220 kV Transmission Line Bay Extension	In Olkaria Sub-station	-
4	220 kV Transmission Line Bay Extension	In Lessos Sub-station	-
5	132 kV Transmission Line Bay Extension	In Lessos Sub-station	-
6	132 kV Transmission Line Bay Extension	In Kisumu Sub-station	-
7	Access roads		

### 2.3 THE PROVISIONAL PROJECT TIMEFRAME

The provisional project timeframe is as shown below.

**Table 3 Provisional Project Timeframe**

No.	Time	Actions
1	March 2010	Loan Agreement
2	July 2010	Selection of Consultant
3	March 2011	Tender for the Procurement and Construction Contract
4	March 2013	Completion of the Construction

### 3.0 THE ESIA STUDY

The Study is to conduct the Environmental and Social Impact Assessment (ESIA) Study for the above-mentioned Project. It is planned that the Study will be conducted from Aug. 2009 until mid-Oct. 2009; however, detailed schedule shall be discussed and agreed between the Client and the Consultant during the pre-contract negotiation.

#### 3.1 THE STUDY AREA

The Study Area includes the Project Area and the entire affected area by the Project and including the alternative routes.

#### 3.2 OBJECTIVES AND REQUIREMENTS OF THE ESIA STUDY

The overall objectives of the ESIA Study are as shown below:

1. To identify and assess potential environmental and social impacts of the proposed Project;
2. To identify all potential significant adverse environmental and social impacts of the proposed Project and recommend measures for mitigation;
3. To verify compliance with the environmental regulations and industry's standards of Kenya;

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4. To generate baseline data for monitoring and evaluation of how well the mitigation measures will be implemented during the project cycle;
5. To recommend cost effective measures to be implemented to mitigate against the expected impacts; and
6. To prepare an Environmental and Social Impact Assessment (ESIA) Study Report compliant to Section 58 of the Environmental Management and Coordination Act (EMCA) of 1999 & the Environmental (Impact Assessment and Audit) Regulations of 2003, and detailing findings and recommendations.

Additionally, the Consultant shall meet the requirements of the former Japan Bank for International Cooperation (JBIC) Guidelines for Confirmation of Environmental and Social Considerations which are available at:

[http://www.jica.go.jp/english/publications/jbic\\_archive/environmental\\_guidelines/](http://www.jica.go.jp/english/publications/jbic_archive/environmental_guidelines/)

Moreover, the Consultant shall be conduct the ESIA study to be able to fill out the review questions in the former JBIC's Environmental Checklist No. 14 for the Power Transmission and Distribution Lines (See Attachment), which is also available at:

[http://www.jica.go.jp/english/publications/jbic\\_archive/environmental\\_guidelines/](http://www.jica.go.jp/english/publications/jbic_archive/environmental_guidelines/)

Both of the above requirements of Kenya and JICA (former JBIC) are geared towards ensuring that the Project is implemented in an environmentally and socially sustainable manner so that maximum benefits are realised. Under the Study, special considerations will be taken to ensure that social issues are not forgotten by carrying out a Social Impact Assessment (SIA) study or Resettlement Action Plan (RAP) study if identified to that will be an integral part of the main ESIA Study Report.

The ESIA Study shall therefore be prepared in accordance with these TOR as well as all relevant legislation and guidelines listed above.

### **3.3 SCOPE OF THE STUDY**

The scope of services to be undertaken by the Consultant shall include but not limited to the following:

**Task 1. Literature Review:** The Consultant is required to undertake desktop study analysis on the available literature on the Scale-up Program including, feasibility study report and any other relevant project materials for the same project shall be provided to the consultant which will serve as a starting point for the consultant to gather Environmental and Social information pertaining the project.

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**Task 2. Legislative and Regulatory Framework:** The Consultant shall review a) the policy and legal framework governing implementation of the Project, as well as b) any international conventions and treaties that may be applicable, c) national and regional plans and d) any other relevant documents pertaining to the Project. The results of the review shall be clearly described and organised in an ESIA report.

**Task 3. Detailed Description of the Proposed Project:** The Consultant is to concisely describe the proposed project, its geographic location, ecological, general layout of facilities including maps at appropriate scale where necessary.

**Task 4. Alternative Consideration:** Alternatives of the Project in terms of the site, design and technologies including “without-project” shall be identified and examined, and the justification for the selected alternatives shall be described as specified by the Environmental (Impact Assessment and Audit) Regulations, 2003 of Kenya. At minimum, two (2) alternative alignments between Kisumu and Lessos and Lessos and Olkaria shall be systematically evaluated in terms of environment, social and economic aspects.

**Task 5. Description of the Baseline Environment:** The Consultant is required to collect, collate and present baseline information on the environmental characteristics of the existing situation in the planned transmission routes. This description involves:

(1) *Biophysical Environment* (i.e. topography, geology, land use, soils, climate, meteorology, soil erosion, hydrology, noise, vibrations, water quality, air quality including dust & exhaust gases, solid wastes, fauna and flora, biodiversity, endangered species, sensitive habitats, protected areas, etc.): Special attention shall be paid to:

1) Protected Areas such as National Parks and Forest Reserves:

The information related to these reserves shall be collected through hearings with the relevant governmental bodies (KFS and KWS) and local experts, including NGO members, site visits by natural environmental experts and a literature survey;

2) Rare, Endangered, Endemic and Valued Species in Kenya:

The official list of rare, endangered, endemic and valued flora and fauna species in Kenya shall be prepared. The existence of these species in the Study Area shall be identified through the literature study, site visits by natural environmental experts and hearings with governmental bodies (KFS and KWS), local experts, including NGO members, and relevant officials. The detailed field survey shall be conducted if the results of the literature study and hearings are not sufficient to identify these species in the Study Area;

3) Soil Erosion; and

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4) Regional Pollution Levels.

(2) *Social and Cultural Environment* (i.e. population, planned development activities, community structure, employment and labour market, sources and distribution of income, landscape, cultural properties, etc). Special attention shall be paid to:

- 1) Number of Households (e.g. official/unofficial land title holders and tenants) whose Lands are Expected to be Affected by the Project (but not resettlers) and their socio-economic status;
- 2) Number of Potential Resettlers, if identified;
- 3) The Vulnerables (e.g. indigenous people, minority tribes, women, the poor, the elderly, the disabled, children, etc.);
- 4) Landscape;
- 5) Livelihood Activities (e.g. employment rate, types of engagement, income sources, and distribution including social economic benefits of the current system);
- 6) Health and Safety Status;
- 7) Existing Social Infrastructure (schools, churches, health facilities, social centres and halls, shopping centres, etc.);
- 8) Community Structures; and
- 9) Historical and Cultural Heritage Sites.

Supporting data such as the secondary data as well as the primary data including the results of the measurement surveys, field reconnaissance and hearings of the Study Area and should cover biophysical, social economic and cultural environments for both on site and off site impacts. The other detailed measurement methods shall be proposed by the Consultant and approved by the Client before conducting the survey.

**Task 6. Identify potential environmental and social impacts that could result from the project:**

The Consultant shall analyse and describe all significant changes/impacts expected due to the proposed project during each of the four stages of the project cycle (planning & designing, construction, operation and decommissioning). These would encompass environmental, ecological and social impacts, both positive and negative, as a result of interaction between the proposed project and the environment that are likely to bring about changes in the baseline environmental and social conditions discussed in Task 4. The Consultant also shall differentiate between short, medium and long-term impacts as well as direct/indirect impacts.

Potential impacts identified in Section 7.0 of the Scoping Report shall be verified and reviewed with the information additionally collected by the Consultant and detailed survey results of the ESIA.