

**REPUBLIC OF KENYA**



**MINISTRY OF ENERGY**

**KENYA ELECTRICITY MODERNIZATION PROJECT-IDA CR 55870**

**Terms of Reference – Power Engineering Consultant**

**Background**

The Government of Kenya (GoK) in conjunction with the Implementing Agencies is implementing the Kenya Electricity Modernization Project (KEMP) whose development objectives are: (a) to increase access to electricity; (b) to improve reliability of electricity service; and (c) to strengthen Kenya Power and Lighting Company (KPLC) financial situation.

The project has four Components, namely:

- 1) Component A: Improvement of Service Delivery and Reliability;
- 2) Component B: Revenue Protection Program;
- 3) Component C: Electrification Program; and
- 4) Component D: Technical Assistance and Capacity Building

The implementing agencies for KEMP are Kenya Power and Lighting Company (KPLC), the Rural Electrification Authority (REA); and the Ministry of Energy (MOE). MOE is responsible for implementation of the activities under Component D. The project is funded by World Bank under IDA CR 55870.

GOK intends to achieve universal access by the year 2020. As part of its effort towards this end, the Ministry has applied part of the funding under Component D of KEMP to develop a National Electrification Strategy (KNES).

A Least Cost Geospatial Electrification Plan for grid and off-grid roll-out in support of this Strategy has also been completed with the support of the Bank.

To attain universal electricity access by 2020, the National Electrification strategy and the Least Cost Geospatial plan envisages that over US\$ 2.6 billion will require to be invested in order to reach the unconnected households through the following approaches:

‘Last mile’ which refers to extending low voltage lines to reach all consumers within 600 meters off existing transformers to reach 2.3 million households.

‘Grid intensification’ that refers to Installation of additional transformers on existing medium voltage lines as well as extending medium voltage lines by up to 2 kilometers and installing additional transformers and associated low voltage lines to reach housing clusters beyond 600 meters off existing transformers to reach over 550,000 households.

“Grid Expansion “which refers to the construction and extension of medium Voltage lines from existing and newly established substations to housing clusters within a 15 – 25 km buffer beyond the existing network and installing transformers and their associated low voltage lines to reach over 270,000 households.

Establishment and expansion of mini grids to serve population clusters that are too distant from the network and where it is not economical to extend the existing grid to reach over 35,000 households.

Stand alone Solar Community & Home Systems in areas that are too far from the grid and do not have population clusters that can economically justify establishment of a mini-grid to reach over 2 million households.

To coordinate the above said approaches, some of which will be undertaken by the private sector, an Electrification Program Management Unit (EPMU) will require to be established within the Ministry.

The MOE is responsible for the overall monitoring and coordination of the projects. To this end, the MOE is requires to recruit two Power Engineering Consultants (individual consultants) to assist in implementing these ongoing projects by providing technical expertise as well as in the preparation of future electricity infrastructure expansion.

## **1.0 Objective of the Consultancy:**

To assist with the implementation of the on-going Kenya Electricity Modernization Project (KEMP) and the Kenya Off-Grid Solar Access Project (K-OSAP) as a members of the Ministry of Energy's Project Implementation Team, and assist in the preparation of the proposed future projects

## **2.0 The responsibilities of the Power Engineering Consultant.**

The Power Engineering Consultants will report to Project Coordinator, and will have the following responsibilities: -

- i. Undertaking assignments related to the Kenya Electricity Modernization Project and Kenya Off-Grid Solar Access Project such as (a) preparing TORs for Consultancy Services to carry out studies for future projects; (b) preparing Request for Proposal Documents; (c) as member of the selection panel, participating in the selection of consultants; (d) in contract negotiations; quality control of procurement and contract documents; and oversight of the progress of the assignments. Likewise, also for policy oriented Studies;
- ii. To assist MOE in the establishment of the proposed Electrification Program Management Unit (EPMU), and participate in the activities of the EPMU which will include:
  - Coordinating electrification expansion;
  - Managing and maintaining the Geospatial Electrification Platform;
  - Monitor electrification expansion;
  - Share data within the sector and with the private sector developers involved in the expansion of the electrification network;
  - Manage access to the Geospatial Electrification platform

- Coordinate periodic training for geospatial platform users; and
  - Ensure the geospatial plan is updated and current at all times.
- iii. To assist the project coordinator in reviewing and monitoring implementation progress of the project components being undertaken by Kenya Power and Lighting Company and the Rural Electrification Authority, the Consultant will provide technical intermediary role with the agencies in resolving technical issues that arise in implementing the contracts above. The Consultant will interact with the Project Implementing Units (PIUs) of the implementing agencies and supervision consultants. At the early stages of implementation of the projects, consultations with implementing agencies are frequently required to resolve emerging issues. The Ministry will be represented in these consultations by the Consultants who will provide leadership and required technical oversight on behalf of the Ministry.
- iv. Reviewing technical study reports arising from assignments and consultancies in the Kenya Electricity Modernization Project and KOSAP;
- v. Preparing project briefs on the power component for supervision missions by the World Bank, the European Investment Bank, the French Agency for Development, the German Development Cooperation, Japan International Cooperation Agency and other energy sector donors and the client;
- vi. Reviewing technical reports and studies of relevance to the responsibilities of the MOE, and preparing comments and recommendations;
- vii. Reviewing investment proposals submitted by the private sector on electric power generation, distribution and rural electrification;
- viii. Reviewing proposals from both KPLC and REA on areas targeted for KOSAP investments and ensuring they are in line with the aspirations of the relevant county governments and target communities.

- ix. Assisting the implementing agencies in resolving emerging challenges when dealing with the county governments.
- x. Undertaking any other assignment as may be directed by the Principal Secretary, Ministry of Energy on electric power development policies, Projects and programmes.

### **3.0 Reporting Requirements**

The Power Engineering Consultant will be required to submit reports as follows:

- One copy of monthly progress reports highlighting achievements and challenges, with proposed mitigations.
- One copy of annual progress reports; and
- One copy of project completion report after the completion of the Project.

### **4.0 Duration of the Assignment**

The duration of the assignment will be Twenty-Four calendar months, and will be renewable subject to satisfactory performance and work programme requirements.

### **5.0 Performance Standards**

The Power Engineering Consultant will carry out all assignments within agreed timeframes and to satisfactory quality.

### **6.0 Consultant's Qualifications, Skills and Experience**

- (a) At least a Bachelor of Science (BSc) Degree in Electrical Engineering or Mechanical Engineering from a recognized university;
- (b) Be Registered as a Professional Engineer;
- (c) At least 15 years experience in power systems planning, operation in a power utility or in the energy field of a government ministry;

- (d) At least five years experience working in similar assignments with Donor Funded projects;
- (e) Knowledge of, and preferably demonstrable relationships with energy sector stakeholders in Kenya
- (f) Experience working with and managing consultants;
- (g) Must have a working knowledge of economic and financial analysis including project evaluation and monitoring; and
- (h) Computer skills in power systems operation and planning.

### **7.0 Reporting:**

The consultant will report to the Project Coordinator.

### **8.0 Selection Method**

This will follow the provision of World Bank's Consultant's Guidelines for Borrowers, January 2011 (revised July 2014).