

# **TERMS OF REFERENCE**

**For**

**Impact Evaluation of Last Mile Connectivity Project (LMCP)**

**REF: KE-MOE-101100-CS-QCBS**

**Client: Ministry of Energy**

**Country: Kenya**

---

## **1. Background**

Access to electricity is recognized as fundamental to development, and many efforts are under way across developing countries to scale up access, both in terms of providing basic supply and enabling people to move up through the energy tiers. The Government of Kenya pledged to stimulate economic growth and accelerate job creation to improve the economic wellbeing of Kenyans. Among the many interventions to achieve this is the expansion of the power distribution system to be within reach and thus enable more Kenyans to connect to the grid at affordable cost and hence initiate economic activities at the micro-economic level (ADB, 2014). Kenya's electricity sector faces extensive development as the country strives to achieve the goal of universal access to electricity by 2022 and the national blueprint Kenya Vision 2030.

The Last Mile Connectivity Project (LMCP) was launched by the Government of Kenya through the Ministry of Energy in 2015 to ensure affordable electricity connections to households and to achieve over 70% connectivity by 2017<sup>1</sup>. The Ministry of Energy therefore seeks to conduct a nationwide evaluation to assess the socioeconomic impacts of electrification and inform the Ministry of Energy's mission to achieve nationwide electricity access by 2022.

The study will examine how electrification affects a diverse set of social and economic outcomes, such as energy usage, household income, children's education, health, and asset ownership. The results from the evaluation will provide a broader understanding of the benefits of electrification, including how benefits may differ for households and businesses with different levels of income, education, and access to markets.

## **2. Purpose of Evaluation**

The evaluation is expected to be forward-looking for demand stimulation of electrification capturing lessons learnt, challenges faced and best practices obtained during implementation. The evaluation will also provide information on the nature, extent and where possible, the potential impact and sustainability of the LMCP project which will inform the Ministry of Energy's mission to achieve nationwide electricity access by 2022. The evaluation will also assess the project design, scope, implementation status focusing on at the connections realized, and implementation period and the capacity to achieve the project objectives.

The evaluation will inform what has and what has not worked as a guide for future planning. It will assess the performance of the project against planned results. The evaluation will assess the preliminary indications of potential impact and sustainability of results, including the socioeconomic impacts of electrification. The results of the evaluation will inform future decisions by the key stakeholders of this evaluation who are the Government of Kenya- through the Ministry of Energy, implementing agencies (KPLC and REA) and development partners providing financial support to the program such as World Bank and African Development Bank. The consultant will further be expected to work very closely with the Ministry of Energy and KPLC staff that would be involved in the evaluation and conduct capacity building and knowledge transfer activities to the client staff officials in the course of the evaluation. The consultant will further be expected to draw recommendations on the success of LMCP and barriers

---

<sup>1</sup> <http://energy.go.ke/last-mile-project/>

to the usage of electricity. The consultant will further be expected to conduct trainings for MoE and KPLC staff in the areas of applied research.

### **3. Objective of the Assignment**

The objective of the assignment seeks to achieve three goals to develop a comprehensive understanding of socioeconomic outcomes of the LMCP.

- First, the evaluation seeks to quantify the nationwide socioeconomic household impacts of increased electricity usage under the LMCP in Kenya.
- Secondly, quantify the socioeconomic impacts of increased electricity usage for connected households and small and medium enterprises (SME) In Kenya
- Thirdly, identify key barriers to increased electricity usage and socioeconomic benefits that accrue from it.

The assignment will further seek to carry out baseline measurement of current ongoing project interventions, monitor the achievement of project indicators over a period of 3 years, and conduct a final evaluation at the end of the project.

### **4. Scope of Work**

This evaluation of the LMCP will assess the effectiveness of the implementation strategy in affecting socioeconomic outcomes for rural households. It will assess the extent to which the project results have been achieved, partnerships established and capacities built. In order to achieve these objectives; the evaluation will focus on the following:

- (i) Provide experimental evidence on the impacts of rural electrification.
- (ii) Evaluate nationwide impacts of the Last Mile Connectivity Project (LMCP).
- (iii) Measure the impacts of and barriers to increased electricity usage/consumption for connected households and businesses.
- (iv) The consultant is expected to work closely with the team from Ministry of Energy at every stage of the assignment to ensure technical knowledge transfer and further organise short term trainings for the teams in the areas of applied research, including in the use of Randomized Controlled trials (RCT)
- (v) Do a documentary of the LMCP project.

### **5. Evaluation Questions**

The study will be based on the OECD/DAC evaluation criteria of Relevance, Effectiveness, Efficiency, Impact and Sustainability. The following key questions among others will guide the nationwide project evaluation:

- i. Relevance (Design and focus of the project)
  - To what extent has the project provided access to electricity to rural households?
  - What and how much progress has been made towards achieving nationwide electricity access by 2022 in Kenya (including contributing factors and constraints)?
  - To what extent were the results (impacts, outcomes and outputs) achieved?

- Were the inputs and strategies identified, and where they realistic, appropriate and adequate to achieve the results? And what are the future intervention strategies and issues?
  - Was the project relevant to the identified needs?
- ii. Effectiveness (Management processes and appropriateness in supporting delivery)
- Was the project effective in delivering desired/planned results?
  - To what extent did the Project's M&E mechanism contribute in meeting project results?
  - How effective were the strategies and tools used in the implementation of the project?
  - How effective has the project been in responding to the needs of the beneficiaries?
- iii. Efficiency (of Project Implementation)
- Was the process of achieving results efficient? Specifically did the actual or expected results (outputs and outcomes) justify the costs incurred? Were the resources effectively utilized?
  - What factors contributed to implementation efficiency?
  - Did project activities overlap and duplicate other similar interventions (funded nationally and/or by other donors)? Are there more efficient ways and means of delivering more and better results (outputs and outcomes) with the available inputs?
  - Could a different approach have produced better results?
  - How effective was the project's collaboration with the World Bank, the Government of Kenya, national institutions, development partners, and the Steering Committee?
  - How efficient were the management and accountability structures of the project?
  - How did the project financial management processes and procedures affect project implementation?
  - What are the strengths, weaknesses, opportunities and threats of the project implementation process?
- iv. Sustainability
- To what extent are the benefits of the project likely to be sustained after the completion of this project?
  - What is the likelihood of continuation and sustainability of project outcomes and benefits after completion of the project?
  - How effective were the exit strategies, and approaches to phase out assistance provided by the project including contributing factors and constraints?
  - What are the key factors that will require attention in order to improve prospects of sustainability of project outcomes and the potential for replication of the approach?
  - How were capacities strengthened at the individual and organizational level (including contributing factors and constraints)?
  - Describe the main lessons that have emerged

- What are the recommendations for similar support in future? (NB: The recommendations should provide comprehensive proposals for future interventions based on the current evaluation findings).
- v. Capacity building and knowledge transfer  
The consultant is expected to work closely with the team from Ministry of Energy at every stage of the assignment to ensure technical knowledge transfer and further organise short-term trainings for the teams in the areas of Random Control trials.

## 6. Approach and Methodology

The consultant is expected to present a detailed methodology for conducting the assignment. To identify the causal effect relationship between rural electricity connection, usage and socioeconomic outcomes, the consultant will be expected to develop an appropriate evaluation model based around the following activities:

### Activity 1

The consultant will be expected to conduct an evaluation (ideally through experimental evidence) of household electrification in Kenya. The evaluation should ideally speak to longer-term impacts.

### Activity 2

The consultant will be expected to use appropriate statistical techniques to study how electrification connection under LMCP affected electricity usage and household outcomes based on Kenya Power data on the rollout of LMCP construction and electricity consumption as well as 2009 and the upcoming 2019 census results.

### Activity 3

The consultant will be expected to measure the socioeconomic benefits to increased electricity consumption. One such avenue to study socioeconomic benefits would be through randomized distribution of appliances, which would allow customers to consume more electricity and allow the consultant to measure the socioeconomic benefits to electricity consumption.

Given the above Activities, the evaluation will require data collection through a mixed method approach. Both quantitative and qualitative techniques will be used to measure the socioeconomic impacts of electrification. Additionally, the consultant is required to collect information by conducting site visits, as well as implement other methods in order to investigate the desired outcomes. The consultant is also expected to consider using experimental or natural variation to study potential barriers to electricity consumption, such as lack of information about benefits and costs of electricity usage, lack of access to credit, and poor electricity reliability.

**Sample Selection:** The consultant is expected to propose the sampling strategy that fits this study. In coming up with the sampling strategy and sampling plan, the consultant will take into consideration recently connected customers with low-to-medium levels of monthly electricity consumption excluding wealthier customers, who may not need appliance subsidies, and customers who consume very low levels of electricity. The consultant is also expected to put in to consideration Kenya's cultural, economic, geographic, and political diversity.

- The consultant is expected to have experience and knowledge in applying Randomized Controlled Trials (RCTs) in socioeconomic evaluations and is expected describe in detail the methodology and techniques to be used in the evaluation, clearly explaining how randomization within each site will be implemented for both households and businesses while putting into consideration of network effects.
- The consultant is expected to work with the Ministry and Kenya Power to select transformer sites in different counties to be included in the study, and randomly assign each transformer site to control or treatment status. The consultant should aim at choosing an appropriate number of transformer communities in each of the five regions: 1) Nyanza/Western, 2) Eastern, 3) Central, 4) Northeastern/Coast, and 5) Rift Valley.

## **7. Project Stakeholders to be consulted**

The consultant will work hand in hand with the LMCP team to identify the key stakeholders be consulted during the evaluation. The consultant is expected to demonstrate how he will work with the following main stakeholders but not limited to:

- i. Ministry of Energy – Kenya
- ii. Funding partners including the World Bank (WB) and the African Development Bank (ADB)
- iii. Executing and implementing partners such as Kenya Power & Lighting Company Ltd (KPLC) and Rural Electrification Authority (REA)
- iv. Target groups such as households and businesses

## **8. Consultant's Qualification**

The required consulting firm shall have the following qualifications:

- i. The consultant to undertake the assignment is expected to be a firm or a joint venture of firms.
- ii. The Consultant should have necessary credentials to undertake the job by virtue of its successful completion of similar assignments.
- iii. The consultant shall have expertise in monitoring and evaluation of electricity programmes, socio-economic studies and sustainable development.
- iv. The consultant shall comprise of experts with stipulated academic qualifications and professional experience. Experience of working in Kenya and other developing economy in energy sector will be an added advantage.
- v. The specific experience of the firms/ JVs (separate from key staff) should be provided.

## **9. Evaluation Team Composition and Requirements**

The Consulting team or firm should comprise of at least seven professionals; the team leader and associate consultants with the following minimum qualifications and experience. However, firms/JVs may propose other key personnel if necessary, for successful completion of the assignment within the specified timeline.

- i. **Team Leader (12 man months)**

- Shall have preferably a minimum of a Master's Degree in Electrical Engineering or Energy Economics with over 15 years of experience in rural electrification. The expert shall have previous experience, including team-leader positions, in assignments such as field-based monitoring and evaluation of community-based development activities, as well as experience in rural electrification, measuring electricity reliability in a developing economy," and experience in planning and development in Kenya and/or other developing countries. A PhD qualification will be an added advantage.
- ii. **Socio-Economist (10 man months)**  
Shall hold preferably Master's Degree in Energy Economics/ Sociology/Development Economics or an MBA with at least 10 years of experience in conducting monitoring and evaluation of related projects.
  - iii. **Electrical Engineer (10 man months)**  
Should have preferably a Master's degree in Electrical engineering with at least 5 years experience in managing and supervising electrification projects, specifically in the area of energy market systems development, electricity reliability and sustainable energy.
  - iv. **Monitoring and Evaluation Expert (10 man months)**  
Should have a minimum of a Master's degree in monitoring and evaluation and over ten years practical experience evaluating development projects, specifically in the area of energy systems, energy market systems development, electricity reliability and sustainable energy.
  - v. **Local Economic Development (LED) Specialist (10 man months)**  
A minimum of MBA, MA or M.Sc. Degree in Economics or Development Economics, or related disciplines with a minimum of ten years work experience in conducting evaluation of related projects. The expert will also be required to have experience on local and regional economic development, small and medium businesses enterprises, microenterprises, and socioeconomic and labour market analysis.
  - vi. **Economist / Financial Analyst (10 man months)**  
The Financial Analyst shall have preferably a Master's Degree or equivalent in Finance or Business Administration or Engineering Economics or other relevant discipline with more than ten years of professional experience. The expert shall have experience in economic and financial analysis of on-grid and off-grid rural electrification projects as a financial specialist.
  - vii. **GIS Expert (8 man months)**  
Shall hold preferably Masters' Degree in GIS or related fields with at least five years of experience in GIS and spatial mapping.
  - viii. **Statistician (8 man months)**  
Should have a minimum of a master's degree in statistics or its equivalent, with more than five years' experience in the use of statistical software, such as SPSS or STATA, for data entry and analysis as well as proper understanding of in econometric analysis.

In their proposals, the consultants are free to modify any or all of these indicative key staff positions, in conjunction with the provision of corresponding sound reasoning and justifications, and provided that such changes are commensurate with the required scope of services.

## 10. Timeline

This project will be implemented for three years. This Monitoring and evaluation is therefore also expected to cover the 3-year period.

## 11. Working Language

The working language for this assignment will be English, but the research team should include members able to communicate in Kiswahili.

## 12. Deliverables

The following outputs are required:

- i. An **Inception Report** will include an outline on the scope of services, the sampling methodology and approach to be used, a profile of the project area, and preliminary findings on the results.
- ii. A **Baseline report** after conducting baseline surveys and delivering treatments under Activity 3.
- iii. A **Follow-up surveys report** after conducting the follow-up survey under Activity 1.
- iv. A **Draft evaluation Report** covering the basic findings with respect to all aspects of the assignment.
- v. **Presentation and discussion** of the results to the Government of Kenya, the LMCP donors and other stakeholders.
- vi. The **Final evaluation Report**, taking into account suggestions made during the stakeholder's workshop. The final report will include comments from the programme stakeholders. The content and the structure of the final analytical report with finding, recommendations and lessons learnt covering the scope of the evaluation should meet the requirements of the Ministry of Energy M & E Policy and should include the following:
  - a) Executive summary
  - b) Introduction
  - c) Situational analysis with regard to the outcome, outputs and partnership strategy
  - d) Description of the evaluation methodology
  - e) Analysis of opportunities to provide guidance for future programming
  - f) Key findings, including best practices and lessons learned
  - g) Conclusion and recommendations
  - h) Appendices: charts, terms of reference, field visits, sample characteristics, documents reviewed
- vii. **Cleaned data** from the fieldwork in soft and hard copies. These will be written up and delivered as an output together with the Final Monitoring and Evaluation Report.
- viii. **Documentary of the LMCP project** Having interviewed representatives of all stakeholders of LMCP

The table below shows the schedule of expected deliverables:

#	Deliverable	Category	Duration (From Commencement)
---	-------------	----------	------------------------------------

#	Deliverable	Category	Duration (From Commencement)
i.	Inception Report	Draft Report & Presentation	2 Weeks
		Final Report	4 Weeks
ii.	Baseline report	Draft Report & Presentation	4 Months
		Final Report	5 Months
iii.	Follow-up surveys (One to be undertaken each year)		
	Year 1	Draft Report & Presentation	6 months after baseline report
		Final Report	7 months after baseline report
	Year 2	Draft Report & Presentation	6 months after Year 1 report
		Final Report	7 months after Year 1 report
	Year 3	Draft Report & Presentation	6 months after Year 2 report
Final Report		7 months after Year 3 report	
iv.	Final Evaluation	Draft Report & Presentation	6 months after Year 3 report
		Final Report	7 months after Year 3 report
v.	Cleaned raw data	Final raw Cleaned Data	1 month after submission of Final Evaluation Report
vi.	Documentary of the LMCP project	Final Project Documentary	1 month after submission of Final Evaluation Report

### 13. Management Arrangements

The consultant will work together with the Ministry of Energy and Kenya Power to strategically choose a set of counties across Kenya with diverse cultural, economic, demographic, and geographic characteristics, to understand how these characteristics may affect the impacts of electricity usage. The Consultants are expected to maintain communication with the various LMCP stakeholders.

### 14. Obligations of the Client

The Client will provide the necessary reference documents, provide supporting letters to facilitate the consultant's travel, monitor the work, and release contractual payments in a timely manner.