

THE KENYA POWER & LIGHTING COMPANY PLC
DETAILS OF SERVICE

**ENGAGEMENT OF A TECHNICAL EXPERT TO ADVISE ON PLANNING,
ELECTRICITY PRICING & QUALITY OF SUPPLY IMPROVEMENT.**

1. Introduction

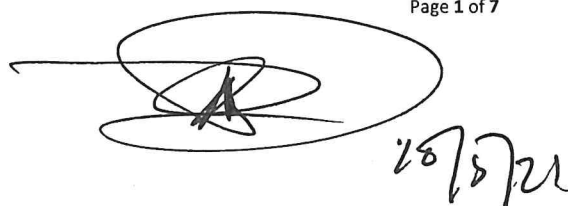
The Kenya's Power overall performance is dependent on the provision of adequate, affordable, and reliable electricity supply to its customers. However, over the last few years, the Company has been faced with a myriad of challenges that have hampered efforts geared towards affordable electricity provision and sustained quality of supply.

The Company has employed a number of strategies to bolster its operations, key among them, electricity infrastructure development, network management and enhancing customer centricity. Whereas the Company needs sufficient revenues for sustenance of its services, the power pricing in Kenya is regulated by the Government. In this regard, the Company is expected to periodically submit retail tariff applications to Energy & Petroleum Regulatory Authority (EPRA) for consideration and approval. A key challenge over the last three years has been either delays in the review and/or partial approval of the required revenues. The last tariff approval granted in 2018 was delayed for two years, a period within which the Company could not recover return on investment neither was it compensated for incremental operating expenditure. The latest Retail Tariff Application has so far been delayed for close to two years impacting negatively on the Company's financial performance.

It is against this backdrop that the company would wish to engage support of a technical expert on matters electric tariffs with unparalleled experience on Kenya's energy sector and Retail Tariff Review process. The focus for the proposed consultancy is to support the Company in ensuring that the retail tariffs are secured to ensure provision of adequate revenue requirements to Company/energy Sector and ensure power business sustainability.

2. Engaging a Technical Expert

Kenya Power is a Public Limited Company which transmits, distributes and retails electricity to customers throughout Kenya. The Company purchases electric power capacity and/or energy from the Kenya Electricity Generating Company PLC, Independent Power Producers (IPPs) and neighbouring countries (Uganda, Tanzania and Ethiopia). The purchase of generating capacity and/or energy from all of these generators is made under Power Purchase Agreements (PPAs) and Power Exchange Agreements approved by Energy & Petroleum Regulatory Authority (EPRA) established pursuant to Section 9 of the Energy Act 2019.



Handwritten signature and date: 28/5/21

One of the mandates of EPRA as provided in section 11(c) of the Energy Act, 2019 is to set, review and adjust electric power tariffs and tariff structures and investigate tariff charges, whether or not a specific application has been made for a tariff adjustment. The tariffs charged for electrical energy supplied shall be just and reasonable which enables a licensee (including Kenya Power) to, inter alia;

- i. Maintain its financial integrity;
- ii. Attract capital;
- iii. Operate efficiently; and
- iv. Compensate investors fully for the risks assumed.

Pursuant to Section 165 of the Energy Act, 2019, and the current Retail Tariff Review Policy, Kenya Power is required to submit an electricity tariff application to EPRA for a review of its retail tariffs. The retail tariff policy and the Energy Act 2019 provides for a review once in every three years.


The technical expert will support Kenya Power to strengthen its tariff review role through capacity building, restructure its rate setting methodology and customer categorization, compute cost reflective power tariffs for each customer category and prepare a comprehensive regional and international comparative analysis for electricity tariffs. In addition, the expert will also provide technical support in the following areas; demand and supply planning, system losses, last mile connectivity project and transmission and distribution costs.

3. Terms of Reference for the Technical Expert

The technical expert will provide support to the Kenya Power to enhance Power Pricing, Demand and Supply Planning, System Losses, Review of the last mile connectivity project and Transmission and Distribution costs in a regulated power market. Specifically, the Technical Expert will:

3.1 Power Pricing

- i. Support in the review of the retail tariff and the pricing framework considering new developments in the electricity cost build up, costing of ancillary services and the allowable parameters in the revenue requirements such as the Return on Equity (ROE), optimal capital structure and the overall revenue requirements (Generation, Transmission and Distribution) in line with the Tariff Review Policy of 2005.
- ii. Review of Structure and Conduct of the Power Sector including the Legal and Regulatory Framework – identifying inconsistencies and weaknesses for determination of tariffs
- iii. Electricity Demand Forecasts – historic demand, existing forecasts and a revised projection



10/8/21

- iv. Determination of Medium to Long-Term Development Programs – gather data on existing generation, transmission and distribution, regional power integration, evaluate costs for new generation, transmission and distribution, prepare financial model for least cost expansion and present scenarios.
- v. Determination of Economic Cost of Supply and Structure and Levels of Tariffs – evaluate marginal costs by voltage level, characterise demand by consumer type, model economic cost and use model to establish economic cost by capacity and energy and by consumer type.
- vi. Life-Line Tariff Mechanism – gather data on poor households use of electricity and define basic needs, review affordability of electricity among poor households and recommend lifeline tariff and process for subsidy.
- vii. Review of Financial Performance of Kenya Power and Preparation of Projections – review Kenya Power cost structure, benchmark costs and indicate areas for improvement, review current tariffs structure and levels as compared to economic tariffs, propose trajectory for bringing tariffs to cost-reflective levels indicating the resultant impacts on Kenya Power financial viability.
- viii. Transmission Wheeling Charges – provide a methodology for the determination of transmission wheeling charges.
- ix. PRA Tariff Determination Methodology – review EPRA Tariff Methodology and propose alternative approaches, prepare manual for the financial model and a capacity building plan.
- x. Tariff Adjustment Roll-Out Strategies – propose strategies for tariff adjustment.
- xi. Prepare a comprehensive comparative analysis (Regional and International covering at least 4 countries each) in regard to applicable tariff methodology and report on success and challenges encountered in each of the countries.
- xii. Working with Kenya Power Team, develop the Retail Tariffs Application (RTA) to be presented to the regulator and policy influencers, which should consist of a compelling case for the company's demand for an efficient tariff review. The RTA should include but is not limited to:
 - Revised retail tariff application report backed by advanced data analytics and;
 - PowerPoint presentation that the Kenya Power can present to the stakeholders while making the case for tariff review.
- xiii. Organize a capacity building training for the Tariff Planning Team to strengthen their technical skills in Tariffs review in a dynamic environment.

3.2 Demand and Supply Planning

- i. Support the interpretation and alignment of the LCPDP Medium Term Plan 2020-2025 with KPLC medium term Plan.
- ii. Guide the technical team to prepare realistic assumptions in demand forecasting, generation planning and network expansion.



- iii. Assist in Capacity building for technical teams at KPLC, other stakeholders to be able to execute their mandates effectively.
- iv. Prepare a framework for commercial restructuring of KPLC to enhance its business strategy.

3.3 System Losses

- i. Advise management on appropriate system loss reduction strategies borrowing from ongoing projects and best practices from similar Utilities.

3.4 Review of the Last Mile Connectivity Project

- i. Analytically assess the impact of last mile connectivity project in relation to operation and maintenance cost of distribution lines, system losses and growth in electricity demand in light of the CAPEX spent..

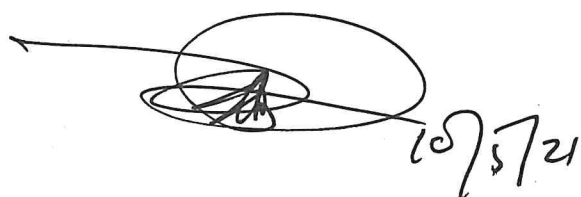
3.5 Transmission and Distribution Costs

- i. Analyse the evolution of KPLC transmission and distribution costs in relation to empirical evidence as experienced by other Utilities across the globe.
- ii. Assess the suitability of allowed transmission and distribution costs for additional infrastructure and propose appropriate rates (% of the project cost) based on studies elsewhere.

4. Specific Key tasks

The technical expert will among other roles focus on the following:

- i. Assess the robustness of the current tariff making methodology and review the existing Tariff model for the Company.
- ii. Interrogate all the components of the Revenue Requirements for suitability and relevance in light of the Energy Act, 2019 and Retail Tariff Review Policy of 2005.
- iii. Review power purchase costs for prudence and efficiency.
- iv. Advise on how and what must be done to ensure that the retail tariffs are brought down and projection on how soon this can be achieved.
- v. Review Kenya Power transmission and distribution operational costs for prudence and efficiency.
- vi. Analyze the evolution of KPLC transmission and distribution costs in relation to empirical evidence as experienced by other Utilities across the globe.
- vii. Review Ketraco transmission operational costs for prudence and efficiency.
- viii. Review the existing Regulated Asset Base.
- ix. Recommend a suitable Return on Equity (RoE) for the Regulated Asset Base.



10/5/21

- v. Extensive experience in Kenya's energy institutional and policy development and reform, working with government agencies and multiple stakeholders;
- vi. Adequate understanding of the operations of electric power grids with intermittent renewable energy.
- vii. Must have demonstrated track record of successfully managing and coordinating a diverse group of professionals in accomplishing Cost of service studies.

6. Presentation and reporting

The technical expert will be working in close cooperation with the Kenya Power and will be reporting to the MD&CEO. He will however be supervised by the General Manager, Business Strategy.

7. Terms of contract and Commencement of work

The consultant will be hired and paid on deliverables while the commencement of work will be as provided in the letter of appointment.

8. Deliverables

- Documenting the findings of the existing electricity pricing, planning and quality of supply improvement with recommendations for improving the entire process.
- Identify anomalies within the pricing, planning and quality of supply improvement process that expose Kenya Power to Revenue loss, system inefficiency and full cost recovery.
- Presenting to the Board the findings and recommendation for improvement of the electricity pricing, planning and quality of supply improvement processes.

The service provider shall be required to give 3 reports namely;

- Inception Report
- Draft Report
- Final Report

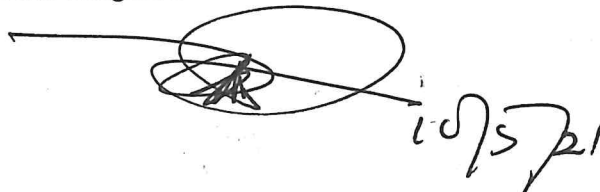
9. Proposed Timelines

The review of the electricity pricing, planning and quality of supply improvement processes is expected to be completed in 6 months. Findings from the inception report may lead to further discussions with the Kenya Power Board of Directors.

10. Ethical Code and Professionalism

The Service Provider shall carry out the above assignment in accordance with the highest standard of ethical competence, integrity and professionalism, having due regard to the nature and purpose of the assignment. They will at all-times and purpose, regard as strictly confidential all knowledge and information not within the public domain which may be acquired in the course of carrying out this assignment and the information shall not be directly or indirectly disclosed to any person whatsoever, except with the written permission of.

The Service Provider will waive all copyrights of documents, data and information prepared as part of this assignment in favor of KPLC.

A handwritten signature, possibly 'J. K. Njoroge', is written over a large, loopy circular mark. To the right of this, the initials 'J/S/P' are written in a stylized, cursive manner.

- x. Review and propose adequate rates for the Time of Use Tariffs applicable for the 4th TCP.
- xi. Assess the impact of Last Mile Connectivity project on operation and maintenance costs of the distribution lines, system losses, and growth in electricity demand and propose a suitable system loss reduction path.
- xii. Analyse system losses and propose appropriate system loss strategies borrowing from ongoing projects and best practices from similar Utilities.
- xiii. Use algebraic methodology to scientifically forecast a suitable Unit Sales for use in the 4th TCP Revenue Requirement model.
- xiv. Undertake a comprehensive assessment of the power sector planning in Kenya and evaluate its adequacy in addressing emerging issues. These should include intermittent power plants integration, ancillary services requirements, demand-supply imbalances among others.
- xv. Assist in stakeholder engagement strategy review and provide recommendation for compelling case, and a highly influential stakeholder engagement roadmap that would guarantee success.
- xvi. Assist in Capacity building for technical teams at KPLC, other stakeholders to be able to execute their mandates effectively, and among others;
 - Organize various training sessions in electricity tariff setting
 - provide expertise in development of pricing models for cost reflective power tariffs
 - Guide the technical team to prepare realistic assumptions in demand forecasting, generation planning and network expansion.
- xvii. Prepare a framework for commercial restructuring of KPLC to enhance its business strategy

5. Qualifications of the Technical Expert

- i. A graduate degree in a field such as engineering, economics, public policy, business, or other similar fields is mandatory.
- ii. Must have at least 10 years of work experience in the power sector with a focus on energy planning, determination of cost of service and experience managing diverse teams.
- iii. Must have extensive knowledge of international best practices in power systems planning, Cost of service studies, economics, business models, institutional assessments, contract procedures, and project follow-up.
- iv. Understanding of technical, commercial, financial and legal terms of power sale to distribution companies is critical.



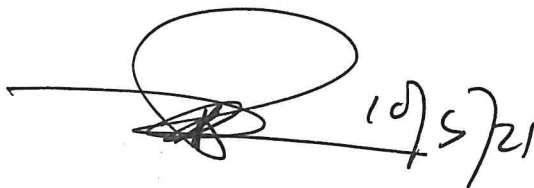
Handwritten signature and date 10/5/21

11. Quality Assurance Reviews of the Work

Quality Assurance of the assignment will be provided in form of regularly reporting as agreed by the parties and adherence to schedules and timeframes.

12. Improvement of TORs

The Consultant may offer suggestions and improvements in the Terms of Reference, which he considers would result in better implementation of the project. Such proposals when accepted will form part of the Terms of Reference of the proposals submitted by the consultant. The effect on the time and cost estimates given under the above clause shall be clearly identified.

A handwritten signature, possibly reading 'R. S.', is written over the date '10/5/21'.