

# REQUEST FOR EXPRESSION OF INTEREST FOR FIRMS TO UNDERTAKE A PROOF OF CONCEPT ON THE USE OF UAV TECHNOLOGY (DRONES) TO PROVIDE NETWORK SUPPORT AND MAINTENANCE SERVICES

<b>EXPRESSION OF INTEREST NO:</b>	<b>KP1/9A.2/EOI/01/BS/21-22</b>
<b>COUNTRY:</b>	<b>KENYA</b>

## BACKGROUND

The Kenya Power and Lighting Company PLC is a public utility company established with the mandate of distributing and retailing electricity. The company currently incurs huge costs while undertaking network maintenance and support functions. These functions include, **Inspection of grid infrastructure, Network Maintenance and Support, Vegetation Management, Network Design, Power Line Construction and Emergency Network Response**. These tasks are currently performed manually by employees, third-parties and depend to a large extent on the use of the company's aerial function which relies on its single existing helicopter. The company is also facing a varying mix of regulatory requirements, increased public scrutiny, growing operational costs, tight profit margins, and demands for better quality of service delivery. The combination of these pressures has compelled the company to re-evaluate its approaches to distributing power through business innovation. Through innovation the company aims to be in better position to **serve its customers, cut costs and substantially grow its revenue** so as to remain competitive in the fast growing energy market.

## OBJECTIVE

The company now intends to implement on a turnkey basis, a Pilot, UAV based technology platform that will be used to carry out various services for the company through. The services to be offered will include, **Inspections** (power lines, substations), **Vegetation Management, Corridor Mapping, Digital Terrain Modelling (DTM), and Line Construction**. The UAV platform will have a major impact on the company's business and will be used alongside the existing company helicopter. The adoption of UAV based technology platforms are not only just cost effective but they also **increase reliability, improve safety and reduces response times**. The adoption of UAV usage by Kenya Power will further future-proof the company's utility business and result in reduced power costs to customers and better customer experience. Kenya Power will therefore greatly benefit from an in house end-to-end UAV based technology platform developed collaboratively with a suitable technology and inspection partner on a turnkey basis.

## PROOF OF CONCEPT

In order for Kenya Power to develop a business value thesis for the full adoption of the UAV and related technologies in its network operations, the company will undergo a two stage implementation process, the **Proof of Concept** and **Pilot Phase**. The Proof of Concept phase will ensure that Kenya Power fully understands the value proposition offered by the UAVs and related technologies. This phase will be used by the selected service providers to clearly demonstrate to Kenya Power within a limited scope and time period, the following;

- Technical Requirements;** UAV Technologies, Payload Technologies and Mobile Deployment Vehicles.
- Operational Requirements;** Mission Planning, Operations and Control.
- Data Processing and Analysis;** Capability, Data Stitching, Big Data, Machine Learning, Artificial Intelligence and Reporting.
- Cost Indicators and Drivers;** Business Model (as a service or purchase) for UAVs, Operations and Control Systems and Data Processing (including storage).

The scope of the Proof of Concept process will include the following;

REQUIREMENT/TASK	DESCRIPTION
1. Inspection Services	Kenya Power will require the service provider to perform the identified task on Low Voltage (11/33kV), High Voltage (132/220kV) and a selected Substation (132/220kV) using <b>Rotor Based UAVs</b> equipped with payload technologies that include, <b>Digital Camera (Still/Video) and Infrared Camera (Thermal)</b> . The payloads should allow for the collection of data, uploading of data and sending of real time footage to the Kenya Power maintenance team that will be on the ground.
2. Data Processing and Analysis	Kenya Power will require the service provider to perform the processing and analysis of the above collected data on a robust Data Processing Platform which should have advanced and highly automated tools for data processing and analysis. The data processing should show Image Stitching, Video Streaming, Thermal Imaging and Stitching. The platform should further demonstrate how Kenya Power can shift to a <b>proactive</b> rather than <b>reactive</b> maintenance regime by providing real time access to exception inspection reports that allow for the detection of <b>Objects, Anomalies and Corrosion</b> .
3. UAV Management and Operations System	Kenya Power will require the service provider to perform operations and control tasks that include; mission planning, mission requests, commencement, mission completion, incidents reporting, UAV maintenance and general administrative tasks (Personnel, Documentation, Regulatory, UAVs and Payloads).
4. UAV Mobile Platforms	Kenya Power will require the service provider demonstrate the capability and features of their proposed <b>UAV Mobile Operations Platform, UMOP</b> for field operations, which will be used to transport and perform missions as required. The details of the UAV Mobile platform should include; <b>Power Systems, Communication Station, Weather Station, Work Space and Display Unit</b> .

REQUIREMENT/TASK	DESCRIPTION
5. Training	The adoption of UAV based technologies requires new skills in Kenya Power which is not limited to UAV piloting alone. The training will be for Pilots, Inspectors, Line Construction, Mission Planning and Operations, Information Technology Support and Data Processing and Analytics. Kenya Power would like to know how that training will be provided by the service provider.
6. Others	In the Pilot Phase, Kenya Power will rely solely on the service provider or consortia for Regulatory Licensing Support and Experienced Pilot Support. Kenya Power will like to know how this will be achieved.

## ELIGIBILITY AND QUALIFICATION CRITERIA

Kenya Power is now seeking for a suitable UAV Technology Service Providers through this Expression of Interest, EOI. The submission of an EOI will not constitute a bid but the information will be solely used by Kenya Power for the purpose of completing its prequalification exercise and thereafter in the preparation of a **Request for Proposal (RFP)** document which will be issued only to the final prequalified service providers or consortia.

- Participating bidders shall be required to meet the requirements under Section 55 of the Public Procurement and Asset Disposal Act 2015 (Kenya).
- The UAV Technology Service Providers must provide adequate information regarding their **company profile, qualification and competence** to undertake such a project and specific experience in performing similar work projects. In addition, the service provider must meet the following minimum requirements;
  - They should be currently involved in offering **Commercial UAV Technology Services** and in possession of a current **Remotely Piloted Aircraft Systems Operator Certificate (ROC)** from Kenya Civil Aviation Authority, KCAA, an appropriate **Training Certificate** from a recognized training body and approval from the **Ministry of Defense** to overfly restricted security areas. They should provide proof of each certificate and clearance approval.
  - They must have completed at least **three (3)** similar projects involving use of UAVs within a commercial environment with at least one being within the power utility industry within the last **3 years**. They should provide a list clearly showing the **Scope of Work, Sector/Industry, Duration, Total Order Value and Status (ongoing/completed)**. They should provide supporting documents in the form of Reference Letters, Letter of Completion or Purchase Orders). The reference documents must be provided with Name, Designation, Mobile Number and Email Id of the relevant point of contact at the referenced client organisation.
  - They must provide their audited financial accounts for the last **three (3)** years clearly showing profit, turnover and company's capital. The consolidated audited revenue of the bidder for the last three (03) years must be a minimum of **KShs.3 Billion** or its **USD** equivalent.
  - They should provide ownership documents of their company and consortia members where applicable. This should include certificate of incorporation, beneficial shareholder information, VAT Certificate and Tax Compliance Certificate.
- They should meet all the costs related to the Proof of Concept phase which will include cost of making and conduction the POC to Kenya Power in an area(s) that will be identified by Kenya Power. The POC will be undertaken within 3 days for each bidder (excluding travel time to locations).
- Where the service provider is a Joint Venture (JV), the Expression of Interest shall include a copy of the JV Agreement entered into by all members. Alternatively, a letter of intent to execute a JV Agreement in the event of a successful proposal shall be signed by all members and submitted with the Expression of Interest, together with a copy of the proposed Agreement.

This invitation for Expression of Interest shall lead to the **Short-Listing** of eligible **Service Providers** who meet the above minimum requirements and who will then be invited to undertake the **Proof of Concept, POC**. The successful completion of the POC by an eligible Service Provider will further lead to their **Pre-Qualification**. The **pre-qualified service providers** will then be invited through a **Request for Proposal (RFP)** to submit both technical and commercial proposals to carry out the assignment starting with the **Pilot Implementation Phase**.

Interested bidders may obtain further information at the address below during office hours, between **0900 to 1200 Hours** and **1400 to 1630 Hours** (East Africa time) or send e-mails to the addresses shown below.

Completed Expression of Interest are to be submitted in electronic format on the KPLC's E-procurement portal in PDF format on the due date and time published on the portal. Tenderers are required to visit the portal and KPLC's website ([www.kplc.co.ke](http://www.kplc.co.ke)) from time to time for revised closing dates and addendums. Prospective bidders should register for E-Procurement to enable them access the KPLC portal under "New Supplier Registration" found under the Tenders Tab. The Tender is to be submitted ONLINE on or before **12<sup>th</sup> January 2022**.

Tenders will be opened electronically promptly after closing time and Bidders or their representatives are welcome to witness the opening at the Stima Plaza Auditorium.

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