

REQUEST FOR PROPOSALS – Consultancy Services for Renewable Integration Gap Analyses in Power System of Kenya

Closing date of RFP: December 8, 2017

Implementing Agency: United States Energy Association

Funding Agency: United States Agency for International Development through a subcontract from Tetra Tech ES, Inc.

The United States Energy Association (USEA) is inviting prospective organizations through this request for proposal (RFP) to submit proposals for consultancy services to conduct a renewable integration gap analyses for Kenya’s power system. This is an activity implemented by USEA under a subcontract from Tetra Tech ES, Inc. through funding provided by the United States Agency for International Development (USAID) Power Africa Transaction and Reforms Program (PATRP).

Proposals are due by 17:00 hours EST of the closing date. Please forward your proposal in soft copy with a read receipt to Ms. Sarah Blanford, Senior Program Coordinator, at sblanford@usea.org.

As this is a USAID-funded program, the RFP follows USAID Procurement Regulations and Laws. All bidder details will be kept confidential. USEA Board of Directors are prohibited from application.

I. INTRODUCTION

USEA

The United States Energy Association (USEA) is the U.S. member of the World Energy Council (WEC), the accredited energy body of the United Nations.

USEA serves as a bipartisan organization that represents 150 members across the U.S. energy sector, from the largest Fortune 500 companies to small energy consulting firms.

USEA’s team of international energy specialists work with the U.S. Agency for International Development (USAID) to expand energy infrastructure in developing countries and with the U.S. Department of Energy to advance the policy discussions on advanced fossil technology.

Read more at www.usea.org.

II. BACKGROUND

Kenya Energy Sector Overview

The Government of Kenya has set forth its “Vision 2030,” a program to transform Kenya into a “newly industrializing, middle-income” country. Yet, Kenya has 2,150 MW of generation capacity to serve its population of more than 43 million, which constrains economic growth. Kenya is believed to possess more than 7,000 MW of undeveloped geothermal energy resources in the Rift Valley. Wind and biomass energy are also significant potential sources for

power generation. [Power Africa](#) is helping Kenya reduce reliance on expensive diesel-fueled generation and other high-cost fossil resources.

Kenya aims to increase generation capacity by 5,000 MW by 2016 and by 23,000 MW by 2030. The Government of Kenya is focused on sustaining a stable investment climate for private-sector participation in energy, developing expanded transmission and distribution networks to deliver power to customers, maintaining a creditworthy off-taker, maintaining cost-reflective tariffs, and reducing inefficiency in the sector to support more affordable end-user tariffs.

Power Africa Support

In Kenya, Power Africa is supporting the development of the energy sector through financing, grants, technical assistance, and investment promotion. Power Africa is working to mobilize more than \$1 billion in private investment for electricity to accelerate geothermal and wind projects.

Central to the work of Power Africa in Kenya is the Grid Management Support Program (GMSP). GMSP is providing technical assistance to address key challenges of integrating intermittent renewable energy into the national grid. The Grid Management Support Program has four components: (1) a renewables integration study, (2) systems operations gap analysis, (3) training and twinning with utilities with significant wind power penetration, and (4) revising the transmission and distribution grid codes.

III. SUMMARY

The Grid Management Support Program has undertaken a range of activities within Kenya, with the overall objective of developing a robust response to the integration of intermittent renewable power onto the grid, given the near-term pipeline of projects that are considered likely to reach financial close, and proceed to construction and operations phases. The 310 MW Lake Turkana Wind Project (LTWP) in particular, a large-scale intermittent power producer located several hundred kilometers from Nairobi (Kenya's main load center) has drawn criticism from some stakeholders. This criticism has included some potential leaders, at the time of financing, saying the variable power production profile will not match the Kenyan demand profile, and additionally the existing grid infrastructure is inadequate to integrate an intermittent producer of that size. In response, initial work completed under the GSMP sought to address these questions, allowing LTWP lenders and equity investors to gain insight into the ability of the Kenyan grid to absorb such intermittent production (assuming the timely construction of the 500 km transmission line) and proceed to the financing and construction of this landmark wind project.

With the near-term commissioning of the LTWP (the power generating facility is fully constructed, but construction of the transmission line by KETRACO and its subcontractors remains a work in progress), the ability of the Kenyan grid to absorb and benefit from intermittent, renewable power generation is once again cast into the spotlight. Apart from LTWP, several other renewable projects are scheduled to reach financial close in the near term, implying that renewable, intermittent power will form a greater percentage of the overall national generating mix. Other near-term intermittent power projects include (among others):

1. Kipeto wind project (100 MW)
2. Radiant solar (40 MW)
3. Eldosol solar (40 MW)
4. Alten solar (40 MW)
5. Malindi solar (40 MW)
6. REA Garissa solar (55 MW)
7. Isiolo solar (40 MW)
8. Kenergy solar (40 MW)
9. Makindu solar (30 MW)

Including LTWP, the above near-term pipeline of wind and solar projects alone account for more than 735 MW, which is a substantial buildout of intermittent power production in the Kenyan context. As some of the projects now approach financial close, and with the near-term commissioning of the LTWP, the practical implications of the GSMP

recommendations and Kenya Power and Lighting Company's (KPLC) and Kenya Electricity Transmission Company's (KETRACO) operational readiness to successfully absorb and dispatch such production urgently need to be evaluated.

As a consequence, GSMP is transitioning its focus, to take a more hands-on, operational approach, focused on key operational steps to be taken at the KPLC and KETRACO levels to ensure adequate integration. This transition by the GSMP is expected to form the final component of GSMP's work in Kenya, and will identify and assist KPLC and KETRACO to implement specific recommendations in order to successfully absorb and dispatch intermittent renewable power produced.

IV. STATEMENT OF WORK

Taking cognizance of GSMP's work already completed and recommendations made to date, and with a view on prioritizing and operationalizing the recommendations of the GSMP, the Consultant will:

1. Evaluate at ground level within KPLC and KETRACO the operational readiness of these entities to absorb and dispatch renewable power successfully, noting the characteristics of the pipeline of renewable projects in Kenya, including sizing and phasing
2. Overlay the recommendations made by GSMP to date, and identify which recommendations may be practically achievable and beneficial to KPLC and KETRACO within a reasonable timeframe ("Immediate GSMP Implementation Steps"), noting the operational readiness and capacity within the utilities (identified in #1 above);
3. In addition to the Immediate GSMP Implementation Steps (identified in #2 above), in consultation with KPLC and KETRACO, identify other immediately implementable (practically achievable steps) to enhance the utilities' ability to move towards implementation in the most expedient manner possible ("Additional Implementation Steps")

In combination, the Immediate GSMP Implementation Steps and the Additional Implementation Steps (together the "Implementation Steps"), are intended to provide KPLC and KETRACO with a set of actionable steps to operationalize at the earliest opportunity. Actual implementation of the Implementation Steps is beyond the scope of this engagement.

V. SCOPE OF WORK

Consultation process

- The Consultant shall travel to Nairobi for a 5-10 working day period (the "Consultation Period") and primarily work at the National Control Center (the "Consultation Location"). The exact number of working days in Nairobi will be agreed with USEA.
- The Consultant shall interface with KPLC and KETRACO staff who have been engaged with the GSMP/[SOGA](#) work to date ("Key Stakeholder Engagements") in order to develop the Implementation Steps as outlined above.

USEA responsibilities

USEA will be responsible for arrangements and associated costs for one trip for up to 2 consultants to Kenya. USEA will arrange and bear the costs of:

- Per diem (lodging, M&IE) for up to 2 consultants in Nairobi, Kenya, to include all travel and training/workshop days and maximum of 1 full day of rest in-country prior to start of activity
- Economy-class roundtrip international flights for up to 2 consultants to Nairobi, Kenya
- Ground transportation to/from meetings in Nairobi, Kenya
- Single-entry visas for up to 2 consultants
- Insurance for the duration of the travel to Kenya
- Meeting space and AV (if required)
- Printing/photocopying of handout materials (if required)

VI. SCHEDULE

Work is anticipated to begin the mid January 2018.

VII. DELIVERABLES

Each deliverable will be submitted in accordance with agreed project program for review, check and approval.

Having derived the Implementation Steps (as outlined above), the Consultant shall produce and make available to USEA, PATRP, KPLC, and KETRACO a report detailing the Implementation Steps (the “Gap Analysis & Recommendations Report”) and include appropriate justification.

All reports will be prepared and submitted in two stages

- a. Draft Gap Analysis: Determine high priority gaps in system operations and short term planning that can be addressed via changes in operating procedures/processes as opposed to capital projects. Deliverable must include a list of gaps and recommendations for mitigation. Recommendations in the deliverable should not involve capital expenses – submitted for review and comments.
- b. Final Report – Final Gap Analysis: Determine high priority gaps in system operations and short term planning that can be addressed via changes in operating procedures/processes as opposed to capital projects. Deliverable must include a list of gaps and recommendations for mitigation.

Other Deliverable: The consultant will also prepare a separate, brief final report for USEA providing the method, specific and general overview of the results of the technical assistance for Kenya. Expected length of report maximum three pages.

VIII. REPORTING

The consultant will report to USEA.

IX. PROPOSAL CONTENT

The proposal must contain the following:

- a) A cover letter to the proposal
- b) A technical proposal, including:
 - Demonstration of an understanding of the issues to be addressed under the proposed statement and scope of work specified above by providing a summarized technical approach (Maximum 2 pages).
 - Proposed project schedule to perform the tasks under this project highlighting any deviations to the proposed scope of work specified above.
- c) A financial proposal, including:
 - Detailed justification (i.e. line item budget)
 - Labor, other direct costs, indirect costs, and level of effort for each employee proposed for this project
 - Labor, other direct costs, indirect costs broken down by task
- d) Bio sketches of personnel, including at least 1 – 2 subject matter experts that will be dedicated to the project

- e) Summary of relevant experience of each proposed team member for (not beyond) the past 10 years. Relevant experience should be listed chronologically (starting with the most recent).
- f) Completed USAID Consultant Employee Biographical Data Sheet forms for each employee proposed for this project (<https://www.usaid.gov/forms/aid-1420-17>)
- g) Summary of the work to be performed by each employee proposed for this project
- h) Consultant's D-U-N-S Number and proof of System for Award Management Registration, Renewal & Migration

X. EVALUATION CRITERIA

Selection of an offer for contract award will be based on an evaluation of proposals against technical merit and budget justification. Proposals shall first be evaluated from a technical standpoint based on the technical proposal without regard to proposed budget justification. For those proposals determined to be technically acceptable, budget justification will be evaluated.

XI. PROPOSAL TIMEFRAME

E-mail Notification of Intent to Bid

The required e-mail notification of intent to bid of should be e-mailed to sblanford@usea.org with a read receipt. Please include "RFP – Kenya RE Gap Analyses" in the subject line and provide your name or name of organization and contact email address as well as a short note describing your intent to respond to this solicitation in the body of the e-mail.

All questions related to this RFP should be submitted via email to Sarah Blanford at sblanford@usea.org no later than November 24, 2017. All questions and answers will be provided to all prospective bidders.

Interested parties are requested to submit final proposals no later than December 8, 2017. Proposals should be sent via email with a read receipt to Sarah Blanford at sblanford@usea.org.

END OF RFP