



**United States Energy Association
Power Africa: A U.S. Government-Led Partnership to Increase Sub-Saharan Africa’s Access to Energy
Request for Proposal – Geothermal Industrial Park Technical Assessment**

REQUEST FOR PROPOSAL – Geothermal Industrial Park Technical Assessment

Closing date of RFP: Friday, November 1, 2019

Implementing Organization: United States Energy Association

Funding Agency: United States Agency for International Development

The United States Energy Association (USEA) is inviting prospective organizations or individuals through this Request for Proposal (RFP) to submit proposals for a technical and economic assessment of a planned industrial park. This is an activity implemented by USEA, funded by the United States Agency for International Development (USAID) as part of the Power Africa Initiative.

Proposals are due by 17:00 hours EST of the closing date. Please forward your proposal in soft copy (PDF form) to Ms. Ashley Ndir, Senior Program Coordinator, at andir@usea.org

As this is a USAID-funded program, the RFP follows USAID Procurement Regulations and Laws. All bidder details will be kept confidential.

I. INTRODUCTION

The U.S. Energy Association (USEA) is the U.S. Member Committee of the World Energy Council (WEC). Headquartered in Washington, DC, USEA is an association of public and private energy-related organizations, corporations, and government agencies.

Through a cooperative agreement with the USAID Bureau for Economic Growth, Education and Environment (E3), USEA implements the Energy Utility Partnership Program (EUPP), available to all USAID-assisted countries and USAID Missions. EUPP supports the efforts in USAID-assisted developing countries to increase environmentally sustainable energy production and to improve the operational efficiency and increased financial viability of their utilities and related institutions, with the goal of increasing the access of these countries to environmentally sound energy services.

USEA conducts a number of activities under the EUPP mechanism for Power Africa - a U.S. Government-led partnership to increase Sub-Saharan Africa’s access to energy. Power Africa uses a wide range of U.S. government tools to support investment in Africa’s energy sector. From policy and regulatory best practices, to pre-feasibility studies and capacity building, to long-term financing, insurance, guarantees, credit enhancements and technical assistance, Power Africa provides coordinated support to help African partners expand their generation capacity and access.

The U.S.-East Africa Geothermal Partnership (EAGP) is a public-private partnership between the U.S. Agency for International Development (USAID) and the U.S. Energy Association (USEA). It was established in September 2012 to promote the development of geothermal energy projects and increase private sector investments in geothermal in East Africa. It also encourages and facilitates the involvement of the U.S. geothermal industry in the region. With an estimated 15,000 MW of potential geothermal capacity in East Africa - a clean, reliable, baseload power solution – geothermal energy is critical to East Africa’s economic development especially as a base-load power source.

II. BACKGROUND

Oserian is a Kenyan flower farming company with a total of 20,000 acres. At their site in Naivasha, Oserian owns 5,000 acres of land on which there are proven geothermal resources. They are located directly across from KenGen’s Olkaria fields. They currently have three wells, two power producing wells and one heat producing well. Oserian is home to the largest geothermal heating for agriculture plant in the world and has been named Kenya’s best renewable energy company by the Kenya Association of Manufacturers. They currently heat 140 acres of greenhouses and generate $\frac{3}{4}$ of a million gallons of water per day. Oserian received a license to retail electricity (within their land) from Kenya’s Energy and Petroleum Regulatory Authority (EPRA), making them the only company in Kenya with a license to generate, transmit, and retail electricity.

Oserian’s operations were running at a power deficit and thus Oserian established their own 1 MW solar plant in January 2019. This plant employs one of the most efficient solar modules in the world. After adding solar into their energy mix, Oserian’s grid became unstable due to the fluctuations in production. Currently, one of their major challenges is grid stability from the integration of solar onto their grid.

Oserian has developed a Master Plan which consists of an industrial park, commercial centers, a game park conservancy and mixed-use housing scheme. Their industrial park, Two Lakes, will host manufacturing companies including a greenhouse film manufacturer, an animal food production facility, and a textile producer. If Oserian can achieve the goals in their master plan they will be able to provide power to these firms. The greenhouse film manufacturer has a demand of 2 MW of electricity, the animal food production facility will have a demand varying between 0.7 MW – 1.5 MW. The textile manufacturer has a demand for high pressure steam.

This RFP seeks proposals for a technical and economic assessment of Oserian’s planned industrial park. Oserian’s goal for their industrial park is to meet their clients’ energy demands fully with 100% renewables including geothermal, solar and pumped hydro storage.

III. SCOPE OF WORK

The purpose of this RFP is to solicit proposals from various candidate organizations, conduct a fair evaluation, and select the organization deemed most suitable to conduct the consultancy.

USEA plans to arrange for one trip to Nairobi and Naivasha, Kenya, not to exceed ten (10) working business days, for meetings and a site visit to Oserian. During this time, the Consultant(s) will work closely with the Oserian management team.

After the in-country visit, the Consultant(s) will work remotely to prepare a report providing:

- a. Technical Analysis
 - i. Identify the available sources of 100% renewable energy that can be used to meet the load growth projections for the planned industrial park.

- ii. Perform an analysis of each of those generation source to determine how each of their generation technical characteristics are best suited and can be used in the Oserian electrical grid expansion.
 - iii. Determine the correct combination of the identified generation resources that can be applied to the Oserian grid that maintaining a reliable and secure grid while meeting growth requirements. Provide PSS/E modeling results that prove the suggested solution provides grid reliability and stability. The proposed solution can include storage options.
 - iv. Load growth projections should include three scenarios: low, business as usual, and high based on the various growth projections as determined by Oserian,
- b. Cost/Benefit Analysis of investment – Conduct a payback analysis of the proposed investments looking at several relevant scenarios:
- i. 100% renewable energy technologies
 - ii. hybrid green and fossil technology (diesel back-up)
 - iii. hydro pumped storage vs. battery storage
 - iv. staged investments and least-cost investment plan
 - v. the potential impact of adding additional residential and/or commercial customers
 - vi. regulatory and legal aspect of such potential additions.

IV. SCHEDULE

The final report from this consultancy must be submitted to and approved by USEA and Oserian no later than June 30, 2020.

V. DELIVERABLES

The following deliverables are anticipated:

- Conduct an on-site assessment at Oserian in Naivasha, Kenya for up to ten (10) working business days;
- Final report to include the following:
 - Summary of meetings and communication with Oserian staff;
 - Full technical analysis and cost/benefit analysis, including all relevant data and final recommendations detailed in the Scope of Work

USEA will be responsible for all logistical arrangements, including:

- All travel-related logistics and costs for the consultant(s), in compliance with Fly America Act and the Federal Travel Regulations; this includes:
 - Roundtrip economy airfare;
 - Meals and Incidental Expenses stipend for consultant(s), calculated according to the Federal Travel Regulations, and using U.S. Department of State rates;
 - Visa costs;
 - Airport transfers;
 - Lodging;
 - Health and accident coverage.

VI. PROPOSAL CONTENT

The proposal must contain the following:

- a) A cover letter to the proposal;
- b) A technical proposal, not to exceed fifteen (15) pages, including:
 - Proposed work plan and methodology;
 - Description of past technical studies, including proposed travel dates.
 - A timeline for this consultancy
- c) A financial proposal, including:
 - Detailed justification (i.e. line item budget);
 - Labor, other direct costs, indirect costs, and level of effort for the consultant(s) proposed for this project.
- d) Short CVs/bio sketches of all proposed Consultant(s);
- e) Summary of the work to be performed by each employee proposed for this project;
- f) Company/organization Data Universal Numbering System (DUNS) number and confirmation of current status in the System of Award Management (SAM);
- g) Completed USAID Contractor Employee Biographical Data Sheet forms for each employee proposed for this project (<https://www.usaid.gov/forms/aid-1420-17>).

VII. EVALUATION CRITERIA AND CONTRACT MANAGEMENT/OVERSIGHT

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

Bidders are required to have a Data Universal Numbering System (DUNS) number and maintain a current registration in the System of Award Management (SAM).

A subcontract agreement between USEA and the Consultant(s) shall be subject to all USAID Special Terms and Conditions, including all mandatory FAR Flow-Down clauses, where applicable, and the provisions included in 2CFR200 and 2CFR700. All bidders are strongly encouraged to review these provisions prior to submitting a proposal.

- Standard Provisions for U.S. Nongovernmental Organizations:
<https://www.usaid.gov/sites/default/files/documents/1868/303maa.pdf>
- 2CFR200: <https://www.gpo.gov/fdsys/pkg/CFR-2014-title2-vol1/pdf/CFR-2014-title2-vol1-part200.pdf>
- 2CFR700: <https://www.gpo.gov/fdsys/pkg/CFR-2015-title2-vol1/pdf/CFR-2015-title2-vol1-part700.pdf>

Subcontract agreement management, oversight and payment will be carried out by USEA.

VIII. QUESTIONS AND CLARIFICATIONS

For all questions and clarification requests please contact Ms. Ashley Ndir, Senior Program Coordinator, at andir@usea.org. All questions are due by October 25th. All responses will be made public on our website.

END OF RFP

Questions & Responses to RFP – Geothermal Industrial Park Technical Analysis

Please find below all questions received regarding the Industrial Park Technical Analysis, note all responses are in red.

1. Section V. of the RFP notes that USEA will cover all travel-related costs. Can USEA please confirm the following costs?
 - a. Interpretation **All work will take place in English; thus interpretation would not be a necessary cost.**
 - b. Printing/Photocopying **Estimates for direct costs, including photocopying and printing, supplies/material, etc. should be incorporated into the financial proposal**
 - c. Miscellaneous supplies/materials **Estimates for direct costs, including photocopying and printing, supplies/material, etc. should be incorporated into the financial proposal**
 - d. Communication costs **Communication will take place over email, Skype and Whatsapp, USEA does not anticipate additional communication costs.**
 - e. Bank charges **Foreign transaction fees should be estimated in the budget. Since travel and logistics for this program are arranged and paid for by USEA we do not expect the consultant to incur any additional bank charges.**
2. Please indicate the anticipated contract type for this award? **Fixed price contract**
3. Please indicate the estimated budget range for this assessment? **USEA is not prescribing a budget for this consultancy, a financial proposal should be submitted along with the technical proposal.** Please share the anticipated assessment start date? Is the assessment to start immediately upon contract award? If so, what is the anticipated award date? **The anticipated start date is mid to late January. The dates will be discussed and finalized in coordination with the Oserian Two Lakes team and USEA's team prior to finalizing the dates for the in-country assessment.**
4. Please advise if Offerors are required to submit a copy of the Offeror's current NICRA? **If the offer has an approved NICRA please submit with the proposal.**
5. Will USEA pay fee under this contract? **This will be a fixed-price subagreement for labor and indirect costs, with payments issued upon receipt of agreed deliverables. Travel and other direct costs will be paid by USEA directly. Any fees should be incorporated into the financial proposal.**
6. What is the expected level of effort (days of LOE) anticipated under this award? **The proposed level of effort is at the discretion of the bidder when submitting a proposal.**
7. In the project Background, we noted that Oserian is experiencing grid stability issues with their solar plant. Is a near term analysis of potential mitigation strategies required to stabilize their current generation prior to expansion of the industrial park?

Yes, this should be addressed immediately so as to stabilize Oserian's mini grid. The Industrial park needs stable power free from surges and fluctuations. Their current projection for energy needs is about 8Mw in the next two years.

8. Does Oserian plan on having a connection to the Kenyan grid as part of their expansion? If yes, will this be used as a backup or primary source of energy supply?

Yes, but there is no intention to feed Power to the national grid. Oserian needs a direct connection of 33Kv line into their existing infrastructure to be used as a fallback incase Oserian's grid goes down for any reason.

9. Noted that geothermal is a potential generation expansion. Will Oserian via their geothermal resource consultant provide estimates of available/sustainable future geofluid supply? **Oserian's concession area has an estimate of 165Mw of which only 3.5Mw has been brought to the surface. The concession area borders both Olkaria Geothermal Power Plants and Ormat geothermal complex. All available information can be shared with successful consultant once the contract is awarded. Will they provide estimated geofluid process conditions (temperature, enthalpy, NCG, etc.)? Once drilling is done and Wells tested, the data will be shared. Would future supply rely on currently underutilized wells, or is there a potential for expansion of production from the reservoir via a drilling program? There is potential for expansion via drilling. There are no underutilized Wells at the moment.**
10. What is Oserian's current peak electrical and thermal energy demand? What percentage is provided by their geothermal plant? **The current peak demand for Oserian is 2.3Mw; The geothermal installed capacity (3.2Mw) is enough to meet the current need; however due to cyclic nature and drop in output from one of the wells, Oserian cannot meet their internal needs from Geo plants alone. Geothermal can meet 90% of the load.**
11. The RFP notes a low, business as usual and high growth projection. For our proposal assessment, would it be possible to provide a rough order of magnitude of these values? **Please find below energy demand projections in the next two years: -**

	Current Situation	Medium (one year)	High (two years)
Geothermal	2.6Mw	3.6Mw	5Mw
Solar	1Mw	1Mw	2Mw
Hydro	0	1Mw	1Mw
Gross	3.6Mw	5.6Mw	8Mw

12. Has Oserian prepared an evaluation of pumped hydro storage options in the vicinity of the flower farm? **No, evaluation for pumped hydro storage has not been done. The detailed 1 meter topographical survey can be available including existing reservoir/dams capacities.**