



KenGen

Kenya Electricity
Generating Company Ltd.

**EXPRESSION OF INTEREST CONSULTANCY SERVICES AND IMPLEMENTATION
OF MINERAL EXTRACTION TECHNOLOGY FROM GEOTHERMAL BRINE**

TENDER REF: KGN-SBP-04-2016

1. Overview

Kenya Electricity Generating Company (KenGen) is the country's leading power producer that uses a mix of hydro, geothermal, wind and thermal power production to meet the nation's energy demand. The company owns and operates four (4) conventional geothermal power plants and fifteen (15) wellhead units that generate a total of 533.8 MegaWatts electric (MWe) within the Olkaria geothermal field that is inclusive of 2.4 MWe from Eburru well head generating unit. All the geothermal plants owned by KenGen are the single flash condensing type. The flashing process yields brine that contains mineral elements like Silica that could have commercial application. The abundant minerals in the brine are Silica and Lithium with other elements present in traceable amounts.

The average Silica concentration in the brine ranges from 600-800 mg/kg with Lithium content averaging at 1.5- 2 mg/kg. The total brine is estimated at 2700 tonnes/hr occurring in several streams that are scattered in the Olkaria geothermal field. At a brine flow of 2700 tonnes/hr, the average Total Dissolved Solids (TDS) of the brine is 2000 Parts Per Million (ppm) with an average potential of Hydrogen (pH) of 8-9.

KenGen invites expression of interest from eligible consultant firms to provide services and technology for mineral extraction from this geothermal brine.

2. The scope of services -

The scope of services for the consultant will include but not limited to the following:

1. Carry out field testing and other studies necessary of the geothermal fluids in Olkaria geothermal field to establish the actual available quantity of the minerals and viability of the mineral extraction project.
2. Prepare a feasibility report on findings and include the following:
 - Minerals that can be economically extracted along with detailed mineral extraction technology description. Include design details and prior applications of technology.
 - The report should provide the economic feasibility and financial returns of the mineral extraction project.
 - The report should also identify any environmental considerations
 - Identify the short and long term market needs for the potential extracted minerals in both a local and global context.
3. Presentation of the findings in to KenGen Management with recommendations of mineral extraction technology, project economics and detailed pilot plant costs.
4. Assuming KenGen management concurrence with findings, install a pilot extraction plant to demonstrate the functionality of the mineral extraction technology. Based on results of pilot plant tests, provide updated recommendations on the mineral extraction technology, project economics and detailed full scale project costs and economics.
5. Actual implementation of the full scale project for KenGen

3. Eligibility and Evaluation criteria

The expression of interest must be accompanied by the consultant's qualifications, professional capabilities and details of past experience in the area of geothermal brine treatment and mineral recovery. Such information may include brochures, description of similar assignments, experience in similar conditions, and availability of appropriate skills among staff with their most recent profiles showing their experience, qualifications, capabilities, referees and details of past experience. The consultant shall bid for the assignment individually or in association with other firms.

The interested firms shall meet the following requirements

- a) Certificate of incorporation/Registration (and any certificate of change of name), certified by an authorized representative of the bidder or (as the case may be) the consortium member in addition and Certified copies of Memorandum / Articles of Association for all consortium members
- b) Demonstrate at least 5years of experience in consulting and implementation services for similar assignment (attach at least two projects completed or on-going).
- c) List of consultancy services on geothermal brine treatment and mineral recovery or similar project carried out and the status of the projects
- d) In addition to the firm's experience, provide a list of at least 5 proposed professional staff and disciplines expected to take part in the feasibility study. (Curriculum Vitae (CV) of key personnel to be involved in the project. Key personnel should have a minimum of 10 years of relevant experience with geothermal brine control and treatment)
- e) Audited Financial Statements for the immediate last 3 years. - Minimum annual turnover should be USD 50,000.00. For consortium arrangement each consortium member must meet the threshold;
- f) A preliminary description of the proposed technology, equipment and process to be used in the mineral extraction process.

Note: KenGen may undertake due diligence and any bidder misrepresenting facts will be automatically disqualified.

A Consultant will be selected in accordance with the Quality and Cost Based Selection (QCBS) method set out in the World Bank's Guidelines.

4. Clarifications

The interested consultants may request for clarifications on this Expression of Interest for up to seven (7) days before the submission date. Any request for clarification must be sent in writing by paper, mail, facsimile, or electronic mail to: tenders@kengen.co.ke and copied to dmuthike@kengen.co.ke and pwambugu@kengen.co.ke.

This EOI can also be downloaded from our website www.kengen.co.ke. Check the websites from time to time before the closure date for any uploaded information through clarification/addendum.

5. Submission

The submission of the Expression of Interest documents (one original and Two Copies) made in English must be received in a sealed envelope and addressed to

**THE COMPANY SECRETARY & LEGAL AFFAIRS DIRECTOR,
KENYA ELECTRICITY GENERATING COMPANY LIMITED,
10TH FLOOR, PENSION PLAZA II, KOLOBOT ROAD,
P.O BOX 47936, 00100 GPO NAIROBI, KENYA**

Information of the outer envelope should be marked: **"CONFIDENTIAL" EXPRESSION OF INTEREST FOR PROVISION OF SERVICES AND TECHNOLOGY FOR MINERAL EXTRACTION FROM GEOTHERMAL BRINE**.

The application must be dropped in the tender box located on the ground floor of Stima Plaza III on or before **20th January 2017 at 10:00 East African Time**.

The EOI will be opened on **20th January 2017 at 10.30am** East African Time in the presence of firms who choose to attend.

SUPPLY CHAIN DIRECTOR