**Re-advertised -Request for Expressions of Interest (EOI) - Conducting a Feasibility Study Into Setting Up a Synthetic Gypsum Plant.**

**OPEN SELECTION INTERNATIONAL (OSI)**

ZCCM Investments Holdings Plc

Incorporated in the Republic of Zambia

**please note the eligibility clause under section iii**

**Section I**

**Terms Of Reference: to Conduct a Feasibility Study Into Setting Up a Synthetic Gypsum Plant.**

1. **Background**

ZCCM Investments Holdings Plc (ZCCM-IH) intends to pursue the manufacturing of synthetic gypsum as part of its commodity diversification and value addition strategy. As such, the Feasibility Study (FS) of setting up the proposed Synthetic Gypsum Manufacturing Plant within Zambia. The proposed Synthetic Gypsum Manufacturing Plant should be able to make use of the key inputs (limestone and sulphuric acid) that are readily available from the local sources in its operations.

It is envisaged that the proposed synthetic gypsum plant should be able to satisfy the demands of local cement companies and to supply to other industries for the manufacture of glass, plaster, drywall and fertilizers among others.

# PROJECT SCOPE OF WORK

The Consulting Firm shall be required to conduct the following works:

1. Test samples of sulphuric acid and limestone from local sources. The tests should be a full analytical test using appropriate analytical procedures.
2. Metallurgical tests to produce commercial grades of gypsum (premium – 89.7% CaSO4.2H2O, grade 1 – 80.5% CaSO4.2H2O, grade 2 – 67.1% CaSO4.2H2O and grade 3 – 53.7% CaSO4.2H2O) for the development of the Basic Design/Conceptual Flow Sheet.
3. Review life of mine (LOM) data from limestone operating mines.
4. Use the average requirements of the main customers’ cement plants and other industry requirements, for sizing the synthetic gypsum plant (the Base Case); and
5. Review, with input from ZCCM-IH, the provision for upgrading the size of plant to provide extra capacity above the base case should the need arise. (This may be necessitated by a need to supply other cement producers outside Ndola (such as the cement plants based in the Lusaka area) or production of other secondary gypsum-based products, such as construction materials, Plaster of Paris etc.)

# TASKS

To successfully carry out this assignment, the following tasks are expected to be undertaken by the successful bidder.

# Mobilization

The Consultant shall be required to mobilize for the assignment as soon as the Contract is signed off with the Client. This shall include advising the Client of which personnel are assigned to the Project.

# Data Collection and Review

The Consultant shall be provided with the pertinent technical data available for review and comment by the Client.

# Receipt of Sulphuric acid Samples

The Consultant shall be provided with the sulphuric acid samples from the local sources (Due to its hazardous nature, shipping of an actual sample to the Consultant’s site may be impractical. A Certificate of Analysis may be provided to the Consultant instead who can then use an equivalent quality of acid in the tests).

# Receipt of Limestone Samples

The Consultant shall be provided with the limestone samples by the Client.

# Testing

The Consultant shall carry out the tests as indicated in section 4 above, and any other tests as agreed between the Consultant and Client; and,

# Reports

The Consultant shall be required to provide regular updates on milestones achieved throughout the project duration, according to a signed off Month by Month schedule of project activities, which will also give the total duration of the Study. On completion of the program, the Consultant shall be expected to produce detailed reports covering the wider scope of works provided.

# DATA CONFIDENTIALITY

The Consultant is expected to maintain highest levels of confidentiality throughout the process and treat with utmost confidentiality, all sources of information.

Accordingly, the Consultant is prohibited from sharing any project information intentionally or otherwise with any external party without express authority of the Client.

# PROJECT DELIVERABLES

On successful signing of contract with the Client, the Consultant shall be required to prepare and submit the following list of deliverables:

1. Inception Report – The report shall be submitted to the Client within a week of signing the contract. The report should clearly state the Consultant’s understanding of the scope of work and present their mobilisation plan. Wherever necessary and with valid justification, the report should provide alternative approach to the scope of work.
2. Progress Reports – the Consultant shall submit Monthly Reports according to the agreed Month by Month schedule of activities. Submission and review of these reports will be the basis for making progressive payments to the Consultant.
3. Final Report – Two hard copies of the Final report printed in colour shall be submitted to the Client by the last working day of the final month of the schedule agreed between the Consultant and Client. In addition to information presented in the Progress Reports, the final report shall include conclusions and recommendations; and
4. Digital Copy – In addition to hard copies, the Consultant bidder shall also submit to the client a soft copy of the final report.
5. A virtual/physical presentation to the ZCCM-IH Management
6. The Consultant can finish the project earlier than the maximum stated project duration
7. **CONSULTANCY FIRM’S Qualifications and Experience**

The consultant should have:

* 1. The Consultant should be reputable, with relevant experience in mineral processing test work and development of Basic Engineering Designs/Conceptual Flow Sheets.
  2. Being an EPCM Contractor is preferable, but if Consultant is not an EPCM Contractor, they should demonstrate a relationship with EPCM Contractors and give a list of such EPCM Contractors, who can convert the Conceptual Flow Sheet (Basic Engineering Design), into a Detailed Engineering Design that is suitable for construction.
  3. The Consultant shall be required to demonstrate successful undertaking of similar assignments in the last 10 years with traceable former Clients.

# KEY STAFF Qualifications

The Consultant firm shall be required to demonstrate that all personnel to be assigned on the project have the required experience and competence to undertake the assignment. As such, the team should be multidisciplinary covering such skills considered as key to the successful completion of the assignment, and include, as a minimum, a member qualified in mineral process engineering and allied disciplines.

* 1. **Lead Consultant**

The Lead Consultant should possess relevant qualifications in mineral process engineering, metallurgy, chemical engineering or other allied disciplines and have not less than 10 years of experience in similar undertakings with a good success record.

Further, the Consultant should provide a description of the key staff to work on the project together with their detailed Curriculum Vitae (CVs) and contact addresses. The CVs must also be signed off by respective staff.

* 1. **Other Experts**

The other experts may also be qualified in the same disciplines as those indicated above for the Lead Consultant, with at least 5 years’ experience in similar projects. They may be complemented, if necessary, by experts qualified in any of the following disciplines, and with a minimum of 5 years’ experience in similar projects:

1. Mechanical Engineering
2. Electrical Engineering
3. Control & Instrumentation
4. Civil Engineering
5. Structural Engineer
6. Environmental Engineering

# SCHEDULE OF ACTIVITIES

The Consultant bidder shall be required to strictly abide by the timeframe provided. To avoid unnecessary time delays and waste, the Consultant is expected to hold regular updates/briefings/ with and bring to the Client’s attention any problems/challenges encountered during the process.

If time extension is necessary, such as due to delayed acquisition of inputs into the project, such as samples, reports etc, the Consultant must request for such extension, in writing. The Client will write back to the Consultant indicating the extension period for any justifiable delays.

# DECLARATION OF AUTHENTICITY OF REPORTS

The Consultant shall make a full declaration of the authenticity of information to be submitted in all reports.

# CONSULTANT’S OBLIGATIONS

The Consultant shall:

1. Provide own office, transport, accommodation and other necessary logistical items to effectively execute the works.
2. Provide computers, printers and other Information Technology (IT) equipment necessary to record, analyze and present the reports in required formats.
3. Design methods appropriate for gathering of data specific to the assignment within the framework of the scope provided.
4. Provide stationery and other related materials for producing reports for the assignment.
5. Ensure that quality of work is maintained at all stages of the assignment.
6. Ensure security of data at all times; and
7. Maintain confidentiality of information obtained due to the business relationship.

**Project Summary**

The project requires the hire of a Consultancy firm (the “Consultant”) to conduct a feasibility study into the viability of setting up a synthetic gypsum manufacturing plant.

The feasibility study should, in part, look at and review the following issues:

1. Present, medium and long-term production of sulphuric acid from local sources;
2. Present, medium and long-term production of limestone from local sources;
3. Quality of inputs into the proposed synthetic gypsum manufacturing plant (sulphuric acid and limestone);
4. Other potential synthetic gypsum manufacturing plant products, based on tests and reviews done, (for gypsum and other related commercial products such as Citrogypsum, a by-product of citric acid manufacturing; Fluorogypsum, a by-product of hydrofluoric acid manufacturing and Phosphogypsum, a by-product of phosphoric acid manufacturing).
5. Expected quality of product (based on tests and calculations);
6. Major equipment for the synthetic gypsum manufacturing plant (at Basic Engineering level or Conceptual Flow Sheet).
7. Order of magnitude Capital Expenditure (CAPEX) estimates.
8. Order of magnitude Operating Expenditure (OPEX) estimates.
9. Order of magnitude estimate of operating personnel required to operate the synthetic gypsum manufacturing plant.
10. Preliminary Economic Assessment (PEA);
11. Recommendations for further work, such as optimized studies and Detailed Engineering etc.; and
12. Recommendations on potential Engineering, Procurement, Construction and Manufacturing (EPCM) Contractors to provide a turnkey solution, if Consultant is not an EPCM Contractor. If Consultant is an EPCM Contractor, must state so.

ZCCM-IH will provide the necessary data in its possession and arrange for other data and/or samples needed to effectively complete the task.

ZCCM-IH will also facilitate access to the various sites for the Consultant, if required.

The Consultant shall objectively review the information availed by ZCCM-IH and where necessary provide guidance on any other work that ZCCM-IH may need to carry out in furtherance of the project objectives.

**Section II – Technical requirements**

Eligible firms must provide information that indicates **experience,** **capacity/Qualifications**, and **capability** to undertake the assignment outlined herein, within the specified timelines. As part of this, the consultant is expected to provide an indication of cost estimating related studies and engagements that the firm has undertaken in the past. This will be considered in the assessment of the consultant’s cost estimating related experience profile.

ZCCM-IH now invites eligible environmental consulting firms to **indicate their interest** in providing the above services. **Interested firms must provide information to demonstrate that they are qualified to perform the services (brochures, description of similar assignments, experience in similar conditions etc.).**

Interested consultants may obtain further information at the address below during office hours between08:00 - 13:00 hours and between 14:00 – 17:00 hours local time from Monday to Friday.

**Section III**

**TERMS AND CONDITIONS IN ACCORDANCE WITH CLAUSE 41 OF THE PUBLIC PROCUREMENT ACT (PPA) NO. 8 OF 2020**

(4) **Participation in open international selection shall be open to all bidders**, including citizen bidders, local bidders and foreign bidders.

(6) A foreign bidder who participates in open international selection under subsection (4) **shall partner with a citizen bidder.**

A consultant will be selected using Quality and Cost Based Selection (QCBS) method. Interested consultants must submit one (01) original and three (03) **hard copies** of the Expression of Interest to the address below not later than **Tuesday, 26th July 2022.**

Procurement Manager

ZCCM Investments Holdings Plc

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**Lusaka.**

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