



HINDUSTAN COPPER LIMITED
(A Govt. of India Enterprise)

Expression of Interest (Eol) for

**IMPROVING THE PERFORMANCE OF CONCENTRATOR PLANT AT KHETRI
COPPER COMPLEX, RAJASTHAN**

Reference No: HCL/M&C/KCC/2018

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1) INTRODUCTION:

Hindustan Copper Limited (HCL), a public sector undertaking under the administrative control of the Ministry of Mines, was incorporated on 9th November 1967. It has the distinction of being the nation's only vertically integrated copper producing company as it manufactures copper right from the stage of mining to beneficiation, smelting, refining and casting of refined copper metal into downstream saleable products.

The Company markets copper cathodes, copper wire bar, continuous cast copper rod and by-products, such as anode slime (containing gold, silver, etc.), copper sulphate and sulphuric acid. In normal practice, more than 90% of the sales revenue is generated from cathode and continuous cast copper rods. HCL's mines and plants are spread across five operating Units, one each in the States of Rajasthan, Madhya Pradesh, Jharkhand, Maharashtra and Gujarat are detailed below:

- Khetri Copper Complex (KCC) at Khetrinagar, Rajasthan
- Indian Copper Complex (ICC) at Ghatsila, Jharkhand
- Malanjkhand Copper Project (MCP) at Malanjkhand, Madhya Pradesh
- Taloja Copper Project (TCP) at Taloja, Maharashtra
- Gujarat Copper Project (GCP) at Jhagadia, Gujarat

HCL is operating 2.0 million TPY Ore Treatment plant to produce Copper Concentrate at KCC, Khetri Nagar, Rajasthan, India since 1967. The Copper ore is produced in nearby underground mines and transported to the concentrator plant by a conventional belt conveyor or dump trucks. HCL is looking for the possibilities of improving the performance of concentrator plant by employing state-of-the-art technologies / equipment to address the issue of reduction in feed grade as well as to improve the recovery and grade of concentrate.

HCL invites expression of interest from EPC Contractor / Equipment Suppliers for upgrading the KCC Concentrator plant by studying the existing plant operation data, carrying out laboratory / pilot plant study, selection of equipment to guarantee the minimum performance criteria as mentioned under scope of work. After analyzing the bidder capabilities, a tender for the same shall be issued to short listed vendors based on the selection criteria mentioned in this document.

2) PLANT DESCRIPTION:

KCC is having Chalcopyrite Ore primary crushing is done in underground before hoisting to the surface. From Khetri Mine ore is transported through conveyor and from satellite mines through dump trucks to the plant crushing section. Crushing plant has cone crushers secondary and tertiary crushing section. Crushed ore is stored in fine ore bin and through feeders ore is fed to the grinding circuit, which consists rod mill as primary mill and Ball Mill as secondary milling in close loop with the Hydro-cyclone classification system, Overflow of the hydro-cyclone gravitates to the flotation section and underflow of the cyclone gravitates to the ball mill feed. Steel rods and Hi-chrome Balls are used as grinding media in rod and ball mills respectively. Two set of primary and secondary mills



exist in the milling circuit. Cyclone overflow is fed to the rougher flotation circuit and rougher tail gravitates to the scavenger circuit and concentrate is fed to the two stage cleaner circuit.

Second stage cleaner circuit is pumped to the dewatering circuit which contains HRT thickener and ceramic disc vacuum filter. Clear water of dewatering circuit is used in the process and filter cake which contains 8% moisture is conveyed to the concentrate stock yard.

Scavenger cell concentrate is pumped to the rougher cell feed and tail is pumped to the tailing thickener. Overflow of the thickener is recycled back to the process plant and thickened underflow slurry is pumped to the tailing pond

Khetri Nagar is Dry area, water availability is one of the major constraints for the plant operation. Technology for reduction in the specific consumption of water in the concentrator plant is the requirement.

3) ORE CHARACTERISTICS:

A brief detail of KCC ore mineralogy and characteristics are provided below:

3.1 Feed Analysis:

Chemical

Cu, %	0.8-1.05
Fe, %	14-16
S, %	2.8-3
Au, g/t	0.2-0.3
Ag, g/t	0.8-0.9
Mo, %	0.0002
Bond Index, KWH/ST	16-18

3.2 Mineralogical Analysis: Major mineral analysis are as follows

Chalcopyrite, %	2.7-3.0
Pyrrhotite, %	6-7
Pyrite, %	0.4-0.6
Quartz, %	35-42
Plagioclase, %	3-5
Almandine, %	8-9
Ferrosilite, %	3-4
Biotite, %	6-7
Chlorite, %	12-13
Magnetite, %	2.5-3%

Note: Detailed analysis are also available and can be shared if required

3.3 Plant Performance: Currently plant performance is as under

1. Concentrate Grade (Cu%)	17 -19%
2. Overall Recovery (Cu %)	88 - 89%



4) SCOPE OF WORK:

The brief scope of work as follows:

1. Process Audit:
 - a. Study of the plant process flow sheet and operating parameters.
 - b. Collection of sample for analysis of plant operating parameters.
 - c. Assessment of the performance of the individual equipment/unit with reference to their rated capacity.
2. Collection of representative sample to carry out laboratory/pilot plant test to find the optimum performance if required by the bidder.
3. Develop suggestive flow sheet for debottlenecking of the existing operation to achieve optimum performance.
4. Prepare the list of new equipment required with their specification data sheet as required in the suggested flow sheet.
5. Prepare requirement of material and schedule to retrofit the proposed flow sheet in the existing plant with least stoppages and modification work required.
6. Prepare water & mass balance based on the suggested flow sheet.
7. Work out the power requirement for suggested flow sheet.
8. Suggest performance guarantee that shall be better than the minimum selection criteria parameters.
9. This project shall be executed on turnkey basis that shall include engineering including as stated above, specification of equipment and other items, supply of equipment and other items, erection, commissioning and performance guarantee test to prove the performance as guaranteed by the bidder.

5) MINIMUM SELECTION CRITERIA:

It is envisaged to improve the plant performance in all areas of operation, but as a minimum following are expected:

- i. Throughput/capacity increase > 15%
- ii. Recovery > 92%
- iii. Concentrate Grade > 20%
- iv. Reagent Consumption TBA
- v. Specific Power Consumption TBA
- vi. Specific water consumption TBA



6) PRE-QUALIFICATION CRITERIA (PQC):

The bidder (i.e. Single bidder/ Consortium) should have minimum 05 year of experience in providing Copper / Zinc / Lead or Nickel concentrator plant process audit and carrying out retrofitting work for process performance optimization in running concentrator plants. Bidder should have executed at least ONE such project along with men, material and equipment either in separate contracts or one contract during the last five years reckoned from the due date for submission of requisite documents against this EoI.

To this effect, Bidder shall submit copies of respective contracts, along with documentary evidence in respect of satisfactory execution of each of those contracts, in the form of copies of any of the documents (indicating respective contract number), such as -

Satisfactory completion / performance report

(OR)

Any other documentary evidence that can substantiate the satisfactory execution of each of the contracts cited above.

Consortium:

Where consortium bids are allowed, leader and members of consortium should themselves jointly meet the experience criteria covering the respective activities of work to be performed by them on their own and not through any other arrangement like through Supporting Company, Parent / Subsidiary / Sister Subsidiary / Co-Subsidiary / Technical Collaboration / Sub-contracting. Necessary documentary evidence to this effect should be submitted with PQC. The members of consortium shall decide the Leader of consortium. The leader of consortium shall have minimum 50% stake in terms of proposal value, as reflected in the MOU executed by the consortium members. Each member of consortium shall remain jointly and severally liable to HCL.

For this purpose the role and scope of work to be performed by the respective consortium members expressed as a percentage of proposal value should be indicated in the Memorandum of Understanding (MOU) submitted along with PQC documents.

- a) Notwithstanding the provisions that the members of consortium shall be jointly and severally liable to HCL, the leader of consortium should undertake unconditional acceptance of primary responsibility of executing the entire 'Scope of work' of this project. This confirmation shall be submitted along with the PQC.
- b) A constituent of the Consortium shall not be permitted to participate either in an individual capacity as a bidder or as a member of another Consortium in this EoI.



- c) Only that consortium member who has undertaken a particular activity in execution of a contract shall be considered as having technical experience of that particular activity.
- d) Financial details and audited annual report of last 3 years.
- e) Equipment supply capability, if it is proposed to supply own make equipment.

7) GENERAL TERMS & CONDITIONS:

7.1 TURNKEY PROJECT: This will be a turnkey project, bidders have to carry out engineering, prepare flowsheet, specification, supply of equipment, erection & commission of equipment, trial and Performance Guarantee test to prove the success of the project.

7.2 EXECUTION METHODOLOGY: Bidders shall submit execution methodology and time required to execute the project and the time required to shut down the existing plant while retrofitting and trial and commissioning of the new equipment (Preference shall be given to a bidder who can implement the proposed system in the running plant or with minimum stoppage)

7.3 PAYMENT: Payment will be linked to the success of the project. HCL proposes to pay to the bidder after the successful commissioning and performance guarantee demonstration by the bidder.

7.4 REQUESTS FOR CLARIFICATION:

If at any time during the EoI process, HCL requires any clarification on the EoI proposal submitted by the interested bidder, it reserves the right to request such information from any or all of the interested bidders and such bidders will be obliged to respond and supply the same within such reasonable time frame as may be required.

7.5 MODIFICATION/CANCELLATION:

- i. HCL reserves the right to amend/modify/delete any of the above conditions and/or the process as may be deemed necessary in the light of the facts and circumstances of the cases.
- ii. HCL reserves the right to proceed with/ cancel the process irrespective of the response to EoI.
- iii. HCL at its discretion may extend the last date for submission of proposal to the EoI.
- iv. Interested parties are advised to keep themselves informed by checking HCL website www.hindustancopper.com regularly for any such modification/cancellation that may be notified. HCL shall not be notifying any such modification separately through any other media.
- v. Decision of HCL in respect of the above would be final and binding on the parties.



7.6 GOVERNING LAWS/JURISDICTION/ARBITRATION:

All matters relating to the EoI and selection of interested bidder shall be governed by the laws of Union of India. Only courts at Kolkata (with exclusion of all other courts) shall have the jurisdiction to decide or adjudicate on any matter, which may arise out of or in connection of the EoI process.

7.7 KCC VISIT:

Though adequate care has been taken while issuing this EoI Document. HCL shall not be responsible for any consequences due to misprinting. It is mandatory for interested bidders to visit KCC plant and carryout a pre-bid inspection and take the current operating details from the site and discuss with the operations team for better understanding the scope of the work. **HCL will arrange a pre-bid meet at KCC for the interested bidders on 12.07.2018.**

7.8 EoI PROCESS:

Following completion of the initial process, all shortlisted parties fulfilling eligible criteria will be provided with an opportunity to hold further discussions with the HCL team. HCL will provide all the information relevant to the EoI and are in its possession, if required by bidder. However, providing information will be the sole discretion of HCL.

- i. The proposal to the EoI shall be submitted at the following address on or before **23.07.2018 before 3:00 PM** during the working days and working hours through E-mail / courier:

Executive Director (Materials & Contracts)
Hindustan Copper Limited
3rd Floor, Tamra Bhawan
1, Ashutosh Chowdhury Avenue
Kolkata - 700 019
Email dkmahajan@hindustancopper.com
Tel: +91 33 22900397
Mobile: +91 94330 01147

The covering envelope containing aforesaid documents submitted should be clearly marked:

IMPROVING THE PERFORMANCE OF CONCENTRATOR PLANT AT KHETRI COPPER COMPLEX, with Reference No: HCL/M&C/KCC/EOI/2018 dated 22.06.2018

- ii. **Opening of the proposal:** Bidder may remain present personally or may depute anauthorized representative at the time of opening of proposal.



- iii. The parties who have applied for **EoI** and qualify the criteria may be considered for participation in main tender. However, HCL reserves the right to accept or reject any or all proposals, re-invite **EoI** or go for open tender without assigning any reasons whatsoever.
- iv. Mere participation & qualification in **EoI** will not automatically mean those bidders are considered qualified for tender participation.
- v. Though adequate care has been taken while issuing this **EoI** document, HCL shall not be responsible for any consequences due to misprinting or any wrong translation by the newspaper/magazine/web portal concerned. The respondent shall satisfy itself that document is complete in all respects. The respondent shall visit KCC and verify facts in case of confusion, before submission of **EoI**.
- vi. HCL may, in its sole and absolute discretion, independently verify any information submitted with the **EoI** proposals by bidders.
- vii. This **EoI** does not create a tender process. By this **EoI**, HCL reserves to itself the right to consider and analyze the proposals received against **EoI**, short-list select respondents without limiting the generality of the foregoing, HCL reserves the right to:
 - a. Reject any **EoI**, whether or not complete and whether or not it contains all the required information.
 - b. Require clarification of any **EoI**; request additional information on any **EoI**.
 - c. Reject any or all **EoIs** without any obligation, or any compensation or reimbursement to the respondents.
 - d. Modify the terms and conditions of the **EoI** and subsequent processes.

7.9 Further information/ clarifications:

Any request for further information or clarification relating to the contents of this **EoI** document, may be submitted in writing to:

To,
Shri Dilip Kumar Mahajan,
Executive Director (Materials & Contracts)
Corporate Office
Hindustan Copper Limited
Email: dkmahajan@hindustancopper.com
Tel: +91 33 22832226

8.0 Forms: Respondents are requested to fill up all the mandatory forms.



8.1 Submission of proposal

Form no-1

(To be forwarded on the letter head of the interested party submitting the Eoi)

Ref: HCL/Form1/EOI/2018

Date:

To,
Shri Dilip Kumar Mahajan
Executive Director (Materials & Contracts)
Tamra Bhavan,
1, Ashutosh Chowdhury Avenue,
Kolkata - 700 019
INDIA

Sub: IMPROVING THE PERFORMANCE OF CONCENTRATOR PLANT AT KHETRI COPPER COMPLEX.

Please refer to the invitation for Expression of Interest issued in respect of the above mentioned subject matter. We have read and understood the contents of the invitation for EOI & interested in submitting our proposal.

We believe that our Company satisfies the eligibility criteria set out in the relevant sections of the Eoi. The litigation impact statement of legal capacity as per the format indicated in the EOI duly signed by us are enclosed.

You and your authorized representatives may contact the undersigned. The undersigned is (are) fully authorized to act on behalf of the respondent.

We shall be glad to receive further communication on the subject.

Signature

Name

(For <Respondent/Bidder>)



8.2 Litigation Impact Statement

Form no. 2

(To be forwarded on the letter head of the interested party submitting the Eol)

Ref: HCL/Form2/EOI/2018Date:

To
Shri Dilip Kumar Mahajan
Executive Director (Materials & Contracts)
Tamra Bhavan,
1, Ashutosh Chowdhury Avenue,
Kolkata - 700 019
India.

Sub: IMPROVING THE PERFORMANCE OF CONCENTRATOR PLANT AT KHETRI COPPER COMPLEX.

Sirs,

We have read and understood the contents of the Eol document and pursuant to this hereby confirm that we satisfy the eligibility criteria laid out in the Eol.

We hereby confirm that we shall not share any information with pertaining to HCL which will be provided to us during the process of EOI or prior to the process of EOI.

Further, the authorized signatory is vested with requisite powers to furnish such letter and Request for Qualification and authenticate the same

Yours faithfully,
(_____)
Authorised signatory
for and on behalf of



Form No 3. (Site Visit)

DECLARATION OF SITE VISIT

(To be forwarded on the letter head of the interested party submitting the Eoi)

Ref: HCL/Form3/EOI/2018

Date

To
Shri Dilip Kumar Mahajan
Executive Director (Materials & Contracts)
Tamra Bhavan,
1, Ashutosh Chowdhury Avenue,
Kolkata - 700 019
India.

Sub: IMPROVING THE PERFORMANCE OF CONCENTRATOR PLANT AT KHETRI COPPER COMPLEX.

I hereby certify that my representatives have visited the site at Khetri Copper Complex (KCC), a unit of Hindustan Copper Limited (a Govt. of India Enterprise), situated at Khetrinagar, District- Jhunjhunu, Rajasthan-333504 and sought all necessary clarifications with respect to the scope of work on the above subject & certify that all data furnished in the Invitation of Offer proposed under different sections and information pertaining to the scope has been verified and considered in our offer covered by our Proposal no..... .

Seal

Signature

Date

Name

Designation

Name of the Organization