



पश्चिम बंगाल WEST BENGAL

AP 023543

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MoU) is entered on 3<sup>rd</sup> day of January, in the year 2023 .

Between

Hindustan Copper Limited, Kolkata as the FIRST PARTY

and

Indian Institute of Technology (Indian School of Mines), Dhanbad as the SECOND PARTY

Hindustan Copper Limited, is a Miniratna Category-I, Central Public Sector Enterprise of Government of India under the administrative control of the Ministry of Mines, Govt. of India, incorporated on 9<sup>th</sup> November 1967 under the Companies Act, 1956.

Hindustan Copper Limited (CIN: L27201WB1967GOI028825), is a Public Sector Company registered under Companies Act, 1956, having its registered office at 'Tamra Bhavan', 1, Ashutosh Chowdhury Avenue, Kolkata – 700 019 hereinafter referred to as "HCL" (which expression shall unless it be repugnant to the context or meaning thereof be deemed to mean and include its successors-in-interest and permitted assigns) as the FIRST PARTY.

*[Signature]* 21/1/23 *Sanghi W. Singh*

Indian Institute of Technology (Indian School of Mines), Dhanbad, an autonomous institution of technical education established in 1926 and governed by the Institutes of Technology Act, 1961 (Institution of National importance), under administrative and financial control by Ministry of Education, Govt. of India, located at Dhanbad, Jharkhand, India, 826004, represented by the Director (hereinafter referred to as 'IIT (ISM)', which expression shall unless it be repugnant to the context or meaning thereof be deemed to mean and include its successors-in-interest and permitted assigns) as the SECOND PARTY.

"HCL" and "IIT (ISM)" hereinafter shall individually be referred to as a **"Party"** and collectively be referred to as **"Parties"**.

WHEREAS

HCL is the only company in India engaged in mining of copper ore and owns all the operating mining leases of copper ore in India and the only integrated producer of refined copper (vertically integrated company). Major activities of HCL include mining, ore beneficiation, smelting, refining and converting of refined copper metal into continuous cast rod (CCR) as downstream product.

Presently, It has five units in possession namely Indian Copper Complex (ICC) at Jharkhand, Khetri Copper Complex (KCC) at Rajasthan, Malanjkhand Copper Project (MCP) at MP, Gujarat Copper Project (GCP) at Gujarat and Taloja Copper Project (TCP) at Maharashtra.

At present, five underground (UG) mines and one open-pit (O/C) mine along with concentrator plants are being operated by HCL in the States of Rajasthan, Madhya Pradesh and Jharkhand. These include Khetri - Banwas UG mine & Kolihan UG mine at KCC, Rajasthan, Surda & Kendadih UG mine at ICC, Jharkhand and an Open pit mine & UG Mine being developed below the open pit at Malanjkhand, MP.



Sanjay K. Singh



HCL is operating its mines either through outsourcing mode or departmentally but mostly through underground mining methods. Due to the complex geological characteristics of the ore body and the increasing depth of mining, various geo-technical and ground water related issues along with technical/ operational problems are being faced during the process of production along with maintaining safety standards and emerging sustainability issues. Further, HCL is in its expansion phase with about 3-fold enhancement of production capacity, development activities in projects are on-going in nature or already planned in most of its mines.

IIT (ISM) is an Institute of National importance, which caters to the needs of the Nation through teaching, research and professional development programmes in all the fields of Science, Technology and Management, to include Mining, Petroleum, Mining Machinery, Mineral Engineering, Earth Sciences, Electrical Engineering, Electronics Engineering, Environmental Science & Engineering, Computer Science & Engineering, Mechanical Engineering, Chemical Engineering, Civil Engineering, Applied Chemistry, Applied Mathematics, Applied Physics, Management and Humanities & Social Sciences. It has 18 full-fledged departments offering undergraduate, postgraduate, and doctoral level courses. IIT(ISM) has contributed significantly for the growth and development of Mining, Mineral and Petroleum Exploration in India and abroad, thus contributing to the country's Industrial development in since last several decades. It has built research collaborations with various Industries, Universities and Technical Institutions across the Globe and thus contributed to the development of cutting-edge technologies in relevant areas.

Both HCL and IIT (ISM) will discuss with each other, whenever there is an opportunity for IIT (ISM) to participate in projects of HCL and agree on the possibility of contractual association for a project to be called as "Identified Project" on a case-to-case basis.



Sanjay K. Singh

The two Parties express their desire to sign this Memorandum of Understanding (MoU) to record the mutual discussions and basic understandings of the services. The Parties understand this MoU does not contain all the commercial terms and undertake that must be reached on a case-to-case basis by the Parties through separate agreements under this MoU.

THE PARTIES HERETO HAVE AGREED to collaborate as per the terms appearing hereinafter:

**1. Broad Areas of Collaboration:**

- 1.1. Assistance in development of Sustainable Mining Plan for the underground mines of HCL.
- 1.2. Review of existing mining operations and plans for enhancing copper ore production through modifying mining methods with application of technologies.
- 1.3. Preparation/ Validation of Techno Economic Feasibility Report /Techno Commercial Viability Report, Detailed Project Report (DPR) etc. for the mine expansion projects and enabling projects.
- 1.4. Technical Assistance/guidance/consultancy in various Geo-technical studies including rock-mechanics laboratory test works and implementation of new monitoring technologies, training & certification etc.
- 1.5. Technical Assistance/guidance/consultancy in various Hydrological & Hydro-geological studies, field tests, instrumentation and implementation of new monitoring technologies, training & certification etc.
- 1.6. Technical Assistance/guidance/ consultancy in adaptation of new technology for numerical modeling in 3-Dimension for subsidence prediction, subsidence survey and monitoring field including Drone Survey, DGPS Survey, Imagery Study etc.
- 1.7. Assistance in formulation of Environment Impact Assessment (EIA) reports in case of a revision of mining plan.
- 1.8. Assistance in obtaining statutory clearances such as Environment Clearance (EC).



Sanjay K. Singh

- 1.9. Assistance in formulating the mining contracts and post-award technical supports for dispute resolutions and suggesting the way out to avoid litigations.
- 1.10. Suggestions for reduction in cost of copper production and improving productivity of mining operations.
- 1.11. Suggestions for improving safety standard in mining operations.
- 1.12. Application of new and advance technologies/equipment systems and IT solutions for optimization of mining operations.
- 1.13. Any other services to enhance safety, sustainability and efficiency of mine development and operation.
- 1.14. Technical Assistance/guidance/ consultancy in evaluation and selection of new / unconventional exploration methods like Geophysical exploration, Remote Sensing etc. for depth exploration of copper ore within the lease area of HCL and use of Geophysical survey methods in various geo-technical and hydro-geological problems, preparation of technical specification and setting of PQ (Pre-Qualification) criteria, supervision of survey works & review of reports etc.
- 1.15. Technical Assistance/guidance/ consultancy for adaptation of state-of-the-art software and digitization techniques in exploration, mining, and ore beneficiation including assistance in preparation of technical specifications and tender documents for procurement of the software/ hardware along with training and implementation support.
- 1.16. Association in taking up R&D projects in the areas of Geology, Mining, and ore beneficiation by taking up joint projects.
- 1.17. Training and development of HCL Engineers/Managers for skill set development and knowledge up-gradation in areas of exploration, ore beneficiation and various other statutory/ mine regulation amendments or related issues.



Sanjay K. Singh



2. Notwithstanding anything contrary contained herein all technical consultancy services by IIT (ISM) to HCL under the MoU shall be based on as-is-where-is basis. Such technical consultancy services by IIT (ISM) to HCL is based on the standard protocols based on report, data, information or samples provided by HCL.
3. The proposal in the areas mentioned in clause 1 of this MoU will be subjected to a separate technical and commercial agreements between the Parties and any specific accreditation required as per statute/ guideline of Govt. in force.
4. This MoU is not exclusive. Both parties are free to work with any third party.
5. Neither this MoU nor any subsequent agreement will affect the individual business of any party concerned. Either Party shall have no right into the existing works or intellectual property rights of the other Party. Each Party will retain ownership of intellectual property rights in the work it creates in relation to any opportunity unless agreed in writing by both parties.
6. It is hereby agreed that any data and information exchanged between the Parties (confidential Information) shall be kept confidential and shall not be divulged to any third party without written consent of the other Party.
7. This MoU constitutes an expression of intent only and sets forth the principles upon which the Parties would work. This MoU is not intended to create nor shall it be deemed to create any legally binding obligations enforceable against each party to this Memorandum or any of its affiliates.



Sanjiv K. Singh

8. If any dispute, controversy or difference arises between the Parties, the same shall be mutually discussed and resolved amicably between the Parties.
9. The Parties agree that unless and until the specific agreement with respect to the proposed collaboration involving the areas of collaboration on case-to-case basis have been executed and delivered, neither Parties shall be under any legal obligation of any kind whatsoever with respect to such agreement beyond the provisions of this MoU.
10. The MoU will be valid initially for a period of *five years* and may be renewed further as per mutual understanding.
11. Either Party may terminate this with at least three months advance notice and without assigning the reasons for termination in writing.
12. This MoU comes into effect on the date of signing by both the parties and may be amended by mutual consent.



Sanjay K. Singh

In Witness Whereof, the authorized representatives of the Parties have signed this MoU, on  
3<sup>rd</sup> day of January in the year 2023, in two originals in English language, one for each Party.

Signed on behalf of ISM

Signed on behalf of HCL

IIT-ISM,

*[Signature]*  
31/1/23

Name *Abhinav Kumar*  
Designation *dy director*  
IIT-ISM, Dhanbad.

HCL

*Sanjay Mr. Singh*  
3/01/2023

Name *SANJIV KUMAR SINGH*  
Designation *DIR (MINING)*  
HCL

Witness:

Signature *[Signature]*  
Name *RAJIV SHEKHAR*  
Designation *DIRECTOR*

Witness:

*[Signature]*  
03.01.2023  
Signature .....  
Name *A-K. SHUKLA*  
Designation *CMD*