

# TERMS OF REFERENCE FOR CONSULTANCY WORK FOR CONDUCT OF ENVIRONMENTAL IMPACT ASSESSMENT AND PREPARATION OF FINAL MINE FEASIBILITY STUDY REPORT OF CHUNAIKHOLA DOLOMITE MINE

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**Title of Consultancy:** Consultancy Work for conduct of Environmental Impact Assessment (EIA) and preparation of Final Mine Feasibility Study (FMFS) Report of Chunaikhola Dolomite Mine

## **Description of Assignment:**

- i. Conduct EIA in line with endorsed 'Terms of Reference (TOR) for conducting EIA for development and operation of Chunaikhola Dolomite Mine under Phuentshopelri Gewog, Samtse Dzongkhag';
- ii. Preparation of Final Mine Feasibility Study Report in line with 'Guideline and formats for Final Mine Feasibility Study Report' (Annex 2- Part 1 of MMR 2002) and
- iii. Guidelines for preparation of Environmental Management Plan for mining projects (Annex 2- Part 2 of MMR 2002)

**Duration:** 5 months

## **1. Background:**

Dolomite is originally formed by post-depositional alteration of lime-mud and limestone by magnesium-rich groundwater under diagenesis process. It is a common sedimentary rock forming mineral composed of calcium magnesium carbonate  $CaMg(CO_3)_2$ . It is one of the important raw materials for steel, ferroalloys, glass, fertilizer industry, etc.

In Bhutan, occurrence of huge dolomite deposits is well known within Manas Formation of Lesser Himalayan Sequence (LHS), belonging to Baxa Group of rocks. The dolomite deposit at Chunaikhola under Phuntshopelri Geog (formerly Pugli), Samtse Dzongkhag is located about 5 km north of Pugli mining town. Detailed exploration of the dolomite deposit was previously carried out in 1975-1976 by Geological Survey of India (GSI) between Pugli river and summit of the dolomite hill covering an area of 98.84 acres on the scale of 1:2000 and drilling of 21 boreholes (Reddy, 1977). A total of 27.47 million metric tons of dolomite reserve (16.72 million MT proven and 10.76 million MT probable reserve) with an average grade composition of 2.31% acid insoluble, 0.94%  $R_2O_3$ , 30.05% CaO and 20.49% MgO was deduced by GSI.

The deposit is currently leased to Jigme Mining Corporation Limited (JMCL) for 15 years auction lease term since 15<sup>th</sup> May 2005 till 14<sup>th</sup> May 2020 with a total bid value of Nu.390 million. The annual production of 2018 is 2.95 million MT. The dolomites are crushed and

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screened to various sizes and supplied to steel plants, Ferro Alloys, Pig Iron, Sponge Iron industries. Pulverized dolomites are supplied to agro-based industries and other sectors like paper, paint, detergent industries, etc.

The Department of Geology and Mines has undertaken geological reassessment of Chunaikhola dolomite deposit during the financial year 2018-19 to map the dolomite band in detail within present mining area and outside mining area till Titi river in the east to prove the reserve and grade of the dolomite and determine the long-term mining potential of the deposit. The geological report shall be made available to the interested consultants.

The current lease expires on May 14, 2020 and the government intends to auction the mine before the expiry of the lease to ensure business continuity. For this purpose, the conduct of EIA and preparation of FMFS reports are prerequisite for auctioning of mine for which tender for this consultancy work is being floated.

## **2. Objectives:**

- 2.1 Mine planning and designing for development and operation of Chunaikhola Dolomite Mine; and
- 2.2 Collect baseline data, assess impact based on the mine description and propose mitigation measures.

## **3. Task to be carried out by the consultant:**

The consultant under the guidance of the Focal Person of DGM shall carry out the following tasks but not limited to:

- Collect baseline data, conduct impact assessment and submit EIA report in line with endorsed Terms of Reference (TOR) for conducting EIA for development and operation of Chunaikhola Dolomite Mine under Phuentshopelri Gewog, Samtse Dzongkhag;
- Discuss and consult with the “Successful bid winner of Chunaikhola Dolomite Mine” and prepare mine plans;
- Prepare and submit of Final Mine Feasibility Study Report in line with Guideline and formats for Final Mine Feasibility Study Report (Annex 2- Part 1 of MMR 2002) with reference to “Report on the Geological Reassessment of Chunaikhola Dolomite Deposit under Phuntshopelri Gewog, Samtse Dzongkhag for auctioning”;
- Prepare and submit Environment Management Plan in line with the Guidelines for preparation of Environmental Management Plan for mining projects;
- Consult with National Environment Commission Secretariat and make presentation where required for issuance of Environmental Clearance; and
- Presentation of the EIA, FMFS and EMP to DGM and the “successful bid winner”.

#### **4. Data, Services and facilities to be provided:**

The following documents will be provided to the consultants:

- Report on the Geological Reassessment of Chunaikhola Dolomite Deposit under Phuntshopelri Geog, Samtse Dzongkhag for Reauctioning;
- Endorsed Terms of Reference (ToR) for conducting EIA Report for development and operation of Chunaikhola Dolomite Mine under Phuentshopelri Gewog, Samtse Dzongkhag;
- Guideline and formats for Final Mine Feasibility Study Report (Annex 2- Part 1 of MMMR 2002);
- Guidelines for preparation of Environmental Management Plan for mining projects (Annex 2- Part 2 of MMMR 2002); and
- Demarcation Map including geological and topographical survey GIS data.

#### **5. Final output/deliverables**

- 5.1 Environment Impact Assessment Report
- 5.2 Final Mine Feasibility Study Report (I)
- 5.3 Environment Management Plan Report (II)
- 5.4 Presentation files

#### **6. Reporting requirements:**

The consultant shall report to Mr. Karma Chopel, Executive Engineer, Mineral Development Division of Department of Geology and Mines once every month.

#### **7. Evaluation of proposal**

Both technical and financial proposals shall be evaluated based on the criteria of the Procurement Rules and Regulation 2009 (revised 2019) of the Royal Government of Bhutan. The selection weight shall be based on a Technical Proposal (60%) and Financial Proposals (40%). The technical proposals will be evaluated based on the criteria provided in RFP.

#### **8. Timeframe:**

The consultancy will be provided with 5 months to complete the task and following work plan shall apply:

- Submission of first draft along with presentation: Mid-February 2019

- Submission of second draft: Mid-March 2020
- Submission of final draft along with presentation: First Week of April, 2020

### **9. Language requirement:**

All reports and deliverables must be prepared and submitted in English.

### **10. Proposal**

The proposal must include clear and detailed description of approach and methodologies, work plan and CV of the personal.

#### **Technical proposal**

The consultant shall submit technical proposal detailing the following:

- A clear description of the approach/ methodology to be adopted for implementation of the task including time frame for execution of the assignment
- Profile of consultant(s) and an outline of recent experience on assignments of similar in nature
- The consultant's comments or suggestions on the TOR

#### **Financial proposal**

The financial proposal will be solicited only if the technical proposals score at least 65 out of a total score of 100. The financial proposal should contain the following:

- Lump-sum consultancy fee
- The lump sum should be broken down to clearly indicate: travel, per diems, and actual consultancy fees (daily fee)
- An indication of whether this rate is flexible

### **11. Reference:**

Up to three references from similar past assignment shall be required for the expert/personnel responsible/assigned for this consultancy.

### **12. Payments:**

Payment will be done as follows: Award and signing of contract: 10% (Firm should submit security deposit 10% of bank guarantee)

- a. First Draft of the document: 30%
- b. Submission of second draft: 30%

c. Final document acceptable to the procuring agency: 40%

*(Note: Two % tax will be deducted at source on each payment made to Consultant as per existing Financial Regulation and norms of the Royal Government of Bhutan)*

**13. Travel:**

All envisaged travel cost must be included in the financial proposal.

**14. Other matters:**

The DGM retains its right to accept or reject the proposals without any reasons, and cancel the procurement service, if it deems so.