Ministry of Mines
National Mineral Exploration Trust

Minutes of the 49th Technical-cum-Cost Committee [TCC] meeting held on 30th and 31st January 2023 through videoconference at New Delhi

The 49th Technical-cum-Cost Committee [TCC] meeting of National Mineral Exploration Trust [NMET] was held under the chairmanship of Shri Janardan Prasad, Additional Director General, Geological Survey of India [ADG, GSI] and Chairman, TCC, NMET on 30th and 31st January 2023 at New Delhi through videoconference. The TCC members and representatives of Exploration Agencies [EAs] have attended the meeting through videoconference. The list of participants is in **annexure-1**.

Shri Suresh Chander, Director, GSI and Member Secretary, TCC NMET, welcomed Shri Janardan Prasad, ADG, GSI & Chairman, TCC; Members of the TCC and participants representing various Exploration Agencies [EAs]. He conveyed that total 15 nos. of new project proposals including 6 nos. of proposals for financial assistance for procurement of machinery/ laboratory equipment/ instruments etc. have been received from different EAs and State Government for technical cum cost evaluation by the committee.

Shri Janardan Prasad, ADG, GSI, and Chairman, TCC welcomed the members and other participants from various EAs. The proceeding of the meeting was initiated as per the circulated agenda.

Agenda wise discussions are summarised as follows.

49.1. Technical evaluation of new project proposals:

49.1.1. Reconnaissance survey (G4) for Manganese and associated mineralization Sitapathar-Koylari area, District: Balaghat, Madhya Pradesh. [Implementing Agency: CMPDI]

a) Geologically the area is represented by the rocks of Sauser Group comprising folded and metamorphosed rocks hosting Mn mineralization. Major lithologies include migmatites and granites, gneisses, rare meta-ultramafic and amphibolite, calcareous and pelitic meta-sedimentary rocks and quartzites.

b) CMPDI has submitted that 0.05% to 4.45% MnO values have been recorded by GSI through geochemical mapping during 2017-18. Besides this, numerous manganese occurrences were observed in the area during STM and Manganese mineralization in the area is noticed up to 1.5 km south-west of Lingapaunar.

c) The proposal was sent to GSI for their considered comments. In response to this, GSI has submitted that the proposed Sitapathar-Koylari block partially overlaps with the previously explored Arjuntola-jamuntola-LSM block and Pauniya exploration blocks by GSI and also with item proposed/approved "Reconnaissance survey for Manganese and Iron ores in Sausar Group of rocks in Piparwani, Agri and Koylari areas, Seoni and Balaghat District, Madhya Pradesh, FS: 2023-24" from SU: Jabalpur for FSP 2023-24.

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d) Based on deliberation, the committee opined that the manganese anomaly recorded from western part of the proposed area is very less (0.07%) and not encouraging.

e) DGM, Madhya Pradesh conveyed that the proposed block was notified for MOIL and CMPDI has not taken consent from State DGM, before proposing the block.

f) In view of this, the committee suggested not to take up exploration in the block.

As the block area was already notified to MOIL, the committee suggested not to take up exploration in the said block. Committee also suggested that the consent of State Government should be taken by EAs before submitting the proposal to NMET.

49.1.2. Preliminary exploration (G3) for limestone in Kiranagi-1 and Kiranagi-2 block (11.41 sq. km), Bhima Basin, District: Gulbarga, Karnataka. [Implementing Agency: MECL]

a) It has been submitted that the entire Bhima basin was mapped by GSI and explored up to different stages in a scattered manner. DGM, Karnataka had also explored the adjoining area in 1976 and established cement grade limestone reserves in the area.

b) It has been submitted that the G3 stage exploration was carried out by MECL in East of Chittapur and North Diggaon village in 2018-19 and resource of 530MT limestone was established. Besides this, G2 stage exploration was also carried out by GSI in Bommanalli, Chittapur South, Chittapur SW block, Sulahalli and mining activities are currently going in surrounding areas and limestone being excavated.

c) MECL has submitted that the qualitative assessment based on the interpretation from nearby data could not done especially for important factors like silica, MgO and others, which have a key role in qualitative standardization of limestone for cement and other industries. Limestone having high silica and MgO cannot be utilized for cement manufacturing process without blending with high grade limestone and the same may not be suitable for clinker manufacturing process. The proposed exploration will locate and quantify the different grade of limestone based on the requirement for the different industries. In view of this, the G3 stage exploration is require before auctioning of block.

d) It has been submitted that the Department of Mines & Geology, Govt. of Karnataka has accorded their consent to carry out exploration in the proposed Kiranagi-1 and Kiranagi-2 Blocks vide letter No. DMG/Plan/53695/VOL-III/2022-23 dated 17/11/2022.

e) The committee opined that as per NMET letter dated 24.08.2021, the exploration for limestone and iron ore may be considered up to G3 stage through NMET fund after considering the requisite demand and availability certificate from State Government.

f) Committee suggested to submit the demand and availability of limestone in the area to NMET before consideration of proposal by Executive Committee.

The committee recommended the proposal for approval of EC, Preliminary exploration (G3) for limestone in Kiranagi-1 and Kiranagi-2 block (11.41 sq. km), Bhima Basin, District: Gulbarga, Karnataka, subject to submission of demand and availability of limestone in the area to NMET, with an estimated cost of Rs. 127.58 Lakh (including

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GST) in time schedule of 10 months for carrying out the proposed work and submission of report as per annexure- 2A & 2B.

49.1.3. Preliminary exploration (G3) for copper and associated minerals in Kalasapura block (15.0 sq. km), District: Chikkamagluru, Karnataka. [Implementing Agency: MECL]

a) The proposal on Kalasapura block was discussed in 38th TCC meeting held in March, 2022 wherein committee opined that the block was already explored atleast for the G4 stage and a possible resource of 0.16 MT with an average grade of 0.25% Cu was estimated and there is no scope for similar exploration. Further Committee suggested that based on available geological data the potential areas may be identified and a revised proposal for the G3 stage of exploration, if found suitable, may be submitted.

b) In view of this, now MECL has submitted the revised proposal for G3 stage exploration in Kalasapura block (15 sq km) through detailed geological mapping (1:4000 scale) along with surface geochemical sampling and ground geophysics.

c) The proposal was sent to GSI for their considered comments, in response to this GSI has submitted that the proposed Kalasapura Block was mapped by GSI during FS 1968-69 and FS 1972-73 on 1:63,360 scale. Detailed mapping (DM) of 1.5 sq km area on 1: 1000 scale with drilling of 685.25m (9 bore holes) has been achieved during FS 1972-73. The 1.5 sq km DM block of FS 1972-73 lies within the proposed Kalasapura block.

d) It is pertinent to mention that the during 1973, GSI had carried out exploratory drilling for 9 boreholes (885.25m) in the proposed area, and revealed copper mineralization in grey massive quartzites over a continuous strike length of 240m and 420m in the western and the eastern blocks respectively. The grade of copper varies from 0.13 to 0.43%. A possible resource of 0.16 MT with an average grade of 0.25% Cu was estimated.

e) It has been informed that MECL had collected 7nos. of grab samples from the area and analyzed with handheld XRF and 0.338% Cu and 0.444% Cu values have been recorded in two samples.

f) After detailed deliberations the committee opined, though the copper value in all boreholes of GSI is below 0.22%, and block was previously mapped on 1:63,360 scale, the potentiality of the block may be reverified in light of geophysical (SP and magnetic) methods and three boreholes of first level and one borehole of second level.

g) Based on detailed deliberations, the committee suggested to take up Preliminary exploration for copper and associated minerals in Kalasapura block (area B & area C) by deploying geological mapping on 1:4000 scale, geochemical sampling, ground geophysical survey, trenching, drilling [350m in four (3+1) boreholes], physical & petrological studies.

h) The projects will be review after four months and seventh months.

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The committee recommended the proposal for approval of EC, Preliminary exploration (G3) for copper and associated minerals in Kalasapura block (15.0 sq. km), District: Chikkamagluru, Karnataka with an estimated cost of Rs. 147.09 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 3A & 3B.

49.1.4. Reconnaissance survey (G4) for Polymetals (Cu, Au, Ag) in Miregaon block (40.769 sq. km), Districts: Bhandara and Gondiya, Maharashtra. [Implementing Agency: MECL]

a) Geologically the area is exposed by the Granite gneiss, quartzites of Amagoan Gneissic Complex (AGC) and Phyllite, mica schist of Sakoli Group. It has been submitted that GSI has reported Cu (0.21% to 0.86%) values from Miregaon Block through geochemical survey in 2000-01.

b) It has been submitted that the evidence of surface mineralization in the Miregaon area is observed in the form of old workings, slag/mine dump. Indigenous limonite, specks of chalcopyrite, pyrite and malachite stains are found along and near the quartz veins. Sulphides are seen in the dump fragments carrying splashes of malachite, crystals & needles of malachite in fractures, covellite, chalcopyrite and gossanic fragments. Gossanised fragments of mica schist and vein quartz are found in the debris indicating intense oxidation.

c) The proposal was sent to GSI for their considered comments, in response to this GSI has submitted that the proposed block almost completely falls under the Dahegaon – Pipalgaon block explored for kyanite & sillimanite by GSI in FS 1978-79. The investigation involved regional mapping (210 sq. km on 1:63,360 scale), pitting and trenching and drilling of 1016.25m in 14 boreholes. The drilling for kyanite and sillimanite was carried out near the Dahegaon mines which lies further south of the proposed MECL block.

d) After detailed deliberations the committee opined that based on available geochemical data, the geochemical prospect map may be prepared and anomalous zones may be identified. The NGPM data, if available, needs to be consulted for demarcation of potential zones. Based on NGCM and NGPM data, the anomalous zones may be identified and geophysical survey including SP and magnetic may be carried out. In case of encouraging results, through surface investigation, drilling (150m) may be carried out. The outcome of project will be reviewed after six months.

The committee recommended the proposal for approval of EC, Reconnaissance survey (G4) for Polymetals (Cu, Au, Ag) in Miregaon block (40.769 sq. km), Districts: Bhandara and Gondiya, Maharashtra with an estimated cost of Rs. 109.56 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 4A & 4B.

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49.1.5. Reconnaissance survey (G4) for chromite in Ramogiri block (129.0 sq. km), District: Koraput, Odisha. [Implementing Agency: MECL]

a) Geologically the area is represented by the rocks of quartzite, hornblende schist and gneiss, amphibolite, quartz-sericite-chlorite schist, magnetite quartzite, quartz-magnetite granulite and ferruginous schists and granulite etc. Dyke like bodies of meta-dolerite, meta-gabbro and granulitic noritic rock found at places. Gneissic hornblende-biotite granite occurs widely in the area and is associated with hornblende gneiss. In the vicinity of the chromite occurrence, the country rock is a peculiar granite/felspathic gneiss and schist resembling a para-gneiss.

b) It has been submitted that the chromite mineralization occurs within the ultrabasic rocks or altered ultrabasic rocks (talc-tremolite schist) in the region. The chromite bearing ultrabasic rocks occur in the form of a few massive and tough boulders comprising fibrous aggregate of amphiboltiic matter with disseminated grains of chromite. This rock is intimately associated with and often appears to grade into a chromite-free talc-chlorite schist.

c) It has been submitted that the Cr_2O_3 (24.07% to 27.49%) and Fe (8.10% to 14.24%) from 5 pits in Ramogiri area have been reported by GSI in 1967.

d) The proposal was sent to GSI for their considered comments, in response to this GSI has submitted that the proposed G4 stage chromite block of MECL is not falling within the block boundary/coordinates of areas being explored during the current FS 2022-23 and proposed for the next Field Season, i.e., FS 2023-24.

e) In view of above, MECL has proposed to take up G4 stage exploration in the area by deploying geological mapping (129 sq. km), Magnetic (3000 stations) and Electromagnetic (300 stations) survey, scout drilling (500m), and trenching (200 cu. m).

f) After detailed deliberations the committee opined that the values reported by GSI are from the pit samples and may be misleading. The committee suggested to collect at least five samples from the area and in case encouraging results, the proposal may be resubmitted in next TCC meeting.

The committee suggested to collect and analyze at least five samples from the area and in case of encouraging results, the proposal may be resubmitted in next TCC.

49.1.6. Reconnaissance Survey (G4) for Iron, Manganese and Associated Minerals in Salaiya Block (110.56 sq. km) Districts: Jabalpur, Katni & Umaria, Madhya Pradesh. [Implementing Agency: MECL]

a) Geologically the area is exposed by the Mahakoshal Group of rocks comprising quartz veins, quartz porphyry veins, mafic and ultramafic intrusive, phyllite with bands of quartzite, conglomerate dolomite, limestone with bands of BIF, Manganiferous chert, quartzite and metabasalts, pyroclasts.

b) The proposal was sent to GSI for their considered comments. In response to this, GSI has submitted that the proposed block is completely overlapping with the explored and being explored block of GSI. The proposed block is completely overlapping with

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ongoing "Regional Mineral Targeting for gold, basemetal and critical minerals in Mahakoshal belt around Jabalpur, Katni, Umariya, Rewa, Shahdol, Satna, Sidhi, districts, Madhya Pradesh, FS: 2021-24."

c) It has also been submitted by GSI that the proposed block is also partially overlapping with the following projects of GSI, State Unit, Madhya Pradesh:

   i. Fluorite investigation in Chandidongri area, Rajnandgaon District and Sleemanabad area, Jabalpur District, Madhya Pradesh (FS: 1989-90).

   ii. Rregional geochemical sampling for gold, silver, and basemetals in Sleemanabad-Vilayat Kalan area of Katni District, M.P., (FS: 2000-02).

   iii. Reconnaissance Survey for base metals mineralization (Cu) in Hardua Block, Bahoriband Tehsil, Dist. Katni, M. P., FS: 2019-20.

   iv. Detailed Investigation for Polymetallic mineralisation in the Imalia-Bhula-Nawalia Belt, Jabalpur Distt. M.P., (FS: 1968-69).

d) DGM, Madhya Pradesh conveyed that about 563 sq. km area has been notified to NMDC ltd. In the southern part of the proposed block.

e) After detailed deliberations the committee opined that most of the proposed area overlaps with the pre-explored /being explored blocks of GSI. Mining activities are in progress in the adjoining parts of the block. GSI has sufficiently explored the available area. Committee suggested that the available geoscience data of GSI needs to be collated and few samples should be collected/analysed from the area. In case of encouraging results, a revised proposal may be submitted in next TCC.

The Committee suggested to collate the available geoscience data of GSI, analyses few samples from the area and in case of encouraging results, a revised proposal may be submitted in the next TCC, if warranted.

49.1.7. Reconnaissance Survey (G4) For REE and Rare Metals (RM) Mineralization In Khairlanji Block (137.30 sq. km), Part of Districts: Balaghat & Seoni, Madhya Pradesh [Implementing Agency: MECL]

a) Geologically, the study area is covered by rocks of Tirodi Gneissic Complex Group and Sausar Group. Tirodi Gneissic Complex Group consist of gneiss of Archaean age whereas Sausar Group of Palaeoproterozoic age is represented by quartz muscovite schist and quartzite of Sitasaongi Formation and calc gneiss and marble of Lohangi Formation, biotite schist, muscovite schist, phyllite, Manganese ore and gondite of Mansar Formation.

b) The proposal was sent to GSI for their considered comments. In response to this, GSI has submitted that the Khairlanji REE block partially overlaps with the previously explored Arjuntola-Jamuntola-LSM block and Pauniya exploration blocks and proposed Piparwani-Agri-Koylari Manganese G4 block for FS: 2023-24.

c) It has been submitted that the geochemical data, acquired by GSI, during FS 2017-18 has indicated 393.4ppm to 2151 ppm TREE concentration in the area.

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d) MECL has submitted that through SEM-EDX studies, LREE bearing monazite and HREE bearing xenotime and crystals of columbite have been identified in the adjacent block of proposed area. Also, the analytical results of bed rock samples revealed that the concentration of REE occurs over pegmatites and granite.

e) Based on encouraging values reported by earlier workers from the area, the committee suggested to take up reconnaissance survey through surface sampling over the proposed block. Committee also opined that the northern boundary of the block overlapping with the GSI's block needs to be modified and the revised area will be 123.04 sq. km).

The committee recommended the proposal for approval of EC, Reconnaissance Survey (G4) For REE and Rare Metals (RM) Mineralization in Khairlanji Block, Part of Districts: Balaghat & Seoni, Madhya Pradesh with an estimated cost of Rs. 68.45 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 5A & 5B.

49.1.8. General exploration (G2) for manganese ore occurrence around Malda block-II (0.37 sq. km), District: Sundargarh, Odisha. [Implementing Agency: DGM, Odisha]

a) Geologically the area is represented by Iron Ore Super Group of rocks belonging to Jamda-Koira valley and the manganese ore deposits occur within the weathered shale/lateritic horizon of Iron Ore Group as tabular lenses, irregular veins, and nodular masses. The manganese occurrences are the supergene product of Iron Ore Group of rocks and mineralization is confined to chert, manganiferous shale and laterite. Manganese ore occurs as pockets, lenses and thin bands in association with laterite, cherty and jaspery quarzites, shales and iron ores. Chert and Cherty manganese are encountered at the sections of existing quarries and also in the bore holes.

b) The proposal was sent to GSI for their considered comments. In response to this, GSI has submitted that the proposed area was under lease of TISCO and upon relinquishment, the Malda Block was taken up by DMG, Odisha for G2 stage investigation during FS 2021-22. GSI has conveyed that the proposed manganese block of DMG, Odisha is not falling within the block boundary/coordinates of areas being explored during the current FSP 2022-23 nor it is proposed for the next Field Season FS 2023-24 by GSI.

c) It has been submitted that a resource of 1.142 MT at 10-25% Mn and 0.331 MT at >25% Mn was already established in the proposed block.

d) Keeping in view the exploration activities already carried out by TISCO and DGM, Odisha *inter-alia* resource assessment, the committee opined that the block is sufficiently explored and may be suitable for auctioning.

Based on deliberations the committee suggested to consider the block for auctioning of mineral concession by DGM, Odisha as the block is sufficiently explored and resource is established.

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49.1.9. Preliminary exploration (G3) for limestone in Itga block (10.60 sq. km), District: Kalaburagi, Karnataka. [Implementing agency: DGM, Karnataka]

a) Geologically the block area is represented by the rocks of Shahabad Formation of Sedam sub group Bhima Group. Geologically the rocks exposed in this area belong to the of Bhima Group.

b) The block is located at a distance of about 2.9 km south of ML no. 2681 of M/s Oriental cement ltd and 7.0 kms North west of ML no. 2674 of M/s Shree Cements where mining activities are in progress and also surrounded by many limestone mining leases.

c) It has been submitted that the area is comprised of horizontal beds of limestone covered by varying thickness of black cotton soil.

d) DGM, has submitted that the qualitative assessment based on the interpretation from nearby data could not done especially for important factors like silica, MgO and others, which have a key role in qualitative standardization of limestone for cement and other industries. Limestone having high silica and MgO cannot be utilized for cement manufacturing process without blending with high grade limestone and the same may not be suitable for clinker manufacturing process. The proposed exploration will locate and quantify the different grade of limestone based on the requirement for the different industries. In view of this, the G3 stage exploration is required before auctioning of block.

e) The project proposal was sent to GSI for their considered comments. In response to this, GSI has conveyed that the project titled 'Preliminary investigation for flux grade and cement grade limestone in Bhima basin, Gulbarga District, Karnataka', was taken up by GSI during field season 1977-78 (Chitthapur LSM Block). Based on the preliminary exploration by GSI, an inferred resource of 153 MT of B.F. grade limestone was established. It has been conveyed that there is an area of about 0.75 sq. km with the pre-explored blocks and may be omitted. GSI has not proposed any exploration activity in the Itga area for FS 2023-24.

f) The committee opined that as per NMET letter dated 24.08.2021, the exploration for limestone and iron ore may be considered up to G3 stage through NMET fund after considering the requisite demand and availability, on request of State Government.

g) Committee suggested to submit the demand and availability of limestone in the area to NMET before consideration of proposal by Executive Committee.

The committee recommended the proposal for approval of EC, Preliminary exploration (G3) for limestone in Itga block (10.60 sq. km), District: Kalaburagi, Karnataka, subject to submission of demand and availability of limestone in the area, with an estimated cost of Rs. 125.26 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 6A & 6B.

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49.2. Proposals on financial assistance for procurement of machinery/ laboratory equipment

A total of six proposals on financial assistance from the NMET fund for procurement of machinery/ laboratory equipment/ instruments/ software have been received from the States of Arunachal Pradesh, West Bengal, Tamil Nadu, Jharkhand, Uttar Pradesh and Kerala for consideration of 49th TCC.

Before deliberating these proposals on financial assistance for technical evaluation in the TCC meeting, the following concerns were raised by the TCC members:

a) Members raised the issue as to whether the examination and evaluation of such financial proposals lie within the purview/mandate of the committee. It was stated by some of the members that the term of reference of TCC constituted vide OM dated 02.09.2020 and 31.12.2021 does not include examination and evaluation of financial assistance proposals from NMET fund to the State Govts. After deliberation, it was assured by the Director & HoD, NMET that the terms of reference of the committee would be amended to include the examination and evaluation of financial assistance proposals from the NMET fund.

b) Members also expressed their concern to examine and evaluate the financial proposals of the States due to the lack of information/ data on the present strength of technical manpower, status of available equipment's and their utilization, number of ongoing exploration programs, future exploration programs envisaged for the next 5/10 years, equipment/instrument wise expected flow of job/ work, the payback period for the equipment/ instruments to be proposed to be procured etc.

c) It was observed by the members that there is wide variations/ difference in the estimated cost of machinery/equipment/ instruments in the proposals submitted by State Governments for financial assistance under the NMET fund.

d) The committee expressed its inability to examine the reasonableness of the cost of machinery/ laboratory equipment/ instruments to be procured by State Governments or arrive at the cost independently in the absence of approved SoC from NMET. It was, however, assured by the Director & HoD, NMET that the NMET Secretariat would circulate the list of approved machinery/ laboratory equipment/ instruments amongst members along with approximate/estimated cost.

e) The committee agreed on in-principal for procurement of equipment/ machinery/ instruments/ software etc. to strengthen the exportation activities of State DGMs under the financial assistance program. Committee also expressed that the list of instruments/ machinery equipment approved by the 27th EC meeting held in January 2023 will only be considered for financial assistance by TCC.

f) It is pertinent to mention that in the 27th EC meeting held on 10th January 2023, Secretary, Mines directed the State DMGs/DGMs to submit the proposals along with details on instruments/ equipment/ software's, manpower, and workload available in the State. He also suggested that the State Governments need to submit details of mineral exploration activities being carried out by DMGs/DGMs as well as future programs of exploration envisaged for the next five to ten years to ascertain/justify the requirements of equipment/ instruments/ software. Besides certificates regarding optimum utilization of equipment /instrument/ software etc. should also be submitted.

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g) It was suggested to seek utilization certificates from the States with regard to equipment/instruments before considering the subsequent proposals. It was suggested to compile cost data submitted by the States for the same equipment/ instrument to examine the nature of variation in the cost.

h) The proposals for financial assistance for six States, therefore, been deliberated by the Committee with the considerations/ limitations elaborated above. The proposals have been examined and discussed with the representative of the State Government and the Committee in principle agreed to recommend the proposal for consideration by EC. The cost estimates for procurement of equipment's /instruments/ software's etc. are as per the proposals submitted by the State Government or has been restricted to cost provided by IBM or GSI. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

i) The Committee further suggested that due process of procurement, including estimation of item wise cost, as per the extant Government of India, financial rules should be followed by DGMs in consent with the competent authority of the Department /State Financial Wing (Division).

49.2.1. Financial assistance for procurement of machinery /laboratory equipment's instruments etc., aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines and Geology, Arunachal Pradesh]

a) The proposal for procurement of machineries/ equipment/ software /machineries aimed at enhancing the exploration activities of DGM, Arunachal Pradesh was discussed in 48th TCC meeting wherein the Committee suggested to resubmit the revised proposal for the procurement of mineral exploration-based instruments in next TCC meeting.

b) Now, the DGM, Arunachal Pradesh has submitted revised proposal for procurements of machinery/ laboratory equipment/instruments etc. with estimated cost of Rs 4.99 crore including GIS software (Unlimited licenses) at the cost Rs 4.83 crore and DGPS at the cost of Rs 16 lakh.

Sl No	Name of Item	Qty.	Estimated cost per unit (Rs.)	Unit Price inclusive GST 18%	Remarks
1	GiS Software	5	13,00,000	65,00,000	Cost estimate as per DGM, Govt. of Arunachal Pradesh)
2	DGPS	1	16,00,000	16,00,000	do
Grand Total				81,00,000	do

c) After detailed deliberations the committee opined that the GIS Software with five floating licence and DGPS (01 no) may be sufficient to meet the requirement of DGM, Arunachal Pradesh.

The proposals have been examined and discussed with the representative of the State Government and the Committee in principle agreed to recommend the proposal for consideration of EC. The cost estimates for procurement of equipment's /instruments/

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software's etc. are based on the proposal submitted by the State Government or cost restricted to cost provided by IBM or GSI. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

The estimated cost submitted by State Government/ cost restricted to cost provided by IBM or GSI is given below:

1. ***GiS Software (five floating license) = Rs 65,00,000/-***
2. ***DGPS (one no) = Rs 16,00,000/-***

Total cost of instruments/ software = Rs 81,00,000/-

The committee opined that due process of procurement (including item wise cost estimation) as per extant Government of India financial rules be followed by DGM, Arunachal Pradesh in consent with the competent authority of State Department/ State Financial Wing (Division). The State Govt. should also ensure full utilization of the instruments/ software to be procured.

49.2.2. Financial assistance for procurement of machinery /laboratory equipment's instruments etc., aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines and Geology, West Bengal]

a) The Department of Mines and Geology, West Bengal has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of Rs 10,70,000/-. The details are given below:

Sl. No.	Software's/ Hardware's/ Equipment's	Quantity	Estimated cost /Unit (Rs in lakhs), Approx.	Total Estimated cost (Rs in lakhs) Approx.
1	Hand Held Garmin GPS GPSMAP 78S Marine GPS Navigator and WorldWide Chart plotter (010-00864-01)	6	0.35	2.10
2	KM-7 Kappa Magnetic Susceptibility Meter	02	1.30	2.6
3	Binocular Polarising Microscope with camera and software	03	2.0	6.0
			Total	**Rs 10.70**

b) Based on detailed deliberations, the committee opined that the proposal is not in appropriate format. The brand names of instruments should not be mentioned in proposal.

The committee suggested to resubmit the revised proposal in appropriate format with justification on requirement of instruments vis-à-vis availability and workload of DGM, West Bengal.

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49.2.3. Financial assistance for procurement of machinery /laboratory equipment's instruments etc., aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines and Geology, Tamil Nadu]

a) The Department of Mines and Geology, Tamil Nadu has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of Rs 11,18,73,987/-.

b) The Committee evaluated the proposal submitted by the DGM, Tamil Nadu for procurement of machinery/ laboratory equipment/ instruments etc. After detailed discussion with DGM representative the procurement of following items was agreed:

Sl. No.	Name of the Item	Quantity	Estimated cost per unit (In Rs)	Total Cost (In Rs.)	Remarks
1	Digital Camera	5	16,756	83,780	Cost estimate as per DGM, Tamil Nadu
2	Brunton Compass	10	5,605	56,050	do
3	Geologists Hammer	10	1,888	18,880	do
4	Handheld GPS	20	29,439	5,88,780	do
5	UV Lamp	5	5,000	25,000	Cost provided by GSI
6	Handheld XRF	1	25,78,300	25,78,300	Cost estimate as per DGM, Tamil Nadu
7	Scintillometer	1	6,00,000	6,00,000	Cost provided by GSI
8	Rock cutting, polishing and mounting unit	1	3,54,000	3,54,000	Cost estimate as per DGM, Tamil Nadu
9	Pulverizer	1	28,61,500	28,61,500	do
10	Stereo zoom microscope	1	2,36,000	2,36,000	do
11	Polarizing microscope	1	20,01,717	20,01,717	do
12	WD X-Ray Fluorescence Spectrometer (WD-XRF)	1	1,80,00,000	1,80,00,000	do
13	Muffle furnace	1	1,00,000	1,00,000	Cost provided by GSI
14	Hot plates	1	10,000	10,000	Cost provided by GSI
15	Air oven	1	25,000	25,000	Cost estimate as per DGM, Tamil Nadu
16	Bomb Calorimeter	1	1,25,000	1,25,000	do
17	GIS Software (ArcGIS per year)	1	1,18,000	1,18,000	do
18	Hydrostatic truck mounted drill machine with 600m capacity	1	80,00,000	80,00,000	Cost provided by GSI
19	Bits, drill rods, casing, core barrel (for one year requirement for one time)	(for one year requirement for one time)	80,00,000	80,00,000	Cost provided by GSI
20	Pumps (pressure/mud)	1	15,00,000	15,00,000	Cost provided by GSI
21	Core splitter/core splitter hydrostatic	1	2,00,000	2,00,000	Cost provided by GSI
22	DGPS	2	16,00,000	32,00,000	Cost provided by GSI
23	Total Station	2	5,88,348	11,76,696	Cost estimate as per DGM, Tamil Nadu
24	Borehole Camera	1	50,000	50,000	Cost provided by GSI
Total				**4,99,08,703**	

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The proposals have been examined and discussed with the representative of the State Government and the Committee in principle agreed to recommend the proposal for consideration of EC. The cost estimates for procurement of equipment's /instruments/ software's etc. are based on the proposal submitted by the State Government or cost restricted to cost provided by IBM or GSI as detailed above. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

The estimated cost submitted by State Government/ cost restricted to cost provided by IBM or GSI for procurement of items detailed above stands at Rs 4.99 crore.

The committee opined that due process of procurement including item wise cost estimation as per extant Government of India financial rules be followed by DGM, Tamil Nadu in consent with the competent authority of State Department/ State Financial Wing (Division). The state Govt should also ensure full utilization of the instruments/ software to be procured.

49.2.4. Financial assistance for procurement of machinery /laboratory equipment's instruments etc., aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines and Geology, Jharkhand]

a) The Department of Mines and Geology, Jharkhand has submitted the proposal for procurements of machinery/ laboratory equipment/ instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹ 16,40,75,000/-.

b) The Committee evaluated the proposal submitted by the DGM, Jharkhand for procurement of machinery/ laboratory equipment/ instruments etc. After detailed discussion with DGM representative, the procurement of following items was agreed:

Sl No	Name of the Equipment	Quantity	Estimated cost per unit (Rs)	Total Amount (Rs)	Remark
1	Digial Camera	10	90,000	9,00,000	Cost estimate as per DGM, Jharkhand
2	Bruntun Compass	20	10,000	2,00,000	Cost provided by GSI
3	Geological Hammer	20	10,000	2,00,000	Cost provided by GSI
4	Hand held GPS	20	95,000	19,00,000	Cost provided by GSI
5	Hydraulic Core Splitter	1	2,00,000	2,00,000	Cost provided by GSI
6	Vibratory Cup Mill with accessories	1	6,00,000	6,00,000	Cost estimate as per DGM, Jharkhand
7	ICP- MS	1	2,00,00,000	2,00,00,000	Cost estimate as per DGM, Jharkhand
8	WD XRF	1	1,60,00,000	1,60,00,000	Cost estimate as per DGM, Jharkhand
9	Fusion Bead Machine	1	20,00,000	20,00,000	Cost provided by GSI
10	Press Palleted machine	1	3,90,000	3,90,000	Cost provided by GSI
11	Grinding and Polishing Machine and mounting unit	1	70,00,000	70,00,000	Cost provided by GSI
12	Transmitted and reflected light research Microscope with software attached camera	1	12,00,000	12,00,000	Cost provided by GSI
13	Proximate Analyzer (TGA)	1	22,00,000	22,00,000	Cost provided by GSI
Total amount				**5,27,90,000**	

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The proposal has been examined and discussed with the representative of the State Government and the Committee in principally agreed to recommend the proposal for consideration of EC. The cost estimates for procurement of equipment's /instruments/ software's etc. are based on the proposal submitted by the State Government or cost restricted to cost provided by IBM or GSI as detailed above. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

The estimated cost submitted by State Government/ cost restricted to cost provided by IBM or GSI for procurement of items detailed above stands at Rs 5.279 crore.

The committee opined that due process of procurement including item wise cost estimation as per extant Government of India financial rules be followed by DGM, Jharkhand in consent with the competent authority of State Department/ State Financial Wing (Division). The state Govt should also ensure full utilization of the instruments/ software to be procured.

49.2.5. Financial assistance for procurement of machinery/ laboratory equipment's instruments etc., aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines and Geology, Uttar Pradesh]

a) The Directorate of Geology and Mining, Uttar Pradesh has submitted the proposal for procurements of machinery/ laboratory equipment/ instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹ 6,39,00,000/-.

b) The Committee evaluated the proposal submitted by the DGM, Uttar Pradesh for procurement of machinery/ laboratory equipment/ instruments etc. After detailed discussion with DGM representative, the procurement of following items was agreed:

Sl. No.	Name of the Equipment	Quantity	Total Amount (Rs)	Remark
1.	Resistivity Meter	1	40,20,000	Cost estimate as per DGM, UP
2.	Handheld XRF	1	30,00,000	Cost provided by GSI
Total amount			70,20,000	

The proposals have been examined and discussed with the representative of the State Government and the Committee in principally agreed to recommend the proposal for consideration of EC. The cost estimates for procurement of equipment's /instruments/ software's etc. are based on the proposal submitted by the State Government or cost restricted to cost provided by IBM or GSI as detailed above. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

The estimated cost submitted by State Government/ cost restricted to cost provided by IBM or GSI for procurement of items detailed above stands at Rs 70.20 lakh.

The committee opined that due process of procurement including item wise cost estimation as per extant Government of India financial rules be followed by DGM, Uttar Pradesh in consent with the competent authority of State Department/ State Financial Wing (Division). The state Govt should also ensure full utilization of the instruments/ software to be procured.

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49.2.6. Financial assistance for procurement of machinery /laboratory equipment's instruments etc., aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines and Geology, Kerala]

a) The Directorate of Mining and Geology, Kerala has submitted the proposal for procurements of machinery/ laboratory equipment/ instruments etc. including drilling machine (up to 1000m capacity), rock cutting, polishing and mounting unit, transmitted and reflected light research microscope with software and attached camera, hot plates, WD-XRF, pellet press and vibratory disc mill (pulveriser) aimed at enhancing the exploration activities of the State at an estimated cost of Rs 3, 93,50,000/-.

b) It has been observed that the cost of instruments proposed by DGM Kerala are tentative and needs to be relooked.

c) After detailed deliberation, committee suggested to resubmitted in the next TCC with proper cost estimates. Besides committee also desired to submit the clarification on requirement of drilling machine with 1000m drilling capacity.

The committee suggested to resubmit the revised proposal in appropriate format with justification on requirement of instruments vis-à-vis availability and workload of DGM, Kerala.

49.3: Review of the Geological report/Ongoing projects

49.3.1: Preliminary exploration (G3) for copper ore in Singhana Muradpur West Intervening block, District: Jhunjhunu, Rajasthan. [Implementing Agency: MECL]

a) The Singhana-Muradpur West Intervening Block was recommended in 33rd TCC meeting held in September, 2021 and approved in 22nd EC meeting held in December 2021 with estimated cost of ₹343.03 lakh for a time period of 13 months.

b) The project was reviewed in 42nd TCC meeting held in June, 2022 wherein the committee suggested to submit the geological report incorporating all the exploration data.

c) It has been conveyed that 640m drilling has been completed in 4 boreholes 56 nos. of primary samples have been analyzed for Cu, Ni, Mo and W and 60 no. of primary samples have been analyzed for Fe, SiO_2, Al_2O_3, P and LOI. The Cu and Fe values of 0.20% and 15% respectively have been recorded from the boreholes. The geological report has been finalized after attending comments of reviewer.

The committee noted the outcome of the exploration work and suggested to submit the geological report to NMET Secretariat.

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49.3.2: Preliminary exploration (G3) for limestone in Sendurai & Maruvathur block (1.54 sq. km), District: Ariyalur, Tamil Nadu. [Implementing Agency: MECL]

a) The Sendurai & Maruvathur Block was recommended in 39th TCC meeting held in March, 2022 and approved in 24th EC meeting held in May, 2022 at an estimated cost of Rs 95.74 lakh for a time period of seven months.

b) It has been conveyed that the assigned targets have been successfully achieved and total limestone resource of 30.49 MT has been established. The summary of resource estimated with different grades in the Sendurai-Muruvathur block is given below:

Category and UNFC Code	Cement (Portland) Grade (Million tonnes)	Blendable Grade (Million tonnes)	Threshold Grade (Million tonnes)	Total (Million Tonnes)	Remarks
Indicated – 332	17.91	4.96	0.40	23.26	76.28%
Inferred – 333	5.79	1.15	0.29	7.23	23.72%
Total	23.69	6.11	0.69	30.49	100.00%
Average Quality	CaO 48.94%, MgO 0.72%, SiO_2 6.83%.	CaO 40.43%, MgO 1.35%, SiO_2 15.85%	CaO 34.50%, MgO 1.64%, SiO_2 22.35%	CaO 46.96%, MgO 0.86%, SiO_2 8.94%	

c) Committee opined that the exploration work qualifies for G2 stage, hence block may be considered for auctioning of ML.

The committee noted the outcome of the exploration and suggested to submit the geological report to NMET Secretariat and State DGM for auctioning.

49.3.3: Reconnaissance survey (G4) for Copper, Lead, Zinc and Gold in Laron block (45.00 sq. km), District: Jhansi, Uttar Pradesh. [Implementing Agency: MECL]

a) The Laron block was recommended in 34th TCC held in October, 2021 and approved in 22nd EC meeting held in December 2021 with an estimated cost of Rs 265.48 lakh and time period of 15 months.

b) It has been submitted that the assigned targets have been successfully achieved. The project was reviewed in 43rd TCC meeting held in July, 2022 wherein the committee opined that the analytical results of the samples are not encouraging hence drilling may not be required, hence project may be concluded.

c) It has been submitted that the analytical values of Cu (6.23ppm to 214.61 ppm), Pb (<1.00ppm to 1230.04 ppm), Zn (6.24ppm to 141.86 ppm), Au (0.51ppb to 9.26 ppb). have been recorded besides Fe (11.45% to 20.38%), Mn (1.24% to 8.31%) and Ni (590.82ppm to 1027.39ppm).

d) After detailed deliberations the committee opined that the MECL should be cautious while formulating any project proposal by considering the geological milieu, collation of available baseline geoscience data etc. to avoid such outcome.

The committee noted the outcome of the exploration and suggested to submit the geological report to NMET Secretariat.

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49.3.4: Reconnaissance survey (G4) for Gold in Mendarbahar-Bhagora block (38.58 sq. km), District: Jashpur, Chhattisgarh. [Implementing Agency: MECL]

a) The reconnaissance survey (G4) for Gold in Mendarbahar-Bhagora block (38.58 sq. km), District: Jashpur, Chhattisgarh, was recommended in 37th TCC held in January, 2022 and approved in 23rd EC meeting held in March, 2022 with an estimated cost of Rs 151.06 lakh and time period of 12 months.

b) MECL informed that the geological mapping has been done at 1:12,5000 scale over 35 sq. km out of 38.58 sq. km and 62 samples have been collected against the targeted 100 samples. Out of which anomalous value of gold is recorded only in one sample. MECL has submitted that the remaining samples could not be collected from the area due to resistance by the locals. It has been conveyed that the area expected to be encouraging /with positive outcome have been occupied by the locals, hence the remaining targets could not be achieved.

c) The committee expressed its concern over non achievement of assigned targets from the block area.

d) Committee suggested to conclude the project and submit the technical report to NMET. Committee suggested to assess the ground position before taking up exploration projects in any area.

The committee suggested to conclude the project and submit the geological reports to NMET. Committee also suggested to record the reasons /law and order issue for non-achievement of assigned targets.

49.3.5: Preliminary exploration (G3) for bauxite in Maduapat-1 block, District: Lohardaga, Jharkhand. [Implementing Agency: CMPDI]

a) The Preliminary exploration (G3) for bauxite in Maduapat-1 block, District: Lohardaga, Jharkhand, was recommended in 33rd TCC held in September 2021 and approved in 22nd EC meeting held in December 2021 with an estimated cost of Rs 42.98 lakh and time period of 12 months.

b) CMPDI has conveyed that geological mapping of 1.50 sq. km. on 1: 4000, drilling of 107m for 5 boreholes and collection of 49 primary samples have been completed.

c) It has been submitted that the bauxite thickness zone varies from 1.30m to 2.0m and aluminous laterite thickness varies form 3.50m to11.0m. The Al_2O_3 (21.72% to 46.11%), SiO_2 (4.88% - 34.00%), TiO_2 (2.20% - 10.58%) and Fe_2O_3 (13.27% - 50.16%) have been recorded from the area.

d) CMPDI sought approval additional drilling of 7m and additional analyses of 19 samples at the cost of Rs 39,333/- and Rs 79,800/- respectively.

e) After the detailed deliberation, the committee agreed with the additional drilling of 7m and analyses of 19 samples.

The committee approved the additional amount of Rs 39,333/- for 7m drilling and Rs 79,800/- for analyses of 19 samples as per SoC of NMET.

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49.3.5: Preliminary exploration (G3) for Coal in North of Parbelia, Raniganj Coalfield, District: Purulia, West Bengal. [Implementing Agency: CMPDI]

a) The preliminary exploration (G3) for coal in North of Parbelia, Raniganj Coalfield, District: Purulia, West Bengal, was recommended in 31st TCC held in July, 2021 and approved in 24th EC meeting held in May, 2022 with an estimated cost of Rs 285.77 lakh for a time period of 12 months.

b) It has been submitted that drilling was initiated in August 2022 and 807.00m drilling has been completed along with geophysical logging of 790m. CMPDI has conveyed that total 17.75m thick coal seam comprising BH-1(0.55m), BH-2 (4.5m), BH-3 (10m-R-IV seam) and BH-4 (two uncorrelatable seams 0.6m and 1.7m) have been recorded from the block.

c) Committee suggested to analyze the samples to ascertain the quality of coal.

The committee noted the outcome of project and suggested to complete the analyses of coal samples to assrtain the quality of coal.

49.3.6: Reconnaissance survey for Kyanite in Kallahalli Kyanite block, District- Mysore, Karnataka. [Implementing Agency: KIOCL]

a) The reconnaissance survey for Kyanite in Kallahalli Kyanite block, District- Mysore, Karnataka, was recommended in 27th TCC held in January, 2021 and approved in 18th EC meeting held in February, 2021 with an estimated cost of Rs 191.64 lakh for a time period of 12 months.

b) The project was reviewed in 34th TCC held in October, 2021 wherein the committee suggested for additional trenching of 100 cu. m. along with petrological studies and modal analysis for kyanite mineralization and approved additional cost of Rs 18,71,250/-.

c) It has been submitted that the assigned targets have been successfully achieved. Based on exploration activities, and modal analyses it has been deciphered that the zone -1, zone – 3 and zone-5 (south) has been encouraging. However, forest permission could not be received for drilling.

d) Committee suggested that the forest and non-forest areas need to be marked and accordingly State Govt. may be informed for auctioning of block over non-forest area.

e) KIOCL has sought additional financial approval of Rs. 1, 89, 18,392 /- (Including GST) for carrying out drilling and associated works. The committee opined that the additional cost approval of more than 100% for any project could not be recommended and it may be appropriate to conclude the project and submit the fresh proposal for drilling and associated activities through NMET funding.

The committee suggested to conclude the ongoing project and submit the geological report to NMET secretariat. However, a fresh proposal for further stage of exploration including drilling and other associated activities may be submitted, if waranted.

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49.3.7: Reconnaissance survey for basemetal in Anaji block (135.00 sq. km), District: Davangere, Karnataka. [Implementing Agency: KIOCL]

a) The Anaji block, Karnataka, was recommended in 34th TCC held in October, 2021 and approved in 22nd EC meeting held in December 2021 with an estimated cost of Rs 140.68 lakh for a time period of 12 months.

b) KIOCL has conveyed that most of the assigned targets have been successfully achieved. The surface manifestation for these rocks / veins does not shows primary sulphides and specks of chalcopyrite and malachite strain. Out of 34 samples analysed, only six samples (4 from Ultramafite + 1 Talc Schist + 1 Quartzite) indicated Cu > 100 ppm.

c) No encouraging results have been obtained from stream sediments samples, collected from 1st order and 2nd order streams.

d) After detailed deliberation, the committee opined that the analytical results are not encouraging, hence project may be concluded.

Keeping in view, the committee suggested to conclude the project and submit the geological report to NMET Secretariat.

49.3.8: Reconnaissance survey for basemetal in Oblapuram block (53.00 sq. km), District: Davangere, Karnataka [Implementing Agency: KIOCL]

a) The Oblapuram block, Karnataka, was recommended in 35th TCC held in November, 2021 and approved in 22nd EC meeting held in December 2021 with an estimated cost of Rs 165.43 lakh for a time period of 12 months.

b) It has submitted that most of the assigned targets have been achieved by the KIOCL. Out of 50 samples analyzed, only 6 samples (3 from Amphibolite + 3 Quartzite) indicated Cu > 100 ppm.

c) After detailed deliberation, the committee opined that the analytical results are not encouraging, hence project may be concluded.

The committee suggested to conclude the project and submit the reprot to NMET Secretariat. It was also suggested to examine the reasons for closure/pre-closure of exploration projects so that necessary corrective measures can be taken at the time of examination and evaluation of the projects.

49.4: The meeting ended with vote of thanks by Director and member secretary, TCC, NMET.

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List of TCC members attended 49th Technical-cum-Cost Committee (TCC) meeting of NMET held on 30th and 31st January 2023 through video conference at New Delhi

S. No.	Name/Designation	Status	Remarks
1	Shri Janardan Prasad, Addl. Director General & HoD, GSI	Chairman, TCC	Attended via videoconference
2	Shri Ranjan Kumar Sinha, Controller General (Retd.), IBM	TCC Member	Attended via videoconference
3	Shri Naeem Ahmad, General Manager-Exploration (Retd.), CMPDI Ltd.	TCC Member	Attended via videoconference
4	Dr. Anjani Kumar, Dy. General Manager (Exploration) & HoD Planning (Retd.), MECL	TCC Member	Attended via videoconference
5	Additional Director, Atomic Minerals Directorate for Exploration and Research	TCC Member	Not attended
6	Shri Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	TCC Member	Attended via videoconference
7	Shri Manoj Kumar Patel, Deputy Director General and RMH-II, GSI	TCC Member	Attended via videoconference
8	Shri Santosh Kumar Adhikari, Chief Mining Geologist, IBM	TCC Member	Attended via videoconference
9	Shri Vivek Kumar Sharma, Director, NMET, Ministry of Mines	TCC Member	Attended via videoconference
10	Shri Suresh Chander Director, GSI	Member Secretary, TCC, NMET	Attended in person
11	Shri Ravi Kumar Gupta, General Manager (Finance) HCL	TCC Member	Attended via videoconference
12	Shri P. K. Maharana, Dy. General Manager (Finance), NALCO	TCC Member	Attended via videoconference
13	Shri Vinay Pal, CAO (Finance), GSI	TCC Member	Not Attended

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Annexure-1

List of participants attended 49th Technical-cum-Cost Committee (TCC) meeting of NMET held on 30th and 31st January 2023 through video conference at New Delhi

S. No.	Name/Designation	Email ID	Contact No	Organisation
1	Shri Janardan Prasad ADG & HoD, GSI	janardan.prasad@gsi.gov.in	7763800788	Chairman, TCC
2	Shri Ranjan Kumar Sinha Controller General (Retd.) IBM	sinhark57@rediffmail.com	9421777637	Member, TCC
3	Shri Hemraj Suryavanshi ADG (Retd.), GSI	hemrajgsi@gmai.com	7477042176	Member, TCC
4	Dr. Anjani Kumar DGM (Retd.), MECL	anjanikumar1 957.ak@gmaiLcom	9975350576	Member, TCC
5	Shri Naeem Ahmed GM (Retd.), CMPDI	ahmadnaeem17@yahoo.co.i n	8588092153	Member, TCC
6	Shri Manoj Kumar Patel DDG and RMH-II, GSI	m.patel1@gsi.gov.in	9040011231	Member, TCC
7	Shri Vivek Kumar Sharma Director, NMET	vksharma.ofb@gov.in	7024570055	Member, TCC
8	Shri P. K. Maharana, DGM (F), NALCO	pmaharana@rediffmail.com	8500669500	Member, TCC
9	Shri Ravi Kumar Gupta General Manager (Finance) HCL	ravi_g@hindustancopper.co m	9433274328	Member, TCC
10	Shri Suresh Chander Director, GSI	suresh.chander@gsi.gov.in	9493860963	Member Secretary,
12	Dr. Deshraj Trivedi Senior Geologist	nmet- tcc@gov.in	9419244294	TCC-NMET
16	Dr. R. P. Singh, Manger (Geology)	gm.exploration.cmpdil@gmail .com	8987789047	CMPDI
17	Shri P. Ravindran, G.M. (Exploration)	gm-exploration@mecl.co.in	7907649392	MECL, Nagpur
18	Shri P. C. Mishra Joint Director (Geology)	directorgeology odisha@yah oo.com	9861465695	DMG, Odisha
19	Shri H. P. Harish, Deputy Director (Plan)	dir-mines@karnataka.gov.in ddpmdmg1@gmail.com	9611951313	DMG, Karnataka
20	Shri Shiva Kumar M, AGM (Mining)	bmed@kiocltd.in	9481444686	KIOCL Limited
21	Shri Anand Rawat, Geologist	dgmarunachal@gmail.com	7005386045	DGM Arunachal Pradesh

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22	Shri Nilabja Roy, Director	nilabjaroy500@gmail.com	8240124822	DGM West Bangal
23	Smt. Aruna V. Joint Director	cgmchennai32@gmail.com;	9176610967	DGM Tamil Nadu
24	Shri Kumar Amitabh, Deputy Director	director-mines@jharkhand.gov.in	9431196469	DMG Jharkhand
25	Shri Vipin Kumar Jain, Special Secretary Geology & Mines U.P.,	dgmupexp@gmail.com	9580002604	DGM, U.P.
26	Shri Jai Prakash Joint Director	dgmupexp@gmail.com	8887534717	DGM, U.P.
27	Shri R. P. Singh, Geologist	dgmupexp@gmail.com	9621045793	DGM, U.P.
28	Shri Sohan Baghel	geology.dgm@mp.gov.in	-	DGM, M.P.
29	Director, DMG, Kerala	www.dmg.kerala.gov.in	-	DMG, Kerala
30	Shri Maneesh Khar Director	nmet.mines@gov.in	9462036108	NMET
31	Smt. Sangeeta Gupta Senior Geologist	nmet-mines@gov.in	7408110676	NMET
32	Smt. Anju C. S Senior Geologist	nmet-mines@gov.in	8588836933	NMET
33	Smt. Ujjwala Sharma Senior Geologist	nmet-mines@gov.in	8957806004	NMET

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Annexure- 2A

Estimated cost for Preliminary exploration (G3) for limestone in proposed Kiranagi-1 and Kiranagi-2 blocks, District- Gulbarga (Kalaburagi), Karnataka Total Area - 11.41 Sq Km; Nos. of Borehole - 10 ; Borehole depth range - 45m; Completion Time - 10 Months							
S.N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	GEOLOGICAL WORK						
1	Mapping (on 1:4000 Scale) , Borehole logging & Sampling & Report writing						
i	Charges for one Geologist per day at HQ	day	1.3	9,000	60	5,40,000	
ii	Charges for one Geologist per day at field	day	1.3	11,000	120	13,20,000	
iii	Labour for Geologist (2 Nos)	day	5.7	477	240	1,14,480	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	45	2,29,500	
v	Labours for sampling work (4 Nos)	day	5.7	477	180	85,860	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher

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2	**Survey**						
i	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and block cardina points by DGPS	Per Point of observation	1.6.2	19,200	18	3,45,600	Block cardinal point- 07 Borehole- 10, base station- 1
ii	Charges of one Surveyor (1 Party)	one surveyor per day	1.6.1a	8,300	30	2,49,000	Contouring at 2m interval
iii	Labours (4 Nos)	day	5.7	477	120	57,240	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub-Total A					**29,41,680**	
B	**DRILLING**						
i	Drilling -Soft rock	m	2.2.1.1b	6714	450	30,21,300	MoC Rate
ii	Land / Crop Compansation (in case the BH falls in agreecultural Land)	per BH	5.6	20,000	10	2,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
iii	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	10	20,000	
iv	Borehole plugging by cement (NQ)	m	2.2.7b	150	10	1,500	
v	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,700	61,200	To & fro
vi	Monthly Accomodation Charges for drilling Camp (up to 1 Rigs)	month	2.2.9	50,000	3	1,50,000	
vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	

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viii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
ix	Road Making (Flat Terrain)	Km	2.2.10a	22,020	4	88,080	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed accordingly.
x	Drill Core Preservation	per m	5.3	1,590	405	6,43,950	
	Sub Total B					**46,86,030**	
C	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary samples**						
	a. For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3 SO3, P2O5 K2O and LOI by XRF	Nos	4.1.15a	4,200	400	16,80,000	
ii)	**Check samples Internal (5%) and External(10%)**						
	a. For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3 SO3, P2O5 K2O and LOI by XRF	Nos	4.1.15a	4,200	60	2,52,000	
iii)	**Petrological samples (Bh Core Samples)**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of Thin Section	Nos	4.3.4	4,232	10	42,320	
iii	Photomicrographs	Nos	4.3.7	280	10	2,800	

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iv)	**Bulk Density Determination**						
	Bulk Density	No.	4.10	3,540	2	7,080	
					Total - C	**20,07,730**	
D					**Sub Total (A to C)**	**96,35,440**	
E	**Geological Report Preparation**		5.2	**For the projects exceeding Rs. 50 Lakhs but less than 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more**		**9,63,544**	2 Separate GRs for two blocks (Kiranagi-1 and Kiranagi-2 Blocks)
F	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	5.1	**2% of the Cost or Rs. 3.8 Lakhs whichever is lower**		**1,92,709**	
G	**Peer review Charges**		**As per EC decision**			**20,000**	Cost Estimated for two peer review of 2 blocks seperately (Kiranagi-1 and Kiranagi-2 Blocks)
H	**Total Estimated Cost without GST**					**1,08,11,693**	
I	**Provision for GST (18% of H)**					**19,46,105**	GST will be reimbursed as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**					**1,27,57,798**	
					or Say Rs. In Lakhs	***127.58***	
Note - If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.							

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Annexure- 2B

Scheduled time for Preliminary exploration (G3) for limestone in proposed Kiranagi-1 and Kiranagi-2 blocks, District- Gulbarga (Kalaburagi) , Karnataka

Sl. No.	Activities	Unit	MONTHS									
			1	2	3	4	5	6	7	8	9	10
1	Camp Setting	Month										
2	Surface Drilling (1 rig)	m.										
3	Survey Party days (1 Party)	day										
4	Geologist Party days in field(1 Party)	day										
5	Sampling Party days, Core Sampling (1 party)	day										
6	Laboratory Studies	Nos.										
7	Camp Winding	Month										
8	Geologist Party days in HQ (1 Party)	day										
9	Geological Report Writing with Peer Review	Month										

Note: 1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.

2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.

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Estimated cost for Preliminary Exploration (G3) for Copper and associated minerals in proposed Kalasapura block, District: Chikkamagaluru. Karnataka. [Block area- 15.00 sq. km; Nos. of Borehole- 4; Borehole depth range- 75m to 125m; Schedule timeline- 12 months]							
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	GEOLOGICAL WORK (1:4000 scale)						
i	Charges for one Geologist-HQ	day	1.3	9,000	60	5,40,000	
ii	Charges for one Geologist-Field	day	1.3	11,000	150	16,50,000	
iii	Labour (2 Nos)	day	5.7	477	300	1,43,100	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Charges for one Sampler per day (1 Party) for geochemical, channel and core samples	one sampler per day	1.5.2	5,100	25	1,27,500	
v	Labours (4 Nos)	day	5.7	477	100	47,700	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	25,08,300	
B	GEOPHYSICAL SURVEY#						
i	Self- Potential & Magnetic (8-20 Line km)	8-20 Line km	3.3b	12,92,047	1	12,92,047	
ii	Charges for one Geophysicist per day at field	day	3.18	11,000	30	3,30,000	Decission will taken after review of geological work

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iii	Charges for Surveyor	day	1.6.1a	8,300	30	2,49,000	
iv	Labours (4 Nos)	day	5.7	477	120	57,240	
v	Charges for one Geophysicist per day at HQ	day	3.18	9,000	15	1,35,000	
					Sub Total- B	**20,63,287**	
C	**PITTING AND TRENCHING$**						
i	Trenching	Cu m	2.1.1	3,330	150	4,99,500	
					Sub Total- C	**4,99,500**	
D	**DRILLING**						
i	Drilling	m	2.2.1.4a	11,500	350	40,25,000	4 bhs
ii	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	4	80,000	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities
iii	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	4	8,000	
iv	Borehole plugging by cement (NQ)	m	2.2.7b	150	4	600	
v	Transportation of Drill Rig & Truck asscciated per drill (1 rigs)	Km	2.2.8	36	2,600	93,600	Certification in this regard is required to be provided
vi	Monthly Accomodation Charges for drilling Camp (up to 1 Rigs)	month	2.2.9	50,000	3	1,50,000	
vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	

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viii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
ix	Approach Road Making (F at Terrain)	Km	2.2.10a	22,020	3	66,060	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 3 km.
x	DGPS Survey for Block boundary + BH coordinates	per point	1.6.2	19,200	5	96,000	4 Bhs + 1 Base station
xi	Drill Core Preservation	per m	5.3	1,590	150	2,38,500	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
					Sub Total- D	**52,57,760**	
E	**Borehole Geophysical Logging**						
i.	Base log	Per m	3.11a	151	350	52,850	
ii.	Induced Polarisation (I.P)	Per m	3.11p	93	350	32,550	
iii.	Magnetic Susceptibility (in borehole)	Per m	3.11q	129	350	45,150	
iv.	Resistivity	Per m	3.11c	39	350	13,650	
v.	Charges for one Geophysicist per day at HQ	day	3.18	9,000	10	90,000	
vi.	Charges for Geophysicist per day at field	day	3.18	11,000	5	55,000	
vii.	Labour (2 Nos)	day	5.7	477	10	4,770	
					Sub Total- E	**2,93,970**	

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F	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
I	**Primary & Check Samples**						
i	**Primary samples**						
	a. For Cu, Pb, Zn, Co, Mo, Se & Te	Nos	4.1.7a & b	3,176	180	5,71,680	
	b. For Au & Ag by fire assay	Nos	4.1.5a	4,760	20	95,200	
ii	**Internal check samples (5%)**						
	a. For Cu, Pb, Zn, Co, Mo, Se & Te	Nos	4.1 7a & b	3,176	9	28,584	
	b. For Au & Ag by fire assay	Nos	4.1.5a	4,760	1	4,760	
iii	**External check samples (10%)**						
	a. For Cu, Pb, Zn, Co, Mo, Se & Te	Nos	4.1 7a & b	3,176	18	57,168	
	b. For Au & Ag by fire assay	Nos	4.1.5a	4,760	2	9,520	
IV	**Composite Samples**						
	a. 34 Elements by ICPMS	Nos	4.1.14	7,731	10	77,310	
2	**Physical & Petrological Studies**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Complete petrographic study report	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos	4.3.2	1,549	10	15,490	

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iv	Complete mineragraphic study report	Nos	4.3.4	4,232	10	42,320	
v	Whole Rock Analysis	Nos	4.1.15a	4,200	10	42,000	
vi	Sp. Gravity	Nos	4.8.1	1,605	5	8,025	
						10,17,907	
G					**Total A to F**	**1,16,40,724**	
H	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	Exploration cost exceeding 50 lakh but less than 150 lakh: A Minimum of ₹2.5 lakh or 5% of the work whichever is more		**5,82,036**	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
I	**Peer review Charges**		**As per EC decision**			**10,000**	
J	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**2,32,814**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
K	**Total Estimated Cost without GST**					**1,24,65,575**	
L	**Provision for GST (18% cf J)**					**22,43,803**	GST will be reimburse as per actual and as per notified prescribed rate

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M	**Total Estimated Cost with GST**	**1,47,09,378**	
	or Say Rs. In Lakhs	**147.09**	
Note:			
	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.		

Annexure- 3B

Scheduled time for Preliminary Exploration (G3) for Copper in Kalasapura Block, District: Chikkamagaluru, Maharashtra.

S. No.			1	2	3	4	Review for Geophysical work	5	6	7	Review for Scout Drilling	8	9	10	11	12
1	Camp Setting	Months/Days														
2	Geological Mapping & Sampling	days														
3	Pitting and Trenching	cu.m														
4	Surface Drilling (1 rigs)	m														
5	Geophysical survey	L.km														
6	Geophysicst Man days(HQ)															
7	Survey Party days	days														
8	Geologst Man days	days														
9	Sampler Man days	days														
10	Camp Winding	months														
11	Laboratory Studies	Nos.														
12	Report Writing with Peer Review	months														
Note:	1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.															
	2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.															

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Estimated cost for Reconnaissance survey (G4) for Polymetals (Cu, Au, Ag) in Miregaon block, District: Bhandara, Gondiya. Maharashtra. [Block area- 49.769 sq. km; Nos. of Borehole- 2; Borehole depth range- upto 100m; Schedule timeline- 12 months]							
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK (1:12,500 scale)**						
i	Charges for one Geologist-HQ	day	1.3	9,000	60	5,40,000	
ii	Charges for one Geologist-Field	day	1.3	11,000	120	13,20,000	
iii	Labour (2 Nos)	day	5.7	477	240	1,14,480	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Charges for one Sampler per day (1 Party) for geochemical, channel and core samples	one sampler per day	1.5.2	5,100	20	1,02,000	
v	Labours (4 Nos)	day	5.7	477	80	38,160	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**21,14,640**	
B	**PITTING AND TRENCHING$**						
i	Trenching	Cu m	2.1.1	3,330	100	3,33,000	
					Sub Total- B	**3,33,000**	

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C	**GEOPHYSICAL SURVEY#**						
i	S.P. & Magnetic Method	8-10 L.Km	3.3b	12,92,047	1	12,92,047	
ii	Charges for one Geophys cist per day at field	day	3.18	11,000	30	3,30,000	
iii	Charges for Surveyor	day	1.6.1a	8,300	30	2,49,000	
iv	Labours (4 Nos)	day	5.7	477	120	57,240	
v	Charges for one Geophys cist per day at HQ	day	3.18	9,000	15	1,35,000	
					Sub Total- C	**20,63,287**	
D	**DRILLING**						
i.	Drilling up to 300m (Hard Rock)	m	2.2.1.4a	11,500	200	23,00,000	Taken after review of mapping sampling, trenching and geophysical survey work
ii.	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	2	40,000	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities
iii.	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2 7a	2,000	2	4,000	
iv.	Borehole plugging by cement (NQ)	m	2.2 7b	150	2	300	
v.	Transportation of Drill Rig & Truck associated per drill (1 rigs)	Km	2.2.8	36	1,600	57,600	Certification in this regard is required to be provided
vi.	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	2	1,00,000	

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vii.	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
viii.	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
ix	Approach Road Making (Flat Terrain)	Km	2.2.10a	22,020	2	44,040	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 3 km.
x	DGPS Survey for BH coordinates	per point	1.6.2	19,200	3	57,600	2 Bhs + 1 Base station
xi	Drill Core Preservation	per m	5 3	1,590	120	1,90,800	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
					Sub Total- D	**32,94,340**	
E	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
I	**Primary & Check Samples**						
i	**Primary samples**						
	a. For Cu, Pb, Zn, Co, Mo, Se & Te	Nos	4.1.7a & b	3,176	160	5,08,160	
	b. For Au & Ag by fire assay	Nos	4.1.5a	4,760	20	95,200	
ii	**Internal check samples (5%)**						
	a. For Cu, Pb, Zn, Co, Mo, Se & Te	Nos	4.1.7a & b	3,176	8	25,408	
	b. For Au & Ag by fire assay	Nos	4.1.5a	4,760	1	4,760	

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iii	**External check samples (10%)**						
	a. For Cu, Pb, Zn, Co, Mo, Se & Te	Nos	4.1.7a & b	3,176	16	50,816	
	b. For Au & Ag by fire assay	Nos	4.1 5a	4,760	2	9,520	
2	**Physical & Petrological Studies**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Complete petrographic study report	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos	4.3.2	1,549	10	15,490	
iv	Complete mineragraphic study report	Nos	4.3.4	4,232	10	42,320	
v	Digital Photographs	Nos	4.3.7	280	-	-	
vi	Whole Rock Analysis	Nos	4.1.15a	4,200	10	42,000	
vii	Sp. Gravity	Nos	4.8.1	1,605	2	3,210	
					Sub Total-E	**8,62,734**	
F					**Total A to E**	**86,68,001**	

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G	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	Exploration cost exceeding 50 lakh but less than150 lakh: A Minimum of ₹2.5 lakh or 5% of the work whichever is more		**4,33,400**	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
H	**Peer review Charges**		**As per EC decision**			**10,000**	
I	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**1,73,360**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
J	**Total Estimated Cost without GST**					**92,84,761**	
K	**Provision for GST (18% of J)**					**16,71,257**	GST will be reimbursed as per actual and as per notifiec prescribed rate
L	**Total Estimated Cost with GST**					**1,09,56,018**	
				or Say Rs. In Lakhs		**109.56**	
Note:							
$	Trenching/Pitting dimensions are tentative may vary depending upon the geology and field conditions						
#	2nd level of work 9drilling) shall be carried out after review of 1st level work i.e. Geological mapping, geochemical sampling/trenching and analysis and geophysical survey						
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

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Scheduled time for Reconnaissance survey (G4) for Polymetals (Cu, Au, Ag) in Miregaon Block, District: Bhandara, Gondiya. Maharashtra.

S. No.			1	2	3	4	Review for Geophysical work	5	6	7	Review for Scout Drilling	8	9	10	11	12
1	Camp Setting	Months/Days														
2	Geolog cal Mapping & Sampling	days														
3	Pitting and Trenching	cu.m														
4	Surface Drilling (1 rigs)	m														
5	Geophysica survey	L.km														
6	Geophysicist Man days(HQ)															
7	Survey Party days	days														
8	Geologst Man days	days														
9	Sampler Man days	days														
10	Camp Wirding	months														
11	Laboratory Studies	Nos.														
12	Report Writing with Peer Review	months														
Note :	1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.															
	2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be adcitional to above time line.															

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Estimated cost for Reconnaissance Survey (G-4) for REE in Khairlanji Block, Balaghat & Seoni District, Madhya Pradesh Total block area- 123.04 sq km; Completion Time- 12 Months							
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC- Item- S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**Geological Work (1:12500 scale)**						
1.1	Large scale (LSM) Geological mapping(1:12,500)/ Trenching/ Drilling						
a	Geologist man days (1 Nc) for Large scale (LSM) Geological mapping/ Trenching/ Drilling	days	1.2	11,000	130	14,30,000	
b	Charges for one Geologist per day at HQ	days	1.2	9,000	60	5,40,000	
c	Labour (field) for (Total 2 Nos)	per worker	5.7	477	260	1,24,020	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Sampler for Suface Samples/ Trench Samples / Core Samples Labour charge not included	day	1.5.2	5100	35	1,78,500	
e	4 labours/ party (As per rates of Central Labour Commissioner)	day	5.7	477	140	66,780	Amount will be reimbursec as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever s higher

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	Sub-Total A					**23,39,300**	
B	**Mineral Investigation**						
	Pitting						
	a) Excavation of pits	per cu m	2.1.2	3,800	200	7,60,000	
	Sub-Total B					**7,60,000**	
C	**Laboratory Studies**						
1.0	Chemical Analysis						
	i) Surface sampling (Bed Rock Samples/Soil/Stream Sediment)						
	a. For 34 elemental analysis includes Nb, Sr, Ta, W, Mo, Sn, Rb, Be Cs, LI & REE analysis by ICP-AES / ICPMS (sequential technique)	per sample	4.1.14	7,731	250	19,32,750	
	ii) Check Samples (Bed Rock/Soil/Stream Sediment Samples) - 5% Internal & 10% External						
	a. For 34 elemental analysis includes Nb, Sr, Ta, W, Mo, Sn, Rb, Be Cs, LI & REE analysis by ICP-AES / ICPMS (sequential technique)	per sample	4.1.14	7,731	38	2,93,778	
2.0	**Petrological / Mineralographic studies**					-	
	a) Preparation of thin section	per sample	4.3.1	2,353	10	23,530	
	b) Study of thin section for petrography	per sample	4.3.4	4,232	10	42,320	
	c) Preparation of polishec section	per sample	4.3.2	1,549	0	-	
	d) Study of polished section for mineragraphy	per sample	4.3.4	4,232	0	-	
	e) Digital photomicrograph of thin polished section	per sample	4.3.7	280	0	-	
	f) XRD Mineral Phase Analysis	per sample	4.5.1	4,000	5	20,000	

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	Sub-Total C					**23,12,378**	
D	**Total (A to C)**					**54,11,678**	
E	**Geological Report Preparation**	Nos	5.2	Exploration cost exceeding 50 lakh but less than150 lakh: A Minimum of ₹2.5 lakh or 5% of the work whichever is more	1	**2,70,584**	For the projects having cost up to exceeding Rs. 50 Lakhs but less than 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more and Rs. 3000/- per each additional copy.
F	**Preparation of Exploration Proposal**	**Nos**	**5.1**	2% of approved cost or 3.8 lakh whichever is less	**1**	**1,08,234**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC- NMET in its meeting while clearing the proposal.
G	**Report Peer Review Charges**	**lumpsum**	**As per EC decision**	**10000**	**1**	**10,000**	
H	**Total Estimated Cost without GST (D+E+F-G)**					**58,00,495**	
I	**Provision for GST (18%)**					**10,44,089**	GST will be reimburse as per actual and as per notified prescribed rate

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J	**Total Estimated Cost with GST**					**68,44,585**	
					Say, in Lakhs	**68.45**	

Note:

*	Marked items not indicated in SoC and required to be taken up during the course of exploration shall be charged separately (as per actuals)
$	Trenching/Pitting dimensions are tentative may vary depending upon the geology and field conditions
i	Satellite imageries shall be procured from website/NRSA as the case may be and procurement charges if any shall be charged at actuals.
#	2nd level of work shall be carried out after review of 1st level work i.e. Geological mapping, geochemical sampling and analysis

Annexure- 5B

Scheduled time for Reconnaissance Survey (G-4) for REE in Khairlanji Block, Balaghat & Seoni District, Madhya Pradesh

S.No.	Activities	MONTHS											
		1	2	3	4	5	6	7	8	9	10	11	12
1	Camp setting	■											
2	Geological mapping & Sampling		■	■	■	■	■						
	Pitting & Sampling		■	■	■	■	■						
3	Sample preparation				■	■	■	■	■				
4	Analytical work					■	■	■	■	■	■		
10	Camp winding										■		
12	Geologist at HQ										■	■	
13	Geological report										■	■	■
14	Peer Review												■

* Commencement of project will be reckoned from the day the exploration acreage is available along with all statutory clearances

*Time loss on account of monsoon/agricultural activity/forest clearance/ local law & order problems will be addition to above time line.

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Annexure- 6A

Estimated cost for Preliminary exploration (G3) for limestone in Itga block (10.60 sq. km), District: Kalaburagi, Karnataka

Sl. No	Item of Work	Unit	Rates as per NMET SoC			Estimated Cost		Remarks
			SOC Item No	Work/ Activity description	Rates as per SoC	Qty	Amount (Rs)	
A	**Geological Mapping (1: 4000: 10.60 sqkm)**							
i	Geologist Party days (1) - Field	Days	1.2	Geological /Traverse mapping	11,000	120	13,20,000	
ii	Geologist Party days (1) - HQ	Days	1.2		9,000	60	5,40,000	
iii	Labour charges(2 labours)	Days	5.7		477	240	1,14,480	
					Total A		**19,74,480**	
B	**Survey works (out sourced)**							
i	Demarcation of Lease boundary by DGPS. And Fixation of borehole and determination of Co-ordinates and RL of the boreholes by DGPS.(Including charges deployed for the work)	Per Point of observation	1.6.2		19,200	16	3,07,200	
	Total B						**3,07,200**	

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C	**Drilling(out sourced)**							
i	Surface Drilling (01 rig - Soft Rock-NQ)		m	2.2.1.1b	As per MOC approved rate	6,714	450	30,21,300	MoC Rate
ii	Land/Crop Compensation		Per borehole	5.6	As per actuals as certified by local authorities subject to a maximum of 20,000 per borehole	20,000	10	2,00,000	
iii	Construction of Concrete pillar (12"X 12"X30")		per borehole	2.2.7a		2,000	10	20,000	
iv	Borehole plugging by cement (NQ)		m	2.2.7b		150	10	1,500	
v	Core preservation		m	5.3		1,590	450	7,15,500	
						Total C		**39,58,300**	
D	**Analysis**								
i	Sample charges		Days	1.5.2		5,100	60	3,06,000	
ii	Labour charges (4 nos)		Days	5.7		477	240	1,14,480	
iii	Sample analysis	Promary samples (Major oxides)	per sample	4.1.15a	XRF analysis for major oxides (CaO, MgO, Al2O3, SiO2, Fe2O3, TiO2 LOI, MnO2, K2O, Na2O, SO3, Cl & P2O5)	4,200	450	18,90,000	
iv		Internal Check (5%) Major oxides	per sample	4.1.15a		4,200	23	96,600	

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v		External Check (10%)Major oxides	per sample	4.1.15a		4,200	45	1,89,000	
vi	Petrological samples (BH samples)	Preparation of thin section	per sample	4.3.1		2,353	10	23,530	
vii		Study of thin section	per sample	4.3.4		4,232	10	42,320	
viii	Bulk density	Of Core samples	per sample	4.10		3,540	5	17,700	
Total D								**26,79,630**	
Total (A+B+C+D)								**89,19,610**	
E	**Peer review of report**		lump sum	As per EC		10,000	2	20,000	Cost Estimated for two peer review of 2 blocks seperate y
F	Preparation of Exploration Project Proposal			5.1	2% of approved project cost or 3.8 lakh which ever is lower			1,78,392	

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G	Exploration Report	no	5.2	For the projects having cost exceeding Rs 50 lakh but less than 150 lakh : A Minimum of Rs. 2.5 lakh or 5% of the value of work whichever is more			8,91,961	2 Separate GRs for two blocks (Itga-1 and Itga-2 Blocks)
H	Tendering process cost		2.3	one time, in case of outsourced components of project work. 2% of the approved project cost or 5 lakh whichever is lower will be paid one time to Exploration Agency.			1,78,392	Will be reimbursed when copy of signed agreement/tender for outsiurced component will be submitted.
I	Operational chagres		Para 3 of SoC				4,26,550	will be reimbursed as per point 3 of NMET SoC after recalculation when actual cost of outsourcing component will be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charges

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J	**GRAND TOTAL**	**1,06,14,905**	
K	GST 18%	19,10,683	GST will be reimbursed as per actual and as per notified prescribed rate
L	**Grand Total (with GST 18%)**	**1,25,25,588**	
	Or Say in Lakhs	**125.26**	
Note - If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.			

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Annexure- 6B

Schedule time for Preliminary exploration (G3) for limestone in Itga block (10.60 sq. km), District: Kalaburagi, Karnataka

Sl No	Details of works	Duration in Months	Months											
			1	2	3	4	5	6	7	8	9	10	11	12
1	Camp Setting	1												
2	Geological Mapping in 1:5000 scale (Includes 10.60 sq km of GM+ 10 nc of BRS.	1												
2.1	Geologist Party days- Field (01 Party)	1												
2.2	Geologist Party days- Head Quarters (01 Party)	1												
2.3	Laboratory works	2												
3	Topographical Survey	2												
4	Surface Drilling [Includes Preparatory work for drilling approach road and platform preparation, drilling (1 rigs total 450m drilling)]	4												
4.1	Geologist Party days- Field (01 Party)	4												
4.2	Geologist Party days- Head Quarters (01 Party)	2												
4.3	Laboratory works	3												
5	Survey Works (Includes Survey party days for DGPS survey of Boreholes and boundary points- -01 party)	03 days												
6	Camp Winding	1												
7	Preparation of Reports and maps	4												

Note:

1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.
2. Time loss on acccunt of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line

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