Ministry of Mines
National Mineral Exploration Trust

Minutes of the 42nd Technical-cum-Cost Committee (TCC) meeting held on 23rd and 24th June, 2022 through video conferencing at Ministry of Mines, Shastri Bhawan, New Delhi

The 42nd 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 23rd and 24th June, 2022 at Ministry of Mines, Shastri Bhawan, New Delhi through video conferencing. The TCC members and representatives of Exploration Agencies [EAs] participated through their respective VC nodes. 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; Shri Vivek Kumar Sharma, Director & HoD, NMET; Members of the TCC and participants representing various EAs. He conveyed that total 15 new mineral project proposals have been received from different EAs for technical evaluation of the committee.

Shri Vivek Kumar Sharma, Director, NMET welcomed Chairman, TCC; Members of the TCC and participants representing various EAs. He congratulated all TCC members for their technical guidance to evaluate the project proposals for NMET funding.

Shri Janardan Prasad, ADG, GSI, and Chairman, TCC also welcomed the TCC members and other participants from various EAs. He appreciated the EAs for timely submission of the projects to evaluate in the TCC meeting. The proceeding of the meeting was initiated as per the circulated agenda.

Agenda-wise discussions are summarised as follows.

42.1: Technical evaluation of new project proposals:

42.1.1. Preliminary exploration (G3) for coal in West of Chuperbhita block (24.57 sq. km), Rajmahal Coalfield, District: Godda, Jharkhand. [Implementing Agency: CMPDI]

a) Chuperbhita coalfield is the second largest coalfield among the five coal fields of Rajmahal coalfields. It has been submitted that the generalized geological sequence of West of Chuperbhita Block has been established on the basis of geological mapping as well as sub surface data in the adjoining blocks.

b) Geologically the area is represented by the metamorphics at the base followed by Talchir Formation, Barakar Formation, Dubrajpur Formation, Rajmahal Traps and intertrappeans, covered by thick (16.65m) soil cover.

c) It has been informed that the twenty-two (22) persistent coal seams have been identified in the Chuperbhita Block and similar coal seams are expected to be

11/07/22

11/07/22

encountered in the proposed West of Chuperbhita block. The expected grade of coal in the proposed block may vary from G8-G10 grade.

d) The proposal was sent to GSI for their considered comments. In response to this GSI has submitted that the exploratory drilling was carried out by GSI near Simlong village (24°46': 87°27') and other parts of Chuperbhita Coalfield in the year 1965. One of the boreholes (RJC-1) drilled upto a depth of 164m was suspended due to excessive artesian water pressure in the borehole.

e) CMPDI has proposed to take up drilling of approximately 2520m in 11 boreholes at 1600x1600 m grid interval for the West of Chuperbhita Block.

f) Based on deliberations the Committee opined that the proposed borehole 3 and 10 may not be required and the earlier borehole (RCJ-7) was found barren. In view of this Committee suggested to take up 2200m drilling in nine boreholes.

g) The progress of work will be reviewed after completion of four boreholes or in the seventh month of execution of work.

The committee recommended the proposal for approval of EC for Preliminary exploration (G3) for coal West of Chuperbhita Block (24.57 sq. km), Rajmahal coalfield District: Godda, Jharkhand with an estimated cost of Rs 248.01 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 2A & 2B.

42.1.2. Preliminary exploration (G3) for coal in West of Urdhan Jamunia (32.96 sq. km), Pench Kanhan Tawa valley coalfield, District: Chhindwara, Madhya Pradesh. [Implementing Agency: CMPDI]

a) Geologically the area is represented by the Archean Metamorphics at the base, followed by Talchir Formation, Barakar Formation, Motur Formation, Jabalpur Formation, followed by thick cover of Deccan Traps (68-144m) and soil cover (.5-24m).

b) It has been submitted that the Urdhan-Jamunia Block (located in dip side area of the proposed block) exhibits five regionally co-relatable consistent coal seams within Barakar Formation. Their splits are occurring as individual coal seams. Depending upon their thickness, stratigraphic positions, quality and consistency over considerable part of the Urdhan-Jamunia block, total 11 nos. co-relatable coal seams have been identified. The overall grade in the proposed block varies from G3-G11.

c) The proposal was sent to GSI for their considered comments. In response to this, GSI has conveyed that there is no overlapping of the proposed block of CMPDI with the earlier explored blocks of GSI.

d) Based on detailed deliberations the Committee opined that most of the coal seams are found below the depth of 500m and in some cases the depth is more than 932m (PKK-8). Committee opined that in north western portion of the block, the depth of coal seams may be more than 1000m, hence the portion above the NE-SW fault may be omitted

11/05/22

11/05/22

from the proposed block. Keeping this in view, the committee suggested to take up 4700m drilling in 8 boreholes.

e) The Committee suggested to initiate drilling from the eastern side of the block so that the coal seams may be encountered at shallower depth. The progress of work will be reviewed after completion of four boreholes or nine months. The total duration of the project will be 16 months.

The committee recommended the proposal for approval of EC for Preliminary exploration (G3) for coal, West of Urdhan Jamunia Block, Pench Kanhan Tawa Valley Coalfield, District: Chhindwara, Madhya Pradesh with an estimated cost of Rs. 437.98 lakh (including GST) in time schedule of 16 months for carrying out the proposed work and submission of report as per annexure- 3A & 3B.

42.1.3. Reconnaissance survey (G4) for manganese and associated minerals in Damodarpur block (62 sq. km), District: East Singhbhum, Jharkhand. [Implementing Agency: CMPDI]

a) The proposed block forms a part of the Proterozoic volcano-sedimentary sequence of North Singhbhum Mobile Belt(NSMB). The NSMB, having a strike length of around 200km, is an E-W to SW-NE trending curvilinear belt (convex towards north) of volcanosedimentary sequence of Palaeo-Proterozoic to Meso-Proterozoic in age.

b) The proposed area comprises rocks of Singhbhum Group and Dalma volcanogenic sequence. The Singhbhum Group is represented by the mica schist with hornblende schist whereas the Dalma Group is represented by phyllites/ carbon phyllite, quartzites, quartz schists, tuff and volcanic agglomerate intruded by several younger intrusive such as quartz veins. Number of quartz veins are intruded within Singhbhum and Dalma Group. These veins are ferruginous, highly deformed and brecciated in nature.

c) The proposal was sent to GSI for their considered comments. In response to this GSI has conveyed that the Reconnaissance survey (G4) for manganese, phosphate and barium mineralization was carried out by GSI in North Singhbhum Mobile Belt (NSMB) around Niponitola-Chamta-Bangora area of Saraikela-Kharsawan District, Jharkhand (situated in West) with an objective to assess potentiality of phosphate, manganese and barium in the area. Three manganese bearing horizons were identified in the form of mineralized zone of pyrolusite and psilomelane.

d) The G4 exploration have been carried out by GSI in 2016-17, 2018-19, 2019-20 in Niponitola-Chamta-Bangora area and Sasandih-Jilingdungri block situated in west side of the proposed area in strike continuity, wherein occurrence of Manganese ore and Phosphatic rock was proved by GSI in tuffaceous phyllite, thin bands of quartz, calc silicates and metabasalts respectively. Samples collected from the mineralized zone shows value of Mn ranging from 0.15% to 17.97%. Analytical results of BRS & Pit/trench samples exihibits 2.64% average value of P_2O_5 with maximum value of 3.74% P_2O_5.

11/07/22

11/07/22

e) Based on detailed deliberations the committee opined that chemical analysis of manganese is available for proposed area and the reported analytical values of P_2O_5 in the nearby block is less than 5%.

f) The committee suggested that the some of the samples may be collected from the proposed block and in case of encouraging results the proposal may be resubmitted in the next TCC meeting. The committee also suggested to exclude the overlapping area of earlier explored block of GSI, if any.

The committee suggested to collect and analyse some of the samples for manganese and in case of encouraging results the proposal may be resubmitted in the next tCC.

42.1.4. Preliminary exploration (G3) for copper and associated minerals in Shitalpani block (7 sq. km), Malanjkhand copper belt, District: Balaghat, Madhya Pradesh. [Implementing Agency: MECL]

a) MECL proposed preliminary exploration (G3) for copper and associated minerals in Shitalpani block (7 sq. km), Malanjkhand copper belt, District: Balaghat, Madhya Pradesh. It was informed that the block has been divided into two blocks [block-A (5.0 sq. km) and block- B (2.0 sq.km)].

b) Malanjkhand Granitoids are surrounded by older Amgaon schist and gneisses in the west, Nandgaon metavolcanics in the south and younger Chilpis and the Deccan basalts in the east and north respectively.

c) The rocks of Malanjkhand Granitoids are Gray coarse grained, occasionally porphyritic, hornblend bearing, pink spotted, granodiorites and quartz diorites. At places the granodiorites are epidote rich and greenish-gray granite gneisses.

d) The Shitalpani block is represented by the Malanjkhand Granitoid which is intruded by quartz veins and metadolerite dykes along sheared zones, joints and fractures. To the west of Shitalpani block, Amgaon schists and gneisses are occurring. The caught up patches of these rocks are noticed in the granitic rocks.

e) The project proposal was sent to GSI for their considered comments. In response this GSI has conveyed that the GSI had carried out exploration [FS: 1991-94] in and around the proposed area. GSI had identified quartz vein having 450m strike length and are of approximately 15.20m wide at 0.9 km west of Shitalpani. Surface manifestation in the form of chalcopyrite, malachite and galena specks noticed at many places. Total 7 bedrock samples collected from the area had indicated 850 ppm to 0.28% of Cu.

f) The committee was also informed that MECL (2001-2003) had carried out integrated geological, geophysical, geochemical, and exploration drilling in the part of proposed Shitalpani block-B (2 sq. km) for Copper. It was observed that the shear zone brought out by the geophysical survey has a strike continuity of 800m, which was extended beyond the block boundary. As a result of the exploration and drilling, two zones of copper mineralization were established. The northern zone had a continuous stretch of mineralization for 600m strike length at 0.2% Cu grade. Since, structural manifestations such as shears and their intersections are the possible loci for

11/07/22

11/07/22

mineralization, exploration through integrated approach including geophysical, geochemical surveys were recommended in the eastern part towards Sitapur village.

g) MECL proposed to carry out Integrated Ground Magnetic, Resistivity and IP to delineate the copper mineralisation in the block-A (5 sq. km).

h) Based on detailed deliberations the committee opined that the block was already explored up to G3 stage of exploration and geological mapping on 1:2,000 scale was already carried out in the proposed block. Keeping this in view, the committee suggested that the geological report of the block may be submitted to Mineral Resources Department, Government of Madhya Pradesh for auctioning of mineral concession in composite licence (CL).

The committee suggested to submit the modified project proposal for Reconnaissance survey (G4) for copper mineralisation in block-A (5.0 sq. km) and geological report along with recource estimation for block-B (2.0 sq. km) may be handed over to Mineral Resources Department, Government of Madhya Pradesh for considering the auctioning of the block under composite licence (CL).

42.1.5. Preliminary exploration (G3) for Graphite and Manganese in Salepali block (12.19 sq. km), District: Balangir, Odisha. [Implementing Agency: MECL]

a) The proposal for Reconnaissance survey (G4) for Graphite and Manganese in Salepali block (23.00 sq. km) District: Balangir, Odisha was discussed in 39th TCC meeting held on 29th and 30th March, 2022 wherein the committee had suggested not to take up the Reconnaissance survey (G4) for Graphite and Manganese in Salepali Block to avoid any duplication of exploration work.

b) Accordingly, MECL has modified the proposal and submitted for preliminary exploration (G3) for Graphite and Manganese in Salepali block (12.19 sq. km), District: Balangir, Odisha.

c) The proposed block lies in the northern part of the Eastern Ghats Super Group of rocks belonging to the metasedimentary sequence of Precambrian Khondalite. The sequence is represented by Khondalite, Quartzite, and Calc-silicate rocks and have been intruded by granites.

d) It has been submitted that the graphite mineralization is restricted to the Khondalite suite and its migmatized equivalents. In surface manifestation, the graphite is crystalline and flaky in nature and occurs in a disseminated state with varying proportions, especially in quartz-feldspar-garnet-sillimanite-graphite schist. The manganese ore bodies occur as bands, lenses, pockets, veins, tabular bodies, and disseminations within the Khondalite group of rocks.

e) The proposal was sent to GSI for comments. In response to this GSI has submitted that the investigation for graphite in parts of Titlagarh, Sadar, and Patnagarh Sub-Division, District: Balangir, Odisha was carried out by GSI during the FS: 1968-69 and manganese occurrences was reported in the eastern side of Salepali village. GSI had also reported flaky nature of graphite with flakes size varying from 1.0 cm to 0.5 cm.

11/07/22

11/07/22

f) The committee was also informed that GSI had carried out investigation for graphite in parts of Balangir, Sambalpur and Kalahandi districts of Odisha during the FS 1981-82. The occurrences of graphite was reported along with occurrence of manganese in water logged pit (14m x 5m) within khondalite and Mn content was reported around 25 to 30% on visual estimate.

g) GSI had already carried out geological mapping on 1:12,500 scale over 160.00 sq. km area along with 700m drilling in Salepali and Turekela areas of Balangir district, Orissa during Field Season: 1984-85, wherein GSI has delineated an East-West trending potential graphite zone between Niljibahal and Rahenmal, which is in continuation of Sargimunda-Tara tract. GSI had also carried out geophysical investigation for regional assessment of graphite resources and suggested drilling in the Salepali Block.

h) MECL has collected 1 bedrock sample from wall of water-logged pit, west of Salepali in December 2021 and analysed for manganese and graphite. The value of graphite and manganese are 3.17% FC and 13.24% Mn respectively.

i) The committee opined that geological mapping may not be required in the area. Committee suggested to collate all the available geological data and potential zone may be identified and trench samples may be collected.

j) The committee suggested to take up 480m drilling in 8 boreholes with max. depth of 60m. The progress of work will be reviewed after completion of 2 boreholes, and decision on remaining 6 boreholes will be taken up. It was also suggested to carry out trenching (300 cu.m) and total of 250 samples for graphite and manganes analysis.

The committee recommended the proposal for approval of EC for Preliminary exploration (G3) for Graphite and Manganese in Salepali block (12.19 sq. km), District: Balangir, Odisha with an estimated cost of Rs. 165.55 lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 4A & 4B.

42.1.6. General exploration (G2) for Manganese Ore in Tablabanji block (1.52 sq. km), District: Balangir, Odisha. [Implementing Agency: MECL]

and

42.1.7. General exploration (G2) for Manganese Ore in Khagsabahal (East and West) block (0.98 sq. km), District: Balangir, Odisha. [Implementing Agency: MECL]

a) The proposed two manganese blocks [Tabalbanji and Khagsabahal (East and West) block] were discussed in 31st TCC meeting in July, 2021 wherein DGM, Odisha had conveyed that the proposed two blocks are suitable for auctioning however, a final decision will be taken after deliberation in the State Expert Committee (SEC).

b) The above two projects were again discussed in 37th TCC meeting held in January 2022 wherein it was reiterated that for basemetals and other minerlas, in view of the option of conducting auction of blocks at G4 level for Composite License, proposals for funding from NMET for exploration up to G2 level may be considered only on

recommendations of state government, after the state government has considered the possibility of auction of the block for Composite License. The committee differed to discuss these two proposals and suggested to send the consent letter to NMET. So far, NMET has not received any consent from State Government of Odisha for consideration of proposals for G2 stage of exploration.

c) MECL again submitted both proposals in 39th TCCmeeting held on 29th and 30th March, 2022. The Committee again deffered to discuss the proposals as the consent /request of the State Government of Odisha in accordance with the OM dated 24.08.2021 of NMET is yet to be received in NMET.

d) MECL submitted the proposals again for technical and financial evaluation. However, committee opined that State Government of Odisha has not given consent letter in accordance with the OM dated 24.08.2021 of NMET. Further, these proposals won't be discussed without concent letter from State Government of Odisha mentioning that state government has considered the possibility of auction of the block for Composite License.

The Committee again deffered to discuss the proposals as the consent /request of the State Government of Odisha in accordance with the OM dated 24.08.2021 of NMET is yet to be received in NMET.

42.1.8. Reconnaissance survey (G4) for Graphite in Thapen block, District: Kalahandi, Odisha. [Implementing Agency: OMECL]

and

42.1.9. Reconnaissance survey (G4) for Graphite in Bazargarh block, District: Kalahandi, Odisha. [Implementing Agency: OMECL]

a) Both project proposals were submitted for graphite exploration in Thapen (51.683 sq. km) and Bazargarh blocks (64.815 sq. km) by OMECL. These blocks lies adjacent to each others.

b) The proposed exploration area lies in the western part of the Eastern Ghats Super Group of rocks and known as Eastern Ghats Mobile Belt (EGMB) which extends from Brahmani River in Odisha to Ongole in Andhra Pradesh over a stretch of 900 km with a width varying from 30 to 300 km, the maximum width being in Odisha.

c) Graphite occurs as veins and disseminated flakes within the weak planes like micro fracture, cleavage and along the foliation plane. Graphite occurrences are also noticed at the contact zones of Khondalite and granite gneiss.

d) The Khondalite Formation is represented by the quartz feldspathic garnetiferrous sillimanite, graphite bearing schists and gneisses, calc-silicate granulites and garnet ferrous quartzites.

e) The chemical analysis of four samples from Thapen block shows Fixed Carbon perecent ranging from 10.33% to 35.81% which was considered as the basis for taking up reconnaissance survey in the proposed block for delineation of mineralized zone.

f) Occurrences of graphite have been noticed within Bazargarh block which forms a part of Eastern Ghats Mobile Belt. Few graphite samples have been collected from different locations within the granite gneiss and khondalite suite of rocks where Fixed Carbon (FC) content varies from 18.98% to 35.98%. Graphite occurs as veins within the weak planes like micro fracture, joints, shear zone, faults and along the foliation plane of the host rock.

g) Based on detailed deliberations the committee opined that both blocks may be merged and a modified the proposal for Reconnaissance survey (G4) for Graphite exploration may be taken up in Thapen- Bazargarh block.

h) Accordingly, OMECL had modified the proposal after combining both the blocks (116.49 sq. km) and revised proposal was considered for deliberation and funding through NMET.

i) The Committee suggested to collate the NGPM data of GSI for the said block for demarcation of potential zones.

j) The Committee suggested to carry out geological mapping (1:12,500 scale), trencing (250 cu.m), sampling (250 nos.), geophysical survey for Self Potential (SP) for 40 L km and 10 nos. of scout boreholes for 500m drilling with average depth of 50m. The progress of the work will be reviewed after six months.

The committee recommended the proposal for approval of EC for Reconnaissance survey (G4) for Graphite in Thapen and Bazargarh blocks (116.49 sq. km), District: Kalahandi, Odisha with an estimated cost of Rs. 168.35 lakh (including GST) in time schedule of 15 months for carrying out the proposed work and submission of report as per annexure- 5A & 5B.

42.1.10. Reconnaissance survey (G4 stage) for Graphite in Lamer-Panga block (88.838 sq. km), District: Kalahandi, Odisha. [Implementing Agency: OMECL]

a) The proposed exploration area lies in the western part of the Eastern Ghats Super Group of rocks and known as Eastern Ghats Mobile Belt (EGMB) which extends from Brahmani River in Odisha to Ongole in Andhra Pradesh over a stretch of 900 km with a width varying from 30 km to 300 km, the maximum width being in Odisha.

b) The area forms geologically a part of the Archaean complex of the peninsular shield comprising highly metamorphosed sedimentary and igneous rocks belonging to khondalite and charnockite formations of the Eastern Ghats Group.

c) The Khondalite Formation is represented by the quartz feldspathic garnetiferrous sillimanite, graphite bearing schists and gneisses, calc-silicate granulites and garnet ferrous quartzites.

d) The OMECL has collected some graphite samples within khondalite, granite gniess and calc-silicate rocks. Seven samples have been analysed for FC and the FC varies from 7.56 % to 26.02%. Graphite occurs as veins within the weak planes like micro fracture, joints, faults, shear zones and as disseminated flakes & scales along the foliation plane of the host rock which has been considered as the basis for

reconnaissance survey in the proposed block for delineation of surface and sub surface mineralized zone.

e) The project proposal was sent to GSI for comments. GSI informed that around 45% of the area is overlapping with earlier explored blocks of GSI during 1983-84.

f) Based on detailed deliberations the committee suggested to modify the block boundary after excluding the overlapping area explored by GSI. Accordingly, OMECL modified the block boundary (49.08 sq. km) for graphite exploration.

g) The Committee suggested to carry out geological mapping (1:12,500 scale), trencing (200 cu.m), sampling (220 nos.), geophysical survey for Self Potential (SP) for 20 L km and 8 nos. of scout boreholes for 500m drilling with average depth of 60-65m. The progress of the work will be reviewed after six months.

The committee recommended the proposal for approval of EC for Reconnaissance survey (G4) for Graphite in Lamer-Panga block (49.08 sq. km), District: Kalahandi, Odisha with an estimated cost of Rs. 146.68 lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure-6A & 6B.

42.1.11. Preliminary exploration (G3) for basemetal in Amargarh block (30.5 sq. km), District: Bhilwara, Rajasthan. [Implementing Agency: Rajasthan State Mineral Exploration Trust (RSMET), Rajasthan]

a) The project proposal was submitted by Rajasthan State Mineral Exploration Trust [RSMET], Department of Mines and Geology, Government of Rajasthan.

b) It was conveyed that the GSI had carried out exploration near village Jhikari during 1972-73 & 74 with 7 boreholes. GSI had reported few very thin and sparsely mineralised zones containing disseminations and fracture fillings of galena and sphalerite in two boreholes. Core recovery was poor due to presence of cavities.

c) Department of mines and geology, Rajasthan had carried out primely exploration work in field season 2021-22 and mapped the two ferruginous brecciated chert bands which are intermittently exposed upto strike length of 7km. The general strike of ferruginous brecciated chert band is NNE- SSW with 45° to 55° dip towards NW. Several old workings have been observed in ferruginous brecciated chert bands & dolomite in form of shaft, edit and deep trenches.

d) Based on deliberations, the committee opined that DMG, Rajasthan has not submitted the consent letter for carrying out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET]. The proposal need to be verified by DMG, Rajasthan and a consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted.

The committee opined that the proposal needs to be verified by DMG, Rajasthan and a consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be

submitted. It was also suggested that Department of Mines and Geology, Government of Rajasthan has to submit consent letter to carry out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET].

42.1.12. Preliminary exploration (G3) for Copper in Bhagal block (4.31 sq. km.), District: Chittaurgarh, Rajasthan.

a) The project proposal was submitted by Rajasthan State Mineral Exploration Trust [RSMET], Department of Mines and Geology, Government of Rajasthan.

b) GSI had carried out exploration during the field seasons between 1983 to 1987. The preliminary exploration inputs were geological mapping 1.25 sq. km on 1:2,000 scale, 3566.70m drilling in 23 boreholes at 200m strike interval.

c) GSI had established the copper mineralisation over 1.40 km strike length and upto depth of maximum 150m from surface demarcating three mineralised zones. The main host rock for copper mineralisation being meta soda rhyolite and garnetiferous mica schist.

d) Based on ground indications and surface manifestations a deposit of 6.46 MT of copper ore with average grade 0.80% Cu and 9.0m average width at 0.50% Cu cut-off upto a vertical depth of 100m was established by GSI.

e) MECL had also carried out G2 stage exploration with geological mapping over 1.0 sq. km area on 1: 1,000 scale, along with 2037m drilling in 17 boreholes at 50m to 100m strike interval and established copper mineralisation over 1.2 km strike length upto a depth of 150m demarcating three mineralized zones.

f) The average thickness of the main lode intersected in boreholes is 3.20m with 0.67% Cu grade at 0.5% Cu cutoff. Besides the main lode, few parallel and impersistent lodes of about 100m strike length are also intersected in the hanging wall and footwall side. The average dip of these lode is around 45° and grade is 0.76% Cu.

g) Resource established in Bhagal block was 9.23 MT of ore reserves with 0.73% Cu at 0.5% Cu cut off. Out of these reserves, 4.80MT with 0.78% Cu are confined between 450 to 350 mRL while 4.43 MT with 0.69% Cu are estimated between 350 to 200 mRL over 1000m strike length.

h) Based on deliberations, the committee opined that DMG, Rajasthan has not submitted the consent letter for carrying out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET]. The proposal need to be verified by DMG, Rajasthan and a consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted.

The committee opined that the proposal needs to be verified by DMG, Rajasthan and the consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted. It was also suggested that Department of Mines and Geology, Government of Rajasthan has to submit consent letter to carry out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET].

42.1.13. Preliminary exploration (G3) for Copper and Gold in Devtalai block (5.1 sq. km), District: Bhilwara, Rajasthan.

a) The project proposal was submitted by Rajasthan State Mineral Exploration Trust [RSMET], Department of Mines and Geology, Government of Rajasthan.

b) GSI had carried out geochemical surveys in Devtalai & Ratreri areas of Bhilwara district, Rajasthan and identified anomalous zones. Subsequently, preliminary exploration investigations were undertaken by drilling boreholes in the areas during 1985 and 1987.

c) GSI had carried out 2346.35m drilling in 13 boreholes and 51 cu.m trenching in 5 trenches in Devtalai block. Two lodes were intersected in the boreholes namely lode-I (hanging wall lode) and lode-II (footwall lode) with average thickness 3.81m at 0.98% Cu and 2.98m with 1.91% Cu at 0.2% Cu cut off respectively. Lode-II has better grade both in terms of copper and gold.

d) MECL had also carried out 4702.65m drilling in 35 boreholes and deciphered that, in most of the sections the gaps still persist in reserves proving upto 200m (i.e. upto 150m RL). Only in one section, the reserve was estimated upto 145m RL. As the lodes are dipping at a very low angle, the assumption of 30m from intersection for probable category and next 30m for possible category, a total of 120m dip influence between two intersections. One extra set of boreholes for deeper intersection is required to prove the continuity of the lodes upto 150m RL (i.e. 200m vertical depth from the surface).

e) Based on deliberations, the committee opined that DMG, Rajasthan has not submitted the consent letter for carrying out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET]. The proposal need to be verified by DMG, Rajasthan and a consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted.

The committee opined that the proposal needs to be verified by DMG, Rajasthan and the consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted. It was also suggested that Department of Mines and Geology, Government of Rajasthan has to submit consent letter to carry out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET].

42.1.14. Preliminary exploration (G3) for Copper in Karoli block (2.75 sq. km), District: Rajsamand, Rajasthan.

a) The project proposal was submitted by Rajasthan State Mineral Exploration Trust [RSMET], Department of Mines and Geology, Government of Rajasthan.

b) The copper mineralization in this area is controlled by tight drag folds plunging towards north to north-east. The lodes are of very limited lateral extent and pinches at shallow depth.

11/07/22

11/07/22

c) The old workings have been observed over a strike length of 1.20 km but the mineralization is not found continues over this strike length. Mineralization has been encountered in dolomite at 100m to 120m depth.

d) The detailed exploration was carried out by Department of Mines & Geology, Rajasthan during 1974. Detailed geological mapping, geochemical sampling, geophysical prospecting was carried out in the area followed by drilling. A total of 1870.90m drilling through 14 boreholes covering a strike length of about 850m (400m in north block and 450m in south block) was done in the area. Rich lode of chalcopyrite was encountered in borehole no. KRL-8 and 9. The other boreholes were found barren.

e) It has been conveyed that the Karoli area was selected on the basis of extensive old working (55 nos.) in the form of narrow circular shafts and shallow pits. Huge slag and heaps are also lying near village pipliya. These shafts are said to be interconnected with each other by level drive.

f) Based on deliberations, the committee opined that DMG, Rajasthan has not submitted the consent letter for carrying out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET]. The proposal need to be verified by DMG, Rajasthan and a consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted.

The committee opined that the proposal needs to be verified by DMG, Rajasthan and the consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted. It was also suggested that Department of Mines and Geology, Government of Rajasthan has to submit consent letter to carry out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET].

42.1.15. Preliminary exploration (G3) for basemetal and silver in Sindesar block (36.88 sq. km), District: Rajsamand, Rajasthan.

a) The project proposal was submitted by Rajasthan State Mineral Exploration Trust [RSMET], Department of Mines and Geology, Government of Rajasthan.

b) The Dariba-Bethumbi belt is known for the occurrences of Pb-Zn-Ag and Cd deposit and has a potential of about 300 MT Pb+Zn content ranging from 2.68% to 8.56%.

c) It is pertinent to mention that the eastern part of the proposed block is surrounded by mining leases/prospecting licence of Hindusthan Zinc Limited (HZL).

d) GSI had carried out systematic exploration for basemetal in this belt from the year 1963 to 2004 dividing the area into 19 blocks. The exploration input included total drilling about 1,00,000m spread over about 300 boreholes. The area comprises meta-volcanic sediments assigned to the Rajpura-Dariba group occurring as cover rock sequence in gneisses of Mangalwar complex of the Bhiwara Supergroup. The mineralized belt (Dariba-Bethumbi Belt) extends over a strike length more than 14 km. The hydrothermal type of Pb-Zn mineralization is in form of massive sulphide lode, veins, disseminations and stringers.

11/07/22

11/07/22

e) Total reserves (probable + possible) estimated is order of 324.70 MT with average grade of 3.47% Zn + Pb and Ag content varying from 15ppm to 165ppm and Cd from 75ppm to 348ppm.

f) Based on deliberations, the committee opined that DMG, Rajasthan has not submitted the consent letter for carrying out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET]. The proposal need to be verified by DMG, Rajasthan and a consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted.

The committee opined that the proposal needs to be verified by DMG, Rajasthan and the consent/request in accordance with the OM dated 24.08.2021 of NMET needs to be submitted. It was also suggested that Department of Mines and Geology, Government of Rajasthan has to submit consent letter to carry out exploration through NMET fund by Rajasthan State Mineral Exploration Trust [RSMET].

42.2. Review of the ongoing projects.

42.2.1. General exploration (G2) for copper mineralization in Tonda block, Eastern Khetri Copper Belt, District: Jhunjhunu, Rajasthan.

a) The project was recommended in 24th TCC meeting held on 07th, 08th and 09th October, 2020 with estimated cost of Rs. 650.39 Lakh & with timeline of 14 months and approved in 17th EC meeting held on 05th November, 2020.

b) MECL informed that exploration work has been completed and geological report was submitted for peer review. The comments of the peer reviewer have been incorporated in the geological report.

c) The committee suggested to recalculate the resource for copper mineralisation considering different lodes and possible boreholes depth. The revised modifications needs to be incorporated in the report. The report will be reviewed again in the next TCC meeting.

The Committee noted the outcome of exploration work and suggested to incorporate the revised modifications in the geological report. The report will be reviewed again in the next TCC meeting thereafter the geological report may be submitted to NMET Secretariat.

42.2.2. Preliminary exploration (G3) for copper in Dhanota Block, District: Jhunjhunu, Rajasthan.

a) The project proposal was recommended in 29th TCC meeting held on 11th and 12th March, 2021 with extimated cost of ₹402.79 Lakh and time schedule of 12 months. EC in it's 22nd meeting held on 24th June, 2021 approved the project.

b) MECL submitted that the 5 boreholes with 1485m drilling, collection of 150 samples for analysis of Cu, Ni and Co have been carried out so far.

c) The Committee suggested that the samples may be analysed under AAS for gold, thereafter, in case of instances of gold, the fire assay method may be adopted for further analyses.

d) MECL has conveyed that less than 10% Fixed Carbon has been reported from the graphite samples. In view of this, the Committee suggested to demarcate the nature of graphite as amorphous or flakey.

The Committee suggested to submit the geological report incorporating all the exploration data including chemical analysis for gold to NMET Secretariat.

42.2.3. Preliminary Exploration (G3) for copper in Singhana-Muradpur West Intervening Block, District: Jhunjhunu, Rajasthan.

a) The project proposal was recommended in 33rd TCC meeting held on 9th and 10th September, 2021 with extimated cost of ₹343.03 Lakh and time schedule of 13 months. EC in it's 22nd meeting held on 24th June, 2021 approved the project.

b) MECL presented the exploration work carried. A total of 604m drilling has been completed in 4 boreholes. Borehole PBH-4 could not be drilled due to high tension line.

c) 56 nos. of primary samples have been analysed for Cu, Ni and Co and 48 nos. of primary samples have been analysed for Fe, SiO_2, Al_2O_3 , P and LOI.

d) It was informed that copper mineralisation intersected in borehole are below 0.20% Cu and magnetite mineralisation intersected in boreholes are also below the threshold of 15% Fe.

e) The Committee suggested to amalgamate the Singhana East, Singhana West, Singhana Central and Singhana-Muradpur West Intervening Block and a combined block may be submitted to State Government of Rajasthan for auctioning of mineral concession.

The Committee noted the outcome of mineral exploration and suggested to submit the geological report incorporating all the exploration data including chemical analysis to NMET Secretariat.

The Committee further suggested to amalgamate the Singhana East, Singhana West, Singhana Central and Singhana-Muradpur West Intervening Block and a combined block may be submitted to State Government of Rajasthan for auctioning of mineral concession.

11/07/22

11/07/22

42.3. Time extension of the approved projects.

42.3.1. Preliminary Exploration (G3) of Bharusari Sub Basin for Potash, NW part of Rajasthan, District: Hanumangarh, Rajasthan.

a) The project was recommended in 24th TCC meeting held on 7th, 8th and 9th October, 2020 and approved in 17th EC meeting held on 5th November, 2020 at an estimated cost of ₹1,754.23 lakh and time schedule of 18 months.

b) MECL informed that a total of 7,868m drilling has been completed in 12 boreholes over an area of 14.16 sq. km. It has been observed that total 7 (seven) halite cycles i.e. H1, H2, H3, H4, H5, H6 and H7 have been intersected in the boreholes drilled in Bharusari block.

c) It was requested for timeline extension for 4 months (31st October, 2022) for analyses of samples, finalisation and submission of report.

d) The committee opined that the Potash (K) grade is very low (<3% K) and chemical analysis are also not encouraging in any boreholes. No further chemical analysis of samples is required.

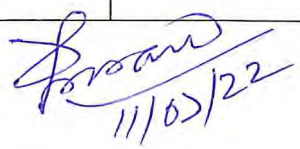
The Committee recommended for approval by EC for time extension up to 31st October, 2022 (4 months) for completion of work and submission of the geological report.

42.4. The meeting ended with concluding remarks of the chairman and vote of thanks by the Director and member secretary, TCC, NMET.

List of TCC members attended 42nd Technical-cum-Cost Committee (TCC) meeting of NMET held on 23rd and 24th June, 2022 through videoconferencing

S. No.	Name/Designation	Status	Remarks
1	Shri Janardan Prasad, Addl. Director General & HoD, GSI	Chairman, TCC, NMET	Attended via videoconference
2	Shri Ranjan Kumar Sinha, Controller General (Retd.), Indian Bureau of Mines	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	Shri B. Saravanan, Additional Director, Atomic Minerals Directorate for Exploration and Research	TCC Member	Attended via videoconference
6	Shri Hemraj Suryavanshi, Deputy Director General and NMH-II, 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 via videoconference
11	Shri Ravi Kumar Gupta, Deputy 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, Assistant Cost Account Officer (Finance), GSI	TCC Member	Not attended





Annexure-1

List of participants attended 42nd Technical-cum-Cost Committee (TCC) meeting of NMET held on 23rd and 24th June, 2022 through videoconferencing

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	Dr. Anjani Kumar, DGM (Retd.), MECL	anjanikumar1957.ak@gmail.com	9975350576	Member, TCC
4	Shri Naeem Ahmed, General Manager (Retd.), CMPDI	ahmadnaeem17@yahoo.co.in	8588092153	Member, TCC
5	Shri B. Saravanan, AMD, Hyderabad	addldir-op1.amd@gov.in	8987571606	Member, TCC
6	Shri Manoj Kumar Patel, DDG and RMH-II, GSI	m.patel1@gsi.gov.in	9040011231	Member, TCC
7	Shri Santosh Kumar Adhikari, Chief Mining Geologist, IBM	skadhikari@ibm.gov.in	7588690545	Member, TCC
8	Shri Vivek Kr Sharma, Director, NMET	vksharma.ofb@gov.in	7024570055	Member, TCC
9	Shri Suresh Chander, Director, GSI	suresh.chander@gsi.gov.in	9493860963	Member Secretary, TCC
10	Shri P. K. Maharana, DGM (F), NALCO	pmaharana@rediffmail.com	8500669500	Member, TCC
11	Dr. Deshraj Trivedi, Senior Geologist	nmet-tcc@gov.in	9419244294	NMET
12	Shri Subhash Kumar, Senior Geologist	nmet-mines@gov.in	9868302624	NMET
13	Shri V. K. Srivastava, GM (Exploration)	gmexpl.cmpdi@coalindia.in	8987788782	CMPDI
14	Dr. R. P. Singh, Manger (Geology)	gm.exploration.cmpdil@gmail.com	8987789047	CMPDI
15	Shri P. Ravindran, DGM (Exploration)	gm-exploration@mecl.co.in	7907649392	MECL, Nagpur
16	RSMET, Rajasthan representative	adgjaipur.mg@rajasthan.gov.in		DGM, Rajasthan
17	Shri P. C. Mishra, Joint Director (Geology)	directorgeology_odisha@yahoo.in	9861465695	DGM, Odisha
18	Dr. P. K. Nayak, Sr. Manager (Geology)	omecloffice@gmail.com	6372651516	OMECL
19	Shri Vonod RV, Manager (Geology)	omecloffice@gmail.com	9995901357	ONECL

Annexure-2A

Estimated cost for Preliminary exploration (G3) for coal in West of Chuperbhita block (24.57 sq. km), Rajmahal Coalfield, District: Godda, Jharkhand.

[Block area- 24.57. sq. km; Nos. of Borehole- 9 (1600x1600m grid); Borehole depth range- 170 to 410m; Completion Time- 12 months]

S. No	Item Work	Item no in Soc	Unit	Rates as per SoC of NMET	Rate (Rs)	Qty.	Amount (Rs)	Remarks
	I- Field operations (Outsourcing)							
A	**DRILLING**							
	Drilling (As per MoC Rate 2020-21)	2.2.1.1b	m	5,619	5,619	2,200	1,23,61,800	Copy of MoC approved Rate is required
B	**GEOPHYSICAL STUDIES**							
	Borehole Geophysical logging (As per MoC Rate 2020-21)	3.11	m	470	470	2,200	10,34,000	Copy of MoC approved Rate is required
						Total (A + B)	**1,33,95,800**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC
	II- Field Work (In House)							
C	**GEOLOGICAL WORK**							
1	Survey Work-1 Surveyor	1.6.1a	Day	8,300	8,300	9	74,700	
2a	Geological days-Field- 1 Geologist	1.5.1b	Day	11,000	11,000	90	9,90,000	
2b	Geological days- HQ (Data processing & Report Preparation)- 1 Geologist	1.5.1b	Day	9,000	9,000	30	2,70,000	
						Sub Total-C	**13,34,700**	
D	**GEOPHYSICAL STUDIES**							
1a	Geophysict days-Field (Field Work) - 1 Geologist	3.19	Day	11,000	11,000	9	99,000	
1b	Geophysicst days-HQ (Data processing & Report Preparation)- 1 Geologist	3.19	Day	9,000	9,000	10	90,000	
						Sub Total- D	**1,89,000**	
						Total (C + D)	**15,23,700**	
	III-Laboratory Studies (In House)							
1	***Band By Band Analysis***							
a	Ash+Moisture	4.2.6	per sample	700	700	650	4,55,000	

11/07/22

11/07/22

b	House Keeping	4.2.1	per sample	115	115	650	74,750	
2	***Overall analysis***							
a	Proximate analysis	4.2.7	per sample	935	935	220	2,05,700	
b	Moisture at 60% RH & 40C	4.2.8	per sample	1,010	1,010	220	2,22,200	
c	GCV	4.2.11	per sample	1505	1505	220	3,31,100	
d	Sample preparation & House Keeping	4.2.3	per sample	795	795	220	1,74,900	
3	***Special Test***							
a	Ultimate analysis	4.2.17	per sample	9,945	9,945	15	1,49,175	
b	Total Sulphur	4.2.14	per sample	1,900	1,900	15	28,500	
c	Distribution of Sulpher	4.2.15	per sample	3,695	3,695	15	55,425	
d	HGI including sample preparation	4.2.18	per sample	3,805	3,805	15	57,075	
e	AFT (Ash Fusion Temperature)	4.2.20	per sample	2,745	2745	15	41,175	
f	Ash analysis	4.2.25	per sample	325	325	15	4,875	
4	**Petrographic analysis**							
a	Pellet preparation	4.3.14a	per sample	1,160	1,160	15	17,400	
b	Maceral Analysis (with photomicrography)	4.3.14e	per sample	25,000	25,000	15	3,75,000	
c	Microlithotype Analysis (with photomicrography)	4.3.14g	per sample	25000	25000	15	3,75,000	
d	Mean Ro%	4.3.14j	per sample	16,345	16,345	15	2,45,175	
					Laboratory Studies Total		**28,12,450**	
	IV. Miscellaneous Charges (In House)							
a	Preparation of Exploration Proposal	5.1	lump sum	2% of the cost or Rs. 3.8 Lakhs whichever is lower	3,80,000		3,80,000	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.
b	Outsourcing process cost (2% of approved project cost or 5 Lakh, whichever is lower)	2.3	lump sum	5,00,000	5,00,000		5,00,000	will be reimbursed when copy of signed agreement/tender for outsoure component will be submitted.
c	Operational charges for CMPDI	Point 3 of SOC			15,00,000		10,44,790	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be be provided. The copy of

11/03/22

11/03/22

								contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
d	DGPS Survey of bundary, borehole points (9 boreholes & 12 boundary point)	1.6.2	per point	19200	19200	21	4,03,200	
e	Borehole pillaring	2.2.7	Per bh	2000	2000	9	18,000	
f	Land crop compensation	5.6	Per bh	20000	20000	9	1,80,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
g	Geological Report preparation (3% or 2000000 Max.)	5.2					7,50,000	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
h	Peer review			10000	10000		10,000	
	Miscellaneous Charges Total						**32,85,990**	
	Total (I- Field Outsourced + II- Field work + III- Lab + IV- Misc)						2,10,17,940	
	GST (@18%)						37,83,229	GST will be reimburse as per actual and as per notified prescribed rate
	Grand Total						**2,48,01,169**	***or say Rs. 248.01 Lakh***

	Note- 1) Above rate of drilling, GPL, Chemical, are budgeted rates.			
	2) There are numerous items in chemical anlysis.The CIMFR rates will be applied for actual payment.			
	3)For Drilling the approved rates of MoC for FY 2022-23 has been considered.			
	4)For Geophysical logging the approved rates of MoC for FY 2020-21 has been taken other rates are as per approved SoC rates.			
	5) The Drilling rate for coal is Rs 6775/- is as per approved rate of Promotional exploration MoC.			
	6) GPL rates is Rs 470/- per meter of minimum 6 parameters, the break up is as follow			
		Probe	**SoC item No**	**Rate 2020-21 (in Rs)**
	1	Base Log	3.11a	162
	2	Dual Density	3.11d	110
	3	Natural Gamma	3.11h	96

	4	Caliper	3.11g	20
	5	SPR	3.11i	41
	6	Resistivity	3.11c	41
		Total		**470**
	7) Rs 10000/- for Peer review is budgeted rate.			

Annexure-2B

Schedule timeline for Preliminary exploration (G3) for coal in West of Chuperbhita block (24.57 sq. km), Rajmahal Coalfield, District: Godda, Jharkhand.

S. No	Activities													
		Months	1	2	3	4	5	6	7	Review	8	9	10	11	12
1	Outsourcing	Months													
2	Mobilising	Months													
3	Drilling (No. of rig-1 rig)	Months													
4	Borehole Geophysical logging	Days													
5	Survey days	Days													
6	Geologist days, Field	Days													
7	Geophysict days, Field	Days													
8	Laboratory Studies (Band By Band)	Nos.													
9	Laboratory Studies (Overall)	Nos.													
10	Laboratory Studies (Special) & (Petrography)	Nos.													
11	Geologist days, HQ	Days													
12	Geophysict days, HQ	Days													
13	Report Writing & Peer Review	Months													
Note: Please add activities accordingly and timelime (months)															
Total Time Period of Completion of Project- 12 months from Sanction of Project															

11/07/22

11/07/22

Annexure-3A

Estimated cost for Preliminary exploration (G3) for coal, West of Urdhan Jamunia block (24.0 sq. km), Pench Kanhan Tawa Valley Coalfield, District: Chhindwara, Madhya Pradesh.

[Block area- 24.00 sq. km; Nos. of Borehole- 8 (1600x1600m grid); Borehole depth range- 400 to 750m; Completion Time- 16 months]

S. No	Item Work	Item no in Soc	Unit	Rates as per SoC of NMET	Rate (Rs)	Qty.	Amount (Rs)	Remarks
	I- Field operations (Outsourcing)							
A	**DRILLING**							
	Drilling (As per MoC Rate 2020-21)	2.2.1.1b	m	5,619	5,619	4,700	2,64,09,300	Copy of MoC approved Rate is required
B	**GEOPHYSICAL STUDIES**							
	Borehole Geophysical logging (As per MoC Rate 2020-21)	3.11	m	566	566	4,700	26,60,200	Copy of MoC approved Rate is required
					Total (A + B)		**2,90,69,500**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC
	II- Field Work (In House)							
C	**GEOLOGICAL WORK**							
2a	Geological days-Field - 1 Geologist	1.5.1b	Day	11,000	11,000	150	16,50,000	
2b	Geological days-HQ (Data processing & Report Preparation)-1 Geologist	1.5.1b	Day	9,000	9,000	45	4,05,000	
					Sub Total- C		**20,55,000**	
D	**GEOPHYSICAL STUDIES**							
3a	Geophysict days-Field (Field Work) - 1 Geologist	3.19	Day	11,000	11,000	8	88,000	
3b	Geophysicst days-HQ (Data processing & Report Preparation)-- 1 Geologist	3.19	Day	9,000	9000	10	90,000	
					Sub Total- D		**1,78,000**	
					Total (C+ D)		**22,33,000**	
	III-Laboratory Studies (In House)							
1	**Band By Band Analysis**							
a	Ash+Moisture	4.2.6	per sample	700	700	360	2,52,000	

11/07/22

11/07/22

b	House Keeping	4.2.1	per sample	115	115	360	41,400	
2	***Overall analysis***							
a	Proximate analysis	4.2.7	per sample	935	935	130	1,21,550	
b	Moisture at 60% RH & 40C	4.2.8	per sample	1010	1010	130	1,31,300	
c	GCV	4.2.11	per sample	1505	1505	130	1,95,650	
d	Sample preparation & House Keeping	4.2.3	per sample	795	795	130	1,03,350	
3	***Special Test***							
a	Ultimate analysis	4.2.17	per sample	9,945	9,945	10	99,450	
b	Total Sulphur	4.2.14	per sample	1,900	1,900	10	19,000	
c	Distribution of Sulpher	4.2.15	per sample	3,695	3,695	10	36,950	
d	HGI including sample preparation	4.2.18	per sample	3,805	3,805	10	38,050	
e	AFT (Ash Fusion Temperature)	4.2.20	per sample	2,745	2,745	10	27,450	
f	Ash analysis	4.2.25	per sample	325	325	10	3,250	
h	Ash sample preparation 800ºC from coke for analysis	4.2.5	per sample	875	875	10	8,750	
i	Roga Index(Instead of caking Index)	4.2.22	per sample	5,365	5,365	10	53,650	
j	Swelling Index	4.2.23	per sample	2,745	2,745	10	27,450	
k	LTGK coke type	4.2.24		4,550	4,550	10	45,500	
4	**Petrographic analysis**							
a	Pellet preparation	4.3.14a	per sample	1,160	1,160	10	11,600	
b	Maceral Analysis (with photomicrography)	4.3.14e	per sample	25,000	25,000	10	2,50,000	
c	Microlithotype Analysis (with photomicrography)	4.3.14g	per sample	25,000	25,000	10	2,50,000	
d	Mean Ro%	4.3.14j	per sample	16,345	16,345	10	1,63,450	
	Laboratory Studies Total						**18,79,800**	
	IV. Miscellaneous Charges (In House)							
a	Preparation of Exploration Proposal	5.1	lump sum	3,80,000	3,80,000		3,80,000	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.
b	Outsourcing process cost (2% of approved project cost or 5 Lakh, whichever is lower)	2.3	lump sum	5,00,000	5,00,000		5,00,000	will be reimbursed when copy of signed agreement/tender for outsoure component will be submitted.

11/05/22

11/05/22

c	Operational charges for CMPDI	Point 3 of SOC			15,00,000		15,00,000	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
d	DGPS Survey of bundary, borehole points (8 boreholes & 7 boundary point)	1.6.2	per point	19,200	19,200	15	2,88,000	
e	Borehole pillaring	2.2.7	Per bh	2,000	2,000	8	16,000	
f	Land crop compensation	5.6	Per bh	20,000	20,000	8	1,60,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
g	Geological Report preparation (3% or 2000000 Max)	5.2					10,81,089	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
h	Peer review			10000	10000		10,000	
					Miscellaneous Charges Total		**39,35,089**	
					Total (I- Field + II- Field work + III- Lab+ IV -Misc)		3,71,17,389	
	GST (@18%)						66,81,130	GST will be reimburse as per actual and as per notified prescribed rate
	Grand Total						**4,37,98,519**	***or say Rs. 437.98 Lakh***

	1) Above rate of drilling, GPL, Chemical, are budgeted rates.			
	2) There are numerous items in chemical anlysis.The CIMFR rates will be applied for actual payment.			
	3) For Drilling the approved rates of MoC for FY 2022-23 has been considered.			
	4) For Geophysical logging the approved rates of MoC for FY 2020-21 has been taken other rates are as per approved SoC rates.			
	5) The Drilling rate for coal is Rs 6775/- is as per approved rate of Promotional exploration MoC.			
	6) GPL rates is Rs 470/- per meter of minimum 6 parameters, the break up is as follow			
		Probe	**SoC item No**	**Rate 2020-21 (in Rs)**
	1	Base Log	3.11a	162
	2	Dual Density	3.11d	110
	3	Natural Gamma	3.11h	96
	4	Caliper	3.11g	20
	5	SPR	3.11i	41

11/07/22

11/07/22

	6	Resistivity	3.11c	41	
	7	Deviation	3.11m	96	
		Total		**566**	
	7) Rs 10000/- for Peer review is budgeted rate.				

Annexure-3B

Schedule timeline for Preliminary exploration (G3) for coal, West of Urdhan Jamunia block (24.0 sq. km), Pench Kanhan Tawa Valley Coalfield, District: Chhindwara, Madhya Pradesh.

S. No	Activities																	
		Months	1	2	3	4	6	7	8	9	Review	10	11	12	13	14	15	16
1	Outsourcing	Months																
2	Mobilising	Months																
3	Drilling	Months																
4	Borehole Geophysical logging	Days																
5	Survey days	Days																
6	Geologist days, Field	Days																
7	Geophysict days, Field	Days																
8	Laboratory Studies (Band By Band)	Nos.																
9	Laboratory Studies (Overall)	Nos.																
10	Laboratory Studies (Special)	Nos.																
11	Laboratory Studies (Petrography)	Nos.																
12	Geologist days, HQ	Days																
13	Geophysict days, HQ																	
14	Report Writing & Peer Review	Months																
Note: Please add activities accordingly and timelime (months)																		
Total Time Period of Completion of Project- 16 months from Sanction of Project																		

11/07/22

11/07/22

Annexure-4A

Estimated cost for Preliminary exploration (G3) for Graphite and Manganese in Salepali block (12.19 sq. km), District: Balangir, Odisha.

[Block area- 12.19 sq. km; Nos. of Borehole- 8; Borehole depth range- 60m; 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 - Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK**						
1	**Survey**						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Per Point of observation	1.6.2	19,200	8	1,53,600	
b	Charges of Surveyor	one surveyor per day	1.6.1a	8,300	45	3,73,500	
c	Labours (4 Nos) Base rate - Rs. 443/-	day	5.7	443	180	79,740	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for Sampler per day	one sampler per day	1.5.2	5,100	45	2,29,500	
e	Labours (4 Nos) Base rate - Rs. 443/-	day	5.7	443	180	79,740	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**Borhole logging & sampling & report writing**						
a	Charges for one Geologist per day at HQ	day	1.3	9,000	60	5,40,000	
b	Charges for one Geologist per day at field	day	1.3	11,000	150	16,50,000	
c	Labour (2 Nos) Base rate - Rs.443/-	day	5.7	443	300	1,32,900	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher

11/07/22

11/07/22

					Sub Total- A	**32,38,980**	
B	**PITTING/ TRENCHING**						
	Exploratory Trenching	cu.m.	2.1.1	3,330	300	**9,99,000**	
C	**DRILLING**						
1	Drilling up to 300m (Hard Rock) (2 Bhs: 120 m, 6 Conditional Bhs: 360 m)	m	2.2.1.4a	11,500	480	55,20,000	
2	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	480	1,58,400	
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	8	1,60,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	8	16,000	
5	Transportation of Drill Rig & Truck associated per drill (1 rigs)	Km	2.2.8	36	1,300	46,800	2600km to & fro from Nagpur/Rig
6	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	4	2,00,000	
7	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
8	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
9	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 accordingly.
10	Drill Core Preservation	per m	5.3	1,590	150	2,38,500	
					Sub Total- B	**68,83,740**	
D	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary samples**						
	b. Proximate Analysis of Graphite (Ash, Moisture, V.M. and F.C.) for Primary samples	Nos	4.1.16	3,000	250	7,50,000	
	b. For 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	250	7,10,250	
ii)	**Check samples Internal (5%)**						

11/07/22

11/07/22

	a. Proximate Analysis of Graphite (Ash, Moisture, V.M. and F.C.) for Primary samples	Nos	4.1.16	3,000	13	37,500	
	b. For 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	13	35,513	
iii)	**Check samples Extrnal (10%)**						
	a. Proximate Analysis of Graphite (Ash, Moisture, V.M. and F.C.) for Primary samples	Nos	4.1.16	3,000	25	75,000	
	b. For 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	25	71,025	
iii)	**Composite Samples**						
	a. For 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles) XRF technique	Nos	4.1.15a	4,200	20	84,000	
	b. Proximate Analysis (Ash, Moisture, V.M. and F.C.) for Primary samples	Nos	4.1.16	3,000	20	60,000	
II	**Petrological samples (Surface & 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	**Mineragraphic Studies (Surface & Bh Core Samples)**						
a	Preparation of polished section	Nos	4.3.2	1,549	10	15,490	
b	Study of Polished Section	Nos	4.3.4	4,232	10	42,320	
c	Digital Photographs	Nos	4.3.7	280	20	5,600	
IV	**Specific Gravity Determination**						
	Specific Gravity Determination	No.	4.8.1	1,605	10	16,050	
					Sub Total- C	**19,68,598**	
E	**Total A to D**					**1,30,90,318**	
F	**Geological Report Preparation**	5 Hard copies with a soft copy	5.2	For the projects having cost more than Rs. 50 lakhs but less than 150 lakhs- A minimum of Rs. 2.5 lakhs or 5% of the value of		**6,54,516**	

11/07/22

11/07/22

				work, whichever is more.			
G	**Peer review Charges**		As per EC decision			**10,000**	
H	**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		275097	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.
I	**Total Estimated Cost without GST**					**1,40,29,930**	
J	**Provision for GST (18% of L)**					**25,25,387**	GST will be reimburse as per actual and as per notified prescribed rate
K	**Total Estimated Cost with GST**					**1,65,55,317**	***or say Rs. 165.55 Lakh***
	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 execution of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

Annexure-4B

Schedule timeline for Preliminary exploration (G3) for Graphite and Manganese in Salepali block (12.19 sq. km), District: Balangir, Odisha.

			1	2	3	4		5	6	7	8	9	10	11	12
1	Camp Setting	**Month**													
2	Survey days	**Party days**													
	Exploratoty Pitting/Trenching	**Party days**													
3	Surface Drilling (2 rig)	**m**													
4	Geologist days	**Party days**													
5	Sampling days/Core Sampling	**Party days**													
6	Camp Winding	**Months**													
7	Laboratory Studies	**Months**													
8	Geologist days, HQ	**Party days**													
9	Report Writing with Peer Review	**Months**													

REVIEW

11/02/22

11/02/22

Annexure-5A

Estimated cost for Reconnaissance survey (G4) for Graphite in Thapen and Bazargarh blocks (116.49 sq. km), District: Kalahandi, Odisha.

[Block area- 116.49 sq. km; Nos. of Borehole- 10; Borehole depth range- 50m; Completion Time- 15 months]

S. No.	Item of Work	Unit	Rate as per NMET SoC 2020-21		Estimated cost of proposal		Remarks
			SoC item Sl. No.	Rate as per SoC (in Rs)	Quantum of Work	Total Amount (Rs.)	
	Outsourse Component						
A	**DRILLING**						
	Surface Drilling	per m	2.2.1.4	11,500	500	57,50,000	
B	**GROUND GEOPHYSICAL SURVEY**						
	Self-potential / Charged Potential	LineKm	3.3a	29,600	40	11,84,000	
					Sub Total (A to B)	**69,34,000**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC
	In-House Component						
C	**GEOLOGICAL WORK**						
1	Charges for One Geologist - Field	per day	1.3	11,000	150	16,50,000	
2	Charges for One Geologist - HQ	per day	1.3	9,000	50	4,50,000	
3	Labour Charges for Geological mapping (2 Nos.) Base rate- 443/-	per day	5.7	443	300	1,32,900	Amount will be reimbursed as per notified rates by central labour Commission rates or respective State Govt. Whichever is higher
4	Charges for one Sampler	per day	1.5.2	5,100	35	1,78,500	
5	Labour Charges for sampling work (4 Nos.) Base rate- 443/-	per day	5.7	443	140	62,020	Amount will be reimbursed as per notified rates by central labour Commission rates or respective State Govt. Whichever is higher
					Sub Total- C	**24,73,420**	
D	**DRILLING related work**						
1	Land/Crop compensastion	Per Bore hole	5.6	20,000	10	2,00,000	As per actuals as certified by local authorities subject to a maximum of 20,000 per borehole

11/07/22

11/07/22

2	Demarcation of lease boundary, Fixation of Borehole and determination of coordinates & Reduced Level (RL)of the boreholes by DGPS	Per point observation	1.6.2	19,200	10	1,92,000	
3	Construction of concrete pillar(12"x12"x30")	Per Bore hole	2.2.7a	2,000	10	20,000	
4	Approach road making	Per km	2.2.10b	32,200	10	3,22,000	As per actuals
5	Drill core preservation	Per m	5.3	1,590	150	2,38,500	
					Sub Total- D	**9,72,500**	
E	**PITTING**						
1	Trenching	Cu.m	2.1.1	3,330	250	8,32,500	
					Sub Total- E	**8,32,500**	
F	**GEOPHYSICAL SURVEY**						
1	Survey Party days	Per days	1.6.1a	8,300	10	83,000	
2	Labour charges for survey work (4 Nos.) Base rate- 443/-	Per days	5.7	443	40	17,720	As per rates prescribed by central labour Commission rates or respective State Govt. Whichever is higher
					Sub Total- F	**1,00,720**	
G	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
	i) Primary samples and Check samples for Graphite (Core Samples)						
	a) Primary samples for Proximate Analysis (Ash, Moisture, V.M. and F.C.)	Nos	4.1.16	3,000	250	7,50,000	60% of core sample (500m) + 100 grab sample + 50 pit sample + 50 trench sample
	b) Check sample Proximate Analysis (Ash, Moisture, V.M. and F.C.)	Nos	4.1.16	3,000	25	75,000	
	c) REE	Nos	4.1.13	5,380	10	53,800	
	ii) Composite Samples for Graphite (Core Samples)						
	a)Proximate Analysis (Ash, Moisture, V.M. and F.C.)	Nos	4.1.16	3,000	10	30,000	
	b) Total Sulphur (S)	Nos	4.2.14	1,900	10	19,000	
2	**Physical Analysis**						
	X-RD Studies	Nos	4.5.1	4,000	10	40,000	10 core samples + 10 grab samples

11/07/22

11/07/22

	Preparation of thin section	Nos	4.3.1	2,353	20	47,060	
	Petrographic studies	Nos	4.3.4	4,232	20	84,640	
	Preparation of polished section	Nos	4.3.2	1,549	10	15,490	
	Mineralographic studies	Nos	4.3.4	4,232	10	42,320	
	Bulk density	Nos	4.10	3,540	5	17,700	
					Sub Total- (C to G)	**11,75,010**	
					Sub Total	**55,54,150**	
H	**Total Cost for Outsource and in-House component**					**1,24,88,150**	
I	**Tender preparation, publishing & finalisation**	one time	2.3			**2,49,763**	2% of the approved project cost or 5 lakh whichever is lower will be paid one time to exploration agency.
J	**Operational charges**		Point 3 (iii)of SOC			**6,45,050**	
K	**GEOLOGICAL REPORT PREPARATION**	One Number (5 Hard copies) along with soft copy	5.2			**6,24,408**	Project cost exceeding 50 Lakh but less than 150 Lakh: A minimum of Rs 2.5 lakh of 5% of the work which ever is more and Rs 3000/- per each additional copy
L	**PEER REVIEW**		As per EC decision			**10,000**	
M	**PREPARATION OF EXPLORATION PROPOSAL**	One Number (5 Hard copies) along with soft copy	5.1			**2,49,763**	2% of approved project cost or 3.8 lakh whichever is lower
					Sub Total (I + J + K + L +M)	**17,78,984**	
Total Estimated Cost without GST						**1,42,67,134**	
					Provision for GST (18% of L)	**25,68,084**	GST will be reimburse as per actual and as per notified prescribed rate
					Total Estimated Cost with GST	**1,68,35,218**	***or say Rs. 168.35 Lakh***
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 execution of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.							

Annexure-5B

Schedule timeline for Reconnaissance survey (G4) for Graphite in Thapen and Bazargarh blocks (116.49 sq. km), District: Kalahandi, Odisha.

S. No.			1	2	3	4	5	6		7	8	9	10	11	12	13	14	15
1	Camp Setting	Month																
2	Geological days	days																
3	Survey days	days																
4	Geophysical Work	Month																
	Self-potential / Charged Potential	Line Km																
5	Geophysical Report Preparation	Month																
6	Pitting & Trenching	Cu. M																
7	Surface Drilling	m																
8	Sampling days	Party days																
9	Laboratory Studies	Nos.																
10	Camp Winding	Months																
11	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 clearance.																		
2: Timeloss on account of monsoon/ agricultural activities/forest clearance/local law and order problem/lockdown etc. will be additional to above timeline.																		

Review

11/07/22

11/07/22

Annexure-6A

Estimated cost for Reconnaissance survey (G4) for Graphite in Lamer-Panga block (49.08 sq. km), District: Kalahandi, Odisha.

[Block area- 49.08.49 sq. km; Nos. of Borehole- 8; Borehole depth range- 65m; Completion Time- 15 months]

S. No.	Item of Work	Unit	Rate as per NMET SoC 2020-21		Estimated cost of proposal		Remarks
			SoC item Sl. No.	Rate as per SoC (in Rs)	Quantum of Work	Total Amount (Rs.)	
	1 - Outsourse Component						
A	**DRILLING**						
	Surface Drilling	per m	2.2.1.4	11,500	500	57,50,000	
B	**GROUND GEOPHYSICAL SURVEY**						
	Self-potential / Charged Potential	Line km	3.3a	29,600	20	5,92,000	
					Sub Total (A to B)	**63,42,000**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC
	2. In-House Component						
C	**GEOLOGICAL WORK**						
1	Charges for One Geologist - Field	per day	1.3	11,000	130	14,30,000	
2	Charges for One Geologist - HQ	per day	1.3	9,000	50	4,50,000	
3	Labour Charges for Geological mapping (2 Nos.) Base rate- 443/-	per day	5.7	443	260	1,15,180	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
4	Charges for one Sampler	per day	1.5.2	5,100	30	1,53,000	
5	Labour Charges for sampling work (4 Nos.) Base rate- 443/-	per day	5.7	443	120	53,160	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- C	**22,01,340**	
D	**DRILLING**						

11/7/22

11/07/22

2	Land/Crop compensastion	Per Bore hole	5.6	20,000	8	1,60,000	As per actuals as certified by local authorities subject to a maximum of 20,000 per borehole
3	Demarcation of lease boundary, Fixation of Borehole and determination of coordinates & Reduced Level (RL)of the boreholes by DGPS	Per point observation	1.6.2	19,200	8	1,53,600	
4	Construction of concrete pillar(12"x12"x30")	Per Bore hole	2.2.7a	2,000	8	16,000	
5	Drill core preservation	Per m	5.3	1,590	135	2,14,650	
					Sub Total- D	**5,44,250**	
E	**PITTING**						
1	Trenching	Cu.m	2.1.1	3,330	200	6,66,000	
					Sub Total- E	**6,66,000**	
D	**GEOPHYSICAL SURVEY**						
1	Survey Party days	Per days	1.6.1a	8,300	8	66,400	
2	Labour charges for survey work (4 Nos.) Base rate-443/-	Per days	5.7	443	32	14,176	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total-D	**80,576**	
F	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
	i) Primary samples and Check samples for Graphite (Core Samples)						
	a) Primary samples for Proximate Analysis (Ash, Moisture, V.M. and F.C.)	Nos	4.1.16	3,000	220	6,60,000	60% of core sample (500m) + 50 grab sample + 50 pit sample + 40 trench sample
	b) Check sample Proximate Analysis (Ash, Moisture, V.M. and F.C.)	Nos	4.1.16	3,000	22	66,000	
	c) REE	Nos	4.1.13	5,380	10	53,800	
	ii) Composite Samples for Graphite (Core Samples)						
	a)Proximate Analysis (Ash, Moisture, V.M. and F.C.)	Nos	4.1.16	3,000	10	30,000	
	b) Total Sulphur (S)	Nos	4.2.14	1,900	10	19,000	

-11/2022

11/11/22

2	**Physical Analysis**						
	X-RD Studies	Nos	4.5.1	4,000	10	40,000	10 core samples + 10 grab samples
	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
	Petrographic studies	Nos	4.3.4	4,232	10	42,320	
	Preparation of polished section	Nos	4.3.2	1,549	10	15,490	
	Mineralographic studies	Nos	4.3.4	4,232	10	42,320	
	Bulk density	Nos	4.10	3,540	5	17,700	
					Sub Total- F	**10,10,160**	
					Sub Total- C to F)	**45,02,326**	
G					**Total (A to F)**	**1,08,44,326**	
H	**Tender preparation, publishing & finalisation**	one time	2.3			**2,16,887**	2% of the approved project cost or 5 lakh whichever is lower will be paid one time to exploration agency.
I	**Operational charges**		Point 3 (iii)of SOC			**6,00,650**	
J	**GEOLOGICAL REPORT PREPARATION**	One Number (5 Hard copies) along with soft copy	5.2			**5,42,216**	Project cost exceeding 50 Lakh but less than 150 Lakh: A minimum of Rs2.5 lakh of 5% of the work which ever is more and Rs 3000/- per each additional copy
K	**PEER REVIEW**		As per EC decision			**10,000**	
L	**PREPARATION OF EXPLORATION PROPOSAL**	One Number (5 Hard copies) along with soft copy	5.1			**2,16,887**	2% of approved project cost or 3.8 lakh whichever is lower
						15,86,639	
					Total Estimated Cost without GST	**1,24,30,965**	
					Provision for GST (18% of L)	**22,37,574**	GST will be reimburse as per actual and as per notified prescribed rate
					Total Estimated Cost with GST	**1,46,68,539**	***or say Rs. 146.68 Lakh***

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 execution of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.

11/07/22

11/07/22

Annexure-6B

Schedule timeline for Reconnaissance survey (G4) for Graphite in Lamer-Panga block (49.08 sq. km), District: Kalahandi, Odisha.

S. No.			1	2	3	4	5	6		7	8	9	10	11	12
1	Camp Setting	Month													
2	Geological days	days													
3	Survey days	days													
4	Geophysical Work	Month													
	Self-potential/Charged Potential	Line Km													
5	Geophysical Report Preparation	Month													
6	Pitting & Trenching	Cu. M													
7	Surface Drilling	m													
8	Sampling days	Party days													
9	Laboratory Studies	Nos.													
10	Camp Winding	Months													
11	Report Writing with Peer Review	Months													

Review

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

2: Timeloss on account of monsoon/ agricultural activities/forest clearance/local law and order problem/lockdown etc. will be additional to above timeline.

11/07/22

11/07/22