

**Ministry of Mines**  
**National Mineral Exploration Trust**  
**Minutes of the 67<sup>th</sup> Technical-cum-Cost Committee (TCC) meeting held on**  
**24<sup>th</sup>, 25<sup>th</sup> and 26<sup>th</sup> July, 2024 through video conferencing**

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The 67<sup>th</sup> meeting of Technical-cum-Cost Committee (TCC) of National Mineral Exploration Trust (NMET) was held through video conferencing under the chairmanship of Dr. S. Ravi, Dy. Director General (DDG), Geological Survey of India (GSI) and Chairman, TCC, NMET on 24<sup>th</sup>, 25<sup>th</sup> & 26<sup>th</sup> July, 2024.

Members of TCC-NMET and representatives from DGM, Chhattisgarh, DGM, Assam, DGM, Madhya Pradesh, DGM, Jammu & Kashmir, DMG, Karnataka, DMG, Odisha, DMR, Meghalaya, CSIR-IMMT, Bhubaneswar, MECL, KIOCL, CMPDI, OMC, MPSC, GMSPL, Geovale, UEIPL, Gemcokati, GeoExplore, GeoMarine, Novomine, Engeotech, Tata Steel Ltd, PRBI and JEMCL, Ranchi have attended the meeting through their respective VC modes.

The list of participants is at Annexure-1.

Shri C. Parthasarathi, Director, GSI and Member Secretary, TCC-NMET, welcomed Dr. S. Ravi, DDG, GSI and Chairman, TCC, NMET, Members of the TCC and participants representing various Notified Exploration Agencies (NEAs) and Notified Private Exploration Agencies (NPEAs).

Dr. S. Ravi, DDG of GSI and Chairman of TCC, extended a warm welcome to all TCC members and participants representing various Notified Exploration Agencies (NEAs) and Notified Private Exploration Agencies (NPEAs). In his opening remarks, the Chairman advised that if NEAs and NPEAs submit a proposal in an annulled block, they must include details related to the auction and annulment. Sh. S.K. Adhikari, Chief Mining Geologist, IBM & member, TCC expressed a concern that the TCC should ensure that NPEAs submitting the proposals, are eligible for the specific commodities they propose. In response, the Chairman assured that these concerns would be addressed. Further, the Chairman, TCC advised all the exploration agencies to verify the latest district boundaries while proposing the projects as the boundaries shown in the toposheets may have been updated long back.

Subsequently, the proceedings of meeting were initiated as per circulated agenda

**Agenda 67.1 Review of Ongoing Projects/Completed Project & Timeline Extension**

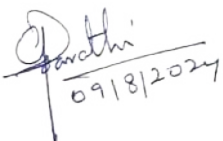
**Agenda 67.1.1. Reconnaissance survey (G4) for Tin in Pokhar-Chhaili Block, District-Tehri-Garhwal, Uttarakhand.**

**[Implementing Agency: MECL]**

- a) The committee finds that the timeline for the project was over by 30th June'2024 but it was learnt that GR could not be submitted on time for peer review.
- b) The committee suggested MECL to submit the GR for peer review and come for review in the next TCC of August 2024.

**Recommendation TCC:**

**The Committee recommended MECL to get the GR reviewed and present it in the 68<sup>th</sup> TCC and accorded timeline extension up to 31<sup>st</sup> August 2024 for final GR submission.**

  
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**Agenda 67.1.2. Reconnaissance survey (G4) for REE and Rare Metals in Khairlanji Block, District-Balaghat and Seoni, Madhya Pradesh.**  
**[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 28<sup>th</sup> EC Meeting held on 16<sup>th</sup> March, 2023. The sanction order was issued on 03<sup>rd</sup> April, 2023 with timeline of 12 months and approved cost was INR 68,44,585/-.
- b) MECL informed that the project was reviewed in the 64<sup>th</sup> TCC and timeline extension upto 31.05.2024 was approved by the committee.
- c) MECL informed that the final GR has been prepared and submitted to peer reviewer. Further, time extension up to 31<sup>st</sup> August 2024 was sought for GR submission
- d) The committee opined that the project may be reviewed after receipt of the peer reviewer's comments *in next TCC meeting and recommended timeline up to 31<sup>st</sup> August 2024 for GR submission*

**Recommendation TCC:**

***The Committee recommended timeline extension up to 31<sup>st</sup> August 2024 for GR submission***

**Agenda 67.1.3. Reconnaissance Survey (G4) for Phosphorite in Kathyur Block (9.0 Sq. Km) Districts- Dehradun, Uttarakhand.**  
**[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 31<sup>st</sup> EC Meeting held on 12<sup>th</sup> September, 2023. The sanction order was issued on 05<sup>th</sup> October, 2023 with timeline of 08 months and approved cost was INR 64,23,064/-.
- b) MECL informed that in the 65<sup>th</sup> TCC meeting held on 28<sup>th</sup>, 30<sup>th</sup> & 31<sup>st</sup> May, 2024 time extension up to 31<sup>st</sup> July 2024 was granted for submission of GR.
- c) MECL informed that exploration work has been completed and 5 distinctly mappable lithounits were identified in the block, i.e., Sandstone/Quartzite, Dolerite Dyke, Shale, Black Shale, Dolomite+ Siltstone. The Phosphate found associated with "Black Shale". The Phosphate content found in 06 samples above cut-off grade  $\geq 5\%$  P<sub>2</sub>O<sub>5</sub> i.e. 10.48%, 6.75% , 5.9%, 5.8%, 5.4%, 5.2% in northern and southern sectors of the Block. The Black Shale with pyritic content in between Lower Tal and Krol formations yield a maximum value of 10.48% of Phosphate. Two Probable Areas have been demarcated with a cumulative strike length of 0.8 Km in Area-1 and 0.5 km in Area-2. The titanium value is anomalously high in one of the samples showing Ti  $\geq 1.65\%$  , with high Iron content suggest present of Iron-Titanium complex phases.
- d) The committee opined that the sampling has not been done properly. Sampling density should have been more in black shale instead of sandstone. The map need to be corrected as per the suggestions given by committee . The committee agreed for timeline extension up to 31<sup>st</sup> August 2024
- e) The committee also suggested MECL to adopt proper exploration scheme and set up internal monitoring mechanism to review the project and course correction.

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**Recommendation TCC:**

***The Committee recommended for modifications in the geological map based in the suggestions of the committee and approved timeline extension up to 31<sup>st</sup> August 2024***

**Agenda 67.1.4. Preliminary Exploration (G-3) for Copper and associated minerals in Sitapur Block, Malanjkhhand Copper Belt, Balaghat district, Madhya Pradesh**

**[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 12<sup>th</sup> December, 2023 with timeline of 12 months and approved cost was INR 2,70,88,193/-.
- b) MECL informed that Phase-1 Work comprising of Detailed Geological Mapping (1:2000 scale) over 3.5 sq.km area, Geochemical sampling (Bedrock, soil) & Ground Geophysical survey I.P. cum Resistivity, S.P. & Magnetic Survey (30 Lkm) to delineate potential mineralized zones and trenching work has been completed.
- c) The committee was informed that bedrock and soil samples collected from quartz vein and epidote bearing/basic rock have not shown any significant values for Cu and associated minerals. Trenching work across quartz veins show no significant values for Copper and associated minerals. However, ground geophysical survey (I.P. cum Resistivity, S.P. & Magnetic) helped to identify N40E-S40W trending shear zone possibly indicative of disseminated type of mineralization associated with quartz reef.
- d) MECL requested permission from the committee to carry out drilling in 4 bhs (880m).
- e) Upon review, the committee found that no surface control of mineralization has been proved and only the geophysical control has been speculated. If drilling is allowed the geophysical party should closely observe and monitor the progress and the outcome of the project.
- f) The committee opined that the borehole plan need to be plotted on the map and presented for approval . The committee suggested the 90m vertical depth for boreholes.

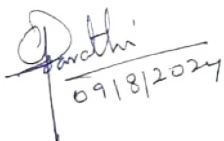
**Recommendation TCC:**

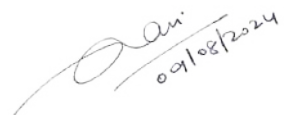
***The Committee recommended MECL to carry out drilling 8 boreholes (initially 4 nos) in the block targeting the MZ at a vertical depth of 90m.***

**Agenda 67.1.5. Reconnaissance Survey (G4) for copper, gold, graphite and associated minerals in Jamtola-Khandapar area (96.62 Sq. Km) District-Balaghat, Madhya Pradesh.**

**[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 12<sup>th</sup> December, 2023 with timeline of 12 months and approved cost was INR 2,16,29,787/-.
- b) MECL informed the committee that the Phase-1 work (Geological mapping and bedrock sampling) in the area has indicated two potential blocks namely Khandapar

  
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block for Au & Cu and Kharwahi block for graphite and sought geophysical, trenching and drilling.

- c) MECL informed Based on the outcome of Phase-I work (Geological mapping & BR sample results) 2 potential areas for gold & graphite have been demarcated for carrying out Ground Geophysical Survey and Trenching work.
- d) The committee was apprised that MECL has planned 25 Lkm Geophysical survey -- i.e. 100m x 20m over 1.74 sq.km area (13 Lkm) for Gold in Area-1 (Khandapar) & 150m x 20m over 3.0 sq.km. (12 Lkm) for Graphite in Area-2 (Kharwahi) .
- e) The committee opined that the trenching and drilling may be carried out after completion of the geophysical survey.

**Recommendation TCC:**

***The Committee recommended carrying out geophysical survey. Based on the outcome, trenching and drilling will be decided.***

**Agenda 67.1.6. Reconnaissance Survey (G4) for Iron ore and associated minerals in Karmai-Chuwahi area (33.40 Sq. Km) District- Sidhi, Madhya Pradesh.  
[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 12<sup>th</sup> December, 2023 with timeline of 09 months and approved cost was INR 1,39,81,360/-.
- b) The committee was apprised that updation of geological Map on 1:12,500 scale along with channel sampling and trenching were carried out. Iron ore mineralization was identified in several parts of the block. Dolomite is also observed in the northern part of the block. A total of 72 nos of samples in 28 channels and 8 nos of samples in 1 Trench showed Fe concentrations >35%.
- c) On the basis of Channel and trench sample results, MECL proposed 6 nos. of Scout boreholes with 480.00m drilling meterage
- d) The committee opined that the ground data need to be represented in the geological map. The committee advised to revisit the area and revise the geological map with ground values and present the same in next TCC.

**Recommendation TCC:**

***The Committee recommended to modify the geological map and present in the next TCC.***

**Agenda 67.1.7. Reconnaissance Survey (G4) for Iron ore and associated minerals in Parsili-Karmai area (18.34 Sq. Km) District- Sidhi, Madhya Pradesh.  
[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 12<sup>th</sup> December, 2023 with timeline of 08 months and approved cost was INR 1,32,13,733/-.
- b) MECL informed that updation of geological Map on 1:12,500 scale along with channel sampling and trenching were carried out. Iron ore mineralization was identified in several parts of the block. Dolomite is also observed in the southern part of the block. A total of 65 nos of channel samples and 04 Nos of Trench samples showing >35% Fe content (IBM threshold)

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- c) Based on the results , MECL proposed, 5 nos. of Scout boreholes with 310.00m of drilling meterage to identify subsurface continuity of mineralized zones.
- d) The committee observed that the quality of work is poor and further exploration is not necessary in the block. The geological map should be properly salvaged through interpretation and plotting of analytical values of channel samples. The committee opined that band-wise calculation of resource is to be presented in the GR. Time extension upto 30<sup>th</sup> September 2024 was approved by the committee.

**Recommendation TCC:**

***The Committee did not recommend further exploration work in the block and approved timeline extension up to 30<sup>th</sup> September 2024 for GR submission.***

**Agenda 67.1.8. Reconnaissance Survey (G4) for Iron, Manganese and Associated Minerals in Tikariya area (146.0 Sq. Km) Districts- Jabalpur, Katni and Umaria, Madhya Pradesh.**

**[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 31<sup>st</sup> EC Meeting held on 12<sup>th</sup> September, 2023. The sanction order was issued on 05<sup>th</sup> October, 2023 with timeline of 10 months and approved cost was INR 2,21,83,799/-.
- b) MECL informed that in the 66th TCC meeting , the committee had suggested to present borehole plans in the next meeting. MECL informed that analytical results indicated assay values of Channel samples maximum 56.37% for Fe and 37.40% for Al<sub>2</sub>O<sub>3</sub>. Trenches near Sansarpur Village maximum 47.11% for Fe and 31.68% for Al<sub>2</sub>O<sub>3</sub>. Gold mineralisation was observed in the block in brecciated quartzite and laterite. Two samples showed 2.62ppm Au (near Sansarpur village) and 0.03ppm Au (near Bhula village).
- c) MECL proposed few scout boreholes to understand Fe and Al<sub>2</sub>O<sub>3</sub> rich laterite for proving the extent of sub surface mineralization with 3 months time extension for Gr submission.
- d) The committee agreed for proposed scout boreholes and approved 3 month's time extension up to 4<sup>th</sup> November 2024.

**Recommendation TCC:**

***The Committee recommended scout boreholes and approved timeline extension upto 4<sup>th</sup> November 2024.***

**Agenda 67.1.9. Preliminary Exploration (G3) for rock phosphate in Nimbli Block, Jaisalmer District, Rajasthan.**

**[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 12<sup>th</sup> December, 2023 with timeline of 12 months and approved cost was INR 3,55,98,122/-.
- b) MECL informed that the project was reviewed in the 64th TCC and the committee recommended to drill inclined boreholes in the alternate sections of the block area during first phase.
- c) MECL completed 730m drilling in 15 no of boreholes out of which two boreholes are running. Out of completed 13 nos of BHs, chemical analysis for 08 no boreholes (87no of primary samples) has been received. The results indicated the

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phosphorite mineralization. The phosphorite zone contains average 5.5% P<sub>2</sub>O<sub>5</sub>, with avg thickness 7.5m.

- d) MECL proposed to carryout drilling in remaining sections along folding with angular and few vertical boreholes with meterage of 865.00 m in 16 boreholes.
- e) The committee noted the progress of the project and agreed for phase II drilling in 16 boreholes

**Recommendation TCC:**

***The Committee recommended to carry Phase II in 16 boreholes and maintain borehole spacing as per norms.***

**Agenda 67.1.10. Preliminary Exploration (G3) for Iron and associated minerals in Chitrangi Block, Districts: Singrauli, State: Madhya Pradesh.**

**[Implementing Agency: MECL]**

- a) The committee was informed that 'Preliminary Exploration (G3) for Iron and associated minerals in Chitrangi Block, District: Singrauli, State: Madhya Pradesh was recommended in the 66<sup>th</sup> TCC meeting of NMET held on 24th, 25th & 26th June, 2024 with Rs. 196.12 lakh (including GST) within time schedule of 12 months.
- b) The committee was informed that SoC rate (Sl. No 2.2.1.5a of SoC) for '**Drilling in Very Hard rock**' with Drilling up to depth of 300 m (Normal rate) is 12,650 per m. However, in the final cost sheet for Chitrangi block the cost is given as 12,450.
- c) In view of the above, approval was sought from Committee for modification of drilling cost to ₹12,650.
- d) The committee approved modification of cost sheet with cost of '**Drilling in Very Hard rock**' @ to ₹12,650.

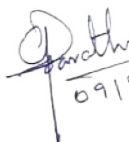
**Recommendation TCC:**

***The Committee approved revised cost of the project 'Preliminary Exploration (G3) for Iron and associated minerals in Chitrangi Block, Districts: Singrauli, State: Madhya Pradesh to 197.78 Lakhs as in Annexure 2A.***

**Agenda 67.1.11. Reconnaissance survey (G4) for manganese ore in Taljuri-Gunchadihi area (80.0 sq. km), District: Balangir, Odisha.**

**[Implementing Agency: MECL]**

- a) MECL informed that the project was approved in the 27<sup>th</sup> EC Meeting held on 10<sup>th</sup> January, 2023. The sanction order was issued on 03<sup>rd</sup> February, 2023 with timeline of 14 months and approved cost was INR 1,66,59,625/-.
- b) MECL informed that the, DM, PT, Geophysical activities and trenching was completed, however due to local agitation, drilling was suspended. MECL informed that based on the outcomes of geochemical, geophysical, trenching and 500m drilling were approved to prove the depth continuity of the graphite and manganese mineralization. In the 1<sup>st</sup> borehole in Area-1 (Chhindrapali village), after drilling of 12 m in khondalite, drilling operation was suspended prematurely and drill rig was withdrawn from the area by the directives of the local authorities. MECL sought approval for pre-closure of the exploration activities in the Taljhuri Gunchadihi Block along with the submission of Geological report based on the activities carried out.
- c) MECL informed that in the 35<sup>th</sup> EC of NMET held on 16<sup>th</sup> May 2024, timeline extension upto 31<sup>st</sup> August 2024 was approved.

  
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**Recommendation TCC:**

**The committee observed that the outcome of the project and asked MECL to approach DMG, Odisha to negotiate with locals and complete the drilling. If the negotiation failed, MECL may submit a letter to drop the item with the acknowledge of DMG, Odisha.**

**Agenda 67.1.12. Preliminary Exploration (G3) for Limestone in Katamadevarahalli Area, Kalburgi Dist, Karnataka  
[Implementing Agency: KIOCL]**

(The committee decided to review the project after receiving the peer reviewer comments in next TCC meeting)

**Recommendation TCC:**

**The Committee recommended KIOCL to submit the report for peer review immediately.**

**Agenda 67.1.13. Reconnaissance Survey (G4) for Gold in Yediyur area, Yediyur - Karighatta schist belt, Mandya district, Karnataka  
[Implementing Agency: KIOCL]**

- a) KIOCL informed that the project was approved in the 33<sup>rd</sup> EC Meeting held on 19<sup>th</sup> February, 2024.. The sanction order was issued on 27<sup>th</sup> March, 2023 with timeline of 12 months and approved cost was INR 1,47,62,526/-.
- b) KIOCL informed that the LSM in 50.00 Sq.km at 1:12,500 scale has been completed.83 nos of BRS and 24 nos of trench samples collected. And results are being awaited. The primary analysis of 67 samples for Au content by fire assay method the 10 samples have resulted 0.04 to 0.64 g/t.
- c) KIOCL sought approval of committee to carry out drilling (500m) in 5 Scout boreholes(03 BH's falling in private land and 02 BH's falling in Hatna reserved forest area. ). KIOCL mentioned that obtaining permissions from forest dept.
- d) In view of the above, the committee agreed for carrying out drilling in 5 BHS.

**Recommendation TCC:**

**The Committee recommended to carry out drilling in the block along with priority of samples from Zone-II.**

**Agenda 67.1.14. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities.  
[Implementing Agency: DGM Jammu & Kashmir]**

*(Item was not reviewed)*

**Agenda 67.1.15. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities.  
[Implementing Agency: DGM Nagaland]**

- a) DGM, Nagaland informed that NMET had approved cost of ₹481 lakh, ₹14.25 lakh and ₹ 20 lakh for Procurement of the project was approved in 28<sup>th</sup> EC, 29<sup>th</sup> EC and 32<sup>nd</sup> EC meeting respectively.

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- b) The committee was informed that the procurement of all the machinery/ laboratory equipments have been completed. However, the committee was requested to approve 1 month time extension upto 31<sup>st</sup> July 2024 for final submission of bills. DGM Nagaland informed that in the 64<sup>th</sup> TCC meeting , time extension upto 30.06.2024 was already approved by TCC of NMET.
- c) Furthermore, DGM Nagaland requested for approval of 01 Fusion Bead machine costing 48 lakhs.
- d) The committee appreciated DGM, Nagaland for completion of the procurement of NMET approved the machinery/ laboratory equipment and agreed for time extension upto 31<sup>st</sup> July 2024 for submission of bills. The committee evaluated the proposal for fusion bead machine and after detailed discussions agreed to recommend the following items to DGM, Nagaland.

S.N o.	Software / Hardware /Equipment	Quantity	Estimated Price / Unit (In Lakhs)	Total Estimated cost ( in lakhs)
1	Fusion Bead machine	1	20	20.00

**Recommendation of TCC:**

**The committee recommended time extension upto 31<sup>st</sup> July 2024 for the already approved procurement proposal and in addition approved procurement of Fusion Bead machine with estimated cost of 20 lakhs as detailed at para (d) above, to enhance the exploration activities in the state. The committee opined that due process of procurement including item wise cost estimation as per extant of Government of India/ State Financial rules be followed by DGM Nagaland 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.**

**Agenda 67.1.16. Preliminary exploration for coal in North of Rajathari block, Pench Kanhan Tawa valley CF, Madhya Pradesh  
[Implementing Agency: CMPDI]**

- a) CMPDI informed that the project was approved in the 24<sup>th</sup> EC Meeting held on 18<sup>th</sup> May, 2022. The sanction order was issued on 02<sup>nd</sup> June, 2022 with timeline of 20 months and approved cost was INR 13,88,23,254/-.
- b) CMPDI informed that time extension up to 1<sup>st</sup> August 2024 was approved in the 33<sup>rd</sup> EC of NMET held on 19<sup>th</sup> February 2024 and project was reviewed in 66<sup>th</sup> TCC and Field Exploration activities completed on 27.06.2024.
- c) Analysis of coal seams with moisture content was appraised.
- d) In order to ascertain the coking property of the coal seams CMPDI sought approval to analyze 7 additional samples along with time extension of three months' submission of final GR.

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- e) The committee agreed for analysis of 7 additional samples for coking propensity tests along with time extension of three months submission of final GR.

**Recommendation of TCC:**

**The Committee approved for analysis of 7 additional samples for coking propensity tests without any escalation of approved project cost and time extension of three months i.e. up to 31<sup>st</sup> October 2024 for submission of final GR.**

**Agenda 67.1.17. Reconnaissance Survey for coal in west of Ghughus & Bellora area, Wardha Valley CF, Maharashtra.**

**[Implementing Agency: CMPDI]**

- a) The project was approved in the 27<sup>th</sup> EC Meeting held on 10<sup>th</sup> January, 2023. The sanction order was issued on 03<sup>rd</sup> February, 2023 with timeline of 12 months and approved cost was INR 2,15,76,661/-.
- b) CMPDI informed that drilling has started in the block and 340m out of approved 1800m has been completed. The committee was apprised that the progress of drilling is delayed due to Motur formation.
- c) CMPDI informed that time extension upto 1<sup>st</sup> September 2024 was approved in the 35<sup>th</sup>EC of NMET held on 16<sup>th</sup> May 2024.
- d) The committee noted the outcome of the project and asked CMPDI to expedite drilling. Since timeline extension upto 1<sup>st</sup> September 2024 already exists, CMPDI has been asked to come for review in the next TCC to decide on the real target achievement.

**Recommendation of TCC:**

**The Committee noted the progress and decided to review the project in next TCC.**

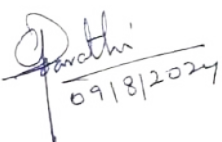
**Agenda 67.1.18. Reconnaissance survey (G4) for Li, Nb, Ta & REE minerals in an around Bengpal-Ellingar-Kumakoleng area, Sukhma and Bastar Districts, Chattisgarh.**

**[Implementing Agency: UEIPL]**

- a) UEIPL informed that the project was recommended the 66th TCC meeting of NMET held on 24th, 25th & 26th June, 2024 with Rs. 84.16 lakh (including GST) within time schedule of 12 months
- b) The committee was informed that as per the new Office Memorandum of NMET released on 08.07.2024 regarding 'applicability of SoC in LWE affected areas', the cost of field component in Bengpal–Ellingnar-Kumakoleng Block, Sukhma, and Bastar Districts, Chhattisgarh may be enhanced by 1.25 times.
- c) The committee discussed that the OM was released after finalization of the minutes of the 66th EC. However, considering that the project will be approved in the forthcoming EC meeting (36th EC) of NMET on 29.07.2024, the cost of field component in the project may be enhanced by 1.25 times.

**Recommendation of TCC:**

**The Committee recommended cost enhancement by 1.25 times for the cost of field component. The revised cost of the project is ₹93.38 Lakhs as given at Annexure 3.**

  
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**Agenda 67.1.19. Preliminary exploration (G3) for Graphite around Naringapanga Rayagada district, Odisha.**  
**[Implementing Agency: DGM Odisha]**

- a) DGM Odisha informed that the project was approved in the 27<sup>th</sup> EC Meeting held on 10<sup>th</sup> January, 2023. The sanction order was issued on 06<sup>th</sup> February, 2023 with timeline of 09 months and approved cost was INR 1,20,92,849/-.
- b) DGM Odisha informed that the sanction order was delayed because of delay fund transfer due to issues with Service Bank & PFMS . The revised sanction order was released on 04.09.2023. The work was further delayed due re-tendering process for inadequate bidders in 1<sup>st</sup> NIT. Considering the sanction order dated 04.09.2023, the scheduled date of completion of project is 03.06.2024
- c) DGM Odisha informed that Geological mapping & Topo survey (1:5000), Geophysical ( SP Survey) has been completed and 338m drilling in 6 BHs has been completed.
- d) The committee was informed that approved target for SP survey was 12 line Km. However, during the survey 13.35 LKM was covered. Hence, DGM Odisha requested for approval of the committee for additional 1.35 LKM. Also, time extension upto November 2024 for completion of the project.
- e) In view of the above, the committee agreed for additional 1.35 LKM for SP survey and time extension upto 3<sup>rd</sup> November 2024 for GR submission.

**Recommendation of TCC:**

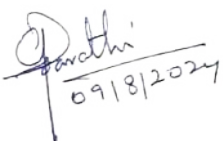
***The Committee recommended additional 1.35 LKM for SP survey and time extension upto 3<sup>rd</sup> November 2024. The revised cost sheet is to be submitted in the final review of the project.***

**Agenda 67.1.20. Preliminary Exploration (G3) for Gold and associated minerals in Sirigeri Block (2 sq.km.), Ballari district, Karnataka.**  
**[Implementing Agency: DMG Karnataka]**

- a) DMG Karnataka informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 15<sup>th</sup> December, 2023 with timeline of 12 months and approved cost was INR 3,45,18,638/-.
- b) DMG Karnataka informed that the Detailed Geological Mapping (1:2000 Scale), Topographic Survey, trenching and Integrated ground geophysical survey (Induced polarization (I.P.) cum Resistivity, Self-Potential and Magnetic) for 2 Sq.Km has been completed.
- c) DMG, Karnataka sought approval of the committee for additional 230 cu.m trenching and 180 trench sample including external check samples for Fire Assay analysis including external check samples
- d) Further, approval was sought to carry out Induced Polarization (I.P.) in 60 LKM.
- e) In view of the above, , the committee approved additional quantum of 230 cu.m trenching and 180 trench samples for Fire Assay analysis including external check samples. The committee agreed to carry Induced Polarization (I.P.) in the block.

**Recommendation of TCC:**

***The Committee recommended additional 230 cu.m trenching and 180 trench samples for Fire Assay analysis. The revised cost sheet is to be submitted in next review of the project.***

  
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**Agenda 67.1.21. Preliminary Exploration (G3) for Vanadium and Titanium in Beach and Dune Sands of Dandi-Onjal-Surwada Block in Navsari and Valsad Districts of Gujarat State.**

**[Implementing Agency: M/s Geo Marine Solutions Pvt. Ltd]**

- a) M/s Geo Marine Solutions Pvt. Ltd informed that the project was approved in the 33<sup>rd</sup> EC Meeting held on 19<sup>th</sup> February, 2024. The sanction order was issued on 12<sup>th</sup> March, 2024 with timeline of 12 months (Up to 11.03.2025) and approved cost was INR 86,27,644/-
- b) M/s Geo Marine Solutions Pvt. Ltd informed that in the approved quantum of work include 73 trench (1m) sampling and 10 Auger BH sampling 10m below ground level (bgl). However, the approval of committee was sought for revised quantum of 56 Auger BH Sampling at 400m x 200m grid (6m bgl) in place of 73 trench and 10 BH Samples.
- c) The committee deliberated the matter in detail and decided that the quantum can be finalise during the next review of the project. Drilling complying with MEMC norms should be completed without escalating the approved cost.

**Recommendation of TCC:**

***The Committee deferred the decision until after the review of the project. Geomarine has to plot all the borehole locations in grid pattern with consideration of influence area and estimate the cost and present in the next TCC.***

**Agenda 67.1.22. Reconnaissance Survey (G4) for graphite in Lamer-Panga area (49.084 sq. Km) in Kalahandi district of Odisha.**

**[Implementing Agency: OMC]**

- a) OMC informed that the project was approved in the 26<sup>th</sup> EC Meeting held on 25<sup>th</sup> August, 2022. The sanction order was issued on 20<sup>th</sup> September, 2022 with timeline of 12 months and approved cost was INR 1,46,68,539/-
- b) OMC informed that in 56<sup>th</sup> TCC meeting, the committee had approved to carry out 08 nos of BHs . Further, timeline extension up to 20.2.2024 was approved in the 31<sup>st</sup> EC meeting of NMET held on 12<sup>th</sup> September 2024.
- c) OMC informed that the exploration work has been completed and total of 20,34,491 tonnes or 2.034 million tonnes reconnaissance resource of graphite along with different ranges of FC i.e. 1.508 million tonnes (02-05% FC), 0.415 million tonnes (05-10% FC) and 0.109 million tonnes (above 10% FC) have been estimated in this block.
- d) OMC informed that Total 361 nos. samples (16 nos. of surface samples and 345 core samples have been analyzed). However, the approved target was 220nos.OMC sought permission of committee for additional samples and time extension upto 15<sup>th</sup> September 2024.
- e) The committee note the outcome of the project and opined that core sampling has not been done judiciously. The sample length followed were highly unscientific. The committee did not approve additional sampling, but recommended time extension upto 15<sup>th</sup> September 2024 for GR submission.

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**Recommendation of TCC:**

***The Committee recommended time extension upto 15th September 2024 for GR submission and did not recommend analysis of additional core samples which was carried out without prior approval and justification.***

**Agenda 67.1.23. Preliminary Exploration (G3) for graphite in Lamer-Panga Block- B (12.994 sq. Km) in Kalahandi district of Odisha.**

**[Implementing Agency: OMC]**

- a) OMC informed that the project was approved in the 27<sup>th</sup> EC Meeting held on 10<sup>th</sup> January, 2023. The sanction order was issued on 03<sup>rd</sup> February, 2023 with timeline of 14 months and approved cost was INR 2,16,60,170/-.
- b) OMC informed that 64<sup>th</sup> TCC meeting on 30<sup>th</sup> April 2024, the committee recommended completion of drilling in the block as well as for submission the geological report on 02<sup>th</sup> of August, 2024
- c) OMC apprised that on the basis of the anomalous zone from SP survey, graphite occurrences and chemical analysis report; 07 nos. of boreholes have been completed.
- d) OMC informed that out of 325 approved samples , **261** nos. (**21** nos. of surface samples, **240** nos. of core sample have been analyzed) have been collected. The analysis is yet to be completed. OMC requested for time extension of additional 3 months for submission of geological report of this block.
- e) The committee noted the progress and agreed for time extension upto 2<sup>nd</sup> November 2024.

**Recommendation of TCC:**

***The Committee recommended time extension upto 31<sup>st</sup> October 2024.***

**Agenda 67.1.24. Reconnaissance Survey (G4) for PGE, Gold & REE in Maneri-Sitapala area, Balaghat District, MP**

**[Implementing Agency: DGM Madhya Pradesh (M/s GemcoKati Exploration Pvt. Ltd) &**

**Agenda 67.1.25. Reconnaissance Survey (G4) for PGE, Vanadium & associated minerals in Bhursadongari - Murum area (100 Sq Km), Balaghat District, Madhya Pradesh.**

**[Implementing Agency: M/s GemcoKati Exploration Pvt. Ltd]**

- a) M/s GemcoKati Exploration Pvt. Ltd informed that the project 'Reconnaissance Survey (G4) for PGE, Gold & REE in Maneri-Sitapala area, Balaghat District, MP ' was approved in the 31<sup>st</sup> EC Meeting held on 12<sup>th</sup> September, 2023. The sanction order was issued on 05<sup>th</sup> October, 2023 with timeline of 08 months and approved cost was INR 64,92,482/- .the 64<sup>th</sup> TCC of NMET had approved 2 months extension upto 31.07.2024.
- b) Further, the project "Reconnaissance Survey (G4) for PGE, Vanadium & associated minerals in Bhursadongari - Murum area (100 Sq Km), Balaghat District, Madhya Pradesh' was approved in the 34<sup>th</sup> ECoF NMET held on 13.03.2024 with timeline of 06months and approved cost was INR 61,01,057/- .The OM in this regard was issued on 12<sup>th</sup> March 2024.

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- c) M/s GemcoKati Exploration Pvt. Ltd informed that forest permission is waited for both the projects to carry out drilling. Hence, time extension upto 31<sup>st</sup> December 2024 is sought for completion of the project.
- d) Considering the delay in receipt of forest permission the committee agreed to recommend time extension upto 31<sup>st</sup> December 2024. Also suggested GemcoKati to periodically update NMET on development.

**Recommendation TCC:**

**The Committee recommended time extension upto 31st December 2024 for Reconnaissance Survey (G4) for PGE, Gold & REE in Maneri-Sitapala area, Balaghat District, MP and Reconnaissance Survey (G4) for PGE, Vanadium & associated minerals in Bhursadongari - Murum area (100 Sq Km), Balaghat District, Madhya Pradesh**

**Agenda 67.1.26. Preliminary Exploration Proposal (G-3 Level) for Ion-Adsorption Clay and Laterite Hosted Supergene Enriched REE deposits in the Sung Valley regions of Meghalaya, NE India.**

**[Implementing Agency: DMR Meghalaya]**

- a) DMR Meghalaya informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 12<sup>th</sup> December, 2023 with timeline of 15 months and approved cost was INR 3,00,93,518/-.
- b) DMR Meghalaya informed that the project was reviewed in the 66<sup>th</sup> TCC and the committee had advised to seek guidance for DDG, RMH II , NER, GSI for executing the project and bring for review in next TCC.
- c) DMR Meghalaya presented the progress of work and requested approval of committee to continue the exploration work
- d) The committee reviewed the item and opined that the executing has not followed the exploration norms stipulated in the MEMC Rules 2015. Sampling has been done much more than the approved quantity without prior approval and justification. While carrying out DM, topographical survey has not been carried out properly.
- e) The committee suggested that the project team need to discuss with GSI and AMD and reorient the exploration work as per MEMC Rule 2015.

**Recommendation of TCC:**

**The Committee recommended DMR, Meghalaya to reorient the exploration work as per MEMC Rule 2015 and consult GSI and AMD and finally present the outcome of the project in the next TCC.**

**Agenda 67.1.27. Reconnaissance survey for Iron Ore in Lengupara area, District: Goalpara, Assam.**

**[Implementing Agency: DGM, ASSAM]**

- a) DGM ASSAM informed that the project was approved in the 23<sup>rd</sup> EC Meeting held on 16<sup>th</sup> March, 2022. The sanction order was issued on 25<sup>th</sup> March, 2022 with timeline of 12 months and approved cost was INR 3,28,47,213/-.
- b) DGM Assam informed that the project was reviewed in the 62nd Technical-cum-Cost Committee (TCC) meeting held on 28<sup>th</sup> & 29th February and 01st March, 2024 and time extension upto 30<sup>th</sup> April 2024 was approved .

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- c) DGM Assam informed that the comments of the peer reviewer has been incorporated and the GR is ready for submission. Timeline extension upto 31<sup>st</sup> July 2024 was sought for submission of GR

**Recommendation of TCC:**

**The Committee recommended time extension upto 31<sup>st</sup> July 2024 for GR submission.**

**Agenda 67.1.28. Reconnaissance Survey (G4 Stage) for Graphite in Nawadih Block (32.04 sq.km.), District: Balrampur, State: Chhattisgarh.**

**[Implementing Agency: UEIPL]**

- a) UEIPL informed that the project was approved in the 30<sup>th</sup> EC Meeting held on 06<sup>th</sup> June, 2023. The sanction order was issued on 26<sup>th</sup> June, 2023 with timeline of 06 months and approved cost was INR 27,72,193/-.
- b) The committee was apprised that the GR has already been submitted to NMET Secretariat after incorporation of peer review comments. However, in the review meeting held by Additional Secretary (AS), Mines, UEIPL was instructed to complete the approved trenching (75 cu.m) in the area. AS, Mines indicated that the GR will be accepted only after incorporation of trenching details.
- c) In view of the above UEIPL sought 6 months extension for completion of trenching and submission of GR
- d) The committee deliberated on the matter and agreed for 6 months extension for trenching and submission of GR. Further UEIPL is asked to improve the geological map by proper interpretation of field data.

**Recommendation of TCC:**

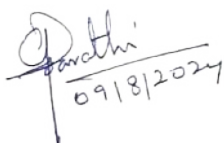
**The Committee recommended 6 months extension for GR submission after carrying out trenching.**

**Agenda 67.2: Technical evaluation of new project proposals:**

**Agenda 67.2.1. Preliminary Exploration (G3) for Bauxite, Titanium and associated minerals in Anvrapat Block (0.55 sq. km), Lohardaga District, Jharkhand.**

**[Implementing Agency: MECL]**

- a. The proposed area falls in SOI toposheet No. 73 A/10 and belongs to Chhotanagpur Granite Gneiss Complex (CGGC).
- b. Initial geological surveys by GSI and DMG, Jharkhand, along with G3/G2 exploration by MECL and CMPDI in adjacent areas, have identical bauxite lenses with thicknesses ranging from 4 to 10 meters in the surrounding area.
- c. During recent field visit to the AnvraPat block and surrounding mines, MECL team found bauxite at depths of up to 25 meters in existing pits. Bauxite samples displayed encouraging results, with high Alumina (Al<sub>2</sub>O<sub>3</sub>) and Titanium (TiO<sub>2</sub>) levels of 48-55% and 8-13%, respectively, and low Silica (SiO<sub>2</sub>) levels of 1-2%.
- d. Moreover, existing Pakhar Bauxite Mine of M/s Hindalco Industries Ltd, is located to the south of the proposed block.
- e. Considering the area's geological similarity to known deposits, existing literature, and previous recommendations, MECL proposed the item.

  
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- f. The proposal was thoroughly reviewed, and the committee found that the proposed block has a 40% overlap with a block of CMPDI approved by NMET.
- g. The committee suggested that MECL seek clarification regarding this issue, but MECL informed the committee that CMPDI has not given any consent regarding this.

***Recommendation of TCC:***

***The committee recommended modifying the block and resubmits the proposal as it has overlapping with already approved block by NMET.***

**Agenda 67.2.2 General Exploration (G2) for Molybdenum Ore in Mannadipatti Central Block (0.60 sq. km), Krishnagiri District, Tamil Nadu.**

**[Implementing Agency: MECL]**

- a. Mannadipatti Central Block belongs to Uttangarai sub-area of Uttangarai Sector of Harur-Uttangarai Belt and falls under the parts of Survey of India Toposheet No 57L/8.
- b. The block has already been explored at the G4 stage by GSI, which included drilling. GSI intersected molybdenum (Mo) mineralization in two boreholes, reporting 1.38m with 0.134% Mo and 1.09m with 0.082% Mo, and recommended further drilling. MECL followed up with G3 stage exploration, establishing 0.699 million tonnes of Molybdenum Ore with 0.031% Mo at a 0.010% Mo cut-off, and suggested further resource upgrading.
- c. Despite this, the block's small size and low resources led to poor bidder participation when it was auctioned by MoM, resulting in the auction being annulled. MoM then advised amalgamation of nearby adjoining blocks for auction in future. The block may be amalgamated with Ponnaiyar North Block, Mannadipatti South, Block, Mannadipatti South Block and Nochchipatti Block.
- d. Given the block's potential, the poor auction participation, and MoM's advice, MECL has proposed General Exploration (G-2) in the Mannadipatti Central Block to meet the country's demand for Molybdenum Ore.
- e. The committee deliberated the proposal and opined that comprehensive approach should be made on the Nocchhipatti, Velampatti and Mannadipatti sectors of Harur Uttangarai belt.

***Recommendation of TCC:***

***The committee recommended MECL to arrange discussion for a VC meeting with Joint Secretary, Critical Mineral, SU: TNP, GSI, Chennai and NMET to find out the possibilities of amalgamation of already explored blocks and upgradation of already explored blocks and upgradation of resources.***

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**Agenda 67.2.3. Preliminary Exploration (G3 Level) for Limestone in Adegaoon Block (5.35 sq. km), Yavatmal District, Maharashtra.**  
**[Implementing Agency: MECL]**

- The proposed area falls in SOI toposheet No.56I/13 and belongs to Penganga Group of Meso to Neoproterozoic age.
- The Adegaoon Limestone block covers the lapsed lease area and was granted as per section 10(A) 2(B) of the MMDR Act-15. DGM, Maharashtra, Yavatmal, requested MECL to take up exploration in this area.
- The following agencies have worked in the area and summary of analysis by the agencies are given below :

Agency	Sample No.	CaO%	MgO%	SiO2%	LOI%			
M/s D. Pateria	I	31.60	21.20	2.10	40.40			
	II	29.10	17.40	10.20	039.80			
M/s. Ashutosh Minerals	Grade	CaO%	MgO%	SiO2%	Fe2O3%	LOI%		
	Min.	47.8	2.27	2.75	0.48	40.6		
	Max.	51.25	2.86	8.33	0.67	42.51		
M/s. Rajani Minerals	Sample No	CaO%	MgO%	SiO2%	Fe2O3%	Al2O3	LOI%	
	TP-6	49.78	2.28	1.09	-	-	45.80	
	TP-8	42.00	3.50	9.28	5.98	1.01	-	
	TP-9	40.00	3.50	8.88	8.17	2.03	-	
M/s. Radhey Minerals	Sample No	CaO%	MgO%	SiO2%	Fe2O3%	LOI%		
	TP-1	33.61	18.4	1.13	0.47	44.53		
	TP-2	48.14	3.20	5.52	0.43	40.89		
	TP-3	33.33	18.30	2.38	0.29	45.25		
	TP-9	52.10	1.50	2.26	0.37	43.20		
M/s. S.K. Sarmokdam	Sample No	CaO%	MgO%	SiO2%	Fe2O3%	LOI%	CaCo3%	MgCO3
	8	48.10	10.90	2.80	2.95	41.88	56.84	8.15
	9	47.20	10.52	2.62	2.65	42.99	57.23	8.20
	10	48.23	10.24	2.30	2.45	42.83	57.30	8.99

- Considering the request of DGM, Maharashtra, the available exploration data, and the demand for limestone, MECL has proposed the item.

**Recommendation of TCC:**

**The committee recommends the proposal for the approval of EC for "Preliminary Exploration (G3 Level) for Limestone in Adegaoon Block, Yavatmal District, Maharashtra." with an estimated cost of Rs. 98.78 lakh (including GST) within time schedule of 08 months and submission of report as per Annexures 4A & 4B. The item will be reviewed after 04 months.**

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**Agenda 67.2.4. Preliminary Exploration (G3) for REE Mineralization in Maravapaliyam Block, Tiruppur District, Tamil Nadu.**

**[Implementing Agency: MECL]**

- a) The proposed block is part of the Southern Granulite Terrane of India and falls in Survey of India Toposheet No. 58 F/09.
- b) This is an upgradation of MECL's G4 item Rudravati area funded by NMET.
- c) During FS 1996-97, GSI carried out detailed studies on the major granites and pegmatites in Bhavani-Punjai Puliampatti, Karamadai, and Coimbatore sectors of Central Tamil Nadu, which revealed significant Rare Metals (RM) and Rare Earth Elements (REE) mineralization.
- d) Later, under NMET fund MECL carried out reconnaissance survey for Rare Earth Elements and Rare Metals in the Rudrawathi (G-4) block during 2023-24 and obtained encouraging results of REE mineralization.
- e) Approximately 5 bedrock samples were collected from this 2.00 sq km area, yielding  $\Sigma$ REE values ranging from 1083.6 to 2573.7 ppm. Furthermore, in 22 soil samples,  $\Sigma$ REE values ranged from 183.3 to 1162.9 PPM. As a result, TCC recommended further upgrading of the area.
- f) The committee thoroughly reviewed the proposal and suggested carrying out auger drilling in the regolith. Additionally, they recommended drilling only two boreholes in the pegmatite, which is considered to be the host of mineralization.

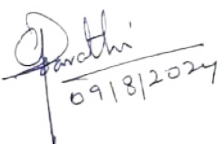
**Recommendation of TCC:**

The committee recommends the proposal for the approval of EC for "Preliminary Exploration (G3) for REE Mineralization in Maravapaliyam Block, Tiruppur District, Tamil Nadu." with an estimated cost of Rs. 125.17 lakh (including GST) within time schedule of 12 months and submission of report as per Annexures 5A & 5B. The item will be reviewed after 06 months.

**Agenda 67.2.5. Preliminary Exploration (G3) for Graphite in Patimal Block, District-Balangir, Odisha.**

**[Implementing Agency: MECL]**

- a) The proposed block is part of the Eastern Ghat Mobile Belt and falls in Survey of India Toposheet No. 64L/13.
- b) The proposed block has been formed by amalgamating 10A 2(b) leases/taken over leases for further exploration, as decided by the State Technical Committee (JWG) on 06.02.2023, and allotted to MECL for action.
- c) During MECL's recent field visit, graphite mineralization was confirmed in abandoned quarries. Two bedrock samples collected yielded 6.23% and 8.90% FC.
- d) In 1971-72, GSI recommended close-spaced geophysical prospecting by SP and IP methods in the Sargipalli-Bardhapalli Belt, Sambalpur and Bolangir Districts, Odisha, to ascertain the strike extension of graphite deposits.
- e) In 1978-79, GSI found a 65% grade graphite quarry and two other occurrences in a 20 sq km area between Sapmund and Telenpali. A 35 cm wide graphite body was also discovered in porphyroblastic granite gneiss. The proposed block lies 7 km east of this area, extending the same geological

  
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setup. Further evaluation and detailed exploration were recommended to assess additional resources.

- f) MECL noted that no previous exploration data for the leases are available with the State Government. Hence, this item has been proposed to establish the vertical and lateral extensions of graphite in the current block.
- g) The committee suggested executing the project in two phases. The first phase will include mapping, sampling, and a geophysical survey. The second phase will cover drilling, subject to encouraging results from the first phase that support proceeding with drilling.

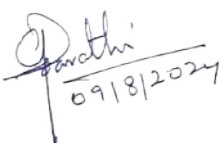
**Recommendation of TCC:**

**The committee recommends the proposal for the approval of EC for “Preliminary Exploration (G3) for Graphite in Patimal Block, District-Balangir, Odisha.” with an estimated cost of Rs. 207.65 lakh (including GST) within time schedule of 12 months and submission of report as per Annexures 6A & 6B. The item will be reviewed after 04 months.**

**Agenda 67.2.6. Reconnaissance Survey (G4) for Iron Ore in Arewada – Hitapadi area, District: Gadchiroli, Maharashtra.**

**[Implementing Agency: GemcoKati Exploration Pvt. Ltd.]**

- a) The area belongs to the Bastar Craton in the Central Indian Peninsular shield and falls in SOI toposheet no. 65A/11.
- b) National Programs such as NGCM, NGPM, STM, and NAGMP have not yet been initiated in this part of Maharashtra. However, GemcoKati informed the committee that 5 G4 blocks have been explored recently in the adjacent Damkodwadvi Hill range and further south with NMET funding by GemcoKati Exploration (P) Ltd., marking the first exploration in 40 years by any government or private agency.
- c) During its recent field visit to the proposed area, GemcoKati identified BIF and phyllites at several places, along with enclaves of BMQ. They collected 4 samples and analyzed them for iron ore, with results showing iron values ranging from 27.84% (magnetite) to 49.59% Fe (T). Iron mineralization is associated with Banded Iron Formation (BIF) and ferruginous phyllites. Currently, the operational iron mine at Surjagad is the only exploration activity in the vicinity of the block area.
- d) GemcoKati also noted that a major part of Gadchiroli District is designated as an "Obvious Geological Potential" (OGP) area and remains unexplored.
- e) The committee raised concern over the fact that GemcoKati had already got five items in the same area approved by NMET but could not accomplish all the targets due to forest and local issues. The proposed item has been placed in the same line and area. However, the committee agrees to carry out the item after getting assurance from GemcoKati.
- f) The committee opined that the project will be carried out in two phases. Except for mapping, all other components will be kept on hold. If GemcoKati can furnish a proper map, then the other components will be allowed to proceed.

  
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**Recommendation of TCC:**

The committee recommends the proposal for the approval of EC for “Reconnaissance Survey (G4) for Iron Ore in Arewada – Hitapadi area, District: Gadchiroli, Maharashtra.” with an estimated cost of Rs. 56.35 lakhs (including GST) within time schedule of 08 months and submission of report as per Annexures 7A & 7B. The item will be reviewed after 04 months.

**Agenda 67.2.7. Preliminary Exploration (G3) in Jhalauthar Phosphorite block for Rock Phosphate, in Bada Malehra Taluka, Chhatarpur District, M.P.  
[Implementing Agency: Engeotech]**

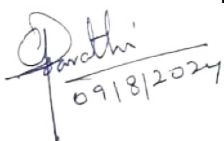
- a) The proposed block belongs to Hirapur Phosphorite Formation of Bijawar Group having Paleo-Proterozoic age and lies in the Survey of India Toposheet No. 54 P/03
- b) Mineral investigation was carried out around Manakpura-Devpur, Jhalauthar and Machheri blocks, District Chhatarpur, MP by GSI and occurrences of phosphorite mineralisation were located at Devpur, Manakpur, Jhalauthar and Macheri NW of Hirapur was reported by GSI. But, considering the poor results at Devpur, Manakpur, Jhalauthar and Macheri blocks, GSI did not recommend further exploration in these areas, especially since the area is under dense forest cover.
- c) But now demand and supply pattern of phosphate mineral have changed drastically and there is a huge gap between demand and supply of the Rock Phosphate. Keeping this in consideration Engeotech carried out a recent field visit in the proposed area and collected 2 samples yielding 18.40% and 16.20% P<sub>2</sub>O<sub>5</sub>.
- d) Beside above at Tigora, Hirapur, Mardeora and Luhani area in Hirapur Rock Phosphate belt active mining of Phosphorite is going on. These mines are located in same belt as Jhalauthar Block.
- e) The committee reviewed the proposal and informed Engeotech to reassess the area and ascertain the mineralization for systematic exploration. Since the existing data are very old and the current investigation is proposed under G3 stage, it is suggested to execute the item in 2 phases. Initially detailed mapping with intensive surface sampling will be completed to delineate the mineralized zone and subsequently drilling will have to be proposed after review.

**Recommendation of TCC:**

The committee recommends the proposal for the approval of EC for “Preliminary Exploration (G3) in Jhalauthar Phosphorite block for Rock Phosphate, in Bada Malehra Taluka, Chhatarpur District, M.P.” with an estimated cost of Rs. 172.01 lakhs (including GST) within time schedule of 12 months and submission of report as per Annexures 8A & 8B. The item will be reviewed after 04 months.

**Agenda 67.2.8. Preliminary Exploration (G3) for PGE and Associated mineral in Mordongri-Jamtara Block in Chhindwara district, M.P.  
[Implementing Agency: MPSMCL]**

- a. The proposed block falls in SOI Toposheet 55J/12 and is situated in The Mardongri mafic ultramafic complex of rocks of Betul group.

  
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- b. Sulphide-rich zones have been observed in the mafic-ultramafic intrusive rocks, with certain areas showing sulphide mineralization. This mineralization is primarily found in meta-gabbro, whereas in coarse-grained amphibolite, sulphide dissemination is lower. The presence of Pd and Au mineralization in stream sediments suggests a potential link with these oxide phases.
- c. GSI has confirmed the presence of PGE (Platinum Group Elements) and associated minerals in the area and has recommended further detailed studies to delineate prospective zones for PGE, Au, Cu, Ni, and Cr mineralization.
- d. MPSMCL informed the committee that the block was included in the auction during phase XI for a composite license and annulled.
- e. The item was proposed in the 64th TCC meeting, where the committee raised concerns about manpower availability at MPSMCL. At that time, MPSMCL had seven ongoing approved projects with only six geologists, indicating an understaffed situation. The committee decided to approve more projects for MPSMCL only after assessing the status of ongoing projects.
- f. MPSMCL updated the committee that the manpower issue has been addressed. Accordingly, the committee reviewed the proposed item and opined that the lithoassemblage and geological set up could potentially contain PGE (Platinum Group Elements) mineralization. Furthermore, since the previous data was not generated using the fire assay method, it is recommended that samples from the area be reanalyzed using this method to improve reliability.
- g. Committee advised to execute the item in two phases. In first phase mapping, sampling and detailed petrography will be carried out. Mapping will be carried out by GPS. The remaining components will be covered in second phase which includes detailed mapping on 1:2000 scale, topographic survey, petrographic and mineralogical studies, drilling, core sampling and resource estimation if any.

**Recommendation of TCC:**

**The committee recommends the proposal for the approval of EC for “Preliminary Exploration (G3) for PGE and Associated mineral in Mordongri-Jamtara Block in Chhindwara district, M.P.” with an estimated cost of Rs. 217.38 lakhs (including GST) within time schedule of 12 months and submission of report as per Annexures 9A & 9B. The item will be reviewed after 06 months.**

**Agenda 67.2.9. Preliminary Exploration (G3) for Bauxite, Titanium, and Associated Minerals Harhapat block, Gumla, Jharkhand.  
[Implementing Agency: JEMCL]**

- a) The investigation area, falls on Survey of India Toposheet number 73A/7, lies within the Chhotanagpur Granite Gneiss Complex.
- b) Initial geological surveys conducted by the Geological Survey of India and the Directorate of Mines and Geology, Jharkhand, along with exploration activities by MECL and CMPDI in the surrounding regions, have confirmed bauxite deposits with thicknesses between 4 and 6 meters.
- c) During a visit to the HarhaPat Block and nearby mines, the JEMCL team observed bauxite deposits reaching depths of up to 25 meters in existing pits.
- d) Field observations identified bauxite outcrops, and the exposed pits in the proposed block confirmed the presence of a Laterite/Bauxite profile.

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- e) Samples of bauxite collected from the block showed promising results, with high levels of alumina ( $Al_2O_3$ ) and titanium ( $TiO_2$ ) ranging from 46-54% and 10-15%, respectively, and low silica ( $SiO_2$ ) content between 0.86-3.58%.
- f) The committee was informed that the proposed area falls entirely within a larger area where GSI is carrying out G4 stage work for critical elements during the current FSP. However, the committee noted that the proposed block is a much smaller section within GSI's larger proposed area and considering the present market demand for bauxite, the committee decided to recommend the item.
- g) When asked, JEMCL replied that in the adjoining area, bauxite occurs at depths ranging from 10-15 meters to 25-30 meters. However, the committee recommended drilling to a depth of up to 25 meters.

**Recommendation of TCC:**

The committee recommends the proposal for the approval of EC for “Preliminary Exploration (G3) for Bauxite, Titanium, and Associated Minerals Harhapat block, Gumla, Jharkhand.” with an estimated cost of Rs. 73.86 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 10A & 10B. The item will be reviewed after 04 months.

**Agenda 67.2.10. Reconnaissance Survey (G4) for Graphite in and around Khairmal area, Bolangir, District, Odisha.**

[Implementing Agency: OMC Ltd.]

- a) The study area in eastern India is situated within the Sargipalli graphite belt of the Eastern Ghat Supergroup and falls in parts of Toposheet No. 64 P/2, 64 L/14, and 64 L/15.
- b) Although the Geological Survey of India and the Department of Mines and Geology, Odisha have limited published reports on the Khairmal block, the presence of an active mining lease and its continuity suggest the area has significant potential.
- c) The region is composed of Khondalites, Leptynites, Granitic Gneisses, and Calc Silicates, though extensive soil cover makes outcrops scarce.
- d) During a preliminary visit to this block, samples taken from the graphite vein and drift samples from the Lant river showed Fixed Carbon (FC) values ranging from 10.90% to 32.31%.
- e) The committee agreed to the proposal and suggested carrying out detailed geophysical survey in the area and advised to execute the item in 2 phases. Drilling may be carried out in second phase after getting encouraging results during mapping, sampling and geophysical survey in first phase.

**Recommendation of TCC:**

The committee recommends the proposal for the approval of EC for “Reconnaissance Survey (G4) for Graphite in and around Khairmal area, Bolangir, District, Odisha.” with an estimated cost of Rs. 85.27 lakhs (including GST) within time schedule of 12 months and submission of report as per Annexures 11A & 11B. The item will be reviewed after 04 and 08 months.

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**Agenda 67.2.11. Reconnaissance Survey (G4) for Rare Metals and REE in Dugru area, Balarampur, Chhattisgarh.**

**[Implementing Agency: Geovale]**

- a) The proposed area belongs to the Chhotanagpur Granite-Gneiss Complex (CGGC) and is situated in the northern part of Chhattisgarh.
- b) Within this proposed area, there are extensive pegmatite dykes within the granite and its surrounding country rocks. The pegmatites in adjacent areas to the west and south are noted for their richness in rare metals such as Nb, Ta, V, and Bi, suggesting that the pegmatite dykes from the Dugru granite batholith might also contain rare metals.
- c) GSI report indicates that the granite batholith is highly siliceous, with SiO<sub>2</sub> content ranging from 72% to 75.89%, and shows a high molar alumina saturation index (A/CNK; 1.0 to 1.4), which suggests potential fertility for rare metals.
- d) NGCM data show enrichment of Heavy Rare Earth Elements (HREE) in the area, with some samples reaching up to 392 ppm. Additionally, high concentrations of Lanthanum (up to 222.6 ppm), Niobium (up to 29.0 ppm), Uranium (up to 15.48 ppm), Tantalum (up to 4.01 ppm), Tungsten (up to 2.57 ppm), and Lutetium (up to 1.89 ppm) have been observed.
- e) Given that pegmatite bodies originating from such granite batholiths often contain rare metals, a buffer zone of 5-10 km around the granite batholith is being explored for rare metal prospects. Exploration data from neighboring areas support the potential fertility of this granite batholith.
- f) Based on this evidence and theoretical considerations, Geovale Services proposed the item in 65th TCC. However, DGM, Chhattisgarh, informed the committee that a similar proposal by MMPL in the same area was rejected in the 52nd TCC meeting due to low value. The committee was also informed that GSI has conducted further work in and around the proposed area. Accordingly, the committee advised Geovale Services to consult the reports from the GSI to confirm the potential of the area. If the area is found to be promising based on GSI's findings, Geovale may resubmit the proposal for further discussion. However, Geovale Services did not present the item with substantial supporting data indicating potentiality of REE.

**Recommendation of TCC:**

**The proposal is not recommended due to lack of substantial data supporting potentiality of REE.**

**Agenda 67.2.12. Preliminary Exploration (G3) for Limestone in Somnala-Murdhoni Block (7.0 Sq Kms) in Somnala area, Dist: Yavatmal, Maharashtra.**

**[Implementing Agency: PRB Infratech]**

- a) The area of investigation falls within Survey of India Toposheet number 55L/16 and belongs to the P-G valley, Penganga Group of Limestone.
- b) The limestone of the Putnur Formation is thinly bedded, light grey to buff in color, fine-grained, dense, and compact, containing specks and nodules of pyrite. It is siliceous and dolomitic in nature, exhibiting elephant skin weathering. Stromatolites have been observed in the Penganga Limestone.
- c) GSI conducted investigations for limestone deposits in and around this area during the 1958-59 field season. DGM also carried out geological exploration work in the Yavatmal district from the 1977-78 to 1982-83 field seasons. The

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CaCO<sub>3</sub> content in the limestone was found to vary from 78% to 92%, confirming the presence of cement-grade limestone near the Somnala village. Hence, the area appears promising for direct prospecting under the G3 stage of exploration.

- d) However, a recent field visit by PRB Infrastructure did not yield encouraging results from the collected samples to recommend the area for G3 stage investigation.

**Recommendation of TCC:**

**The committee does not recommend the item as the analytical data are not encouraging**

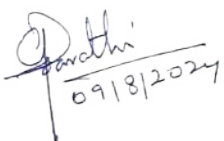
**Agenda 67.2.13. Reconnaissance Survey (G4) Exploration of Copper Bearing Minerals around Musabani, Dumriya, Maheshpur areas in West Singhbhum District of Jharkhand.**

**[Implementing Agency: Natural Resources Division, Tata Steel Limited]**

- a) The proposed area is falling close to the central part of Singhbhum Share Zone and forms a part of Survey of India Toposheet No. 73J/6 and 73J/7 in East Singhbhum district, Jharkhand.
- b) The blocks are located adjacent to each other, in proximity to a shear zone, which may be a suitable locale for mineralization.
- c) Several G3/G2 copper exploration projects by GSI and MECL near the eastern boundary of the proposed block found copper mineralization primarily in Quartz-Chlorite-Schist, sheared quartzite, and some contact zones.
- d) A recent field visit by Tata Steel's Natural Resources Division found bands of quartz-chlorite-schist and sheared quartzite. Five BRS samples showed copper concentrations of 106-346 ppm, titanium of 2878-5053 ppm, vanadium of 190-305 ppm, nickel of 135-214 ppm, and chromium of 183-472 ppm.
- e) The committee finds that the proposed block partially overlaps with the area previously worked by AMD. However, since the commodity proposed by TATA is different, they are permitted to proceed with their work.
- f) Moreover, the proposal is supported by the area's proximity to known copper mines of HCL, along with mineral occurrences and significant geological potential. The host lithology is continuing to the proposed block.

**Recommendation of TCC:**

**The committee recommends the proposal for the approval of EC for "Reconnaissance Survey (G4) Exploration of Copper Bearing Minerals around Musabani, Dumriya, Maheshpur areas in West Singhbhum District, Jharkhand." with an estimated cost of Rs. 288.14 lakhs (including GST) within time schedule of 15 months and submission of report as per Annexures 12A & 12B. The item will be reviewed after 06 and 09 months.**

  
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**Agenda 67.2.14. Preliminary Exploration (G3 stage) for Manganese ore, iron ore and other clays in Doddaguni BLOCK-I Tumakuru District, Karnataka.**

**[Implementing Agency: DGM Karnataka (V.M.Salgaocar & Brother Pvt Ltd)]**

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**Agenda 67.2.15. Preliminary Exploration (G3 stage) for Manganese ore, iron ore and other clays in Doddaguni BLOCK-I Tumakuru District, Karnataka.**

**[Implementing Agency: DGM Karnataka (V.M.Salgaocar & Brother Pvt Ltd)]**

- a) The proposed blocks are part of Chitradurga Schist Belt and falls in Survey of India Toposheet No. 57C/11 and 57C/15.
- b) This is upgradation of GSI's G4-level survey which established manganese ore potential in the Doddaguni Block. Following GSI's recommendations and State Government advice, the item has been proposed. According to suggestion of DMG, Karnataka, Doddaguni Block has been divided into Block-I and Block-II.
- c) Manganese mineralization is mainly confined within the banded iron-manganese chert (protore) which is interbedded with phyllite. The manganese ore occurs as irregular pockets and bands. The manganese ore is mostly psilomelane, pyrolusite, manganese wad and powdery manganese. Surficial stains of manganese and many old working and trial pits are seen throughout the area.
- d) It is observed that manganese mineralization is better in the southern part of the area as the compared to the northern part of the area.
- e) Out of twenty trenches excavated in the block area during the G4 level of exploration by GSI eight trenches are in the southern part of banded iron-manganese chert interbedded with phyllite unit having irregular bands of manganese ore. The width of the exposed banded iron manganese chert unit varies from a few meters to 12 m.
- f) The banded iron manganese chert bands are thickened and transposed due to folding. The analytical results from bedrock including grab samples from leasehold areas and from trench samples have shown MnO values from 0.80% to 45.26% and Fe<sub>2</sub>O<sub>3</sub> values from 4.43% to 70.16%.
- g) The committee suggested to combine the two blocks into one reducing the unmineralized area and advised that V.M.Salgaocar present the item next day with the original map of GSI, including a properly demarcated mineralized zone. However, V.M.Salgaocar did not present the item.

**Recommendation of TCC:**

**The committee could not make any decision as V.M.Salgaocar did not present the item with the suggested modifications. V.M.Salgaocar should modify the block by combining the two blocks and present in the next TCC with proper drilling plan for review.**

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### 67.3 Procurement of Machinery Laboratory Equipment/instruments etc

#### 67.3.1 Financial Assistance from NMET funds to procure Machinery/Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities [Implementing Agency: CMPDI]

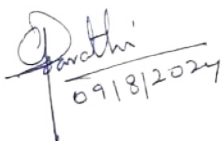
- a) CMPDIL vide F. No. 55027/3/2007-CRC-(Vol-II) (FTS-323159) dated 30.5.2024 through email dated 31.5.2024 communicated regarding proposal for procurement of equipment's from NMET funds .
- b) CMPDI has informed that a Standard Operating Process (SOP) has been prepared for analysis of core samples for REE from boreholes drilled during the coal exploration which is subjected to Geochemical studies (Major Oxides, REE & Trace Elements) and Mineralogical studies. Further, in order to strengthen the capacity of CMPDIL for targeting REE and other mineral analyses, CMPDIL has submitted a proposal of Rs. 588/- lakhs (including GST) for financial assistance towards the procurement of following equipment's listed below:

Sl. No.	Item	Qty	Amount in Lakhs (INR)
1	LA- ICP-MS Facility	1	310
2	Rock Cutting Polishing and Mounting Unit (Both for Thin Section & Polished Section)	1	158
3	Transmitted and Reflected Light Polarizing Research Microscope with Camera, Image Analyses Software & Workstation.	1	21
Total			588/- including GST

- c) The proposal of CMPDI for procurement of advanced equipment at a cost of Rs 588 Lakhs (including GST) was placed before Hon'ble Minister of Mines/ Chairperson, Governing Body (NMET), for in-principal approval there is no such scheme as per which NMET can provide financial assistance to Govt. PSUs for procurement of equipment's. This was approved by the competent authority.
- d) The committee deliberated up on various aspects of the purchase of the three high –end equipments, CMPDI was asked to provide justification for purchasing LA- ICP-MS . The committee opined that a 5-year plan for the utilization of these equipments may be presented in next TCC.
- e) The committee suggested that CMPDI diligently prepare the document, addressing all the discussed points and aspects. Additionally, they should include a road map to encourage other agencies to use these instruments, thereby boosting exploration activities in the country.

#### **Recommendation TCC:**

**The Committee asked CMPDI to present the proposal with proper justification for purchase of the 3 advanced equipments in next TCC.**

  
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**67.3.2 Financial Assistance from NMET funds to procure Machinery/Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities [Implementing Agency: CSIR-IMMT, Bhubaneswar]**

- a) Director, CSIR-Institute of Minerals and Materials Technology(IMMT), Bhubaneswar presented the proposal for procurement of Mineral Liberation Analyser (MLA) with an estimated cost of ₹785 Lakhs.
- b) CSIR-IMMT mentioned that the proposal was put forward in the 1st meeting of the committee to review and promote R& D projects for developing the value chain from beneficiation/ refining of critical minerals & offshore minerals held on 23.02.2024 at New Delhi, upon which Additional Secretary, Mines had suggested to submit the proposals to NMET.
- c) IMMT informed that purpose of establishing a mineral liberation analyzer is to carry out mineral quantification to characterize the ore minerals. CSIR-IMMT is interested to establish this facility to cater the needs of public private and government Parties.
- d) The committee was also apprised that the institute is working on wide variety of ore minerals such as iron, manganese, chromite, Alumina, limestone, base metal minerals, strategic minerals, precious metals etc. from various sources within India and abroad. Hence establishment of MLA will benefit Indian mineral and metallurgical sector a lot. Presently, many sponsored projects are done in the institute. Addition of MLA would reduce the project duration and increase the scientific output.
- e) The committee deliberated upon the proposal and suggested CSIR – IMMT to cross check the details of MLA procurement with the GSI. It was also suggested that a joint training programme for utilization of the instrument may also be arranged.
- f) CSIR-IMMT, Bhubaneswar is also asked to consult with NGRI for technical specifications and cost finalization.

**Recommendation TCC:**

***The Committee recommended to present the proposal in next TCC.***

**Agenda 67.4. Project Evaluation for In-Principle Approval**

**Agenda 67.4.1. Reconnaissance Survey (G4 Stage) for Base metal (Tin), Hafnium and Zirconium over Ruigavhan area of Ahmadnagar district, Maharashtra. [Implementing Agency: Novamine India Pvt Ltd]**

- a. The proposed block falls in Survey of India (SOI) Toposheet No. 47J/14
- b. Based on the outcome of STM work and NGCM data, the area appears to be a potential for copper mineralization.
- c. The area exhibits anomalous values of copper in Stream Sediment points and Soil C Horizon samples.
- d. The committee upon review felt the area does not appear favorable based on the existing GCM values.

**Recommendation of TCC:**

**The committee recommended Novamine to carry out a preliminary field visit, collect samples, analyze them, and resubmit the proposal for in-principle approval.**

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**Agenda 67.4.2. Reconnaissance Survey (G4 Stage) for Tin, Tungsten, Copper and Molybdenum at Majgaon area of Karbi Anglong district, Assam.**  
[Implementing Agency: Novamine India Pvt Ltd]

- a) The proposed block falls in Survey of India (SOI) Toposheet No. 83B/8.
- b) Thirty seven stream sediment sample points revealed anomalous values for several elements. Tungsten ranged from 17 ppm to 805 ppm, which is significantly higher than its crustal abundance. Copper values ranged from 230 ppm to 413 ppm, Tin from 18.4 ppm to 5435 ppm, and Molybdenum from 8.2 ppm to 2397 ppm.
- c) Similarly, soil regolith samples showed anomalous values for Tin, Tungsten, Copper, and Molybdenum. The area was proposed for further exploration based on the analysis of Specialized Thematic Mapping (STM) of toposheet 83B/8.
- d) The committee finds that the values shown are encouraging but they are of stream sediment, hence the committee approves the item subject to field visit, bedrock sample collection and analysis.

**Recommendation of TCC:**

**The committee recommended approving the item for presentation at the forthcoming TCC meeting with few sample analysis.**

**Agenda 67.4.3. Reconnaissance Survey (G4 Stage) for Tungsten and REE over an area of 50 Sq.km at around Sonarijangaon, Karbi Anglong district, Assam.**  
[Implementing Agency: Novamine India Pvt Ltd]


- a) The proposed block falls in Survey of India (SOI) Toposheet No. 83F/4.
- b) NGCM data shows anomalous values ranging from 350.42 to 1219.92 ppm, confined to parts of Toposheet No. 83F/4. These high values may be attributed to gneisses with younger intrusive granitoids exposed/alluvium in that area.
- c) Sheared pegmatite veins rich in pink feldspar and muscovite books traversing the gneisses have also been reported. The area exhibits low gravity anomalies, suggesting the presence of granitic/gneissic rocks. Additionally, LREE concentrations in stream sediment are more than ten times their crustal abundance values.

**Recommendation of TCC:**

**The committee recommended Novamine to carry out a preliminary field visit, collect samples, analyze them, and resubmit the proposal for in-principle approval.**

**Agenda 67.4.4. Reconnaissance Survey (G4 Stage) for Tin and REE around Jirang area, Ribhoi district of Meghalaya & Kamrup District of Assam.**  
[Implementing Agency: Novamine India Pvt Ltd]

- a) The proposed block falls in Survey of India (SOI) Toposheet No. 78O/9.
- b) Seven bedrock samples of porphyritic granite showed total rare earth elements ( $\Sigma$ REE) values between 403 and 985.59 ppm, with an average of 727.62 ppm. Two bedrock samples of non-porphyritic granite had nearly identical  $\Sigma$ REE values of around 803 ppm.
- c) Analysis of 100 stream sediment samples revealed  $\Sigma$ REE values ranging from 326.62 ppm to 6240.45 ppm, averaging 1335.37 ppm. Eight soil samples from

  
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weathered granite crust showed  $\Sigma$ REE values between 623 ppm and 1958 ppm, averaging 1187 ppm.

- d) NGCM data indicated anomalous Tin values in the northern part, ranging from 183 ppm to 201 ppm, significantly exceeding the crustal abundance value of Tin.
- e) The committee finds that the presented data is not encouraging and additionally, the proposed area has around 80% overlap with the area worked out by GSI during 2016-18.

**Recommendation of TCC:**

**The committee suggested Novamine to discuss with DDG, Shillong and carry out a preliminary field visit, collect samples, analyze them, and resubmit the proposal for in-principle approval.**

**Agenda 67.4.5. Reconnaissance Survey (G4 Stage) for Heavy mineral (Rutile, Zircon, Ilmenite) Vanadium, REE and associated mineralization between Kasaba, Nellikunnu and Mogralputhur Villages, Kasargod district, Kerala with an extent of 2 sq.km.**

**[Implementing Agency: GeoExpore Pvt Ltd]**

- a) During the 2012-2014 field seasons, Geological Survey of India surveyed a 143 sq.km area, uncovering high concentrations of Total Heavy Minerals (THM) in the dunes and backshore regions, with values reaching up to 46%. Economic Heavy Minerals (EHM) ranged from 0.88% to 23.81%, averaging 5.60%, indicating significant economic potential. Heavy mineral concentrates may also indicate REE mineralization.
- b) The proposed block, located north of the GSI-surveyed area with high EHM concentrations, is expected to have similar mineral abundance, warranting further exploration.
- c) The committee finds that AMD has carried out Reconnaissance survey between Manjeshwar and Kasargod, Kasargod district, Kerala, for Atomic and other associated heavy mineral placers (monazite, zircon, ilmenite, rutile, leucosene, sillimanite, garnet, etc.).
- d) The committee informed GeoExpore that the comments of AMD will be shared with them accordingly GeoExpore will reshape their proposal. GeoExpore was also advised to consult the GSI's marine wing's work.

**Recommendation of TCC:**

**The committee suggested GeoExpore to modify the proposed area after consulting AMD's comments, which will be shared with them, and resubmit the proposal for in-principle approval.**

**Agenda 67.4.6. Preliminary exploration (G3 stage) for REE and Associated Minerals around Uppala village, District: Kasargod, Kerala with an extent of 1.7 sq.km.**

**[Implementing Agency: GeoExpore Pvt Ltd]**

- a) The GSI's G4 study revealed significant REE enrichment in soil samples, with LREE values ranging from 1019.31 to 2908.92 ppm, HREE values from 80.24 to 186.36 ppm and the  $\Sigma$ REE ranges from 1099.55 to 3095.28 ppm with a mean value of 2097.41 ppm. GSI recommends detailed coastal exploration to further assess REE concentrations.
- b) Research, including Papadopoulos (2018), suggests that felsic plutonic rocks and their metamorphic equivalents contain high amounts of REE-enriched

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minerals. Consequently, beach sands from weathered plutons likely have high REE concentrations.

- c) Expanding upon these findings, the proposal has been conceived.

**Recommendation of TCC:**

The committee suggested GeoExpore to modify the proposed area after consulting AMD's comments and all other information available, and resubmit the proposal for in-principle approval.

**Agenda 67.4.7. Preliminary Exploration (G3 stage) of Limestone Block in Nanhwara Kymore Area in Katni District of Madhya Pradesh, covering a proposed area of 22.52 sq. km.**

**[Implementing Agency: Engeotech Consultant]**

- a) The proposed area fall in parts of Survey of India Toposheet nos. 63D/12 and 64A/9
- b) The item is proposed based on GSI's report on Geology of Vindhyan Supergroup Kymore- Bhadanpur area in Jabalpur, Panna, Satna and Shadol, districts, Madhya Pradesh
- c) The committee finds that at this stage a G4 stage item will be fruitful to be executed

**Recommendation of TCC:**

The committee suggested Engeotech to formulate a G4 stage item in the prescribed format enlarging the proposed area and resubmit for in-principle approval.

**Agenda 67.4.8. Reconnaissance Survey (G4) for Limestone in and around Hatta area in Damoh district of Madhya Pradesh proposed area 15.9 sq km.**

**[Implementing Agency: Engeotech Consultant]**

- a) The proposed area fall in parts of Survey of India Toposheet no. 54 P/12. The item is proposed based on district resource map of Damoh District Of Madhya Pradesh.
- b) The committee finds that the proposed area has overlapping with the work of both GSI and DMG

**Recommendation of TCC:**

The committee does not approve the item.

**Agenda 67.4.9. Preliminary exploration (G3) of Phosphorite/Rock Phosphate Block in Devpur-Manakpura area in Chattarpur district of Madhya Pradesh.**

**[Implementing Agency: Engeotech Consultant]**

- a) Significant phosphorite deposits have been confirmed by GSI at Hirapur in Sagar District, Madhya Pradesh, associated with the Hirapur Phosphorite Formation of the Bijawar Group of rocks.
- b) At Devpur, a phosphatic horizon 1 km east of the village on the western slope of Jugnu Pahar is about 250 meters long and 5 to 10 meters thick. Similarly, the

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phosphorite bed near Manakpura village is about 150 meters long and 5 to 10 meters thick.

Surface channel samples indicated the following phosphorite zones	Three boreholes were drilled with these intersections
7.50 meters x 2.44% P2O5 3.70 meters x 7.33% P2O5 4.00 meters x 14.99% P2O5 21.15 meters x 6.94% P2O5	DBH-1: 5.50 meters x 5.21% P2O5 DBH-2: 4.00 meters x 11.68% P2O5 DBH-3: Two thin zones (0.65 meters) with poor P2O5 content

- c) Initially, the report recommended no further exploration at Manakpura due to poor results and dense forest cover. However, considering the present-day cut-off value of 5% P2O5, many analytical results exceed this threshold.
- d) The 66<sup>th</sup> committee stated that to carry out G3 stage investigation, it is mandatory to have control of mineralization on the surface within the proposed block. However, Engeotech did not have any data from the central or northeastern parts of the proposed block.
- e) Accordingly, 66<sup>th</sup> TCC advised Engeotech to collect samples from central and NE part of the area and establish the potentiality of the block for upgradation but Engeotech could not obtain the forest clearance and consequently samples were not collected.

**Recommendation of TCC:**

**The committee opined that Engeotech should obtain forest clearance, collect samples, analyze them, and then resubmit the item for in-principle approval.**

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**Annexure 1**

**Minutes of the 67<sup>th</sup> Technical-cum-Cost Committee (TCC) meeting held on 24<sup>th</sup>, 25<sup>th</sup> and 26<sup>st</sup> July 2024 through video conferencing**

<b>S.No.</b>	<b>Name/ Designation</b>	<b>Status</b>	<b>Remarks</b>
1	Dr. S. Ravi, Dy. Director General, SU: Karnataka & Goa, GSI Bangalore.	Chairman, TCC	Through VC
2	Shri. I.R. Kirmani, ADG (Retd.), GSI.	Member	Through VC
3	Shri. Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	Member	Through VC
4	Shri. K. Koteswara Rao, Dy.D.G. (Retd.) GSI.	Member	Through VC
5	Dr. S. K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	Member	Through VC
6	Shri. S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	Member	Through VC
7	Dr.E.V.S.S.K.Babu, Scientist (G), NGRI.	Member	Through VC
8	Shri. K.L. Mundra, Head-RMRE, AMD, Hyderabad	Member	Through VC
9	Shri. Alok Kumar, Deputy Secretary, (IFD), Ministry of Mines.	Member	Not Attended
10	Shri. Geetika Sharma Deputy Secretary, NMET, Ministry of Mines	Member	Through VC
11	Shri. P.K. Maharana, DGM (Finance), NALCO, Bhubaneswar	Member	Through VC
12	Shri. Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	Member	Through VC
13	Smt. Vandana, Cost Accounts Officer, RSAS, Bangalore, GSI.	Member	Through VC
14	Shri. C. Parthsarathi, Director, GSI & Member Secretary, TCC- NMET, GSI, Bengaluru	Member Secretary	Through VC

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**List of participants attended 67<sup>th</sup> Technical-cum-cost Committee (TCC) meeting of  
NMET held on 24<sup>th</sup>,25<sup>th</sup> and 26<sup>st</sup> July 2024 through videoconferencing**

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**Estimated cost for Preliminary Exploration (G-3) for Iron and associated minerals in Chitrangi Block, Districts: Singrauli, State: Madhya Pradesh.**

**[Block area- 5.00 sq. km; Schedule timeline- 12 months; BH-10 nos; Drilling- 600m; Review- After 5 months]**

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SoC	Qty.	Amount (Rs)	
i	Charges for one Geologist- Field	day	1.2	11,000	150	16,50,000	
ii	Charges for one Geologist per- HQ	day	1.2	9,000	40	3,60,000	
iii	2 labours/ party (As per rates of Central Labour Commissioner)	day	5.7	522	300	1,56,600	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Sampling party days-1 Samplers Labour charge not included	day	1.5.2	5,100	62	3,16,200	
v	4 labours/ party (As per rates of Central Labour Commissioner)	day	5.7	522	248	1,29,456	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
vi	Survey Party Days for topographical contour survey, block boundary and borehole points fixation	day	1.6. 1a	8,300	40	3,32,000	
vii	4 labours for surveyor	day	5.7	522	160	83,520	
<b>Sub Total- A</b>							

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							<b>30,27,776</b>
<b>B</b>	<b>PITTING AND TRENCHING</b>						
i	Trenching	Cu m	2.1.1	3330	-	-	
							<b>Sub Total- B</b>
							-
<b>C</b>	<b>LABORATORY STUDIES</b>						
<b>1</b>	<b>Chemical Analysis</b>						
<b>i</b>	<b>Primary &amp; Check samples for Iron-PGE &amp; associated minerals BRS/Chip/Channel/Trench/BH samples)</b>						
	a. Primary Samples for PGE (ICP-MS, Ni-S fire Assay)	Nos	4.1.5d	11,800	25	2,95,000	
	b.External (10%) Check samples for PGE	Nos	4.1.5d	11,800	3	29,500	
	e. Primary Samples for Iron	No.	4.1.15a	4,200	400	16,80,000	Surface Samples-100, BH Samples-300
	f.External (10%) Check samples for Iron	No.	4.1.15a	4,200	40	1,68,000	
<b>ii</b>	<b>Primary &amp; Check samples for gold (BRS/Channel/Core)</b>						
	a. Primary Samples for Au by Fire Assay	Nos	4.1.5a	2,380	25	59,500	
	external (10%) Check samples for Au by Fire Assay	Nos	4.1.5a	2,380	3	5,950	
<b>2</b>	<b>Physical, Petrological, Mineralogical Studies</b>						
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 polished 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	Digital Photographs	Nos	4.3.7	280	10	2,800	
vi	Estimation of Major oxides by XRF technique (Whole Rock Analysis)	Nos	4.1.15a	4,200	-	-	
vii	Analysis of rock sample for determination of a package by 34 elements by ICPMS (Trace element studies)	Nos	4.1.14	7,731	-	-	
xi	Bulk Density	Nos	4.10	3540	5	17,700	
<b>Sub Total- C</b>						<b>23,82,110</b>	
<b>D</b>	<b>DRILLING</b>						
i	Drilling upto 300m (Very Hard Rock) (1 rigs )	m	2.2.1.5a	12,650	600	75,90,000	
ii	Land / Crop Compensation	per BH	5.6	20,000	10	2,00,000	
iii	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	10	20,000	
iv	Transportation of Drill Rig & Truck associated per drill (2 rigs)	Km	2.2.8	36	2,600	93,600	Certification in this regard is required to be provided
v	Monthly Accommodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	4	2,00,000	
vi	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	2	5,00,000	
vii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	2	5,00,000	
viii	Approach Road Making (Hilly Terrain)	Km	2.2.10b	32,200	10	3,22,000	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 4 km.

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ix	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Nos	1.6.2	19,200	16	3,07,200	10 Boreholes+ 6 Block Boundary points	
x	One complete borehole plus mineralised cores of all the remaining Bhs	m	5.3	1,590	330	5,24,700	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities	
<b>Sub Total- D</b>						<b>1,02,57,500</b>		
<b>E</b>	<b>Total A to D</b>						<b>1,56,67,386</b>	
<b>F</b>	<b>Geological Report Preparation</b>		<b>5.2</b>	iii		<b>7,50,000</b>	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.	
<b>G</b>	<b>Peer review Charges</b>		<b>As per EC decision</b>			<b>30,000</b>		
<b>H</b>	<b>Preparation of Exploration Proposal</b>	<b>5 Hard copies with a soft copy</b>	<b>5.1</b>	2% of the Cost or Rs. 5.0 Lakhs whichever is lower		<b>3,13,348</b>	EA has to submit the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.	
<b>I</b>	<b>Total Estimated Cost without GST</b>						<b>1,67,60,734</b>	
<b>J</b>	<b>Provision for GST (18% of I)</b>						<b>30,16,932.07</b>	GST will be reimbursed as per actual and as per notified prescribed rate
<b>K</b>	<b>Total Estimated Cost with GST</b>						<b>1,97,77,665.79</b>	

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	Rs. In Lakhs	197.78
1	<b>Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.</b>	
2	<b>In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.</b>	
3	<b>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 Certificate regarding non outsourcing of any component/ project is required.</b>	
4	<b>Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.</b>	
5	<b>Any item of work not mentioned above shall be added as per SoC.</b>	

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**Estimated cost for Reconnaissance survey (G4) for Li, Nb, Ta & REE minerals in an around Bengpal-Ellingar-Kumakoleng area, Sukhma and Bastar Districts, Chattisgarh.**  
**[ Area 112.00 sq. km, Schedule timeline- 12months Review: After 6 Months]**

S. No.	Item of Work *	Unit *	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks	
			SoC-Item No. *	Rates as per SoC * (a)	Qty. (b)	Total Amount (Rs) (a*b)		
<b>1</b>	<b>Geological Mapping Other Geological Work &amp; Surveying</b>							
	Satellite Imagery Studies (Aster)							
	Geological mapping over 112 Sq.Km Area, (1:12,500 scale) & Trenching , drilling work							
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2b	11,000	180	19,80,000		
ii	b. Labours Charges; Base rate	day		522	360	1,87,920	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.	
	c. Charges for Geologist per day (HQ)	day		9,000	50	4,50,000		
	d. Charges for one Sampler per day (1 Party)	one sampler per day		5,100	52	2,65,200		
	e. Labours (4 Nos)	day		522	208	1,08,576		
	<b>Sub Total- 1</b>						<b>29,91,696</b>	
<b>2</b>	<b>Pitting/Trenching</b>							

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	Pitting (up to 2m)	Per Cum	2.1.2	3,800	100	3,80,000	
	<b>Sub Total- 2</b>					<b>3,80,000</b>	
	TOTAL FIELD EXPLORATION COST					33,71,696	
<b>3</b>	<b>Cost for LWE districts (1.25 higher than SoC for FIELD WORK)</b>					<b>36,52,120</b>	
<b>4</b>	<b>LABORATORY STUDIES</b>						
1	<b>Chemical Analysis</b>						
i)	<b>Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment/Pit )</b>						
	a. ICPMS	Nos	4.1.14	7,731	350	27,05,850	BRS-250 (channel), Pit samples -100
	10% Check Samples	Nos	4.1.14	7,731	35	2,70,585	
	b. XRF	Nos	4.1.15a	4,200	25	1,05,000	
	10% Check Samples	Nos	4.1.15a	4,200	3	12,600	
2	<b><u>Physical &amp; Petrological Studies</u></b>						
i	Preparation of thin section	Nos	4.3.1	2,353	25	58,825	
ii	Study of thin section	Nos	4.3.4	4,232	25	1,05,800	
v	Digital Photographs	Nos	4.3.7	280	25	7,000	
<b>4</b>	<b>Total LABORATORY STUDIES Cost</b>					<b>32,65,660</b>	
<b>5</b>	<b>Total Cost 1 to 4</b>					<b>73,67,780</b>	
<b>5</b>	<b>Geological Report Preparation</b>	<b>5 Hard copies with a soft copy</b>	<b>5.2</b>	<b>ii</b>		<b>3,68,389</b>	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
<b>6</b>	<b>Peer review Charges</b>		<b>As per EC decision</b>			<b>30,000</b>	

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7	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. 5.0 Lakhs whichever is less	1,47,356	EA will be reimbursed after submission of 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.
8	Total Estimated Cost without GST				79,13,525	
9	Provision for GST (18% of 8)				14,24,434	GST will be reimburse as per actual and as per notified prescribed rate
10	Total Estimated Cost with GST				93,37,959	
11	Rs. In Lakhs				93.38	
Note:						
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.					
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.					
3	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 Certificate regarding non outsourcing of any component/project is required.					
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.					
5	Any item of work not mentioned above shall be added as per SoC.					

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**Estimated Cost for Preliminary Exploration (G3 Level) for Limestone in Adegaon Block (5.35 sq. km), Yavatmal District, Maharashtra.**  
**Total Area - 5.35 Sq Km; Nos. of Borehole - 07; Borehole depth range - 50m (BGL); Completion Time - 08 Months, Review : After 4 months**

S.N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SoC	Qty.	Total Amount (Rs)	
<b>A</b>	<b>GEOLOGICAL WORK</b>						
<b>1</b>	<b>Mapping (1:4000), Topographical Survey, Borehole logging &amp; Sampling &amp; Report writing</b>						
a	Charges for one Geologist per day at HQ	day	1.3a	9,000	30	2,70,000	
b	Charges for one Geologist per day at field	day	1.3b	11,000	100	11,00,000	
c	Labour for Geologist (2 Nos)	day	5.7	522	200	1,04,400	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	41	2,09,100	

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e	Labours for sampling work (4 Nos)	day	5.7	522	164	85,608	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
<b>2</b>	<b>Survey (on 1:4000 Scale)</b>						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and block cardinal points by DGPS	Per Point of observation	1.6.2	19,200	19	3,64,800	Block cardinal point- 12 Borehole- 7
b	Charges of one Surveyor (1 Party)	one surveyor per day	1.6.1a	8,300	30	2,49,000	Contouring at 2m interval
c	Labours (4 Nos)	day	5.7	522	120	62,640	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	<b>Sub-Total A</b>					<b>24,45,548</b>	
<b>B</b>	<b>DRILLING</b>						
1	Drilling -Soft rock	m	2.2.1.1b	7,168	350	25,08,800	MoC Rate
2	Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	7	1,40,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities

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3	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	7	14,000	
4	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	400	14,400	To & fro
5	Monthly Accommodation Charges for drilling Camp (up to 1 Rigs)	month	2.2.9	50,000	3	1,50,000	
6	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
7	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
8	Road Making (Flat Terrain)	Km	2.2.10a	22,020	4	88,080	Road Making will be considered as per the requirement
9	Drill Core Preservation	per m	5.3	1,590	320	5,08,800	
	<b>Sub Total B</b>					<b>39,24,080</b>	
<b>C</b>	<b>LABORATORY STUDIES</b>						
<b>1</b>	<b><u>Chemical Analysis</u></b>						
<b>i)</b>	<b>Primary samples</b>						
	a. For 9 radicals i.e. CaO, MgO, Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> , Fe <sub>2</sub> O <sub>3</sub> , SO <sub>3</sub> , P <sub>2</sub> O <sub>5</sub> , K <sub>2</sub> O and LOI by XRF	Nos	4.1.15a	4,200	300	12,60,000	
<b>ii)</b>	<b>External Check samples (10%)</b>						
	a. For 9 radicals i.e. CaO, MgO, Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> , Fe <sub>2</sub> O <sub>3</sub> , SO <sub>3</sub> , P <sub>2</sub> O <sub>5</sub> , K <sub>2</sub> O and LOI by XRF	Nos	4.1.15a	4,200	30	1,26,000	

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iii)	<b>Petrological samples ( Bh Core Samples)</b>						
i	Preparation of thin section	Nos	4.3.1	2,353	5	11,765	
ii	Study of Thin Section	Nos	4.3.4	4,232	5	21,160	
iv)	<b>Bulk Density Determination</b>						
	Bulk Density	No.	4.1	3,540	2	7,080	
	<b>Total - C</b>					<b>14,26,005</b>	
<b>D</b>	<b>Sub Total (A to C)</b>					<b>77,95,633</b>	
<b>E</b>	<b>Geological Report Preparation</b>		<b>5.2</b>	<b>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</b>		<b>3,89,782</b>	EA has to submit the final Geological Report in Hard Copies and soft copy to NMET
<b>F</b>	<b>Preparation of Exploration Proposal (5 Hard copies with a soft copy)</b>	<b>5 Hard copies with a soft copy</b>	<b>5.1/28th EC</b>	<b>2% of the Cost or Rs. 5.0 Lakhs whichever is lower</b>		<b>1,55,913</b>	EA has to submit the hard copies and soft copies of final proposal along with maps and plan as suggested by the TCC-NMET in its meeting while clearing the proposal.

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<b>G</b>	<b>Peer review Charges</b>		<b>As per EC decision</b>			<b>30,000</b>	
<b>H</b>	<b>Total Estimated Cost without GST</b>					<b>83,71,327</b>	
<b>I</b>	<b>Provision for GST (18% of H)</b>	<b>%</b>				<b>15,06,839</b>	GST will be reimburse as per actual and as per notified prescribed rate
<b>J</b>	<b>Total Estimated Cost with GST</b>					<b>98,78,166</b>	
				<b>or Say Rs. In Lakhs</b>		<b>98.78</b>	
<b>1</b>	<b>Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.</b>						
<b>2</b>	<b>In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.</b>						
<b>3</b>	<b>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 Certificate regarding non outsourcing of any component/project is required.</b>						
<b>4</b>	<b>Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.</b>						
<b>5</b>	<b>Any item of work not mentioned above shall be added as per SoC.</b>						

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**Time schedule / Action plan for Preliminary Exploration (G3 Level) for Limestone in Adegaoon Block (5.35 sq. km), Yavatmal District, Maharashtra**

Sl. No.	Activities	Unit	MONTHS									
			1	2	3	4	Review	5	6	7	8	
1	Camp Setting	Month							Review			
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	day										
6	Camp Winding	Month										
7	Laboratory Studies	Nos.										
8	Geologist Party days in HQ (1 Party)	day										
9	Geological Report Writing with Peer Review	Month										

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**Estimated cost for Preliminary Exploration (G3) for REE Mineralization in Maravapaliyam Block (2.0 sq. km), Tiruppur District, Tamil Nadu.  
Total block area- 2.00 sq km; Completion Time- 12 Months, Review- after 6 months, Auger - 350, 50bh, Drilling : 150m, 2 bhs**

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)	
1.0	<b>Detail Geological mapping(1:2000)/ Topographic mapping/Trenching/ Drilling</b>						
1.1	Detail Geological mapping/ Trenching/ Drilling					-	
	a) Geologist man days (1 No) for Large scale (LSM) Geological mapping/ Trenching/ Drilling	days	1.2	11,000	120	13,20,000	
	Geologist man days (1 No.) for data interpretation, Geological map & Report (HQ)	days	1.2	9,000	30	2,70,000	
	b) Labour (field)	per worker	5.7	522	240	1,25,280	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	c) Sampler for Surface Samples/ Trench Samples / Core Samples Labour charge not included	day	1.5.2	5100	32	1,63,200	50 HMS, 175

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	d) 4 labours/ party (As per rates of Central Labour Commissioner)	day	5.7	522	128	66,816	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	<b>Sub-Total A</b>					<b>19,45,296</b>	
<b>2.0</b>	<b>Topographical Survey (1:2000)</b>						
	a) Surveyor Charges	day	1.6.1a	8,300	20	1,66,000	1:2000 scale
	b) 4 labours/ party (As per rates of Central Labour Commissioner)	day	5.7	522	80	41,760	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	<b>Sub-Total B</b>					<b>2,07,760</b>	
<b>2.1</b>	<b>Mineral Investigation</b>						
2.2	Trenching <sup>§</sup>						100 cu.m
	a) Excavation of trenches	per cu m	2.1.1	3,330	100	3,33,000	
	<b>Sub-Total B</b>					<b>3,33,000</b>	
<b>3.0</b>	<b>Drilling</b>						
3.1	a) Auger drilling	per m	2.2.2	4760	350	16,66,000	50bh
3.2	b) Drilling up to 300m Rigs) (Very Hard Rock)	per m	2.2.1.5 a	12,650	150	18,97,500	2 bhs
3.3	Borehole deviation survey	per m	2.2.6	330	0	-	
3.4	Borehole pillaring					-	
	a) construction of concrete pillar (12"x12"x30")	per borehole	2.2.7.a	2,000	2	4,000	
	b) Borehole plugging by cement	per m	2.2.7.b	150	0	-	

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3.5	Transportation of drill rigs & truck associated per drill (To & Fro from HQ)	per km	2.2.8	36	2900	1,04,400	1450km one way
3.6	Monthly accommodation charges for drilling camp	monthly	2.2.9	50,000	3	1,50,000	
3.7	a) Drilling camp setting (1 rigs)	per drill	2.2.9a	2,50,000	1	2,50,000	
	b) Drilling camp winding (1 rigs)	per drill	2.2.9b	2,50,000	1	2,50,000	
3.8	Approach road making in rugged- hilly terrain (Partly rugged-hilly terrain)	per km	2.2.10b	32,200	3	96,600	
3.9	Drill core preservation	per m	5.3	1590	115	1,82,850	1 complete borehole and mineralized zone in other boreholes
3.10	Land/crop compensation	per borehole		20000	10	2,00,000	
3.11	Demarcation Fixation of borehole and determination of co-ordinates & Reduced Level (RL) of the boreholes by DGPS (including charges for labours deployed for the work)	Per point of observation	1.6.2	19,200	6	1,15,200	2 bh, 4 boundary pillars
	<b>Sub-Total C</b>					<b>49,16,550</b>	
<b>4.0</b>	<b>Laboratory Studies</b>						
4.1	Chemical Analysis						
	<b>i) Heavy Mineral Separation by Magnetic and Gravity</b>						
	a) Separation of Heavy minerals from stream sediments of 2mm size through gravity and magnetic separation	per sample	4.3.6b	13,820	50	6,91,000	

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	b) REE analysis(34 elements) by ICP-MS Method	per sample	4.1.14	7,731	50	3,86,550	
	<b>ii) Check Samples (Auger Samples) - 10% External</b>					-	
	c) REE analysis(34 elements) by ICP-MS Method	per sample	4.1.14	7,731	5	38,655	External check 5
4.2	<b>Trench, Primary Samples</b>					-	
	a) 34 element Package analysis by ICP-MS for surface samples	per sample	4.1.14	7,731	75	5,79,825	
	<b>ii) Check Samples -10% External</b>					-	
	REE analysis(34 elements) by ICP-MS Method	per sample	4.1.14	7,731	8	57,983	External check 8
4.3	<b>i) BH Core Sampling, Primary samples</b>					-	
	REE analysis(34 elements) by ICP-MS Method	per sample	4.1.14	7,731	60	4,63,860	1m sample interval
	<b>ii) Check Samples -10% External</b>					-	
	REE analysis(34 elements) by ICP-MS Method	per sample	4.1.14	7,731	6	46,386	External check 15
4.7	<b>Whole rock studies</b>	per sample	4.1.15a	4,200	5	21,000	
4.8	<b>Petrological / Mineralographic studies</b>					-	
	a) Preparation of thin section	per sample	4.3.1	2,353	20	47,060	
	b) Study of thin section for petrography	per sample	4.3.4	4,232	20	84,640	
	c) Preparation of polished section	per sample	4.3.2	1,549	0	-	
	d) Study of polished section for mineragraphy	per sample	4.3.4	4,232	0	-	

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	e) Digital photomicrograph of thin section	per sample	4.3.7	280	20	5,600	
	f) Specific Gravity	per sample	4.8.1	1,605	2	3,210	
	g) EMPA	per hour	4.4.1	8,540	5	42,700	
	h) SEM	per hour	4.4.2	2,940	5	14,700	
	<b>Sub-Total D</b>					<b>24,83,169</b>	
<b>5.0</b>	<b>Total (1.0 to 5.0)</b>					<b>98,85,775</b>	
<b>6.0</b>	<b>Geological Report Preparation</b>	Nos	5.2	A Minimum of Rs. 2.50lakhs or 5% of the workwhichever is more	1	<b>4,94,289</b>	(ii)Reconnassance Survey/ Preliminary exploration/ General Exploration/Detailed Exploration having cost up to exceeding Rs.50 Lakhs but less than Rs 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the workwhichever is more and Rs.3000/- per each additional copy.
<b>7.0</b>	<b>Preparation of Exploration Proposal</b>	<b>Nos</b>	<b>5.1</b>	A Minimum 2% of the work or max 5 lakhs whichever is less	<b>1</b>	<b>1,97,715</b>	
<b>8.0</b>	<b>Report Peer Review Charges</b>	<b>lumpsum</b>	<b>As per EC decision</b>	<b>30000</b>	<b>1</b>	<b>30,000</b>	Additional Rs.1500 as handling charges should be added
<b>9.0</b>	<b>Total Estimated Cost without GST (7+8+9+10)</b>					<b>1,06,07,779</b>	
<b>10.0</b>	<b>Provision for GST ( 18%)</b>					<b>19,09,400</b>	GST will be reimburse as per actual and as per notified prescribed rate
<b>11.0</b>	<b>Total Estimated Cost with GST</b>					<b>1,25,17,179</b>	

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					Say, in Lakhs	125.17	
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	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 Certificate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						
5	Any item of work not mentioned above shall be added as per SoC.						

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**Time Schedule/ Action Plan for Preliminary Exploration (G3) for REE Mineralization in Maravapaliyam Block (2.0 sq. km), Tiruppur District, Tamil Nadu.**

S.No.	Activities	MONTHS														
		1	2	3	4	5	6	Review	7	8	9	10	11	12		
1	Camp setting															
2	Geological mapping & Survey															
3	Trenching/pitting															
4	Drilling 360m (auger and core)															
5	Sample preparation for Drill core samples															
6	Camp winding															
7	Analytical work drill core samples															
8	Geologist at HQ															
9	Geological report															
10	Peer Review															

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Estimated cost for Preliminary Exploration (G3) for Graphite in Patimal Block (4.00 sq km), District-Balangir, Odisha.  
[Block area- 4.00 sq. km; Nos. of Borehole- 10 (1st level BH: 08, 2nd level BH: 02); Borehole depth range: 70-100m; Schedule timeline- 12 months, Review: 4 months]

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SoC	Qty.	Amount (Rs)	
<b>1</b>	<b>Geological Mapping (1:2000), Topographic survey, Borehole logging, sampling &amp; Report writing</b>						
i	Charges for one Geologist- Field	day	1.2	11,000	120	13,20,000	
ii	Charges for one Geologist - HQ	day	1.2	9,000	30	2,70,000	
iii	2 labours/ party (Rs 522/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	522	240	1,25,280	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Core Sampling - 1 Samplers Labour charge not included	day	1.5.2	5,100	44	2,24,400	

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v	4 labours/ party (Rs 522/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	522	176	91,872	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
<b>2</b>	<b>Survey</b>						
i	Topographical Survey-Surveyor	day	1.6.1a	8300	30	249000	Topographical Survey on 1:2000 (2 m contour interval)
ii	4 labours/ party (Rs 522/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	522	120	62,640	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iii	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS and boundary coordinates	Per Point of observation	1.6.2	19,200	16	3,07,200	10 BHs and 6 boundary coordinates
<b>Sub Total- A</b>						<b>26,50,392</b>	
<b>B</b>	<b>GEOPHYSICAL SURVEY</b>						
i	Self Potential	Line Km	3.3a	29600	30	8,88,000	Tentative 4.00 sq km area for Geophysical Survey at 100 m traverse interval i.e. 30Line Km.
ii	Charges for one	day	3.18	11000	0	-	

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	Geophysicist-Field						
iii	Charges for one Geophysicist - HQ	day	3.18	9000	15	1,35,000	
iv	Surveyor Work	day	1.6.1a	8300	0	-	
v	4 labours/ party (Rs 522/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	522	0	-	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
<b>Sub Total- B</b>						<b>10,23,000</b>	
<b>C</b>	<b>TRENCHING</b>						
	Trenching (1m x 2m x15m): 10 trenches	Cu. M.	2.1.1	3330	300	9,99,000	
<b>Sub Total- C</b>						<b>9,99,000</b>	
<b>D</b>	<b>DRILLING</b>						
i	Drilling upto 300m (Hard Rock) (1 rig)	m	2.2.1.4a	11,500	800	92,00,000	(1st level BH: 08, 2nd level borehole: 02)
ii	Land / Crop Compensation	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	

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iv	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,000	36,000	Certification in this regard is required to be provided
v	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	4	2,00,000	
vi	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	1 rigs
vii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	1 rigs
viii	Approach Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement
ix	Core Preservation: One complete borehole plus mineralised cores of all the remaining Bhs	m	5.3	1,590	235	3,73,650	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
<b>Sub Total- D</b>						<b>1,06,39,750</b>	
<b>E</b>	<b>LABORATORY STUDIES</b>						
<b>1</b>	<b>Chemical Analysis</b>						
<b>i</b>	<b>Primary &amp; Check samples for Graphite</b>						

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	a. Primary Samples for Proximate Analysis of Graphite: Fixed Carbon (FC), Ash (A), Moisture (M) and Volatile Matter (VM)	Nos	4.1.16	3,000	300	9,00,000	Trench-150, BH-150
	b-External(10%) Check samples from NABL Lab for Proximate Analysis of Graphite: Fixed Carbon (FC), Ash (A), Moisture (M) and Volatile Matter (VM)	Nos	4.1.16	3,000	30	90,000	
	c-XRF-whole rock analysis for oxides (SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> , CaO, MgO, Na <sub>2</sub> O, K <sub>2</sub> O, V <sub>2</sub> O <sub>5</sub> and LOI )	Nos	4.1.15a	4,200	10	42,000	
	34 element by ICPMS	Nos	4.1.14	7,731	10	77,310	As per EC, NMET suggestion.
<b>2</b>	<b>Physical &amp; Petrological Studies</b>						
i	Preparation of thin section	Nos	4.3.1	2,353	5	11,765	

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ii	Complete petrographic study report	Nos	4.3.4	4,232	5	21,160	
iii	Preparation of polished section	Nos	4.3.2	1,549	5	7,745	
iv	Complete mineragraphic study report	Nos	4.3.4	4,232	5	21,160	
v	Digital Photographs	Nos	4.3.7	280	5	1,400	
vi	Bulk Density studies	Nos	4.8.1	1,605	2	3,210	
	<b>Sub Total- E</b>					<b>11,75,750</b>	
<b>D</b>	<b>Total A to E</b>					<b>1,64,87,892</b>	
<b>E</b>	<b>Geological Report Preparation</b>		<b>5.2</b>	For the projects having cost exceeding Rs. 150 lakhs and less than Rs. 300 lakhs - A minimum of Rs. 7.5 lakhs or 3% of the value of work whichever is more		<b>7,50,000</b>	Reimbursement will be made after submission of the final Geological Report in Hard Copies and the soft copy to NMET.
<b>F</b>	<b>Peer review Charges</b>		<b>As per EC decision</b>			<b>30,000</b>	

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<b>G</b>	<b>Preparation of Exploration Proposal (5 Hard copies with a soft copy)</b>	<b>5 Hard copies with a soft copy</b>	<b>5.1</b>	2% of the Cost or Rs. 5 Lakhs whichever is lower		<b>3,29,758</b>	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>H</b>	<b>Total Estimated Cost without GST</b>					<b>1,75,97,650</b>	
<b>I</b>	<b>Provision for GST (18% of H)</b>					<b>31,67,577</b>	GST will be reimburse as per actual and as per notified prescribed rate
<b>J</b>	<b>Total Estimated Cost with GST</b>					<b>2,07,65,227</b>	<b>or Say Rs. 207.65Lakh</b>
<b>K</b>	<b>Rs. In Lacs</b>					<b>207.65</b>	
<b>Note:</b>							
<b>1</b>	<b>Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.</b>						
<b>2</b>	<b>In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.</b>						
<b>3</b>	<b>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 Certificate regarding non outsourcing of any component/project is required.</b>						
<b>4</b>	<b>Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.</b>						
<b>5</b>	<b>Any item of work not mentioned above shall be added as per SoC.</b>						

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## Time Schedule/ Action plan for Preliminary Exploration (G3) for Graphite in Patimal Block (4.00 sq km), District-Balangir, Odisha.

Sl. No.	Particulars	Months	1	2	3	4	Review	5	6	7	8	9	10	11	12	
1	Camp Setting/ mobilization	Months	■													
2	Geologist days	days	■	■					■	■	■	■				
3	Geophysist days	days		■	■	■			■							
4	Survey Days (2 party)	days	■	■	■											
5	Trenching	days			■											
6	Drilling (1 rig)	m							■	■	■	■				
7	Sampling days	days				■				■	■	■	■			
8	Camp winding	Months													■	
9	Laboratory Studies	days							■			■	■	■	■	
10	Geologist days, HQ	days													■	
11	Report Writing with Peer Review	days												■	■	

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**Estimate Cost for Reconnaissance Survey (G4) for Iron Ore in Arewada – Hitapadi area (70 sq km), District: Gadchiroli, Maharashtra.  
PHASE-1 & 2 Area 70 sq. km, Schedule timeline- 8 months [Review: After 4 Months]**

S. No.	Item of Work *	Unit *	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item No. *	Rates as per SoC *	Qty.	Total Amount (Rs)	
				(a)			
	<b>PHASE 1</b>						
1	<b>Large Scale Geological Mapping and preliminary sampling</b>						BRS/Channel sampling - 30 nos
	Geological mapping, (1:12,500 scale)	Sq. km			70		
i	a. Charges for Geologist per day (Field) for geological mapping	day	1.2b	11000	60	660000	
ii	b. Labours Charges; Base rate	day	5.7	522	120	62640	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	<b>Total- 1</b>					<b>7,22,640</b>	
	<b>AS per LWE Scheme of NMET</b>					<b>9,03,300.00</b>	

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	c. Charges for Geologist per day (HQ)	day	2a	9000	0	0	Phase 2
1	<b>Collection of Surface Sample</b>						
	BRS, Channel Sampling	Sq. km			70		
i	a. Charges for Geologist per day (Field) BRS/Channel	day	1.2b	11000	40	440000	
ii	b. Labours Charges; Base rate	day	5.7	522	80	41760	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
<b>Total- 1</b>						<b>4,81,760</b>	
<b>LWE Scheme</b>						<b>6,02,200.00</b>	
	d Charges for Geologist per day (HQ)	day	2a	9000	20	180000	For preparation of Maps, Plates & GR
2	<b>LABORATORY STUDIES</b>						
a	<b>Chemical Analysis</b>						
i)	<b>Geochemical Sampling- Surface samples (Bedrock Samples)</b>						

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	a. Au by Fire Assay	Nos	4.1.5a	2380	5	11,900	
iv)	<b>Stream Sediments-Panned Samples</b>						
	b. ICPMs- 34 element	Nos	4.1.14	7731	10	77,310	Equally distributed along 70 sq.km area
vii)	<b>Major Oxide Analysis</b>						
	a) Estimation of major oxides by XRF/whole rock analysis for primary samples (CaO, MgO, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , LOI, Na <sub>2</sub> O, Fe <sub>2</sub> O <sub>3</sub> , MnO, K <sub>2</sub> O, TiO <sub>2</sub> , SO <sub>3</sub> , P <sub>2</sub> O <sub>5</sub> , Cr <sub>2</sub> O <sub>3</sub> , ZnO, V <sub>2</sub> O <sub>5</sub> )	per sample	4.1.15a	4200	100	4,20,000	100 BRS
	Estimation of major oxides by XRF/whole rock analysis for check samples	per sample	4.1.15a	4200	10	42,000	10 check sample of BRS
3	<b><u>Physical &amp; Petrological Studies</u></b>						
i	Preparation of thin section	Nos	4.3.1	2353	5	11,765	

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ii	Petrological report of thin section	Nos	4.3.4	4232	5	21,160	
iii	Preparation of polish section	Nos	4.3.2	1549	5	7,745	
iv	Minerographic report of rock sample	Nos	4.3.4	4232	5	21,160	
v	Digital Photographs	Nos	4.3.7	280	5	1,400	
viii	XRD Studies	Nos.	4.5.1	4,000	5	20,000	
	<b>Total 2 &amp; 3</b>					<b>8,14,440</b>	
<b>4</b>	<b>TOTAL PHASE-2</b>					<b>23,19,940</b>	
<b>5</b>	<b>Geological Report Preparation</b>	<b>5 Hard copies with a soft copy</b>	<b>5.2</b>	<b>5.2 (i/ii/iii/iv)</b>		<b>1,50,000</b>	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
<b>6</b>	<b>Peer review Charges</b>		<b>As per EC decision</b>			<b>30,000</b>	
<b>7</b>	<b>Preparation of Exploration Proposal</b> <b>(5 Hard copies with a soft copy)</b>	<b>5 Hard copies with a soft copy</b>	<b>5.1</b>	2% of the Cost or Rs. 5.0 Lakhs whichever is less		<b>46,399</b>	EA will be reimbursed after submission of 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>8</b>	<b>Total Estimated Cost without GST</b>					<b>25,46,339</b>	
<b>9</b>	<b>Provision for GST (18% of J)</b>					<b>4,58,341</b>	GST will be reimburse as per actual and as per notified

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			prescribed rate
10	<b>Total Estimated Cost with GST</b>	<b>30,04,680</b>	
11	<b>Rs. In Lakhs</b>	<b>56.35</b>	
<b>Note</b> :			
1	<b>Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.</b>		
2	<b>In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.</b>		
3	<b>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 Certificate regarding non outsourcing of any component/project is required.</b>		
4	<b>Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.</b>		
5	<b>Any item of work not mentioned above shall be added as per SoC.</b>		
*	<b>SoC Item No, Unit and Rate for each item of work must be as mentioned in the SoC.</b>		

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Annexure 7B											
Time schedule/action plan for Reconnaissance Survey (G4) for Iron Ore in Arewada – Hitapadi area (70 sq km), District: Gadchiroli, Maharashtra.											
		Oct-24	Nov-24	Dec-24	Jan-25	Review	Feb-25	Mar-25	Apr-25	May-25	
	Activities	1	2	3	4	Review of 1st Phase work	5	6	7	8	
1	Geological mapping										
2	Sampling & Sample preparation										
3	Analytical work										
4	Peer Review										
5	Report Preparation										
6	Submission of Report										

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**Estimated Cost for Preliminary Exploration (G3) in Jhalauthar Phosphorite block for Rock Phosphate, in Bada Malehra Taluka, Chhatarpur District,  
M.P.Area of 2.28 km<sup>2</sup> / 228 Ha, Drilling : 600 m, 6 bhs, Depth 100m, Timeline: 12 months, Review:after 4 months**

Sr. No.	Description	Item of work	Unit	SoC-Item SI No	Rates as per SoC	Qty.	Total	Remarks
<b>PHASE-1 (Survey, Mapping and Sampling)</b>								
1	<b>Geological Mapping 1:4000 and sampling</b>	Charges for 2 Geologists in Field	Per day per Geologist	1.2.b	₹ 11,000.00	80	₹ 8,80,000.00	Geochem sampling
		Labour			₹ 522.00	160	₹ 83,520.00	
2		Charges for 1 Geologists in HQ	Per day per Geologist	1.2.a	₹ 9,000.00	30	₹ 2,70,000.00	
3		Geochemical sampling	Per day per Geologist	1.5.1a	₹ 11,000.00	0	₹ 0.00	
4	<b>Survey Work</b>	Charges for surveyor in field	per day per surveyor	1.6.1a	₹ 8,300.00	30	₹ 2,49,000.00	
5		Charges for 1 surveyors in HQ	per day per surveyor	1.6.1a	₹ 8,300.00	0	₹ 0.00	
6		Demarcation of lease boundary, Fixing of BH, Co-ordinate, RL etc.	Per point	1.6.2	₹ 19,200.00	11	₹ 2,11,200.00	11 points including boreholes and block boundary
	<b>COST</b>						<b>₹ 16,93,720.00</b>	

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**PHASE-2 (Drilling, Analysis & Associated Studies)**

		Charges for 2 Geologists in Field	Per day per Geologist	1.2.b	₹ 11,000.00	40	₹ 4,40,000.00	<b>BH sampling</b>
		Labour			<b>522</b>	<b>80</b>	₹ 41,760.00	
7	<b>Drilling Work</b>	Drilling	per meter	2.2.1.4a	₹ 11,500.00	600	₹ 69,00,000.00	6 boreholes x 100 m each
8		Construction of concrete pillar	Per borehole	2.2.7a	₹ 2,000.00	6	₹ 12,000.00	Charges for 6 boreholes pillaring
9		Transportation of Drill Rig	Per km	2.2.8	₹ 36.00	600	₹ 21,600.00	to and fro from HQ
10		Drilling camp setting cost	Per drill	2.2.9a	₹ 2,50,000.00	1	₹ 2,50,000.00	For 1 drill rig
11		Drilling camp winding cost	Per drill	2.2.9b	₹ 2,50,000.00	1	₹ 2,50,000.00	For 1 drill rig
12		Monthly accommodation charges for drilling camp	Per month	2.2.9	₹ 50,000.00	3	₹ 1,50,000.00	For 1 drill rigs for 3 months
13		Drill core preservation (Core Boxes)	Per meter	5.3	₹ 1,590.00	400	₹ 6,36,000.00	6 boreholes x 100 m each
14		Approach road making to drill site	Per km	2.2.10a	₹ 22,020.00	5	₹ 1,10,100.00	Charges for 5 kms- as per actuals
		Sample processing, core splitting, crushing, powdering, etc.	one sampler per day	1.5.2	₹ 5,100.00	82	₹ 4,18,200.00	Charges for 1 sampler per day for 60 days
15			Labour			522	328	171216

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16	Laboratory Studies	XRF - Major Oxides	per sample	4.1.15a	₹ 4,200.00	600	₹ 25,20,000.00	Charges for 600 samples (400 core + 200 surface)
		Additional trace elements(U, Th)		4.1.15b	₹ 421.00	50	₹ 21,050.00	core samples only
17		ICPMS- 14 REE elements	per sample	4.1.14	₹ 5,380.00	5	₹ 26,900.00	Charges for 5 samples
18	Petrological Studies	Preparation of thin sections	Per sample	4.3.1	₹ 2,353.00	5	₹ 11,765.00	Charges for 5 samples
19		Study of thin sections	Per sample	4.3.4	₹ 4,232.00	5	₹ 21,160.00	Charges for 5 samples
20		Digital photomicrograph	Per Sample	4.3.7	₹ 280.00	10	₹ 2,800.00	Charges for 10 photographs
21	Geotechnical studies	Specific Gravity determination	Per Sample	4.8.1	₹ 1,605.00	5	₹ 8,025.00	Charges for 5 samples
	<b>COST</b>						<b>₹ 1,20,12,576.00</b>	
<b>PHASE-3 (Data Compilation &amp; Report Preparation)</b>								
22	Data Compilation and Report Preparation	Base line data collection	-	5.5.1.b	₹ 5,94,570.00	1	₹ 0.00	Geology, Geomorphology, Soil Meterology 10 km radius
23		Air Water Noise Analysis	-	5.5.1.c	₹ 7,72,329.00	1	₹ 0.00	10 km radius
24		Environmental Report Preparation	-	5.5.1.d	₹ 75,000.00	1	₹ 0.00	5 hard copy & 1 soft copy
25		Labour	per day	5.7	₹ 700.00	60	₹ 0.00	4 labour per surveyor for 2 surveyors and 1 labour per geologist for 3 geologists

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26		COST					₹ 0.00	
27	<b>TOTAL COST (phase 1+2+3)</b>						<b>₹ 1,37,06,296</b>	5% of exploration cost or 2.5 lakhs whichever is more
28		Preparation of Exploration Proposal	Lump sum	5.1			₹ 2,40,252	
		Geological report preparation	5 hard copy & 1 soft copy	5.2	ii		₹ 6,00,629	
		Peer Review	Lump sum			₹ 30,000.00	1	₹ 30,000
<b>Sub Total</b>							₹ 1,45,77,176.32	<b>Total .</b>
<b>GST</b>							₹ 26,23,891.74	
<b>TOTAL COST with GST</b>							₹ 1,72,01,068.06	
<b>Rs. In Lacs</b>							₹ 172.01	
<b>Note:</b>								
1	<b>Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.</b>							
2	<b>In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.</b>							
3	<b>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 Certificate regarding non outsourcing of any component/project is required.</b>							
4	<b>Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.</b>							
5	<b>Any item of work not mentioned above shall be added as per SoC.</b>							

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**Time Schedule/ Action Plan for Preliminary (G-3) Exploration for Jhalauthar Phosphorite Block (2.28 sq km), District- Chhatarpur, Madhya Pradesh**

S. No.			1	2	3	4	REVIEW	5	6	7	8	9	10	11	12	
1	Camp Setting	Months/Days														
2	Geological Mapping (1:4000) & BRS Sampling	days														
3	Surface Drilling (1 rigs)	600 m														
4	Core Sampling	days														
5	Laboratory Studies	Nos.														
6	Camp Winding	months														
7	Report Writing with Peer Review	months														

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**Cost Estimate for Preliminary Exploration (G3) for PGE and Associated mineral in Mordongri-Jamtara Block in Chhindwara district, M.P.  
No.of BH: 5, Borehole depth range 100 m; Schedule timeline 12 months Review: After 6 Months]**

S. No.	Item of Work *	Unit *	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item No. *	Rates as per SoC * (a)	Qty (b)	Total Amount (Rs) (a*b)	
<b>A</b>	<b>Geological Mapping Other Geological Work &amp; Surveying</b>						
	Geological mapping, (1:2,000 scale) & Trenching , drilling work						in an area about 3-4 sq.km in phase 2
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2a	11,000	150	16,50,000	30 days -phase 1, 120 days -Phase 2
ii	b. Labours Charges; Base rate	day	5.7	522	300	1,56,600	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	c. Charges for Geologist per day (HQ)	day	1.2b	9,000	60	5,40,000	60 Days -Phase 2

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	d. Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	78	3,97,800	50 days -phase 1, 28 days -phase 2	
	e. Labours (4 Nos)	day	5.7	522	312	1,62,864	200 days -phase 1, 112 days -phase 2	
	Charges of Surveyor (1 party) for geological mapping	one surveyor per day	1.6.1a	8,300	30	249000	30 one surveyor per day - phase 2- Geological mapping, topographic survey in 1:2000 scale 4m contour interval	
	Labours Charges for survey work;	day	5.7	522	120	62640	120 days - phase 2- Geological mapping	
	<b>Sub Total- A</b>						<b>32,18,904</b>	
<b>B</b>	<b>Ground Geophysical Survey</b>							
1	Gravity Method detailed (outsourced)	Per station	3.1a	3,800	100	3,80,000	100 per station -phase 2	
2	Magnetic survey (outsourced)	Per station	3.2a	1,800	160	2,88,000	160 per station -phase 2	
	<b>Sub Total- B</b>						<b>6,68,000</b>	
<b>C</b>	<b>Survey work</b>							
a	DGPS Survey for BH fixation & RL determination	Per Point of observatio	1.6.2	19,200	9	172800	9 per point of observation -phase 2	

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	<b>(outsourced)</b>	n					
b	topographic surer 1:2000 4m contour interval						
c							
	<b>Sub-Total C</b>					<b>1,72,800</b>	
<b>D</b>	<b>Trenching/Pitting (in- house)</b>						
	a) Excavation of Trenches	per cu.m	2.1.1	3,330	50	<b>166500</b>	50 per cu.m -phase 1
<b>E</b>	<b>DRILLING (after review)</b>						
1	Drilling up to 300m (Hard Rock) <b>(Outsourced)</b>	m	2.2.1.4a	11,500	500	57,50,000	500 m -phase 2
10	Drill Core Preservation <b>(Outsourced)</b>	per m	5.3	1,590	200	3,18,000	200 per m -phase 2
	<b>Sub Total E</b>					<b>60,68,000</b>	
<b>F</b>	<b>Borehole Geophysical Logging (Outsourced)</b>		3.12	622.00	500	<b>3,11,000</b>	500 Bhs of 350m each -phase 2
<b>G</b>	<b>LABORATORY STUDIES</b>						
1	<b>Chemical Analysis</b>						
i)	<b>Geochemical Sampling- Surface samples (Bedrock/Channe</b>						

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	<b>I /Soil/Stream sediment)</b>						
	b. ICPMS -34 elements	Nos	4.1.14	7,731	150	11,59,650	150 nos -phase 1
	c. For PGE by Fire Assay	Nos	4.1.5d	11,800	150	17,70,000	150 nos -phase 1
ii)	<b>Surface Check samples (10% External)</b>						
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.14	7,731	15	1,15,965	15 nos -phase 1
	c. For PGE by Fire Assay	Nos	4.1.5d	11,800	15	1,77,000	15 nos -phase 1
v)	<b>BH Core samples</b>						
	a. Au by Fire Assay	Nos					
	b. ICPMS-34 elements	Nos	4.1.14	7,731	100	7,73,100	100 nos -phase 2
	c. For PGE by Fire Assay	Nos	4.1.5d	11,800	100	11,80,000	100 nos -phase 2
vi)	<b>BH Core samples (10%External)</b>						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements	Nos	4.1.14	7,731	10	77,310	10 nos -phase 2
	c. For PGE by Fire Assay	Nos	4.1.5d	11,800	10	1,18,000	10 nos -phase 2
2	<b>Physical &amp; Petrological</b>						

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	<b>Studies</b>						
i	Preparation of thin section	Nos	4.3.1	2,353	40	94,120	30 nos -phase 1, 10 nos -phase 2
ii	Study of thin section	Nos	4.3.4	4,232	40	1,69,280	30 nos -phase 1, 10 nos -phase 2
iii	Preparation of polish section	Nos	4.3.2	1,549	40	61,960	30 nos -phase 1, 10 nos -phase 2
iv	study of polished section	Nos	4.3.4	4,232	40	1,69,280	30 nos -phase 1, 10 nos -phase 2
v	Digital Photographs	Nos	4.3.7	280	80	22,400	60 nos -phase 1, 20 nos -phase 2
vii	Sp. Gravity	Nos	4.8.1	1,605	5	8,025	05 nos -phase 1, 05 nos -phase 2
	SEM Studies	per hour					
viii	EPMA studies	per hour					
	<b>Sub Total G</b>					<b>58,96,090</b>	
H	<b>3D ore body modeling</b>		<b>As per the actuals/implementing agency to put the cost based on the market survey</b>			-	As the rate varies from mineral to mineral and on mode of occurrence, hence charges applicable would be as per actual, based on market survey
I	<b>Total Outsourcing Cost</b>					<b>72,19,800</b>	
J	<b>Total A to H</b>					<b>1,65,01,294</b>	
K	<b>Geological Report Preparation</b>	<b>5 Hard copies with a soft copy</b>	<b>5.2</b>	<b>iii</b>		<b>7,50,000</b>	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.

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L	Peer review Charges		As per EC decision			30,000	
M	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. 5.0 Lakhs whichever is less		3,30,026	EA will be reimbursed after submission of 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.
N	Operational Charges		6 (ii)			6,66,485	
O	Tendering cost					1,44,396	
P	Total Estimated Cost without GST					1,84,22,201	
Q	Provision for GST (18% of J)					33,15,996	GST will be reimburse as per actual and as per notified prescribed rate
R	Total Estimated Cost with GST					2,17,38,197	
				Rs. In Lakhs		217.38	
Note :							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	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 Certificate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						
5	Any item of work not mentioned above shall be added as per SoC.						
*	SoC Item No, Unit and Rate for each item of work must be as mentioned in the SoC.						

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**Time schedule/ Action plan for Preliminary Exploration (G3) for PGE and Associated mineral in Mordongri-Jamtara Block  
in Chhindwara district, M.P.**

S. No.			Phase 1						Review	Phase 2					
			1	2	3	4	5	6		7	8	9	10	11	12
1	Camp Setting	Months													
2	Geological Mapping & Sampling	Months													
3	Geophysical survey	Months													
5	Pitting/Trenching	Months													
6	Surface Drilling (1 rigs)	Months													
7	Survey Party days	Months													
8	Geologist Man days	Months													
9	Geophysicist man days	Months													
9	Sampler Man days	Months													
10	Camp Winding	Months													
11	Laboratory Studies	Months													
12	Report Writing with Peer Review	Months													

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**Estimated Cost for Preliminary Exploration (G3) for Bauxite, Titanium, and Associated Minerals Harhapat block, Gumla, Jharkhand.  
Area - 1.32 sq. km, No of BH - 8, BH Depth Range - 25m , Schedule timeline - 10 Months, Review - After 4 Months**

S. N.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SoC	Qty.	Total Amount (Rs)	
<b>A</b>	<b>GEOLOGICAL MAPPING, SAMPLING AND SURVEYING DAYS</b>						
<b>1</b>	<b>Geological Mapping (1:4000), Topographic survey &amp; Sampling</b>						
a	Charges for one Geologist per day at field	day	1.3	11000	90	990000	
b	Labour for Geologist (4 Nos. i.e. 2 workers/geologist)	day	5.7	522	180	93960	Amount will be reimbursed as per the notified rates by the central labour commissioner or respective state govt. whichever is higher
	Charges for one Geologist per day at HQ	day	1.3	9000	30	270000	
c	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5100	28	142800	
d	Labours for sampling work (4 Nos) Base rate	day	5.7	522	112	58464	Amount will be reimbursed as per the notified rates by the central labour commissioner or respective state govt. whichever is higher
<b>2</b>	<b>Survey (on 1:4000 Scale)</b>						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes	Per Point of observation	1.6.2	19200	15	288000	Borehole-8, Boundary Points - 7

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	and pit-trench points by DGPS/Total station						
b	Charges of one Surveyor (1 Party)	one surveyor per day	1.6.1a	8300	15	124500	
c	Labours (4Nos) Base rate	day	5.7	522	60	31320	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
<b>3</b>	<b>Pitting</b>	cu.m	2.1.2	3800	60	228000	30 pits (1x1x2) with 30 nos. of pit samples
	<b>Sub-Total A</b>					<b>2227044</b>	
<b>B</b>	<b>DRILLING</b>						
a	Drilling -Soft rock	m	2.2.1.3a	7123	200	1424600	MoC rate
b	Borehole Deviation Survey	m	2.2.6	330	0	0	
c	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2000	8	16000	
d	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	400	14400	To and Fro from HQ at Ranchi
e	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50000	3.0	150000	
f	Drilling Camp Setting Cost	Nos	2.2.9a	250000	1	250000	
g	Drilling Camp Winding up Cost	Nos	2.2.9b	250000	1	250000	
h	Road Making (Flat Terrain)	Km	2.2.10a	22020	5	110100	Road making will be considered as per the requirement and Road making charges will be reimbursed accordingly
e	Drill Core Preservation	per m	5.3	1590	200	318000	
	<b>Sub Total B</b>					<b>2533100</b>	

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<b>C</b>	<b>LABORATORY STUDIES</b>						
<b>i)</b>	<b>Chemical Analysis</b>						
<b>a</b>	<b>Primary Samples</b>						
1	XRF -Major Oxides	Nos	4.1.15a	4200	200	840000	30 pit + 170 core samples
<b>b</b>	<b>Check samples External(10%)</b>						
1	XRF -Major Oxides	Nos	4.1.15a	4200	20	84000	
<b>c</b>	<b>Analysis of Bauxite</b>						
1	Combined determination of Tri hydrate Alumina (THA-40 c) and Mono hydrate Alumina (MHA - 240 c) & reactive silica	Nos	4.1.17a	6700	0	0	
2	Determination of Bond Work Index	Nos	4.1.17e	10000	0	0	
	<b>Sub Total - i</b>					<b>924000</b>	
<b>ii)</b>	<b>Petrological/Mineralogical studies</b>						
a	Preparation of thin section	Per Samples	4.3.1	2353	10	23530	
b	Study of Thin Section	Per Samples	4.3.4	4232	10	42320	
c	Preparation of polish section	Per Samples	4.3.2	1549	10	15490	
d	Study of polish Section	Per Samples	4.3.4	4232	10	42320	
e	Digital Photographs		4.3.7	280	20	5600	
	<b>Sub Total - ii</b>					<b>129260</b>	
<b>iii</b>	<b>Geotechnical Laboratory</b>						
	Specific Gravity determination	Nos	4.8.1	1605	5	8025	
	<b>Sub Total - iii</b>					<b>8025</b>	
	<b>Total - C</b>					<b>1061285</b>	
<b>D</b>	<b>Sub Total (A to C)</b>					<b>5821429</b>	

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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 and Rs. 3000/- per each additional copy		291071	
F	Preparation of Exploration Proposal	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		116429	
G	Peer review Charges		As per EC decision			30000	
H	Total Estimated Cost without GST	Approx.				6258929	
I	Provision for GST (18% of H)	%				1126607	
J	Total Estimated Cost with GST					7385536	
					<b>Rs. In Lakhs</b>	<b>73.86</b>	
Note:							
1	<b>Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.</b>						
2	<b>In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.</b>						
3	<b>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 Certificate regarding non outsourcing of any component/project is required.</b>						
4	<b>Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.</b>						
5	<b>Any item of work not mentioned above shall be added as per SoC.</b>						

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## Time Schedule/ Action plan for Preliminary Exploration (G3) for Bauxite, Titanium, and Associated Minerals Harhatpat block, Gumla, Jharkhand.

Sl. No.	Activities	Unit	Months												
			1	2	3	4	5	6	7	8	9	10			
1	Camp Mobilization	Days	■												
2	Geological Mapping & Sampling	Days	■	■											
3	Lab Analysis-Samples (bed rock, soil, stream sediment)	Days		■											
4	Pitting, Trenching & Sampling	Days		■	■	■	■								
5	Lab Analysis of Pit-Trench Samples	Days			■	■									
6	Survey (topographic & borehole demarcation)	Days			■	■									
7	Drilling (1 rig)	Days						■	■						
8	Sample preparation for drill core samples	Days						■	■						
9	Lab Analysis of Drill core samples	Days							■	■					
10	Camp Demobilization	Days								■	■				
11	Geological Report	Days								■	■	■			
12	Peer review	Days										■	■		

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## Estimated cost for Reconnaissance Survey (G4) for Graphite in and around Khairmal area, Bolangir, District, Odisha.

Area : 83.34 Sq. Km @ G4 level of exploration, Timeline- 12 months, Review-4 months, 8 months

S. No	Item of Work	SoC-Item -SI No.	Quantity	Unit	Unit rate	Total	Remarks
<b>PHASE 1</b>							
<b>A</b>	<b>Geological Mapping</b>						
	Charges of procurement of satellite imagery from NRSC	1.1	1	Scene	0	At actual	
	Large scale geological mapping @ 1:12,500	1.2					
	Field	1.2	100	Man-day	11,000.00	11,00,000.0	
	Unskilled Labours	5.7	200		522.00	1,04,400.0	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	HQ	1.2	30	Man-day	9,000.00	2,70,000.0	
	Charges of one sampler per day	1.52	22	Man-day	5,100.00	1,12,200.0	
	Unskilled Labours (04 Nos x 60 days)	5.7	88	Man-days	522.00	45,936.0	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
		Total				16,32,536.0	
<b>B</b>	<b>Laboratory analysis of BRS</b>						
	Analysis of one rock/soil sample for determination of apackage of 34 elements by ICP-AES/ICP MS	4.1.14	5	Per sample	7,731.00	38,655.00	

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	Major oxides	4.1.15a	5	Per sample	4,200.00	21,000.00	
	Proximate analysis of Graphite (FC, VM, Ash, Moisture of BRS samples + 10 % check samples	4.1.16	55	Per sample	3,000.00	1,65,000.0	
		Total				<b>2,24,655.0</b>	
<b>C</b>	<b>Petrological studies</b>						
	Preparation of standard thin section of the rocks	4.3.1	10	Per sample	2,353.00	23,530.0	
	Completed petrographic/ore microscopic study/mineragraphic report of the rock samples	4.3.4	5	Per sample	4,232.00	21,160.0	
	Digital photomicrograph of the thin sections	4.3.7	10	Per sample	280.00	2,800.0	
		Total				<b>47,490.0</b>	
<b>D</b>	<b>Geophysical Survey (Outsourced)</b>						
	Self potential (8-20 line Km)	3.3a	20	Line Km.	29,600	5,92,000.00	
		Total				<b>5,92,000.00</b>	
<b>PHASE 1 TOTAL</b>						<b>24,96,681.00</b>	
<b>PHASE 2</b>							
<b>E</b>	<b>Scout drilling (Outsourced)</b>						
	Fixation of collar RL of boreholes and creation of permanent bench mark- DGPS	1.6.2	5	Points of observation	19,200.00	96,000.0	
	Creation of Benchmarks - 01 nos						

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	Fixation of collar RL for boreholes - 6 Nos						
	<b>Total</b>					<b>96,000.0</b>	
<b>F</b>	<b>Drilling and Trenching (Outsourced)</b>						
	Excavation of trenches upto 2.0 metres depth	2.1.1	50	Cu.M	3,300	1,65,000.0	
	Drilling in medium hard rock (5 BH @ 60 m each)- Outsourced	2.2.1.4a	300	Meter	10,100.00	30,30,000.0	
	Construction of concrete pillars on BH	2.2.7a	0	Nos	2,000.00	-	
	Drill core Preservation (in house)	5.3	150		1590	2,38,500.0	
	<b>Total</b>					<b>34,33,500.0</b>	
<b>G</b>	<b>Laboratory analysis of Core samples</b>						
	Proximate analysis of Graphite (FC, VM, Ash, Moisture of 120 Nos drill core composite samples + 10 % check samples	4.1.16	110	Per sample	3,000.00	3,30,000.0	
	<b>Total</b>					3,30,000.0	
	<b>Total Outsourcing Cost</b>					<b>32,91,000</b>	
	<b>TOTAL COST Phase 1</b>					24,96,681.0	
	<b>TOTAL COST Phase 2</b>					38,59,500.0	
	<b>Total Cost Phase 1 &amp; Phase 2</b>					<b>63,56,181</b>	
	<b>Tendering process cost</b>						
	<b>Operational Charges</b>	<b>6.0</b>	<b>i</b>			<b>3,29,100</b>	
	Tendering process cost	2.3				65,820	

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	Preparation Exploration Proposal	5.1				1,27,124	
	Geological report preparation	5.2	ii			3,17,809	
	Peer Review cost					30000	
	<b>TOTAL COST</b>					<b>72,26,034</b>	
	<b>GST</b>					<b>13,00,686</b>	
	<b>TOTAL COST with GST</b>					<b>85,26,720</b>	
<b>Rs. In Lacs</b>						<b>85.27</b>	
<b>Note:</b>							
1	<b>Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.</b>						
2	<b>In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.</b>						
3	<b>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 Certificate regarding non outsourcing of any component/project is required.</b>						
4	<b>Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.</b>						
5	<b>Any item of work not mentioned above shall be added as per SoC.</b>						

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**Time Schedule/ Action Plan for Reconnaissance Survey (G4) for Graphite in and around Khairmal area, Bolangir, District, Odisha.**

Phase	Activity	2024												2025																						
		Month 1		Month 2		Month 3		Month 4		Month 5		Month 6		Month 7		Month 8		Month 9		Month 10		Month 11		Month 12												
		July		August		September		October		November		December		January		February		March		April		May		June												
		2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks											
Phase 1	Geological mapping and surveying	Monsoon												BUFFER PERIOD																						
	Chemical analysis of phase 1 samples																																			
	Petrological and mineralogical studies																																			
	Geophysical survey (Self Potential survey, including tendering process)																																			
<b>MID REVIEW</b>		<b>MID REVIEW AFTER COMPLETION OF PHASE 1</b>																																		
Phase 2	Excavation (Trenching or pitting as appropriate based on field experience)																																			
	Drilling of 05 scout boreholes (time period includes mobilization and tendering process)																																			
	Chemical analysis of trench and core samples																																			
	Interpretation of results and buffer period																																			
	Preparation of Geological report according to MEMC																																			
	NMET Presentation and projecta closure																																			

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**Estimated Cost for Reconnaissance Survey (G4 stage) for Copper and associated mineralisation in Musabani- Dumriya- Maheshpur areas in East Singhbhum District of Jharkhand**

Name of the Exploration Agency - Natural Resources Division, Tata Steel Limited  
Total Area - 166.296 Sq. Km; Completion Time - 15 Months, Review , 6months, 9 months

Sl. No	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Additional charge for most affected LWE districts	Total Amount (Rs)	Remarks
			SoC- Item- S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	Factor of multiplication		
<b>1</b>	<b>Phase-I : LSM at 1:12500 Scale with BRS and Soil sampling, Chemical analysis, Mineragraphic study - 6 Months</b>								
1.1	Geologist -LSM (1:12500 scale) with BRS or Soil Sampling (Field work)	Mandays	1.2	11000	200	2200000		2200000	1. 250m traverse spacing across the block 2. Total traverse length 640 km. 3. GCP at 50m interval on traverse line or less. 3. Daily minimum 2.0 line Km traverse for data collection by each geologist. 4. 6 days working per week.
1.2	Geologist- at HQ (for overall supervision, liaisoning etc)	Mandays	1.2	9000	60	540000		540000	1 Person; 6 days working per week
1.3	Labour charges (for sample collection, packaging, carrying)	Mandays	5.7	522	400	208800		208800	2 labour per team; Amount will be reimbursed as per the notified rates by the Central Labour Commission or respective State Govt. whichever is higher.

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1.4	Charges for one sampler per day (for sample preparation)	Mandays	1.5.2	5100	83	423300		423300	1. 100 samples 2. 1 sampler to be deployed 3. 15 samples to be prepared in a day 4. 6 days working per week
1.5	Labour charges (for sample preparation)	Mandays	5.7	522	332	173304		173304	1. 4 persons per day 2. Minimum 15 samples to be prepared in a day Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
1.6	BRS and Soil samples analysis (a package by 34 elements by ICP-AES/ ICP-MS (sequential technique)	No. of Samples	4.1.14	7731	400	3092400		3092400	1. 400 samples 2. Initially 100 samples 3. Later rest 300 sample after review
1.7	Check samples - 10% External	No. of Samples	4.1.14	7731	40	309240		309240	1. 10% of the samples
1.8	preparation of polished thin section of rock	No. of Samples	4.3.2	1549	30	46470		46470	
1.9	Complete mineragraphic report of rock samples	Per sample	4.3.4	4232	30	126960		126960	
1.10	EPMA	No. of hours	4.4.1	8540	10	85400		85400	
<b>2</b>	<b>Phase-II: Geophysical Survey - 3 Months- Outsourced</b>								
2.1	Magnetic Surveys (10-30 line km)	No. of Stations	3.2a	1800	480	864000		864000	
2.2	Induced Polarization (Dipole-Dipole) (10-20 Km)	Line Km	3.4a	69950	20	1399000		1399000	

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2.3	Labour charges for assisting in geophysical survey	Mandays	5.7	500	0	0	0	1. 6 labour per day (2 for Magnetic survey and 4 for IP survey); Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher	
2.4	Geophysicist man days for Geophysical Survey (Field)	Mandays	3.18	11000	0	0	0	Daly 2.0 Line Km traverses; 1 Geophysicist; 6 days working	
2.5	Geophysicist man days for Geophysical Survey (HQ)	Mandays	3.18	9000	0	0	0		
<b>3</b>	<b>Phase-III: Diamond core drilling (NQ size) and related activities - 4 Months- Outsourced</b>								
3.1	Drilling up to depth of 300m (normal rate)	per m	2.2.1.3a	10100	1000	10100000	10100000	5 boreholes; avg 200m depth	
3.2	Drilling supervision, core logging, sampling advice	Mandays	1.2	11000	0	0	0	1. 1 Geologist per rig 2. Total drilling days = 50	
3.3	Fixation of BH by DGPS	per point	1.6.2	19200	5	96000	96000		
3.3	Borehole collar survey	Mandays	1.6.1a	8300	0	0	0	Using DGPS	
3.4	Labour charges for assisting in collar survey	Mandays	5.7	500	0	0	0	1. 3 labour per day 2. 7 days work Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher	
3.5	Transportation of drill rigs and trucks associated per drill (to & from headquarter and drill sites)	Per KM	2.2.8	36	3752	0	0	2 rigs to be deployed; Nagpur to Musabani one way distance is 938 Km.	
3.6	Monthly accommodation charges for drilling camp	Monthly basis	2.2.9	50000	2	0	0	1. Daily effective drilling by 2 rigs = 20m	

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									2. Total drilling days = 50
3.7	Drilling camp setting cost	Per drill	2.2.9a	250000	2	0		0	
3.8	Drilling cam winding cost	Per drill	2.2.9b	250000	2	0		0	
3.9	Approach road making for flat terrain	Per km	2.2.10a	22020	2	0		0	Considered 2 bhs at flat terrain
3.1	Approach road making for rugged-hilly terrain	Per km	2.2.10b	32200	3	0		0	Considered 3 bhs at rugged-hilly terrain
3.11	Project Manager at HQ (for overall supervision, liaisoning etc)	Mandays	1.2	9000	25	0		0	
3.12	Charges for one sampler per day (for sample preparation)	Mandays	1.5.2	5100	0	0		0	1. 200 samples 2. 1 sampler to be deployed 3. 15 samples to be prepared in a day 4. 6 days working per week
3.13	Labour charges (for sample preparation)	Mandays	5.7	500	0	0		0	1. 4 persons per day 2. Minimum 15 samples to be prepared in a day Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
3.14	Drill core sample analysis (a package by 34 elements by ICP-AES/ ICP-MS (sequential technique)	No. of Samples	4.1.14	7731	200	1546200		1546200	1. 0.5m sample interval in the mineralized zone and 1.0m sample interval in HW and FW side of the mineralized zone 3m in both sides
3.15	External Check Samples 10%	No. of Samples	4.1.14	7731	20	154620		154620	1. 10% of the samples
3.16	Drill core preservation		5.3	1590	300	477000		477000	
<b>4</b>	<b>Project Cost without GST (1 to 8)</b>							<b>2,18,42,694</b>	

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5	<b>Total Outsourced Cost</b>							<b>1,40,63,820</b>	
6	Tendering process cost for outsourced activities		2.3					281276	2% of the approved project cost or 5 lakh whichever is lower
7	Operational Charges against outsourced activities		6.0					1078191	
8	Peer review by external expert		As per EC decision			30000		30000	15 days
9	Geological Report Preparation (@3% of the project cost or 7.5 Lakh whichever is more)		5.2					750000	Reconnaissance Survey exceeding Rs. 150 lakh but less than 300 lakh: A minimum Rs. 7.5 lakh or 3% of the value of the work whichever is more. Time required 1.5 months
10	Preparation of Exploration Proposal							436854	
11	<b>Total Project cost (without GST)</b>							<b>24419015</b>	
12	<b>Total Project Cost with GST</b>	<b>%</b>				18		<b>28814438</b>	
13	<b>Rs. In Lacs</b>							<b>288.14</b>	
<b>Note:</b>									
1	<b>Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.</b>								
2	<b>In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.</b>								
3	<b>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 Certificate regarding non outsourcing of any component/project is required.</b>								
4	<b>Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.</b>								
5	<b>Any item of work not mentioned above shall be added as per SoC.</b>								

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**Time Schedule / Action Plan for Reconnaissance Survey (G4 stage) for Copper and associated mineralisation in Musabani- Dumriya- Maheshpur areas in East Singhbhum District of Jharkhand**

Sl. No.	Activity Plan	M1	M2	M3	M4	M5	M6		M7	M8	M9		M10	M11	M12	M13	M14	M15		
1	LSM (1:12500 scale) with BRS and soil sampling over 167.0 Sq. Km. area	■	■	■	■			Review				Review								
2	Sample preparation for chemical analysis				■	■														
3	Chemical analysis of BRS and soil samples					■	■													
4	Mineragraphic and EPMA study						■													
5	<b>1st Review by TCC on progress and Outcome</b>						■													
6	Geophysical survey (Magnetic and IP) over potential areas						■			■										
7	Processing and interpretation of Geophysical survey data										■									
8	Synthesis of all data, interpretation and review										■									
9	<b>2nd Review by TCC on progress and Outcome</b>												■							
10	Exploratory drilling, borehole collar survey etc														■	■				
11	Logging, sampling, sample preparation and interpretation															■	■			
12	Peer Review																	■		
13	<b>Final Review by TCC on progress and Outcome</b>																		■	
14	Final Report preparation and submission																			■

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09/08/2024