MINUTES OF THE 15th MEETING OF TECHNICAL CUM COST COMMITTEE (TCC) OF NATIONAL MINERAL EXPLORATION TRUST (NMET)

Held at Fermor Hall, Geological Survey of India, Nagpur on 4th & 5th July, 2018

The 15th meeting of Technical Cum Cost Committee (TCC) of National Mineral Exploration Trust (NMET) was held at Fermor Hall, GSI, Central Region, Nagpur on 04-07-2018 & 05-07-2018 under the chairmanship of Shri. D. Mohan Raj, Addl. Director General & Head, National Mission-II, GSI, Nagpur. The list of participants is at Annexure-1.

Shri D. Mohan Raj, Additional Director General, GSI, Nagpur & Chairman, TCC welcomed all the members of the committee. He briefed the committee members about decisions of 8th EC of NMET

- TCC will be held in the 3rd week of every month for the next three months as per the minutes of the 8th EC, accordingly all the State DGMs, State and Central PSUs may submit the proposals for discussion in the ensuing meetings.
- Chairman informed that the exploration proposals are to be submitted well in advance to all members of TCC i.e. 15 days before the schedule of meeting, otherwise the same will be taken up in the subsequent meeting.
- Majority of the proposals evaluated are of bulk minerals, the EC in the previous meeting suggested that TCC now focus should be given to other than the bulk minerals also. Hence, it is requested that, proposals for Au, Cu, Pb-Zn, Mo, Sn, W, Ni, Co, REE-RM, etc., in future.
- EC also opined that all the on-going NMET projects should be monitored properly which should include:
  - A team of technical experts should visit to the projects and can do onsite monitoring wherever it is felt necessary and submit its report.
  - The exploration agencies should submit monthly progress report of on-going project to NMET secretariat.
  - There should be a separate finance wing to evaluate cost estimates of the proposals, bills and other financial documents.
  - A monthly report on the progress of each block should be submitted by the exploration agencies to NMET secretariat in the prescribed format.
- After discussion the committee further recommended that the cost estimates of projects need to be rigorously appraised by a separate finance wing of NMET, after a preliminary estimation of cost for reach project by TCC. The finance wing of NMET will have to work out the cost meticulously for each project as per the work components suggested by the TCC and put up to the EC NMET for approval. It is difficult to justify the financial appraisal of the project within the period of TCC meeting which leave scope of inadequate rigor.
- The committee needs to concentrate solely on technical evaluation and initial cost estimates which will be taken up by NMET secretariat for fund appraisal and approval of the EC.

5/7/18
(B. P. Ratan)

(D. Mohan Raj)

A- AGENDA-1 EVALUATION OF PROPOSALS

I. PROPOSAL FROM MECL (02 MANGANESE BLOCKS, & 3 IRON ORE BLOCKS)

MECL presented 5 (Five) Nos. of proposals and the details of the proposals discussed is given below:-. Recommendations of the Committee in respect of various proposals are as under:

1. *PROPOSAL FOR RECONNAISSANCE SURVEY (G-4) AND GENERAL EXPLORATION (G-2) FOR MANGANESE ORE IN RENGALI BLOCK, DISTRICT-BOLANGIR, ODISHA:*

G-4 proposal:

G-4 exploration will be carried out in extension area (excluding the area) where GSI has worked for G-3 level of exploration.

Committee recommended the approval of G-4 exploration in the block with Geophysical Survey (Gravity, Magnetic & Resistivity), a total of 600 m drilling in 5 Bhs and associated Geological & Laboratory Studies at an estimated cost of 284.10 Lakh to be completed in a time schedule of 12 months including the final report submission.

G-2 proposal:

The Committee discussed the proposal in detail and suggested following changes:

- In Section EE', PBH-8 is to be shifted eastward.
- In Section GG', PBH-12 to be shifted to intersect exact level & PBH-13 angle to be changed.

MECL incorporated above changes and proposal was again put up to the committee.

Committee recommended the approval of G-2 exploration in the Block with a total of 2350m drilling in 37 Bhs alongwith associated Geological & Laboratory studies at an estimated cost of 340.93 Lakh to be completed in the time schedule of 13 months including the final report submission.

2. *PROPOSAL FOR RECONNAISSANCE SURVEY (G-4) AND GENERAL EXPLORATION (G-2) FOR MANGANESE ORE IN TAMIYA BLOCK, DISTRICT-BOLANGIR, ODISHA.*

G-4 proposal:

G-4 exploration will be carried out in extension area, excluding the area, where GSI has carried out exploration work.

The Committee discussed the proposal in detail and recommended for approval of EC for G-4 exploration in the block with a total 310 m of drilling in 6 Bhs at an estimated cost of Rs 246.43 Lakh to be completed in a time schedule of 11 months including the final report submission.

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(C.D. Mishra Raj)

G-2 proposal:

The Committee recommended the approval of the proposal with following modifications:

- In Section B-B', PBH-1 to be removed, PBH-02 to be drilled as proposed and PBH-03 is to be drilled (conditional) if PBH-02 is positive.
- In Section D-D', PBH-05 to be removed, PBH-06 to be modified to intersect western mineralised zone at 200mRL & PBH-07 should intersect eastern mineralised zone at 170mRL.
- In Section I-I', PHB-14 should be parallel to GSI borehole & PBH-15 should be removed.
- In Section J-J', PBH 17 is approved with the condition that PBH 16 intersects the mineralised zone & it is expected to continue in depth.
- In Section M-M', PBH-19 is approved with the condition that PBH-18 intersects the mineralised zone & it is expected to continue in depth.
- In Section O-O', PBH-22 is approved with the condition that PBH-21 intersects the mineralised zone & it is expected to continue in depth.
- In Section Q-Q', PBH-25 is approved with the condition that PBH-24 intersects the mineralised zone & it is expected to continue in depth.
- In Section R-R', PBH-26 should be parallel to GSI borehole.
- In Section S-S', PBH-27 should be parallel to GSI borehole.
- In Section Q-Q', PBH-29 is approved with the condition that PBH-28 intersects the mineralised zone & it is expected to continue in depth.

MECL incorporated above modifications in the proposal and presented it to committee again.

The Committee recommended the proposal for approval of EC for G-2 exploration in the block with a total 1590 m of drilling in 29 Bhs along with associated geological & Laboratory Studies at an estimated cost of Rs 248.78 Lakh to be completed in a time schedule of 12 months including the final report submission.

3. ***THREE (3) SUB BLOCKS (D- SUB BLOCK, E-SUB BLOCK & G- SUB BLOCK) OF MALANGTOLI IRON ORE DEPOSIT, DISTRICTS: SUNDARGARH & KENDUJHAR, ODISHA.***

The Committee discussed all the three the proposals in detail on Maps, Sections and suggested for few modifications as given below:-

- Initially 10 boreholes are to be drilled in each sub block covering the entire area of each sub block keeping 400m x 400m grid intact to know the depth extension of iron.
- All the boreholes should be closed after intersecting the total iron ore horizon and intersecting the shale unit i.e., 100m or shale unit whichever is later.
- As there is no schedule of rate for drilling of Iron in the MECL's Schedule of charges, the committee suggested that the drilling may be through outsourcing to private parties and the rate to be charged for drilling shall be actual outsourcing rate basis and the handling charges.

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(B.P. Rathore)

(D. Mohan Raj)

- Five (5) months for tendering process, although geological mapping will be parallel to the tendering process.
- Accordingly, time schedule will be modified.
- Bulk density should be calculated using drill core samples as well as by using pit samples.
- Lump & Fine ratio study to be done from boreholes core.

MECL incorporated above suggestion / modifications and put up the proposal again to the committee. The Committee recommended the proposal for approval of EC as given below:-

- ***G-3 level of Exploration in Sub Block-D of Malangtoli Iron Ore Block, with a total of 1000m drilling in 10 Bhs alongwith associated geological & Laboratory Studies at an estimated cost of Rs. 210.89 Lakh to be completed in a time schedule of 12 months including the final report submission.***
- ***G-3 level of Exploration in Sub Block-E of Malangtoli Iron Ore Block, with a total of 1000m drilling in 10 Bhs alongwith associated geological & Laboratory Studies at an estimated cost of Rs 199.21 Lakh to be completed in a time schedule of 12 months including the final report submission.***
- ***G-3 level of Exploration in Sub Block-G of Malangtoli Iron Ore Block, with a total of 1000m drilling in 10 Bhs alongwith associated geological & Laboratory Studies at an estimated cost of Rs 210.88 Lakh to be completed in a time schedule of 12 months including the final report submission.***

II. **PROPOSALS FROM DMG JHARKHAND**

DGM Jharkhand has requested MECL to prepare the 2 exploration proposals for Iron & Manganese blocks. MECL informed that it will process the data to prepare the proposals and will check the doability in the area before carrying out the work.

DMG Jharkhand assured that there is no such problem in the area and work can be started. Also if necessary, forest clearance will be arranged by DMG- Jharkhand.

1. ***EXPLORATION PROPOSAL (G-4 LEVEL) FOR IRON & MANGANESE ORE IN SILPUNJI BLOCK, DISTRICT: WEST SINGHBHUM, JHARKHAND***

2. ***EXPLORATION PROPOSAL (G-4 LEVEL) FOR IRON & MANGANESE ORE IN BOKNA BLOCK, DISTRICT: WEST SINGHBHUM, JHARKHAND***

Committee has gone through the proposals of Bokna as well as Silpunji Block. In view of smaller area of Bokna Block the Committee suggested that a larger area (Approx. 50 sq km) should be mapped on 1:12,500 scale as part of G-4 exploration including nearby freehold area to understand the geology & structure of the area.

Accordingly, MECL submitted the revised exploration proposal to the committee.

- ***The Committee recommended the proposal for approval of EC for G-4 exploration in Bokna Block with Geological mapping on 1: 12,500 Scale in an area of 50 Sq.Km. after completion of mapping a total of 600 m drilling in 5 Bhs at an estimated cost of Rs. 115.03 Lakh to be completed in a time schedule of 7 months including the final report submission.***

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III. **INDIAN BUREAU OF MINES NAGPUR**

PROJECT PROPOSAL (PHASE-1) FOR MODERANISATION AND UPGRADATION OF FACILITIES AT MINERAL PROCESSING LABORATORIES OF IBM.

Committee in principle agrees to the upgradation of ore dressing laboratories of IBM. Committee suggested that proposal should come with recommendation of the expert committee constituted by 3rd EC of NMET. After discussion it was decided that some more experienced personnel's of GSI, IBM, NML e.tc may be added in the expert committee and IBM may suggest such names. As suggested by IBM, the committee recommended the names of following personnel to be included in the expert committee

1. Dr. Ranjit Choudhury, Former GCM Rajasthan State Mines & Minerals Ltd (RSMML)
2. Shri M. Mohan, Retd. Dy DG GSI.
3. Shri S. K. Ghosh, Retd. Director OD. IBM.
4. Dr. S. K. Biswal, Head Mineral Processing, IMMT, Bhubaneswar.

The proposal of IBM will be discussed by the expert committee and same will be recommended for the approval of EC. TA/DA of non-official members will be paid by NMET.

IV. **PROPOSALS FROM CMPDIL**

CMPDIL presented a total of 5proposals of coal blocks for approval. Committee has gone through all the proposals and the comments for all the five blocks are given below:

- Clause of 7.5% of additional charge should be removed.
- Schedule of charges as approved by Ministry of Coal (MOC) will be considered for the coal projects plus GST
- If drilling is outsourced, handling charges will be applicable to be decided in EC.

1. ***EXPLORATION PROPOSAL FOR COAL IN PATEHPUR BLOCK, MANDRAIGARH COALFIELD, CHHATTISGARH:***

   Committee discussed the proposal in detail on maps, plans and sections and after detailed discussion recommended for approval of EC for a total of 64,500m of drilling in 173 Bhs alongwith geological and laboratory studies at an estimated cost of Rs 4587.21 Lakh to be completed in a time schedule of 48 months including the final report submission.

2. ***DETAILED EXPLORATION PROPOSAL FOR COAL IN BHAKUMA-MATRINGA BLOCK, HASDEO ARAND COALFIELD, CHHATTISGARH:***

   The Committee discussed the proposal in detail on maps, plans and sections and after detailed discussion recommended for approval of EC, with a total of 13,200m of drilling in 125 Bhs at an estimated cost of Rs 952.60 Lakh to be completed in a time schedule of 36 months including the final report submission.

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(C. Mohan Raj)

3. ***DETAILED EXPLORATION PROPOSAL FOR COAL IN KAPASDANGA-BHARKATA BLOCK, BIRBHUM COALFIELD, WEST BENGAL***

Committee recommended that in phase -1, borehole density of 6 Bhs / Sq km to be considered.

Committee discussed the proposal in detail on maps, plans and sections and after detailed discussion recommended for approval of EC with a total of 78,000m of drilling in 120 Bhs along with associated Geological & Laboratory Studies at an estimated cost of Rs 5604.97 Lakh to be completed in a time schedule of 48 months including the final report submission.

4. ***DETAILED EXPLORATION PROPOSAL FOR COAL IN MERKHI WEST BLOCK, SOHAGPUR COALFIELD, MADHYA PRADESH:***

Committee recommended the approval of EC with a total of 54500m drilling in 150 Bhs along with associated Geological & Laboratory Studies at an estimated cost of Rs 3833.54 Lakh to be completed in a time schedule of 48 months including the final report submission.

5. ***DETAILED EXPLORATION PROPOSAL FOR COAL IN AMELIHA BLOCK, SOHAGPUR COALFIELD, MADHYA PRADESH:***

Committee discussed the proposal in detail and recommended that due to less thickness of coal seam in the north eastern portion, drilling to be carried out on 800 x 800m grid initially. In case results are encouraging after discussion in TCC further drilling may be taken up. However, the proposal in the remaining part of the block is recommended for approval of EC as per proposal.

Committee discussed the proposal in detail on maps, plans and sections and after detailed discussion recommended for approval of EC with a total of 29000m of drilling in 85 Bhs along with associated Geological & Laboratory Studies at an estimated cost of Rs 2048.17 Lakh to be completed in a time schedule of 36 months including the final report submission.

V. **PROPOSAL FROM GSI**

GSI presented total 3 proposals which are as follows:

1. ***PROPOSAL FOR THE PROJECT "MULTISENSOR AERO GEOPHYSICAL SURVEYS OVER OBVIOUS GEOLOGICAL POTENTIAL AREAS OF INDIA, BLOCK-5 [TO EXECUTIVE COMMITTEE OF NATIONAL MINERAL EXPLORATION TRUST (NMET)]***

The committee concurred with the technicalities of proposal. The proposal has been approved earlier by multi institutional expert committee comprising diverse government stakeholder. The cost has been finalised through a global bidding process. However, committee advised to submit the proposal as per format prescribed by NMET.

Accordingly, GSI has submitted the proposal as per the NMET format.

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(B.P. Ratnam)

(D. Mohan Roy)

Committee recommended the proposal for approval of the project an estimated cost of Rs 3644.85 Lakh to be completed in a time schedule of 12 months *including the final report submission.*

2. ***PROPOSAL FOR THE PROJECT "MULTISENSOR AERO GEOPHYSICAL SURVEYS OVER OBVIOUS GEOLOGICAL POTENTIAL AREAS OF INDIA, BLOCKS- 9 TO 12 [TO EXECUTIVE COMMITTEE OF NATIONAL MINERAL EXPLORATION TRUST (NMET)]***

The committee concurred with the technicalities of proposal. The proposal has been approved earlier by multi institutional expert committee comprising diverse government stakeholder. The cost has beenfinalised through a global bidding process. However, committee advised to submit the proposal as per format prescribed by NMET.
Accordingly, GSI submitted the proposal as per the NMET format.
Committee recommended for approval of the project with a time schedule of 12 months an estimated cost of Rs11917.91 Lakh *including the final report submission.*

3. ***PROPOSAL FOR ENGAGING A CONSULTANT TO INTERPRET THE EXISTING LEGACY DATA OF AIRBORNE GEOPHYSICAL SURVEY OF GSI & DMG, ODISHA [TO EXECUTIVE COMMITTEE OF NATIONAL MINERAL EXPLORATION TRUST (NMET)]***

Committee has suggested GSI to submit the proposal along with detailed breakup of the proposal in the forthcoming meeting of TCC of NMET with justification of budget part.

VI. PROPOSALS FROM NLC

Three proposals were presented by NLC which are as follows:

1. ***DETAILED EXPLORATION IN KADALANGUDI LIGNITE BLOCK, THANJAVUR & NAGAPATINAM DISTRICTS, TAMILNADU.***
2. ***DETAILED EXPLORATION IN KAKKRA & WEST OF KAKKRA BLOCK, BIKANER DISTRICT, RAJASTHAN***
3. ***DETAILED EXPLORATION IN NOKHA BLOCK, BIKANER DISTRICT, RAJASTHAN***

Committee suggested that all these three proposals should be submitted with all details and supported materials in the next TCC meeting.

2 - AGENDA - 2. UPGRADATION OF REGIONAL EXPLORATION BLOCK

1. ***APPROVAL FOR DRILLING WORK IN VASU-JAGAT-KHARWACH & SARAN-BHARWAWAT AREA (BLOCK ID - RAJ 21), UDAIPUR, RAJASTHAN FOR BASE METALS & GOLD***

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(B. P. Raturi)

5/7/18
(CD Mohan Raj)

Committee suggested that channel sampling should be drawn at anomalous locations with 1 m sample length. In case results are encouraging, drilling of 500m in 9 boreholes can be taken up.

3. AGENDA- 3. HANDLING CHARGES FOR THE OUTSOURCED NMET WORK FOR THE DIFFERENT AGENCIES.

MECL presented the estimation (Calculation) of handling charges in case of outsourcing of drilling works funded through NMET. The Committee suggested that same will be discussed in details in EC.

4.- REVIEW OF ONGOING PROJECTS

1. ***REGIONAL EXPLORATION (G-4) IN UDWARA AREA, ALIRAJPUR, MADHYA PRADESH FOR MANGANESE, PHOSPHORITE AND GRAPHITE***
   - Committee reviewed the project and agreed with the proposal of channel sampling in the area where anomalous PGE values are present.
   - Committee suggested that prior to field visit, MECL can take advice of GSI personals to layout channel sampling program.
   - Ni & Cr should be included in the analysis.

2. ***REGIONAL EXPLORATION (G-4) IN RANIBENNUR BLOCK, HAVERI & DAVANAGERE, KARNATAKA FOR AU, CU, PB, ZN, NI AND CO***
   - Committee reviewed the work carried out by MECL and discussed in detail and agreed with the proposal of channel sampling in the area for Gold.

3. ***REGIONAL EXPLORATION FOR POTASH IN LAKHASAR-SUB BASIN, NORTH WESTERN PART OF RAJASTHAN DISTRICT- BIKANER, RAJASTHAN (G4)***
   - Dr. Ranjit Choudhury, Consultant for Potash, MECL gave a presentation on Potash exploration as well as status of ongoing exploration work carried out by MECL in Lakhasar sub- basin.
   - Borehole no MLP-01 has been drilled upto a depth of 646 m which has successfully encountered the entire halite zone but the targeted depth to intersect Jodhpur Sandstone could not be achieved due to drilling problem. It was felt that since the borehole has attained its basic purpose by penetrating all the hyalites zones, committee agreed for closure of the borehole.
   - It is strongly felt that the analytical results of possible potash bearing zone should be fast tracked. Prolong delay would otherwise negate the vary purpose of the drilling exercise.
   - Attempts should be made to measure deviation, if any in vertical borehole.
   - Since MECL & GSI are engaged in the exploration of potash in evaporate basins of western Rajasthan it was felt that there should be more exchange of experience and information between these two organisations.
   - The higher value of K_2O in a particular borehole in the Satipura Sub basin (as informed by GSI representative) represents positive development; they represent an element of broad similarity in the potash disposition pattern in the sub basin.

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(D. Mohan Raj)

4. ***EXPLORATION FOR COAL IN NONBIRRA BLOCK, MAND-RAIGARH COAL FIELD, RAIGARH, CHHATTISGARH (BY MECL)***

- MECL presented the work carried out by MECL in the block and informed about the development of coal seams and non-development area in the block due to which the total drilling target could not be achieved. MECL, requested the committee for concluding the work of the block so that the Geological Report can submitted.
- Committee reviewed the work of the block in detail and recommended to submit the Geological Report based on present available data.

5. ***EXPLORATION FOR COAL IN RECHERLA BLOCK, GODAVARI VALLEY COAL FIELD, ANDHRA PRADESH.***

- The committee enquired from MECL that why the exploration work commenced in the block.
- MECL informed that the work could not be started in the block because of fund crunch and non-receipt of fund from different clients. After receipt of fund from NMET in March -2018 MECL initiated the outsourcing process and the work will be commenced after completion of outsourcing process.
- Committee was informed that drilling will be taken up through outsourcing for which tendering process is initiated.

6. ***EXPLORATION FOR LIGNITE IN PALYAMKOTTAI LIGNITE BLOCK, CUDDALORE, TAMILNADU***

- Committee opined that the exploration in this block may be concluded after drilling of 7 numbers of infilling boreholes and geological report is to be submitted as per approved time schedule.

7. ***EXPLORATION FOR LIGNITE IN VEERANAM LIGNITE BLOCK, CUDDALORE, TAMILNADU***

- Committee reviewed ongoing works and suggested to continue the exploration as approved by EC.

5.- AGENDA-5 PAYMENTS RELATED TO FOREST PERMISSIONOF EXPLORATION BLOCKS I.E. NPV & ICFRE

PAYMENT OF NPV FOR FOREST AREAS & CHARGES FOR ENGAGEMENT OF ICFRE TO CONDUCT STUDY ON THE IMPACT NUMBERS OF BOREHOLES FOR PROSPECTING IN FOREST AREA

Committee recommended for approval of the statutory payments related to forest clearance will be paid on actual basis other than the exploration cost and othe taxes..

Shri B.P. Raturi, HOD (Exploration) MECL & Member Secretary, TCC NMET given the vote of thanks to all the members and participants and the meeting ended with the permissin of chair.

5/7/18
(B.P. Raturi)

(D. Mohan Rao)

The meeting ended up with the vote of thanks by Shri B. P. Raturi, Member Secretory, TCC of NMET.

(Shri H.K. Verma)
DGM (Finance), HCL & Member
Technical cum-Cost Committee
(TCC), NMET

(Shri. P Habibulla Khan)
Joint GM (Geology), NMDC &
Member Technical cum-Cost
Committee (TCC), NMET

(Shri. S. K. Thakur)
GM (Expl) (Retd.), MECL &
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(Shri T. V. Rama Rao)
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(Shri K. C. Sahoo)
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(Shri. S.K. Adhikari)
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(Shri P. Tarafdar)
DDG-PSS, GSI & Member,
Technical cum-Cost
Committee(TCC), NMET

(Shri D. Mohan Raj)
Addl. Director General GSI
& Head M-II & Chairman,
Technical cum-Cost
Committee(TCC), NMET

List of participant's present in 15th Meeting of Technical cum-Cost Committee(TCC) of NMET held on 04th & 5th July, 2018 at GSI, Central Region, Nagpur

SL. No	Name of Participant's	Designation & Organisation	Participation	Mobile No	Email-Id	Signature (4th July)	Signature (5th July)
1	Shri D. Mohan Raj	Add. Director General, GSI, Nagpur	In Chair	9765980957	hodnm2@gsi.gov.in.		
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9	Shri Prasant Kumar Maharana	Asst. GM (Finance), NALCO, Bhubaneswar	Member				
10	Shri H. K. Verma	Dy.G.M (Finance), HCL, Kolkata	Member	9752860983	verma.hkk@hindustancopper.com	04/07/18	05/7/18

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