Exploration Contractual Framework
An Introduction

2nd National Conclave on Mines and Minerals
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Key changes brought by the MMDR Amendment Act, 2015, *inter alia*, include:

- Introduction of **non-exclusive reconnaissance permits** (NERP) and Prospecting Licence cum Mining Lease (PL-cum-ML)
- Grant of concession through auction (except NERP), setting up of **National Mineral Exploration Trust** (NMET) etc.

Concession Grant Process Pre/Post Amendment of Act
Subsequent to the amendment of Act and introduction of NMET, onus of preparing mineral blocks for auctions rests on the Government.

Only blocks where prescribed level of exploration [as per the Minerals (Evidence of Mineral Contents) Rules, 2015] has been completed, can be auctioned.

Private sector has no motive to take up exploration in absence of an exploration permit or concession with in-built exclusivity and seamless transition.

Further, Notified Exploration Agencies (NEA), covered under the second proviso to Section 4(1) of the MMDR Act, 1957 are permitted to carry out exploration without a permit or concession.

Contract exploration seems to be the best alternative to enable private sector participation for carrying out prescribed level of exploration prior to auctions.

“Contract exploration” could be carried out through these NEAs.
Proposed Model

- Contracting procedures that could be adopted uniformly by all NEAs are being developed

- Responsibilities under a multi-stage exploration contract to be split between
  - **Explorer:** responsible for end-to-end execution of exploration project with an opportunity to earn incentive
  - **Exploration Contractor:** responsible for on-field activities such as drilling, chemical sampling, gravity survey etc.

- NEA, ‘Principal’ will carry out exploration through its ‘Agents’ i.e. Explorer and Exploration Contractor(s)

- NEA may choose to carry out stage-wise exploration work with or without the assistance of Explorer

- Explorer and Exploration Contractor(s) will be appointed through competitive selection process
Funding arrangements are initially for first stage of work plan only, each subsequent stage work plan and funding will be based on the results of previous stage.
Explorer | Role

- Firm or company engaged in exploration and mining consulting
- Empanelled by NMET and selected by NEA through competitive bidding
- Explorer will be embedded in NEA with an objective of capacity building of NEA
- Explorer, selected through competitive bidding, will
  - Prepare stage-wise work plan and cost estimates (say virgin-OGP/OGP to G4 / G4 to G3) based on results from the previous stage
  - Assist NEA in selection of Exploration Contractor(s)
  - Oversee entire exploration and on-field activities carried out by exploration contractors as per prescribed work plan
  - Carry out necessary analysis, interpretation and modelling etc. to establish mineral resources
  - Maintain data integrity and submit final recommendation report after each stage of exploration to enable “Go-No Go” decision
Exploration Contractor | Role

- Entities engaged in specific exploration activity (drilling, electrical resistivity survey, gravity survey etc.) may be selected by NEA.
- Multiple exploration contractors having requisite experience may be selected on lowest cost basis for a single project.
- All data and samples collected by ‘Exploration Contractor(s)’ will be handed over to ‘Explorer’ for further analysis and interpretation.
- Exploration Contractor(s) will work under the direct supervision and guidance of Explorer and NEA.
Role of Committees of NMET

- **Empanelment** of potential Explorers
- Allocation of block(s) to specific NEA
- Enter into **funding arrangement** with State and NEA
- Approve the **first stage work plan** along with estimated **cost** submitted by the NEAs and Explorers
- **Monitor and review** progress of project execution
- **Recommend a ‘Go-No Go Decision’** for a particular exploration block upon submission of findings of each stage of exploration
- Review and **approve final exploration reports** before incentive is paid out
Role of NEA (State DGMs/PSUs)

- **Select an Explorer** from the empanelled explorers through competitive bidding
- **Review the Work Plan** submitted by Explorer and submit it to NMET for approvals
- **Appoint Exploration Contractors** with the assistance of Explorer through competitive bidding
- Obtain necessary **approvals and clearances** before start of exploration
- **Monitoring** the work of Explorer and Exploration Contractors
  - Monthly progress reports
  - Reviewing deliverables as per timelines under the work plan
  - Reviewing final geological report submitted by Explorer
- **Make Payments** to the Explorer and Exploration Contractors as per the contract terms
- **Capacity Building** – Assign a team of its own geologists or geologists from State PSUs and/or university students or research scholars
Empanelment of Potential Explorers | NMET

- NMET has invited Expressions of Interest (EoIs) from potential domestic and international explorers for **empanelment** on December 27, 2016.
- Explorers to be empanelled based on technical criteria prescribed (i.e. project as well as professional experience).
- Empanelment of Explorer will be for **different mineral categories** based on his experience and expertise.
- Explorers will be empanelled for **5 years**. However, EoIs for fresh empanelment may be invited by NMET **once every year or earlier** for inducting new Explorers.

*Let's assume 50 Explorers submit their EoIs based on given Technical criteria*

*30 Explorers who meet the Technical criteria will be empanelled by NMET for 5 years; NMET invites EoIs every year*

*NEA invites technical and financial bids for a particular project from say 20 empanelled Explorers who have relevant experience in a particular commodity*

*Explorer with highest composite score (technical and financial) is chosen for exploration project*
Selection of Explorer | For Specific Project

- NEAs to issue Notice Inviting Bids (NIB) for limited tender within empanelled explorers who have experience in relevant mineral Category

- NEAs to develop tenders documents, information memorandums and other documents specific to the exploration blocks before issuance of NIB

- Each bid would comprise of
  - **Technical Bid** with detailed work plan for first stage, broad work plan for subsequent stages, proposed team for project, documentary evidence meeting eligibility conditions
  - **Financial Bid** with quoted Advisory Fee (i.e. monthly retainer fee)
Illustration | Technical Bid Evaluation

- Technical bid will be evaluated based on Technical Score under each category of factors
  - Understanding, Methodology and Approach (X)
  - Professional Personnel Competency (Y)
  - Plan for Capacity Building of NEA (Z)

- Computation of Technical Score (TS)
  \[ TS = \frac{X \times W_X + Y \times W_Y + Z \times W_Z}{100} \]
  Where X, Y and Z are marks obtained under each category of factors (maximum 100 marks)

<table>
<thead>
<tr>
<th>Bidder B</th>
<th>Weightage</th>
<th>Score</th>
<th>Weighted Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding, Methodology and Approach (X)</td>
<td>45%</td>
<td>76</td>
<td>0.45 \times 76</td>
</tr>
<tr>
<td>Professional Personnel Competency (Y)</td>
<td>45%</td>
<td>75</td>
<td>0.45 \times 75</td>
</tr>
<tr>
<td>Plan for Capacity Building of NEA (Z)</td>
<td>10%</td>
<td>60</td>
<td>0.10 \times 60</td>
</tr>
<tr>
<td><strong>Total Technical Score (TS)</strong></td>
<td></td>
<td></td>
<td><strong>74</strong></td>
</tr>
</tbody>
</table>

- Technical Bid Other Criteria
  - Bidders who obtain at least 50% on technical score
  - Bidders who obtain at least 50% marks under Plan for Capacity Building
Illustration | Financial Bid Evaluation

- Financial bid to be evaluated based on **Financial Score (FS)**
- Financial bid with the lowest Advisory Fee will be given Financial Score of 100
- Financial Scores of bids of other bidders will be computed using the following formula
  \[ FS = 100 \times \left( \frac{\text{Lowest Quoted Bid}}{\text{Financial Bid of a Bidder}} \right) \]
- For example,
  - Bidder A has lowest bid of Rs. 3 crore
    \[ FS = 100 \times \left( \frac{3}{3} \right) = 100 \text{ marks} \]
  - Bidder B quoted Rs. 3.3 crore
    \[ FS = 100 \times \left( \frac{3}{3.3} \right) = 90 \text{ marks} \]
  - Bidder C quoted Rs. 3.80 crore
    \[ FS = 100 \times \left( \frac{3}{3.8} \right) = 80 \text{ marks} \]
Illustration | Composite Score

- **Composite Score** (CS) of all bidders will be calculated as

\[ CS = W_t \times TS + W_f \times FS \]

- \( W_t \) and \( W_f \) are the weights assigned to technical and financial bid

- For illustration purpose,
  - Assuming \( W_t \) and \( W_f \) as 70% and 30% respectively
  - Scores of Bidder B
    - If Technical Score (TS) = 74 and Financial Score (FS) = 90
    - Then Composite Score (CS) = 0.70 \times 74 + 0.30 \times 90 = 79

- Bidder obtaining the highest Composite Score (CS) will be selected as the **Successful Bidder**
Above illustration is based on assumed weights of TS:FS :: 70:30

It is observed that the bidder with reasonably high technical and financial scores becomes successful bidder

- Bidders with highest technical score (i.e. G) or financial score (i.e. A) do not necessarily become successful bidder
Incentive Pay-Out to Explorer

- **Incentive** for mineral resources (at *G2 Level*) will be **0.05%** of Value of Estimated Resources (VER) subject to a **minimum** of say **1x** and a **maximum** of **10x** of annual Advisory Fee

- This multiple **may be adjusted** based on complexity of project

- For block explored up to **G3 Level** and auctioned for grant of Composite Licence, **70%** of incentive (i.e. **0.035%** of VER) may be paid due to lower level of confidence of the resources

- Incentive pay out to Explorer will be released on **approval** of the final exploration report by NMET

- Entire exploration data collected and exploration reports prepared by the Explorer with details of resources established will be placed in public domain to act as a **check**
Selection of Exploration Contractor(s)

- NEA with assistance of Explorer will provide
  - Eligibility Criteria, if any, for selection of Exploration Contractor
  - Clearances/Approvals needed for executing Exploration Project
- Engagement of Exploration Contractor
  - Invite technical and financial bids for a particular exploration activity or multiple activities under the work plan along with unit costs for each exploration activity from potential contractors
  - Bidders will be shortlisted based on eligibility criteria
  - Bidder quoting lowest cost for each activity will be selected as Exploration Contractor for that activity
  - Multiple contracts may be awarded to engage different contractors for each exploration activity
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Notified Exploration Agencies

Under the Second Proviso to sub-section (1) of Section 4 of the MMDR Act, 1957
  ● Geological Survey of India
  ● Indian Bureau of Mines
  ● Atomic Minerals Directorate for Exploration and Research
  ● Mineral Exploration Corporation Limited
  ● Various State Directorates of Geology and Mining

Subsequently Notified Exploration Agencies (11) by the Central Government
  ● Rashtriya Ispat Nigam Limited
  ● Steel Authority of India Limited
  ● NMDC Ltd.
  ● KIOCL Ltd.
  ● MOIL Ltd.
  ● Chhattisgarh Mineral Development Corporation Ltd.
  ● Madhya Pradesh State Mining Corporation Ltd.
  ● Andhra Pradesh Mineral Development Corporation Ltd.
  ● Gujarat Mineral Development Corporation Ltd.
  ● Singareni Collieries Company Ltd.
  ● Telangana State Mineral Development Corporation Ltd.
Incentive Payable to Explorer | Illustration

Incentive payable as a multiple of the Annual Advisory Fee for different value of resources established

<table>
<thead>
<tr>
<th>Value of Estimated Resources (VER)*</th>
<th>G2 Level 0.05% of VER</th>
<th>G3 Level 0.035% of VER</th>
<th>Annual Advisory Fee (B)**</th>
<th>Incentive Payable to Explorer for G2 (C)</th>
<th>Incentive as a Multiple of Annual Advisory Fee for G2 (C/B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>0.5</td>
<td>0.35</td>
<td>3.0</td>
<td>3.0</td>
<td>1.0x</td>
</tr>
<tr>
<td>5,000</td>
<td>2.5</td>
<td>1.75</td>
<td>3.0</td>
<td>3.0</td>
<td>1.0x</td>
</tr>
<tr>
<td>10,000</td>
<td>5.0</td>
<td>3.50</td>
<td>3.0</td>
<td>5.0</td>
<td>1.7x</td>
</tr>
<tr>
<td>30,000</td>
<td>15.0</td>
<td>10.40</td>
<td>3.0</td>
<td>15.0</td>
<td>5.0x</td>
</tr>
<tr>
<td>40,000</td>
<td>20.0</td>
<td>14.00</td>
<td>3.0</td>
<td>20.0</td>
<td>6.7x</td>
</tr>
<tr>
<td>50,000</td>
<td>25.0</td>
<td>17.50</td>
<td>3.0</td>
<td>25.0</td>
<td>8.3x</td>
</tr>
<tr>
<td>60,000</td>
<td>30.0</td>
<td>21.00</td>
<td>3.0</td>
<td>30.0</td>
<td>10.0x</td>
</tr>
<tr>
<td>1,00,000</td>
<td>50.0</td>
<td>35.00</td>
<td>3.0</td>
<td>30.0</td>
<td>10.0x</td>
</tr>
</tbody>
</table>

* VER = Product of Estimated quantity of mineral resources (in metric tonnes) for which mineral block is being auctioned and average price per metric tonne of such mineral as published by Indian Bureau of Mines for the relevant state for a period of twelve months preceding the month of computation

** Annual Advisory Fee for the purpose of illustration is assumed as Rs.3 crore per annum.
Understanding, Methodology and Approach | Factors

- Analysis of existing data
- Adequacy of Work Plan
- Identification of risks and mitigation strategy
- Coordination plan
- Supervision of Geological Mapping, Topography Survey, Geochemical and Geophysical Survey
- Supervision of Drilling, Core recovery, core logging, sampling, geophysical logging
- Laboratory Test and Analysis
- Integration and 2D/3D modelling
- Resource Estimation and Classification
- Safety, Health and Environment
Other Factors

Professional Competency
- Team Leader
- Project Management
- Principal Geologist 1
- Principal Geologist 2
- Principal Geophysicist
- Resource Modeller
- GIS Remote Sensing

Plan for Capacity Building of NEA
- Adequacy of training plan
- Class room training
- On field training
- Data Integration and Modelling
# Empanelment of Explorer | Mineral Categories

<table>
<thead>
<tr>
<th>Mineral Category</th>
<th>Minerals forming part of Mineral Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group A</strong></td>
<td>Precious Stones (Diamond, gemstones)</td>
</tr>
<tr>
<td><strong>Group B</strong></td>
<td>Precious Metals (Ag, Au, PGE - Pt, Pd, Rh, Ir, Ru, Os), Chromite and associated minerals</td>
</tr>
<tr>
<td><strong>Group C</strong></td>
<td>Base Metals (Cu, Pb, Zn, Co, Ni), Molybdenum, Graphite and its associated minerals</td>
</tr>
<tr>
<td><strong>Group D</strong></td>
<td>Fertilizer Minerals (Phosphorite and Potash minerals)</td>
</tr>
<tr>
<td><strong>Group E</strong></td>
<td>Bulk Minerals</td>
</tr>
<tr>
<td><strong>Sub-Group E1</strong></td>
<td>Metallic Minerals (Iron ore, Manganese, Bauxite, etc.)</td>
</tr>
<tr>
<td><strong>Sub-Group E2</strong></td>
<td>Industrial Minerals (Aggregates, Alunite, Andalusite, Asbestos, Asphalt, Ball Clays, Baryte, Bentonite, Borates, Brines, Carbonatites, Dolomite, Feldspar, Granite, Gypsum, Halite, Kaolin, Kyanite, Limestone, Marble, Mica, Olivine, Perlite, Phosphate, Potash, Quartz, Slate, Silica Sand, Sulphur, Talc, Wollastonite, etc.)</td>
</tr>
<tr>
<td><strong>Sub-Group E3</strong></td>
<td>Coal and Lignite</td>
</tr>
<tr>
<td><strong>Group F</strong></td>
<td>Rare Metals (Rare Earths, Lithium, etc.)</td>
</tr>
</tbody>
</table>