Investment Opportunities in the Mining Sector

INDIA DAY

at

PDAC-2013

5th March, 2013
Scheme of Presentation

- Mines & Mineral Sector: An Overview;
- Policy Framework: An Outline;
- Geological Survey of India (GSI);
- Mineral Exploration Corporation Ltd (MECL);
- State of Andhra Pradesh (AP);
- National Aluminum Company (NALCO);
- Hindustan Copper Ltd (HCL);
- National Mineral Development Corporation (NMDC);
- Steel Authority of India Ltd. (SAIL);
- Atomic Mineral Directorate (AMD);
- Tata Steel;
- Federation of Indian Mining Industry (FIMI); and
- Concluding Remarks

Q&A
• India is endowed with rich mineral resources;
• Mining sector contributed around 2.26% to India’s GDP in 2011-12;
• India produces 87 minerals:
  • 4 fuels
  • 10 metallic
  • 47 non-metallic
  • 3 atomic and
  • 23 minor minerals (building and other materials).
Total value of mineral production (excluding atomic) during 2011-12 is estimated at INR 2,103 billion (US $41.4 billion).
## Resources of Selected Minerals

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Abundant</th>
<th>Adequate</th>
<th>Deficient</th>
<th>Scarce</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metallic minerals (ferrous)</strong></td>
<td><strong>Iron ore</strong></td>
<td><strong>Chromite (metallic), Manganese</strong></td>
<td><strong>Chromite (refractory)</strong></td>
<td><strong>Nickel, Tungsten, Cobalt, Molybdenum</strong></td>
</tr>
<tr>
<td><strong>Metallic minerals (non-ferrous)</strong></td>
<td><strong>Bauxite (metallurgical)</strong></td>
<td><strong>Zinc</strong></td>
<td><strong>Bauxite (chemical grade), Copper, lead</strong></td>
<td><strong>Antimony, Gold, PGE</strong></td>
</tr>
<tr>
<td><strong>Industrial minerals</strong></td>
<td><strong>Dolomite, Gypsum, Limestone, Mica</strong></td>
<td><strong>Graphite</strong></td>
<td><strong>Coal Apatite, Rock Phosphate, Kyanite</strong></td>
<td><strong>Sulphur, Potash Met. Coal</strong></td>
</tr>
<tr>
<td><strong>Precious Stone Minerals</strong></td>
<td><strong>--</strong></td>
<td><strong>--</strong></td>
<td><strong>--</strong></td>
<td><strong>Diamond, Emerald, Sapphire, Ruby</strong></td>
</tr>
<tr>
<td>Mineral</td>
<td>Total Resource</td>
<td>Key States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------</td>
<td>----------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bauxite</td>
<td>3,479</td>
<td>Odisha, Andhra Pradesh, Gujarat &amp; Maharashtra</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper Ore</td>
<td>1558</td>
<td>Rajasthan, Madhya Pradesh, Jharkhand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Ore</td>
<td>28,526</td>
<td>Jharkhand, Chhattisgarh, Goa Odisha &amp; Karnataka</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead-Zinc Ore</td>
<td>685</td>
<td>Rajasthan, Jharkhand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese Ore</td>
<td>429</td>
<td>Maharashtra, Madhya Pradesh, Odisha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limestone</td>
<td>1,84,935</td>
<td>Odisha, Andhra Pradesh, Gujarat, Maharashtra, Rajasthan, Tamilnadu, Karnataka</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chromite Ore</td>
<td>203</td>
<td>Odisha, Karnataka</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Top 10 Minerals Production in 2011-12

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Production</th>
<th>Value in Rs. Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum (crude)</td>
<td>38.08 mt.</td>
<td>695.42</td>
</tr>
<tr>
<td>Coal</td>
<td>539.85 mt.</td>
<td>626.76</td>
</tr>
<tr>
<td>Iron Ore</td>
<td>167.289 mt.</td>
<td>379.65</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>46,576 mcum</td>
<td>174.31</td>
</tr>
<tr>
<td>Lignite</td>
<td>42.897 mt.</td>
<td>48.28</td>
</tr>
<tr>
<td>Chromite</td>
<td>3.764 mt.</td>
<td>26.52</td>
</tr>
<tr>
<td>Zinc Concentrate</td>
<td>1.412 mt.</td>
<td>19.89</td>
</tr>
<tr>
<td>Manganese Ore</td>
<td>2.349 mt.</td>
<td>11.71</td>
</tr>
<tr>
<td>Silver</td>
<td>2,07,142 kg</td>
<td>11.56</td>
</tr>
<tr>
<td>Others</td>
<td>--</td>
<td>86.33</td>
</tr>
</tbody>
</table>
## India’s Contribution in Mineral Production

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Unit</th>
<th>Production</th>
<th>Contribution %</th>
<th>India’s rank in World</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>World</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>Chromite</td>
<td>000 T</td>
<td>18,700</td>
<td>3,413</td>
<td>18.2</td>
</tr>
<tr>
<td>Baryte</td>
<td>000 T</td>
<td>7,100</td>
<td>2,138</td>
<td>30.1</td>
</tr>
<tr>
<td>Talc/ Steatite/ Pyrophyllite</td>
<td>000 T</td>
<td>7,400</td>
<td>1,077</td>
<td>14.5</td>
</tr>
<tr>
<td>Coal &amp; Lignite</td>
<td>MT</td>
<td>6,938</td>
<td>566</td>
<td>8.2</td>
</tr>
<tr>
<td>Iron Ore</td>
<td>MT</td>
<td>2,248</td>
<td>219</td>
<td>9.7</td>
</tr>
<tr>
<td>Kyanite, Andalusite &amp; Sillimanite</td>
<td>000 T</td>
<td>440</td>
<td>36</td>
<td>8.2</td>
</tr>
<tr>
<td>Manganese Ore</td>
<td>MT</td>
<td>33.4</td>
<td>2.44</td>
<td>7.3</td>
</tr>
<tr>
<td>Bauxite</td>
<td>MT</td>
<td>199</td>
<td>139.52</td>
<td>7.0</td>
</tr>
</tbody>
</table>
Major Minerals being imported

- Rough Diamond
- Gold
- Copper concentrate
- Zinc concentrate
- Nickel/Tin
- Tungsten
- Rock phosphate
- Potash
- Thermal Coal
- Metallurgical/Coaking Coal
### Exploration opportunities in India

<table>
<thead>
<tr>
<th>Geological Environment (in sq. Km.)</th>
<th>Area covered by prospecting and future opportunities</th>
</tr>
</thead>
</table>
| Gold: 112,000  
Base metal: 182,000  
Diamond and Gemstone: 300,000 | 20% to 30% of the potential area prospected; significant scope for prospecting and exploration in virgin areas. |
| Iron ore: 4,000  
Manganese ore: 4,600  
Chromite ore: 2,500 | Geological mapping and delineation of potential area- 90% completed for hematite ore, 80% for manganese ore and 40% for chromite ore. Resource assessment carried out in the early eighties. Most areas covered under lease or forest; free areas may be taken up. |
| PGE: 8,000 | 1% to 2% area covered by prospecting, virtually an untapped field. |
| Coal: 48,500 | 70% explored up to 900 meters depth. |
| Lignite: 9,300 | 40% explored between the depth of 300 to 500 meters. |
One of the oldest geological survey organizations in the world;

Getting modernized with state-of-the-art facilities and additional skilled manpower;

Adding Ocean Going Research Vessel, Helicopter and Twin Otter Aircrafts with modern gadgets to add capacity;

Identified 0.571 million Sq Km area as Obvious Geological Potential (OGP);

Mandated to map the OGP up to G4 and G3 levels of UNFC Classification in 5 years; and

GSI shares all Information through its Website.
### Total land area: 3.28 M Sq Km; and EEZ: 2.015 M Sq Km

<table>
<thead>
<tr>
<th>Mapping Type</th>
<th>Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geological Mapping</td>
<td>3,095,170 sq km</td>
<td>98.4%</td>
</tr>
<tr>
<td>Specialized Thematic Mapping</td>
<td>180,235 sq km</td>
<td>5.4%</td>
</tr>
<tr>
<td>Geochemical Mapping</td>
<td>304,270 sq km</td>
<td>9.99%</td>
</tr>
<tr>
<td>Geophysical Mapping</td>
<td>180,691 sq km</td>
<td>5.5%</td>
</tr>
<tr>
<td>Marine/Bathymetric survey</td>
<td>1,980,428 sq km</td>
<td>98.3%</td>
</tr>
</tbody>
</table>
OGP AREA & KNOWN MINERAL BELTS
Indian Bureau of Mines

- Regulator to approve Mining Plans and Mine Closure Plans keeping in mind conservation of minerals;

- Maintain Data Bank for Minerals & Ores;

- Development & Regulation of Offshore Mineral Deposits; and

- Protection of mining environment.
Salient Features of National Mineral Policy, 2008

- **Participatory**
  - Encouraging private sector participation in exploration;
  - Induction of high-end technology for exploration and mining; and
  - Introduction of new concession Large Area Prospecting License (LAPL).

- **Regulatory**
  - Right of grant of concession to the prior applicant;
  - Seamless movement from RP to PL/LAPL to ML;
  - Full transferability to encourage specialized exploration;
  - Mine closure and sustainable development; and
  - Creation of independent Mining Tribunal
Salient Features of NMP (Contd.)

- **Facilitator**
  - GSI to do regional exploration to facilitate private sector;
  - Online tenement Registry; and
  - Encourage venture capital and FDI.

- **Equitable**
  - Protection of stakeholder interests of local population; and
  - Sustainable development.
Regulatory Framework

• Overall Law & Regulations framed by the Federal Government – Mines & Minerals (Development & Regulation) Act, 1957 & Rules thereunder;

• Marine mining, Coal & Lignite administered by the Federal Government;

• Minerals in their territories belong to Provinces and they administer the Mining Laws & Regulations; and

• For ten Major Minerals and Atomic Minerals Provinces need to seek prior clearances from Federal Government for granting licences.
Grant of concessions under MMDR Act, 1957

- Mineral Concessions are granted by the State Government;
- For grant of any type of concession,
  - The person should be an Indian National, or
  - Company should be registered Indian company
- Area Limits:
  - Reconnaissance Permit (R.P.) – 10,000 sq. km
  - Prospecting Licence (P.L.) – 25 sq.km.
  - Mining Lease (M.L.) – 10 sq.km.
- Area limits can be relaxed by the Central Government;
- Periods of Concessions:
  - Reconnaissance Permit (R.P.) – 3 years
  - Prospecting Licence (P.L.) – 3 years + 2 years (max. -5 yrs.)
  - Mining Lease (M.L.) – 30 yrs.(max.) / 20yrs. (min.)
• State Government may notify an area for inviting applications without competitive bids;

• Notification mandatory only if area relinquished after exploration or surrendered;

• States allowed complete discretion to grant concessions after comparative analysis of the applicants in notified areas;

• State Governments can use discretionary power to give preference to a later applicant over the first-in-time applicant;

• Priority is given in obtaining next stage concession in case conditions of a licence are met; and

• Grant of concession for coal or lignite through auction by competitive bidding.
MMDR Bill, 2011: Salient Features

- Introduced in Parliament in December, 2011;

- Under consideration of Parliamentary Committee;

- Mining lease can be granted directly in notified areas only through competitive bidding;

- Provides for a new exploration licence for investors focused on deep-seated mineralization;

- Timelines fixed for Government agencies to deliver;

- Assured and seamless transition from exploration to mining;
Salient Features of Bill, 2011 (Contd.)

- Facilitates Transferability of concessions;
- Level playing field - reservation only for conservation;
- Facilitating flow of venture capital (Domestic/Foreign);
- Ensures greater acceptability by local community for mining activities, through sharing of royalty for local area development; and
- Independent regulation and Tribunals to address grievances/complaints.
A Destination, A Consumer & An Investor

- 3rd largest Economy in the world in PPP terms;
- Growth @8% for the last decade;
- Sustainability challenges being addressed;
- Young and skilled population;
- Rapid urbanization and infrastructure growth;
- Rule based Democratic Governance;
- 100% FDI through Automatic Route; and
- FDI for 2011-12 was US$ 154 million.
THANK YOU

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WEBSITE: http://mines.nic.in