Sector Profile: Minerals & Mining
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Minerals & Mining – Scenario in India

India - one of the world’s leading mineral producers with large resources of Diamond, Coal, Manganese, Iron Ore, Bauxite, Lead, Copper, Zinc, Gold and Limestone

Minerals & Mining

Accounted for about 1.91 % of GDP (Rs. 318 billion) in the estimates of GDP in 2009-10 (April to September)

Index of mineral production for 2009-10 estimated to be 189.90 as compared to 175.96 for 2008-09 - growth of 7.92%

Produces as many as 86 minerals:
- 4 Fuels, 10 Metallic, 46 Non-Metallic, 3 Atomic and 23 Minor Minerals

Value of Mineral Reserves (2009-10 Provisional) in INR Crores

- Fuel Minerals: 16%
- Metallic Minerals: 22%
- Non-metallic Minerals: 62%

With a rich Bauxite reserve of 2300 million tonnes (approx. 6.76% of the world total) - ranks 5th in the world

Minerals & Mining – Scenario in Madhya Pradesh

- Mining and quarrying sector contributed to 4.5% of the NSDP in 2007-08
- Substantial mineral resources like Diamond, Gold, Copper, Lead, Zinc, Bauxite, Manganese, Limestone, PGE groups of minerals, Pyrophyllite, Diaspore and Rock Phosphate
- Rich in Coal and CBM resources

Madhya Pradesh - Calling

- Only Diamond producing State of the country
- Ranked 1st in production of Pyrophyllite
- Ranked 1st in production of Copper Ore
- Ranked 2nd in production of Diaspore
- Ranked 2nd in production of Rock Phosphate
- Ranked 2nd in production of Clay
- Ranked 3rd in production of Manganese Ore
- Ranked 3rd in production of Shale
- Ranked 3rd in production of Limestone

<table>
<thead>
<tr>
<th>Minerals</th>
<th>Reserves in Madhya Pradesh (in Million tonnes)</th>
<th>% of all India Reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond</td>
<td>1205 (thousand carat)</td>
<td>100</td>
</tr>
<tr>
<td>Pyrophyllite</td>
<td>10</td>
<td>53</td>
</tr>
<tr>
<td>Diaspore</td>
<td>2</td>
<td>65</td>
</tr>
<tr>
<td>Copper Ore</td>
<td>227</td>
<td>6</td>
</tr>
<tr>
<td>Rock Phosphate</td>
<td>19</td>
<td>36</td>
</tr>
<tr>
<td>Manganese Ore</td>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td>Dolomite</td>
<td>116</td>
<td>12</td>
</tr>
<tr>
<td>Coal</td>
<td>20981</td>
<td>8</td>
</tr>
<tr>
<td>Limestone</td>
<td>795</td>
<td>6</td>
</tr>
<tr>
<td>Coal Bed Methane</td>
<td>144 (in BCM)</td>
<td>10</td>
</tr>
</tbody>
</table>

Madhya Pradesh ranks 3rd in terms of Mineral production in India

Minerals & Mining – Scenario in Madhya Pradesh

- Major Mineral exploration, Mining and Mineral based industries present
- 60 Reconnaissance Permits (RP) sanctioned over an area of approx. 80000 sq. km for exploration of mineral wealth
- Several MNC's conducting explorations
- Mining revenue generation more than $200 million per annum
- Many key players present in the State

Rio Tinto has identified an Inferred Resource of 37 million carats at their Bunder Diamond Project

Coal Bed Methane (CBM) a non-conventional source of energy available in plenty

Recent discoveries of Gold, Ni-Cu and Platinum Group of Elements

Indicates large untapped mineral potential

Minerals & Mining – Scenario in Madhya Pradesh
Why Madhya Pradesh?

- Unique geological settings
- Rock formations which are more than 3000 million years old ranging from Archaean to recent times
- Large areas under hard rock cover - the perfect sites for mineral prospecting
- Idyllic settings for locating diamondiferous kimberlite pipes
- Houses Mafic–Ultramafic complexes that can potentially host mineralization of:
  - Nickel
  - Copper
  - PGE
- Major tectonic lineaments pass through the State:
  - Son – Narmada
  - Tan
  - Other shear zones
- A total of 35 RPs under operation over an area of 40000 sq. km
- Rio Tinto’s discovery of inferred resource of 37 million carats- Diamonds is their second largest mine after Argyle.
- 5 CBM Blocks allocated to various companies by Govt. of India
- RIL estimated 36.5 TCF of CBM in 2 of their blocks
- RP conducted by MNCs like Geo Mysore, De Beers, NMDC, Rio Tinto, BHP, etc.
- Recent discovery of mineral viz. Nickel, Copper, Gold, PGE, etc. by Geo Mysore- presents bright prospects for exploration.
- Tentative possible reserve of 0.861 million cubic meters of Black Granite and 21.279 million cubic meters of multi-colour Granite down to a depth of 10 meters estimated.

Source: Madhya Pradesh calling brochure, Investors guide book for mines & minerals in MP - 2010
Why Madhya Pradesh?

MP holds premier position in the country with regard to mineral resources like Diamond, PGE, Copper, Gold, Limestone, Rock Phosphate, Pyrophyllite, Diaspore, Coal and CBM.

Possesses favorable geographical and geological settings.

Great potential for development of mineral resources like Diamond, Gold, Copper, Lead, Zinc and PGE.

Scarc fuel resources such as coal and CBM. Asia’s thickest coal seam located in Singrauli district.

Supplies most minerals to other states in raw, semi-processed and processed form.

Leading producer of Pyrophyllite and Copper Ore.

Manganese and Dolomite key ingredients to Iron & Steel – available in the State.

Large reserves of limestone – the basic raw material for cement.

Madhya Pradesh, also known as the ‘Diamond Destination’ has substantial reserves of major minerals.

Source: Madhya Pradesh calling brochure, MP State Mining Corporation Limited
Why Madhya Pradesh?

Exceptional support by the State Government

Mineral Policy of MP – Incentives / Assistance

- Private sector with sound financial base & technical expertise to be encouraged in prospecting and searching for Diamond, Gold and other precious minerals
- Areas reserved for PSUs to be de-reserved for private sector if mining not commenced or if Mineral Concessions not secured
- Bauxite bearing areas reserved earlier to be de-reserved and leased out to private investors
- Commercial Tax rates, Royalty, and other duties if higher in the State as compared to other States to be examined to make them competitive
- Applicants willing to establish mineral based industry in the State granted Mineral Concessions on priority

STONE PARK: Keeping pace with the economic development policy of the State; with a view to develop the Marble deposits of Katni district, development of a STONE PARK over an area of 120 acres has already commenced near Sleemnabad to house 40 units. The day is not far off when Katni-Jabalpur road will be known as latest MARBLE HUB of India.

Clusters of Rewa & Sagar being developed for:
- Minerals,
- Mineral processing
- Stone based industries

MPSIDC & AKVNs developing a Diamond park near Indore.

SEZ HARGARH – being developed near Jabalpur for mineral based industries.

The new Mineral Policy 2010 of the State has been finalized recently.

Source: Directorate of Geology and Mining - Madhya Pradesh
Why Madhya Pradesh?

Highlights / Focus areas of upcoming State Mineral Policy 2010

- Industry status to Exploration and Mining of Minerals
- Prevention of illegal mining and transportation
- Potential sites to be published in Gazette for inviting applications for detailed exploration
- Areas with proven mineral deposits to be granted through bidding
- Scientific mining and principles of zero waste to reduce fragmentation and wastage of ore deposit
- Priority in sanctioning of mineral concessions to applicants establishing mineral based industries within the State
- Priority in granting mineral concessions to applicants setting up value addition plant
- Action to acquire technique of low grade Ore beneficiation
- Priority to development of internal roads in mining areas and maintenance of roads connecting them to railway stations
- Audit of mines fetching revenues of more than Rs.5 crores by CA
- Persuade Technical/Engineering Institutes to introduce mining engineering courses & Creation of competent technical manpower
- Time bound disposal of applications for mineral concessions in forest areas

Investor friendly environment conducive to business growth!

Source: Draft of state Mineral Policy 2010
Opportunities in Minerals and Mining

Mineral exploration

Mineral based Industries (processing)

With vast mineral resources, well developed infrastructure and comfortable power situation, Madhya Pradesh offers excellent opportunities for mining and mineral – based industries across the value chain.

- Diamond exploration & Polishing
- Chemicals & Petrochemicals
- Cement Industries
- Thermal Power Plants
- Coal Washery
- Industrial Fuel
- Caustic Soda
- Ceramics
- Domestic Gas
- Fertilizers
- Potteries
- Refractory
- Tiles & Bricks
- Gemstone processing
- Hydrated Lime

Opportunities in Minerals and Mining

Proposed plans of State Mining Corporation

- Coal production in joint sectors
- Rock Phosphate Beneficiation plant at Meghnagar in (Distt. Jhabua) and Hirapur (Sagar Distt.)
- Production of refractory and metal grade Bauxite in joint sector at Navo Hills (Satna Distt.)
- Flagstone cutting and polishing unit with Private Sector Participation at Morena, Vidisha, Gwalior
- Diamond Park near Indore

<table>
<thead>
<tr>
<th>Mineral potential areas / zones for Reconnaissance Permits, Prospecting Licenses &amp; Mining Licenses</th>
<th>Area in Km</th>
<th>Mineral Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleemnabad Block – District Katni</td>
<td>5040</td>
<td>Polyphase mineralization – Gold, Copper, Lead &amp; Zinc</td>
</tr>
<tr>
<td>Baghwari-Sukhwari Block – District Sidhi</td>
<td>5600</td>
<td>Gold, Copper, Lead, Zinc, Diamond, Nickel, Cobalt &amp; Chromium</td>
</tr>
<tr>
<td>Paharikhera Block – District Panna &amp; Satna</td>
<td>5000</td>
<td>Diamond and other precious / semi-precious stones</td>
</tr>
<tr>
<td>Chhatarpur-Tikamgarh Block</td>
<td>7200</td>
<td>Copper, Lead and Zinc</td>
</tr>
<tr>
<td>Jobat-Alirajpur Block – District Jhabua</td>
<td>5000</td>
<td>Carbonalite and Gold mineralization</td>
</tr>
<tr>
<td>Betul-Chhindwara Block</td>
<td>13000</td>
<td>Gold, Copper, Lead, Zinc, Diamond, Nickel, Cobalt &amp; Chromium</td>
</tr>
<tr>
<td>Balaghat Block</td>
<td>7700</td>
<td>Manganese and Copper</td>
</tr>
<tr>
<td>Mandsaur Block</td>
<td>4000</td>
<td>Diamond</td>
</tr>
<tr>
<td>Dhar Block</td>
<td>3600</td>
<td>Copper, Lead and Zinc</td>
</tr>
<tr>
<td>Narmada Block – District Khandwa &amp; Khargone</td>
<td>4200</td>
<td>Gold, Silver, Copper, Lead and Zinc</td>
</tr>
<tr>
<td>Anda-Seondha Block – District Gwalior, Bhind &amp; Datia</td>
<td>5000</td>
<td>Copper, Lead and Zinc</td>
</tr>
</tbody>
</table>

Source: MP State Mining Corporation Limited, Investors guide book for mines & minerals in MP – 2010
## Contacts

### Directorate of Geology and Mining, Madhya Pradesh

| Address | 29-A, Khanij Bhawan, Arera Hills, Bhopal (M.P.) INDIA, PIN – 462002 |
| Telephone | (+91) (0755) 2551795, 2550066 (Office) |
| Fax | (+91) (0755) 2551795 |
| E-mail | dirgeomn@mp.nic.in |
| URL | http://www.mp.gov.in/geologyandmining/ |

### Madhya Pradesh State Mining Corporation Limited

| Address | Paryawas Bhawan, Block 'A', 2nd floor, Arera Hills, Bhopal (M.P.) 462011 |
| Telephone | (+91) (0755) 2763391, 2763392 |
| Fax | (+91) (0755) 2763394 |
| E-mail | mpmining_bpl.sancharnet.in |
| URL | http://www.mpmining.org |

### Madhya Pradesh State Industrial Development Corporation Limited

| Address | AVN Towers, 192 Zone -1, M.P Nagar, BHOPAL-462011 |
| Telephone | (+91) (0755) 4270370 |
| Fax | (+91) (0755) 4270280 |
| E-mail | sidc@sancharnet.in; mpsidc@sancharnet.in; md@mpsidc.org |
| URL | http://www.mpsidc.org |

### Madhya Pradesh Trade and Investment Facilitation Corporation Limited

| Address | AVN Towers, Mezzanine Floor, 192 Zone -1, M.P Nagar, BHOPAL-462011 |
| Telephone | (+91) (0755) 2559970 / 2559979 / 2768058 |
| Fax | (+91) (0755) 2559971 |
| E-mail | trifac@mptrifac.org; md@mpsidc.org |
| URL | http://www.mptrifac.org |