Australian Trade and Investment Commission (Austrade)

METS Webinar

07 June 2018
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  - Presence in 23 countries with over 3700 staff
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- Team of 100+ professionals with rich and diverse experience
- Operations in India and 22 other emerging economies in Asia, Africa, and the Middle East

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- Oil and Gas
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- Metals and Minerals

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- Solid Waste Management
- Municipal Finance
- Infrastructure Development Plans
- Social Infrastructure

Transport & Logistics
- Ports
- Railways
- Roads
- Airports
- Logistics
- Industrial Parks/SEZ

Infra & Public Finance
- Business Strategy and Planning
- Operations Support
- Transaction Support
Overview and Framework

- Indian Mining Industry Overview
- Acts and Policies
- Federal and State Roles
India leads in production of various metals and minerals

<table>
<thead>
<tr>
<th>Rank</th>
<th>Metal/Mineral Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd</td>
<td>Coal Producer</td>
</tr>
<tr>
<td>3rd</td>
<td>Steel Producer</td>
</tr>
<tr>
<td>4th</td>
<td>Iron Ore Producer</td>
</tr>
<tr>
<td>5th</td>
<td>Bauxite Reserve</td>
</tr>
<tr>
<td>6th</td>
<td>Zinc Producer</td>
</tr>
<tr>
<td></td>
<td>98 types of Minerals Produced</td>
</tr>
</tbody>
</table>
Mining contributes ~2% in India’s GDP

India’s contribution in Global GDP

Source: World Bank

Contribution of Mining in GDP

Source: RBI; MOSPI; US Bureau of Economic Analysis

Average Global Mineral Production Share

Source: World Mining Congress (World Mining Data)
Metals & Minerals form a large chunk of imports, Mineral production has shown an uptick of late

- Metals and minerals are ~35 to 40% of the total non-oil merchandise imports. Coal (both thermal as well as metallurgical) has a large share in these imports.
- Index of Industrial Production (Mining) has picked up recently, as the sector comes out from the embargoes imposed by judiciary owing to “illegal mining”.
India has huge reserves of coal, iron-ore; Mineral reserves vary across different states

India’s Reserves w.r.t World Reserves

Mineral Wise State Reserves

Production to Reserves Ratio
A federal structure in place for governance of mining sector in India

- The Central Government formulates legislation for all minerals except minor minerals where the regulatory and administrative jurisdiction falls under the purview of state governments.

- The Mines and Minerals (Development & Regulation) Act (MMDR Act) is the key legislation governing the minerals sector in India.
  - A separate set of legislation exists for fuel and atomic minerals
  - A number of rules and regulations under the MMDR Act to regulate the sector
    - Mineral Concession Rules
    - Mineral Auction Rules
    - Evidence of Mineral Contents Rules, etc

- MMDR mandates three types of levies viz. royalty, district mineral foundation (DMF) and National Mineral Exploration Trust (NMET) for major minerals such as iron ore, limestone, bauxite and manganese.

- While the framework is governed by the federal law, state governments have complete administrative control over allocation and administration of all major minerals

- As regards minor minerals, complete autonomy is extended to the state governments to prepare the framework of allocation and administration of such minerals including specifying the royalty or any such levies.

- State governments are fully empowered to make rules to prevent Illegal mining.
Policy Reforms

- Recent Policy Reforms
- Amendment of MMDR Act
- Coal Mines (Special Provisions) Act
- National Mineral Policy
- National Mineral Exploration Policy
Recent legislative changes are paving way for a transparent allocation and promoting private sector participation

### Coal Mines (Special Provisions) Act, 2015
- 204 mines/blocks earmarked for auctions/allocation
- Blocks categorised under Schedule I, II & III
- Rules & process pre-specified for auctions
- Nominated Authority created
- Auction proceeds to go to states
- Five rounds of auctions conducted so far, six under way

### MMDR Amendment Act, 2015
- MMDR Act, 1957 amended in early 2015
- Paved way for a transparent and efficient system of allocation by mandating auctions of mineral resources
- Establishment of District Mineral Foundation (DMF)
- Creation of National Mineral Exploration Trust (NMET)

<table>
<thead>
<tr>
<th></th>
<th>Private Sector</th>
<th>Public Sector</th>
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</thead>
<tbody>
<tr>
<td>Blocks Auctioned/</td>
<td>32</td>
<td>57</td>
</tr>
<tr>
<td>Allocated</td>
<td></td>
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</tbody>
</table>

### MMDR Amendments/Auction Rules, 2015
- Uniform lease period of 50 years; no renewals; auction at the end of lease period
- Two types of concessions viz. Mining Lease (ML) and Composite License (Exploration cum ML)
- Both to be awarded only through auctions.
- Pre-requisites for grant of Mining Lease
  - Establishment of mineral contents as per EMCR 2015,
  - Identify and demarcate the area using total station and DGPS, and demarcate the area as forest land, land owned by the state government and land not owned by the state government.
  - Extent of the demarcated shall include all areas required for mining activities.

### Coal Mines Auction Rules, 2015
- Coal mine/block to be awarded only through auctions
- A reverse bidding method followed for power sector where the bid price is linked to the variable charge under the two part tariff for generating power
- An ascending Rs./tonne of bid premium where a coal block is awarded to “non-regulated” sector such as steel, cement or captive power plants.
Ascending auctions methodology for coal blocks (non-regulated sectors) and for non-coal major minerals

**Preferred Bidder** → **Recommendation by Nominated Authority** → **Declaration of Successful Bidder** → **Agreement & Vesting Order**

**Applicable Floor Price**
- Initial Price Offers
- Qualified bids
- Disqualified bids

**Floor Price in Rs. XX/tonne for coal blocks and in % of Sale Price Index for non-coal minerals**

- Bidder 1
- Bidder 2
- Bidder 3
- Bidder 4
- Bidder 5
- Bidder 6
- Bidder 7

**Increasing Prices**

**Successful Final Price Offer**
- Final Price Offers

**Offers**

**Preferred Bidder**

**Recommendation by Nominated Authority**

**Declaration of Successful Bidder**

**Agreement & Vesting Order**
National Mineral Exploration Policy 2016 stresses on exploration, and creates framework for private participation

- Open dissemination of pre-competitive baseline geo-science data
- Special initiative to probe deep-seated/concealed mineral deposits
- Private sector participation in exploration
- Collaboration with Scientific and Research bodies for technological development

**EXPLORATION BUDGET**

<table>
<thead>
<tr>
<th>Country</th>
<th>Budget (Billion US Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>$1.29</td>
</tr>
<tr>
<td>Australia</td>
<td>$1.10</td>
</tr>
<tr>
<td>US</td>
<td>$0.74</td>
</tr>
<tr>
<td>China</td>
<td>$0.55</td>
</tr>
<tr>
<td>Russia</td>
<td>$0.46</td>
</tr>
<tr>
<td>Brazil</td>
<td>$0.28</td>
</tr>
<tr>
<td>India</td>
<td>$0.04</td>
</tr>
</tbody>
</table>

Source: World Exploration Trends, 2015; SNM Metal and Mining

- General Exploration required for auctioning of Mining Lease
- Preliminary Exploration required for auctioning of Composite Licence
- Detailed Exploration to be completed within five years of grant of mining lease
- Successful discovery of mineral
  - Permit the NERP holders to participate in the mining auction process and in a way effectively exercise the option of first right of refusal
  - Revenue sharing in terms of percentage of royalty/premium or lump-sum on the basis of present value of the future revenue shares
- Non discovery of mineral reserves
  - Compensation to the exploration agencies as per the normative cost of exploration
Very recent policies providing for more private participation

**National Mineral Policy**

- *National Mineral Policy 2018*
  - Mineral exploration would be incentivised to attract private investments as well as state of the art technology through an adequate financial package or through the Right of First Refusal at the time of auction.
  - The government agencies would carry on exploration and survey work as usual, the private sector would be incentivised to take up exploration activities.
  - Public funds would be spent by government agencies in areas where private sector investments are not coming in due to high uncertainties.

*Draft stage*

**Commercial Coal Mining**

- Government approved the methodology for allocation of coal blocks for commercial mining purpose in Feb 2018
- The auction will be online, and will be an ascending forward auction whereby the bid parameter will be the price offer in rupees per tonne to the State Government
- Freedom of marketing and pricing provided to the commercial miner
  - Help attract foreign investment
  - Bring in efficiency and promote competition, and allow the use of best possible technology into the sector
No. of initiatives underway to streamline mineral administration and incentivize sustainable development

**Mining Tenement System**

- Automation in the functioning of DMG, MoM, IBM and GSI
- Bringing transparency and efficiency in different processes associated with grant, execution and operation of various mineral concessions

**Mining Surveillance System**

- Aims to curb illegal mining with the use of space technology
- Under development with the help of Bhaskaracharya Institute for Space Applications and Geo-Informatics (BISAG)
- ISRO is assisting in development of applications
- Superimposition of mining lease map over the satellite map to find out any violations over time

**Star Rating of Mines for Sustainable Development**

- Encourage leaseholders to adopt sustainable mining practices
- Mines with higher star ratings will get faster clearances
- Different parameters considered for evaluation:
  - Scientific and efficient processes
  - Addressing social and environmental impacts
- Self-driven compliance mechanism of all statutory provisions.

**Coordination-cum-Empowered Committee (CEC)**

- Speed up the approval process
- Timely intervention
- Managing coordination issues at the Central and State level
- Assisting states in coming up with mineral assets for auctions
- Advising states on the constitution of DMF
- Review of status of steps taken to curb illegal mining
Policy impetus on clean coal technologies

Underground Coal Gasification

- ~40% of the available coal resources are deep seated, and mining these deposits in many cases through conventional mining techniques is difficult as well as capital intensive. These could be potential candidates for underground coal gasification (UCG)

- A formal policy was launched in Sep 2016 for development of UCG blocks. Model bidding documents are underway.

- Marketing and pricing freedom to be provided to the block holders

- Further, a few pilot lignite blocks have been identified for UCG.

Coal Washing

- It's mandatory to wash coal with ash more than 34% that’s being transported over 500 kms

- Coal India has planned installation of 15 coal washeries on Build, Operate and Maintain basis.
Other policy developments

Rationalization of Coal Linkages

- Optimization of transportation cost of coal
- ~13 mt of coal has been swapped with estimated annual savings of ~Rs 7.7 billion

Coal Tolling

- Guidelines issued for flexible utilization of coal in June 2016
- Government generating company can invite tariff bids from IPPs for supplying power in lieu of transfer of its coal
- A few states such as Gujarat and Maharashtra have taken the initiative

Quality & Third Party Sampling

- An independent third party agency to be appointed for undertaking sampling and analysis of coal at the loading end on behalf of both the power plant (consumer) and the coal company
- CMIFR, QCI and IIT(ISM) have been appointed as the sampling agencies
- UTTAM portal developed to provide online tracking of sampling status
Current Trends

- Current Trends in Indian Coal and Mining Industry
Government companies dominate the coal market, significant presence in iron ore as well

<table>
<thead>
<tr>
<th>Coal India Limited</th>
<th>National Mineral Development Corporation Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Coal India Limited (CIL) is the largest coal producer in the world.</td>
<td>- NMDC is the largest producer and exporter of Iron ore in India.</td>
</tr>
<tr>
<td>- It operates through 7 wholly owned coal producing subsidiaries.</td>
<td>- It has three fully mechanised mines in Chhattisgarh and Karnataka.</td>
</tr>
<tr>
<td>- During 2017-18, CIL produced 567 million tonnes (mt) of coal</td>
<td>- In 2016-17, NMDC produced 34 MT of Iron ore out of total production of 192 MT of domestic production. Another public sector undertaking in iron ore mining is Odisha Mining Corporation (OMC).</td>
</tr>
<tr>
<td>- CIL and Singareni Collieries (SCCL) together produce ~90% of the coal produced in India.</td>
<td></td>
</tr>
</tbody>
</table>

**Coal Production Mix (in %)**

- CIL: 81%
- SCCL: 9%
- Captive: 10%

**Iron Ore Production Mix (in %)**

- NMDC: 18%
- OMC: 5%
- Others: 77%
Consistent increase in Coal Demand

- Coal demand has been strong, due to large coal based capacity additions in power
  - Demand has grown consistently in the past, growing at ~7% per annum
  - Demand has grown from 608 mt in FY2012 to 908 mt in FY2018

- Consumption mix
  - Power sector remains the largest consumer of coal (~80% of total coal) followed by steel, cement, sponge iron and others

- Coal demand estimated to grow in future, as demand for electricity grows with full electrification and increased hours of supply.
  - Extent of solar ramp-up and related storage solutions will affect the actual demand

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Source: Ministry of Coal, Coal Controller
Coal production has fallen short of demand

- Coal production has not kept pace with demand
  - Production grew @~5% per annum in the last five years, with Coal India and Singareni growing at similar levels
  - Captive production dipped in FY 2016, largely due to lag in auctioned mines coming on-stream, but has picked up since then

- Shortfall in domestic production met through imports (~200 mt in FY 18).
  - ~75% of total imports of non coking category

- Given the supply constraints, imports are likely to continue in the near future

Source: Ministry of Coal, Coal Controller
No. of coal blocks auctioned in the last three years to expand domestic supplies over time

- 204 coal blocks cancelled by Supreme Court in 2014
- 89 coal blocks have been auctioned or allotted as per Coal Mines (Special Provisions), Act and as per MMDR Act.

Auction of captive coal blocks

- Only few states have selected MDOs for operationalization of blocks under allotment route. Will be another few years until these blocks start producing.
- Only 13 out of 31 auctioned blocks have started operations, and only 5 out of 43 under the allotment route
- Revenue generation till Dec 2017 is Rs 4270 Cr (excluding Royalty, cess etc.)
Coal Linkages by Government Companies are also auctioned now

- With effect from February 2016, all coal linkages are to be allocated through auctions. A special scheme viz. SHAKTI has been promulgated for power sector.

- Of 78 mt earmarked for non regulated sectors, ~45 mt has been auctioned so far by CIL

- About 25 mt of annual coal linkages have been granted under SHAKTI B(ii)

### Three rounds conducted

- Tranche I- 2016 (June-Oct)
- Tranche II 2017 (Jan-June)
- Tranche III 2017 (Aug-Oct)
- Tranche IV (expected Jun 2018)

### Offered Quantity (subsidary wise and sector wise)

- ECL 1%
- BCCL 2%
- WCL 7%
- SECL 30%
- MCL 20%
- NCL 6%
- NEC 0%
- Others 11%
- Steel 9%
- Cement 6%
- CPP 53%
- Sponge iron 21%

Source: CRIS Analysis
No. of other minerals also successfully allocated in the last three years

**No. of mineral blocks auctioned**

<table>
<thead>
<tr>
<th>Mineral Wise auctioned blocks</th>
<th>Diamond</th>
<th>Manganese</th>
<th>Bauxite</th>
<th>Gold</th>
<th>Iron Ore</th>
<th>Limestone</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>State-wise auctioned blocks</th>
<th>MP</th>
<th>MH</th>
<th>AP</th>
<th>GJ</th>
<th>JH</th>
<th>CG</th>
<th>Odisha</th>
<th>RJ</th>
<th>KTK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

**No. of mineral blocks (auctions ongoing)**

<table>
<thead>
<tr>
<th>Mineral Wise Ongoing mineral block auctions</th>
<th>Graphite</th>
<th>Copper</th>
<th>Manganese</th>
<th>Bauxite</th>
<th>Limestone</th>
<th>Iron Ore</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>11</td>
<td>13</td>
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</table>

<table>
<thead>
<tr>
<th>State-wise Ongoing mineral block auctions</th>
<th>JH</th>
<th>Odisha</th>
<th>KTK</th>
<th>MP</th>
<th>MH</th>
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<td>2</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>12</td>
</tr>
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</table>
A no. of blocks in the pipeline for further allocation

Opportunities in Other Minerals (Pipeline 2018-19)

Mineral Wise Upcoming blocks for auctions

- Dolomite: 1
- Gold: 2
- Emerald: 2
- Graphite: 3
- Molybdenum: 3
- Copper: 5
- Bauxite: 8
- Manganese: 9
- Others: 11
- Limestone: 15
- Iron Ore: 36

State-wise Upcoming blocks for auctions

- GJ: 3
- TEL: 3
- TN: 3
- Odisha: 5
- CG: 6
- AP: 9
- RJ: 9
- JH: 12
- MP: 13
- KTK: 32

Source: Ministry of Mines
Sizeable contract mining opportunity in captive coal blocks; commercial coal mining and coal washing

Contract Mining Opportunities in Captive Coal

- Blocks allotted to Central PSUs/States/Government companies
  - Resources: ~9.8 billion tonnes
  - Annual Capacity: ~180-190 MTPA

Opportunities in Coal Mining (Commercial)

- 16 coal blocks earmarked for allotment to PSUs

<table>
<thead>
<tr>
<th>State</th>
<th>Number of blocks</th>
<th>State</th>
<th>Number of blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madhya Pradesh</td>
<td>5</td>
<td>Jharkhand</td>
<td>2</td>
</tr>
<tr>
<td>Telangana</td>
<td>3</td>
<td>Odisha</td>
<td>1</td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>2</td>
<td>West Bengal</td>
<td>1</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Ministry of Coal

Ore Beneficiation

<table>
<thead>
<tr>
<th>Type</th>
<th>Capacity (MTPA)</th>
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</thead>
<tbody>
<tr>
<td>Coking</td>
<td>12</td>
</tr>
<tr>
<td>Non-coking</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

Coal India Limited’s Washing Capacity

- 23.3 MTPA
- 13.5 MTPA
- 36.8 MTPA

Source: CRISIL Analysis

- Blocks auctioned to private companies in power sector
  - Resources: ~890 million tonnes
  - Annual Capacity: ~30 MTPA

- 16 coal blocks earmarked for allotment to PSUs
Different entry routes possible

Directly through 100% FDI

- 100% FDI permitted via automatic route for mining and exploration of metal and non-metal ores including precious ores, and for mining of coal and lignite for captive consumption.
- Commercial Documents for coal and non coal minerals can provide further details regarding qualification and other entry criteria

Unincorporated Entity

- Liaison Office: For a light touch representation and communication role
- The Company can try for opportunities in consortium with local player(s) without any formal incorporation of the entity; though it may have to form an SPV if the work is awarded
- Such partnerships come with a binding joint and several liability

Incorporated Entity/ SPV

- Company: A company is registered under Indian corporate laws and it’s regulations; this could be a wholly owned subsidiary or joint venture with a local partner
- A separate SPV too can be formed for a project.

Partnering

- Liaison Office: For a light touch representation and communication role
- Can act as subcontractor to an Indian mining player without taking any joint and several liability

100% FDI permitted via automatic route for mining and exploration of metal and non-metal ores including precious ores, and for mining of coal and lignite for captive consumption.
Key conclusions

- A spate of new policies in mining sector in the last three years paving way for transparent allocation of minerals concessions, promoting private participation and streamlining mineral administration

- Demand for coal has increased consistently, and shortfall in domestic supplies has led to imports with the quantity touching nearly 200 mt last fiscal.

- Electricity requirement to increase in line with increased electrification and increased supply hours, leading to higher demand for coal

- While RE capacity additions will have an effect on coal based power, the fluctuating nature of RE generation will require coal based power to continue

- On the production side, dependence on coal imports, especially metallurgical coal, to continue in the medium term.

- A number of coal blocks as well as other mineral blocks have been awarded in the last three years since a new legislative framework has been laid down. A sizeable contract mining opportunity exists for captive coal blocks as the allottees don’t have any mining experience.

- Given the supply deficits, commercial coal mining is also an attractive opportunity, however, the quality of coal blocks offered will be key.

- Ore beneficiations and clean coal technologies too are attractive business opportunities given the policy impetus and environmental factors.
Thank you

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