



**Investment Opportunities in  
the Mining Sector**

**INDIA DAY**

**at**

**PDAC-2013**

**5<sup>th</sup> 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**

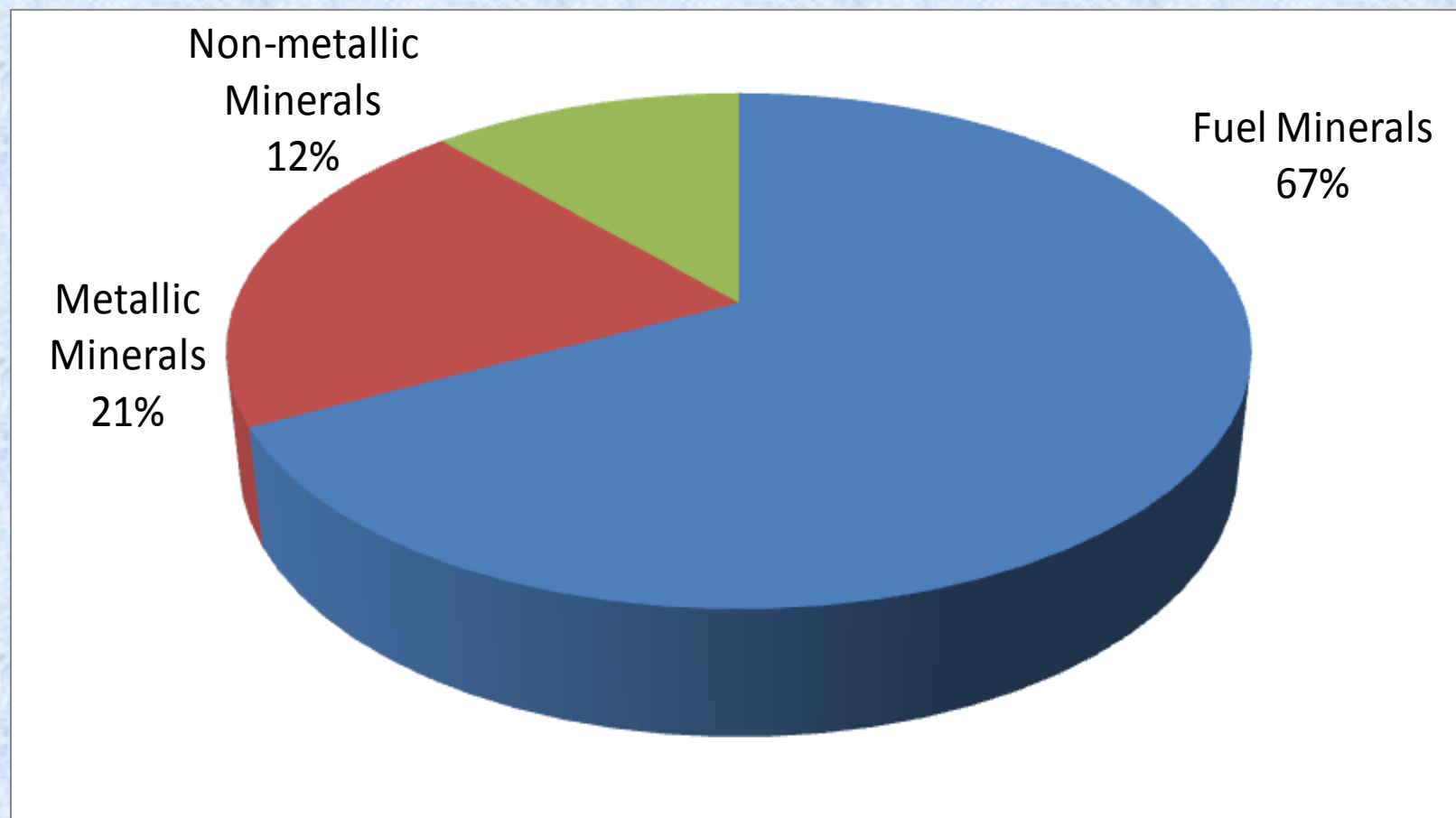


# Indian Mining Sector: An Overview



- 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



Mineral	Abundant	Adequate	Deficient	Scarce
<b>Metallic minerals (ferrous)</b>	<b>Iron ore</b>	<b>Chromite (metallic), Manganese</b>	<b>Chromite (refractory)</b>	<b>Nickel, Tungsten, Cobalt, Molybdenum</b>
<b>Metallic minerals ( non-ferrous)</b>	<b>Bauxite (metallurgical)</b>	<b>Zinc</b>	<b>Bauxite (chemical grade), Copper, lead</b>	<b>Antimony, Gold, PGE</b>
<b>Industrial minerals</b>	<b>Dolomite, Gypsum, Limestone, Mica</b>	<b>Graphite</b>	<b>Coal Apatite, Rock Phosphate, Kyanite</b>	<b>Sulphur, Potash Met. Coal</b>
<b>Precious Stone Minerals</b>	--	--	--	<b>Diamond, Emerald, Sapphire, Ruby</b>



# Resources of Important Minerals

(in Million Tons)



Mineral	Total Resource	Key States
Bauxite	3,479	Odisha, Andhra Pradesh, Gujarat & Maharashtra
Copper Ore	1558	Rajasthan, Madhya Pradesh, Jharkhand
Iron Ore	28,526	Jharkhand, Chhattisgarh, Goa Odisha & Karnataka
Lead-Zinc Ore	685	Rajasthan, Jharkhand
Manganese Ore	429	Maharashtra, Madhya Pradesh, Odisha
Limestone	1,84,935	Odisha, Andhra Pradesh, Gujarat, Maharashtra, Rajasthan, Tamilnadu, Karnataka
Chromite Ore	203	Odisha, Karnataka





## Top 10 Minerals Production in 2011-12



Mineral	Production	Value in Rs. Billion
Petroleum (crude)	38.08 mt.	695.42
Coal	539.85 mt.	626.76
Iron Ore	167.289 mt.	379.65
Natural Gas	46,576 mcum	174.31
Lignite	42.897 mt.	48.28
Chromite	3.764 mt.	26.52
Zinc Concentrate	1.412 mt.	19.89
Manganese Ore	2.349 mt.	11.71
Silver	2,07,142 kg	11.56
Others	--	86.33



# India's Contribution in Mineral Production



Mineral	Unit	Production		Contribution %	India's rank in World
		World	India		
<b>Chromite</b>	000 T	18,700	3,413	18.2	2 <sup>nd</sup>
<b>Baryte</b>	000 T	7,100	2,138	30.1	2 <sup>nd</sup>
<b>Talc/ Steatite/ Pyrophyllite</b>	000 T	7,400	1,077	14.5	2 <sup>nd</sup>
<b>Coal &amp; Lignite</b>	MT	6,938	566	8.2	3 <sup>rd</sup>
<b>Iron Ore</b>	MT	2,248	219	9.7	4 <sup>th</sup>
<b>Kyanite, Andalusite &amp; Sillimanite</b>	000 T	440	36	8.2	4 <sup>th</sup>
<b>Manganese Ore</b>	MT	33.4	2.44	7.3	5 <sup>th</sup>
<b>Bauxite</b>	MT	199	139.52	7.0	6 <sup>th</sup>





# 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



## Geological Environment (in sq. Km.)

## Area covered by prospecting and future opportunities

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.



# Geological Survey of India



- 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.



# Mapping Done



**Total land area: 3.28 M Sq Km; and EEZ: 2.015 M Sq Km**

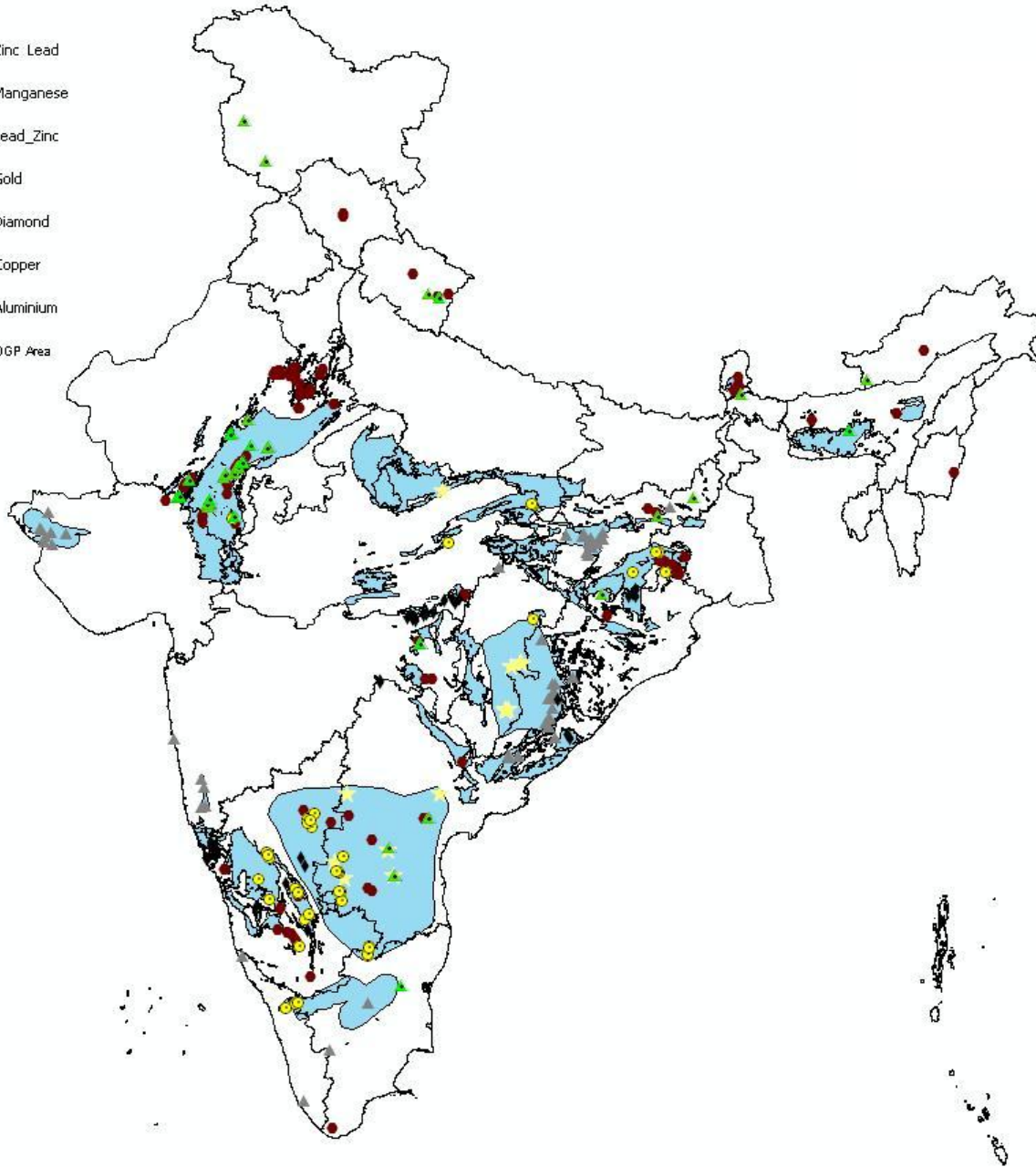
<b>Geological Mapping</b>	<b>3,095,170 sq km (98.4%)</b>
<b>Specialized Thematic Mapping</b>	<b>180,235 sq km (5.4%)</b>
<b>Geochemical Mapping</b>	<b>304,270 sq km (9.99%)</b>
<b>Geophysical Mapping</b>	<b>180,691 sq km (5.5%)</b>
<b>Marine/Bathymetric survey</b>	<b>1,980,428 sq km (98.3%)</b>



# OGP AREA & KNOWN MINERAL BELTS



- ▲ Zinc Lead
- ◆ Manganese
- ▲ Lead\_Zinc
- Gold
- Diamond
- Copper
- ▲ Aluminium
- OGP Area





# 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.) – 3years +2years (max. -5 yrs.)
  - Mining Lease (M.L.) – 30 yrs.(max.) / 20yrs. (min.)





## Grant of concessions (Contd.)



- 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



- **3<sup>rd</sup> 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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