

**MINERAL BUSINESS DEVELOPMENT (MBD)  
TECHNICAL LECTURE SERIES 2022**



**STATUS AND MINERAL EXPLORATION  
IN INDIA – ISSUES, CHALLENGES AND  
LEGISLATIVE REFORMS**

**DR P. K. JAIN  
CHIEF MINERAL ECONOMIST (RETD.) &  
CONSULTANT INDIAN BUREAU OF  
MINES, NAGPUR**

# ROLE OF MINERAL RESOURCES IN DEVELOPMENT

Minerals play an indispensable role in the progress

The living standard is measured by per capita consumption of minerals and metals.

The industrial development of a country needs an uninterrupted supply of raw material.

Mineral resources provide strength & ensures sustainable supply to keep the wheels of industries rolling.

Post independence demand surged for mineral raw materials.

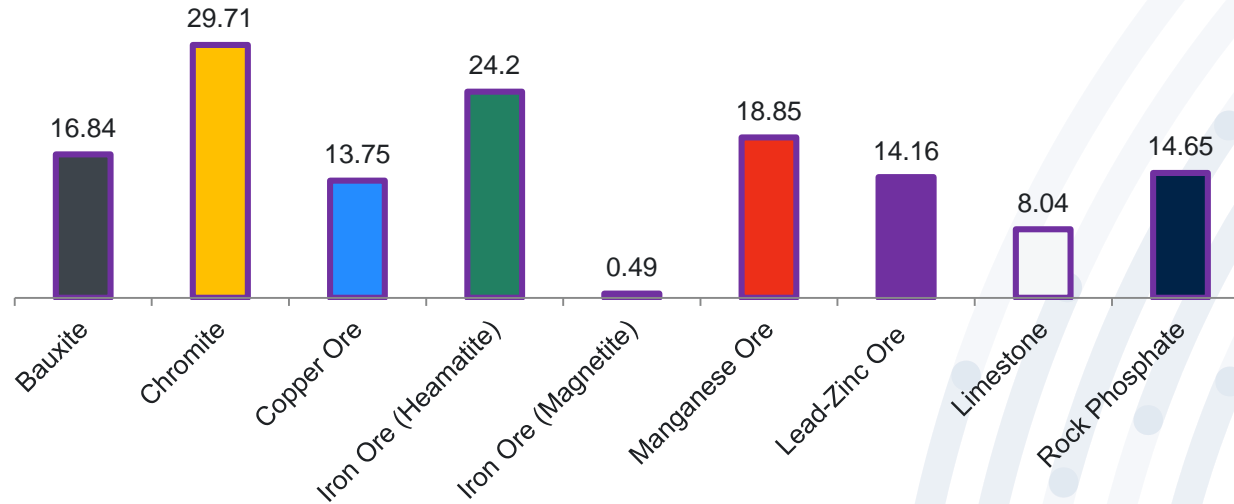
Increased demand led to intensive search for mineral deposits in the known/ virgin areas.

To enhance the growth rate and remove the bottleneck for exploration & exploitation of minerals, the government has taken several legislative reforms.

# ADEQUACY OF MINERAL RESOURCES IN INDIA

Mineral	Abundant	Adequate	Deficient	Scarce
Metallic Minerals (Ferrous)	Iron Ore (31.32 BT)	Chromite (Metallic), Manganese	Chromite (Refractory)	Nickel, Tungsten, Cobalt, Molybdenum
Metallic Minerals ( Non Ferrous)	Bauxite (Metallurgical grade) 3.48 BT	Zinc	Bauxite (Chemical grade), Copper, Lead	Antimony, Gold, PGE
Industrial Minerals	Coal (319 BT) Dolomite (7.73 BT), Gypsum (1.29 BT), Limestone (185 BT) Mica (0.53 BT)	Graphite	Apatite, Rock Phosphate, Kyanite	Sulphur, Potash, Met.Coal
Precious Stone Minerals	--	--	--	Diamond, Emerald, Sapphire, Ruby

# RESERVES TO RESOURCES RATIO FOR SOME MINERALS IN INDIA



- Reserves/ Resources ratio below 30% for most of the minerals.
- Upgradation of resources to higher confidence level by additional exploration as per Minerals (Evidence of Mineral Contents) Rules, 2015 is urgently required.

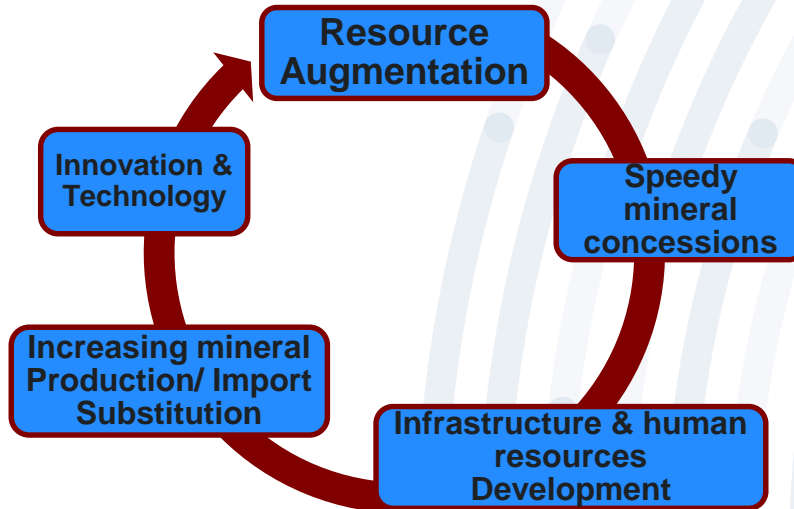
# INDIAN MINING SECTOR – GDP CONTRIBUTION

**GDP =**

• Consumption + Investment + (government spending) + (Exports-Imports)

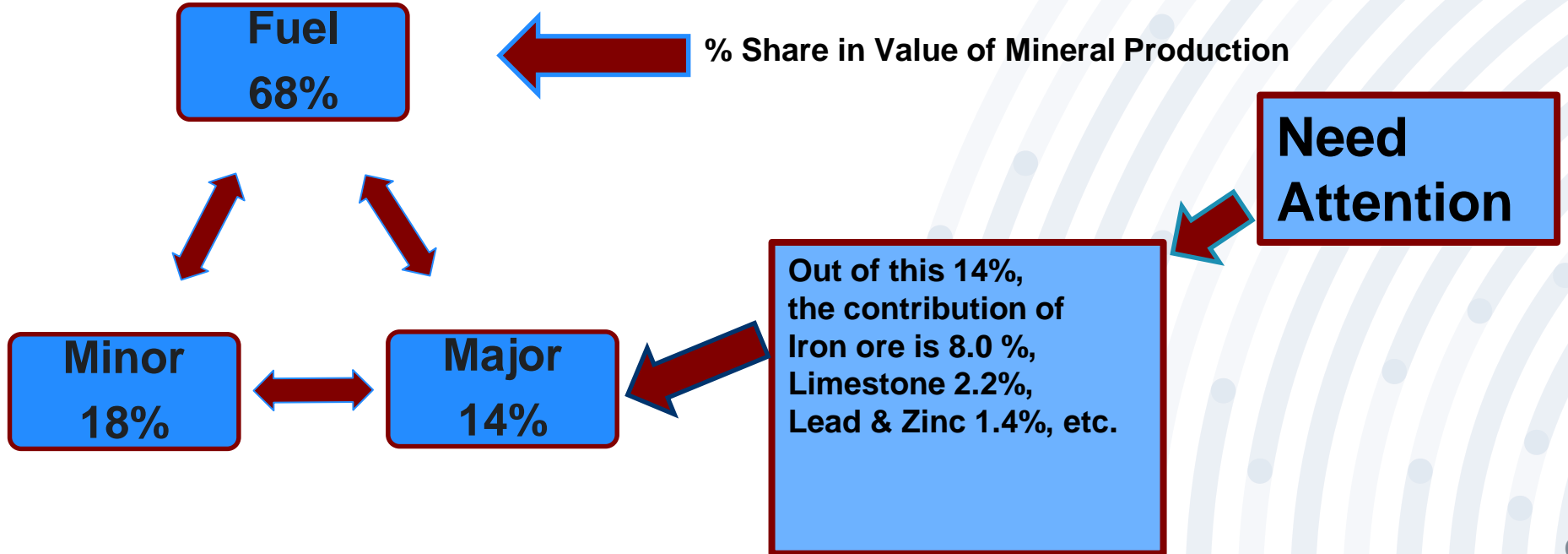
Mining sector is one of the core sectors of economy. It provides basic raw materials to many important industries.

For  
Enhancing  
GDP %

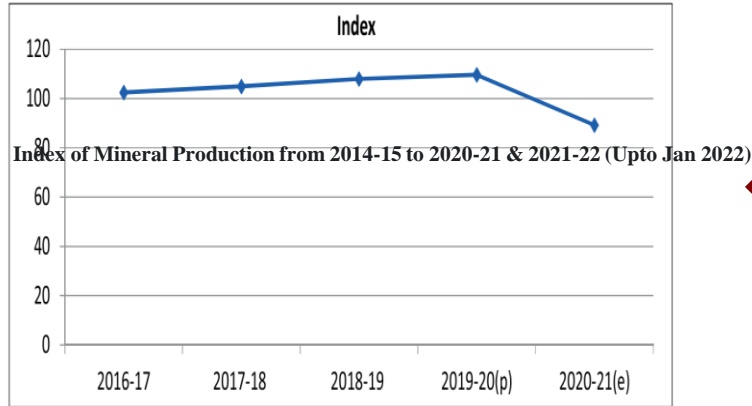


# INDIAN MINING SECTOR – GDP GROWTH

Every 1% increase in the growth rate of mining & quarrying  
→ 1.2 to 1.4 % increase in the growth rate of industrial production  
→ 0.3% increment in growth rate in India's GDP



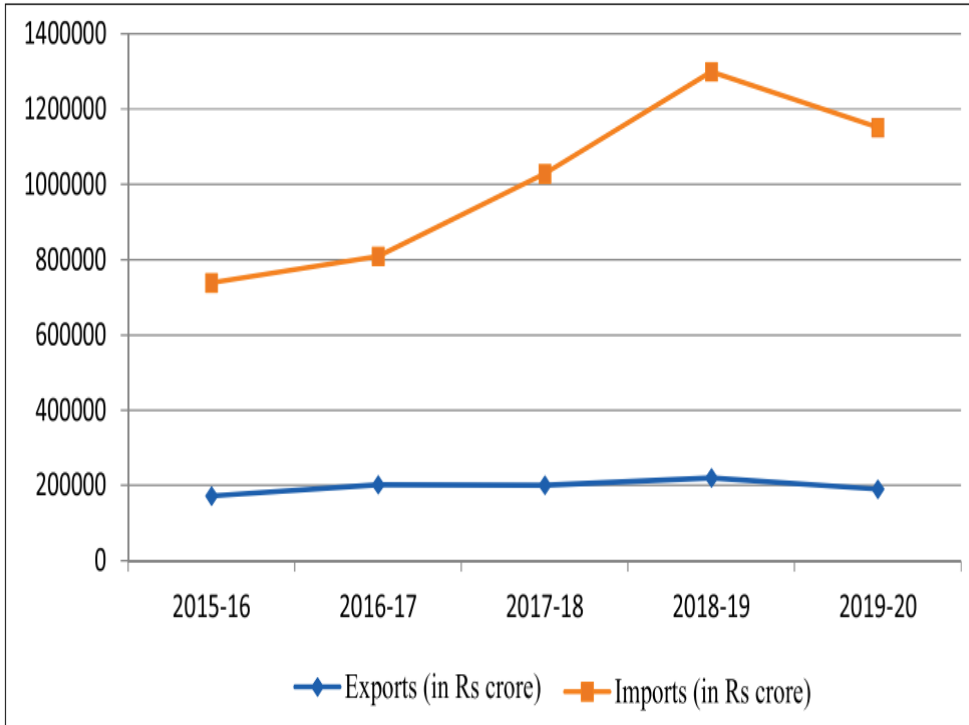
# INDIAN MINING SECTOR – INDEX OF MINERAL PRODUCTION



The Index of mineral production represents the status of production for a given period of time as compared to a reference.

Year	Index	Growth (%)	GVA (Rs crore)	Growth (%)
2014-15	93.3	-1.37	288685	9.72
2015-16	97.3	4.29	317974	10.15
2016-17	102.5	5.34	349248	9.84
2017-18	104.9	2.34	329612	-5.62
2018-19	107.9	2.86	326815	-0.85
2019-20	109.6	1.58	321766	-1.54
2020-21	101.0	-7.85	294024	-8.62
2021-22 (upto January)	109.1	14.24*	330945	12.56

# INDIAN MINING SECTOR – CHALLENGES



**Trend in Value of mineral Export & Import in last five years indicates that value of Import is significantly high compared to Export.**



# FDI INFLOW IN MINING SECTOR

Year	FDI Inflow in mining (In \$ million)	Share of Total FDI (In %)
2016-17	56	0.12
2017-18	36	0.80
2018-19	158	0.51
2019-20	140	0.40
2020-21	125	0.28

*Source: Centre for Monitoring Indian Economy, DIPP website*

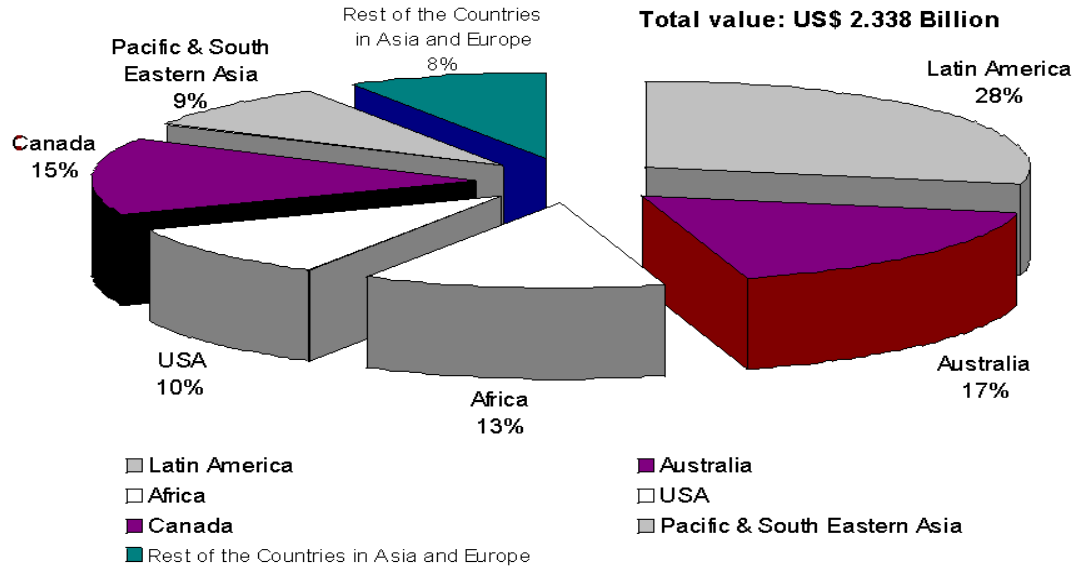
# OVERVIEW OF INDIAN MINERAL SECTOR

India produces 95 minerals including 4 fuel, 10 metallic, 21 non-metallic, 5 atomic and 55 minor minerals.

Mineral	India's Reserves	India's Rank	India's Production (2019)	India's Rank
Coal	10 %	5 <sup>th</sup>	9%	2 <sup>nd</sup>
Iron Ore	3 %	7 <sup>th</sup>	8%	4 <sup>th</sup>
Manganese	3 %	7 <sup>th</sup>	5 %	6 <sup>th</sup>
Bauxite	2 %	8 <sup>th</sup>	6 %	5 <sup>th</sup>
Chromite	18 %	3 <sup>rd</sup>	10 %	3 <sup>th</sup>
Zinc	4 %	9 <sup>th</sup>	6%	5 <sup>th</sup>

Source: USGS 2020 and WMP-2015-19, BGS

# GLOBAL TREND INDICATE EXPENDITURE ON EXPLORATION



**Low  
exploration  
expenditure**

**India's expenditure on mineral exploration is only \$ 17/sqkm,  
Australia's \$124/sqkm &  
Canada's \$118/sqkm**

# OBVIOUS GEOLOGICAL POTENTIAL AREA

Mineral	Area (sq. km.)	Mineral	Area (sq. km.)
Gold	1,02,809	Manganese ore	4,600
Diamond and Precious Stones	3,00,000	Chromite	2,690
Base Metals	1,81,150	Manganese	6,000
Platinum Group of Elements	8,130	Tin and Tungsten	1,300
Iron ore	5,135	Bauxite	32,520

Of India's entire Obvious Geological Potential (OGP) area, only 10% has been explored and mining is undertaken in 1.5-2% of this area.

# CHALLENGES LED TO REFORMS

**Objective : Development of Mineral Industry/Resources**

Compliance of Supreme Court Judgments for allocation of mineral resources

Transparency

Eliminating procedural delay

Auction

To solve Social problems, Tribal issues

To address Inadequate infrastructure development of mining areas.

DMF

Uniform Lease Period,

Security

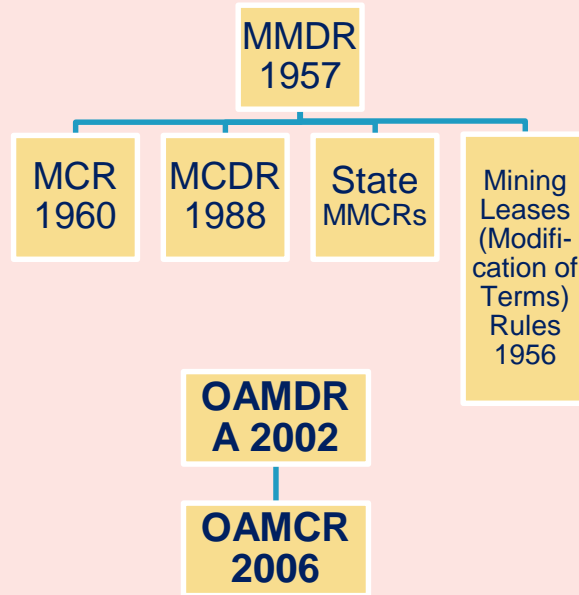
Attracting pvt. investment & the latest technology;

To deal with Low exploration expenditure

NMET

# RECENT REFORMS IN MINING LEGISLATION

## Before Reforms

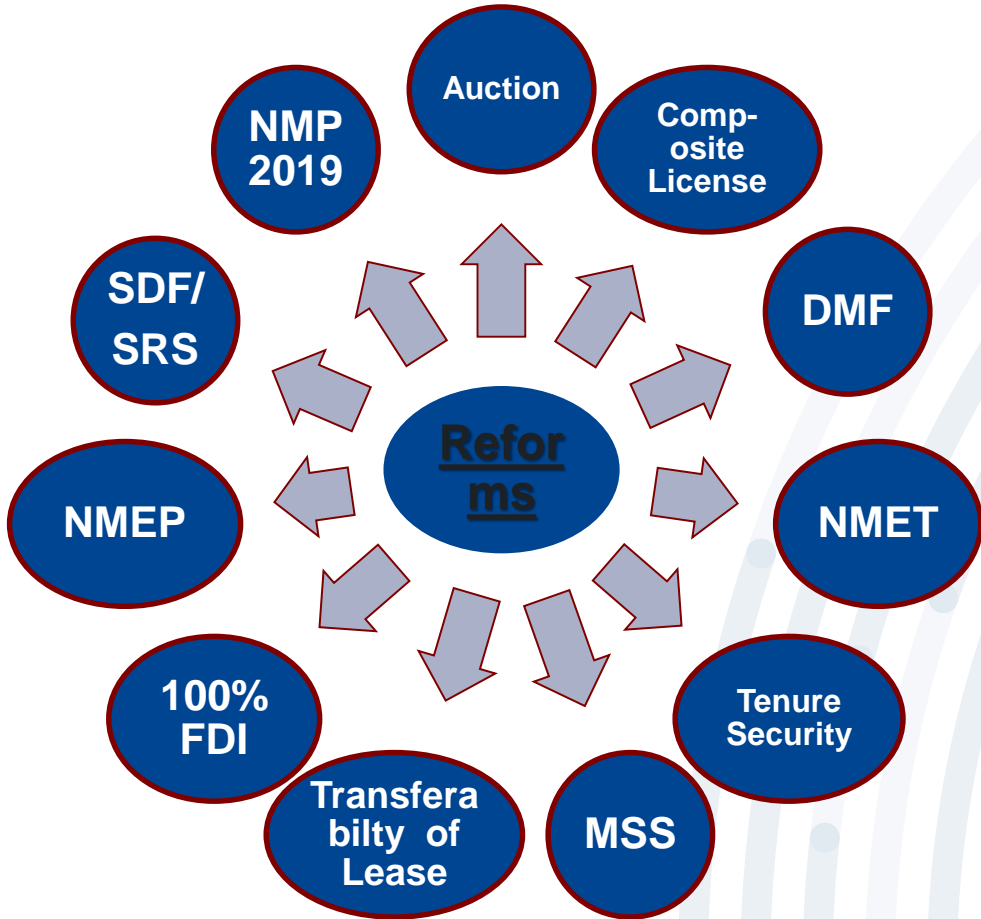


## Sub Legislation under MMDR Amendment Act 2015

- ❖ The Minerals (Evidence of Mineral Contents) Rules, 2015.
- ❖ The Mineral (Auction) Rules, 2015
- ❖ The Mineral(Non-exclusive Reconnaissance Permits) Rules, 2015.
- ❖ The National Mineral Exploration Trust Rules, 2015.
- ❖ The Mines and Minerals (Contribution to District Mineral Foundation) Rules, 2015
- ❖ The Mineral (Mining by Government Company) Rules, 2015
- ❖ The Minerals (Other than Atomic and Hydro Carbon Energy Minerals) Concession Rules, 2016
- ❖ Minerals (Transfer of Mining Lease Granted Otherwise than through Auction for Captive Purpose) Rules, 2016
- ❖ The Atomic Mineral Concession Rules, 2016
- ❖ The Mineral Conservation and Development Rules 2017



# INDIAN MINING SECTOR – STRATEGIES FOR GROWTH



# REFORMS

## National Mineral Exploration Policy, 2016 (NMEP)

- To enhance the exploration activities in the country, the Government unveiled NMEP to spells out the strategy and outlines the actions plan that the Government will adopt to ensure comprehensive exploration of country's mineral resources (non-fuel and non-coal).
- The NMEP primarily aims at accelerating the exploration activity in the country through enhanced participation of the private sector.



# REFORMS

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## **National Mineral Policy 2019**

An aim to have a more effective, meaningful and implementable policy that brings in further transparency, better regulation and enforcement, balanced social and economic growth as well as sustainable mining practices.

## **National Mineral Index (NMI)**

MoM has constituted a committee to introduce an **index based mechanism by developing a for various statutory payments and others for future auctions.**

# REFORMS

## Mineral Auction Rules, 2015

- Amended vide notification dated 30.11.2017 to make the auction process simpler and to help the States **auction mineral blocks quickly**.

## Mineral Conservation & Development Rules, 2017

- Amended vide Gazette notification G.S.R. No. 289 dated 27.03.2018 **to facilitate and expedite the process of auction**.

As part of unlocking India's vast mineral potential by exploration, the MoM has **handed over 152 mineral block reports to different State Governments** so far.

# REFORMS

- U/s 4(1) of the MMDR Act, 1957 Central and State PSUs & Pvt. Company such as RINL, SAIL, NMDC Ltd., KIOCL Ltd., MOIL Ltd., etc. have been enlisted to do **prospecting operations without obtaining prospecting licenses**,
- Atomic Minerals Concession Rules, 2016 amended vide Notification No. G.S.R. 126(E) dated 19.02.2019 regarding power of the central government to amend schedule A and further by notification No. G.S.R. 134(E) dated 20.02.2019 to amend Schedule A for **Threshold Value for atomic minerals**.
- Offshore Areas Mineral Concession Rules, 2006, amended vide notification No. G.S.R. 595(E) dated 23rd August, 2019 for **prohibition on grant of permit, license or lease in respect of atomic minerals**.

# REFORMS

- To ensure ease of doing business, **restriction on transfer of mineral concessions are removed** and now mineral concession can be transferred without any transfer charge.
- **Government is empowered to conduct auction in cases where the States face challenges** in conduct of auction or fail to conduct auction within prescribed time fixed in consultation with State Government.
- Subsequently, **acceleration of mineral exploration has been identified as a critical need** both for evaluating available resources and developing mineral blocks for auction as per the Mineral (Auction) Rules, 2015.
- The new provisions will also augment **the exploration of the deep-seated minerals** and minerals of national interest by allowing **Non-Exclusive Reconnaissance Permits (NERP) holders to apply for composite license or Mining Lease (PL-cum-ML)**.
- **Financial assistance** for procurement of machinery & equipment aimed to enhance exploration activities.
- **Partial reimbursement** of exploration expenses for holder of CL granted through auctions for certain minerals.

# SIMPLIFICATION OF EXPLORATION REGIME

To ensure seamless transition of the concession from exploration to production -Under seamless prospecting licence cum-mining lease, exploration activity is seamlessly integrated with mining,

- i. Mineral Blocks for **Composite License can be auctioned at G4 level of exploration instead of G3 level** as per the earlier standard.
- ii. Mineral Block for surficial mineral can be auctioned for grant of **Mining Lease at G3 level instead of G2 level**.
- iii. **Private entities may be notified under Section 4(1)** of the MMDR Act for conducting exploration.
- iv. It will increase the pace of exploration and will bring **advance technology** in exploration of mineral by giving level playing field for government and private agency,
- v. The National Mineral Exploration Trust (**NMET**) **to be made Autonomous body** to ramp up exploration by engaging public and private entities.

# SUCCESS STORY

## An transparent open regime for growth of mining industry



100% FDI

- 100% FDI through automatic route opened for all non-atomic & nonfuel minerals
- Mineral laws amended to increase mineral production by notifying more blocks for auction.



Transparent Auction process

- Auction process in 19 mineral rich States in India.
- Already auctioned- 176 blocks [ML-150 (Iron ore, Limestone, Chromite, Bauxite, Manganese etc. ), CL - 26 (Gold, Diamond, Copper etc )]
- Under Auction – 112 blocks [ ML-62 (Iron Ore, Limestone, Bauxite, Manganese etc), CL – 50 (Gold, Diamond, Copper etc) ]. 67 Blocks of Gold, Limestone, Iron ore, Diamond, Phosphorite, Graphite etc are notified for PL cum ML.
- 8 Private exploration agencies are accredited and notified.
- 219 exploration projects are funded by Government (NMET).



Exploration-cum-mining policy

- 50% reimbursement of exploration expenses to holder of composite licence through NMET

# KEY CHALLENGES

- There is a need to pay more focus on mineral exploration, with increased **impetus in investments, especially from the private sector**, which needs to be encouraged & incentivized to take up mineral exploration activities.
- Special emphasis needs to be given to prospecting and exploration of minerals in which the country has a **poor resource-cum-reserve base** despite having the geological potential for large resources.
- Exploration of **energy critical minerals, fertilizer minerals, precious metals and stones, strategic minerals and deep-seated minerals** which are otherwise difficult to access and for which the country is mainly dependent on imports, needs to be prioritized.

# KEY CHALLENGES

- India is still largely dependent on import of minerals like gold, silver, coal, bauxite, copper etc. which are key for India's economic development.
- **Enhancing exploration and mining can significantly reduce India's import dependence on mineral and metals.**
- Low level of exploration: Only 10% of OGP area of India has been explored while Australia has explored more than 90% of its area.
- There are definite areas of weakness in application of sophisticated modern techniques and for proper interpretation of data, wider application **of latest techniques of deep drilling** for delineation of favorable targets by detailed exploration.



## E-AUCTIONS

### STATE WISE /MINERAL WISE BLOCKS AUCTIONED

State	Mineral	Auctioned for CL	Auctioned for ML	Total	No. of Blocks Operationalized
Andhra Pradesh			8	8	2
	Gold		1	1	
	Iron Ore		1	1	
	Limestone		5	5	
	Manganese		1	1	2
Chhattisgarh		1	8	9	
	Gold	1		1	
	Limestone		8	8	
Gujarat			10	10	
	Bauxite		3	3	
	Limestone		7	7	
Jharkhand		3	4	7	
	Gold	1	1	2	
	Graphite		2	2	
	Iron Ore		1	1	
	Limestone	2		2	
Karnataka			24	24	13
	Iron Ore		20	20	13
	Limestone		4	4	
Madhya Pradesh		2	15	17	
	Bauxite		2	2	
	Diamond	1	1	2	
	Gold		2	2	
	Graphite	1	1	2	
	Iron Ore		1	1	
	Limestone		7	7	
	Rock Phosphate		1	1	
Maharashtra		3	14	17	1
	Bauxite		6	6	
	Copper	2		2	1
	Iron Ore		1	1	
	Kyanite		1	1	
	Limestone		3	3	
	Manganese	1	3	4	
Odisha		1	37	38	26
	Chromite		3	3	3
	Graphite		1	1	
	Iron Ore		22	22	14
	Iron Ore & Dolomite		1	1	1
	Iron Ore & Manganese		6	6	5
	Limestone		2	2	
	Manganese	1	2	3	2
Rajasthan			15	15	2
	Limestone		15	15	2
	Grand Total	10	135	145	44

# WAY FORWARD

- **Up scaling of exploration** activities in Greenfield exploration targets, as well as brown field exploration/mining projects after ascertaining future demand by domestic industries.
- Ensure enhanced efforts towards the development of new technologies for conversion of existing mineral resources into viable economic resources.
- With the Government's consistent efforts in the promotion & development of the sector as well as the untapped potential the industry offers, the mining sector is poised to make significant strides and reach its pinnacle in the years to come.

# WAY FORWARD

- The recent amendments to the **MMDR Act** aim to **provide an impetus to mineral exploration and mining**.
- As the government has been pushing for **private participation in the mining and exploration**, it is expected to fast forward the technological progress and growth in the sector.
- Recent reform giving boost to mineral exploration & exploitation, improving ease of doing business in the country and increasing contribution of **mineral production to Gross Domestic Product (GDP)**.

# THANKS!

## ANY QUESTIONS?

YOU CAN FIND ME AT:

- [pkjain3661@gmail.com](mailto:pkjain3661@gmail.com)
- 9405904410