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MINING FOR CRITICAL MINERALS

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MINING FOR CRITICAL MINERALS: WHAT IS THE AUCTION PROCESS, AND WHY IS IT IMPORTANT?

Critical minerals are the resources of the future — and essential for the country's economic development and national security. The government has identified 30 of these minerals, and created a legal framework for their mining in India. This is the first time that rights related to the mining of lithium ore are being auctioned to private parties. Other minerals in the blocks include nickel, copper, molybdenum, and rare earth elements (REEs).

Twenty blocks of critical minerals are currently on auction for commercial mining by the private sector. The mineral blocks contain lithium ore, which has use in batteries and electric vehicles, and another 10 of the 30 minerals that the government declared as "critical" in July. The bidding process began on November 29, and bids can be submitted until January 22 next year. The total value of these blocks is estimated at Rs 45,000 crore, subject to further discoveries or revisions in inferred reserves.

This is the first time that rights related to the mining of lithium ore are being auctioned to private parties. Other minerals in the blocks include nickel, copper, molybdenum, and rare earth elements (REEs). All these minerals are utilised in key supply chains for vehicle batteries, energy storage devices, consumer electronics, and vital industrial processes.

"Lithium is truly a mineral of the future … In today's launch of critical mineral auctions, 2 lithium blocks have been offered. Once operational, they will help to cut down imports and build an #AatmanirbharBharat," Minister for Mines Pralhad Joshi posted on X last month.

Where are these critical mineral blocks, and what rights are being auctioned?

The Notice Inviting Tender (NIT) floated by the Ministry of Mines says the 20 blocks are spread over eight states. There are seven blocks in Tamil Nadu, four in Odisha, three in Bihar, two in Uttar Pradesh, and one each in Gujarat, Jharkhand, Chhattisgarh, and Jammu & Kashmir.

Only four of these 20 blocks are being auctioned for a Mining Licence (ML), which means that once the licence is granted, the licensee can begin mining operations after obtaining the requisite clearances.

Three of these four blocks are in Odisha, and contain deposits of nickel, copper, graphite, and manganese. The fourth block is in Tamil Nadu, and contains deposits of molybdenum.

And what sort of rights are being auctioned for the other 16 blocks?

The remaining 16 blocks are being auctioned for a Composite Licence (CL), which allows the licensee to conduct further geological exploration of the area to ascertain evidence of mineral contents.

Once the licensee collects sufficient information on mineral deposits, they can make an application to the relevant state government to convert their CL to an ML to begin mining operations pending requisite clearances. The licensee has three to five years to complete the prescribed level of exploration, failing which the licence will be withdrawn.

What are the other clearances that will be required before operations begin?

The NIT notes that out of the total concession area of 7,197 hectares (for all 20 blocks), 17 per cent or 1,234 hectares is forest land with status as per the PM Gatishakti portal, the digital platform to facilitate integrated planning and monitoring of infrastructure projects around the country.

Once granted a licence, the licensee will have to obtain 15 approvals and clearances before beginning operations. These include forest clearance, environmental clearance, Gram Sabha consent, etc.

What are the estimated reserves of key critical minerals in these blocks?

The two blocks of lithium reserves, one each in J&K and Chhattisgarh, are up for auction for a CL. According to the NIT, the J&K block has an inferred reserve of a 5.9 million tonne (mt) of bauxite column, which contains more than 3,400 tonnes of lithium metal content. This block also contains more than 70,000 tonnes of titanium metal content.

The block in Chhattisgarh contains lithium and REEs, but no drilling has been conducted yet to estimate total reserves. Nickel ore reserves have been found in three blocks, one each in Bihar, Gujarat, and Odisha. While no drilling has been conducted for the blocks in Bihar and Gujarat, in the Odisha block, the NIT states an inferred value of 2.05 mt of nickel ore, which amounts to 3,908 tonnes of nickel metal content.

This Odisha block is being auctioned for an ML. It is also the only block among the 20 that contains deposits of copper — amounting to 6.09 mt of copper ore and 28,884 tonnes of copper metal content.

How does India currently get its supplies of these minerals?

Minister Joshi told Lok Sabha in August that in FY23, India imported 2,145 tonnes of lithium carbonate and lithium oxide at a total cost of Rs 732 crore. Lithium carbonate contains up to 19 per cent lithium. Lithium oxide, which is usually converted to lithium hydroxide, contains 29 per cent lithium.

India also imported 32,000 tonnes of unwrought nickel at a cost of Rs 6,549 crore, and 1.2 million tonnes of copper ore at a cost of Rs 27,374 crore, in 2022-23.

India is 100 per cent reliant on imports for its lithium and nickel demand. For copper, this figure is 93 per cent.

What will happen after the ongoing round of auctions is over?

The bidding process began after the government declared 30 minerals as "critical", and amended a key law to allow for the mining of three critical minerals, lithium, niobium, and REEs, earlier this year. To attract bidders, the government also specified new royalty rates for critical minerals, matching global benchmarks.

The bid for each block will be awarded on the highest percentage of mineral dispatch value quoted by the bidder. After the ongoing auction is over, the process to auction a second tranche of critical mineral blocks is expected to begin. It is currently unclear if this second tranche would include new lithium reserves found in Rajasthan and Jharkhand.

The Ministry has told Parliament that the Geological Survey of India has taken up 125 projects in the current fiscal to explore critical mineral reserves in the country. In the preceding eight fiscal years, a total of 625 mineral exploration projects were undertaken. The Ministry's Report of the Committee on Identification of Critical Minerals released in June this year recommended that a Centre of Excellence for Critical Minerals should be established to frame policies and incentives for creating a complete value chain of critical minerals in the country.

Source: The Indian Express

IN A FIRST, EXPLORATION LICENCES TO PRIVATE AGENCIES FOR MINERAL PROJECTS

In a first, the Ministry of Mines on Friday directly sanctioned exploration licences to five Notified Private Exploration Agencies (NPEAs) for critical and deep-seated mineral projects. These licensees selected by the Centre sans any auction process would, however, be allowed to participate in the auction of the said minerals, a privilege that was previously not granted.

"In order to give impetus to the exploration of critical and deep-seated minerals, the Ministry of Mines has launched a new scheme to directly sanction exploration projects to NPEAs for critical and deep-seated minerals. Further, the ministry has also allowed these NPEAs to bid for auction for mineral blocks explored by them which was not allowed earlier," the ministry said in a statement.

A total of 17 projects, including 11 of critical minerals, provided to the five NPEAs are in Maharashtra, Madhya Pradesh, Chhattisgarh, Odisha, Gujarat and Karnataka.

Gemcokati Exploration, an NPEA in Maharashtra, acquired the highest six projects. Kolkata-based Maheshwari Mining secured four projects.

WHO GETS WHAT

List of NPEAs allotted with the 17 mineral blocks

	STATE	NO OF PROJECTS	COMMODITY
Gemcokati Exploration	Maharashtra	5	Iron ore
	Madhya Pradesh	1	PGE, Gold, REE
United Exploration India	Chhattisgarh	1	Graphite
Maheshwari Mining	Madhya Pradesh	1	Bauxite
	Chhattisgarh	1	Graphite
	Odisha	2	Graphite
Geovale Services	Gujarat	3	Nickel & PGE
Geoexpore	Karnataka	2	Nickel, Copper, PGE & Associated Minerals
	Chhattisgarh	1	REE

Source: Ministry of Mines

Both Geovale Services and Geoexplore secured three projects each, while United Exploration received one project.

The exploration blocks will contain a variety of minerals, including iron ore, graphite, platinum group elements (PGE), gold, bauxite, nickel, cobalt, and rare earth elements (REE).

A total of Rs 15.88 crore have also been sanctioned from NMET funds, the ministry said. The government through NMET provides an incentive of 25 per cent of the approved project cost to exploration agencies.

Since March 2022, the ministry has notified 16 Private Exploration Agencies to take up exploration projects through state governments, funded by the National Mineral Exploration Trust (NMET).

The Mines and Minerals (Development and Regulation) Act, 1957, MMDR Act was amended through the MMDR Amendment Act, 2021, w.e.f. 28/3/2021 which, inter alia, empowers the central government to notify entities, including private entities, that may undertake prospecting operations.

On August 17, 2023, an amendment to the MMDR Act identified 24 minerals, including graphite, nickel, PGE, REE, potash, among others, as critical and strategic minerals. A comprehensive list of 29 minerals was included in the 'Seventh Schedule' of the Act, opening the possibility for these private exploration agencies to obtain exploration licenses for these minerals.

The decision to allow NPEAs to directly submit projects to the Ministry of Mines will help in cutting out delays in sanctioning projects as well as help in faster execution of projects.

The MMDR Act grants these exploration agencies the opportunity to participate in mining auctions for the mineral blocks they have explored. Enabling exploration agencies to bid for mining rights of the discovered minerals, the government's goal is to draw larger mining companies into the exploration sector.

The ministry anticipates that this provision will also encourage junior mining companies globally to engage in exploration projects in India, supported by NMET funding.

Source: Busniess Standard

INDIA LAUNCHES FIRST PART OF CRITICAL MINERALS AUCTION WORTH $5.4 BLN

India on Wednesday launched the first part of its critical minerals auction worth an estimated 450 billion rupees ($5.40 billion), the country's mines minister said.

Mines minister Pralhad Joshi said the auctions would be held in eight states, including Bihar, Chhattisgarh, Odisha, Tamil Nadu, Jammu & Kashmir and would include minerals such as lithium, potash, vanadium, graphite, and rare earth elements

"I also take this opportunity to invite prospective bidders from across the globe to participate," Joshi said at the launch.

The first tranche, which will end on February 20, will auction 20 blocks and is part of a planned auction of 100 blocks.

The government has also taken up 125 projects to explore critical minerals in the country, the country's mining secretary V. L. Kantha Rao said at the launch event.

The Indian government in June this year, listed 30 minerals, including nickel, titanium, vanadium and tungsten as critical to drive its clean energy push. The federal government had previously listed 12 strategic minerals, including lithium - a critical raw material for electric vehicle batteries.

Lithium reserves were discovered earlier this year in the federally administered region of Jammu and Kashmir. These reserves would be auctioned as part of first tranche, Joshi said on Wednesday.

India will also announce the acquisition of lithium blocks in Australia and Argentina in a month or two, he said at the event.

India's largest power producer NTPC Ltd and state-run miner Coal India are looking at acquiring lithium assets in Australia, a government source separately told Reuters.

India is among the world's top greenhouse gas emitters and has been pursuing overseas pacts to secure key minerals in resource-rich countries such as Australia, Argentina and Chile.

India aims to be a net zero emitter of greenhouse gases by 2070

Source: Reuters

CENTRE ALLOWS NOTIFIED PVT EXPLORATION AGENCIES TO PARTICIPATE IN CRITICAL MINERALS BLOCKS AUCTION

The development will attract bigger mining companies in the exploration arena and is likely to encourage junior mining companies from around the world t...

New Delhi: The mines ministry on Friday said it has permitted notified private exploration agencies to participate in the auction of critical and deep-seated mineral blocks explored by them.

The development will attract bigger mining companies in the exploration arena and is likely to encourage junior mining companies from around the world to come to India and take up exploration projects with National Mineral Exploration Trust (NMET) funding.

The ministry further said it has also launched a new scheme to directly sanction projects for exploration of critical and deep-seated minerals to notified private exploration agencies (NPEAs).

This new scheme will help bring new technologies in the field of exploration.

The decision to allow NPEAs to directly submit projects in Ministry of Mines will help cut delays in sanction of projects as well as fast-track execution of projects. The move aims at giving a fillip to exploration of critical and deep-seated minerals. "Ministry of Mines has launched a new scheme to directly sanction exploration projects to NPEAs for critical and deep-seated minerals. Further, the ministry has also allowed these NPEAs to bid for auction for mineral blocks explored by them which was not allowed earlier," an official statement said. Recently, through an amendment in the MMDR Act, 24 minerals such as graphite and nickel were notified as critical and strategic minerals by Ministry of Mines. The amendment gives the power to grant mineral concession of these minerals to the Centre so that it can prioritise auction of these minerals.

"In tune with the amendments of 2023 and to increase the pace of exploration in the country for these minerals, Ministry of Mines has notified a transformative scheme wherein NPEAs will be directly sanctioning exploration projects for minerals mentioned in Part D of First Schedule and in Seventh Schedule of MMDR Act, 1957 from NMET," the ministry said.

Critical minerals cater to the needs of sectors such as renewable energy, defence and agriculture.

Source: The Hindu

SC SEEKS MOEF'S STAND AS MINES MINISTRY REFUSES CAP ON MINING IN ODISHA

A bench headed by Chief Justice of India (CJI) Dhananjaya Y Chandrachud had in August sought the view of the Centre on imposing a cap on mining while hearing a public interest litigation (PIL) filed by NGO Common Cause, which apprehended that due to excessive mining, iron ore reserves in the state were fast depleting and will get exhausted in another two decades.

At present, there is no cap on iron ore mining in Odisha unlike Goa and Karnataka where the court imposed a cap on the quantity of ore to be extracted.

"The environmental aspect has not been considered in this affidavit," said the bench, also comprising justices JB Pardiwala and Manoj Misra as it told additional solicitor general (ASG) Aishwarya Bhati, "The Ministry of Mines will look at the issue from the point of view of tapping of resources. It is the Ministry of Environment, Forests and Climate Change (MoEFCC) that will give us a view on the overall impact considering inter-generational equity." The MoEF has been granted 4 weeks to file its response.

The affidavit by Mines Ministry filed on December 1 said, "If there is a capping on production of iron ore, then it may distort the mineral production and supply in favour of the existing lessees...This may raise the price of minerals thereby raising the input cost for downstream industries and having a cascading impact on overall inflation."

Bhati told the court that the affidavit by Mines Ministry was prepared after consulting all ministries concerned. However, the court did not find any mention of this fact in the affidavit. Talking of inter-generational equity, the affidavit said, "Inter-generational equity has to be understood holistically taking into account the developmental needs of the country, resource/reserve augmentation and potential for recycling."

Odisha currently contributes to over 54% of the iron ore produced in the country. With total iron ore resources of over 35.280 billion tons, India is one of the leading producers of iron ore in the world. In 2022-23 the total iron ore production in the country was 257.86 million tons, of which Odisha's share was 140.43 million tons, nearly 54.46%.

The affidavit said, "Putting a cap on production of a mineral in a particular state, which is resource rich in that commodity, will jeopardise the economic development of the nation, mineral availability for the downstream industries and the requirement to subserve the huge population base of the country."

Odisha has 58 iron ore producing working mines and even these areas have not been fully explored. At the same time, iron ore resources in the state have shown an increase from 4,180 million tons in year 2000 to 9,737 million tons in 2023 even with tripling of production in the past two decades.

The Centre refuted the claim of the petitioner that iron ore reserves in the state will exhaust in 20 years as "wholly unfounded" and said, "There are abundant iron ore resources in the country and in Odisha to meet the existing and emerging developmental needs of the country."

Senior advocate ADN Rao assisting the court as amicus curiae informed the court that the view of MoEFCC will be crucial as Mines Ministry will only consider the "commercial" aspect. He said that in the past, the court had imposed a cap on mining in Karnataka and Goa based on recommendation of court-appointed expert body called the Central Empowered Committee (CEC). He urged the court that the Centre's response should be forwarded to CEC for its suggestions on whether there should be a cap on Odisha mining as well.

The state was represented by senior advocate Rakesh Dwivedi who said that the Mines Ministry has given a holistic picture as the available resources is in plenty and the ore produced in the state serves as the "backbone" for steel production in the country. "Any curtailment will affect the future of the steel industry," Dwivedi said.

On July 1, the Odisha government informed the court that the total iron ore reserves pertaining to the geologically explored area of the state stands at 9,220.728 million tons. According to the state, the total ore being mined at the 58 working mines annually comes to 227.13 million tons.

Common Cause represented by advocate Prashant Bhushan said that there is a serious cause for concern as at the current rate of mining, the total reserves in the said mining leases would last only for around 20 years. However, the state countered this by stating that over 71% of the state's obvious geological potential (OGP) is yet to be geologically explored. Moreover, the affidavit by Centre pointed out that the current per capita consumption of steel in the country is 77.2 kilogram which is much lower than the global per capita average consumption of 208 kg. By 2030-31, India's consumption is estimated to increase to 150 kg, still lower than the global average.

Source: Hindustan Times

MC EXPLAINS: THE WHY AND HOW OF INDIA'S 100 MT UNDERGROUND COAL MINING TARGET BY 2030

While the aim is to have a very large chunk of energy derived from renewable sources, thermal power will not ride off into the sunset anytime soon. To meet the increasing demand for electricity, the government plans to substantially raise the amount of coal produced via underground mining.

India's energy transition story is a mixed bag in which the country is determined to achieve its target of having 500 gigawatts (GW) of installed power generation capacity from renewable sources by 2030, and at the same time it is also certain about not phasing out coal at least until 2040.

India will continue to rely on coal for power generation for two reasons revolving around energy security and affordability—the unprecedented growth in power demand which is likely to touch 335 GW by 2030 from the current 240 GW, and the high costs involved in energy storage which acts as a barrier to round-the-clock renewable energy supply.

To meet the growing demand, the government has revised its plan to increase the country's coal-fired power generation capacity by 78 GW by 2030 instead of 51 GW as was planned earlier. This means more coal needs to be mined for increased supply to thermal power plants.

Why the push for underground mining?

Since phasing out coal is not an option as of now, the government is looking at ways to mine the fossil fuel in an environmentally responsible manner. Of the two types of coal mining practiced across the world, India currently is heavily dependent on the opencast mining method, which is a surface mining technique that extracts minerals from an open pit in the ground.

The other technique is the underground mining method, which currently accounts for barely 4 percent of India's total coal mining output. It is faster and extracts much higher quantities at one go with better quality coal.

However, opencast mining, despite being cheaper than underground mining, has its own disadvantages such as higher pollution due to overburden removal, the costs of land acquisition followed by rehabilitation and resettlement issues, and displacing forest cover.

The government, therefore, announced In June this year that Coal India Limited (CIL), the country's biggest coal miner, will quadruple its underground mining production to 100 million tonnes (MT) by 2030 from the current 25.5 MT per year.

"Underground coal is superior in terms of quality and will help reduce imports of higher grades of coal. Besides, CO2 equivalent emissions in underground mining are lower by around 24 percent than opencast mines. For every 100 MT of coal produced through underground mines, CO2 emissions are down by about 2.4 MT," PM Prasad, chairman, CIL, told Moneycontrol.

He added there is almost no land degradation in underground mining and it does not impact local communities much in terms of resettlement.

How does CIL plan to achieve its 100 MT target?

Underground mining, however, requires highly skilled workers which CIL said is now possible to deploy through outsourcing to contractors and proliferation of mass production technologies.

As per CIL's roadmap, the company expects coal from underground mines to be around 31-34 MT in FY24, rising to 99-100 MT in FY28. "For underground mining, we plan to focus on continuous miners which is a mass production technology through which the environmental angle is also taken care of," Prasad said.

When asked, a senior CIL official admitted that there was a definite cost difference. "About 1,000 tonnes of coal production through opencast mining costs about Rs 800, while underground mining costs about Rs 2,100-2,200. But we have to consider the fact that deeper deposits of coal can be best extracted through underground mining only. We were initially lagging in mechanisation. But now with the mass production technology through continuous miners, it is possible," said the official, requesting anonymity.

CIL has also devised a strategic plan to phase out imports of heavy earth-moving machinery (HEMM) and underground mining equipment over the next six years. Currently, CIL imports high-capacity equipment such as electric rope shovels, hydraulic shovels, dumpers, crawler dozers, drills, motor graders and front-end loaders, valued at Rs 3,500 crore, incurring additional expenses of Rs 1,000 crore in customs duty. This approach aims to encourage and develop domestically manufactured equipment.

Source: Money Control
By: Sweta Goswami

NPEAS TO DIRECTLY GET EXPLORATION PROJECTS OF CRITICAL MINERALS

5.9 million tonne reserves of Lithium ore in Reasi among notified critical minerals | NPEAs allowed to bid for auction for mineral blocks explored by them

The Ministry of Mines Friday launched a new scheme to directly sanction exploration projects to Notified Private Exploration Agencies (NPEAs) for critical and deep-seated minerals to give impetus to their (critical minerals') exploration.

Further, the Ministry also allowed these NPEAs to bid for auction for mineral blocks explored by them, which was not allowed earlier.

Prior to the launch of this scheme, thorough an Office Memorandum (OM) F. No 6/3/2015-NMET/380, Director National Mineral Exploration Trust (NMET), Ministry of Mines on December 12, 2023 had shared the details of this approved modified scheme (approved for engagement of NPEAs in exploration of critical and strategic minerals by central government) with the Commissioner Secretary (Industries and Commerce), Government of J&K, besides his counterparts in other states and Union Territories, (including Secretary, Department of Industries, Administration of Union Territory of Ladakh).

A copy of this OM was also addressed to the Director, Department of Geology and Mining, Government of Jammu and Kashmir.

Lithium was among critical and strategic minerals, twenty blocks of which as part of the first-ever tranche auction was launched by the Ministry of Mines on November 29, 2023.

The Mines and Minerals (Development and Regulation) Act, 1957, MMDR Act was amended through the MMDR Amendment Act, 2021, with effect from March 28, 2021 which, inter alia, empowers the central government to notify entities, including private entities, that may undertake prospecting operations.

The interested private exploration agencies are required to obtain accreditation in accordance with the scheme of the Ministry of Mines and thereafter apply to the Ministry for their notification under the second proviso to sub-section (1) of section 4 of the Act.

Since March, 2022 the Ministry of Mines has notified 16 Private Exploration Agencies (PEAs) to take up exploration projects through state governments, funded by NMET. Since then, only 17 projects to five NPEAs for Rs 15.88 Cr have been sanctioned from NMET funds. Out of 17 projects sanctioned so far, 11 are of critical minerals.

Recently, through an amendment in the MMDR Act on August 17, 2023, 24 minerals such as Graphite, Nickel, PGE, REE, Potash. Lithium etc. were notified as "Critical and Strategic minerals" by the Ministry of Mines. The amendment confers the power to grant mineral concession of these minerals to the central government so that it (government) can prioritize auction of these minerals looking at the requirements of the country.

"As these critical minerals are indispensable for the growth of our economy, authorising the central government to auction concessions for these critical minerals would increase the pace of auction and early production of the minerals," officials point out.

"The lack of availability of these minerals or concentration of their extraction or processing in a few countries may lead to supply chain vulnerabilities. The future global economy will be underpinned by technologies that depend on minerals such as Lithium, Graphite, Cobalt, Titanium and Rare Earth Elements (REE)," the officials maintain.

"In tune with the amendments of 2023 and to increase the pace of exploration in the country for these minerals, Ministry of Mines has notified a transformative scheme wherein NPEAs will be directly sanctioning exploration projects for minerals mentioned in Part D of First Schedule and in Seventh Schedule of MMDR Act, 1957 from NMET. Further, these agencies will be allowed to bid in auction of mineral blocks explored by them, which was not allowed earlier," read an official statement.

It added that the decision to allow NPEAs to directly submit projects to the Ministry of Mines would help in cutting out delays in sanction of projects as well as help in faster execution of projects. Further, the provision to allow these exploration agencies in bid to auction the explored mineral blocks by them would attract bigger companies in mining in the exploration arena.

"This provision is also expected to encourage junior mining companies from around the world to come to India and take up exploration projects with NMET funding. Overall, this new scheme is expected to bring many players in the exploration arena including international ones and help in bringing new technologies in the field of exploration," the official statement said.

"The scheme marks a big leap forward in promoting exploration of critical minerals vital for realizing "Atmanirbhar Bharat" vision of the Prime Minister of India," the statement added.

Prior to this, the Ministry had also announced to launch "the first ever critical minerals auction process" on November 29.

Notably after Lithium) was categorised as a strategic mineral, along with 23 other minerals, through an amendment by the Centre, the J&K government had provided all the required data related to deposits in Reasi to the Government of India to pave the way for the auction.

J&K Mining Secretary Dr Rashmi Singh, while responding to Greater Kashmir queries with regard to the formalities, preceding the auction, completed by the J&K government, had informed that that they (required formalities) pertained to the area mapping in terms of habitation; demarcation of the entire area etc. and that process was completed by the district administration

with the support of team of the J&K Geology and Mining Department.

"That data was to be provided to the Government of India. Prior to it, the Geological Survey of India (GSI) had already done an extensive study. The required data was provided to the Government of India in October," J&K Mining Secretary had said.

In response to a query pertaining to the post auction process, Dr Singh had said, "Ultimately, all revenue comes to the state or UT concerned; here (in case of Lithium), it will come to J&K."

The data furnished by the Reasi district administration mentions that Lithium deposits are spread in an area of 18913 Kanals and 17 marlas, out of which 3929 kanals include private land; 269 kanals and 7 marlas State land and 14715 Kanals and 10 marlas forest land. With regard to habitation, there are 326 families and 431 structures, including 418 residential structures.

On November 28, while announcing the launch of the first ever critical minerals auction process, the officials had mentioned that royalty rates of critical minerals were rationalized to encourage more participation in auctions.

"The government had specified royalty rates for Platinum Group of Metals (PGM) at 4 percent, Molybdenum at 7.5 percent, Glauconite and Potash at 2.5percent in March, 2022. On October 12, 2023 the government specified royalty rates for Lithium at 3 percent, Niobium at 3 percent and Rare Earth Elements at 1 percent," the officials had said.

In August this year, the Parliament had passed the Mines and Minerals (Development and Regulation) Amendment Bill, 2023 providing for the omission of six minerals, including Lithium from the list of 12 atomic minerals.

Reforms brought in through amendments pertained to omission of 6 minerals from the list of 12 atomic minerals specified in Part-B of the First Schedule of the Act, namely, Lithium bearing minerals; Titanium bearing minerals and ores, Beryl and other beryllium bearing minerals; Niobium and Tantalum bearing minerals and Zirconium-bearing minerals.

Source: Greater Kashmir

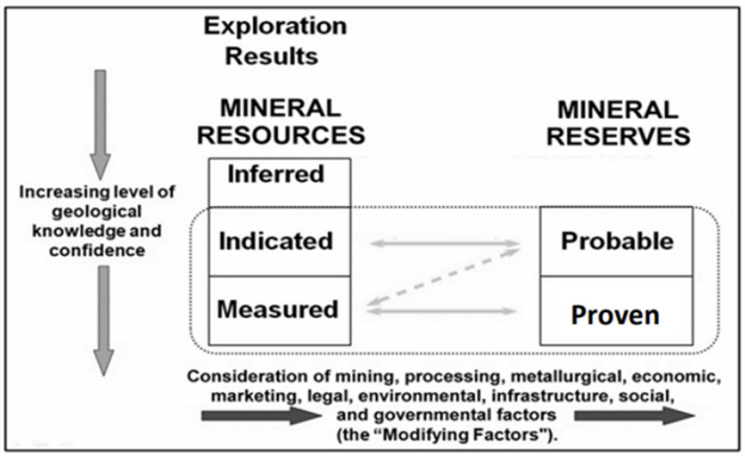
AN OVERVIEW OF INDIA'S LITHIUM DEPOSITS AND THEIR GEOLOGICAL SURVEY STATUS REPORT

India has identified a game-changer for its clean energy transition with the discovery of lithium deposits in Jammu & Kashmir as well as in Chhattisgarh. This not only excites India, but also holds promise for global energy needs. Initial findings in Mandya, Karnataka, uncovered about 1,600 tonnes of lithium, with plans for commercial production (PIB, 2021). India's exploration in states like Arunachal Pradesh, Andhra Pradesh, Chhattisgarh, Jharkhand, and Rajasthan shows a commitment to using its own lithium at a time when countries around the world are looking to reduce their dependency on foreign nations for raw materials.

Before we delve deeper, it is important to understand the difference between resource and reserve. There is a simple thumb rule: 'All Reserves are Resources, but all Resources are not Reserves'. This is because of the associated economic value. A reserve is defined as a proven amount of a given mineral present in sufficient quantity as to support commercial extraction within the prevailing 'modifying factors', i.e. the legal, environmental, social and technological factors that might affect or restrict this extraction.

Characteristics of India's Deposits

In India, lithium-bearing pegmatites are confined to Precambrian rocks, ranging in age from 1,345 to 950 million years ago. India hosts a spectrum of lithium deposits, including spodumene-bearing pegmatites, lithium micas, and



lithium-enriched clays.

Each deposit type poses unique extraction challenges and opportunities. Lithium also occurs in brines of several closed basins where lithium compounds are precipitated in the late stage of evaporation (Prasad, Umeshwar 2016).

The two notable lithium discoveries that have put India under the limelight are the Salal-Haimna Lithium, Titanium and Bauxite (Aluminous Laterite) Block, and the Katghora Lithium and Rare Earth Elements (REE) Block.

India's Lithium Landscape

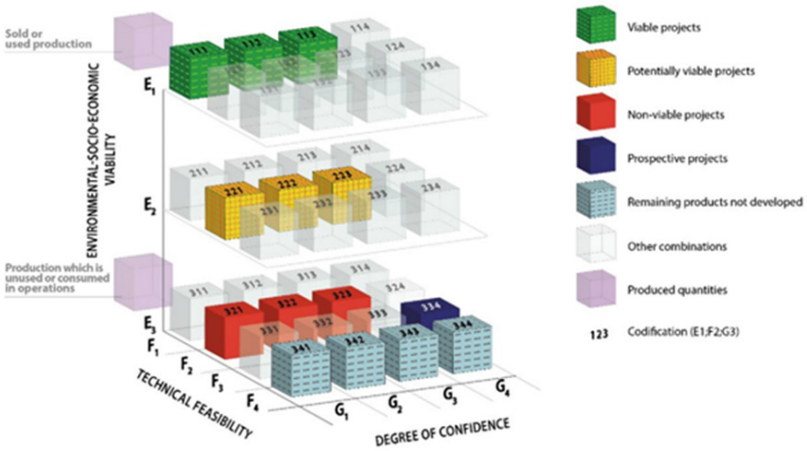
To understand the significance of these deposits, let us understand the levels

of mineral exploration. According to the United Nations Framework Classification for Resources (UNFC) , exploration stages are designated using the labels G4, G3, G2, and G1 levels. Each level represents a progressive step in exploration, from initial identification to a detailed understanding of resource potential (UNFC, 2016).

Let us start with G4. This stage represents reconnaissance, involving initial surveys and a broad assessment to identify potential resources. Advancing to G3, both General Exploration and Preliminary Exploration are conducted, refining data and initiating feasibility studies. Moving further to G2, the focus shifts to General Exploration, and in-depth studies confirm the quantity and quality of resources. Finally, G1 signifies the Detailed Exploration stage, involving comprehensive surveys and studies to confirm the presence and characteristics of resources.

In district Reasi, Jammu & Kashmir, the Salal-Haimna Lithium, Titanium, and Bauxite Block covers 317.638 square units, and is currently undergoing G3 Preliminary Exploration for a Composite License.

Spearheaded by the Geological Survey of India, Lucknow, geochemical surveys have revealed associations between elevated Al2O3 and lithium values, supporting the potentiality of bauxite. Results from 37 boreholes with a total meterage of 487.55m, maintained at a 200m spacing, show promising inferred mineral resources: 5.9 million tonnes of lithium, 5.1346 million tonnes of titanium, and 13.2 million tonnes of aluminous laterite.



The geological trend indicates a layered rock slab/ wedge, justifying further exploration for critical/ strategic mineral mineralization. Recommending a Composite License auction aims to elevate exploration and fully assess the economic potential of the deposits. The hilly topography, with elevation ranging from 487m to 1038m, sets the stage for a comprehensive exploration journey in this mineral-rich block (MoM, 2023).

Exploration in the Katghora Lithium and REE Block, Korba, Chhattisgarh, is at the G4 Reconnaissance survey stage, propelled by the Geological Survey of India, Raipur.

Geo-chemical mapping reveals promising lithium anomalies in composite stream sediment samples, ranging from 82.606 to 155 parts per million. Bedrock samples divulge lithium content in granitoids, homophanus leucogranite, granitic pegmatite, and pegmatite rock structures. Inductively coupled plasma mass spectrometry (ICPMS) highlights elevated lithium content in pink micas, emphasizing cores over margins.

Furthermore, electron microprobe analysis (EPMA) studies confirm the presence of REE phases like apatite, monazite, xenotime, and churchite in homophanus leucogranite. Although drilling is yet to commence, the NW-SE trending block exhibits a 60-70° dip towards the Northeast. The justification for further exploration lies in the confirmed presence of lithium and REE mineralization, urging the recommendation for a Composite License auction. With a total concession area of 256.12 hectares, Katghora emerges as a promising frontier in the pursuit of unlocking the economic potential of lithium and REE resources (MoM, 2023).

The expected timelines for these exploration activities, may vary from five to 10 years. Potentially, even after reporting attractive commercial parameters the impact of this discovery will be realized only after 2030.

Nevertheless, as India charts its course in harnessing "white gold," a thoughtful approach blending technological innovation with environmental consciousness will define a sustainable and prosperous future.

Article By -- Soumita Das
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GOVT TO PAY 30% UPFRONT IN CRITICAL MINERAL EXPLORATION

Advance payments, a first in India's mining sector, are expected to speed up the exploration of these minerals, in a country where mining remains dominated by public sector companies

New Delhi: The Union government plans to make advance payments to private companies selected to scout for critical minerals to get work on these projects started quickly, a mines ministry document showed.

According to the ministry's proposed scheme of engagement, 30% of the project cost would be paid upfront once the selected company, called a notified private exploration agency (NPEA), submits a bank guarantee equal to the value of the advance to the National Mineral Exploration Trust (NMET).

The guarantee should be valid for at least 60 days beyond the date of completion of the project and acceptance of the geological report by NMET. The guarantee will be released within 30 days of settling the advance payment.

Advance payments, a first in India's mining sector, are expected to speed up the exploration of these minerals, in a country where mining remains dominated by public sector companies.

India recently permitted private companies to scout for 29 critical and deep-seated minerals including cobalt, lithium, nickel, gold, silver, and copper, which are hard to find and reach, compared with surface minerals or bulk minerals.

Through amendments in the Mines and Minerals (Development and Regulation) Act, 1957, a new mineral concession, namely exploration licence, has been introduced and the private sector allowed to use this licence for critical and strategic mineral exploration.

"As exploration licences are being issued for the first time in India, the government wants to incentivize specialists to participate, especially junior mining companies who have the know-how for exploration of critical and strategic minerals. These minerals are present in very low concentrations naturally, and therefore, more difficult to find than bulk minerals. Unless the ecosystem is made more investor-friendly, specialists for the exploration of deep-seated and critical minerals may not come to India this time around as well," said Ritabrata Ghosh, vice-president and sector head, Icra Ltd.

The advance paid will be adjusted in the first bill submitted by the NPEA, and a utilization certificate of the amount has to be submitted along with the bills.

Further payment will be made on reimbursement basis against the bills submitted.

NPEAs will be free to approach the NMET to explore the minerals of their choice. They will also be allowed to bid in auction of mineral blocks explored by them, which was not allowed earlier.

This is to reduce delays in sanctioning projects and speed up execution. Further, the provision to allow these exploration agencies in bids for the auction of already-explored mineral blocks will attract bigger companies in mining in the exploration arena.

This provision is also expected to encourage junior mining companies from around the world to come to India and take up exploration projects with NMET funding.

The government also plans to check monopolies in critical minerals by allowing one applicant to submit only a single bid in an auction of a mineral block; If a bidder submits more than one bid in an auction of a mineral block, or an affiliate submits bid in the same auction where such bidder has already submitted a bid, the government will reject both bids.

The increased focus on critical minerals is part of India's ambitious plans to achieve energy transition and strengthen the domestic manufacturing sector, in which these minerals play a key role. China dominates the critical and rare earth mineral supply chain, but India and other countries in the Mineral Security Partnership (MSP) are looking to diversify their sources.

Source: MINT

Article By - Subhash Narayan

UNLOCK THE POTENTIAL: YOUR MIND IS THE MOST VALUABLE REAL ESTATE

Today where the world is dominated by cityscapes and sprawling landscapes that fetch exorbitant prices, there exists a territory far more valuable than any piece of land or architectural marvel – the human mind. It is, without a doubt, the most valuable real estate in existence which is often underestimated and overlooked.

If you imagine your mind as a vast landscape, with immense potential, then great thoughts, ideas, as well as innovations sprout from this fertile ground.in other words our mind can be a birthplace of creativity, the incubator of dreams, and the epicenter of innovation. There is a condition that much like a piece of prime real estate, it too requires nurturing, cultivation, and investment to reach its full potential.

The human mind holds the power to shape destinies, transcend boundaries, and spark revolutions. Actually it is the catalyst behind groundbreaking inventions, revolutionary theories, and artistic masterpieces.

Unlocking the potential of your mind is equal to discovering a hidden gem within yourself.it involves a journey of self-discovery, continuous learning, and sharpening of skills. Education, exposure to diverse perspectives, and a thirst for knowledge serve as keys to unlocking the vast reservoirs of potential within.

Stress management, mindfulness practices and seeking support when needed are vital aspects of maintaining the health of this valuable real estate.

Ultimately, recognizing and harnessing the potential of your mind is the most rewarding investment one can make. As you embark on this journey, remember: your mind is the most valuable real estate – unlock its potential, and the possibilities are endless.

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