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Geonesis

(A GEMCO KATI INITIATIVE)

Indian Mining & Exploration Updates

VOLUME 8, ISSUE 3

MARCH 2020

GROWTH NEEDS SUSTAINABLE MINING

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GROWTH NEEDS SUSTAINABLE MINING

The mineral development and mining sectors are a significant contributor to India's GDP growth as there is a strong correlation between their growth and that of the manufacturing sector.

India is well endowed in terms of minerals. The country produces as many as 87 minerals, including four fuel minerals, 10 metallic minerals, 47 non-metallic minerals, 3 atomic minerals and 23 minor minerals (including building and other materials). The mineral development and mining sectors are a significant contributor to India's GDP growth as there is a strong correlation between their growth and that of the manufacturing sector. They thus become catalysts for the growth of basic industries such as power, steel, cement etc.

However, there are many issues that need to be addressed in respect of different, gradually-evolving facets of mining operations, i.e. technological, social, legal and, the most important, the sustainability of mining operations. The mining sector therefore is of importance to India's economy and contributes about 3 per cent to GDP. But the sector's contribution to GDP should more than double for the country to reach a double-digit growth rate. The coal mining sector has embarked on a plan to achieve 15 per cent growth y-o-y basis to catch up with the required pace.

Coal India Limited is poised to achieve its 1 billion tonnes target by 2023-24. Minerals and metals are essential materials for the functioning of modern societies and economies. Mining provides great economic opportunities for resource-rich countries. However, the process of mining creates challenges and risks for the well-being of people and the environment. A key challenge for these countries is to manage mining in a way that contributes to – and does not jeopardize – sustainable development. The management of mining at all stages, from exploration to mine closure, rThough, most countries have adopted rules on environmental and social impact assessment and mine closure, implementation lags behind. The mining industry has the power to take a key role in creating a more sustainable planet. The crux of any growing self-sustaining economy lies in adoption of best techno-economic methods with greater scale of operations to exploit mineral resources which entails higher production, productivity and safety in mining operations.

Aligning with this, over the years, mechanisation has become an important strategy in the design and operation of modern mines. The objectives of mine mechanisation are

varied, but include improved safety, working conditions and productivity. As India is still at an early stage on the mineral consumption curve – which implies that as the GDP of the country increases, its mineral consumption would grow at a rapid pace – there is need of mechanisation.

The demand for mining equipment such as Draglines, Bucket Wheel Excavator, In-pit Crushing & Conveying, High Capacity Rear Dumpers, High Capacity Electric Rope Shovels & Hydraulic Excavators, Crawler Dozers, Rotary Blast Hole Drills, Motor Graders, Surface Miners, Highwall Miners, Continuous Miners etc. are on the rise . Apart from mine mechanisation, modern mine planning software would also play a crucial role in the operation of future mining operations and projects.

Every aspect of the mining industry is today using some form of mine planning software. From exploration to rehabilitation, the use of software is becoming more and more widespread. For a mining company, sustainable practices are at the core of its license to operate. More and more companies have come to realize that the only way to be economically viable is to operate in an environmentally and socially responsible manner.

The themes of climate change, resource scarcity and energy efficiency strongly resonate with the mining industry as they have been grappling with these topics in their day-to-day business. All mining companies need to be strongly committed to sustainability and work for a better tomorrow. The sustainable development discussion shall not be confined to the environmental or legal aspects, but increasingly focus on innovative design and economic return. The practices of environment and social impact monitoring and auditing, community consultation, engagement and protection, concurrent and mine closure practices are bound to weigh heavily in any advanced mining operations of the future.

I believe that in the present Indian economy, mining would continue to be an activity to be reckoned with as it provides basic raw materials to several significant industries, including thermal, iron and steel, petroleum and natural gas, electrical and electronics equipment among others. The importance of embracing eco-friendly technical advancements from planning to operational stages of mining would be paramount for sustaining the desired GDP growth of our country.



WHY MINE AUCTION POLICY NEEDS A RELOOK

High premium for auction of iron-ore mining leases raises product prices. There is also a chance of market dominance by a few players

The auctioning of mining leases in Odisha has begun and is almost half way through. The current auction of mining leases marks the end of the existing regime and the beginning of a new, anxiety-laden era.

The Mines and Minerals (Development and Regulation) Act was amended in 2015, extending the life of leases of both merchant and end-users. The mining leases of merchant miners, expiring on March 31, 2020, are to be re-allotted through auction, for which the Government of Odisha has invited bids through the tendering process. The government's initiatives and advance actions are commendable, as they are aimed at ensuring continuity of operation and avoiding disruptions. Odisha is a major mineral-producing State, accounting for more than 50 per cent of the iron ore production in India.

As of now, auctioning of 10 out of 19 working mines has been completed. The offers have been invited through a two-stage process. In the first stage, the technically-qualified bidders are required to quote their initial price offer. The price offer, a bidding parameter, is the percentage of revenue to be shared with the government. The revenue for the purpose of sharing is the value of the mineral dispatched, an amount equal to the product of the mineral dispatched in a month and its sale price as published by Indian Bureau of Mines.

The technically qualified bidders are ranked on the basis of the descending initial price offer submitted. The highest offer is set as the floor price for the second round of bidding. The highest bidder in second round of bidding will be declared as the preferred bidder.

It is significant to note that the 10 mining leases auctioned so far have fetched a revenue sharing premium of 95.2 per cent, 98.05 per cent, 107.55 per cent, 118.05 per cent, 132 per cent, 135 per cent, 110 per cent, 90.90 per cent, 92.7 per cent, 141.25 per cent, respectively. It is also important to note that out of these, six major mining leases account for 91 per cent of the value of the total estimated reserves and 92 per cent of the volume of the total reserves. With these concluded auctions, there is a significant increase in the share of iron ore production by the end-use steel-makers, and consequently, a sharp fall in the share of merchant miners.

Mine classification

Such exorbitant winning premiums are a matter of concern. The categorisation of mines is a prime cause for such an outcome. The government classifies the mines into two categories – captive and non-captive/open. While some mines are reserved for the captive use of end-users, certain others are earmarked to be

in the open category.

While for a mine reserved for the end use, only end-users can bid for their own requirement, the open category blocks can be bid by both captive as well as merchant miners. The exclusivity available in the case of iron ore blocks reserved for end-users is not available to merchant/standalone miners. This has led to the absence of a level playing field in the competitive bidding space, and has put merchant miners in a distinct disadvantageous position.

It may be worthwhile to mention that the concept of captive use, prevalent in India, is globally not practised. The concept and history of captive use was followed during the early days of Independence, when steel-makers needed assurance of resource supply by way of allotment of mines for end-use, at a time when the idea of mining as an independent industry was nascent and not attractive. This concept has limited relevance today, when the idea of resource comfort to an industry is certainly not limited to the allotment of a captive resource base. However, the legacy still continues.



High premium and costs

The revenue share (premium) that a bidder must pay the government is a cost to him. In addition to this, the bidder must also pay royalty and other statutory dues, such as the contribution to the district mineral fund etc, which accounts for about 17 per cent of the sales revenue. Over and above this, the bidder has to pay a GST of 18 per cent. The bids so far have fetched a premium of 95.2 per cent-141.25 per cent. This clearly shows that for every ₹100 a bidder earns, the cost incurred is much more than revenue – in some cases as high as 190 per cent of revenue – and this doesn't include wages, salaries or cost of operations, leave alone the profit margin. If these are taken into account, the cost will be significantly more than the revenue.

This raises a fundamental question: how will a winning bidder sustain himself? The exorbitant bidding premiums clearly defy any logic and economics. A merchant miner cannot bid premium more than 50 per cent (approximately) to sustain himself. The present auction policy enables and encourages a captive miner to bid a premium much higher than merchant miner, because it is possible for an end-user to absorb the high cost of revenue share in his product price, with the availability of a stream of value-added activities – which are absent in the case of merchant miners. The privilege, possibility and flexibility of accommodating and absorbing the high revenue share as a cost is available only to a captive player.

This also brings forth the important dimension of product pricing of steel-makers in India. In a free market scenario, prices can be increased to absorb the cost and pass expenses on to the consumer. In such a situation, the doctrine of "robbing Peter to pay

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Paul” works in favour of the captive users, because whatever amount they pay as cost towards revenue sharing is ultimately recovered from the consumer.

Unfair dominance

Classification is the culprit here. But this rigid classification seems to be going away. Today, captive users can sell 25 per cent of iron ore products from their mines in the open market. Earlier, end-users were required to use the minerals extracted from their mines solely and exclusively for self-consumption. Going ahead, the policy may also relax the present cap of 25 per cent.

The distinction between both the categories is getting diluted and becoming irrelevant in changed times. This has given rise to a very disturbing situation, where the space of standalone miners is increasingly occupied by the captive miners. Among the auctioned mines so far, excepting one case, all other mines which were earlier operated by merchant miners now will be

owned and operated by the end-users. This may not auger well for the mining industry and the market.

The biggest gainer appears to be the government. The government seems to relish the idea that it will get maximum revenue from successful auctioning at very high premiums. The question is at what cost, and whose cost? Policy is vulnerable to throw up a situation where maximum public revenue may not be compatible with public good. Even the idea of maximum revenue is questionable, because it is dependent upon a single parameter ie the price at which goods are sold, which in this case is the IBM-declared price.

The design and role of market forces, when the number of winning bidders are limited and the sector is heading for a polarised framework with few players dominating the scene, will play a significant role in the coming years in influencing and determining so-called market price. Time will reveal what happens next.

FIVE RECENT DEVELOPMENTS IN ODISHA MINES AUCTION 2020

To learn how the mines auction 2020 unfolds, be a part of SteelMint Events’ 4th Indian Iron ore, Pellet and DRI Summit

In line with MMDR (Amendment) Act 2015, Odisha govt. put up 20 merchant iron ore mines for auction which were due to expire in March 2020. Upon receiving aggressive participation from 86 companies, Odisha govt. has successfully auctioned 17 mines, out of which 5 were reserved for captive and remaining 12 for merchant use. The leases put up for auction are expected to produce around 65-70 MnT iron ore in FY20 versus 50-55 MnT in FY19, against an EC limit of 80-85 MnT. Auction process of RP Sao Guali mines is underway. However auction process of Badampahar has been put on hold due to some ongoing legal issues.

1. Supreme Court holds transfer of Essel Jilling Mines till Further Order - Supreme Court has put a hold on transfer of Essel’s Jilling iron ore mines auctioned under MMDR act, amid a writ petition filed by Essel Mining Industries Ltd, a subsidiary company of Aditya Birla. The

operations were suspended in 2014 following SC order owing to lack of requisite clearances. In the recent writ petition put up, the miner said that it could not continue mining operations for 39 months despite having all statutory clearances and for reasons beyond its control. Hence the miner has now requested for extension of the mining lease period on account of time lost in litigation. The case will be heard in third week of March.

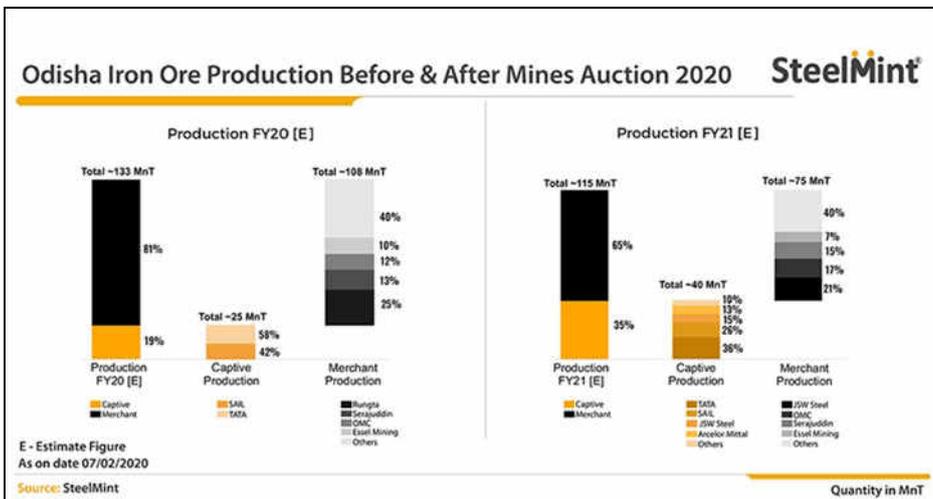
Jilling Langalota mines received aggressive participation from bidders. Outstripping other bidders, Shyam Ore emerged as preferred bidder for the mine quoting a premium of 135%, as per sources.

2. Ministry invites suggestions on Draft rules - The Ministry of Mines has invited comments/suggestions on draft Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Amendment Rules, 2020 and draft Mineral (Auction) Amendment Rules, 2020. The Ministry has invited suggestions from the general public, Government of States and Union Territories, mining industry, stake holders, industry associations, and other persons and entities concerned. The key highlights of the draft are as follows:

i) The new lessee shall immediately, but not later than ninety days from the date of issue of the Letter of Intent, apply for all necessary rights, approvals, clearances, licenses and the like under the applicable statutes/rules/regulations afresh for obtaining the necessary clearances to enable further continuance of the mining operations beyond two years, as per the proviso to sub-section (2) of section 8B of the Act.

ii) Previous lessee shall remove all material, machines, structures and the like that may hamper or act as impediments to the mining activities by the new lessee, as soon as possible, but not later than thirty days after the issue of a notice in this regard by the new lessee to the old lessee, failing which the new lessee shall be

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at freedom to remove such obstruction under intimation to the state government at the cost and risk of the previous lessee.

3. Recap of auction results – Out of 17 mines auctioned, JSW Steel won four mines, ArcelorMittal and Fomento bagged one mine each. Few merchant miners like Serajuddin, KN Ram and Ghanshyam Mishra were able to retain their mines. Auctions witnessed high premium upto 154% over reserve price.

The premium is the key figure to evaluate the bids. It's a percentage of the price of the iron ore that is set by the Indian Bureau of Mines (IBM) each month for different states and grades. The high premiums are set to put iron ore prices on a different orbit altogether. Since many of the large companies are emerging as the winners, they will become the new price makers in the market.

4. JSW Steel holds 21% share of merchant iron ore supplies - After winning four iron ore mines in Odisha auctions 2020 (2

captive & 2 merchant), JSW Steel's share in Odisha's merchant iron ore supplies in FY21 roughly stands at 21%, as per Steel-Mint's analysis. Other major merchant suppliers of iron ore in the state are – OMC, Serajuddin & Essel Mining.

JSW Steel has won two mines which were reserved for merchant namely Nuagaon & Jajang having total EC limit of 22.1 MnT pa. Govt has emphasized in Mineral Law (Amendment) Ordinance 2020 that a successful bidder after obtaining all statutory clearances needs to produce in the first two years at least 80% of what the mine actually produced in the preceding two years.

5. Odisha production expected to increase by 20% in CY19 - Odisha's iron ore production is likely to increase by ~20% Y-o-Y for FY20 to 130-135 MnT against 110 MnT in FY19. State has produced ~ 103 MnT in first nine months of FY20 (Apr-Dec 2019). We expect miners to utilize their production limit by Feb end.

INDIA: POTENTIAL INVESTORS SEEK MORE CLARITY ON COMMERCIAL COAL MINING NORMS

Potential private investors have sought more clarity on the pricing mechanism proposed for the much-anticipated auction for commercial coal mining. In three separate meetings with Union coal ministry officials, some industry personnel also pointed out that the efficiency parameters specified by the government's discussion paper on the subject are too stringent and the coal ministry must relax the operational timelines proposed in it.

Few private firm representatives demanded that the offered mines should come up with "pre-embedded" clearances to reduce the time required for starting production. The industry pointed out that the paper was silent on infrastructure for coal evacuation and sought the Indian Railways' inputs on the subject.

After the early January Cabinet decision to remove end-use restrictions on miners in the sector that virtually abolished the concept of captive coal mining, the Union coal ministry had floated a discussion paper which said that the ministry is developing a 'National Coal Index' to fix the price of coal for commercial mining, which would include a weighted combination of monthly prices of coal in various channels of transaction. Stakeholders sought more clarity on the pricing mechanism and said that the methodology should be transparent and should be put up in the public domain. Some of them also said that the floor



price bench-marked for the auctions – 4% of the revenue share and increment in multiples of 1% – is too high and should be reconsidered.

As reported by FE earlier, the Cabinet decision dismantling the end use curbs could prompt foreign coal companies and also local power and steel companies to take part in the auctions to be held to re-allocate the captive blocks cancelled by the Supreme Court in 2014. So far, only 96 of the 204 blocks cancelled by the apex court have been re-allocated – including 60 assigned to PSUs on a nomination basis and 36 auctioned off – and just 29 of them are operational.

While steel and power firms have interest in coal mining as it gels well with their businesses if unhindered open market sales of surplus coal is allowed, they have been largely shying away from the auctions held so far – even 25% open-market sales allowed in February 2019 was not enough to kindle their interest in these coal blocks.

The Cabinet, via an amendment to the MMDR Act, also extended the policy of composite mining licence, now in force for unexplored blocks of most non-coal minerals, to the coal sector as well, adding to certainty of tenure from the prospecting to the production stages. A section of the industry demanded that the

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coal ministry must reimburse the exploration costs to the companies for unviable mines. Other demands include incentives on cleaner mining technology such as coal gasification, liquefaction and coal bed methane and permission to use associated minerals like shale, sandstone and fireclay for ancillary activities. There

was also requests for more coal blocks in Odisha. Companies which participated in the stakeholder meetings held in New Delhi, Mumbai and Kolkata include JSW Energy, Tata Power, Adani Enterprises, CESC, JSPL and Reliance Power.

LOK SABHA CLEARS MINES AND MINERAL LAWS BILL, OPENS UP COAL SECTOR FOR COMMERCIAL MINING

The Mines and Mineral Laws (Amendment) Bill also removed the current end-use restrictions, thereby allowing for wider participation and competition in auction.

In a move that could give a big leg-up to the mining sector that has been stagnating, the Lok Sabha Friday, amidst ruckus from Opposition benches, cleared the Mines and Mineral Laws (Amendment) Bill.

The bill will open up the coal sector for commercial mining and allow domestic as well as global companies to invest.

Once enacted, the bill will pave the way for the central government to go ahead with the auction of coal mines for commercial purposes by even allowing companies, which do not possess any prior coal mining experience in India, but are financially strong and or have mining experience in other minerals or in other countries to participate in auction of coal/lignite blocks.

This would also allow the implementation of the 100 per cent foreign direct investment through automatic route for sale of coal.

The amendments also removed the current end-use restrictions that are in place for those participating in auctions.

Removing the restrictions will allow a successful bidder or allottee to utilise mined coal for own consumption, sale or for any other purpose specified by the government, thereby allowing for wider participation and competition in auction.

These two crucial aspects – liberalising the eligibility criteria for participating in the auction and removal of end-use restrictions – will attract large investments in the sector and foreign direct investment too.

The bill, once it is passed by the Rajya Sabha, will replace the Mineral Laws (Amendment) Ordinance, 2020.

The ordinance, which was cleared by the cabinet in January this year, had brought amendments to the Mines and Minerals (Development and Regulation) Act, 1957, and the Coal Mines (Special Provisions) Act, 2015. The ordinance was promulgated

on 10 January.

Other key features of the amended bill

Under the Coal Mines (Special Provisions) Act, 2015, there was no provision for grant of composite prospecting licence-cum-mining-licence in respect of coal/lignite.

But the amended bill has this provision.

A coal or lignite block could either be allocated for prospecting or mining license. A prospecting license is given for exploring and finding mineral deposits, while granting a composite license help increase the inventory of coal/lignite blocks for allocation by making available coal blocks with different grades and in a wide geographical distribution.



Another restrictive provision in the Mines and Minerals (Development and Regulation) Act, 1957, which required prior approval of the central government even in cases where the allocation or reservation of coal/lignite block has been made by the Centre itself, has been done away

with.

This will go a long way in reducing the time taken for operationalisation of coal/lignite mines.

Expeditious reallocation of license to new lessees

Under the Mines and Minerals (Development and Regulation) Act, 1957, a new lessee who won a mining lease for specified minerals other than coal, lignite and atomic minerals could start operations only after acquiring all statutory clearances.

But now a new section, 8B, has been introduced in the amended bill that extends the various statutory clearances given to the previous allottee to the new lessee for a two-year period.

The new allottee can continue mining operation during this time. But he will have to acquire all the clearances within this two-year

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period.

The objective of the amendment is to ensure the continuity of production of minerals, said an official of the Ministry of Mines.

Besides, the central government will have the power to prescribe the conditions for the new lessees to commence production within the time period of two years for starting the production.

This will promote ease of doing business, according to a government statement issued in January after the ordinance was approved, and will benefit the holders of auctioned brown-field mining leases on expiry of their lease period starting from March 2020 and then from March 2030. For instance, the working mining leases of Odisha are expiring during this year.

These leases produced about 58 million tonnes of iron ore, 1.80 million tonnes of chromite and 0.77 million tonnes of manganese during the year 2018-19, the statement said.

Statutory clearances required to start the mining operations for the new leases have to be granted expeditiously to enable the new lessees to continue the mining operations.

Under the old rules, the new lessee has to obtain 20 approvals to start the mining operations, of which 9 are related to different central ministries and the remaining are from the state governments.

In normal course, the minimum time period required to obtain these approvals vary from two to three years. This whole process would delay the commencement of mining operations by the new lessees, according to the statement.

HIGHER BAUXITE SOURCING HELPS VEDANTA CUT ALUMINA-MAKING COST BY 8%

Alumina production at Lanjigarh was up 16 per cent y-o-y to 476,000 tonnes

Higher sourcing of bauxite from local supplies helped Vedanta to prune cost of making alumina at its Lanjigarh refinery by 8 per cent year-on-year (y-o-y) to \$269 per tonne in Q3 of this fiscal.

Alumina production at Lanjigarh was up 16 per cent y-o-y to 476,000 tonnes. Lower alumina costs also led to cut in Cost of Production (CoP) of aluminium at \$1691 per tonne. Vedanta Ltd said at a recent investor presentation that local bauxite was now meeting over half of the company's total requirement.

During April-December 2019, output at Lanjigarh refinery was up 24 per cent to reach 1.33 million tonne (MT) whereas the cost of production was down 16 per cent y-o-y at \$281 per tonne. Pursuant to falling alumina costs and structural cost reduction measures embarked on by Vedanta, aluminium CoP during this period fell 12 per cent to \$1769 per tonne.

Vedanta plans to enhance coal linkages through participation in Tranche V and VI coal auctions. It is eyeing coal security of 90 per cent, up from 72 per cent now. The company is also attaching thrust on ramp up of the Lanjigarh alumina refinery in a staggered manner. In the first phase, capacity of the refinery will be scaled up to 2.7 million tonne per annum (mtpa) with medium term expansion to 6 mtpa. The ultimate capacity of the alumina refining unit is envisaged at 6 mtpa.

On bauxite sourcing, Vedanta is making continuous efforts to step up output from its captive mine. Besides, efforts are on to ramp up supplies from Kodingamali bauxite mine in Odisha under the leasehold of Odisha Mining Corporation (OMC). It is also looking to explore new resources under the New Mineral Policy.

To cut down on logistics costs, Vedanta is shifting focus from road to rail. For streamlining procurement efficiencies, the company has struck strategic partnerships with key supplies besides entering into long-term contracts.

EXPLAINED: HOW GEOLOGISTS DETECTED GOLD IN SONBHADRA, ESTIMATED ITS VALUE

GSI director general M Sridhar said that the GSI Northern Region carried out exploration in 1998-99 and 1999-2000. The results, however, were not encouraging enough to suggest major resources for gold in Sonbhadra.

The statement came after news reports stated that the gold available is 3,350 tonnes; the GSI clarified that its estimates are 160 kg.

In a recent statement (The Indian Express, February 23), the Geographical Survey of India (GSI) provided estimates for the amount of gold that can be extracted from a site in Sonbhadra district of Uttar Pradesh. The probable resource is 52,806.25 tonnes of ore, with an average grade of 3.03 grams per tonne, which means the total gold that can be extracted is 160 kg, it said. The statement came after news reports stated that the gold available is 3,350 tonnes; the GSI clarified that its estimates are 160 kg.

What is this site with ore?

It is near a village called Mahuli, around 70 km from Sonbhadra district's headquarters of Roberstganj, and just 10 km from Jharkhand. The land is mainly forest area and inhabited mostly by tribals and members of backward classes. Locals said stories of gold underground have been passed down generations, giving rise to the name Sonpahari, the hill where the reserves have been estimated.

The site is part of the Mahakoshal region that includes parts of UP, Madhya Pradesh and Jharkhand. It is known to be potentially mineral-rich, said GSI Lucknow director Ghanshyam Tiwari. "This is something we also know through the geological map we keep updating, and that is why this whole Mahakoshal region has always interested us. We keep studying the rocks here and search for potential mineral reserves. That is what exactly

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what the GSI is for," he said.

How long has the GSI known about the ore and its mineral content?

The GSI Northern Region carried out exploration in 1998-99 and 1999-2000, GSI director general M Sridhar said. The results, however, were not encouraging enough to suggest major resources for gold in Sonbhadra. "We found that there is an estimated resource of 52,806.25 tonnes of ore with 3.03 grams per tonne gold. This information was not significant for us as we know that extracting 160 kg gold, or even less, from more than 52,000 tonnes can cost a lot," said Ashish Kumar Nath, director & PRO, GSI Central Headquarters.

The GSI compiled a report but did not forward it to the state government at the time. It submitted the report in 2019, following an amend-



ment to the Mines and Minerals (Development and Regulation) Act in 2015. "(It) had a clause that we have to share all our reports with the state government. As we had thousands of such reports, this particular report was sent to the UP government last year," said Ashish Kumar Nath, director & PRO, GSI Central Headquarters.

How does the GSI arrive at such estimates?

Two basic processes are involved — a study of rocks, and drilling of the ground. Laboratory analysis of the rocks indicates the possibility of these containing a particular mineral, in this case gold, said Tiwari, the GSI Lucknow director.

Another indicator is the age of the rocks, which is determined by radiometric dating processes. For high possibility of containing such metals and minerals, the rocks need to be at least 700 million years old, Tiwari said, while also citing exceptions. "The rocks in Sonbhadra are in the Mahakoshal region and from the

Proterozoic era, which started 2,500 million years ago," Tiwari said.

The GSI drilled the ground at some 30 places between 1998 and 2000, before compiling the report. This eventually provides a three-dimensional image of the area, which is necessary for determining the quality of the resource and the amount available.

Will it be worthwhile to extract the gold from the ore?

The GSI classifies ore into categories based on the viability of extraction, which is determined from density. Tiwari said the gold ore found in Sonbhadra is in the "economic" category, which means that extraction will cost less than the cost of the gold that is extracted. The cost of extraction also depends on the grade of gold; the higher the gold concentration, the easier its extraction.

At the same time, GSI officials pointed out that the findings are two decades old and the possible gold present is just 160 kg. GSI director & PRO Nath said they have thousands of such findings, and this particular report was never a priority.

So, what happens to the ore now?

Once the GSI gives an estimate, the state government conducts an auction and the winner undertakes the extraction. UP government officials said that before e-auctioning, a team of officials from the state mining department and the district administration have been asked to conduct a survey of the area and identify the land containing ore, by superimposing GSI's geological maps on khasra maps from revenue records.

District Magistrate (DM) S Rajalingam said that reserves of other minerals — andalusite, potash and iron ore — have been estimated in various parts of Sonbhadra. A preliminary survey also suggested a possibility of uranium deposits, he said.

INDIA'S OMISSION FROM FRASER SURVEY TO SHRINK FOREIGN FUNDS INTO MINING

Calendar 2019 marked the third straight year in which India did not feature; country may also lose access to state-of-the-art technology due to exclusion from benchmark study

India's omission from Canada-based Fraser Institute's annual survey of mining and exploration companies is set to have serious ramifications on the inflow of foreign capital and technology into the domestic mining sector.

In calendar 2019, India was excluded for the third year on the trot from the survey. The survey is a barometer of the overall Mining Attractiveness Index driven by factors like geological attractiveness, effects of government policies on exploration investment, taxation levels and quality of infrastructure. Western Australia is perched on the top of 76 mining jurisdictions

across resource rich nations covered in the survey followed by Finland and Nevada (USA).

Federation of Indian Mineral Industries (Fimi) feels that the latest policy to award minerals via auctions has dimmed India's edge in investment attractiveness. Also, India's exclusion from the list of surveyed nations will deprive the country of state-of-the-art technology and foreign capital sorely needed to develop its deep seated mineral resources and cut dependence on imports. India's imports of minerals have exceeded its value of domestic output by four times in the past three to four years.

R K Sharma, secretary general, Fimi said, "The current mining

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policy has put India out of attractive destination for investment in mining. At one time, almost all junior and senior mining company in the world was in India following amendment of MMDR Act, 1957 in December, 1999. Today, all these companies have moved out of India because of the auction policy adopted by this country in January, 2015".

"The Fraser Institute, a Canada based institute, which does annual survey on attractive destination for investment in mining and prospecting has removed India from the list of countries from their survey. The result will be that India will be deprived for state-of-the-art technology and investment capital particularly in deep-seated minerals, for which the country depends on imports", he added.

Steep taxes on mining and lacklustre exploration spends have sunk India's rankings at the previous editions of the Fraser Survey, eventually dislodging the country out of the reckoning in the past three consecutive years.

India's exploration expenditure pales into insignificance when

compared with other resource rich countries such as Canada and Australia. Canada accounts for 14 per cent of the global mining exploration expenses, Australia ranks next with 13 per cent share. India's share is a minuscule two per cent. For each square km of a potential mining lease, Australia spends \$5580 while Canada incurs \$5310. By contrast, India spends only \$9 per square km.

Unlike India, the taxpayers' money is not used elsewhere on mineral exploration, a risky business venture. The governments of mineral rich countries like US, Canada, Australia, Brazil, South Africa, Chile and Mexico create a congenial ecosystem for exploration by providing the necessary data to the private companies.

"In these countries, the privately managed entities known as junior exploration companies undertake detailed exploratory work and enjoy leeway to sell or transfer mineral concessions. The junior exploration companies take the lead in greenfield exploration by raising funds from venture capital in stock exchanges. If India were to make exploration an attractive business for the private sector, the policies need to be aligned with the practices in other resource rich nations", said a mining industry source.

LITHIUM RESERVES FOUND IN MANDYA DISTRICT OF KARNATAKA

In a welcome development, a survey by the Atomic Minerals Directorate (AMD) has established the presence of lithium in Karnataka's Mandya, although the reserves are estimated to be small.

The Atomic Minerals Directorate, a unit of the Atomic Energy Commission, has estimated that around 14,100 tonnes of lithium reserves are present in the small patch of land in southern Karnataka.

The discovery of lithium reserves in India, although in small quantities, could be a big boost to local manufacturing of Electric Vehicle batteries.

Mandya is 100 km from Bengaluru in Karnataka.

"The present data provides a total estimation of available Li₂O as about 30,300 tonnes over an area of 0.5 km x 5 km, which works out to about 14,100 tonnes of lithium metal," said N Munichandraiah, Emeritus Professor at the Indian Institute of Science and an expert on battery technologies.

The discovery also comes at a time when the Indian government has been pushing for an electric vehicle ecosystem. India imported lithium batteries worth \$1.2 billion in 2019, up from \$384 million in FY17.

In the first eight months of fiscal 2019-20 India's lithium battery imports stood at \$929 million, according to minister of science and technology Harsh Vardhan.

The lithium reserves discovered in Mandya, however, are insignificant compared to deposits in countries like Chile, Australia and Argentina.

Since India has not made much effort to explore local lithium reserves, it currently relies on mines located in Argentina, Bolivia and Chile.

India is also yet to estimate its requirements - both current and future - of lithium. It has also not formulated a comprehensive plan to map local reserves of lithium. India has set up Khanij Bidesh India Ltd to source and acquire mines in Argentina, Bolivia and Chile.

COAL MINES ON AUCTION SHOULD COME WITH ECO CLEARANCE, SAY INVESTORS

Stakeholders attending a meeting of the coal ministry have insisted that mining blocks that are being offered for commercial coal mining should have prior environmental clearance, so that issues like violation of environmental laws do not crop up during the development of these blocks.

Some of the prominent players who participated in the meeting held last month to discuss methodology for commercial coal mining included major industrial groups such as Tata Steel, JSW Steel, Adani Power, JSPL, Hindalco and GMR Power among others.

Participants have requested the government to ensure that blocks auctioned for commercial coal mining do not later give rise to issues like 'inviolate areas', ie, sights of significance for conservation of biodiversity (flora and fauna) and forest types that are unique and ecologically important.

"The mines may be cleared from the environmental angle so that issues like safety zones, inviolate areas may not crop up later during development of mines," a source said.

During the meeting, the stakeholders also requested that

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sufficient large mines should be earmarked for the industry, instead of numerous small mines, the source said.

The participants were also of the view that the "terms and conditions are liberal and conform to the government's intentions of opening up the Indian coal sector," the source added.

The government had called meetings with various stakeholders to discuss the draft methodology as well as key bidding terms and conditions for auction of coal mines for commercial mining.

Earlier, the government had said that it is initiating the process of coal auctions and the first round of sale of blocks under commercial mining is proposed to be launched before the end of the current fiscal.

The announcement came days after the government approved an ordinance to ease coal mining laws that will see more local and global players enter the Indian coal sector.

A company or a joint venture company incorporated in India is

eligible to participate in commercial coal auctions, the coal ministry had said.

"Moving ahead after the recent amendments in MMDR Act 1957 and the CMSP Act 2015, the ministry of coal is initiating the process for auction of coal mines for sale of coal. Expected to be held in multiple tranches, the first tranche is proposed to be launched in the current financial year," the government had said.

The bidders would be required to bid for a percentage share of revenue payable to the government. The floor price shall be four per cent of the revenue share, the coal ministry notice had said.

The government has released a list of 74 mines which it plans to auction under commercial mining.

The ministry had said it has urged interested stakeholders to view the discussion paper and the mine specific details and submit their views/ suggestions, indicating their preferences for the mines to be considered for auction under the first tranche.

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