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SEPTEMBER 2022

Geonesis

**Do away with forest clearance to explore mining activities:
Mines ministry to MoEF & CC**



Do away with forest clearance to explore mining activities: Mines ministry to MoEF & CC

Since survey and investigation for mining opportunities during exploration do not cause any perceptible changes in forest land, these could be restored to their original shape, the ministry said

The Union Ministry of Mines has urged the Ministry of Environment, Forest and Climate Change (MoEF&CC) to do away with the requirement of forest clearance for exploration of mining activities, according to an important official.

Alok Tandon, the secretary of the mines ministry, confirmed to the Press Trust of India (PTI) during the 56th meeting of the Federation of Indian Mines and Industry September 2, 2022, that the ministry had made the suggestion.

“We have requested the MoEF&CC that exploration activity should not be treated as diversion of forest area. We are in active consultation with them ... This is part of the cabinet note and we have sought public comments,” Tandon told PTI.

The proposal to keep exploration out of the ambit of forest clearances was made in a public notice calling for the amendment of the Mines and Minerals (Development and Regulation) Act, 1957, issued by the mines ministry May 25 this year.

It said the high level committee of NITI Aayog had said “there should not be any requirement of forest clearance for undertaking exploration.”

It added that MoEF&CC had issued a consultation paper on the proposed amendments to the Forest (Conservation) Act, 1980.

The ministry had also invited comments and suggestions from state governments and the public on the proposal that read:

Survey and investigation activities are procedures prior to considering or proposing actual non-forestry activity on forest land. In many such activities, the forest land is used for a

very short time and also, there is no perceptible change in the forest land and or the biodiversity thereon.

It added:

But since such activities are considered non-forestry activity, prior approval of the central government is sought following formal procedure which, in fact, takes a lot of time. To address this, particularly in activities where the impact is not perceptible, the provisions of the Act may not be applicable.

The Union Ministry of Mines said since survey and investigation for mining opportunities during exploration did not cause any perceptible changes in forest land, and it was likely that exploration might not lead to any mining activity, the places where drilling had been done could be restored to their original shape.

“And let’s say it is only in one of 25 cases or in one of 50 cases that exploration would result in the discovery of minerals. So, it is only in one of 50 cases where the diversion of the forest will finally happen.

“So, if we exclude exploration activity and not consider it as diversion of forest area or a non-forestry activity, then exploration activity can move forward,” PTI quoted Tandon.

“No permanent diversion of forest land for non-forest activities is required for such activities and these activities are for a short duration of 3-5 years. Also, the ratio of conversion of exploration activity to mining activity is 100:1,” read the amendment proposal issued in May this year.

The proposal added that in order to enable auction of more blocks and enhance production of minerals, more exploration was required to be conducted. Hence, mining operations can be undertaken in an area only after the existence of minerals is established there. Necessary forest clearance would anyway be taken before the start of mining operations.

The proposal for amendment urged the

insertion of a provision in the MMDR Act. This was so that any reconnaissance or prospecting operations undertaken within the period specified under the Act on forest land would not be considered as diversion of forest for non-forest purposes under the Forest Conservation Act, 1980.

The state governments may prescribe the manner of granting permission for carrying out such reconnaissance or prospecting operations.

Tandon added that India was at a stage where it was witnessing a fast depletion of mineral resources and that his ministry was working on a separate policy of giving incentives for the promotion of these deep-seated minerals.

The amendment proposal also asked for dispensing with the central government’s approval before initiating the auction for composite license (CL) at the G4 stage.

The exploration for any mineral deposit involves four stages:

1. Reconnaissance survey (G4). Reconnaissance is the preliminary examination of the general geological features and characteristics of a region
2. Preliminary exploration (G3). Investigation carried out along certain broad features of a mineral area, with the object of deciding whether the proposition is such as to warrant a detailed exploration
3. General exploration (G2). Establish the main geological features of a deposit and provide an initial estimate of size, shape, structure and grade of the mineral in the mine
4. Detailed exploration (G1)

“In 2021, several amendments were made in the Act and the rules to boost exploration in the mineral sector and increasing pace of auction of blocks, including allowing auction of blocks for CL at G4 level of exploration instead of previously prescribed G3 level.



“As the level of exploration has been reduced at CL stage, it would be appropriate to remove the redundant process of obtaining previous approval of the central government before

putting a block for auction of CL. This will enable the state governments to put blocks in auction for CL at faster pace. Accordingly: section 10B (2) of the Act may be amended,”

the proposal read.

Source: downtoearth.org.in

‘Mining sector going through paradigm shift’

India is endowed with most of the minerals and produces 95 minerals, including fuel, atomic, metallic, non-metallic and minor minerals, the NDMC Chairman said.

Mining sector in India is going through a paradigm shift with reforms to ease the business ecosystem and make the country self-reliant, said National Mineral Development Corporation (NMDC) Chairman Sumit Deb. Given

vast mineral resource base in the country, international giants too are showing interest in the country’s mines and mineral industry, along with domestic players, Deb said addressing a curtain raiser event hosted by Federation of Indian Chambers of Commerce & Industry (FICCI) and NMDC jointly. India is endowed with most of the minerals and produces 95 minerals, including fuel, atomic, metallic, non-

metallic and minor minerals, the NDMC Chairman said. “Collaboration between all relevant stakeholders including industry, Centre and states is the key and the upcoming conference will work as a platform to strengthen the collaboration and chalk out the plan ahead,” Deb added.

Source: newindianexpress.com

India targets 900 million tonne coal production in FY23: Minister



With regards to commercial mining, coal minister Pralhad Joshi said 43 mines have been awarded during the last two years and that they will generate employment for nearly 32,000 people

The ministry of coal is targeting production of 900 million tonne (MT) this financial year and national miner Coal India Ltd (CIL) would produce 700 MT coal, union coal minister Pralhad Joshi said on Wednesday.

"During the last four months, CIL has set new record by producing around 207 MT of coal.

the minister said 43 mines have been awarded during the last two years. He said the total annual revenue generation from the three tranches of commercial auction is estimated at Rs 4,286.53 crore considering production at aggregated Peak Rate Capacity level of 23.77 MT per annum.

"Once fully operational, these coal mines are expected to generate employment for 31,954 people directly and indirectly. A total investment of Rs 3,565.50 crore will be incurred to operationalise these mines," Joshi said.

Indian economy is growing at a very fast pace and coal based power generation has recorded 16.8 per cent increase this year and the production of domestic coal has gone up by 22 per cent. By the year 2030 India’s coal requirement will be of 1.5 billion tonne," Joshi said.

With regards to commercial mining, the

The Centre in 2020 opened the coal mining sector with private companies entering the arena of commercial mining and sale of coal – 47 years after coal mining was nationalised in India. It amended the Coal Mines (Special Provisions) Act, 2015, in May to open the coal auction for non-mining, MSMEs and foreign companies.

In the first round in November 2020, among the winning bidders were Adani Enterprises, Hindalco, Vedanta Ltd, Essel Mining of the Aditya Birla Group, Jindal Steel & Power Ltd, and several new and non-mining companies such as Aurobindo Realty, Yazdani International, JMS Mining, and Boulder Stone Mart. Almost 65 per cent bidders were from the ‘non-end user’ category i.e they are not direct coal user.

Post this, the Centre decided to award mines for commercial use under rolling auction. In the recent round, there were 13 winning bidders - MP Natural Resources Private Limited, Dalmia Cement (Bharat) Limited, Assam Mineral Development Corporation Limited, BS Ispat Limited, Platinum Alloys Private Limited and Jindal Steel and Power Limited, among others.

Source: business-standard.com

HOW MANY MINES DO WE NEED?



As the lithium ion battery revolution gains momentum, **Benchmark** forecasts just how many mines need to be built to keep up with the exceptional volumes of demand for key raw materials expected by 2035.

■ 2022 Supply vs 2035 Demand

Average Mine/Plant Size

No. of Mines/Plants Needed

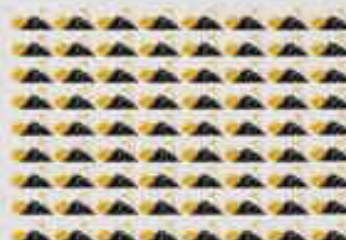
Lithium



Cobalt



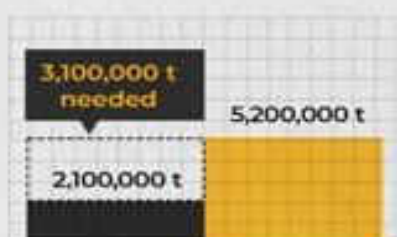
Nickel



Natural Graphite



Synthetic Graphite



Geology, Minerals and Tectonics of Jaisalmer basin western Rajasthan - V.P. Laul

Abstract:

Jaisalmer basin is mainly represented by Mesozoic- Tertiary sequence. Mineral wealth of basin includes clays, glass sand, building stones, cement to high grade/ steel grade limestone, phosphatic nodules, bentonitic clays, fuller's earth, glauconite and gypsite. Kanoi & Ramgarh are major faults. Mashuriyan fault, Bida fault and NibhDungar lineament also require mention.

Geology

Jaisalmer Basin is mainly represented by Mesozoic- Tertiary sequence overlain by Quaternary sediments. Mesozoic sequence, with basement, mainly of Malani Igneous suite, is represented by sandstone rich sequence of continental Lathi Formation (Lower Jurassic) overlain by fossiliferous limestones - sandstone sequence of Jaisalmer Formation(Middle Jurassic) which in turn is overlain by shale-sandstone sequence of Baisakhi Formation (Upper Jurassic) unconformably overlain by Bedesar Formation (Upper Jurassic) represented by sequence of ferruginous grits, hard compact calcareous at places ferruginous sandstones, soft sandstone and associated shale beds. The sandstone in upper part grades into sandstone of Pariwar Formation(Lower Cretaceous) which is mainly a sandstone sequence. The succeeding Abur Formation (Middle Cretaceous) is mainly represented by fossiliferous limestone- calcareous sandstone sequence.

The Lower Tertiary sequence includes Paleocene Sanu Formation, mainly sandstones, Khuiala Formation represented by bentonitic clays- limestone in association with fullers earth overlain by limestone and Bandah Formation represented by gypsiferous bentonitic clays and limestone.

The Mesozoic- Tertiary sequence is overlain and capped by Quaternary sediments.

Minerals

Minerals of Jaisalmer basin include clays and

glass sand in Lathi Formation (Lower Jurassic), Building stones for blocks, pillars and using as marbles found in Jaisalmer Formation (Middle Jurassic). Oolitic limestone of Jaisalmer Formation in places like Shipal and Jethwai is mainly cement grade and fine grained limestone in Pohar and Nibh Dungar is high grade. Oolitic limestone near Dedha is high grade, Laul Geonesis, August 2021. The upper part of Jaisalmer Formation (Unit D) contains high grade phosphatic nodules and Unit A of Baisakhi Formation contains phosphatic nodules bearing ferruginous bands in shale, Laul, Geonesis February 2021. Bedesar Formation (Upper Jurassic) contains grinding stone. Pariwar Formation (Lower Cretaceous) contains glass sand deposits and succeeding Abur Formation (Middle Cretaceous) is known for Abur stone, "Geology and minerals of Jaisalmer District, DMG Rajasthan". Abur stone is a well known decorative and fancy stone. Lower Tertiary mineral resources mainly contained in Khuiala Formation include more than 3000 million tonnes of cement to high/ steel grade limestone, Laul Geonesis May 2021, some bentonitic clays deposits and occurrences in areas like Niba- Sam, Khuri, Khuiala and Bandah and fuller's earth in Mandha area. Bentonitic clays of Khuri and Niba-Sam area may be correlated with Akli bentonite of Barmer basin. Small occurrence of clay and bauxitic clay in Sanu Formation (Paleocene) is located near Bao.

Glauconite was recorded during mapping in newly dug well in Mashuriyan village followed by investigation leading to 21.5 million tonnes with average grade of 4.5 %, K₂O, Binod Kumar & Sahiwala, GSI unpub Rept. 1989, Rec GSI 118(1) & 119(1). Glauconite occurs in argillaceous- carbonaceous sequence and may be correlatable with carbonaceous - argillaceous sequence with associated lignite seams and glauconite of Lower member of Akli Formation (Paleocene) of Barmer basin, Laul, Geonesis October 2021. Limestone of Khuiala Formation occurring over glauconite

bearing sequence in Mashuriyan area may be industrial grade. Gypsite contained in Quaternary sediments is located at Sri Mohangarh, Hamirwali Dhani, Lakhakhader, Nachna, Phalsund etc, "District Resource map of Jaisalmer District, Rajasthan of GSI"

Tectonics

Two major faults identified mapped and interpreted are 1. Kanoi fault 2. Ramgarh fault. Both trend NW-SE to NNW- SSE. Both are active faults

3. N-S trending Mashuriyan fault nearly at 70° 30' perhaps forms eastern boundary of Barmer - Jaisalmer link basin in which Paleocene sediments of both basins overlain by Eocene limestone of Jaisalmer basin have been found. Mashuriyan fault perhaps extends upto west of Mohamad ki Dhani perhaps the western limit of Sanu Formation (Paleocene).

4. E-W Bida fault nearly at 26°43' with some variation on either side, appears to be parallel to the Fathegarh fault. This appears to be extending westward deciding limit of Barmer- Jaisalmer link basin. This fault appears to be extending eastward upto Shipal at 26°43' where Jaisalmer- Baisakhi contact appears to be faulted 5. NibhDungar tectonic lineament: This NW- SE to NNW- SSE trending lineament is perhaps part of Jaisalmer- Barwani lineament, Bakliwal and Ramasamy, GSI Rec 113(7) 1987, perhaps extends southeast ward and marks eastern limit of Dujoro Dungar hill. Towards Northwest ward it perhaps goes towards an area near Kanoi where it has become sub parallel to Kanoi fault. In Nibh Dungar area it has faulted down western part of Nibh Dungar which is a fold hill and part of the fold limb involving perhaps Baisakhi shales has been washed out.

Tectonics-Seismotectonics and Mineral deposits: 1. N-S Mashuriyan fault and E-W Bida fault deciding eastern and northern limit of Barmer- Jaisalmer link basin has facilitated



the formation of good grade glauconite overlain by limestone, perhaps industrial grade. 2. Cement grade Jaisalmer limestone near Shipal is located between Kanoi fault on west and perhaps NibhDungar lineament on east. In NibhDungar area tectonic lineament has disturbed cement to high grade limestone of Jaisalmer Formation and phosphatic nodules in marls/ shales of Jaisalmer Fm and phosphatic nodules bearing ferruginous bands in Baisakhi shales. 3. Ramgarh fault, trending NW-SE to NNW-SSE has tectonically disturbed both Lower Tertiary cement- steel grade limestone in Sirara Dungar & Jurassic Jaisalmer industrial grade limestone near Jaisalmer town and perhaps is also responsible for silicification of limestone at places. Tectonics- Seismotectonics and settlements.

Two main faults- Kanoi and Ramgarh are responsible for earthquakes in the Jaisalmer

area. Ramgarh fault passes in an area close to Jaisalmer town therefore poses threat to historic buildings and the golden Jaisalmer fort - Sonar Kila. In the past earthquakes along Kanoi fault have damaged houses in villages like Kanoi and others located near the fault. According to Dr A.B. Roy et.al, Current Science, v. 112, NO. 2, 25 January 2017, earthquakes have damaged village houses and resulted in the collapse of houses of villages like Kuldhar and Khaba, now in ruins.

It may be mentioned here that tectonic lineament passing through NibhDungar (folded and faulted) area has tectonically disturbed NibhDungar- Khaba area.

It appears that combination of three- 2 active faults- Kanoi and Ramgarh and 1 lineament NibhDungar/ Jaisalmer- Barwani ? have damaged houses of settlements near them during earthquakes.

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Acknowledgment: Author is thankful to Dr Vivek Laul, Vivek Geo Services for discussion and finalization & formatting of article, to Geonesis for providing a platform for dissemination of useful information for the mineral & mining sector and researchers.

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Records Geological Survey of India 113 (7) , 54-64.

Government plans to sell 13 gold mines to boost mining sector's contribution in country's GDP

The allocation of mineral blocks through auction route kicked off after amendment in the Mining Act in 2015.

The government plans to put on the block 13 gold mines in the states of Andhra Pradesh and Uttar Pradesh in the ongoing month amid its efforts to give a boost to the mining sector's contribution to the country's gross domestic product.

Of the 10 blocks in Andhra Pradesh, the auction of five blocks may take place on August 26, while the remaining five are likely to be put on the block on August 29, according to latest data of the government.

The gold mines in Andhra Pradesh include Ramagiri North Block, Boksampalli North

Block, Boksampalli South Block, Javakula-A Block, Javakula-B Block, Javakula-C Block, Javakula-D Block, Javakula-E Block, Javakula -F Block.

The notices inviting tender for these gold mines were floated in March.

In the case of remaining three gold mines in Uttar Pradesh, the auction will happen this month.

But no specific dates have been given.

Of the three mines in the state, two gold mines -- Sonapahari Block and Dhurva-Biadand Block-- are in Sonbhadra.

The notices inviting tender of these three gold mines in Uttar Pradesh were floated on May

21.

The government had in May said the auction of mineral blocks has stabilised in the country.

The states have auctioned 199 mineral blocks as on August 4.

The allocation of mineral blocks through auction route kicked off after amendment in the Mining Act in 2015.

In the last financial year, 45 mineral blocks were put on sale.

The state governments, the Centre had said, are getting a very good share of revenue from the auctions and had stressed that those states which were early birds in the race were really happy.

The mines ministry had earlier said the amendment in mineral auction rules will encourage competition that will ensure more participation in sale of blocks.

The Ministry of Mines had notified the Minerals (Evidence of Mineral Contents) Second

Amendment Rules, 2021, and the Mineral (Auction) Fourth Amendment Rules, 2021 to amend the Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC Rules) and the Mineral (Auction) Rules, 2015 (Auction Rules), respectively.

The amendment rules have been framed after extensive consultations with the states, industry associations, miners, other stakeholders and general public.

Source: [newindianexpress.com](https://www.newindianexpress.com)

Explained: Why Supreme Court Raised The 'Ceiling Limit' Of Karnataka's Iron Ore Mining?



Recently, the "ceiling limit" for mining iron ore in the Karnataka districts of Ballari, Chitradurga, and Tumakuru was increased by the Supreme Court on the grounds that environmental protection and economic development must coexist.

A decade after the Supreme Court heavily limited the sale and extraction of iron ore in Karnataka, the Court has eased its own orders.

What exactly is the order?

The Bellary, Chitradurga, and Tumkur districts in Karnataka's iron ore mining cap were raised by the Supreme Court on Friday, noting that "conservation of the ecosystems and the environment must go hand in hand with the spirit of economic growth" and noting that the state's circumstances had "vastly changed" since mining in these districts was outlawed there in 2011.

Bellary's ceiling was raised from its current level of 28 MMT to 35 MMT, and the combined limit for Chitradurga and Tumkur districts was increased from 7 MMT to 15 MMT, according to a bench headed by Chief Justice

of India N V Ramana.

In response to complaints of widespread illicit mining, the court on July 29, 2011, Chitradurga on August 28, 2011, and Tumkur on September 1, 2011, all banned mining. By order dated September 23, 2011, the court mandated that the Monitoring Committee conduct an

electronic auction to dispose of the stored iron ore, and it also established a Special Purpose Vehicle to implement mitigating measures.

On May 20 of this year, the court approved the export of the "already excavated stock" after taking into account petitions that claimed the Monitoring Committee's e-auctions had generated little interest and that sales of iron ore, even at the reserve price, were appallingly low.

Karnataka's iron ore mining ban

Following the launch of a CBI investigation into alleged unlawful mining in 2009, the Supreme Court ordered the closure of the Obulapuram Mining Company (OMC) in Ballari.

In addition to significant losses to the exchequer, encroachment on forest land, ecological destruction, and serious health issues among the local inhabitants, unlawful mining led to the theft of public property. Over 700 government personnel, including 3 chief ministers, were publicly disclosed in the two Lokayukta Papers from 2008 and 2011 addressing the illegal mining scandal.

Supreme Court's orders

In 2011, the Supreme Court issued a ruling to prohibit mining operations in Ballari after the Central Empowered Committee (CEC) report, which was formed by the SC, raised awareness of the widespread breaches in mining.

The SC further restricted the export of iron ore pellets from Karnataka in an attempt to prevent environmental deterioration and to preserve the environment for the next generation as part of the idea of intergenerational equality.

Additionally, SC set the maximum permitted annual produce cap for mines in categories A and B at 35 MMT. It instructed the Indian Council of Forestry Research and Education (ICFRE) to create a reclamation and rehabilitation (R&R) strategy to undo the ecological damage caused by illegal mining.

18 "category A" mines were reopened in 2012 with SC approval. "Leases whereby no illegality or minimal illegality have been detected" describes these mines. Depending on the severity of their offences, mines with more significant transgressions belong under categories B and C.

Ore was sold via electronic auctions after the mines were allowed to reopen.

Mine closures resulted in a shortage of raw resources for steel mills, requiring them to acquire from overseas and enabling large global iron ore companies to conduct business in India. According to reports, lakhs of Karnataka residents who depend on the mining industry for a living have been adversely impacted by production restrictions, e-auction, and price



increases.

Recent developments on the issue

Mining companies requested that the SC eliminate the e-auction requirements for the export or sale of iron ore to mining lessees in the

Ballari, Tumakuru, and Chitradurga districts in May 2022. They stated that they would have to close because their stocks weren't moving.

The Karnataka state government is in favour of eliminating the ceiling limit entirely. Accord

ing to the court, it was crucial to establish a balance between the mines based in the three districts and those situated elsewhere in the nation.

Source: [indiatimes.com](https://www.indiatimes.com)

Mining sector's failure to seek new copper jeopardizes entire energy transition

This story is the first in a two-part series. In part two, we look at challenges facing future copper demand and how industry may fill a projected supply gap.

Mining company executives' preference for safe, short-term returns has led to a massive underinvestment in new copper mines and exploration, jeopardizing the metal-intensive energy transition.

The shift toward decarbonization will require vast amounts of copper to extend transmission lines, install new wire in renewable power sources, and electrify existing appliances and cars. Despite this nearly certain demand, the mining industry has spent the past decade moving much of its profits away from finding and developing major new copper projects.

Instead, industry members have favored expanding mines with stronger guarantees of shorter-term shareholder returns and growing dividends and share buybacks. But new copper mines take decades to achieve commercial production, and they come with risks including permitting issues and shifting political landscapes. Meanwhile, new discoveries are frequently of lower grades, making the copper more expensive to extract.

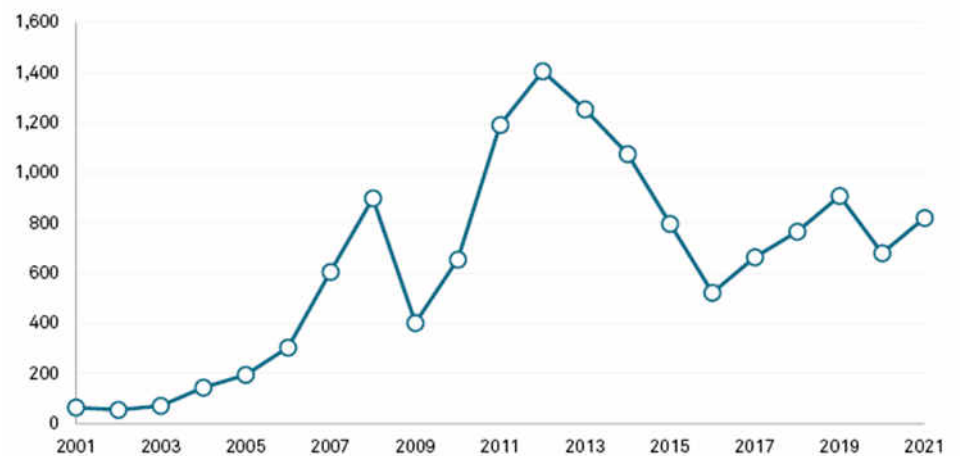
All of these challenges combine to create hurricane-force headwinds for a speedy economic transition toward electrification and renewable power. In the most optimistic scenario in its recent "Future of Copper" report, S&P Global estimates the world will be short 1.6 million tonnes of copper in 2035, with major deficits beginning this decade. In its most pessimistic view, that shortfall expands to 9.9 Mt in 2035.

"The challenge is that if current trends continue ... there's a huge gap," said Daniel Yergin, vice chair of S&P Global and project chair of the group behind the recent analysis, which projects massive copper deficits emerging in the coming decade. "And even if you put on your roller skates and your jet burner [to realize optimistic supply growth], and everything goes right, there's still a gap, because it's enormous. And it's important to recognize that now, not in 2035."

"And then companies were left with this huge debt level for these assets that they were developing," Murphy said. "That led to this really quite long period of rationalization ... where companies opted to reduce what they had in their holdings."

These cutbacks included exploration budgets. After peaking at approximately \$1.41 billion in 2012, the exploration budgets of reporting copper-producing companies steadily declined

Exploration budgets over time for copper producing companies (\$M)



Data compiled July 22, 2022.
Source: S&P Global Market Intelligence

Bear market bite

In part, the origins of the coming shortfall lie in the mining industry's response to economic pressures in the wake of the 2008 financial crisis, according to Commodity Insights mining analyst Kevin Murphy. After a frenzied upswing in metals and mining equities that started in the mid-2000s, the sector fell into a protracted bear market for about a half-decade after 2012.

through 2016 to \$522.5 million. Exploration budgets rebounded slightly to \$820.8 million in 2021, but that was still 41.6% lower than the 2012 high.

The frothy bull market in metals in the early 2010s drove miners to aggressively explore and develop less promising projects in the hopes of capturing high prices. Average discovery costs were less than a cent per pound of copper in the



1970s, surging to over eight cents per pound from 2010 to 2019, according to Richard Schodde, managing director at Minex Consulting.

"The reason why the last decade was almost a lost decade for copper ... was the fact that there was a hot market for exploration, which led to inefficient cost inflation," Schodde said. Many miners also targeted "low quality projects" in a bid to profit from known deposits rather than take risks.

Lackluster exploration spending has yet to stymie copper supply, as the new finds of 20 years ago are now in the production stage. Global production of copper has been on a steady upswing for decades as demand has climbed, including on a per capita basis.

But the pipeline of future projects is thin, and the industry will be unable to meet anticipated demand. Over the next 28 years, total copper demand is set to match cumulative copper consumption since 1900, John Mothersole said during a July 14 call on the "Future of Copper" report. Mothersole is director of nonferrous metals, economics and country risk at S&P Global Market Intelligence.

"Copper mines don't grow on trees," Robert Friedland, founder and executive co-chair of Ivanhoe Mines Ltd., said on an Aug. 15 earnings call. "And we're not going to have clean air or make a meaningful impact on the climate, nor are we going to be able to act on the so-called inflation reduction bill [in the U.S.], without a massive increase in demand for copper metal."

Regulatory conundrum

Long lead times for mine development will prevent the industry from rapidly making up for lost time. The National Mining Association estimates that it takes seven to 10 years on average to obtain the permits necessary to bring a mine into operation in the U.S. The lead time is even longer starting from the moment of a deposit's discovery.

"If it actually gets approved and everything goes well, it tends to be in the 20-year time frame," Murphy said.

This lengthy lead time, combined with volatile copper prices and government policies that may slow development or create political instability, can discourage companies from opening or exploring for new deposits, according to analysts. For example, miners in Chile have warned that a proposed tax increase on

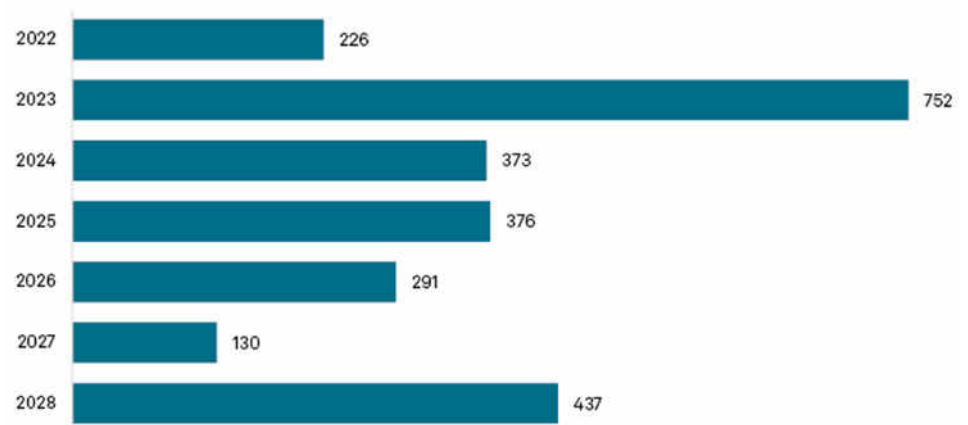
copper production by the government could lead to a decline in mining investments, amid a growing political shift to the left in South America, a top copper-producing region.

"There's always been those sort of challenges, but I can see it becoming sharper," said Schodde. "As the world gets more interconnected, you can't hide the impact, or potential impact, of a mining project on a local community."

In response to those challenges, major mining companies have tried to garner social licenses to operate increasingly large mines, making project development more difficult and time-consuming, Schodde said.

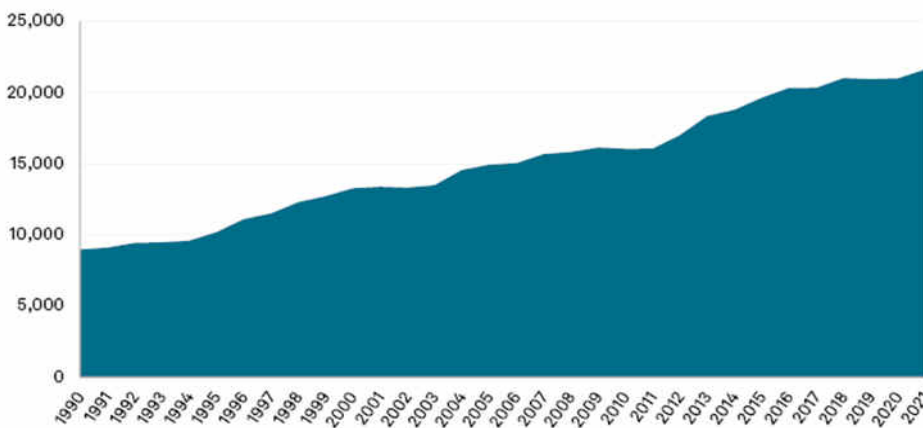
"I think we can say that issues other than economics are becoming increasingly influential to a project's success," Vanessa Davidson, CRU Group director of base metals research

Planned capacity for upcoming global copper projects (000 tonnes)



Data compiled July 20, 2022. Only shows capacity for projects with available expected capacity figures. 2022 figure shows planned capacity for projects operational after July 20, 2022. Source: S&P Global Market Intelligence

Global production of copper since 1990 (000 tonnes)



Data compiled July 22, 2022. Source: S&P Global Market Intelligence

and strategy, said in a June 13 presentation at the Prospectors and Developers Association of Canada conference in Toronto.

As demand for South America's copper grows, the region's politics have emerged as a greater drag on industry growth than was the case during the last supercycle, which started in the early 2000s on the back of searing economic growth in China.

"And most [of these] governments have a socialist agenda," Schodde said. "And to fund



those programs which make them popular, they're going to need money. The easiest targets for them is the mining industry."

Roadblocks to individual projects can also discourage new investment. Northern Dynasty Minerals Ltd.'s Pebble copper-gold project in Alaska, for example, has faced shifting rulings from the U.S. government every time a new political party came to power in recent years.

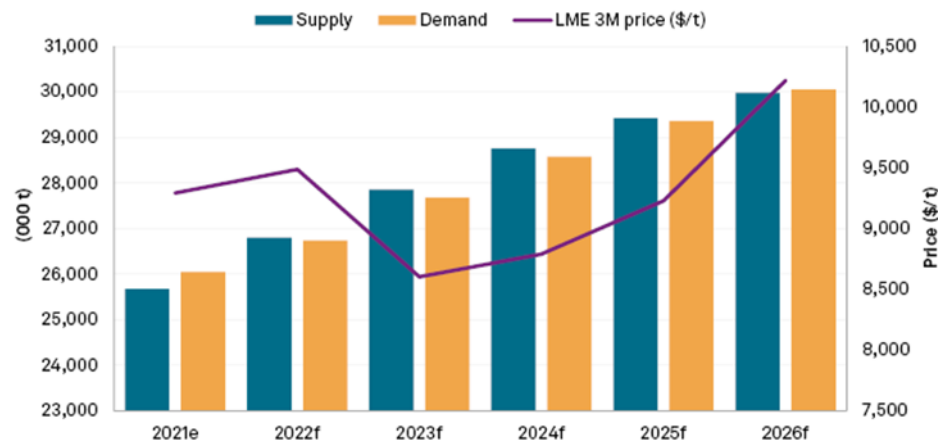
Brownfield versus greenfield

To avoid some of these problems, companies may opt to expand existing mines rather than develop new projects. Greenfield exploration brings the lure of a major discovery, yet also comes with massive risks. Finding a meaty new deposit or discovering one in a region where development may go smoothly was never an easy thing and it is has become increasingly tough in recent decades.

You have to spend billions and billions of dollars to open new mines," said Mark Mills, senior fellow at the Manhattan Institute and faculty fellow at Northwestern University.

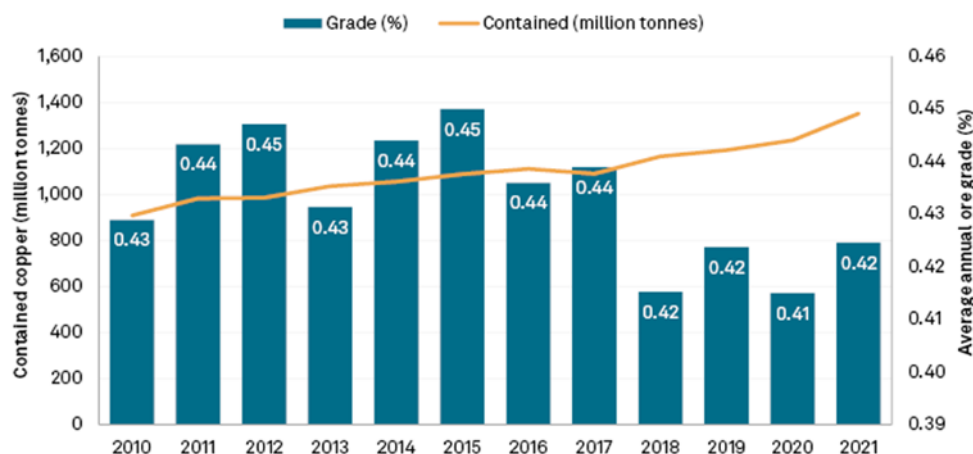
"Ore grade declines are an established, enduring feature of the industry," said Anthony Lea, president of the International Copper Association. "The industry has always responded ...

Projected copper supply deficit



Data as of June 21, 2022. e=estimate; f=forecast Sources: S&P Global Market Intelligence; Copper CBS June 2022, London Metal Exchange

Copper resource grade, contained resources excluding reserves since 2010



Data compiled July 22, 2022. Source: S&P Global Market Intelligence

"[One] reason that we don't have an expansion [of supply] commensurate with the demand that will come from the so-called energy transition is very simple: If you're a mining business, the magnitude of costs and amount of time required ... put that business at extraordinary risk.

With expansion often comes declining ore grades, increasing the cost of extracting the same amount of copper. Experts expect the copper industry will be able to develop the technological knowledge to efficiently process these lower grades, at least in the near term.

[and] we're confident that they will continue to respond to that kind of ore grade challenge."

Powering the energy transition

Still, exploration expenditures and planned capacity increases do not reflect the magnitude of projected demand growth for copper, analysts say.

"Even under the high-ambition scenario, the very optimistic scenario, we see large deficits or shortfalls emerging in the market ... in the next 10 years," Mothersole told Commodity Insights. "It's just staggering."

If supply is not there, demand destruction may ensue, and things such as electric vehicles and copper wires may not be able to be made at the levels required to hit net-zero targets.

"It means ... the energy transition goals would be pushed out further into the future," Yergin said.

Source: spglobal.com

India seeks to mandate low-grade iron ore beneficiation

The Indian government's ministry of mines is consulting with the mining industry as it pushes for mandatory beneficiation of low-grade iron ore.

The ministry, in a bid to ensure utilisation of low- and lean-grade iron ore resources, wants to mandate 80pc of total iron ore produced in a year by a mining leaseholder that is below 58pc Fe to be beneficiated to 62pc Fe and above.

The government imposed a 50pc export tax on all grades of iron ore in late May to increase the availability of the raw material. Low-grade iron ore of 58pc Fe and below prior to this was exported, as it is not used for steel production in the country.

Mining bodies have requested the government to remove the duties as it has halted all shipments. India exported 35.6mn t of iron ore in 2021, down by 31.5pc from the previous year as Chinese demand plummeted in the second half of the year on mandated steel cuts.

Exports have dropped by 58pc to 12.4mn t during January-June this year.

The ministry is proposing a concession to mining firms of 5pc in the rate of royalty on the quantity of low-grade ore beneficiated through the wet process and 10pc on beneficiation through the dry process. Such concession may be allowed on 20pc quantity of the annual production of iron ore of all grades. But the benefit may be extended to low-grade iron ore below 58pc Fe that is upgraded to 62pc Fe and above.

The policy will be assessed on a quarterly basis. If producers fail to beneficiate 80pc of low-grade iron ore they will have to pay a royalty and premium applicable for 62-65pc Fe grade for the quantity not beneficiated. Any shortfall for non-auctioned mines will attract four times the royalty paid on 62-65pc Fe grade, in addition to the actual royalty paid on such quantity at the time of its removal and consumption.

If the leaseholder fails to maintain the minimum quantity of ore to be beneficiated as required for two successive years and fails to pay the royalty on the shortfall, the state government may terminate the lease and pre-empt such low-grade ore to dispose off it as deemed fit.

The ministry is considering the policy for an initial period of five years and is inviting suggestions and recommendations from the industry by 31 August.

India is estimated to have produced about 217mn t of iron ore in the 2021-22 fiscal year ending 31 March, according to the ministry. Odisha state accounted for 51pc of production, followed by Chhattisgarh at 18pc, Karnataka at 17pc and Jharkhand with 10pc. Goa largely produces low-grade iron ore.

Source: [fastmarkets.com](https://www.fastmarkets.com)

IBM to create separate portal for Ministry of Mines under Gati Shakti Yojana

In pursuance of PM Gati Shakti National Master Plan, Ministry of Mines entrusted the responsibility of creating personalized portal to Indian Bureau of Mines (IBM) through BISAG-N (Bhaskaracharya National Institute of Space Applications and Geoinformatics).

So far, two data layers have been created. The first layer contains spatial data of mineral concessions including existing mining leases and existing composite licenses granted through auction. The second layer comprises the mineral auction block which has been successfully auctioned but is pending execution of the mining lease.

A statement from the Ministry of Mines said that the spatial data of about 3154 mining

leases (both working and non-working including auction blocks) covering an area of 297200 hectares across the country have been uploaded on the portal, which is being validated. Is.

The verification process is likely to be completed by the end of this month.

Prime Minister Narendra Modi on October 13, 2021 launched PM Gati Shakti – National Master Plan for Multi-Modal Connectivity. Infrastructure creation in India faced several issues, including a lack of coordination among various implementing agencies as well as information gaps for cost and time. Exaggeration in the execution of projects. These issues not only caused public inconvenience but also deprived the country of world class

infrastructure. To address this, efforts were made to enhance coordination among various agencies, to make available all available and necessary information for building infrastructure on a web based platform. Steps have also been taken to address other issues like time-consuming approval process, multiplicity of regulatory approvals etc.

In this direction, the Pradhan Mantri Gati Shakti Program is designed to address past issues through institutionalizing holistic planning for stakeholders for major infrastructure projects. PM Gati Shakti is based on six pillars: Comprehensiveness, Priority, Customization, Synchronization, Analytics and Dynamic. Instead of planning and designing projects in



separate silos, projects will be designed and executed with a common vision. It will cover infrastructure schemes of various central

ministries and state governments. It will extensively leverage technology including spatial planning tools with ISRO imagery developed

by BISAG-N.

Source: [livemint.com](https://www.livemint.com)

Women: mining's greatest untapped asset?

Mining policy adviser Ege Tekinbas warns technology alone won't bring equality

By Ege Tekinbas, Senior Policy Adviser, Intergovernmental Forum on Mining



Mining technology has constantly evolved over the centuries, but today's emerging technologies are rapidly re-shaping the nature of mining work as never before. Workers will surely feel the knock-on effects—but will those effects change the gender dynamics of the traditionally male-dominated mining workforce?

It's tempting to be optimistic. One might assume that new ways of working might challenge ideas prioritizing the physical strength of workers and thereby push large-scale mining towards gender balance. However, examples from the past indicate that while such advances may gradually upskill the mining workforce, our research suggests they may also increase its masculinity if new developments are tailored to suit male workers.

As the increasingly digitized large-scale mining sector is set to ramp up to produce the copper, lithium and other critical minerals for

low-carbon energy transitions, the Women and the Mine of the Future (WMF) project has set out to shed light on the gendered employment landscape for large-scale mining via granular gendered data to help stakeholders assess, anticipate, and address inequities with evidence-based policies and programs.

Why does gender equality matter in a mine?

Across the globe, large-scale mining offers relatively high wages to workers. It also represents one of the most male-dominated indus-

tries, with women making up only 5% to 15% of workers. And while mining may be a small sector in terms of total employment in a nation, it is often the biggest and most important employer for many mining communities. Balancing access to mining jobs in can bring secure livelihoods to women and their households while engendering trust with authorities and industry.

Decision-makers need to understand the status quo for women in mining if there is any hope to address longstanding inequities during the next generation of large-scale mining that will be characterized by digitization, automation, machine learning, artificial intelligence, and more.

Accordingly, the first phase of our WMF research project is to establish a baseline gender profile for workers in large-scale mining. A clearer picture of the gender dynamics on the ground today can inform actions to

ensure new mining technologies do not maintain or intensify existing inequities.

This year, we released uniquely granular and comparable data on the mining workforces in 10 diverse nations, drawn from household surveys collected by the International Labour Organization.

Digging into the Data

Data from Chile suggests that the real median income for mining is triple that of workers in the broader economy. However, less than 10% of total employees in the Chilean mining sector are women. In Peru, we see that women represent only 5% of the core mining jobs, and 10% of all mining jobs. Sweden is an exception where female workers represent a quarter of the total mining workforce – notwithstanding the fact that the mining sector employs only 0.2% of workers in the country.

Even though women often make up a small fraction of the total mining workforce, the data shows there are some roles where they clearly dominate: clerical and administrative occupations. In Sweden 73% of clerical support workers are women'; in South Africa, 52%. Data from Canada shows that women are underrepresented in almost all occupations, except human resources and financial roles—positions that are particularly at risk to become obsolete as new technologies are adopted.

On the positive side, women are more likely to be qualified in the fields of natural and physical sciences such as geology, environmental engineering, and natural conservation. As investors, operators, and other stakeholders increasingly call for sustainability, staff with these qualifications will be in high demand. Some indicators are already hinting at this trend, such as data from Brazil, where we see

female dominance and even a reverse gender pay gap that favours similarly qualified female workers in agriculture, forestry, hunting, and fisheries.

One of the most surprising findings from our preliminary data is that women have a much higher level of education compared to the men they work with. In Mongolia, around 42% of women in mining have a bachelor's degree or higher, compared to 29% of men. In Brazil, 56% of women have advanced education while almost 99% have attained education above the basic level. Women in the Canadian mining sector similarly have higher levels of education, resulting in lower unemployment rates than women in other industries.

We also see that women are significantly underrepresented in programs that train technicians, tradespeople, machine operators, and drivers. This signals a need to support female workers to acquire the skills required to fill these roles that have a low barrier to entry and are evolving to adapt to new mining technologies.

And while women may have higher-level educational attainment, our research shows that women tend not to be trained in STEM fields that would allow them to find secure, high-

paying jobs in mining. In Australia, the roles where women represent more than 20% of the mining workforce are those that require non-STEM qualifications. In Canada, women constitute 34% of the mining employees with non-STEM degrees whereas this ratio is 11% for all industries. Interestingly, Canadian women with STEM degrees prefer other sectors over mining as they have higher representation in other industries. Similarly, in South Africa, the percentage of women graduating with STEM degrees exceeds their representation in the mining workforce. These trends show that while increasing women's mining-related education is important, it may only be a partial solution unless other entrenched gender inequalities in mining, including the gender pay gap, are not properly addressed.

Looking ahead

Forecasting the potential gendered implications of new mining technologies is no easy task. But it's safe to assume we can't expect the technology alone to bring equity to the mining sector. It will take good policy based on sound evidence.

The preliminary data from Women and the Mine of the Future offers insights that must be considered by governments, industry, and

other stakeholders in large-scale mining. The next phases of our project will use the data to assess how these technology-driven trends will affect women in mining and related supply chains and outline key barriers to increased participation by women in mining. Finally, we will publish guidance and implementation resources to inform decision-makers in a position to make policy and impact the mining industry.

About Author:

Ege Tekinbas is Senior Policy Advisor, Gender Equity with the Intergovernmental Forum on Mining, Minerals, Metals, and Sustainable Development (IGF). Women and the Mine of the Future is a collaborative project to increase understanding of the status quo for women in mining, so stakeholders can anticipate, assess, and address gendered impacts as mining evolves. The project partners are the IGF, International Labour Organization (ILO), International Women in Mining (IWIM) and the Environmental Governance Program of the United Nations Development Programme (UNDP) and the Swedish Environmental Protection Agency (SEPA).



Source: Huawei.com

SWASTHA*A GEMCOKATI EMPLOYEES INITIATIVE***Every ending has a new and beautiful beginning**

Nature demonstrates that almost everything occurs in cycles. The earth rotates on a daily cycle. Within nature, every beginning has an ending and all endings herald a new beginning. In the sea, every day tides go out and then come in. As each day ends and night begins, followed by a new day. And our lives have seasons and cycles as well. Each one of us experiences an endless flow of new beginnings and their endings. Childhood ends and adolescence begins, adolescence ends and adulthood begins; young adulthood ends and middle age begins; middle age ends and old age begins.

Endings are most of the time very difficult to accept, even if we were looking for it, because it is always hard to start again with the same

energy and enthusiasm. Some endings are easier to digest and others are so painful that tears our heart apart. Those kind of wind-ups paralyses our world, and nothing in our lives seems to make sense. But there is always a reason why things happen in the way they happen. Every culmination, no matter how hard it is, it's a new opportunity in disguise. It's the same with days too. Each sunset is the start of a new sunrise. The sun inevitably goes down, and it inevitably comes up again.

We generally like beginnings — we celebrate the new. But we resist endings and attempt to delay them. Very often we don't feel the joy of a beginning, knowing that in each beginning are the seeds of the end. Although endings can be painful, but they can be reduced if, instead

of resisting them, we look at it as a natural process of nature. Much of our resistance stems from our unawareness of each new beginning, from our inability to realize that we are one with nature. Indeed, we may even doubt that there will be a new start! The more we can allow ourselves to trust that every ending is a new beginning, the less likely we are to resist letting go of the old. The less resistance we have, the less pain we will experience in making the journey through the many cycles of our lives. The powerful potential behind change lies in the possibility that each new beginning will bring us greater joy and freedom than we have ever known.

About Author:**Dr. Majo Joseph**

Dr. Majo Joseph is an Ayurveda Consultant, & General Practitioner. He is also a Psychology And Counselling, Wellness Trainer.

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