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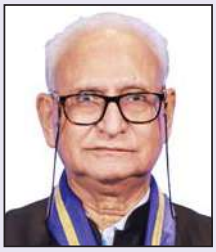

this issue contains...

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President's Message.....

Dear members..

We are shortly going to conduct elections to reconstitute the National Council for the term 2025-27, and nominations are already being invited from Chapters for various posts. This time we are going to elect a VP-II directly. The Mining Industry & MEAI as a whole, and the Council & Chapters' Executive Committees have always been male-dominated. Otherwise, there are hardly any female life members in MEAI. But as a unique and exemplary initiative, the Ahmedabad Chapter is reportedly nominating a female member for the post of VP-III. Though the nominations for this post are open for all Chapters of the West Zone, and the Ahmedabad Chapter has already availed this chance last time when it nominated me, other Chapters of the Zone would now like to take advantage of this opportunity. Let's wait and see how much response and appreciation the unique initiative of the Ahmedabad Chapter receives. We may not have to wait long, as by the time this February issue reaches the hands of Council members, they would already be debating this matter in the council meeting on 1st February at Belgaum.

It is also learned that the Ahmedabad Chapter was considering electing an all-women Executive Committee for the term 2025-27, but considering the low female membership, this idea was dropped. They will probably now settle for 30% female participation or so. But it was definitely an appreciable initiative.

Organizing an event exclusively by and for student members has been my dream. I am happy to see this dream transforming into reality through the Udaipur Chapter, which is finally organizing this event in Udaipur on 22-23 February 2025. My sincere thanks to them. I hope other Student Chapters will support this event by deputing a good number of participants and make it a grand success so that this becomes a regular feature in MEAI's annual calendar in the future.

Women members from the Ahmedabad Chapter are probably also considering conducting a virtual panel discussion soon by and for women members. It is again a unique and good idea. I hope women members from other Chapters will also want to join this event. They may contact the secretary of the Ahmedabad Chapter for support and willingness to participate.

With best wishes.

S.N. Mathur
President

Mining Engineers' Association of India

Regd. Office : Rungta House, Barbil (Odisha)

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1967-68	L.A. Hill	S. Chandra
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1969-70	S.S. Manjrekar	V.S. Rao
1970-71	R.C.B. Srivastava	M.G. Jhingran
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1975-76	G.L. Tandon	K.K. Biran
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1975-76	G.L. Tandon	K.K. Biran
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1978-80	R.C. Mohanty	S.K. De
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1981-82	D.K. Bose	S.B. Mukherjee
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1983-86	V.S. Rao	L.S. Sinha
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2011-2013	Dr. S.K. Sarangi	A.S. Rao
2013-2015	A. Bagchhi	Koneru Venkateswara Rao
2015-2017	T. Victor	Koneru Venkateswara Rao
2017-2019	Arun Kumar Kothari	Dr.H.Sarvothaman, S. Krishnamurthy
2019-2021	S.K. Pattnaik	S. Krishnamurthy, M. Narsaiah
2021-2023	K. Madhusudhana	M. Narsaiah

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11. Hutti-Kalaburagi	Prakash	Arunachalam
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13. Jabalpur	Pukhraj Nenival	Pratyendra Upadhyay
14. Kolkata	-	-
15. Mumbai	-	-
16. Nagpur	P.N. Sharma	Dr. Y.G. Kale
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18. Ongole-Vijayawada	K. Subhaskar Reddy	Sarat Chandra Babu
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EDITOR'S DESK

Dr. P.V. Rao
Editor, MEJ

The Central Geological Programming Board (CGPB) is recognized as the apex body at the national level for overseeing geoscientific programs, including geological mapping, mineral prospecting, exploration, and exploitation across India. It guides the annual field season programs of the Geological Survey of India (GSI) through specialized committees focused on various themes related to geology and mineral resources. The board holds regular meetings to discuss progress, challenges, and future directions for geoscientific research and exploration in India. The Secretary of the Ministry of Mines serves as the Chairman of the CGPB, which includes several members from various ministries and organizations, heads of central organizations related to geology and mining, state secretaries for mining and geology, and industry representatives.

I would like to draw the attention of our esteemed members to the discussions held at the 64th CGPB meeting in Bhubaneswar on January 19, 2025. During this meeting, industry representatives and NACRI founder members raised the subject of adopting the CRIRSCO-recognized Indian Mineral Industry Code (IMIC) for reporting Exploration Results, Mineral Resources, and Mineral Reserves in India. This suggestion was made by industry stakeholders from Adani Group and Hindustan Zinc Limited (HZL), specifically Shri Deepak Rathod and Shri K.S. Solanki. They emphasized the importance of adopting IMIC in India when preparing exploration or geological reports, particularly those prepared by the government for auctioning mineral blocks. MEAI/NACRI have already developed the CRIRSCO-recognized reporting code IMIC to instill confidence and attract much-needed foreign direct investments and advanced technologies in exploration and mining.

The Mines Secretary, Shri V.L. Kantha Rao, confirmed that this suggestion was brought to him in November 2023 by MEAI/NACRI/CRIRSCO representatives and that the government has worked on it. He was advised by his technical team that both the UNFC and CRIRSCO systems are similar. He also mentioned that a question regarding this matter was raised in the last parliamentary session, where the government informed Parliament that both systems are comparable. However, during this meeting, he observed many industry representatives expressing their disagreement with his technical team's feedback as they vigorously shook their heads. In light of this, the Mines Secretary suggested forming a group led by Director Technical Shri Yogendra Singh Bhamboo to further study the matter and take it forward. He reiterated the government's willingness to reconsider the issue.

The Ministry of Mines Additional Secretary Shri Sanjay Lohiya stated that more than a year ago, a group including Shri Solanki from HZL visited the Ministry when Shri Pradeep Singh was present in the Mines Ministry. The government had suggested that they review two or three reports prepared by GSI/MECL according to MEMC Rules and identify what modifications or additional information were required according to IMIC. The reports were handed over to the group; however, they never returned with their suggestions despite several reminders. He further clarified that the group should suggest modifications to the existing MEMC Rules so that the government can act on them. When industry stakeholders attempted to respond to this observation, the Mines Secretary did not allow further discussion on it.

In conclusion, the Mines Secretary advised that the committee formed under Shri Yogendra Singh Bhamboo's chairmanship should also include all stakeholders who disagree with the government's observations and return with proposals within a month's time. MEAI/NACRI welcomes this suggestion from the Mines Secretary and confirms their willingness to cooperate with authorities.

Let me respond to the government's observations:

1. In response to Shri Sanjay Lohiya's observation on reviewing MEMC-compliant reports, I would like to highlight that NACRI provided detailed feedback on December 20, 2023, regarding five geological reports forwarded by then Director Technical Shri Pradeep Singh. However, NACRI has not been informed about the status of these reports since submission.
2. Concerning the government technical team's input suggesting there is "not much difference between UNFC and CRIRSCO reporting standards," I would like to assert that this reflects a misunderstanding of the standard definitions utilized in these two systems and how they complement each other. To address this discrepancy, a bridging document was officially released in 2024 jointly by UNECE and CRIRSCO for better understanding and appropriate application of these two systems. It is crucial for government technical team to stay updated with the latest developments in this field.

I urge the government to adopt IMIC promptly to attract much-needed FDI for sustainable growth in India's mineral industry. Let us welcome the Mines Secretary's initiative to form a committee for further study of this matter on a time-bound basis.

- Editor

NEWS FROM THE MINERAL WORLD

Critical mineral push: Exploration up 53%, but auction hurdles persist

The ministry has also notified 28 private exploration agencies to undertake exploration without requiring prospecting licences

The Geological Survey of India (GSI) has undertaken 195 mineral exploration projects for critical and strategic minerals in the financial year 2024-25 (until November), a significant leap from the previous year. This represents a 53 per cent increase compared to the 127 projects seen in 2023-24, according to the mines ministry's year-end report.

This year, the ministry not only accelerated exploration activities but also made strides in auctions. It concluded 2024 with the auctioning of 24 - 48.98 per cent - critical mineral blocks out of the 49 it has offered for bidding so far. These include key resources like lithium, graphite, phosphorite, and glauconite, spread across various regions of India.

"Out of 48 blocks put to e-auction, 24 have been successfully auctioned, including four mining lease (ML) and 20 composite licence (CL) blocks," the mines ministry had said in November. One of its tungsten blocks in Tamil Nadu is entangled in a legal dispute between the state and the Centre.

The ministry has also notified 28 private exploration agencies for exploration without a prospecting licence. The government is also providing funding to eligible private exploration agencies through the National Mineral Exploration Trust (NMET). During 2024-25, NMET has funded 40 projects of critical minerals through various exploration agencies.

The government had released its first list of critical minerals in July 2023, underscoring its focus on resources like rare earth elements (REE), lithium, molybdenum, potash, tungsten, and graphite. This year's intensified exploration efforts align with its strategy to reduce import dependence and strengthen domestic supply chains for these essential materials.

With exploration hitting new highs, the ministry is expected to roll out additional rounds of critical mineral auctions in 2025. It aims to further bolster the nation's self-reliance in key sectors like energy storage, electronics, and defence. However, lack of clarity regarding the resources in 49 blocks has cast a shadow on the country's ambitions for critical mineral self-sufficiency.

About 10 per cent of the total mineral blocks are designated for mining leases, typically auctioned at the G2 level, which provides detailed resource information and enables the successful bidder to commence mining directly. According to the United Nations Framework for Classification of Resources, the exploration of minerals is divided into four stages - G4 (reconnaissance), G3 (prospecting), G2 (general exploration), and G1 (detailed exploration). The G4 stage entails estimating quantity with grade through regional assessments and limited subsurface sampling, resulting in low-confidence estimates. Progressing beyond reconnaissance, the G3 stage maintains low-confidence estimates.

The G2 stage indicates a more comprehensive assessment with a moderate level of confidence in estimating quantity with grade. At the G1 level, the most advanced stage, high-confidence estimates are derived from in-depth investigation, extensive sampling, and direct analysis.

In addition to the lack of clarity on reserves, the high cost of investment in exploration has deterred potential investors from participating in the bidding process. The poor performance of critical mineral block auctions could also hinder India's critical mineral mission, which aims to secure vital resources for green energy and technology. Critical minerals are essential for modern economies, serving as key components in advanced technologies, clean energy solutions, and national security systems.

Nitin Kumar New Delhi, BS | Jan 02 2025

Beyond China: Which Countries Hold the Key to Future Rare Earth Supplies?

- Rare earth elements are crucial for clean energy, advanced technology, and modern warfare, making them a new axis of geopolitical power.
- China currently dominates the global rare earth market due to its near-monopoly on refining capacities.
- Western powers are concerned about China's control over rare earth supply chains and are seeking to diversify sources and develop their own refining capabilities.

Rare earth elements are the new oil. This group of 17 metallic elements has become indispensable for the clean energy transition and for modern manufacturing in general. These elements have unique characteristics that make them essential ingredients for the future of technology.

"[Rare earths] just change everything about automobiles; about green technology; about the accuracy of weapons systems. And so they've just become essential." said Jim Kennedy, the president of ThREE Consulting, a rare earths consultancy. "You want a Prius? You need rare earths. You want a long-range Tesla? You need rare earths. You want a cruise missile that is accurate to 1 meter? You need rare earths."

The particular utility of rare earth elements primarily comes from their uses as catalysts and magnets in traditional and low-carbon technologies. Other important uses of rare earth elements are in the production of special metal alloys, glass, and high-performance electronics. Rare earth elements "have remarkable physical and chemical properties that make them arguably the superheroes of the periodic table," Ryan Castilloux, the managing director of minerals consultancy Adamas Intelligence, told Foreign Policy.

Rare earths aren't really as 'rare' as the name would lead you to believe. These minerals are naturally occurring all over the world – but the key lies in finding them in great enough concentrations to make their extraction worth the time and money required.

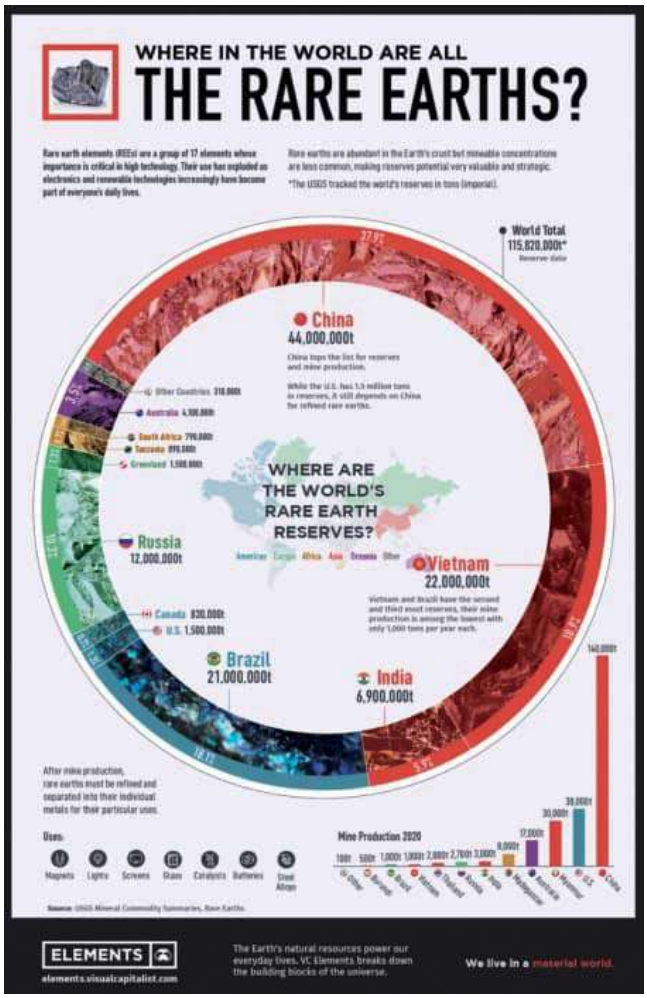
All of this serves to make rare earths the new axis of geopolitical power on a global scale. The nations that have naturally occurring reserves of these elements and the capacities and resources to extract and refine them will find themselves wielding enormous financial and political leverage in the coming years.

So which countries are at the top of this new geopolitical totem pole?

China is far and away the largest producer of rare earth elements. After China, which provides about 38 percent of the world's raw rare earth minerals, Vietnam has the next biggest rare earth reserves, accounting for about 19 percent. Then there is Brazil with 18.1 percent, Russia with 10.4 percent, India with 6 percent, Australia with 3.5 percent, and finally a tie between the United States and Greenland, accounting for 1.3 percent each. No other country has more than one percent of rare earth reserves.

However, out of all these countries, only one really has geopolitical control of rare earth supply chains and all of the secondary markets that rely on those materials, and that country is China.

China supplies about 85–95 percent of the world's refined rare earth minerals and has dominated the global market since the late 1990s. This is because Beijing has a near-monopoly on rare earth refining capacities. As we know, a handful of other countries also have significant reserves of critical rare earth elements, but lack the established infrastructure necessary to process them for use in an efficient or cost-effective manner.



China alone accounts for 85-90 percent of the world's rare earth mine-to-metal refining. What's more, Chinese refineries supply 68 percent of the world's cobalt, 65 percent of nickel, and 60 percent of EV-battery-grade lithium. As a result, a whopping 75 percent of all EV batteries are made in China.

There is significant concern that if other nations rich in rare earths don't step up to compete with China, this is giving Beijing entirely too much leverage and creating a market that is anything but free. So far, however, some experts contend that such worries are overblown. But it's no secret that rare earths are the new oil, and Western powers are scrambling to regain control. Global tensions around rare earth are certain to heat up in coming years, and mitigating such lopsided control

of the market will be critical to maintaining balanced trade mechanisms.

Haley Zaremba, Oilprice.com | Jan 01, 2025

Which countries produce the world's silver?

Where does the world get its silver?

In 2023, silver mines produced 830.5 million ounces of silver. That total is projected to decline by about 1 percent to 823.5 million ounces in 2024.

Silver mine output has been declining for nearly a decade. Mine production peaked at 900.1 million ounces in 2016. Meanwhile, demand has outstripped supply for three straight years and the Silver Institute projects another market deficit in 2024. This is primarily due to rapidly rising industrial demand, specifically in the solar energy sector.

Only 20 to 30 percent of the world's silver comes from primary silver mines. Approximately 70–80 percent of silver mined globally is produced as a by-product of mining other metals, such as copper, lead and zinc.

Here are the top 20 silver-producing countries based on 2023 data from the Silver Institute:

1. Mexico - 202.2 million ounces
2. China – 109.3 million ounces
3. Peru – 107.1 million ounces
4. Chile – 52 million ounces
5. Bolivia – 42.6 million ounces
6. Poland – 42.5 million ounces
7. Russia - 39.8 million ounces
8. Australia – 34.4 million ounces
9. United States – 32 million ounces
10. Argentina – 26 million ounces
11. India – 23.8 million ounces
12. Kazakhstan – 16.6 million ounces
13. Sweden – 12.6 million ounces
14. Indonesia – 10.3 million ounces
15. Morocco – 8.8 million ounces
16. Uzbekistan – 7.7 million ounces
17. Canada – 7.1 million ounces
18. Papua New Guinea – 4.3 million ounces
19. Spain – 3.7 million ounces
20. Brazil – 3.3 million ounces

Mike Maharrey - MoneyMetals.com | January 24, 2025

Only Indonesia can help nickel recover from price bust

Nickel ended 2024 trading at four-year lows, a spectacular reversal of fortune for a metal that soared so high in 2022 it almost broke the London Metal Exchange (LME).

There is no mystery to this dramatic tale of boom and bust. Indonesia has flooded the world with more metal than it can absorb, crushing the price and leaving a trail of casualties among the rest of the world's producers. The market's fortunes this year depend on whether Jakarta can tame the excesses of its nickel sector and align supply more closely with demand. There are positive signs. Indonesia's mining ministry plans to cut the nickel ore mining quota to 200 million metric tons this year from a previously planned 240 million.

The news has sparked a modest price revival, LME 3-month nickel rising by 3% since the start of January. Whether it's enough to generate a more sustained recovery remains to be seen.

Out of the shadows

Indonesia has emerged as the world's dominant nickel producer over the last decade.

The country's mined production exploded from 358,000 tons in 2017 to 2.2 million tons in 2023, according to the

World Bureau of Metals Statistics. Indonesian supply was equivalent to over half of global demand that year. The Indonesian supply tsunami initially washed through the Class II segment of the nickel market in the form of stainless steel inputs such as nickel pig iron.

That's changed over the last two years after Chinese operators mastered the technology to convert Indonesia's relatively low-grade resource into high-purity Class I products such as sulphate and refined metal. The processing revolution has transferred the market surplus from the Class II shadows to the highly visible world of exchange trading.

LME and ShFE nickel inventory

The LME has listed five Chinese brands and one Indonesian brand of refined nickel since its 2022 meltdown. The impact is clear to see in rising LME inventory.

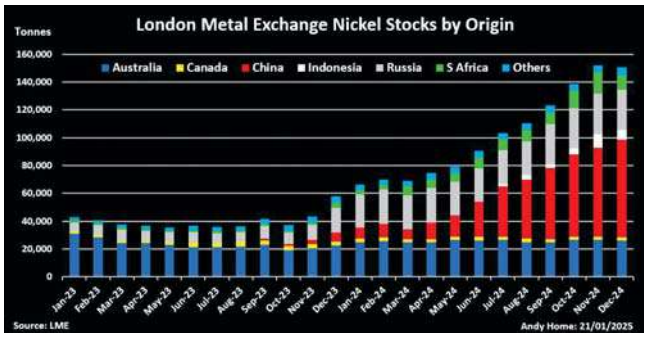
Low LME stocks were one of the reasons for the price going supernova in March 2022. They continued sliding through the first half of 2023, falling below 40,000 tons for the first time since 2007. LME inventory has since surged to 172,206 tons on the back of Chinese and Indonesian deliveries.

There was no Chinese nickel in the LME storage system until August 2023. As of the end of December 2024 there were 70,000 tons, accounting for 47% of on-warrant stocks. The first Indonesian metal turned up in July last year and amounted to over 7,000 tons by the close of December.

LME registered stocks are only part of the bigger stocks picture. LME off-warrant stocks have also grown, while Shanghai Futures Exchange stocks have risen to a five-year high of 35,327 tons. Total exchange inventory was almost 230,000 tons at the end of November 2023, the highest level since 2021.

This is good news for both exchanges. The physical liquidity boost has helped restore confidence in both markets, generating a recovery in trading volumes after activity slumped in the wake of the 2022 nickel crisis.

It's been less good news for anyone in the nickel production business outside Indonesia and China. Rising stocks have driven the price ever lower.



LME nickel stocks by origin producer

Battery demand stutters

It's not as if nickel demand has collapsed. The stainless steel sector, which still accounts for the largest share of the metal's usage, performed strongly in 2024. Global melt-shop production rose by 6.3% year-on-year in the first half of last year, according to industry association world stainless.

But nickel's usage in electric vehicle (EV) batteries has been weaker than expected. Although global EV sales grew by 25% in 2025, most of the growth came from China, where automotive companies are increasingly shifting to non-nickel battery chemistry such as lithium-iron-phosphate. Western car-makers are sticking with nickel in their batteries but EV sales rose by a relatively modest 9% in North America and contracted by 3% in Europe last year, according to consultancy Rho Motion. Moreover, both Western and Chinese car buyers are choosing hybrids over pure battery models and hybrids need smaller batteries.

Researchers at Adamas Intelligence estimate that the global sales-weighted average amount of nickel deployed per passenger vehicle battery was 12.6 kg in November 2024, down 16% from November 2023. While European EV sales are expected to recover this year as tougher emission rules kick in, North American sales face the challenge of Donald Trump rolling back the Biden administration's EV subsidy scheme.

Supply discipline

Indonesia has made no secret of its desire to leverage its nickel supply dominance into pricing dominance. It now has that power. The key question for the nickel market is how it will use that power. The cut to this year's

ore quotas suggests that Jakarta knows the price has fallen too far even for some of its own producers.

The trick will be tailoring production rates to a fast-evolving EV battery demand dynamic. Without supply discipline from the world's dominant producer, a sustained nickel price recovery will remain elusive.

Reuters / January 23, 2025

Indonesian parliament proposes revision of mining law

Indonesia's parliament proposed on Thursday to revise the country's mining law to help the government accelerate development of its mineral processing industry and to regulate mining permits for religious groups and for universities.

President Prabowo Subianto has vowed to expedite development of Indonesia's mineral processing industry and energy transition and formed a special task force to come up with detailed plan for the sector. A parliamentary plenary meeting on Thursday agreed to launch a formal deliberation process for the law revision.

Among the proposed revisions to the mining law was a plan to give certain companies priority access to mining areas for "down streaming" purposes. The draft said companies may be prioritized based on their investment size, their mineral value-add plan and jobs creation for domestic workers.

The draft bill also includes plans to give priority access to religious groups and universities for certain metal ore mining areas, taking into account the size of the mines, the institutions' capability to manage them, and their plan to develop local economies and education.

Indonesia last year issued a regulation allowing religious organization to manage mining assets to provide them with a source of income, a move that critics have said was to reward the groups for their longstanding political support. The government at the time denied that.

The legislative body also proposed that mining area smaller than 2,500 hectares (6,178 acres) will be prioritised for small business to support local economies.

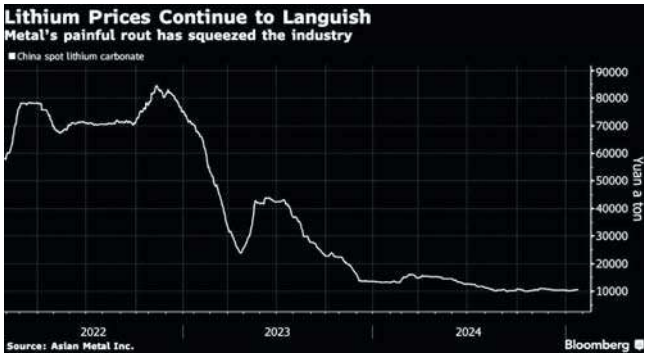
Reuters / January 23, 2025

Chile keeps faith in lithium expansion even as glut worsens

Chile, home to the world's biggest lithium reserves, is confident that investors will compete for licenses to drill new deposits even amid a worsening global glut that's squeezing the battery metal industry.

"We're convinced that there's interest," Mining Minister Aurora Williams said in an interview late Wednesday - a day before Chile warned that global oversupply is set to increase this year, despite some industry cutbacks. Companies have until Jan. 31 to apply directly for contracts as the government looks to open up new areas to lithium mining. Authorities have already started indigenous consultation processes for as yet untapped salt flats. Other clay and geothermal deposits are also being offered to the private sector.

The new areas - identified partly based on expressions of interest from prospective bidders - are part of the government's efforts to boost production under a public-private model. Chile, the top lithium producer after Australia, is banking on investors taking a long-term view on the strength of electric vehicle demand as prices stabilize from a sharp pullback.



Still, oversupply in the market is set to swell this year as Chinese demand slows, according to a report released Thursday by Chilean agency Cochilco, which also cited the threat of sweeping US tariffs.

Currently, only two companies produce lithium in Chile - SQM and Albemarle Corp. - from a single salt flat. They are expected to push up national output by 7% this year to 305,000 metric tons, Cochilco estimates. Under the government's model for the sector, the state will take a controlling stake in operations considered strategically significant, while allowing private firms to retain control of projects in non-strategic areas. The goal is to more than double output over the next decade.

Authorities are expected to grant Enami a lithium operating license soon, paving the way for the Chilean state company to secure partners to develop the project. Another state mining firm, Codelco, is lining up a partner for the Maricunga lithium project. Williams declined to comment on those processes.

Copper smelting

The state companies are also working on separate copper smelting projects - Enami is looking at a major upgrade of its shuttered plant while Codelco is working on a proposal to develop a new smelter with private capital.

The Mining Ministry's focus is the Enami modernization project, which is moving through environmental evaluation, Williams said. She declined to comment on Codelco's initiative, other than to say it would fit in with the goal of maintaining or increasing smelting capacity in Chile.

Building smelters makes little business sense right now given the abundance of Chinese capacity. But there are sustainability and geopolitical factors at play as nations look to boost their presence in battery supply chains in response to China's dominance.

The Chilean government also hopes Codelco's three existing smelters remain viable, including the almost century-old Potrerillos plant, Williams said.

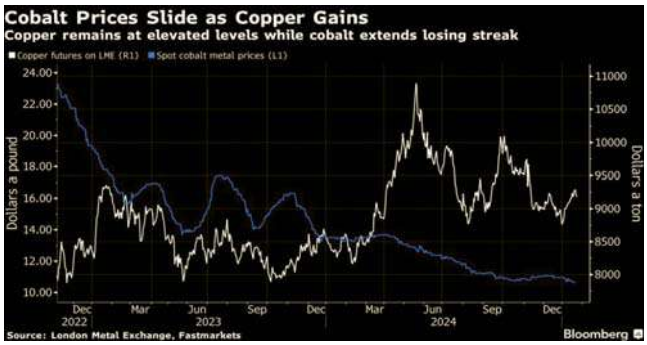
Bloomberg News | January 23, 2025

World's No. 1 cobalt miner sees 2025 output approaching record

The Tenke Fungurume mine in DRC

The world's biggest cobalt miner, which churned out a record amount of the battery metal last year, is targeting similar levels of production for 2025 following a ramp-up at two African mines. China's CMOC Group Ltd. gave output guidance at 100,000 to 120,000 tons of cobalt, according to a statement posted on its *WeChat* account, after producing 114,165 tons in 2024.

Elevated levels of cobalt output from CMOC could further pressure prices of the material that's used in everything from electric vehicle batteries to aerospace alloys. The company exceeded its 2024 full-year production guidance within the year's first nine months, sending shock waves through the market and weighing on prices that are at the lowest since 2016.



The speedy ramp up at CMOC's two mines, TFM and KFM, in the Democratic Republic of Congo helped it double cobalt output last year. The company said it's carried out exploration work at TFM's western area and KFM Phase II.

Cobalt is often extracted as a by-product from digging up copper, which CMOC is bullish about over the longer term. It's targeting copper production this year at between 600,000 and 660,000 tons, compared with about 650,000 tons last year. Still, it sounded the alarm in November over the shrinking role of cobalt in the electric-vehicle transition.

CMOC reported its preliminary net income for 2024 surged between 55% and 72% from the year before to 12.8 billion yuan ($1.76 billion) to 14.2 billion yuan, according to a stock exchange filing Wednesday. It cited an increase in output and sales, as well as higher copper prices, for the rise.

Bloomberg News | January 23, 2025

Govt to launch critical mineral mission to boost production: Mines minister

Reddy made the remark after inaugurating the 3rd National Mining Ministers' Conference in Konark

Union minister G Kishan Reddy along with CM of Odisha Mohan Charan Majhi launched the Mining Tenement System (MTS) Module at the 3rd National Mining Ministers' Conference in Konark, Odisha

Union minister G Kishan Reddy on Monday said the Centre will soon launch the National Critical Mineral

Mission (CMM) to enhance domestic production, reduce import dependence, and encourage offshore mining auctions, while urging states to cooperate for sustained mining activities.

Reddy made the remark after inaugurating the 3rd National Mining Ministers' Conference in Konark, in the presence of Odisha Chief Minister Mohan Charan Majhi, Bihar's deputy CM Vijay Kumar Sinha, Telangana deputy CM Bhatti Vikramarka Mallu, and other dignitaries and industry leaders.

"The mission will soon get Cabinet approval. Union finance minister had announced about it in her budget speech. Import duty on critical mineral has also been made zero," Reddy said. Lithium, cobalt, copper, nickel and rare earth elements are known as critical minerals which are essential for manufacturing defence equipment and key technologies.

Stating that India has already made a place in the global platform on critical minerals, the Union coal and mines minister said his ministry wants the public and private sectors to work in tandem in this regard.

Reddy also announced that India launched the auction of 48 critical mineral blocks, with 24 successfully allotted. "The fifth tranche offering of 15 critical mineral blocks was launched today, and industries have participated with full encouragement. This momentum should continue," he added.

He also recognised the growing potential of offshore mining, marking India's first offshore mineral auction in 75 years, which will reduce import dependence and contribute significantly to India's self-sufficiency.

Addressing the conference, chief minister Mohan Charan Majhi said the state, known for its vast mineral resources, significantly contributes to India's industrial and economic growth. "The conference serves as a vital platform for knowledge-sharing, collaboration and policy deliberation to ensure sustainable and environmentally responsible mining practices," he said.

Majhi said Odisha is poised to play a pivotal role in this transformation, particularly as part of the 'Purvodaya Mission,' which aims to unlock the economic potential of India and build a more prosperous and self-reliant nation.

Both Reddy and Majhi jointly launched the Mining Tenement System (MTS) at the conference. This cutting-edge digital platform will streamline processes, enhance transparency, and boost efficiency in the allocation and management of mineral resources.

They also handed over sanction letters to 11 startups, selected for funding of Rs 15.97 crore under S&T-PRISM Component of Science and Technology Programme of Ministry of Mines. These startups will focus on indigenous technologies, including sustainable solutions like high-grade silica production, lithium battery materials, and AI-enhanced mining operations.

Reddy and Majhi also presented awards for excellence in mineral block auctions.

Rajasthan secured the top position, followed by Madhya Pradesh and Maharashtra, for their outstanding contribution in conducting highest number of auctions in 2023-24 fiscal. They also jointly released the booklet on 'Best Practices on Mine Closure' at the conference.

VL Kantha Rao, secretary, ministry of mines, in his address highlighted significant achievements in the mining sector. He shared that 75 per cent of mining block auctions have been conducted in the last four years, with Odisha generating Rs 1.33 lakh crore in mineral revenue over a decade.

Press Trust of India, Bhubaneswar / Jan 20 2025

NMDC to extract diamonds worth $3.4 mn from mine near tiger reserve in MP

NMDC, which has not yet started new rounds of mining, is focusing on extracting and processing diamonds from ore stockpiles at its Panna mine.

The miner faced delays in securing environmental clearances and had to halt mining for over three years.

India's state-run miner NMDC is expected to extract 6,500 carats of diamonds, worth $3.4 million, this fiscal year from ores in a mine near a tiger reserve, after receiving mining clearances last year, two sources said. The miner faced delays in securing environmental clearances and had to halt mining for over three years at the Panna mine in the central state of Madhya Pradesh due to its proximity to the tiger reserve.

The Supreme Court later permitted NMDC to mine, subject to certain guidelines, paving the way for the company to resume operations. NMDC, which has not yet started new rounds of mining, is focusing on extracting and processing diamonds from ore stockpiles at its Panna mine, the sources said.

Reuters / Jan 20 2025

25 Chinese companies may take part in international mining exhibition

Around 25 Chinese companies have expressed interest in participating in the 11th edition of the International Mining and Equipment Exhibition (IME) in Kolkata, an official said on Friday.

Around 25 Chinese companies have expressed interest in participating in the 11th edition of the International Mining and Equipment Exhibition (IME) in Kolkata, an official said on Friday. The Mining, Geological & Metallurgical Institute of India (MGMI), which organises the exhibition in collaboration with Tafcon, stated that the last two editions did not feature direct participation from Chinese companies.

"For the upcoming 11th edition, 25 (Chinese) companies have committed to participate so far," MGMI secretary Ranajit Talapatra said. Addressing the media, Tafcon official I P Wadha said: "With the easing of visa restrictions, we expect officials from at least 25 Chinese companies to attend.

In the past editions, Chinese companies that have local affiliations or collaborations have participated in the exhibition. MGMI president and Western Coalfields Chairman J P Dwivedi said the event could witness the participation of 600 delegates from 30 countries. The IME 2025 and a conclave will be held across two venues Science City grounds and Biswa Bangla Mela Prangan from October 30 to November 2.

Press Trust of India, Kolkata / Jan 17 2025

At least 78 dead at abandoned South Africa gold mine, toll expected to rise

A specialist mining rescue company has been dropping a small cage thousands of metres (feet) into the mine to retrieve survivors and bodies.

Civic groups claim authorities also removed the ropes and pulley systems that the miners used to enter and exit at least one shaft and send down supplies.

Rescuers and volunteers have pulled at least 78 dead miners and more than 160 survivors from an abandoned South African gold mine, where they have languished for over two months during a standoff with authorities who demanded they surrender to police because they were mining illegally.

Hundreds are still believed to be trapped on Wednesday and the death toll is expected to rise in a disaster that has focused criticism on the South African government's decision to try to smoke them out by cutting off food and other supplies for a time. Civic groups claim authorities also removed the ropes and pulley systems that the miners used to enter and exit at least one shaft and send down supplies.

The groups say the government's weekslong refusal to stage a rescue effectively left scores of miners to die of starvation or dehydration. A rescue is now underway after a court order but only a few miners can be pulled up at a time, and the operation could take 10 days. South African authorities have argued that the miners were always able to exit through another shaft at Buffelsfontein Gold Mine, one of the deepest in the mineral-rich country.

AP Stilfontein (South Africa) / Jan 15 2025

Assam mining tragedy: Search, rescue operations in Dima Hasao enter day 7

Rescue operations are being carried out by multiple agencies, including NDRF, SDRF, army and navy personnel, with drones deployed for mapping of the area.

Dima Hasao: Rescue operation underway for labourers trapped inside a coal mine, in Dima Hasao district, Assam.

Rescue operations at a flooded coal mine in Assam's Dima Hasao district continued for the seventh day on Sunday to locate trapped labourers inside the quarry, officials said.

Dewatering of the mine is being carried out with the process expected to reach the final stage soon, state Mines and Minerals Minister Kaushik Rai said. Altogether nine workers were trapped inside the coal mine in Umrangsu area, around 250 km from Guwahati, after a sudden gush of water flooded the quarry on January 6. Of them, the bodies of four labourers have been recovered so far.

(Continued on Page 31)

ENHANCEMENT OF BLAST PERFORMANCE USING STEMMING PLUG

[1]Manukonda Bharath, [2]Lakkarsu Krishna, [3]Abhsihek Urmaliya

Abstract

Stemming is one of the major effective parameters of open pit blasting. "Stemming plugs" are the new technological development on the increase of blasting efficiency without changing the feature of explosives. They are used in the stemming zone of the blast hole to increase the containment of the explosive gasses. This yields an increase in explosive energy transmitted to rock mass, resulting in better fragmentation. In this study, the results of some limestone and overburden bench blasting performances with the stemming plugs over the conventional method. The video-camera shots of experimental blasting with stemming plugs will provide a better understanding over the mechanism of them.

Keywords: *Fragmentation, Stemming Plugs, Explosive Energy*

1. INTRODUCTION

Due to constant raising of the cost, the mining industry is facing immense pressure on costing, where a blast outcome directly affects the performance of loading and hauling. The energy generated by the explosive and its utilization to break the surrounding rock in a uniform manner is more important in the blasting operation.

In the entire operation of charging, stemming is the major part in confining blast energy and reducing gas backflow, both of which directly influence fragmentation. Stem plugs have proven to be an innovative solution for enhancing stemming efficiency and improving fragmentation in this critical area.

1.1 The role of stem plugs

mechanical devices placed within the stemming material to provide added confinement. By preventing the upward escape of explosive gases, they direct more energy into the surrounding rock, thereby improving fragmentation in the stemming region.

1.1 Benefits of stem plugs

- Enhanced energy utilization: minimize gas loss, improving rock breakage near the collar zone.
- Improved fragmentation: decrease oversize fragments, reducing the need for secondary blasting.
- Cost efficiency: Lower explosive consumption while maintaining desired fragmentation quality.
- Environmental Benefits: Reduce fly rock, vibrations, and dust emissions.

2. LITERATURE REVIEW

Research by Rehman et al. (2021) evaluated the effectiveness of three types of stemming plugs in full-scale production blasts. The results demonstrated improved blast performance, reduced secondary blasting, and significant cost savings. And economic analysis revealed that using stemming plugs substantially lowers blasting expenses. Another study by Rehman et al. (2020) found that the additional time required to load stemming plugs ranges from 1 to 7 minutes, depending on the plug type, making their use practical and efficient.

3. METHODOLOGY

Stemming plugs are placed in a predetermined location in a blast hole and forced to fit. When explosives are detonated, the plug resists the pressure of the compressed air deck, diverting energy towards the free face. The plug is then forced upward into the stemming material, where it locks up and contains the explosive gases and energy.

Figure-1. Stemming Plug

4. CASE STUDY

A blast was done at a Mine-X, located in the Madhya Pradesh, Satna, latitude/longitude (24°34'23.8"N 80°59'40.5"E), on limestone and Over Burden bench to compare the performance of blast outcomes with and without stemming plug.

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Figure-4. Possible Mechanism causing blocky collar

5. DISCUSSION OF RESULTS

In the course of the study, trial blast was done in limestone and overburden and the details listed in the Table-1. It is observed that, in the pattern blasted without a stemming plug, gases are ejected to the surface from the stemming portion resulting in boulder formation in the stemming part and the same is illustrated in Figure-2. The pattern blasted using a stemming plug resulted in uniform fragmentation.

For uniform fragmentation, potential energy is required in the entire column and to fulfill this criterion charge length has to increase and thus results in more explosive consumption and excessive energy release, which directly affect ground vibration, fly-rock. Usually charge length is maintained in view of breakage of rock at the stemming portion not in view of actual explosive consumption because charge length and stemming length are indirectly proportional to each other. When stemming length increases explosive energy will not reach the stemming completely, resulting in boulder formation. For energy utilization at the stemming portion properly, charge length need to increase but while using a stemming plug actual quantities of explosive used to break the entire rock. A stemming plug to be placed at a depth from the mouth of the hole as required above which is filled with stemming material, plug has a confined grip to hold the stemming material at desired height so that the hole can be charged with the actual required quantity. Figure-3 illustrates the position of placing of the stemming plug.

Stemming plug can be used for air-deck as well as in control blasting to control the fly rock. Where the actual explosive quantity requirement is less their plug can be used for the air deck as shown in the Figure-3 and where the fly rock control/ energy confined is required then place the plug at any place like just above the charge column ends/ between the stemming. Plug not only optimizes the explosive consumption but confined the energy so that energy utilizes within the holes rather than ejection from the stemming portion.

Trial Blast 1: Over burden Trial Blast 2: Overburden

Figure-2. Blast Performance Images of Overburden and Limestone

6. CONCLUSION

Integrating stem plugs into blasting operations enhances stemming zone performance, achieving consistent fragmentation, operational efficiency, and cost savings. None of the stemming plugs gave any kind of boulders which means homogenized blast energy utilization and no Secondary blast requirement, when stemming plug was used alongside conventional stemming material.

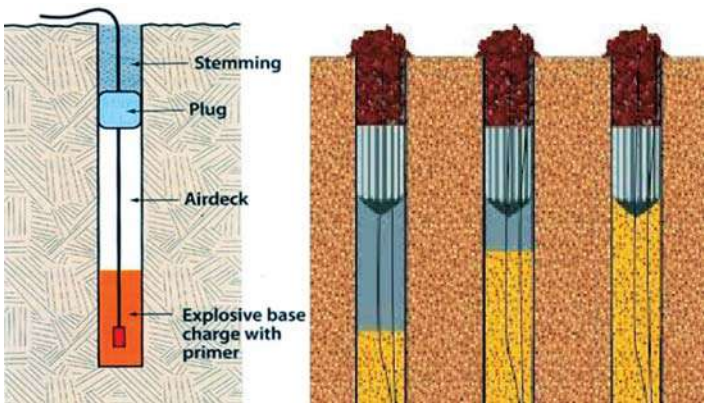

Figure-3. Position of stemming plug in blast hole

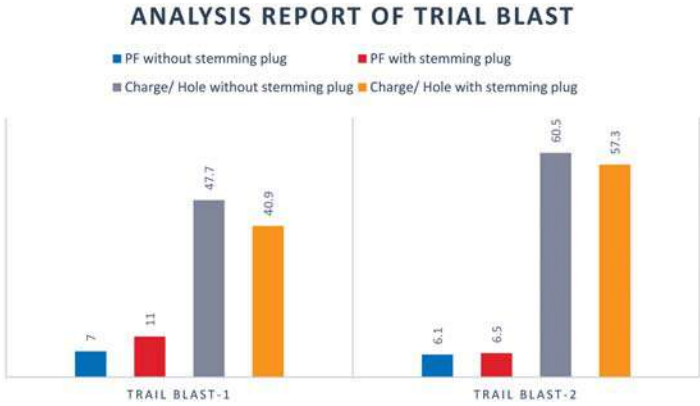

Figure-5 Analysis of Trail blast

Table-1: Illustrates the comparison of blast geometry and charge composition.

S. No.	Description	Over Burden – Trial Blast-1		Limestone – Trial Blast-2	
		Without Stemming Plug	With Stemming Plug	Without Stemming Plug	With Stemming Plug
1	Spacing	4.5	4.5	3.5	3.5
2	Burden	3.5	3.5	4.5	4.5
3	Depth of Hole	8.5	8.5	9.5	9.5
4	No. of Holes	35	37	43	46
5	Charge Per hole (Kg)	47.7	40.9	60.5	57.3
6	Charge per delay (Kg)	47.7	40.9	60.5	57.3
7	Total Charge (Kg)	1669.5	1513.3	2601.5	2635.8
8	Specific Gravity	2.5	2.5	2.5	2.5
9	Yield (tonnes)	11714.06	12383.43	16084.68	17206.87
10	Powder Factor (tonnes/Kg)	7	11	6.1	6.5
11	Explosive Optimized (Kg)	N/A	6.8	N/A	3.2

The above table reflects that blast taken with stemming plug had consumed less quantity of explosive compared to the blast taken without stemming plug (Figure 5). It is not only that the energy generated is completely confined within the hole which results in uniform fragmentation which illustrates in the Figure-2 clearly.

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NOMINATIONS FOR MEAI AWARDS 2025

The Mining Engineers' Association of India presents awards Instituted by the Industry/individuals during the Annual General Meeting in July - August every year. Nominations for the following Awards are invited in the prescribed form, so as to reach the Secretary General by **30th of April 2025**. Nomination can be submitted by a member for any one award.

1. MEAI - Sitaram Rungta Memorial Award
For the best paper on Mining-related issues during the year 2024

AWARD Bylaws:

a. The award is known as MEAI – Sitaram Rungta Memorial Award, instituted by M/s Rungta Group of Mines.

b. The award is presented to a Mining Engineer/ Geologist or any other qualified person involved with the Mining Industry, who presented a paper on mining related issues during the previous calendar year/ financial year.

c. The papers presented in any of the paper meetings, seminars or workshops organized by the Association/ Chapter during the calendar year are eligible for the award, provided

1. *The paper was not published in any journal/ magazine in India or abroad other than the MEJ*
2. *The author did not deliver lectures/ talk related to this paper on any other forum other than in the Seminars / Workshops etc., organised by MEAI.*

2. MEAI NMDC Award
For significant contribution to Iron Ore Industry during the year 2024

Award Bylaws:

a. The award is known as MEAI-NMDC Award instituted by M/s NMDC Ltd.

b. The award is presented to a Mining Engineer/ Geologist or any qualified person involved in the Mining Industry for the meritorious services rendered by him/ her to the Iron ore Industry.

3. MEAI Simminds Award
For significant contribution to the limestone industry during the year 2024

Award Bylaws:

a. The award is known as MEAI – SIMMINDS award instituted by M/s SOUTH INDIAN MINES AND MINERALS INDUSTRIES Ltd.,

b. The award is presented to a Mining Engineer/ Geologist or any qualified person involved in the Mining Industry for his/ her significant services rendered to the Limestone industry.

4. MEAI Smt. Bala Tandon Memorial Award
In recognition of contribution to the Mining Industry for improving ecology, environment and forestation during the year 2024.

Award Bylaws:

a. The award is known as MEAI - Smt. Bala Tandon Memorial Award was instituted by Padma Bhushan G.L. Tandon in memory of his late wife.

b. The award is presented to a Mining Engineer/ Geologist or any qualified person associated with the Mining Industry, in recognition of his/ her meritorious services for improving ecology, environment and afforestation in mining and mineral industries.

***5.* MEAI Abheraj Baldota Memorial Gold Medal Award** (Mining Engineer of the year 2024)
In recognition of significant contribution to the Mining Industry by a Mining Engineer with 20 years of experience in the Industry.

Award Bylaws:

a. The award is known as MEAI – Abheraj Baldota Memorial Gold Medal Award (Mining Engineer of the year) instituted by M/s MSPL Ltd., in memory of its founder late Abheraj Baldota.

b. The award is presented to a Mining Engineer with a Degree or Diploma in Mining Engineering and Mine Manager's Certificate of Competency with 20 years of experience in mining and allied disciplines as on the date the nomination is forwarded and the nominee should have completed 45 years of age and contributed substantially to the mining and mineral industries in the areas of management performance, production, mining technology, human resource development, protection of environment, mineral conservation, beneficiation etc.

6. MEAI Abheraj Baldota Memorial Gold Medal Award
(Young Mining Engineer of the year 2024)
In recognition of significant service to the Mining Industry by an Young Mining Engineer who has not completed 35 years of age as on 2025.

Award Bylaws:

a. The award is known as MEAI – Abheraj Baldota Memorial Gold Medal Award (Young Mining Engineer of the Year) instituted by M/s MSPL Ltd., in memory of its founder late Abheraj Baldota.

b. The award is presented to a Young Mining Engineer with a Degree or Diploma in Mining Engineering or a Manager's Certificate of Competency with five years' experience in mining industry and the nominee should not have completed ***35 years of age as on the date of filing his nomination for the award.***

7. MEAI-SRG Informational Technology Award for the year 2024
In recognition of significant contribution to Mining Industry adopting Information Technology during the year 2024

Award Bylaws:

a. The award is known as S.R.G. Award for Information Technology, instituted by M/s S.R.G. Consulting Mining Engineers (P) Ltd. in memory of Sriram Srinivasan and Pradeep Kumar Bhattacharya both founder directors who lost their lives in Train (Rajdhani Express) accident in the year 2002.

b. The award is presented to a qualified Mining Engineer/ Geologist/ any qualified person for his significant contribution in Information Technology to Mining and Mineral Industries and the nominee should be a Life Member of the MEAI.

8. MEAI Master Tanay Chadha Memorial Geologist Award for the year 2024
In recognition of the significant contribution by a geologist in the field of Mineral Exploration, quality control, and production, mine planning, etc. during the year

Award Bylaws:

a. The award is known as MEAI – Master Tanay Chadha Memorial Geologist Award instituted by Shri G.L.Tandon (Padma Bhushan) in the name of his late grandson (S/o Smt. Sunita Chadha and Shri Sudhanshu Chadha). The award is presented to a geologist with a Master's Degree in Geology/ Applied Geology/ Geophysics with at least five years' experience in Mining and Mineral Industry who has contributed significantly in the areas of mineral exploration, quality control and production, mine planning, etc.

9. MEAI- Smt Veena Roonwal Memorial Award
for the year 2024
To a Mining Engineer/Geologist/a qualified person involved with the Mining Industry with 10 years of experience for presenting a paper during the year in a seminar/ symposium workshop organized by MEAI on "Water Management in and around a working mine" or "Implementation of New/Latest Technology in Mining and allied subjects.

Award Bylaws:

a. The Award is known as Smt. Veena Roonwal Memorial Award instituted by Prof. G.S. Roonwal in memory of his late wife and is presented to a qualified Mining Engineer/ Geologist/ any qualified person involved with Mining Industry with 10 years' experience, for presenting a paper during the year in a seminar/ symposium/ workshop/ technical paper meeting organized by MEAI/ MEAI Chapter on "Water Management in and around a working mine or implementation of New/ Latest Technology in mining.

10. MEAI- Smt Kiran Devi Singhal Memorial Award for the year 2024
Only to a person (MEAI Member/Non-member- need not necessarily be from mining discipline) for his/her contribution in the field of "Development and Conservation of Minerals and Environment" in and around Metalliferous mines (excluding Coal and oil) during the year 2024.

Award Bylaws:

a. The award is known as MEAI - Smt. Kiran Devi Singhal Memorial Award instituted by Dr. Suresh C. Singhal in memory of his late mother.

b. The award is presented to a member or non-member of MEAI for his/ her outstanding contribution in the field of "Development and Conservation of Minerals and Environment in and around metalliferous mines.

11. MEAI Award to a best paper in Mining article published in the Mining Engineers' Journal in the financial year 2024 Instituted by Dr. M.L. Jhanwar

Award Bylaws:

a. a. The Award will be known as Eco-friendly Mining Award.

b. The award consists of a Plaque/ Medal and a Certificate. The cost of the Award will be met from the interest received on the donation of Rs. 1 lakh from Dr. M.L. Jhanwar.

c. The Award will be given to a person for contributing the best paper on Eco-friendly Mining in Mining Engineers' Journal published by MEAI.

d. The Award is presented to a member or non-member of MEAI.

The paper should not have been published in any of the journals in Magazines India/ Abroad other than MEJ on Eco-friendly Mining.

12. MEAI-SCCL Coal Award for the year 2024 to a Mining Engineer, a Geologist, a Mechanical Engineer and a Foreman/Over man for meritorious contribution to the Coal Industry.

Award Bylaws:

a. The Awards are known as MEAI- SCCL Coal Awards instituted by M/s SCCL Ltd.

b. The Awards are presented to a Mining Engineer, Geologist, Mechanical Engineer, Overman/ Foreman or any qualified person involved in the Coal Mining Industry for the meritorious services rendered by him/ her to the coal industry or papers published.

- ***For detailed guidelines please visit the website www.meai.org and the memorandum of association and rules and regulations (as on 26.08.2022)***

Applications and GuideLines

The application (Hard Copy) shall be forwarded/sent to Secretary General MEAI NHQ in Prescribed Format (Copy Enclosed) to reach before ***30th April 2025*** *(**MEAI NHQ Address: Mining Engineers' Association of India, F-608&609, VI Floor, Raghava Ratna Towers 'A' Block, Chirag Ali Lane, Abids, Hyderabad – 500001. Mob – 7780117320)** **and the Soft copies should be enclosed in PDF format with the subject. MEAI Awards 2025 and shall be sent to email - meai1957@gmail.com***

Applications for the Award are to be sent along with the following Format.

MEAI Award Format

1.	Name of the Award Applied for	:
2.	Name of the Applicant	:
3.	Date of Birth	:
4.	Academic Qualification	:
5.	Professional Qualification	:
6.	Whether a Member/Life Member of MEAI	:
7.	Specific details of the award applied for as per requirement of bylaws (Enclose relevant documents)	:

Date: Certify that the information/details submitted for the above Award are true to the best of my knowledge

Name: Signature:

Enclosed copies of documents on experience and achievements.

i. ii. iii.

COKING COAL SECURITY FOR INDIAN STEEL SECTOR

Vikash Patnaik*, Niladri Bhattacharjee, Pankaj Satija*****

Abstract

Coking coal is a critical input for steel production which is very important for industrial development of the country. In India, as on April 2020, ~20 billion Tons (BT) of coking coal reserves are in the proven category while another ~15 BT coking coal reserves are in inferred or indicated reserves category. The 'Prime Coking Coal' resources are restricted to Jharia Coalfields only. The 'Medium Coking Coals' are available in Jharia, Raniganj, Bokaro, Ramgarh, Karanpura, Sohagpur & Pench-Kanhan coalfields and the semi-coking coals are available in Raniganj, Ramgarh & Sonhat coalfields. Almost 85% of the Prime coking coal resources of the nation, which are confined to Jharia coalfield, stand 'Proved' catering to the needs of the country's steel industry. However, India's domestic coking coal reserves are inadequate to meet the demand. Domestic raw and washed coking coal production during the last few years has been around ~50 MTPA and ~5 MTPA respectively, whereas import of coking coal stood at ~50 MTPA. The Indian steel industry fulfils ~70% of its coking coal requirements through imports. Growth in steel production is expected to push up demand for metallurgical coking coal in future. According to National Steel Policy 2017, to achieve steelmaking capacity of 300 MTPA (including 181 MTPA through blast furnace route) by FY 2030, huge volumes of coking coal (~171 MT of domestic raw coking coal) would be required. With various transformative measures being taken by the Ministry of Coal under the 'Atmanirbhar Bharat' initiative of the PM, domestic raw coking coal production is likely to reach 140 MT by 2030.

However, in view of Climate change initiatives, Industry is now looking for greener technology for Steel making and thereby reducing its dependency on coal.

Keywords: *Coking coal, reserves, imports, steel policy, coal washing, Greenhouse Gas (GHG), Stamp charging technology.*

1. INTRODUCTION

Coking coal is used in the steel industry as a fuel for the blast furnace, for production of metallurgical coke. Coking coal is much different from coal used in other processes such as non-coking or power grade coal used for power generation. Only a certain class of coals possessing very specific properties and composition are suitable for the making of a quality coke for blast furnace use. Inherently the coking coal found in India is higher in ash and is not suitable for direct use in coke making/Blast furnaces. They are washed to bring down the ash level to 16-18%. Even at this ash% level, they are blended with low ash imported coking coal (8-10%) to bring down the overall ash% for Coke making as per the requirements of Steel making process. Hence domestic coal generally constitutes 25-35% in the coal blend for coke making. The higher the ash percentage in coal/coke, will adversely affect the productivity of Blast furnaces.

2. DOMESTIC COKING COAL SCENARIO

2.1 Coking Coal Reserves

As on April 1, 2020, India has ~35 billion tonnes (BT) of coking coal reserves. Of these 35 BT reserves, ~20 BT are Proved Reserves and the remaining 15 BT are Indicated and Inferred coking coal reserves. Category-wise coking coal reserves of the country is provided below (Fig 1).

As per the information provided by Central Mine Planning and Design Institute (CMPDIL), out of the 35 BT coking coal reserves, ~18.83 BT coking coal reserves are in the coal blocks which are with Coal India Limited (CIL) and the remaining reserves are in non-CIL blocks or with Tata Steel and Steel Authority of India Limited (SAIL). Company-wise break-up of coking coal reserves is provided in Fig 2.

Below chart (Fig 3) depicts the outlook for coking coal resources in India.

Hence, Coal India Ltd (CIL) should make available the required quantity of coking coal for domestic steel makers by putting up efficient coal washing infrastructure and stopping diversion of Raw coking coal for non-metallurgical usage.

2.2 Domestic Coking Coal Production

a) In FY 2023, India has produced ~893 MT of coal including 60 MT of coking coal and 833 MT of Non-

*Head Oman Project, Tata Steel Ltd; **Executive Assistant to EIC FAMD, Tata Steel Ltd
***Executive in Charge FAMD, Tata Steel Ltd

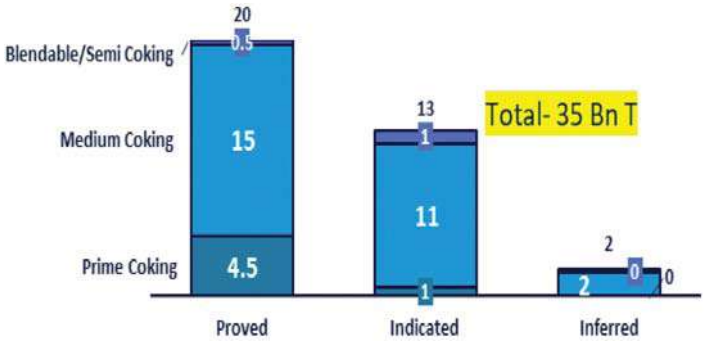


Fig 1

Fig 2

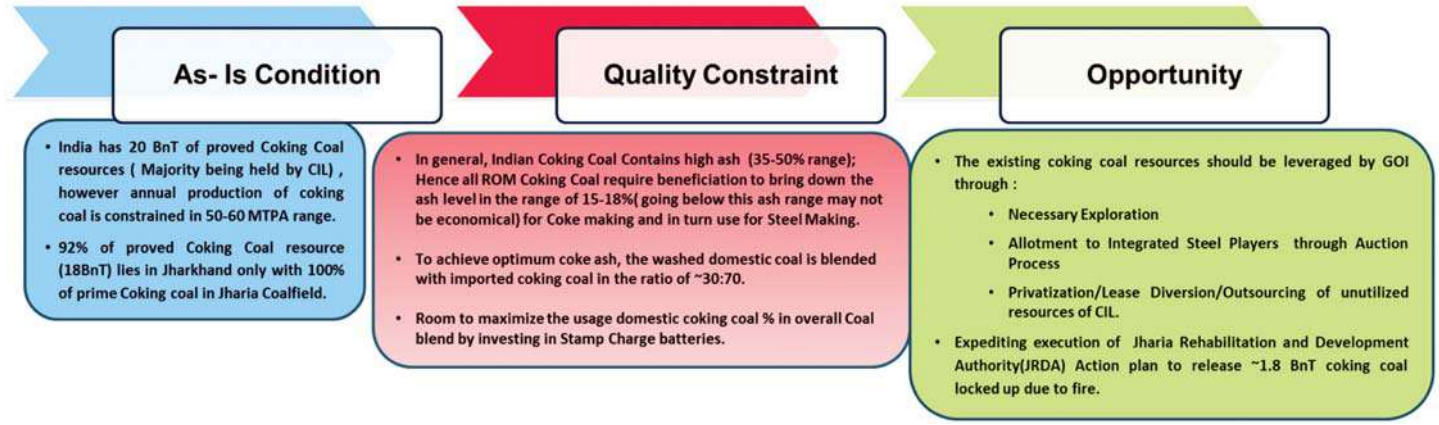


Fig 3. Outlook for coking coal resources in India

coking coal to meet the demand of the Power, Steel and Non-regulated sector (Fig. 4).

b) The demand of coal is projected as 1.6 BT by FY 2030 including 1.43 BT non-coking coal and 161 MT coking coal.

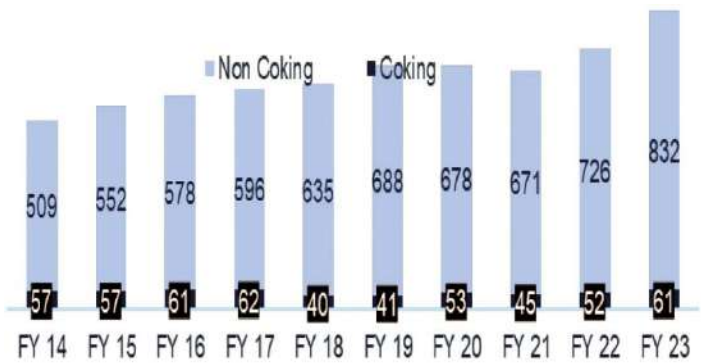
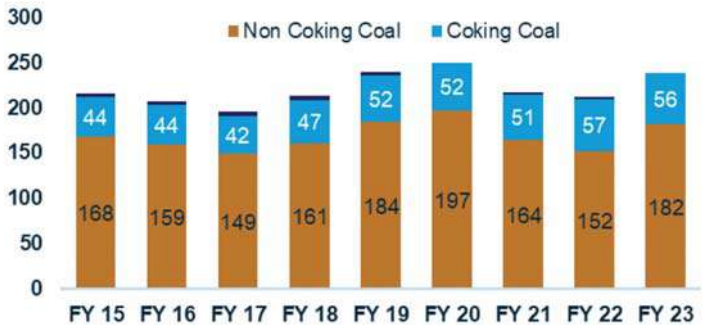


Fig 4. Domestic coal production

Around 50-55 MT of annual imports (Fig. 5) continue to constitute import of coking coal due to lack of hard coking coal reserves in India, which can be utilized directly by steel mills in blast furnaces.

Indian coal is also characterized by relatively high ash content, low vitrinite, lower rank and inferior caking/coking

2.3 Coking Coal Imports



properties. Therefore, under the present technology, they, at best, can be utilized, as a blend to imported coking coals to some extent, and that too, after suitable washing. Fig 5. Coking coal imports

Due to the quality issue of Indian coking coal and also its limited availability in the country, Indian steel industries are highly dependent on low ash coking coal imports.

2.4 Metallurgical Coal Import Projection in India

a) Metallurgical Coal imports into India (Fig. 6) have almost tripled in the last decade; Australia remains the biggest supplier despite losing market share to other players, mainly Russia and the US.

Others: includes Canada, China, Indonesia, New Zealand, South Africa, etc

Fig 6. Metallurgical Coal Import Projection in India

b) As India aims to expand its steel production capacity to 300 million tons by 2030, its coking coal imports are expected to rise significantly, potentially reaching ~100 million tons per year by 2030.

c) Driven by a push from the Indian government, steel mills diversified their raw material sourcing.

d) Import of Coking coal can't be eliminated due to quality limitations of domestic coal. In best possible case, the domestic washed coking coal can be used only to the extent of ~35% of the total coking coal requirement in the coal blend for coke making (stamp Charging technology)

3. INCREASING DEMAND OF COKING COAL COMMENSURATE WITH NATIONAL STEEL POLICY TARGETS 2030

Coking coal is mainly used in manufacturing of steel through blast furnace route. Domestic coking coal is high ash coal (mostly between 18% - 49%) and is not suitable for direct use in the blast furnace. Therefore, coking coal is washed to reduce the ash percentage and Indian Prime Coking Coal and Medium Coking Coal (<18% ash) is blended with imported coking coal (~9% ash) before utilisation in the Coke Ovens to make Coke for feeding into the Blast Furnace.

Limited supply of raw coking coal and washery capacity is a challenge in increasing the blending percentage of domestic coking coal. With increase in supply of domestic coking coal (18% ash), the blending percentage may be increased up to 25% without usage of stamp charging technology by the steel sector and over 35% with usage of stamp charging technology.

India's domestic steel industry's capacity expanded from 142.299 MT per annum in 2019-20 to 179.515 MT in 2023-24. As per National Steel Policy 2017, the targeted steel production by FY2029-30 is 300 MT of which 181 MT would be through blast furnace route i.e. nearly 3-fold increase is targeted in the blast furnace route steel-making capacity. Together with increased steel production and higher blending percentage, multi-fold increase is required in the supply of domestic coking coal. Hence, the Ministry of Coal (MoC) has set up a Mission Coking Coal to suggest a road map to augment the production and utilisation of domestic coking coal in India.

The Ministry of Coal has taken a target of augmenting domestic raw coking coal production to 140 MTPA. At a yield of 33% (assumption) this will amount to 46 MTPA of coking coal, (sufficient to meet the domestic coal blending requirement in Scenario 1, which looks more feasible.

3.1 Demand of Coking Coal in India – FY 2030

Sl. No.	Particulars	Basis of Calculation	Scenario 1- Utilization of 25% Domestic Coking Coal in the blend	Scenario 2- Utilization of 35% Domestic Coking Coal in the blend	Remarks
A	Total Coking Coal Required by FY'30 (MT)	National Steel Policy / MOC Action Plan	**161**	**161**	Beneficiated/Low Ash Coal
B	Domestic Washed Coking Coal Required(MT)	0.25*A, 0.35*A	**40**	**56**	
D	Import (MT)	A-B	**121**	**105**	
C	Raw Coking Coal Required considering 33% yield(Assumption)	B*(100/33)	122	171	Raw Coal

However, a washing capacity of 140 MTPA will also be required. The operable capacity of all the wash plants in the country as on date is 23 MTPA (including 11 MTPA wash plants of the Private sector).

The plan of the Ministry is to add 38 MTPA extra washing capacity by 2030; thus, total washing capacity will be 61 MTPA in FY 30.

There still lies a gap of 79 MTPA washing capacity addition (Fig. 7).

3.2 Recommendation for Enhancing Domestic Washing Capacity

a) In the year 2020, a report of the High-Level Committee (HLC) of NITI Aayog on the Coal Sector in its report had

stated "there is going to be demand for washed coking coal as well as a shortfall in CIL's washing capacity. This provides ample scope for establishing private washeries. However, these can only be established if these private washeries receive assured linkage on a long-term basis (at least 30 years) and are provided for adequate quantities (at least 3 MT/annum).

b) **Monetization of Old Washeries**: Ministry of coal has planned to monetize four coking coal washeries (have either outlived or having very poor capacity utilization and performance) of Bharat Coking Coal Limited (BCCL) in FY 2025 to the steel players of country to increase the washing capacity in country.

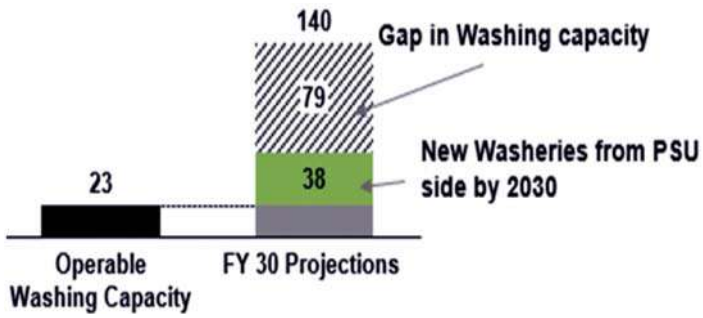


Fig 7. Gap in washing capacity

4. ISSUES & CHALLENGES AND MITIGATION MEASURES

4.1 Due to operational inefficiency of PSU wash plants, both Central Coalfields Limited (CCL) and BCCL are unable to fully load their Washeries (10-15% utilization) and hence are forced to divert raw Coking coal to Power sector customers since this raw coking coal cannot be used directly by steel plants unless it is washed to reduce ash%.

4.1.1 Mitigation Measures

a) Immediate stoppage of diversion of Coking Coal for non-metallurgical use.

b) Augmentation of coking coal production and washing capacity & adopting state of the art washing technology in Coal India Ltd (CCL & BCCL) will reduce diversion.

c) Incentives to private players to set up washeries.

d) Long term supply assurance to Private Beneficiation players.

4.2 Auction of coking coal blocks: Good blocks such as Kotre Basantpur & Pachmo, Rohne etc. being allotted to State PSUs while inferior blocks (low PRC, low reserve etc.) are offered in e-auction. The successful bidder often faces a long gestation period owing to the tedious process of taking approvals regarding Land Acquisition, Forest Clearance, R&R etc.

SECTOR	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
POWER	27.216	23.63	17.12	25.43	27.5
CPP	0.02	0.01	0.0	0.03	0.01
STEEL	0.36	0.65	1.03	0.73	1.16
FERTILIZER	0.92	0.98	0.94	0.64	0.39
E-AUCTION(EXCL. SPECIAL FORWARD E-AUC)	2.23	1.24	0.95	1.23	1.23
NRS LINKAGE E-AUCTION/OTHERS	0.73	0.52	0.45	0.63	0.82
FEED TO WASHERY	1.58	1.72	2.63	3.56	4.42
INTERNAL CONSUMPTION	0.02	0.01	0.004	0.0	0.0
TOTAL	33.07	28.76	23.13	32.25	35.53

Off-take of Coking Coal produced by BCCL (MPTA)

4.2.1 Mitigation Measures

a) Land acquisition in line with The Coal Bearing Areas (Acquisition and Development) (CBA) act for Private players.

Although the Government has made certain headway by bringing amendments in land use policy of central public sector undertakings in the Coal sector by Order no. PS2-13011/3/2022-PS2(FTS:353749) dt. 29th July,2024 & subsequently inviting comments on the draft amendments proposed in the Coal Bearing Areas (Acquisition and Development) Amendment Bill, 2024. The key highlight of this order is that Govt. is allowing leasing of mining and/or surface rights in the land already acquired by central Govt. and vested in Govt. companies under CBA act , which overlaps with the coal mines/blocks already allocated or to be allocated to successful bidders through e-auctions under Coal Mines (special provision) act, 2015 or which overlaps with coal blocks already allocated or presently under allocation through auction under MMDR act, 1957. *However, this amendment is not applicable for MMDR coal blocks to be auctioned in the future.*

b) Good Coking coal blocks should be earmarked exclusively for Integrated Steel Players in e-auction.

c) Proper coal evacuation infrastructure leading to affordable transportation cost.

4.3 Sourcing of Coal from CIL: Private players finding the option of setting up new beneficiation plant unattractive due to higher raw coking coal price at domestic market. The Price of domestic coal does not account for its detrimental effect on productivity of Blast Furnace due to high ash content. Also, Infrastructure issues at coal dispatch point: Loading and weighing facilities need major revamp to handle large quantities by road/rail. Often it was witnessed that there is a quality issue between agreed and offered quantity.

4.3.1 Mitigation Measures

a) CIL should discount the detrimental effect on blast

furnace productivity (owing to high inherent ash) while pricing Coking Coal.

b) Coking coal Production enhancement by CIL.

c) Customer friendly e-auction of Coking coal by CIL.

d) More number of BCCL mines participating in e-auctions.

4.4 Small window available (10-15 years) for full utilization of fossil fuel resources because of the growing pressure for Climate Change. As per Niti Ayog report of the "Inter-ministerial committee on just transition from coal" coal consumption in the country is likely to peak somewhere between 2035 and 2040 and may undergo gradual tapering thereafter. This may result in phase-wise measured closure of coal mines.

4.4.1 Mitigation Measures

a) Incentives to Steel players for Stamp charging.

b) Extraction of Coal based Methane and Underground Coal gasification for deeper seams in Coal mines (where extraction is not economically viable), Surface coal gasification MIDREX (done by JSPL).

c) SSAB-Swedish Steel maker is in the advanced stage of replacing Coking coal with Hydrogen for steel making. Indian Govt. should emphasize on monetizing Coking Coal resource before India also embarks on the journey of Hydrogen /Natural gas-based steel making.

4.5 Resolving Jharia Issue: The Jharia coalfield is located in Jharia, Dhanbad, Jharkhand, in eastern India. With an estimated 19.4 billion tonnes of coking coal reserves, Jharia has the largest coal reserves in India. Since at least 1916, the fields have been plagued by a coal bed fire that has devoured 37 million tons of coal, caused substantial ground subsidence, and polluted the air and water in nearby areas, including the city of Jharia. Jharia Rehabilitation and Development Authority (JRDA) has been assigned to relocate the local population as a result of the pollution that has resulted, but not much has been done about it.

4.5.1 Mitigation Measures

Revised Jharia Master Plan: Even after the expiration of the Jharia Master Plan in August 2021, the Ministry of Coal is reviewing the progress of activities undertaken by BCCL & Jharia Rehabilitation and Development Authority (JRDA) on a monthly basis. A committee was constituted in 2021 headed by Secretary Coal, to review the Jharia Master Plan with a focus on extinguishing fires, rehabilitating affected families, and proposing a way forward. This committee formulated an action plan, based on the recommendations of the committee, COS, DOE, a DCN is prepared which is under approval.

5. CONCLUSION

Coking coal is a scarce resource in India and constitutes only ~10% of the total coal resources in the country. Most of the coking coal is produced in India by CIL and they are mostly diverted to the non-metallurgical sector due to poor coal washing infrastructure and high inherent ash% of ROM. The Ministry of coal should take measures to make sure all the coking coal produced is properly washed and used in Steel making purposes. This will ensure optimum use of precious coking coal resources within the country and help in bringing down our import bill. The Ministry of Coal should also ensure to explore all the remaining coking coal resources within the country and put them for auction for early monetization of resources. The Ministry of Coal under 'Atmanirbhar Bharat' initiative of the PM, has taken initiative to enhance production of domestic raw coking coal to 140 MT by 2030 and augmenting washing infrastructure.

However, usage of Coal in the Steel industry is highly polluting & one of the key contributors for carbon emission. Steel making through Blast Furnace - Basic oxygen steelmaking (BF-BOF) process emits lots of Greenhouse gas (GHG) and hence with the World fighting against GHG emission and Climate change, in next 10-15 years it is imperative that Steel Industry must shift towards greener steel making technology. Recycling and use of more Scraps, use of Hydrogen/Natural gas, biomass etc would help steel industry to reduce emission intensity and reduce its dependency on Coking coal. Govt. may aggressively push for auction of coking coal blocks but there would be no takers at that time. Therefore, it is important for India to capitalise on the natural resource on time".

6. DISCLAIMER

The article is an amalgamation of data collected from various sources and authors' own views and thoughts. Tata Steel Ltd does not necessarily subscribe to the views and thoughts, expressed in the article, and should not be held responsible for the same.

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INDIAN MINING DAY CELEBRATIONS 2024

Dhanbad Chapter

CSIR-CIMFR, Dhanbad in association with Mining Engineers Association of India, Dhanbad Chapter celebrated the observance of Indian Mining Day 2024 on 27th December 2024. The event was graced by Shri Ajay Kumar, Director (Technical, Planning & Design) as Chief Guest. Shri Kumar appreciated the contribution of about 7 lakhs miners working in different parts of the country. He emphasized on various challenges including the need for net zero emissions, digital mining, AI interventions in Mining etc.

The event was attended by members of Dhanbad chapter including Scientists and Technical Officers of CSIR-CIMFR, Professors of IIT(ISM), Dhanbad and the students from BIT Sindri and KNU Asansol. The Chapter Chairman Prof. Arvind Kumar Mishra highlighted the contribution of mining community in the nation's development. He also briefed about the ongoing target of greening of the mining industry. Dr. Santosh Kumar Ray, Vice Chairman of the Chapter presented the brief biodata of the Chief Guest. Dr Vivek Kumar Himanshu, Joint Secretary of the Chapter briefed about the MEAI and the Dhanbad Chapter.

A quiz competition was organized on 11th November 2024 under the gambit of the Mining Engineers Association of India. Altogether eight teams of students from Indian Institute of Technology (Indian School of Mines), Dhanbad, BIT Sindri, Kazi Nazrul University, Asansol and Academy of Scientific and Innovative Research, CSIR-CIMFR participated in the quiz. The participants and winners of the quiz competition were also felicitated on this occasion. Mr. Abhay Kumar and Mr. Saurabh Chatterjee of BIT Sindri grabbed the first prize in the quiz competition. Second prize was won by Mr. Vikas Kumar of CSIR-CIMFR and Mr. Nitish Kumar of AcSIR, CSIR-CIMFR, Dhanbad. Mr. Deep Mandal and Mr. Bipin Kumar Yadav of KNU Asansol won the third prize on this occasion. Prof. B.S. Choudhary, Secretary of the Chapter proposed a hearty vote of thanks. Guests and participants also visited different laboratories of CSIR-CIMFR after the event.

Quiz competition for the college students at CSIR-CIMFR, Dhanbad on 11th November 2024.

Prof. A.K. Mishra welcoming the chief guest Shri Ajay Kumar

Address by Prof. A. K. Mishra

Felicitation to the winner of the quiz competition

Winners of the quiz competition with their prize and certificates

MEAI NEWS

MEAI HEADQUARTERS

MEAI Professional Development Program – V

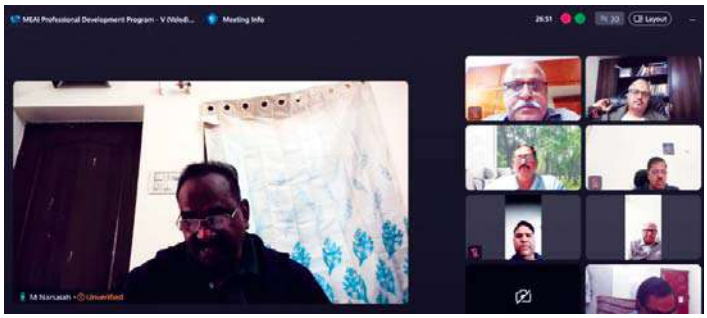
MEAI launched the 5th MPDP Course on 4th November 2024, following the success of the first four courses.

The program was led on WebEx platform and was attended by 53 participants from 12 mining organizations including NMDC, SAIL, Tata Steel, MSPL, GMDC, JSW, SKMEL, BGR, Vedanta, ERM Group, KSMCL, Vensar besides a few independent consultants.

24 technical sessions were conducted by 16 eminent faculties and industry experts covering 20 relevant subjects. Participants were awarded Certificates of participation.

The program was concluded on 29th December 2024 and the glimpses of the Valedictory program are as follows.

Shri. S.N. Mathur, President, MEAI addressing the participants



Shri. M. Narsaiah, Secretary General, MEAI presenting welcome address

Address by Chief Guest Shri. Bipin Kumar Giri, ED (Mines), SAIL

Address by Shri. K. Madhusudhana, IPP, MEAI

Feedback from the participants

Vote of thanks by Shri. B. Sahoo, Jt. Secretary cum Treasurer, MEAI

First Aid Training- Batch – 5

The MEAI Headquarters organized a First Aid Training Program (Batch–5) from January 2 to January 16, 2025. In the Training program, 34 Candidates, primarily students from Osmania University participated.

Dr. Naveen and Shri V. Siddi Ramulu conducted the training sessions, imparting essential knowledge and practical demonstration.

Following the program, an examination was held on January 18, 2025, to assess the participants' understanding. The candidates were presented with certificates, recognizing their achievement.

Dr. Naveen presenting First Aid Teaching

Practical Demonstration – Shri. V. Siddi Ramulu, First Aid Training Instructor

L to R: Shri. M. Narsaiah, Dr. Naveen, Shri. V. Siddi Ramulu, Shri. L. Krishna, during the certificate presentation ceremony

Candidates displaying their certificates in the First Aid Batch5 Training Program

BELLARY-HOSPET CHAPTER

Webinar Report: Introduction to NIAFLOW Simulation Software on 19-12-2024

Organizers: Department of Mineral Processing and MEAI Student Chapter, Sandur

The primary objective of the webinar was to introduce MTech Mineral Processing students to NIAFLOW simulation software, a cutting-edge tool in the field of mineral processing. The event was aimed at providing students with a comprehensive understanding of the software's application, benefits, and practical uses.

Dr. Rudiger Heinrich, Technology Manager at HAVER NIAGARA GmbH, delivered an insightful and engaging address on "Introduction to NIAFLOW Simulation Software." Dr. Heinrich's expertise and experience in the field of mineral processing simulation software made the session highly informative and interactive.

Event Highlights

- The webinar witnessed enthusiastic participation from MTech Mineral Processing students, who actively engaged in a productive Q&A session with Dr. Heinrich.
- The event provided a platform for students to gain hands-on knowledge of NIAFLOW simulation software and its applications in mineral processing.
- The organizers received positive feedback from attendees, who appreciated the relevance and usefulness of the webinar in enhancing their knowledge and skills.

Acknowledgments:
The organizers would like to extend their sincere gratitude to Dr. Rudiger Heinrich, Technology Manager at HAVER NIAGARA GmbH, for sharing his expertise and valuable time with the students; Mr M Mallikarjun, Chairman and Mr PV Rao, Secretary of the Chapter for their cooperation and support in organizing the event.

The webinar on "Introduction to NIAFLOW Simulation Software" was a resounding success, providing MTech Mineral Processing students with a unique opportunity to learn from an industry expert. The event reinforced the importance of collaboration between academia and industry in enhancing knowledge and skills. The organizers look forward to hosting more such events in the future.

Glimpses of the program

(Continued from Page 16)

The first body was recovered on Wednesday while three others were fished out on Saturday. NDRF team commander Roshan Kumar Singh said the water level inside the flooded mine is receding with the dewatering process going on.

ANI | Jan 12 2025

Hindustan Copper signs mining services agreement with South West Mining

Hindustan Copper (HCL) has appointed South West Mining (SWML) as the Mine Devetoper cum Operator (MDO) for re-opening and expansion of Rakha Copper Mine, development of a new underground mine at Chapri and commissioning of a new concentrator plant for a period of 20 years, extendable by another 10 years.

The mining operation in Rakha Mine was suspended since 2001 on account of unviable operations. The Mining Services Agreement was signed on 9 January 2025 between HCL and SWML at Ranchi.

BS | Jan 10 2025

Private mines, CIL drive record coal output of 988 mt in 2024: Govt

Coal production from captive and commercial mines was 162 MT between January and November 2024, the ministry said.

Coal production during the calendar year (CY) reached 988.32 million tonne (Mt), compared to 918.02 Mt during the same period last year, registering a growth of about 7.66 per cent, the coal ministry said in its year-end report, citing it as a new record.

It is expected that coal production will exceed the last financial year's mark of 997 Mt by the end of 2024-25 (FY25), driven by higher output from privately owned mines and enhanced supply from Coal India (CIL) mines.

Coal production from captive and commercial mines was 162 Mt between January and November 2024, the ministry reported. Since 2015, 113 coal mines with a peak rated capacity of 257 Mt per annum have been auctioned. The ministry said that opening the sector to private participation aligns with efforts to reduce coal imports and promote domestic production.

"To strengthen India's energy security and realise Atmanirbhar Bharat by replacing imported coal with domestically mined coal, the coal ministry has set a target to produce 1.31 billion tonne (Bt) in FY25 and 1.5 Bt in 2029-30 (FY30)," the ministry said.

Shreya Jai, BS, New Delhi | Dec 29 2024

Illegal mining: NGT asks applicant to approach DPCC, mining dept first

The tribunal gave the order to enable the committee or department to ascertain the extent of the illegal activity.

The green body was hearing a petition by the Jagatpur village chief, or 'pradhan', who alleged that the sand mafia was illegally extracting huge quantities of the sand in the area.

The National Green Tribunal has asked a petitioner to approach the Delhi Pollution Control Committee or the mining department regarding allegations of illegal instream and riverbed sand mining from the Yamuna in north Delhi.

The tribunal gave the order to enable the committee or department to ascertain the extent of the illegal activity. The green body was hearing a petition by the Jagatpur village chief, or 'pradhan', who alleged that the sand mafia was illegally extracting huge quantities of the sand in the area.

The petition also alleged that a bund (check dam) created near Jagatpur and Burari villages in Delhi had developed cracks because of unauthorised activities. In an order dated December 24, a bench of NGT Chairperson Justice Prakash Shrivastava and expert member A Senthil Vel said that the complaint first required to be looked into by the DPCC or the mining department to find the "reality and extent" of the illegal mining.

"Hence, we dispose of the original application (OA) permitting the applicant to file a detailed comprehensive complaint along with the relevant material to the member secretary of DPCC/ secretary of mining department, who, on receipt of the same, will get the spot inspection done and will take the due remedial and punitive action in accordance with law expeditiously," the tribunal said.

Press Trust of India, New Delhi | Dec 29 2024

6th IN-PERSON PROFESSIONAL TRAINING PROGRAM ON IMIC

on May 5-9, 2025

MEAI Headquarters, Flat 608 & 609, A-Block, 6th Floor, Raghavaratna Towers, Abids, Hyderabad 500 001

The Mining Engineers' Association of India (MEAI) is the leading professional organization recognized by the National Committee for Reporting Mineral Resources and Reserves in India (NACRI) and the Committee for Mineral Reserves International Reporting Standards (CRIRSCO). MEAI is dedicated to offering professional development programs to its members, registering Competent Persons (RCP), and overseeing their ethical conduct. NACRI serves as the National Reporting Organization (NRO) of India recognized by CRIRSCO.

The previous five training programs on the Indian Mineral Industry Code (IMIC), approved by CRIRSCO, were successfully completed by NACRI in January 2021, April 2021, April 2022, April 2023, and May 2024. These programs saw overwhelming participation from 67 professionals representing leading mining companies viz. Adani Enterprises Limited, BGR Mining & Infra Ltd, Capstone Geo Consultants, Central Mine Planning & Design Institute Limited, DMT Consulting Private Limited, ERM Group, GMMCO Technology Services Ltd, Hindustan Copper Limited, Hindustan Zinc Limited, Hutti Gold Mines Limited, , JSW Steel Ltd, Lloyds Metals and Energy Ltd, M/s. Geeta Rani Mohanty, KSMC Ltd, MECL, MOIL Ltd, MSPL Ltd, NMDC Ltd, OMC Ltd, Singareni Collieries Company Limited, SRK Mining Services (India) Pvt Ltd, Steiger Geoscience and Engineering Pvt. Ltd, Tata Steel Ltd etc. and many others. Most of the delegates have successfully passed the IMIC evaluation test and more than a third of them have registered as Competent Persons (RCP) with MEAI. A list of delegates who attended previous IMIC training programs and subsequently registered or renewed as RCPs can be found on the MEAI website at **www.meai.org**.

Efforts to gain recognition of IMIC from the Government of India are ongoing. MEAI and NACRI representatives recently met with the Honourable Coal & Mines Minister Sri G Kishan Reddy in Hyderabad to discuss past interactions with the Ministry of Mines. The Minister appreciated MEAI and NACRI's efforts and agreed to hold a formal meeting in New Delhi with all stakeholders shortly.

About the Professional Development Program on IMIC

NACRI has formulated a five-day in-person, non-residential training program on IMIC. This course, conducted by domain experts from India and abroad, covers essential aspects of IMIC, including the Code of Ethics, best practices in the mineral industry, and guidance for prospective RCPs. The course aligns with the JORC Code training program conducted by AusIMM and consists of six major modules

- Why the IMIC Standard? Context and Principles
- Reporting of Exploration Results and Targets
- Informing Investors about Technical Studies
- Reporting of Mineral Resources
- Reporting of Mineral Reserves
- The Role of Regulatory Environment

The training program aims to clarify the obligations and liabilities of Competent Persons under IMIC, interpret IMIC within participants' working environments, counter common misconceptions about IMIC, identify good and poor technical reporting practices, and demonstrate correct application of IMIC.

Overseas domain experts from organizations such as JORC (Australasia), PERC (Europe and UK), CIM (Canada), CBRR (Brazil), SAMREC (South Africa), and SME (USA) will discuss industry best practices and provide practical examples on reporting exploration results, mineral resources, and mineral reserves.

Prerequisites for Registration as a Competent Person (RCP)

An RCP is a mineral industry professional who is a member of a professional organisation headquartered in India and approved by NACRI or a member of a 'Recognised Professional Organisation' (RPO), as included in a list of similar bodies headquartered outside India available on the NACRI website. These organisations have enforceable disciplinary processes including the powers to suspend or expel a member. An RCP must have a minimum of ten years professional experience, which includes five years relevant experience in the style of mineralisation or type of deposit under consideration, and in the activity which that person is undertaking.

Additionally, potential RCPs must obtain a minimum of 40 hours of mandatory professional development credits before applying for registration and at least 8-hours annually through participation in NACRI accredited seminars, conferences, workshops, training programs or webinars for certificate renewal.

The initial registration fee for RCPs as well as the annual renewal fee has been set at Rs 5,000 plus GST @18%, payable to MEAI. RCP certification is valid for one year from the date of issue and may be renewed thereafter.

Training Venue

The 6th IMIC in-person training program will take place at MEAI Headquarters in Hyderabad from May 5-9, 2025. The course fee includes working lunch for all five days, tea and snacks twice daily, and a course dinner on the inaugural evening.

Course Fee

- **MEAI Members:** Rs 25,000 plus GST @18%
- **Other Delegates:** Rs 30,000 plus GST @18%

Payment should be made online to

- Account Name: **Mining Engineers Association of India**
- Bank: **Union Bank of India**
- Branch Address: **Nampally Branch, 5-4-445 Nampally Station Road, Hyderabad - 500001**
- Account Number: **037810100028696**
- IFSC Code: **UBIN0803782**

Contact Information

For further clarifications or additional details about this program, interested professionals may contact:

Mr. M. Narsaiah, Secretary General, MEAI
Email: **meai1957@gmail.com**
Office Phone: **040-23200510 / 040-66339625**
Mobile: **+91- 9177045204**

Dr. PV Rao
Co-Chair NACRI

CONFERENCES, SEMINARS, WORKSHOPS ETC.

INDIA

1 Feb 2025: **Seminar on Bridging of Advanced Technology for Sustainable Mining - Challenges ahead**. Organized by Belgaum Chapter at Belgavi. For details contact: Shri. Amit Ghooli, Secretary, Belgaum Chapter at amitghooli86@gmail.com or 9901445823.

14-15 February 2025: National Conference on **"Mining The Minerals: Way Forward Towards Atmanirbhar Viksit Bharat 2047"**. Organised by MEAI Hyderabad Chapter at Taj Deccan, Banjara Hills, Hyderabad. For more details Contact: Dr Sanjeev Kumar Sinha, Dy. General Manager (Mine Planning Division), NMDC Limited, Hyderabad, Mob. 8500667319/ Email: sinhask@nmdc.co.in OR Mr L Krishna, Secretary, Hyderabad Chapter, Mob. 9553939316/ Email: meaihydcha@gmail.com

15 Feb 2025: **Surveyors Meet**. Organized by Bellary-Hospet Chapter at Hosapet, Karnataka. For details please contact, Mr P Venkateswara Rao, Secretary, Bellary-Hospet Chapter at +91 9900256764

ABROAD

3-6 Feb 2025: **Investing in African Mining INDABA**. CTICC Cape Town, South Africa. Contact info@miningindaba.com.

18-19 Feb 2025: **International Conference on Geology and Geophysics ICGG**. Manila, Philippines. Website URL: https://waset.org/geology-and-geophysics-conference-in-february-2025-in-manila. Program URL: https://waset.org/conferences-in-february-2025-in-manila/program. Contact URL: https://waset.org

23-26 Feb 2025: **MINEXCHANGE 2025 SME Annual Conference & Expo and CMA 127th National Western Mining Conference** co-located with World Gold 2025. Colorado Convention Center, 700 14th St., Denver, CO 80202. Contact: cs@smenet.org

02-05 Mar 2025: **PDAC 2025**. Organised at Metro Toronto Convention Centre, 222 Bremner Blvd, Toronto, Ontario, Canada. Contact information: 416 362 1969 or info@pdac.ca.

09-12 Mar 2025: **EnviroTech Athens - 2025** - The Gateway to Green Cement. Greece. Contact: enquiries@globalminingreview.com

7 - 9 Apr 2025: **Underground Operators Conference 2025**. Adelaide Convention Centre, Adelaide, Australia. Contact: 1800 657 985 or +61 3 9658 6100 (if overseas)

8-9 Apr 2025: **International Conference on Geological Engineering ICGE**. Rome, Italy. Website URL: https://waset.org/geological-engineering-conference-in-april-2025-in-rome. Program URL:https://waset.org/conferences-in-april-2025-in-rome/program. Contact URL: https://waset.org

4-7 May 2025: **CIM CONNECT**. Montreal, QC, Canada. Organised by The Canadian Institute of Mining, Metallurgy and Petroleum. Contact Chantal Murphy, Conference Planner (Technical Program) at cmurphy@cim.org or +1-514-939-2710 ext. 1309.

7-8 May 2025: **Mineral Resource Estimation Conference 2025**. Perth, Australia. Contact: 1800 657 985 or +61 3 9658 6100 (if overseas)

20-22 May 2025: **Global Resources Innovation Expo 2025**. Brisbane, Australia. Contact: 1800 657 985 or +61 3 9658 6100 (if overseas)

21-22 May 2025: **AUSTMINE 2025**. Brisbane Convention and Exhibition Centre. Contact: Jason Berman, Event Director, jberman@etf.com.au, +61 2 9556 7991

Jun 2025: **UK Mining Conference** in Cornwall. Organised at Princess Pavilion, 41 Melvill Road, Falmouth, Cornwall, TR11 4AR, United Kingdom. Contact: +44 7885 131097 or info@ukminingconference.co.uk.

21-22 Jun 2025: **International Conference on Oil, Gas and Petroleum Geology ICOGPG 2025**. Vienna, Austria. Website URL: https://waset.org/oil-gas-and-petroleum-geology-conference-in-june-2025-in-vienna. Organised by World Academy of Science, Engineering and Technology.

22-23 Jul 2025: **International Conference on Mining and Economic Geology ICMEG**. Berlin, Germany. Website URL: https://waset.org/mining-and-economic-geology-conference-in-july-2025-in-berlin

10 - 13 Aug 2025: **Application of Computers & Operations Research in the Mining Industry**. #APCOM2025. PCOM Conference 2025, Perth Convention and Exhibition Centre, Perth, Western Australia. AusIMM T: 1800 657 985 or +61 3 9658 6100 (if overseas). Po Box 660 Carlton, VIC 3053, Ground Floor, 204 Lygon St, Carlton VIC 3053.

REQUEST TO READERS/ MEMBERS OF MEAI

The Editorial Board of the Mining Engineers' Journal (MEJ) requests our esteemed Readers/ Members of MEAI to share their valuable Research work in geosciences/ mining or Best practices developed/ adopted while employed in the mineral industry, for publication in our Mining Engineers' Journal (MEJ), for the benefit of the mineral industry fraternity.

Interested professionals may please contact the Editor, MEJ for obtaining "Author(s) guidelines" for submitting technical papers at **editor.mej.meai@gmail.com**.

Editor, MEJ

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