ISSN 0975 - 3001

Mining Engineers' Journal

Indian Mining Day celebrations 2025

Official Publication of
Mining Engineers' Association of India

Price ₹100/-

Vol. 27 No. 5 MONTHLY December - 2025

Not Just Mining Minerals...

MINING HAPPINESS

Odisha_mining | OmcOdisha

Mining Engineers' Association of India
Flat-608 & 609, Raghava Ratna Towers, A-Block, VI Floor, Chirag Ali Lane, Abids, Hyderabad - 500001
Ph.: 040 - 66339625, 23200510, Email: meai1957@gmail.com Website: www.meai.org

एनएमडीसी

NMDC

Responsible Mining

New Look
Soaring Aspirations
Incredible Possibilities

Since our incorporation in 1958, we have raised the bar in mining and become India's largest iron ore producer. Our philosophy as a Responsible Mining Company has resulted in socio-economic development of people around our projects.

NMDC Limited

(A Govt. of India Enterprise)

Regd. Office: Khanij Bhavan, 10-3-311/A, Castle Hills, Masab Tank, Hyderabad - 500 028

CIN: L13100TG1958GOI001674

nmdc.co.in

/nmdclimited

GROUP ERm

MINING • STEEL • POWER

TURBOSTEEL®

LPS TMT Bars

TOUCHING EVERY SPHERE OF LIFE

ERM GROUP OF COMPANIES

R. Praveen Chandra (Mine Owner)

Prakash Sponge Iron and Power Pvt. Ltd.

E. Ramamurthy Minerals and Metals Pvt. Ltd.

Benaka Minerals Trading Pvt. Ltd.

Codeland Infosolutions Pvt. Ltd.

www.ermgroup.in | www.turbosteel.in

IS 1786 : 2008

TEMPCORE® CERTIFIED TMT

BALDOTA
WE ARE LIFE

Expanding pellet production by
3.3X

Scaling mining by
4X

Launching TMT Steel
1.2MT

Growing renewable energy by
3X

Multiplying employee strength
2.2X

CARBON POSITIVE

WHEN YOU AIM TO DEFY GRAVITY, YOU NEED WINGS.

BALDOTA

Every great ascent needs wings – wings powered by values, guided by vision, and driven by enterprise. Our new Baldota Group logo embodies this spirit of transformation, signalling the next leap in our growth journey. With audacious goals ahead – Baldota Next is built for scale, speed, and sustainability.

baldota.co.in

ISSN 0975 - 3001

Mining Engineers' Journal

Official Publication of
Mining Engineers' Association of India

Vol. 27 No. 5 MONTHLY December - 2025

this issue contains...

Correspondence Address

MEAI National Headquarters

Contact: **Secretary General,**
Mining Engineers' Association of India
F-608 & 609, Raghavaratna Towers, 'A' Block, VI Floor,
Chirag Ali Lane, Abids, Hyderabad - 500 001.
Ph.: 040-66339625, 23200510

E-mail : meai1957@gmail.com
website : www.meai.org

President's Message.....

Dear members..

I am very happy to share that the MEAI Headquarters, along with all our chapters across the country, celebrated ***Indian Mining Day 2025 on 1st November 2025*** in a grand and memorable manner. This year's theme, "**Mining Today for a Greener Tomorrow,**" truly reflects our collective commitment to responsible mining, sustainable development, and the adoption of modern technologies that safeguard our environment for future generations.

I am also delighted to inform you that, in alignment with our objectives to improve the skill and knowledge of mining professionals, we have launched the 6th series of the ***MEAI Professional Development Program (MPDP–VI)*** in online mode starting from 6th November 2025. This initiative continues to provide a valuable platform for knowledge enhancement, capacity building, and professional growth for mining engineers and geoscientists across India.

I am glad to note that the National Conference on "Industrial Minerals and Ceramics: Downstream Industries & Investment Opportunities" has been organized by Bikaner Technical University (BTU) and the Mining Engineers' Association of India (MEAI), Jodhpur Chapter, in association with the Bikaner District Mine Owners' Association on 8th & 9th November 2025.

It is equally heartening to note that the Kolkata Chapter has been successfully revived. I warmly congratulate the newly elected office bearers, and I am confident that the new team of the Kolkata chapter, with the guidance of Dr. Pukhraj Nenival, VP-II, will energize the professional community and contribute significantly to MEAI's national goals.

It is good to know that Rajasthan has achieved a remarkable milestone by becoming the first state in the country to auction pre-embedded mineral blocks, complete with all necessary statutory clearances. This pioneering initiative marks a transformative step toward streamlining the mineral sector, enhancing transparency, and improving business efficiency. It sets a national benchmark for facilitating responsible mineral development while ensuring ease of doing business.

Considering the ecological and geological importance of the Aravali hills and ranges, the committee appointed by the Supreme Court has recommended a set of environmental safeguards and regulatory measures to be implemented by respective state governments. ***This is a welcome decision from the Apex Court, indicating that it is not averse to the mining industry***. These measures are aimed at promoting systematic, sustainable, and eco-friendly mining practices while leveraging modern technology and information systems to prevent illegal mining activities.

In this calendar year all active chapters have organized seminars, workshops, and other events meeting the objectives of MEAI; my congratulations to all these chapters. I am happy to see the involvement of all members in upholding MEAI's values and advancing the mining sector towards innovation, sustainability, and excellence.

Regards,

D.B. Sundara Ramam
President

Mining Engineers' Association of India

Regd. Office : Rungta House, Barbil (Odisha)

Presidents & Hony. Secretaries / Secretary Generals

Period	President	Secretary/ Secretary Generals
MINING ENGINEERS' ASSOCIATION		
1957-64	B.L. Verma	B.N. Kanwar
1964-67	N.S. Claire	R.C. B. Srivastava
1967-68	L.A. Hill	S. Chandra
1968-69	H.L. Chopra	M.G. Jhingran
1969-70	S.S. Manjrekar	V.S. Rao
1970-71	R.C.B. Srivastava	M.G. Jhingran
1971-72	R.K. Gandhi	B. Roy Chowdhury
1972-73	I.N. Marwaha	D.D. Sharan
1973-75	R.S. Sastry	M.S. Vig
1975-76	G.L. Tandon	K.K. Biran
MINING ENGINEERS' ASSOCIATION OF INDIA		
1975-76	G.L. Tandon	K.K. Biran
1976-78	D.L. Patni	A.K. Basu
1978-80	R.C. Mohanty	S.K. De
1980-81	M.K. Batra	R.C. Dutta
1981-82	D.K. Bose	S.B. Mukherjee
1982-83	P.R. Merh	M.K. Srivastava
1983-86	V.S. Rao	L.S. Sinha
1986-88	M.A.Khan	D.K. Sen
1988-90	Saligram Singh	A. Panigrahi
1990-93	M. Fasihuddin	B. Mishra
1993-95	K.K. Biran	S. Chandrasekaran
1995-97	N.S. Malliwal	Dr. P.V. Rao
1997-2001	T.V. Chowdary	C.L.V.R. Anjaneyulu (S.G)
2001-2003	R.N. Singh	C.L.V.R. Anjaneyulu (S.G)
2003-2007	Meda Venkataiah	C.L.V.R. Anjaneyulu (S.G)
2007-2009	R.P. Gupta	C.L.V.R. Anjaneyulu & A.S. Rao
2009-2011	Dr. V.D. Rajagopal	A.S. Rao
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
2023-2025	S. N. Mathur	M. Narsaiah

Chapter	Chairman	Secretary
1. Ahmedabad	Dhananjay Kumar	Anant Balkrishna Dani
2. Bailadila	-	T. Shiva Kumar
3. Bangalore	Dr. T. N. Venugopal	Sitaram Kemmannu
4. Barajamda	Atul Kumar Bhatnagar	Rahul Kishore
5. Belgaum	Dr.Pramod T.Hanamgond	Sagar M. Waghmare
6. Bellary-Hospet	S.H.M. Mallikajuna	P. Venkateswara Rao
7. Bhubaneswar	P.K. Satija	Shambhu Nath Jha
8. Dhanbad	Prof. A.K. Mishra	Prof. B.S. Choudhary
9. Goa	E. Hymakar Reddy	Santosh G Kotapkar
10. Himalayan	-	-
11. Hutti-Kalaburagi	Prakash	Arunachalam
12. Hyderabad	Vinay Kumar	L. Krishna
13. Jabalpur	-	Pratyendra Upadhyay
14. Kolkata	Sanjiv Kumar Singh	Umesh Singh
15. Mumbai	-	-
16. Nagpur	P.N. Sharma	Dr. Y.G. Kale
17. New Delhi	Deepak Gupta	Ashis Dash
18. Ongole-Vijayawada	K. Subhaskar Reddy	Sarat Chandra Babu
19. Rajasthan-Jaipur	Lalit Mohan Soni	Dr. Vivek Laul
20. Rajasthan-Jodhpur	A.K. Jaiswal	Dr. Ram Prasad Choudhary
21. Rajasthan-Udaipur	Praveen Sharma	Asif Mohmmed Ansari
22. Raipur	-	-
23. Rayalaseema	K. Naga Sidda Reddy	E. Vasudevan
24. Singareni	K. Venkateshwarlu	A. Ravikumar
25. Tamil Nadu	Sanjeevi. R	Jaya Bharath Reddy N
26. Veraval-Porbandar	Manish Kumar Yadav	C.M. Dwivedi
27. Visakhapatnam	Dr. C.H. Rao	Prof. K.S.N. Reddy

LIFE INSTITUTIONAL MEMBERS

1	A.P. Mineral Dev. Corp.Ltd.	(LIM-12)
2	Aarvee Associates, Architects, Engineers & Consultants Pvt. Ltd.	(LIM-49)
3	ACC Ltd.	(LIM-25)
4	Ambuja Cements Ltd.	(LIM-3)
5	Aravali Minerals & Chemical Industries(P)Ltd.	(LIM-48)
6	Arrows Mining Consult	(LIM-88)
7	Associated Mining Co.	(LIM-19)
8	Associated Soapstone Distributing Co.(P)Ltd.	(LIM-57)
9	Belgaum Minerals	(LIM-64)
10	Bharat Alloys & Energy Ltd.	(LIM-36)
11	Capstone Geo Consultants (India) Pvt. Ltd.	(LIM-66)
12	Dalmia Bharat (Cement) Ltd.	(LIM-71)
13	Designer Rocks (P) Ltd.	(LIM-32)
14	Doddanavar Brothers	(LIM-81)
15	FCI Aravali Gypsum & Minerals India Ltd.	(LIM-61)
16	Grasim Industries Ltd.	(LIM-26)
17	Gravitas Infra Equipment Pvt. Ltd.	(LIM-83)
18	Gujarat Heavy Chemicals Ltd.	(LIM-6)
19	Gujarat Mineral Dev. Copr Ltd.	(LIM-18)
20	Gujarat Sidhee Cements Ltd.	(LIM-4)
21	Gulf Oil Corporation Ltd.	(LIM-9)
22	Hindustan Zinc Ltd.	(LIM-60)
23	Indian Rare Earths Ltd.	(LIM-35)
24	J.K. Cement Ltd.	(LIM-58)
25	JSW Cement Ltd.	(LIM-63)
26	Jubilee Granites India Pvt. Ltd.	(LIM-23)
27	Kariganur Mineral Mining Industry	(LIM-41)
28	Khetan Business Corporation Pvt. Ltd	(LIM-79)
29	Kirloskar Ferrous Industries Ltd.	(LIM-33)
30	Krishna Mines	(LIM-27)
31	Lafarge India Pvt. Ltd.	(LIM-69)
32	M.P.L. Parts & Services Ltd.	(LIM-14)
33	Madras Cements Ltd.	(LIM-17)
34	Mahashakti Infrastructure	(LIM-77)
35	Maheswari Minerals	(LIM-65)
36	Mangala Associates Pvt. Ltd.	(LIM-74)
37	Manganese Ore (India) Ltd.	(LIM-37)
38	Mapscope Pvt. Ltd.	(LIM-87)
39	Mewara Mining	(LIM-78)
40	MSPL Limited	(LIM-30)
41	My Home Industries Limited	(LIM-70)
42	Mysore Minerals Limited	(LIM-45)
43	National Aluminium Co. Ltd.	(LIM-1)
44	National Institute of Rock Mechanics	(LIM-76)
45	NMDC Ltd.	(LIM-20)
46	Obulapuram Mining Co. (P) Ltd.	(LIM-54)
47	Orient Cement	(LIM-59)
48	Panduronga - Timblo Industries	(LIM-56)
49	Pearl Mineral Ltd.	(LIM-39)
50	Polygon Geospatial Private Limited	(LIM-86)
51	Priyadarshini Cement Ltd.	(LIM-5)
52	R.K. Marbles Pvt. Ltd.	(LIM-52)
53	Radials International	(LIM-29)
54	Rajasthan State Mines & Minerals	(LIM-53)
55	Rajgarhia Group of Industries	(LIM-50)
56	S.N. Mohanty	(LIM-62)
57	Sagar Cements Ltd.	(LIM-21)
58	Sangam University	(LIM-82)
59	Sandvik Asia Limited	(LIM-46)
60	Sesa Goa Ltd.	(LIM-11)
61	Shivalik Silica	(LIM-72)
62	Shree Cement Ltd.	(LIM-51)
63	Shree Engineering Services	(LIM-15)
64	Shri Sharda Cold Retreads (P) Ltd.	(LIM-24)
65	Skylark Drones Pvt Ltd	(LIM-84)
66	SN Mining Private Limited	(LIM-85)
67	South India Mines & Minerals Industries	(LIM-2)
68	South West Mining Ltd.	(LIM-40)
69	Sri Kumarswamy Mineral Exports	(LIM-43)
70	Sudarshan Group of Industries	(LIM-47)
71	Tata Chemicals Ltd.	(LIM-7)
72	Tata Steel Limited	(LIM-8)
73	Telangana State Mineral Development Corporation Limited	(LIM-75)
74	Terra Reserves Determination Technologies (P) Ltd.	(LIM-55)
75	The India Cements Ltd.	(LIM-16)
76	The K.C.P. Ltd.	(LIM-22)
77	The Odisha Mining Corporation Limited	(LIM-80)
78	The Singareni Collieries Company Ltd	(LIM-73)
79	Thriveni Earthmovers (P) Ltd.	(LIM-31)
80	Transworld Garnet India Pvt. Ltd.	(LIM-67)
81	Tungabhadra Minerals Pvt. Ltd.	(LIM-42)
82	Ultra Tech Cement Ltd.	(LIM-10)
83	UltraTech Cement Ltd.A.P.Cement Works	(LIM-28)
84	V. Thirupathi Naidu	(LIM-34)
85	V.V. Mineral	(LIM-68)
86	Veerabhadrappa Sangappa & Company	(LIM-44)
87	VS Lad & Sons	(LIM-38)
88	W.B. Engineers International Pvt. Ltd	(LIM-13)

CHIEF EDITOR'S DESK

Dr. P.V. Rao
Chief Editor, MEJ

Advancing India's Mineral Sector: Why IMIC and CRIRSCO Standards Matter

India's mineral sector is at a turning point as global attention shifts toward minerals essential for clean energy, digital infrastructure, and advanced defense technologies. To participate meaningfully in these rapidly expanding value chains, the country needs a reporting framework that is transparent, credible, and internationally comparable. The Indian Mineral Industry Code (IMIC), aligned with CRIRSCO standards, offers exactly that foundation. Its wider adoption can transform how India presents its mineral wealth, attracts investment, and manages long-term resource development.

A Changing Global Context: Across the world, the rise of critical minerals has prompted nations to re-evaluate their mineral strategies. These commodities now anchor supply chains for electric mobility, grid-scale storage, renewable energy technologies, aerospace systems, and electronics. With demand accelerating, countries are not only intensifying exploration but also strengthening the frameworks they use to classify, evaluate, and report their mineral assets.

For India, which aims to expand its footprint in clean energy manufacturing, semiconductor supply chains, and strategic defense platforms, credible and harmonized reporting has become indispensable. Investors and international partners rely on standardized information when assessing the technical, environmental, and financial viability of mineral projects. Without such clarity, projects struggle to compete globally, irrespective of their geological potential.

The Case for IMIC: IMIC's importance extends well beyond technical definitions. As a CRIRSCO-aligned code, it establishes a common reporting language used by major mining jurisdictions such as Australia, Canada, South Africa, the USA, and most of Europe. These countries have demonstrated that clear classification systems and transparent public reporting help build investor confidence and strengthen governance.

The IMIC framework ensures that Exploration Results, Mineral Resources, and Mineral Reserves are reported using consistent terminology and methods. Its emphasis on transparency, materiality, and competency introduces discipline into a sector where uncertainty is inherent. Mandatory disclosure of modifying factors-including environmental, social, and governance aspects-promotes responsible development and sets a higher bar for industry accountability.

Benefits for India's Mining and Exploration Landscape: Widespread adoption of IMIC would significantly enhance India's attractiveness to both domestic and international investors. Mining companies seeking foreign direct investment, private equity funding, or global partnerships often need to present their projects in formats recognized by international financial markets. CRIRSCO-compliant reporting reduces ambiguity, lowers perceived risk, and allows Indian projects to be compared with assets elsewhere.

Moreover, IMIC implementation provides impetus for capacity-building in critical technical areas. Modern resource estimation, geometallurgy, mine planning, and digital modelling become more deeply integrated into project evaluation. Over time, this strengthens India's professional ecosystem, with Registered Competent Persons playing a central role in maintaining reporting quality.

Why Progress Has Been Slow: Despite its advantages, India's shift to IMIC has been gradual. Legacy systems based on UNFC/MEMC still dominate regulatory processes, and multiple institutions remain comfortable with these classifications. Transitioning to a CRIRSCO-style framework requires cooperation across ministries, state directorates, PSUs, and private operators-an alignment that has taken time to achieve.

Another challenge is that many Indian mining companies still do not depend on global stock exchanges or international financing. Without external funding pressure, the incentive to upgrade reporting systems is less direct. At the same time, there is a shortage of Registered Competent Persons with the depth of experience required under IMIC, indicating a need for sustained training and accreditation efforts.

Voluntary Adoption as a Catalyst: Given these realities, industry-led voluntary adoption offers the most realistic pathway for accelerating reform. When leading companies begin reporting under IMIC despite the absence of full regulatory enforcement, they set practical benchmarks and generate evidence of the system's value. Successful voluntary adoption builds confidence among policymakers and demonstrates that a CRIRSCO-aligned approach is both workable and beneficial.

Aligning with Global Best Practices: Countries with mature mining sectors have integrated company-level CRIRSCO reports into their national mineral inventories, making them more robust and reliable. A similar evolution in India would strengthen national resource assessments, improve planning, and support international trade negotiations-especially in the context of global critical mineral alliances and supply-chain partnerships.

The Way Forward: India's movement toward IMIC reflects a commitment to responsible, transparent, and globally aligned mineral development. Clear reporting, technical rigor, and sustainability-oriented disclosures are now essential features of modern mining jurisdictions. With strong groundwork laid by NACRI and MEAI, the time is right for wider adoption-voluntary and regulatory-to position India as a credible leader in the global critical minerals landscape.

- Chief Editor

CHIEF EDITOR

Dr. P.V. Rao
Off. : +91 (040) 23200510
Cell: +91 87120 34723
Email: editor.mej.meai@gmail.com

PUBLISHER

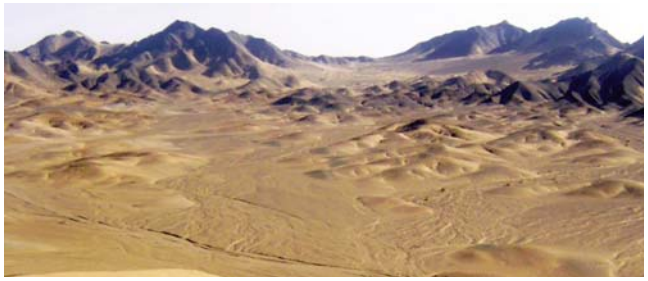
M. Narsaiah
Secretary General,
Mining Engineers' Association of India
Cell: +91 9177045204 / 7382087618

SUBSCRIPTION RATES

	India	Foreign
1. Subscription for 1 Year	Rs. 1000/-	US$120
2. Single Copy	Rs. 100/-	

NEWS FROM THE MINERAL WORLD

➤ US EXIM to invest $100B in critical minerals and energy, says chair



The Reko Diq deposit is located in the Balochistan province.

The US Export-Import Bank (EXIM) will invest $100 billion in support of the Trump administration's strategy of achieving global energy dominance, the export credit agency said.

In an interview with the Financial Times, newly appointed chair John Jovanovic said the move aims to address the West's over-reliance on supplies from China and Russia.

"We can't do anything else that we're trying to do without these underlying critical raw material supply chains being secure, stable and functioning," he said.

The first tranche of investments, according to Jovanovic, will be in Egypt, Pakistan and Europe. These include $4 billion worth of natural gas being delivered to Egypt by New York-based commodities group Hartree Partners and a $1.25 billion loan for the giant Reko Diq copper mine being developed by Barrick Mining (TSX: ABX, NYSE: B) in Pakistan's Baluchistan province.

However, the EXIM chair told *FT* that the bank is finalizing several other critical minerals deals that are "orders of magnitude larger" than the Reko Diq loan. While he did not provide further details, Jovanovic said EXIM is "ready" to be part of various critical minerals pacts that the US has with its allies, such as Australia.

To date, it has deployed $35 billion of the $135 billion authorized by the US Congress, he noted. On top of critical minerals, the bank is also placing a heavier investment emphasis on energy security. Jovanovic told *FT* that it was "actively in discussions" about several nuclear projects in southeast Europe, where US companies such as Westinghouse were looking to invest. Last year it supported $1.6 billion in green energy projects, an increase of 74% compared with 2023, he noted.

Also of significance is LNG, for which EXIM has received requests for US support from Europe, Africa and Asia, and "a series of multibillion-dollar LNG supply deals" could be announced soon, according to Jovanovic.

Staff Writer, Mining.Com | November 24, 2025

➤ Adani's giant copper smelter caught up in global ore shortage

Indian tycoon Gautam Adani's $1.2 billion copper smelter in Gujarat is receiving only a fraction of the ore required to operate the 500,000-ton-a-year plant at full capacity, as a global supply squeeze tightens.

Kutch Copper Ltd., which began processing metal in June after multiple delays, has brought in less than a 10th of the raw material required, according to customs data. In the 10 months to October, it imported about 147,000 tons of copper concentrate. Competitor Hindalco Industries Ltd. bought a little over 1 million tons during the same period, according to the data compiled by *Bloomberg*.

The smelter requires about 1.6 million tons of concentrate to function at full strength, *Bloomberg* reported earlier.

Supply for copper smelters everywhere has been hit by a wave of mine disruptions this year, including at major producers like Freeport-McMoRan Inc., Hudbay Minerals Inc., Ivanhoe Mines Ltd., and Chile's state-owned giant Codelco. Adding to that squeeze, China's relentless expansion of its own smelting capacity has battered profit margins and pushed some producers outside the country to cut output or shut down.

As a result, treatment and refining charges - the fees miners pay for processing - have hit a record low this year, indicating smelters are willing to accept ever-tighter margins to secure material. For new entrants such as Kutch Copper, which plans to double annual capacity to 1 million tons in four years, tight supply means higher expenses to maintain the facility, plus an even longer ramp-up process.

"Adani's smelter is new and so should be more efficient than many competitors, so in the short term the smelter could ramp up at a loss," Bloomberg Intelligence analyst Grant Sporre said, adding India could also introduce higher tariffs to protect its industries. That would mean accepting "short-term pain for a longer-term gain," he said.

BHP Group has supplied 4,700 tons to the smelter, while other shipments came from Glencore Plc and

Hudbay, customs data show. Kutch Copper's slow start is a reminder of the hurdles facing India's efforts to increase its metals self-reliance. Surging demand from infrastructure, power, and construction sectors far outpaces constrained processing capacity and limited domestic ore reserves.

Bloomberg News | November 24, 2025

➤ Toxic mines put Southeast Asia's rivers and people at risk, study says

Rare earth mining processing cause pollution in river on Southeast Asia.

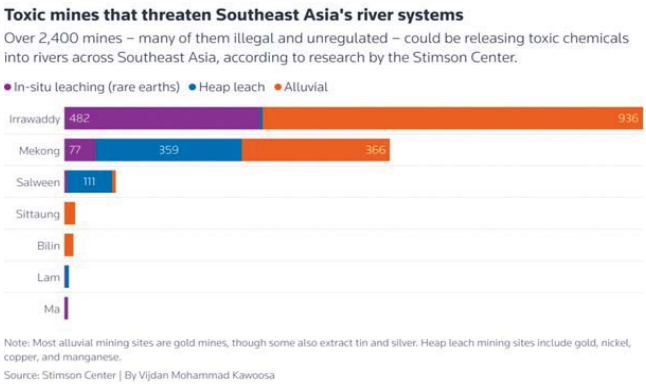
For most of her life, 59-year-old farmer Tip Kamlue has irrigated her fields in northern Thailand with the waters of the Kok River, which flows down from neighbouring Myanmar before joining with the Mekong River that cuts through Southeast Asia.

But since April, after authorities warned residents to stop using the Kok's water because of concerns over contamination, Tip has been using groundwater to grow pumpkins, garlic, sweet corn and okra.

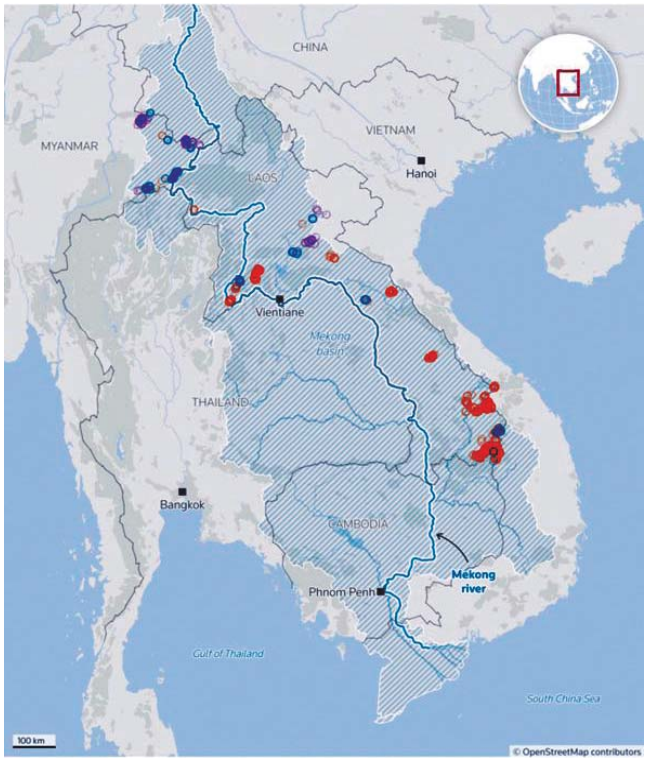
"It's like half of me has died," Tip said, standing by her fields in Tha Ton sub-district, and looking out at the river that she is now forced to shun. Across mainland Southeast Asia, more than 2,400 mines – many of them illegal and unregulated – could be releasing deadly chemicals such as cyanide and mercury into river water, according to research from the US-based Stimson Center think tank released on Monday.

"The scale is something that's striking to me," said Brian Eyler, senior fellow at Stimson, pointing to scores of tributaries of major rivers, like the Mekong, the Salween and the Irrawaddy that are probably highly contaminated.

The Stimson report marks the first comprehensive study of potentially polluting mines in mainland Southeast Asia. Researchers analyzed satellite imagery to identify mining activity including366 alluvial mining sites, 359 heap leach sites and 77 rare earth mines draining into the Mekong basin.



Most alluvial mining sites are gold mines, though some also extract tin and silver. Heap leach mining sites include those for gold, nickel, copper, and manganese extraction.The Mekong is Asia's third-largest river and supports the livelihood of more than 70 million people as well as the global export of farm and fisheries products. It was previously perceived to be a clean river system, said Eyler.



"Because so much of the Mekong Basin is essentially ungoverned by national laws and sensible regulations, the basin is unfortunately ripe for this kind of unregulated activity to occur at a high level of intensity and the huge scale that our data reveals," he said.

The toxic chemicals released through unregulated rare earths mining include ammonium sulphate, and sodium cyanide and mercury that are used for two different types of gold mining, according to Stimson researchers. That exposes not only the millions of people who live along the Mekong in Southeast Asia to health risks, but also consumers elsewhere. "There is not a major supermarket in the US that doesn't have products from the Mekong Basin, including shrimp, rice and fish," said Eyler.

China-backed mining

The emergence of new China-backed rare earth mines in eastern Myanmar, not far from the mountainous border with Thailand, initially set off concerns among researchers of the danger of downstream pollution along the Kok River, including areas like Tha Ton.

The contamination pattern on samples from the Kok River shows the presence of arsenic – linked to rare earth and gold mining – alongside heavy rare earths like dysprosium and terbium, said Tanapon Phenrat of Thailand Science Research and Innovation, a Thai government research agency.

"It has only been two years since the rise of rare earth and gold mining in Myanmar at the Kok River's source," said Tanapon, who conducted testing of the waters this year and warns of a sharp rise in contamination levels unless mining is stopped. Tanapon was not involved in the Stimson study.

Myanmar, which erupted in conflict after the military seized power in 2021, is one of the world's largest producers of heavy rare earths, critical minerals infused into magnets that power the likes of wind turbines, electric vehicles and defence systems.

From mining sites in Myanmar, the raw material is transported for processing to China, which has a near-monopoly over production of these vital magnets, with Beijing deploying rare earths as leverage in its tariff war with the US. Mines across Myanmar and Laos use in-situ leaching for rare earth elements that was initially developed within China, according to Stimson's Eyler. "In general, Chinese nationals work on these mines as managers and technical experts," he said.

In response to questions from *Reuters*, China's foreign ministry said it was not aware of the situation. "The Chinese side has consistently required overseas Chinese enterprises to conduct their production and business operations in accordance with local laws and regulations, and to adopt stringent measures to protect the environment," it said. The Thai government has established three new task forces to coordinate international cooperation, monitor the mines' health impact and secure alternative supplies for communities along the Kok, Sai, Mekong and Salween rivers, said Deputy Prime Minister Suchart Chomklin.

In northern Tha Ton, signs still hang on a bridge over the Kok River, calling for authorities to shut down the rare earths mines upriver, and farmers like Tip are desperate for an intervention. "I just want the Kok River to be the way it used to be – where we could eat from it, bathe in it, play in it, and use it for farming," she said. "I hope someone will help make that happen."

➤ Britain unveils critical minerals strategy to cut reliance on foreign supply

Britain on Saturday rolled out a critical minerals strategy designed to reduce dependence on foreign suppliers by 2035, with targets to source 10% of domestic demand from UK production and 20% from recycling, the government said, as global competition for these essential resources intensifies.

Backed by up to 50 million pounds in new funding, the strategy seeks to ensure no more than 60% of the UK's supply of any one critical mineral comes from a single country by 2035, according to a statement.

British Prime Minister Keir Starmer said in the statement that critical minerals "are the backbone of modern life and our national security," arguing that boosting domestic production and recycling would help shield the economy and support efforts to lower living costs. The government said the UK currently produces 6% of its critical mineral needs domestically. Under the plan, it wants to expand domestic extraction and processing, with a particular focus on lithium, nickel, tungsten and rare earths. It aims to produce at least 50,000 tonnes of lithium in the UK by 2035.

Britain faces an urgent need for a secure, long-term supply of critical minerals, including copper, lithium and nickel, which are essential for smartphones and electric vehicles and increasingly crucial for building data centers that power artificial intelligence.

British demand for essential materials is climbing sharply, with copper consumption projected to nearly double and lithium demand expected to surge by 1,100% by 2035, Britain's government said.

The strategy underscores China's grip on critical mineral supplies, leaving the sector exposed to price swings, geopolitical strains and sudden disruptions. Britain noted China accounts for about 70% of rare earth mining and 90% of refining, a dominance that puts countries such as the UK at risk.

Earlier this year, Britain struck a minerals cooperation deal with Saudi Arabia aimed at bolstering supply chains, opening doors for British firms, and drawing fresh investment into the UK.

Reuters / November 22, 2025

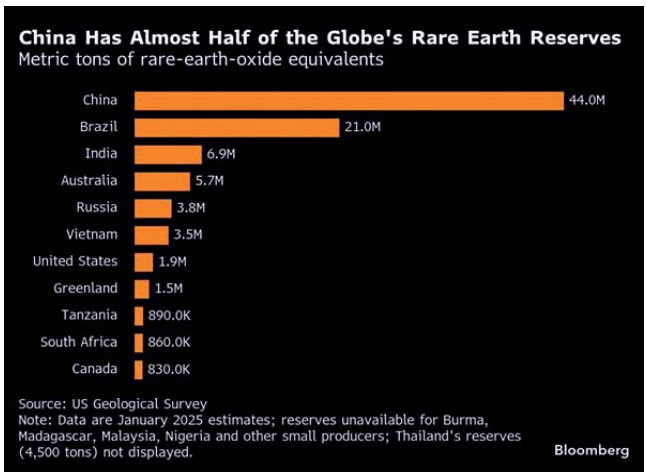
➤ G-20 calls to shield critical minerals in veiled China swipe

Baotou City: Epicentre of China's rare earth industry.

The Group of 20 called for greater protection of critical minerals from unilateral trade actions, in a seemingly veiled reference to China's sweeping export curbs unleashed during Donald Trump's trade war.

"We seek to ensure that the value chain of critical minerals can better withstand disruptions, whether due to geopolitical tensions, unilateral trade measures inconsistent with WTO rules, pandemics, or natural disasters," the group said in a proposed draft document seen by *Bloomberg News*.

China weaponized its chokehold on critical minerals earlier this year as its trade spat with the US ramped up, imposing a license system that throttled the world's access to metals needed to make everything from missiles to mobile phones.



China's Foreign Ministry didn't immediately respond to a request for comment made outside working hours in Beijing.

"It's a major departure for G-20 members to call out China, albeit not by name, for its unfair and unilateral critical minerals policies," said Wendy Cutler, a former US trade negotiator now at the Asia Society Policy Institute, adding that the language "underscores the depth of global concern" with "recent steps by Beijing to disrupt supply chains for its own gain."

The decision comes after US leader Trump said last month that a truce stuck with President Xi Jinping had restored access to such minerals not just for America, but for "the world."

While critical minerals were mentioned in the declaration at last year's G-20 summit in Brazil, they got just one reference as leaders called for "responsible supply chains." This year's draft document dedicates a four-point section to the subject, reflecting how tensions around that issue have intensified.

That included a voluntary, non-binding blueprint to ensure that critical mineral resources "become a driver of prosperity and sustainable development." The declaration is happening in the absence of Xi, who has sent Chinese Premier Li Qiang to the summit in his place. The language could still change during the weekend's events.

While China's rare earth restrictions have been widely criticized by nations across Europe and Asia, as well

(Continued on Page 20)

TOWARDS MINERAL SOVEREIGNTY: INDIA'S GRAPHITE IMPERATIVE IN THE ELECTRIC MOBILITY ERA CHARTING A STRATEGIC COURSE AMIDST GLOBAL SCARCITY

Ashokaditya P. Dhurandhar

Abstract

Graphite is a key mineral for lithium-ion batteries, refractories, and lubricants. It is in huge demand because of its important role in clean energy technologies, especially electric vehicles (EVs) and renewable energy storage systems. This article offers an in-depth look at the global graphite market, highlighting production trends, demand factors, supply gaps, and India's strategic role. China leads the world with over 77% of graphite production, with Madagascar, Mozambique, Brazil, and India following. New producers like Turkey, Tanzania and Australia are ready to help diversify supply chains. India, the sixth-largest producer, has a significant supply gap and depends on imports for about 69% of its needs. Arunachal Pradesh and Tamil Nadu have large graphite resources, and Tamil Nadu Minerals Limited (TAMIN) plays a crucial role in production. To close India's supply gap, strategies include expanding mining operations, improving processing technologies, and creating supportive policies. The article will help the policymakers, industry leaders, geologists, mining engineers, and mineral processing engineers for graphite mineral sovereignty for India.

1. INTRODUCTION

In a time marked by the growing use of electric vehicles and the global push for sustainable energy, graphite stands out as a key material. Its high electrical and thermal conductivity, lubricity, and thermal stability make it crucial for lithium-ion batteries that power electric vehicles and renewable energy storage systems. The global graphite market is valued at USD 8.4 billion in 2023 and is expected to reach USD 13.2 billion by 2033 due to increasing demand for clean energy solutions. However, China dominates this market, producing over 77% of the world's graphite and controlling 90% of battery-grade refining. This dominance, coupled with export restrictions in 2023, highlights significant supply chain risks (Investing News Network, 2025). India has substantial graphite reserves in Arunachal Pradesh and Tamil Nadu. It is at a critical moment, ready to turn its mineral resources into a source of national strength and global presence. Yet, domestic production meets only a small part of the rising demand. India relies on imports for about 69% of its graphite needs, mainly from China. This puts pressure on the country to better utilize its resources. This article outlines India's journey toward mineral self-reliance. It looks at global production trends, demand changes, supply shortages, and strategies to improve mining and processing capabilities. This article also identifies the new directions for helping policymakers, industry leaders, and technical experts secure India's role in the era of electric mobility.

2. GLOBAL GRAPHITE MARKET OVERVIEW

2.1 Market Size and Growth

The growing need for lithium-ion batteries in EVs and energy storage systems is expected to propel the global graphite market's growth. According to research, the market is projected to grow at a compound annual growth rate (CAGR) of 4.8% from its estimated USD 8.4 billion in 2023 to USD 13.2 billion by 2033 (Allied Market Research 2025). A higher growth trajectory is suggested by alternative projections, which place the market size at USD 25.9 billion in 2023 and USD 58.6 billion by 2033 at a compound annual growth rate (CAGR) of 8.5% (Fact.MR, 2024). With a projected CAGR of 9.2% from 2025 to 2033, the Asia-Pacific region—led by China and India—holds a sizable share (Grand View Research 2025). Turkey boasts the largest graphite reserves in the world, with a staggering 90 million tonnes, which makes up about 27% to 35% of the global total. Some of the key deposits can be found in areas like Kütahya-Oysu, Balıkesir-Susurluk, Kastamonu-Doganyurt, Bingöl-Genç, Adıyaman-Sincik, Mugla-Milas, Kahramanmaras-Göksun, Konya, Yozgat-Akdagmadeni, and Kırklareli. However, despite having such extensive reserves, Turkey's current production levels are quite low, and the country mainly relies on imports to meet its domestic needs. The only active graphite mine, situated in the Kütahya-Altıntas district, has the capacity to produce around 22,000 tonnes of raw graphite and 8,000 tonnes of enriched graphite each year. The challenges lie in the limited exploration knowledge and the technological infrastructure required to enhance ore grades. With its vast reserves and strategic location close to Europe, Turkey has a significant opportunity for future development (Alp et.al. 2020).

Orion Geohytech India. G-10 Brahmaputra Apartment Aakar Nagar Katol Road Nagpur,
ORCID iD: https://orcid.org/0000-0002-9948-1937, Email: apdhurandhar@gmail.com

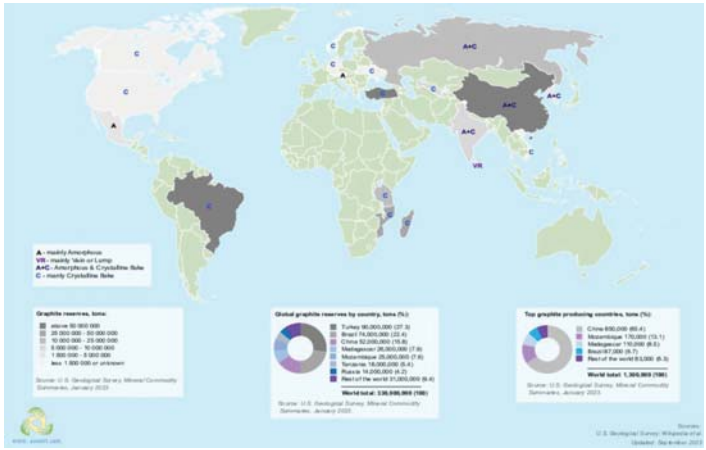


Figure. 1: Graphite producing major countries in world (after USGS 2023)

3. PRODUCTION TRENDS AND EMERGING PRODUCERS

3.1 Major Producers

China produces 1.23 million tonnes annually, mainly flake graphite from Heilongjiang. It controls 90% of global battery-grade graphite refining (Investing News Network, 2025). Madagascar produces 100,000 tonnes of high-quality flake graphite from the Ambaton Delazaca region (East Carbon 2024). Mozambique's Balama Graphite Project is the world's largest high-grade flake deposit, producing 96,000 tonnes each year (Syrah Resources 2025). Brazil produces 73,000 tonnes of both flake and amorphous graphite, with reserves of 74 million tonnes (U.S. Geological Survey, 2023, 2024) Figure. 1. India produces 11,500 tonnes, with reserves of 8.6 million tonnes Table 1. The production occurs mainly in Odisha, Jharkhand, Tamil Nadu, and Kerala.

Table 1: Top Graphite-Producing Countries (2023)

Country	Production (tonnes)	Reserves (tonnes)	Graphite Type and Quality
China	1,230,000	78,000,000	High-purity flake, amorphous
Madagascar	100,000	26,000,000	High-quality flake
Mozambique	96,000	25,000,000	High-grade flake
Brazil	73,000	74,000,000	Flake, amorphous
South Korea	27,000	Not specified	Primarily synthetic, some natural
India	11,500	8,600,000	Flake, amorphous
Russia	16,000	Not specified	Flake graphite
North Korea	8,100	1,800,000	Limited data, quality unclear
Norway	7,200	Not specified	Flake graphite
Tanzania	6,000	18,000,000	High-quality flake

Source: U.S. Geological Survey (2024)

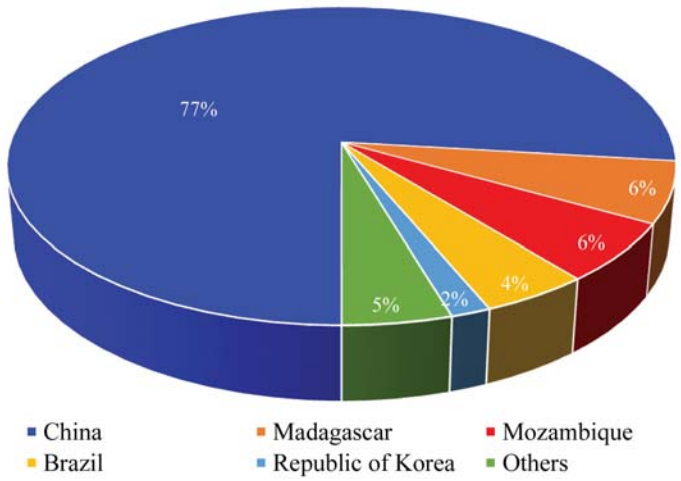


Figure 2: Global Graphite Production Shares by Country (2023)

The pie chart illustrates China's dominant share, emphasizing the need for diversified supply chains Figure.2.

4. SUPPLY-DEMAND GAPS

Research indicates that by 2025, the demand for graphite around the globe is expected to surpass supply, largely fuelled by the electric vehicle battery market. UBS projects that natural graphite demand could hit 6.3 million tonnes by 2030, while supply might only reach about 2.4 million tonnes, creating a potential shortfall of 1.2 million tonnes (Investor News 2023). Meanwhile, Macquarie Research anticipates that deficits will begin in 2024 and will continue to grow each year until 2030 (Investor News 2023).

The line chart shows the growing gap between demand and supply. This highlights the need for more production capacity Figure. 3.

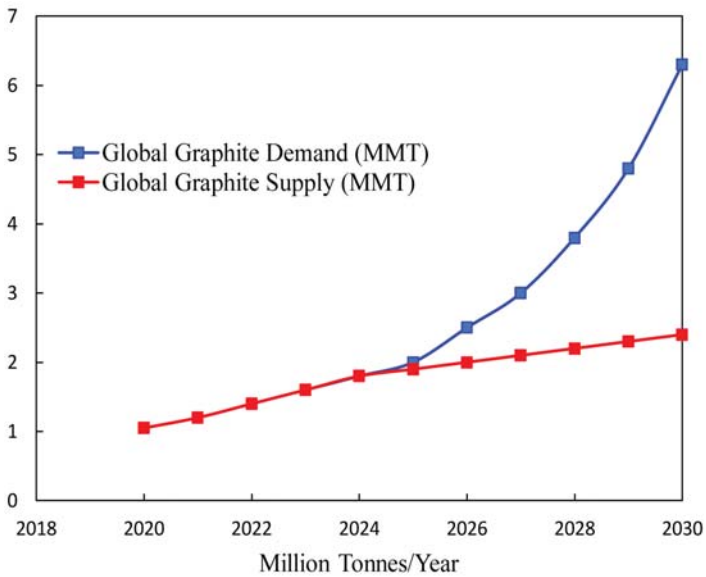


Figure 3: Global Graphite Demand vs. Supply (2020-2030)

5. PRICE TRENDS AND FINANCIALS

Graphite prices depend on type, quality, and location. In 2025, flake graphite (94% C, -100 mesh, FOB China) was priced at USD 470-510 per ton, down from USD 830 per ton in 2023 because of oversupply (Fastmarkets 2023). Amorphous graphite prices ranged from USD 400-600 per ton. Mining costs for flake graphite are higher, with battery-grade graphite priced at USD 1,800-2,600 per ton due to complex purification processes (Grand View Research 2025). Regional price variations in Q2 2025 are shown in Table 2.

Table 2: Graphite Prices by Region (Q2 2025)

Region	Price (USD/tonne)
USA	1,290
China	2,040
Germany	1,673
Brazil	1,890
UK	N/A

Source: IMARC Group (2024)

6. TYPES OF GRAPHITE AND THEIR APPLICATIONS

6.1 Flake Graphite

The sizes of flakes are divided into these four categories:

1. Jumbo Flake: greater than 180 microns
2. Large Flake: 150 to 180 microns
3. Medium Flake: 100 to 150 microns
4. Fine Flake: 75 to 100 microns

In-situ ore grades fall between 2% and 30% total graphitic carbon (TGC), and after processing, concentrates generally exceed 90% TGC (Syrah Resources 2025). Flake graphite, which contains over 85% carbon, has a crystalline structure and high conductivity. It is used in:

- Battery Anodes: High-purity (99.9995%) spherical graphite for lithium-ion batteries, requiring 50-100 kg per EV battery (Grand View Research 2025).
- Refractories: High-temperature applications in steelmaking and cement production.
- Lubricants: Oils, greases, and fluid dispersions due to its layered structure.
- Nuclear Reactors: Requires 300 tonnes per 100 GW reactor initially (Investing News Network, 2025).

6.2 Amorphous Graphite

Amorphous graphite is a naturally occurring type of graphite characterized by its microcrystalline structure. It's commonly found in sedimentary rocks and is generally less pure and more powdery than other varieties. Amorphous graphite, with 60-85%. It is used in:

- Pencils: Affordable and sufficient for writing.
- Coatings: In steelmaking and foundries for heat resistance.
- Carbon Brushes: For electrical applications with moderate conductivity.

6.3 Vein Graphite

Vein graphite, also known as lump graphite, can be found as crystalline veins or fissures in rocks. This type is known for its high purity and has a more organized, flaky structure, making it suitable for premium applications. It contains over 90% carbon, is rare and is used in specialized applications like nuclear reactors and high-performance electronics.

7. QUALITY VS. PRICE

Higher-quality flake graphite, especially large-flake or high-purity types, commands premium prices due to its suitability for specialized applications. Amorphous graphite is cheaper, even with high carbon content, because it has simpler uses (Northern Graphite 2025). The cost of mining flake graphite is higher because it involves complicated processing to separate and purify the flakes, with prices reaching as much as USD 2,600 per ton for battery-grade graphite. In contrast, amorphous graphite, typically mined like coal, is cheaper but still needs processing to be turned into usable forms.

8. EMERGING PRODUCERS

Tanzania's production increased to 25,000 tonnes in 2024, driven by the Lindi Jumbo mine, which has reserves of 18 million tonnes (Investing News Network, 2025, Research and Markets (2024). Australia is developing graphite projects, with companies like Syrah Resources focusing on battery-grade graphite (Syrah Resources 2025). The United States is exploring domestic production through projects like the Coosa Graphite Mine in Alabama (Holley et. al 2025). Canada is also making strides with projects like the Lac Knife mine, which has reserves of 5.9 million tonnes (Natural Resources Canada, 2025).

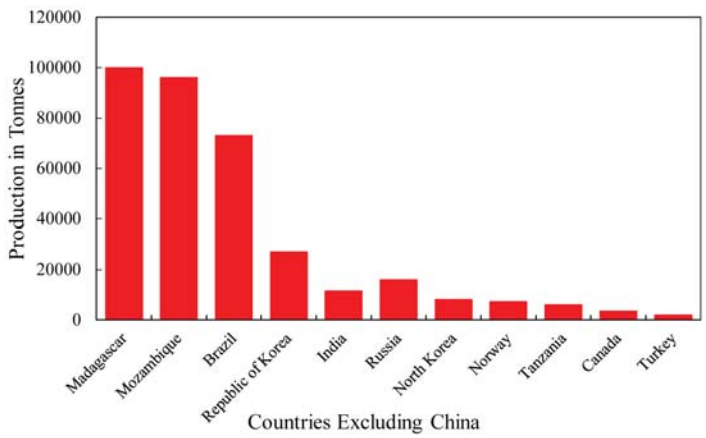


Figure 4: Graphite Production by Top Countries Excluding China (2023)

The bar graph highlights Madagascar and Mozambique as key players outside China Figure.4.

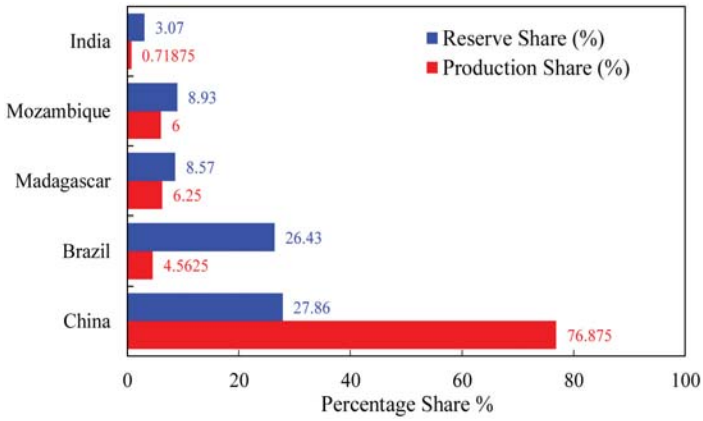


Figure 5: Comparison of Production and Reserves for Selected Countries (2023)

The chart compares production and reserve shares, highlighting Brazil's and India's potential for growth Figure.5.

9. INDIAN GRAPHITE

Indian graphite can be classified in three be broad categories by based on their geographic and genetic aspects.

1. CGGC Type 1
2. Himalayan Type 2
3. Eastern Ghat Type 3

9.1 CGGC Type 1

CGGC Type 1 graphite is microcrystalline or mainly amorphous; it is present in low to medium-grade metamorphosed carboniferous sediments or coals, belonging to Archean to Proterozoic cratonic rocks, ca. 2.5 to 1.6 Ga. On the other hand, Himalayan Type 2 or Eastern Ghats Type 3 crystalline flake graphite is present in schists, gneisses, and Gondwana coal fields as disseminated material, lenses, or beds, with a carbon content of about 70–90%. To this extent, it is more suitable for low-purity application as lubricants and foundries than for applications in high-purity batteries. Jharkhand has the potential to boast about 6% of India's graphite reserves, while it produces over 30% of the country's total graphite output as a byproduct of coal. The CGGC trends northeast to the Shillong-Meghalaya Gneissic Complex. Amorphous in Palamu, small workable in Garhwa, co-mined with coal in Latehar (Chiaki area), reconnaissance-like in Oranga-Revatipur (CG) all these small deposits are present in metamorphosed graphitic schists and gneisses. In Meghalaya, the graphite is present as amorphous to semi-crystalline small disseminations in migmatites and schists of the Shillong Plateau. All these deposits are poor in purity and small flakes-size, so they face import competition and regulatory and logistic challenges. However, there are possibilities for beneficiation and linked "integrated" exploration with coal and REE, utilizing cratonic stability, but no connection with the Pan-African belts.

9.2 Himalayan type 2 or Arunachal Pradesh type

Himalayan type 2 or Arunachal Pradesh type is largely crystalline flake but has subordinate amorphous variety occurrences in the Proterozoic Himalayan belt metasedimentary rocks. Formed along with the Himalayan orogeny (50-10 million years ago) under greenschist to amphibolite facies conditions, the deposits include the Indian Himalayan states. Such stratabound deposits completely have been derived from the biogenic carbon into the transported-around-a-small-amount sediments. These have medium to large flakes (>0.1 mm) and fixed carbon in the range of 8-20% which could be up-graded by beneficiation to around 95% for high-value applications, like battery anodes, refractories, and electronics. This has geologically feasible style across J&K, Sikkim, and Uttarakhand as both Lesser and Greater Himalayan sequences show comparable tectonometamorphic settings, inverted metamorphic gradients, and thrust dominance.

In Arunachal Pradesh, which contains about 43% of the total Indian graphite (~8.6 million tonnes), the most significant deposits are that found within the carbonaceous phyllites and schists of the Bomdila Group, and they are highly pure after beneficiation; however, environmental and terrain restrictions bar exploitation: J&K has ~37% of reserves and similar deposits in the Salkhala Group but remains underexplored owing to terrain and security concerns; Sikkim enjoys about 1-2% of reserves from the Lesser Himalayan calcareous suites and mica schists, having both flaky and lumpy types, while Uttarakhand has minor occurrences in the Kumaon region with on-going but small-scale exploration. Exploration is hampered here by rules and regulations, remote terrain, and competition with larger minerals. The homogeneous geological structure, however, suggests a potential to be uncovered through targeted geophysical surveys and mapping. This suggests that there is a uniform prospect of high-purity, medium-to-large-flake graphite throughout the Himalayan belt.

9.3 Eastern Ghat Type 3

Eastern Ghat Type 3 graphite from southern and eastern India is primarily crystalline flake-type but is associated with epigenetic vein-like occurrences in Andhra Pradesh. It is found in the Proterozoic Eastern Ghats Mobile Belt and Kerala Khondalite Belt, having been deposited during the Pan-African orogeny (~550–650 Ma), stages during which high-grade granulite facies metamorphism and CO_2-rich mantle-derived fluids remobilised biogenic carbon. It is present in khondalites, migmatites, and schists. They yield flakes from fine to large size and contain 85 to 98% carbon after beneficiation. They are the suitable candidate materials

for lithium-ion batteries, refractories, and electronics. Odisha accounts for approximately 3-5% of the total reserves in India and is the leading producer, followed by Tamil Nadu, which has about 5% of reserves and contributes about 37% to the total production. Andhra Pradesh and Kerala have alternate high-grade deposits, with Odisha and Tamil Nadu leading the maximum production. Andhra Pradesh supplies to Kerala and smaller high-purity pockets (including vein types in AP). The genesis relates Gondwana reconstructions to Pan-African events and consequently correlates the Indian EGMB/KKB deposits with Sri Lanka's Highland Complex as well as Madagascar and Mozambique belts by shared granulite metamorphism and mantle-fluid processes. Issues are environmental impacts, the need for beneficiation, and how to mine sustainably to satisfy demands for EV batteries.

10. INDIA'S POSITION IN THE GRAPHITE MARKET

10.1 Production and Reserves

India is making its mark on the global stage by ranking sixth in graphite production, churning out an impressive 11,500 tonnes in 2023. The country boasts reserves estimated at 8.6 million tonnes, according to the U.S. Geological Survey (2024). Arunachal Pradesh stands out as the state with the richest graphite resources, holding about 35-43% of India's total. The Geological Survey of India highlights major deposits in areas like Bopi, Lamdak, Taliha, Tai, Hunli, and Lalpani, especially in the Tai-Tachidoni region of West Siang district (Geological Survey of India, 2013). However, despite these abundant resources, Arunachal Pradesh's deposits are still largely untapped due to limited exploration and infrastructure, presenting a golden opportunity to enhance domestic production. Tamil Nadu also plays a crucial role, with Tamil Nadu Minerals Limited (TAMIN) operating graphite mines and a beneficiation plant in the Sivaganga region, particularly in the villages of Pudupatti, Kumaripatti, and Senthiudayanathapuram. TAMIN oversees over 600 acres of graphite-rich land, with an estimated reserve of three million tonnes of graphite ore, yielding around 300,000 tonnes of recoverable graphite at an average fixed carbon content of 14% (Tamin Graphite, 2023, IBM 2023). In October 2024, Tamil Nadu's graphite production was reported at 4,020 tonnes, a drop from 5,791 tonnes in September, with an average annual output of beneficiated graphite flakes at 6,000 tonnes from TAMIN's plant, which has a capacity of 8,400 tonnes per year (Tamin Graphite, 2023, Indian Bureau of Mines (IBM) 2023). Other notable states in graphite production include Odisha, with 1.35 million tonnes of recoverable reserves, as well as Jharkhand and Kerala, which have historically been strong producers due to their higher recoverable reserves (U.S. Geological Survey, 2024). Key players in the industry include Tirupati Carbons & Chemicals, Chhotanagpur Graphite Industries, Graphite India Limited, and TAMIN. Recent news also highlights Coal India Limited's entry into the graphite market, signalling exciting developments ahead.

10.2 Quality of Graphite

India is known for producing both flake and amorphous graphite, with the quality varying from one region to another. In Arunachal Pradesh, the graphite tends to be fine to medium flaked, with fixed carbon content ranging between 5% and 25%. This makes it a promising feedstock for high-value uses, like lithium-ion battery anodes, especially after some downstream processing. Over in Tamil Nadu, the Sivaganga graphite, which is overseen by TAMIN, has a flaky texture and an average fixed carbon content of 14%. This graphite is processed to reach up to 96% fixed carbon content, making it suitable for a variety of applications, including refractory bricks, crucibles, carbon brushes, lubricants, and even pencils (Tamin Graphites, 2023, IBM 2023). The TAMIN beneficiation plant located in Senthiudayanathapuram, which has been operational since 1994, processes 200 tonnes of ore each day to produce 20 tonnes of high-quality graphite daily, maintaining a moisture content of 0.2% to 0.5% (Tamin Graphites, 2023). Odisha also contributes high-quality flake graphite to the mix, but the absence of advanced processing technologies hampers India's ability to consistently produce battery-grade graphite (99.9995% purity) needed for electric vehicle batteries, despite the promising feedstock available from Arunachal Pradesh and Tamil Nadu.

The demand for graphite in India is on the rise, fuelled by the rapid growth of its electric vehicle, automotive, and steel industries. Estimates suggest that by 2025, the demand will reach 60,000 tonnes, with projections indicating it could hit 150,000 tonnes by 2030. However, domestic production is only expected to be around 12,500 tonnes in 2025, which covers just 20% of the demand. As a result, India will depend on imports for 69% of its graphite needs, mostly from China. This trend is clearly depicted in Table 3.

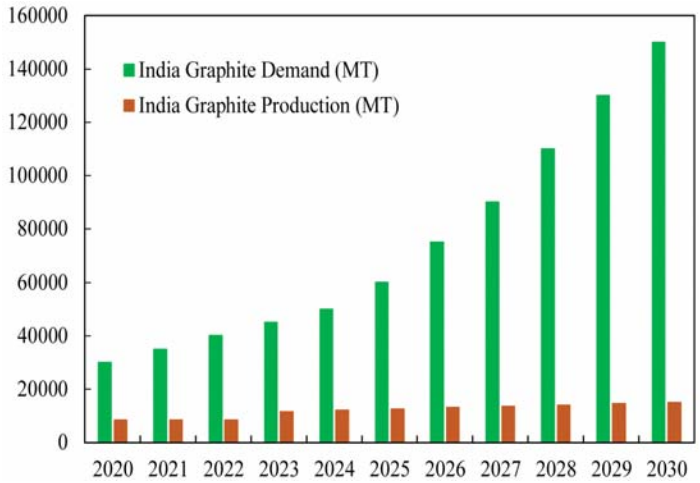


Figure 6: India Graphite Demand vs. Production (2020-2030)

The bar chart illustrates (Figure. 6) the increasing gap between what India requires and what it can produce, highlighting the urgent need for strategic measures Research and Markets (2024).

Table 3: India's Graphite Demand and Production (2020-2030)

Year	Demand (tonnes)	Production (tonnes)	Supply Gap (tonnes
2020	30,000	8,300	21,700
2021	35,000	8,300	26,700
2022	40,000	8,300	31,700
2023	45,000	11,500	33,500
2024	50,000	12,000	38,000
2025	60,000	12,500	47,500
2026	75,000	13,000	62,000
2027	90,000	13,500	76,500
2028	110,000	14,000	96,000
2029	130,000	14,500	115,500
2030	150,000	15,000	135,000

Source: IBM Mineral Year Book 2023, Research and Markets (2024)

10.3 Recent Developments

Coal India Limited (CIL) has officially been chosen as the preferred bidder for the Khattali Chhoti Graphite Block in Madhya Pradesh's Alirajpur district, marking a significant milestone as it embarks on its first venture into non-coal mineral mining. This expansive block covers nearly 600 hectares and features graphite with a fixed carbon content ranging from 1.99% to 6.50%. CIL has committed to a mining premium of 150.05% of the mineral dispatch value to the Madhya Pradesh government. The block is also rich in resources, containing approximately 9.28 million tonnes of graphite and 0.70 million tonnes of vanadium. Furthermore, CIL has agreed to a mining premium of 189.75% of the mineral dispatch value to the state government and is set to execute a mining lease deed within three years, following the deposit of performance security and the completion of tender formalities. Dalmia Bharat Refractories Limited has successfully secured the Iluppakudi Graphite Block in Tamil Nadu through an e-auction, which is a significant step for the company. To move forward, the block needs 15 different clearances, such as forest and environmental approvals, mining plan endorsement, an explosives license, permission to open the mine, groundwater clearance, and consent from the Gram Sabha. The initial tender also comes with a hefty 45% auction premium. Dalmia Bharat is waiting for Letter of Intent (LOI) till date.

10.4 Challenges

India's graphite industry is grappling with some serious challenges that are holding it back from satisfying the rising domestic demand. Currently, production only covers about 20% of what's needed, which means India is heavily dependent on imports—especially from China, which provides around 69% of the country's graphite needs. This reliance puts India at risk due to geopolitical tensions. Additionally, the absence of advanced processing technologies limits the country's ability to produce high-purity, battery-grade graphite that's crucial for electric vehicle batteries, even though there's plenty of suitable feedstock available, like the fine to medium flaked graphite found in Arunachal Pradesh. On top of that, significant graphite reserves in Arunachal Pradesh, which make up about 35-43% of India's total resources, are still largely untapped because of limited exploration and poor infrastructure, preventing the state from reaching its potential as a major producer (Geological Survey of India, 2013).

10.5 Strategies for India

India needs to take a diversified approach in order to close its supply gap and take advantage of its significant graphite resources, especially in Arunachal Pradesh. India needs to take a well-rounded approach. First off, expanding mining operations is essential, which begins with thorough geological surveys to pinpoint new deposits in Arunachal Pradesh, Odisha, Jharkhand, and Kerala. A key area to focus on is Tai-Tachidoni in Arunachal Pradesh's West Siang district, known for its significant fine to medium flaked graphite that's perfect for high-value uses like lithium-ion battery anodes. Boosting production at existing mines, such as the Gaura Graphite Mines in Jharkhand, and establishing new mines in Arunachal Pradesh through public-private partnerships with companies like Tirupati Graphite (2025) can really ramp up output. It's also vital to enhance processing technology, which means investing in flotation, purification, and spheroidization techniques to create battery-grade graphite. Additionally, funding research and development for cost-effective processing methods tailored to Indian deposits is crucial. Supportive policies can speed up progress by providing subsidies, tax incentives, and simplified regulations to draw in investment, especially in less developed areas like Arunachal Pradesh. Including graphite in India's critical minerals framework can help prioritize its growth. Promoting exports of value-added graphite products can also help diversify revenue streams. Sustainability is key, too, with eco-friendly mining practices needed to meet global environmental, social, and governance standards. Engaging local communities in Arunachal Pradesh through job creation and infrastructure development can ensure that they benefit as well. Lastly, collaborating internationally with countries like Australia or Canada for technology transfer and diversifying imports from emerging producers like Tanzania

and Madagascar can lessen India's dependence on China, boosting mineral security and positioning India as a strong competitor in the global graphite market.

11. CONCLUSION

Increased demand for electric vehicles and renewable energy storage systems is driving significant upheaval in the global graphite market. China's dominance, coupled with its export limitations, underscores the urgent necessity for more diversified supply chains. Emerging producers like Turkey, Madagascar, Mozambique, Tanzania, and Australia are becoming good options, while India, with its large graphite reserves—especially in the old rocks of Arunachal Pradesh, Jammu & Kashmir, Sikkim, and Uttarakhand—has the potential to play an important role. The CGGC type possesses significant promise in Palamu, Jharkhand; Surguja, Chhattisgarh; Sonbhadra, Uttar Pradesh; and adjacent regions in Meghalaya. There are still unexplored regions in Andhra Pradesh, Tamil Nadu, and Kerala within the Eastern Ghats. By addressing its production issues, enhancing processing capabilities, and implementing supportive policies, India can reduce its dependence on imports and significantly contribute to global graphite supply chains. We have discovered key trends and gaps, providing useful insights for stakeholders. By strategically investing in the undiscovered resources of Arunachal Pradesh, alongside technology advancements and regulatory enhancements, India might become a significant contender in the worldwide graphite market, propelling the clean energy revolution.

12. REFERENCES

1. Allied Market Research (2025): Graphite market size, share, competitive landscape and trend analysis report by type, application, and region: Global opportunity analysis and industry forecast, 2024-2033. Accessed on April 2025. https://www.alliedmarketresearch.com/graphite-market
2. Alp Ilhan, Ramazan Sari, and Yonca Yildirim (2020): Hidden graphite resources in Turkey: a new supply candidate for Europe? European Geologist, The Journal of the European Federation of Geologists. pp.31-36.
3. East Carbon (2024). Top ten graphite producing countries. Accessed on January 2025. https://www.eastcarb.com/top-ten-graphite-producing-countries/
4. Fastmarkets (2023). Industrial minerals: Natural and synthetic graphite market guides. Accessed on April 2025. https://www.fastmarkets.com/industrial-minerals/graphite/
5. Geological Survey of India. (2013). Assessment of graphite resources in India. https://www.gsi.gov.in/
6. Global Data (2025). Graphite Mining Market Analysis by Reserves, Production, Assets, Demand Drivers and Forecast to 2030. Accessed on July 2025. Report Code: GDMMGGP0020MR-ST. Accessed on 06/08/2025. https://www.globaldata.com/store/report/graphite-mining-market-analysis/
7. Grand View Research (2025): Graphite market size, share & trends analysis report by type (natural, synthetic), by application (batteries, refractories, lubricants), by region, and segment forecasts, 2024-2030. Report ID: GVR-4-68040-142-0, Accessed on July 2025. https://www.grandviewresearch.com/industry-analysis/graphite-market
8. Holley E. A., Fahle L., Smith N.M., Deberdt R., Calderon J., Gibbs G., Bazilian M., (2025) Graphite and manganese mining in the U.S.: Proposed projects and federal battery mineral policies. Resources Policy Volume 108, p. 105689. https://doi.org/10.1016/j.resourpol.2025.105689
9. IMARC Group (2024). Graphite market: Global industry trends, share, size, growth, opportunity and forecast 2024-2032. Accessed on April 2025. https://www.imarcgroup.com/graphite-market
10. Indian Bureau of Mines (2023): Mineral year book 2022: Part-III : Mineral Reviews Graphite. 60th Edition, Government of India Ministry of Mines Indian Bureau of Mines pp. 14-1 -14.13.
11. Indian Bureau of Mines (2025): Mineral Production: Tamil Nadu: Volume: Non-Metallic Minerals: Graphite. https://www.ceicdata.com/en/india/mineral-production-tamil-nadu/mineral-production-tamil-nadu-volume-non-metallic-minerals-graphite#:~:text=Bureau%20of%20Mines-,Mineral%20Production%3A%20Tamil%20Nadu%3A%20Volume%3A%20Non%20Metallic%20Minerals%3A,5%2C880.000%20Ton%20for%20Jan%202025.
12. Investing News Network. (2025). Top 10 graphite-producing countries. Accessed on June 2025. https://investingnews.com/daily/resource-investing/battery-metals-investing/graphite-investing/top-graphite-producing-countries/
13. Investor News (2023). Graphite supply and demand forecast: The growing deficit. Accessed on February 2025. https://investornews.com/graphite-market-forecast/
14. Natural Resources Canada (2025). Graphite facts. Accessed on June 2025. https://www.nrcan.gc.ca/our-natural-resources/minerals-mining/minerals-metals-facts/graphite-facts/24029
15. Northern Graphite (2025). Graphite pricing and markets. Accessed on June 2025. https://www.northerngraphite.com/graphite-pricing/
16. Research and Markets (2024). Global Graphite Mining Industry Report 2024-2030: Reserves, Production, Major Operating Mines, Competitive Landscape, Major Projects, Exports and Imports. Accessed on 08/08/2025. https://www.globenewswire.com/news-release/2024/05/29/2889609/28124/en/Global-Graphite-Mining-Industry-Report-2024-2030-Reserves-Production-Major-Operating-Mines-Competitive-Landscape-Major-Projects-Exports-and-Imports.html
17. Syrah Resources (2025). Balama graphite operation, Cabo Delgado Mozambique. Accessed on May 2025. https://www.syrahresources.com.au/our-operations/balama-graphite-operation/
18. TAMIN Graphite (2023): Graphite mining, beneficiations and processing. https://tamin.co.in/service/graphite/
19. Tirupati Graphite (2025). India operations. Accessed on May 2025 https://tirupatigraphite.co.uk/
20. U.S. Geological Survey (2023). Global distribution of graphite producing countries. Accessed on August 2025.
21. U.S. Geological Survey (2024). Mineral commodity summaries 2024. Accessed on 05/08/2025. https://www.usgs.gov/centers/nmic/mineral-commodity-summaries

(Continued from Page 12)

as in the US, it's unclear whether they violate World Trade Organization rules. The Chinese curbs apply to dual-use items targeting minerals that have military as well as commercial applications.

Much of the focus of the European leaders attending the G-20 summit will be on Ukraine and US pressure on Kyiv to agree to a lopsided peace deal with Russia. The declaration made a tepid reference to the war in Ukraine and other conflicts, alongside respecting UN principles such as territorial integrity, sovereignty, and the repudiation of the use of force. The statement also condemns all attacks against civilians and infrastructure.

The decision by South Africa to write a draft declaration comes in defiance of the US, which is boycotting this weekend's G-20 leaders' summit in Johannesburg. Washington urged South Africa in a formal letter not to publish a joint statement, saying it would not reflect the US' views.

"The US opposes issuance of any G-20 summit outcome document under the premise of a consensus G-20 position without US agreement," it said.

Bloomberg News / November 21, 2025

➤ Stand-off between China's iron ore buyer and BHP tightens iron ore supplies

The Jimblebar iron ore mine is a part of an 85:15 joint venture between BHP and Mitsui and ITOCHU.

Protracted negotiations between China's state iron ore buyer and miner BHP have tightened availability of some iron ore, seven sources said, underpinning prices despite weakening demand for the key steelmaking ingredient.

China Mineral Resources Group (CMRG), set up in 2022 to centralize iron ore purchasing and win better terms from miners, asked Chinese steel mills and traders in September to stop buying BHP's Jimblebar Blend Fines while negotiating annual contract terms with the Australian miner for 2026 supply.

Trade of Jimblebar fines is still frozen in China, leaving mills that previously used it switching to a substitute, Pilbara Blend Fines (PBF), rival Rio Tinto's flagship product, resulting in a rapid drawdown in PBF inventory, the sources said. A BHP spokesperson told *Reuters* "negotiations are ongoing", declining to elaborate. CMRG did not immediately respond to a *Reuters* request for comment.

Portside inventories of PBF began falling in mid- to late September and were down by around 40% to 6.5 million tons on November 18, the lowest since August, according to two of the sources with knowledge of the matter.

By contrast, portside stocks of Jimblebar fines, which account for around a quarter of BHP's production, continued to pile up, surging by 156% over the same period, one of the sources said. All sources requested anonymity due to the sensitivity of the matter. Thinning margins have propelled Chinese steel mills to favor medium-grade cargoes such as PBF, heating up competition and accelerating the drawdown in port inventories, sources said.

Profitability among Chinese steel mills has been falling since mid-August, with only around 39% of mills operating at a profit by November 13, versus 55% in the same period a month before and 58% at the same time in 2024, data from consultancy Mysteel showed. Iron ore futures prices hit a more than two-week high on Wednesday even as crude steel output in the world's largest producer of the metal slid to the lowest level since December 2023 as bad weather led some northern mills to cut production.

The tightened availability of PBF at Chinese ports contributed to surprising resilience in iron ore prices, said the two trade sources and the other two analysts, with one of them adding that the situation created a "man-made bull market." Ore prices have climbed 3% from a month before and 8.4% from the beginning of the year to close at 791.5 yuan ($111.23) per metric ton on Wednesday.

($1 = 7.1157 Chinese yuan)

Reuters / November 20, 2025

(Continued on Page 24)

OPERATIONAL EXCELLENCE IN MINING BUSINESS BY DIGITALISED MINE PLANNING DRIVEN BY GEO-MIN COMPETENT PERSONS

Sanjay Singh

Abstract:

For mining projects, accurate and reliable data from standard exploration activities is crucial for declaring minable reserves and developing a pre-feasibility report. The competent person's evaluation of exploration data is the foundation for determining the minable reserves and the pre-feasibility report, both crucial steps in developing a successful mining project.

Digitalized mine planning is becoming increasingly important for modern mining operations due to the Complex deposits and potential for significant improvements in efficiency, safety, sustainability, and decision-making.

1. INTRODUCTIONS:

Digitalised mine planning allows for a holistic view of the entire mining operation, including geology, orebody modelling, extraction sequencing, equipment allocation, and ventilation planning. This comprehensive data analysis enables informed decision-making regarding resource optimization, safety measures, and production scheduling.

The major benefits of digitalised mine planning are:

Optimized Stripping Ratio & Lead for Overburden:

Digitalised mine planning can identify the most efficient extraction paths with exposure and mining of Coal/Ore with minimum Stripping Ratio leading to improved resource utilization, facilitate input dumping and lead optimisations with positive cash flow in start of mining project.

Data-Driven Decision Making:

Regular update of geological and survey data collection and analysis provide valuable insights for better decision-making in various aspects of mining, including exploration, production optimization and risk management.

Enhanced safety planning:

By simulating various scenarios within the digital mine plan, potential safety hazards can be identified and addressed proactively, reducing the risk of accidents based on pit design and HEMM capacity with respect to traffic and total material handling.

2. DATA BASE REQUIREMENTS FOR GEOLOGICAL MODEL & PIT DESIGN:

Accuracy of the geological model required as robust Exploration data base system that was certified by Competent Geologist for particular type of deposit of mineral or coal based on complexity of the ores.

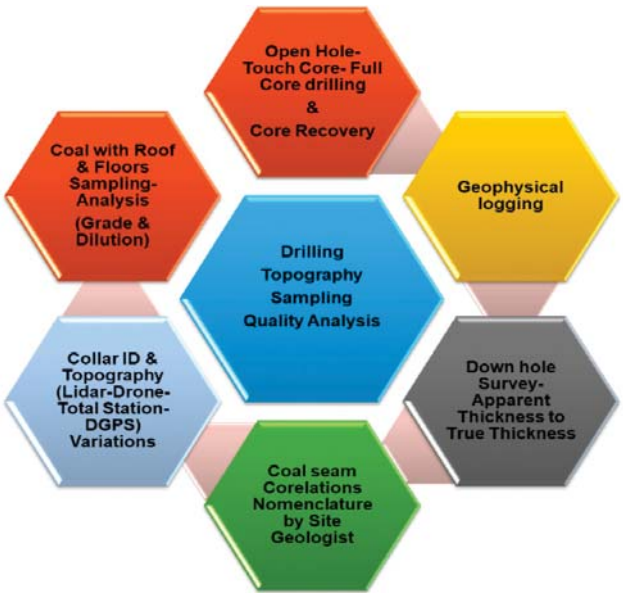
The following data are mandatory to prepare the Geological model and Resources- Reserve estimations.

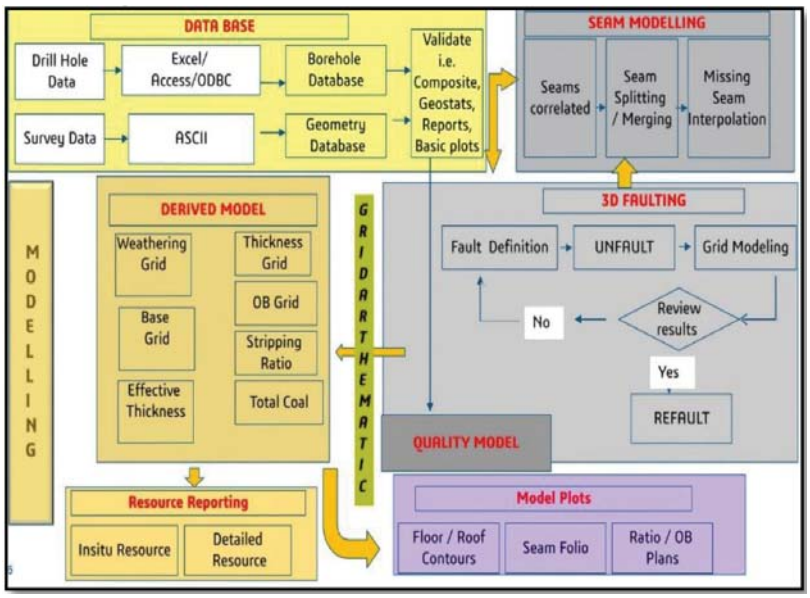
1. Review of regional geological map, Geological mapping of the Mining Concession area, Outcrops coordinates, Sampling and lab reports, General strike and dip, Infrastructure and logistic details around mining concession area.
2. Exploration drilling Operation – Open Hole, Touch Coring or Full Coring with Lithology details, Core recovery, Photographs, Storage of Core box and Sample.
3. Geophysical logging and its interpretations with Core samples
4. Down hole survey and Interpretations for True thickness & Dip wrt Apparent Thickness and dip
5. Stratigraphy for total number of Coal seam / Mineralization's during exploration drilling.
6. Preparation of Lithology of each bore hole, Weathered Zone, Coal/Mineralization's details.
7. Topography data is based on Lidar Survey/Drone/Total Stations /Laser survey/Total Stations/DGPS survey and its accuracy in coordinates and elevations wrt National/ Universal benchmark.
8. Drill hole collar elevations deviation with Topography and correction factors
9. Coal/Ore sample analysis for Grade quality estimations.
10. Insitu density, Bulk density- Strength and other geo tech parameter analysis.
11. Roof/Floor or HW/FW analysis for dilutions
12. Geotechnical analysis to decide the bench dimension and stope size.
13. Hydrology study to estimate the volume of ground and surface water during mining operations and its impact in operations.
14. Situation map of Mining Boundary and permanent surface features as related with Land details, Highway-Railway -Rivers or any other infrastructure that may require shifting during mining operations.

AVP- Operation & Project , South West Mining Limited, Barmer, Rajasthan

15. Geological interpretations of Coal seam/Ore body in terms of nomenclature, splitting etc by explorations geologist
16. Unexplored Area and future drilling plan based on mineralization's

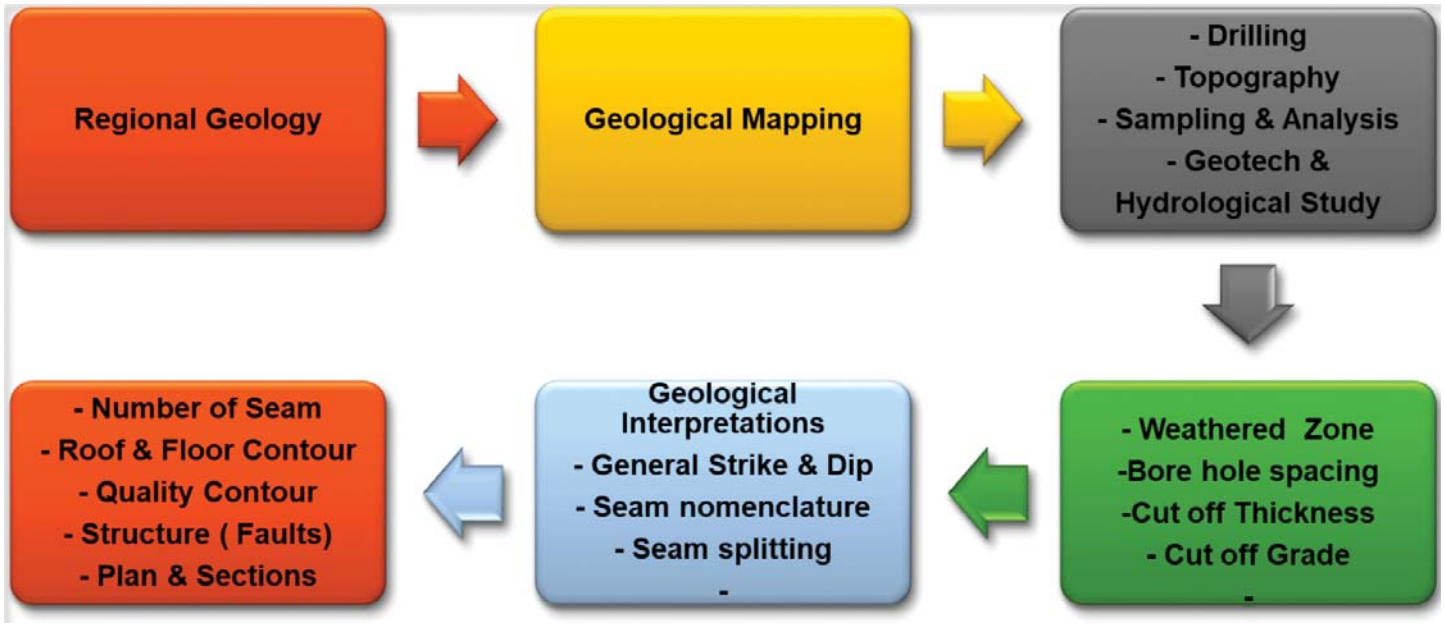
3. GEOLOGICAL MODEL OUTCOMES





Three dimensional details of the Coal deposit/Ore mineralization may be prepared by competent Geologist

1. Number of coal seam/Ore body in the mining concession
2. Continuity of each coal seam/Ore body along strike and dip based on extrapolation and interpolations data
3. Subcropline of the deposit along topography
4. Washed out zone/Weathered zone/Faulted zone based on geological discontinuity
5. Roof & Floor of all coal seam/ore body
6. Plan and sections with respect to thickness and grade along strike and dip
7. Categorization of Geological resources into Measured-Indicated-Inferred based on drill hole distribution for individual coal seam/ore body

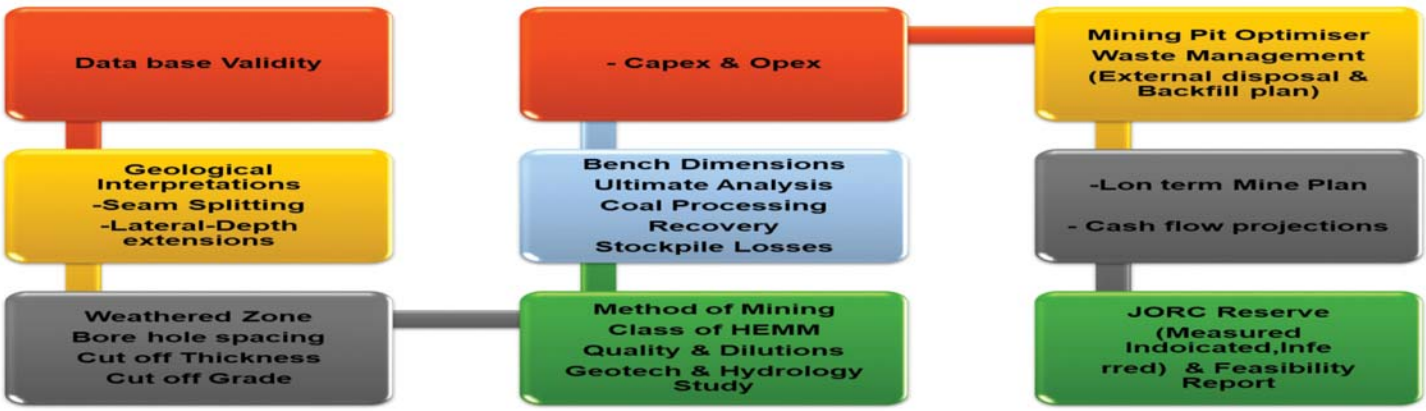


4. MINABLE RESERVE ESTIMATIONS & PRE-FEASIBILITY STUDY:

Mineable reserve estimation involves identifying the portion of a mineral deposit that can be extracted economically and responsibly under current conditions. This process considers various criteria known as Modifying Factors, which include a wide range of technical, economic, environmental, social, and governmental aspects.

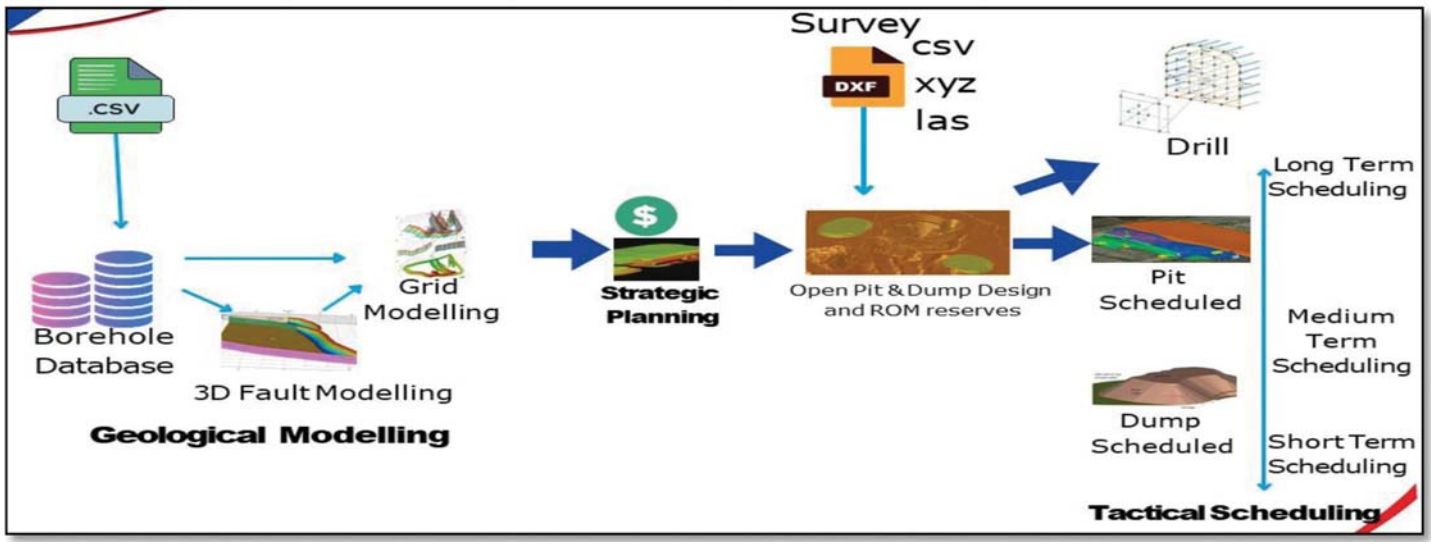
The key factor important for Minable reserve estimations are as defined below:

1. Cut off thickness of Coal deposit/Ore body
2. Cut off grade of Coal deposit/Ore body
3. Bench design parameter/Ultimate Pit Slope/Stope Size based on Geotech and hydrology study.
4. Dilution in quality parameter from Roof-Floor, HW-FW
5. Ore recovery % based on Geological model and Method of Mining.
6. Pit block optimiser based on different Stripping ratio (SR)
7. Coal washing /Ore Processing /Recovery % estimations
8. Stacking, Crushing loading & Transport of Product as washed Coal /Concentrated Ore
9. Capex and Opex estimations for Coal/Ore
10. Selection of Mining pit based on economic SR
11. Area demarcation for Infrastructure development and Overburden Waste Management (External disposal-within Mining Concession area or rehandling of waste OB)
12. Material balance for Overburden based on Mine Opening-External disposal area for Overburden and Inpit dumping
13. Cash flow projections
14. Declaration of Minable reserve and Pre-feasibility study for the deposit by Competent person



5. MINE PLANNING SOLUTION WORKFLOW:

Summary of mine planning salutation are detailed in below flow chart as



6. RISK & SENSITIVITY ANALYSIS:

Geological & Economical uncertainty are crucial for mining projects. Confidence level of competent person based on data is important key factors.

Sensitivity analysis helps identify which variables most influence project performance, while risk analysis assesses the likelihood and impact of various risks. By combining these analyses, mining companies can make more informed decisions and develop effective mitigation strategies.

7. CONSTRAINS OF FUTURE MINING PROJECT IN INDIA AND AROUND THE GLOBE:

- Partial explored area even declared as fully explored area in proposed Mining lease block.
- Geological resources recovery considered with 90-95 % recovery without basic study considering combination of mining method and new technology.
- Many mining lease areas are Coal bearing area that may led to External disposal area outside the mining lease or underground potential area or rehandling of Overburden in future mining.
- Mostly Mining lease area have Rivers-Highway-Village etc that need to be planned for shifting with R & R etc and may impact on recovery of Coal/Ore.
- Minimum exploration data

Initial Techno due diligence involves a thorough review of technical data and documentation, site visits, and discussions with relevant stakeholders. Key areas like geology, resource estimation, mine planning, processing, environmental permitting, and infrastructure are scrutinized

The mining project may be review independently by competent persons based on all parameters checklist as described this article to uncover potential risks and hidden liabilities.

8. CONCLUSIONS & RECOMMENDATIONS:

Quality of exploration data, Reverification of data, Competent persons with advance mining software like Minscape-Minex-Surpac-Datamine with regular update of geological model and estimations based on mining progress will increase the confidence level of the competent team based on data analysis and project uncertainty may be controlled and reoptimized operations on time to run overall project in sustainable way.

Both techno due diligence and digitalized mine planning are essential for navigating the complexities and challenges of the modern mining industry, ensuring projects are well-evaluated, operations are optimized, and companies remain competitive, safe, and recovered future resources by sustainable mining business.

Centralised mine planning and technical team with Advanced software availability and standard code for reporting of Minable reserve and feasibility report system not yet streamlines in Indian Mining Industry and same may be planned in to reduce the dependency on International Mining Consultancy and hidden constraints in feasibility reports of new mining projects in future.

9. REFERENCES:

Australasian Code for Reporting of Exploration Targets, Exploration Results, Mineral Resources, and Ore Reserves - JORC 2012 Code

---

(Continued from Page 20)

➤ BHP liable for 2015 Brazil dam collapse, UK court rules in mammoth lawsuit

Rupture of Samarco's Fundao dam in 2015.

BHP is liable for the 2015 collapse of a dam in southeastern Brazil, London's High Court ruled on Friday, in a lawsuit the claimants' lawyers previously valued at up to £36 billion ($48 billion). Hundreds of thousands of Brazilians, dozens of local governments and around 2,000 businesses sued BHP over the collapse of the Fundao dam in Mariana, southeastern Brazil, which was owned and operated by BHP and Vale's Samarco joint venture.

Brazil's worst environmental disaster unleashed a wave of toxic sludge that killed 19 people, left thousands homeless, flooded forests and polluted the length of the Doce River. A separate claim against Vale was filed in Dutch courts in 2024 on behalf of nearly 1,000 businesses and more than 77,000 individuals hit by the dam break.

Judge Finola O'Farrell said in her ruling that continuing to raise the height of the dam when it was not safe to do so was the "direct and immediate cause" of the dam's collapse, meaning BHP was liable under Brazilian law. BHP said it would appeal against the ruling and continue to fight the lawsuit.

(Continued on Page 32)

MEAI NEWS

MEAI HEADQUARTERS

MEAI Professional Development Program (MPDP – VI) - Highlights of the Inaugural Program

Date: 6 November 2025

Mode: Online

Organised by: MEAI Headquarters, Hyderabad

The Inaugural Program of the MEAI Professional Development Program (MPDP - VI) was successfully conducted on 6th November 2025 at 4:00 PM through virtual mode. The program commenced with words of welcome by Shri M. Narsaiah, Secretary General, MEAI, who greeted the dignitaries, faculty, and participants joining from leading mining organizations such as NMDC, Vedanta, Tata Steel, JSW, KSMCL, BGR, ERM, MSPL, RBSSN, and others.

Shri. K. Madhusudhan, Chairman of TDPC, welcomed the dignitaries and participants and highlighted the journey of MPDP since its inception in 2022. He recalled the invaluable contributions of the late Shri Deepak Vidyarthi, who conceptualized and established the MPDP series, and assured that the present program continues his legacy. He emphasized the program's industry relevance, its role in capacity building, and the positive response from various organizations.

Shri Vinay Kumar, Chief Guest, appreciated MEAI's continued efforts in promoting professional development and knowledge sharing in the mining sector. He lauded the participation of major mining companies and encouraged participants to use the training as a means to become future leaders of the industry.

He emphasized that MPDP programs bridge the gap between academic knowledge and field application, covering vital topics such as mine planning, resource estimation, environmental management, and digital transformation. He also underlined the importance of sustainable and responsible mining practices to enhance the image of the mining industry.

Shri. D. B. Sundara Ramam, President, MEAI, in his Presidential Address, commended the well-curated structure of MPDP-VI and acknowledged the efforts of the organizing team. He highlighted that mining today is not just about mineral extraction but about nation-building, innovation, and sustainability.

He urged young professionals to:

1. Stay Curious—Question existing methods and bring innovative ideas.
2. Build Relationships—Network with peers and continue sharing knowledge.
3. Lead with Integrity—Uphold ethics and more excellence in the mining profession.

He encouraged participants to be change-makers contributing to a safer, smarter, and more sustainable mining future.

Shri. Dhananjaya G. Reddy, Vice President - I, MEAI, appreciated the MPDP initiative as a comprehensive learning and knowledge-sharing platform. He defined the importance of interactive participation and learning from experienced faculty and peers from diverse organizations.

Dr. Pukhraj Nenival, Vice President-II, MEAI, delivered an inspiring address quoting ancient Indian wisdom emphasizing the purity and power of knowledge. He reiterated that learning and collaboration are the true wealth of professionals and praised MEAI for its sustained commitment to skill development and continuous learning in the mining fraternity.

The inaugural program concluded with a vote of thanks by **Shri M. Narsaiah**, who expressed gratitude to the chief guest, president, vice presidents, TPDP Committee, faculty members, and participants for their presence and support. The session marked a vibrant beginning to MPDP-VI, reaffirming MEAI's mission of advancing professional excellence and fostering sustainable growth in the Indian mining industry.

BELLARY-HOSPET CHAPTER

50 Years Golden Jubilee Celebration

International Conference on Next Generation Mining (NextGen Mining – 2025)

The International Conference on Next Generation Mining (NextGen Mining—2025) was successfully organized by the Bellary–Hospet Chapter on 10–11 October 2025 at Hotel Malligi, Hosapete. The two-day conference witnessed the enthusiastic participation of more than 255 delegates from various leading mining organizations such as MSPL–Baldota Group, JSW, HGML, SMIORE, RBSSN, SKMEPL, ZTC, SUMS, MINERA, and several others. Students from TMAES Polytechnic and VSKU Post-Graduation Centre, Nandihalli, also actively participated in the event. In addition, officials from the Directorate General of Mines Safety (DGMS), the Indian Bureau of Mines (IBM), and the Department of Mines and Geology (DMG) graced the conference with their valuable presence.

The conference served as a premier platform for industry leaders, academicians, and government officials to discuss the latest innovations, technologies, and sustainable practices in the mining sector. A total of 21 technical papers related to next-generation mining technologies and practices were presented by eminent industry experts, academicians, and professionals from across the country.

This year's conference was of special significance as it was organized as part of the Golden Jubilee Year Celebration, marking 50 glorious years of the Bellary–Hospet Chapter. It was indeed a proud and memorable occasion for the chapter to host such a prestigious event, fostering collaboration and knowledge sharing among mining professionals for a sustainable and technology-driven future of mining in India.

Chief Guests

- Sri Ujjwal Tah, Director General of Mines Safety (DGMS), Dhanbad – Chief Guest of the Inaugural Session
- Sri Shailendra Kumar, Controller of Mines, Indian Bureau of Mines (IBM), Bengaluru – Chief Guest of the Conference
- Sri Chandrashekar Hirani, Department of Mines and Geology (DMG), Chief Guest for the Valedictory Function

Guests of Honor

- Sri Krishnendu Mondal, Director of Mines Safety, Ballari Region–1
- Sri Yohan Yejerla, Director of Mines Safety, Ballari Region–2
- Sri K. Madhusudhana, Past President, MEAI & CEO, M/s Baldota Group
- Sri Dhananjaya G. Reddy, Vice President–1, MEAI & COO, M/s ERM Group

Conference Highlights

The conference featured engaging technical sessions, panel discussions, and paper presentations that focused on digital transformation, automation, safety innovations, and sustainable development in the mining sector. Delegates had the opportunity to exchange ideas and experiences on the evolving technologies that are shaping the future of mining.

The event concluded with a valedictory function on 11th October 2025, where participants were felicitated for their valuable contributions. The efforts of the Bellary–Hospet Chapter were highly appreciated for organizing such a grand and informative event that brought together professionals from across the mining fraternity to share their insights and expertise.

(L-R): Sri, SHM Mallikarjun, Chairman, BH Chapter; Sri K. Madhusudhana, Past President; Sri Shailendra Kumar, CoM, IBM, Bengaluru; Sri Ujjwal Tah, (DGMS), Dhanbad; Sri Krishnendu Mondal DMS Bellari Region–1; Sri Dhananjaya G. Reddy, Vice President–1, MEAI; Sri Yohan Yejerla, DMS Region–2; Sri, P. Venkateswara Rao, Secretary, BH Chapter

Address by Sri K. Madhusudhana—Past President MEAI and CEO of M/s Baldota

During his address, Sri K. Madhusudhana, past president of MEAI and CEO of M/s Baldota Group, emphasized the importance of adopting next-generation technologies for achieving sustainable and safe mining operations. He appreciated the efforts of the Bellary–Hospet Chapter for organizing such a meaningful conference. He highlighted the need for continuous learning, innovation, and collaboration between industry and academia to shape the future of the mining sector.

Address by Sri Ujjwal Tah, Director General of Mines Safety (DGMS), Dhanbad

During his address, Sri Ujjwal Tah emphasized the importance of enhancing mine safety through the adoption of advanced technologies and automation. He highlighted that next-generation mining practices should prioritize both productivity and worker safety. He encouraged the industry to embrace digital monitoring, real-time data systems, and innovative safety measures to minimize risks. His inspiring words motivated participants to commit towards achieving zero accidents and sustainable mining growth.

Address by Sri Shailendra Kumar, Controller of Mines, IBM, Bengaluru

Sri Shailendra Kumar, in his address, emphasized the importance of sustainable mining for future generations by adopting advanced and eco-friendly technologies. He highlighted the need for digital innovation, automation, and responsible resource management to ensure environmental protection and productivity. He appreciated MEAI for organizing the conference and encouraging discussions on next-generation mining practices that align with national sustainability goals.

Address by Sri Krishnendu Mondal, Director of Mines Safety, Ballari Region–1

During his address at the NextGen Mining—2025 Conference, Sri Krishnendu Mondal emphasized the importance of ensuring the safety of men and machines in mining operations. He highlighted the need to adopt new and advanced technologies to enhance safety standards, reduce risks, and improve efficiency. He also urged the industry to integrate automation and digital monitoring systems to minimize human exposure to hazardous conditions. His insights inspired participants to embrace innovation for a safer and more sustainable mining future.

Address by Sri H.M. Mallikarjun, Chairman, Bellary–Hospet Chapter

Sri H.M. Mallikarjun, in his address, highlighted the chapter's active role in organizing frequent workshops, technical discussions, and seminars aimed at enhancing professional knowledge and promoting innovation in the mining sector. He emphasized the importance of continuous learning, collaboration, and knowledge-sharing among mining professionals to meet the evolving challenges of the industry.

Inauguration of Exhibition Stalls by DGMS Officials

Sri Ujjwal Tah, Director of Mines Safety, Directorate General of Mines Safety (DGMS), inaugurated the exhibition stalls during the conference. He keenly inspected the exhibits and interacted with the stall representatives, discussing the latest advancements, innovations, and practical applications of modern mining machinery and equipment**.** His visit encouraged exhibitors to continue developing technologies that enhance safety, efficiency, and sustainability in mining operations.

Paper presentation by industry experts from different organizations

During the conference, around 21 technical papers were presented by experts, academicians, and professionals from across the country, covering various aspects of next-generation mining technologies and practices. The sessions were highly interactive, with presenters engaging in meaningful discussions with the audience, addressing queries, and clarifying technical doubts. These knowledge-sharing sessions provided valuable insights into the latest innovations, sustainable practices, and emerging trends shaping the future of the mining industry.

Address by Sri Chandrashekhar Hirani, Senior Geologist, Department of Mines and Geology (DMG)

In the valedictory session, Sri Chandrashekhar Hirani, Senior Geologist, Department of Mines and Geology (DMG), attended the conference and appreciated the smooth and successful conduct of the two-day International Conference. In his address, he congratulated the organizing committee of the Bellary–Hospet Chapter for their dedicated efforts in bringing together industry experts, academicians, and professionals on a common platform. He also emphasized the importance of such technical events in promoting innovation, knowledge exchange, and sustainable growth in the mining sector.

Vote of Thanks by Sri P. Venkateswara Rao, Secretary, Bellary–Hospet Chapter

Sri P. Venkateswara Rao, Secretary of the Bellary–Hospet Chapter, proposed the Vote of Thanks and expressed his heartfelt gratitude to all the dignitaries on and off the dais for their valuable presence and contribution to the success of the International Conference on Next Generation Mining—*2025, for* 50 glorious *years of* Golden Jubilee Celebrations. He extended his sincere thanks to the chief guests, guests of honor, speakers, delegates, and industry representatives from various organizations for their active participation and insightful contributions that enriched the technical sessions and discussions.

He also conveyed special appreciation to the stall exhibitors for showcasing the latest innovations and technologies, to the media personnel for their effective coverage, and to the camera and videography team for capturing the key moments of the event. Further, he acknowledged the support and cooperation of the hotel management and staff of Hotel Malligi for providing excellent arrangements and hospitality. Finally, he thanked all the members and volunteers of the Bellary–Hospet Chapter for their dedication and teamwork in ensuring the smooth and successful conduct of the two-day international conference.

RAYALASEEMA CHAPTER

Technical session & live demonstration

The Rayalaseema Chapter has organized a technical session & live demonstration on 27.10.2025 for the students of Govt. Autonomous College – Anantapur on the topic "THE ROLE OF DRONES IN THE DIGITAL TRANSFORMATION OF MINERAL EXPLORATION" at Govt. Autonomous College – Anantapur.

The program was witnessed by the college principal, faculty & students, which has enlightened & imparted in-depth knowledge among the students.

The session was handled by Shri M. Vinod Kumar, Unitos Aero Drone Solutions, & his team.

Some glimpses of the programme

The Rayalaseema Chapter has organized a one-day workshop on "WIRED FOR THE FUTURE: DRONES AND EVs TOWARDS GREENER MINING" at the venue "Tarangini" Auditorium—Ultratech Cement Limited, AP Cement Works, Tadipatri.

The dignitaries who chaired the meeting:

Shri. Sajendra kumar JA, Unit Head—Ultratech Cement APCW Tadipatri

Shri. B. Sahoo, Joint Secretary cum Treasurer, MEAI-HQ

Shri. K.N. Sidda Reddy, Chairman of the MEAI Rayalaseema Chapter

Shri. K. Sudhakar Raju, Vice Chairman of the MEAI Rayalaseema Chapter

Shri. E. Vasudevan, Secretary - MEAI Rayalaseema Chapter

The program started with a welcome address by Shri E. Vasudevan and was followed by the lighting of the lamp by all the dignitaries.

Later, the Chapter Chairman Shri. K.N. Sidha Reddy addressed the gathering, and the Chief Guest Shri. Sajendra Kumar & Guest of Honor Shri. B. Sahoo also witnessed the gathering & shared some of the valuable inputs regarding the current scenario of mining industries, and MEAI's role & objectives were highlighted. The dignitaries appreciated the new life members & students enrolled for the Association from the past couple of days & also praised the crowd gathered for the event.

The program is followed by 3 technical sessions, which are as follows:

Technical sessions

The first technical session on "the role of GIS & drones in mining" was handled by Shri. M. Vinod Kumar, Unitos Aero Drone Solutions.

The second technical session on "Optimizing blasting with AI: Turning technology into a strategic advantage for tomorrow's mining" was handled by Shri. Lalit K Agarwal, Deepak Mining Solutions Limited.

The third session was handled by Shri. Hariprasad of SANY India Limited on the topic "Application of Electric Vehicles in the Mining Industry."

The program concluded with a vote of thanks by Shri K. Sudhakar.

Some glimpses of the one-day workshop

SINGARENI CHAPTER

General Body meeting

The General Body meeting of MEAI, Singareni Chapter, was held on 30.10.2025, 03.00 PM at Conference Hall, Project Planning Dept., Kothagudem, both in offline and online mode. The VC link was provided to all the members, and the meeting proceeded as per the agenda circulated.

Agenda 1: Secretary of the Singareni chapter Shri A.L.S.V. Sunil Varma welcomed the members for the general body meeting. In his address, he gave details of various programs and activities conducted during the previous tenure, like the celebration of IMDs on 1st November, the technical workshop on 12.5.2022, and the National seminar on 19.11.2022, along with the 6th council meeting and commencement of the student chapter at JNTU Manthani.

He also stressed the activities to be taken up during the coming days. He also requested members to encourage the professionals to join MEAI as a part of the membership drive. He urged members to get as many new members as possible to enroll themselves as part of a membership drive, which would be taken up soon.

Agenda Point -2: Vacancies for the posts of Chairman, Vice Chairman, Secretary, Joint Secretary cum Treasurer, and five committee members have existed, and election of candidates for these posts was taken up.

The following **office-bearers** were elected unanimously.
Chairman : Sri K. Venkateshwarlu, Director (P&P)
Vice chairman : Sri K. Saibabu , GM(PP)
Secretary : Sri A. Ravikumar, Deputy Manager
Joint Secretary : Sri Marikanti Suresh, Addl. Manager
Treasurer : Sri Gone Babji, Addl. Manager

Executive committee members:
1. Sri Dundra Ramesh, Addl. Manager
2. Sri P Siva Kumar, Addl. Manager
3. Sri V. Mahendranath, Addl. Manager
4. Sri Thandra Srinivas, Dy. Manager
5. Sri G.V.R. Karthik Sharma, Dy. Manager

Agenda Point -3: It is proposed that planning of the future activities must be done by the Singareni Chapter. Further, it was decided to hold a workshop on the theme "The Role of Critical Minerals in the Growth of SCCL—Opportunities and Challenges Ahead" in the month of November 2025 and various programs on 1.11.2025 on the occasion of INDIAN MINING DAY. It is resolved to make the Singareni chapter the most active and best chapter and also to help in the dissemination of technological improvements/ advancements among the mining fraternity.

Agenda Point - 4: It is proposed to take the membership drive for life members and student members intensively. Initially, the target for the Life Members shall be 240.

Agenda Point 5: MEAI, Singareni chapter, had the savings account in Andhra Bank, Kothagudem, with A/C number 015710100055849. The accountant details were submitted to all the members.

Since a new executive body has been elected, the account shall be transferred to the new body, with the account operating with any two members out of the vice chairman, secretary, or treasurer.

The secretary of the Singareni chapter thanked the authorities of the Project Planning Dept. in Kothagudem for sparing the conference hall and other VC facilities to conduct the general body meeting. The secretary also thanked SG Sri M. Narsaiah for providing all the guidance and others for providing all the support in operating the chapter more actively and more efficiently.

The meeting ended with a vote of thanks to the secretary general who attended through VC and all the members.

Some Glimpses of the AGM

TAMIL NADU CHAPTER

The New Office Bearers for TN Chapter

Venue: MS Teams Meeting – Online Mode

Committee members, senior members of MEAI, officials from various companies and sectors, and members from Anna University and the new office bearers joined the meeting, and the meeting commenced on 06.11.2025 at 6:15 pm.

The welcome address was given by R. Kamaraj, outgoing secretary, TN Chapter. Thanked all the members for organizing the program and meetings.

The secretary welcomed the National Council Members Shri. Sendilkumar K, Shri. Muthukumar, Senior Members Shri. Kumaraswamy, Shri. Mayilrajan, Shri. Ifthikar Ahmed, Shri. Sivaraj, Shri. Magesh, Shri. Ramesh MM, Shri. Karthigeyan & the new office bearers chairman Shri. Sanjeevi, Secretary Shri. Jayabharatha Reddy, Jt. Secretary Shri. Deepak & other office bearers.

Outgoing Chairman of the Chapter Prof. Dr. T. Subramani thanked all the members for the support rendered during the tenure. He congratulated the new office bearers and expressed his interest in continuing support to the MEAI through the Students Chapter programs.

Announcements Of New Office Bearers

Chairman	Shri. Sanjeevi. R
Vice Chairman	Shri. A. Sivaraj
Secretary	Shri. Jaya Bharath Reddy N
Jt. Secretary	Shri. J. Deepak
Treasurer	Shri. G. Magesh
Executive Committee Members	1. Shri. Kesavan 2. Shri. Natarajan 3. Shri. Radhakrishnakanth 4. Shri Edwin David Raj 5. Shri. Gowthaman. S
Student Chapter Mentor	Dr. T. Subramani

Incoming Secretary Shri Jayabharatha Reddy thanked the Council for giving him the opportunity, and he assured them that he would take the Chapter to the next level.

Incoming Jt. Secretary Shri Deepak from NLC highlighted the opportunities for conducting the seminars and technical sessions at NLC and thanked the Council for giving the opportunity.

National Council Members Shri. Sendil Kumar and Shri. Muthukumar congratulated the new office bearers and expressed the willingness of the National Council to organize the council meeting in the TN chapter in the month of April 2026. They requested the new team to take up the chance to arrange for the National Council Meeting in Tamil Nadu and arrange for technical sessions across the state.

Incoming Chairman Shri. Sanjeevi thanked the Council for giving him the opportunity to lead the TN Chapter for the next tenure from 2025 to 2027. He highlighted the requirement of an office building for the TN Chapter and explored the office in NLC premises for the TN Chapter. He also assured us to explore the opportunity to plan for the TN Chapter Office in the land available in the Trichy area. He also suggested organizing the physical meeting of the office bearers in the NLC in December 2025 and planning for the National Council Meeting.

All the senior members and past council members from the chapter congratulated the new team and wished them all the best for the new assignment & conveyed their wishes to make the chapter more vibrant and active.

(Continued from Page 24)

BHP's president of Minerals Americas Brandon Craig said in a statement that 240,000 claimants in the London lawsuit "have already been paid compensation in Brazil". "We believe this will significantly reduce the size and value of claims in the UK group action," he added.

RBC Capital Markets analyst Marina Calero said a final resolution was unlikely before 2030, with significant uncertainty around which claims would ultimately be considered valid. "Based on BHP's estimates of overlap with Brazil's compensation scheme, Vale and BHP could each face roughly $2.2 billion in additional payments," Calero said in a note.

Claimants celebrate major ruling

Gelvana Rodrigues da Silva, who lost her seven-year-old son Thiago in the flood, said in a statement: "Finally, justice has begun to be served, and those responsible have been held accountable for destroying our lives."

(Continued on Page 57)

INDIAN MINING DAY CELEBRATIONS 2025

MEAI HEADQUARTERS

Indian Mining Day (Online) celebration on 1st November 2025

Theme: "Mining Today for a Greener Tomorrow."

The Indian Mining Day Headquarters Program was commenced by Shri M. Narsaiah, Secretary General, with a warm welcome and acknowledgment of the widespread celebrations across all chapters. It was noted that the chapters celebrated with great enthusiasm, organizing diverse events to mark the occasion.

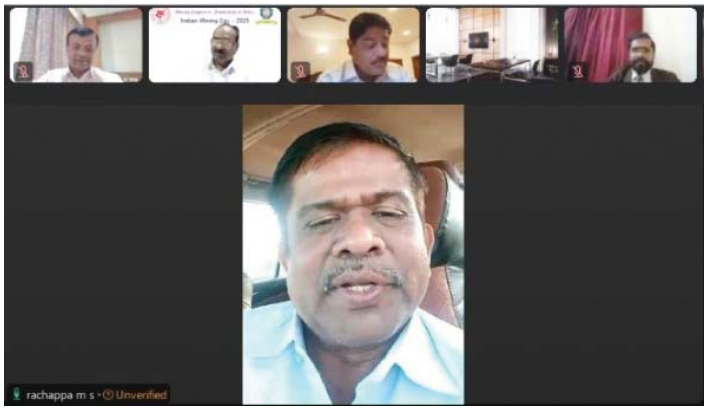
All the chapters have celebrated in a big way, in an enthusiastic and nice way, noting the great spirit of observance.

Address by the President, Shri. D.B. Sundara Ramam

The president congratulated all chapters for their enthusiastic participation in this year's IMD Celebrations. He emphasized that the celebration is crucial to openly discuss the industry's role and correct public perception.

Address by Vice President—I, Shri. Dhananjaya G. Reddy, reported on the successful, diverse celebrations across chapters, including blood donation camps and workshops, etc.

Dr. Pukhraj Nenival, Vice President – II, addressed the theme, "Mining Today for a Greener Tomorrow," and articulated the critical juncture facing India's mining sector, balancing economic demand with global sustainability imperatives.



Shri. Rachappa M Saradagi, Vice President – III, delivered a passionate address highlighting the core responsibility of the mining community. He stressed that the community is responsible not only for mining today but also for the future generation. The goal must be sustainable, balanced practices leading to total zero emission, greener energy, and a clean environment.

Shri. Lalit Mohan Soni, Chairman, Jaipur Chapter, delivered a highly praised technical/case study presentation on the theme, "Mining Today for a Greener Tomorrow."

Shri. Vinay Kumar (Director, Technical, NMDC & Chairman, Hyderabad Chapter) expressed his honor in celebrating the day and noted that NMDC is actively implementing sustainable practices.

Shri. K. Madhusudhana, PP, MEAI, highlighted the mining industry's positive impact, encapsulated in the mantra "Mining Today for the Greener Tomorrow." He countered the 'destruction' perception by detailing the industry's commitment to creating green colonies and providing three times the replacement forest cover. He called for urgent communication of these green efforts and proposed a

cultural shift: “Instead of cutting a cake for celebrations or anniversaries, let us plant one tree.”

Shri. Deepak Gupta, Chairman, New Delhi Chapter, welcomed the visionaries, engineers, and workers powering India’s industrial journey, noting the sector’s resilience and adoption of global best practices.

Shri. M. Narsaiah thanked all the esteemed leaders and members for their participation, valuable discussions, and presentations and concluded by expressing gratitude to everyone whose contributions ensured the success of the Indian Mining Day celebration.

AHMEDABAD CHAPTER

Celebration of Indian Mining Day 2025

Theme: “Mining Today for Greener Tomorrow” on 1st Nov, 2025

AHMEDABAD LOCAL CENTRE

The Ahmedabad Local Centre, celebrated Indian Mining Day on 1st November 2025 at the Corporate Office, GMDC, Ahmedabad from 4:30 PM to 6:00 PM. The event, themed *“Mining Today for a Greener Tomorrow,”* underscored the collective commitment to responsible and sustainable mineral development. The program commenced with the welcome of dignitaries, including Dr. Naresh Kumar Katariya, Regional Controller of Mines, IBM (GOI), Gandhinagar, as Chief Guest, and Shri S. N. Mathur, Former President, MEAI. A Mining Pledge for a Greener Tomorrow was recited, reaffirming the industry’s focus on safety, environmental care, and community welfare. The welcome address was delivered by Shri A. K. Makadia, Sr. General Manager (Tech-I), GMDC, emphasizing GMDC’s initiatives in sustainable mining practices, followed by an address by Dr. Katariya, who highlighted mineral conservation, compliance transparency, and adoption of cleaner technologies for sustainable growth.

The technical session featured two insightful presentations: *“Critical Minerals & Circularity: Paving the Way for Sustainable Mining in India”* by Shri Lalitendu Mohanta, DGM (Sales), GMDC, focusing on the importance of circularity and strategic mineral management for India’s green transition, and *“Powering Progress: Zero-Emission Trucking in Mining for a Healthier Planet”* by Shri Jayesh Vyas and Shri Sagar Yadav, showcasing low-carbon haulage solutions for emission reduction. The event concluded with memento presentations, a vote of thanks by Smt. Suchika Gupta, and a group photograph with refreshments, celebrating a shared vision of innovation, safety, and environmental stewardship—reinforcing that *mining today is about ensuring a greener and healthier tomorrow.*





KUTCH LOCAL CENTRE

The *Indian Mining Day* was celebrated by KLC at various locations of GMDC sites, including Panandhro, Umarsar, Mata Na Madh and Gadhsisa projects, by a flag hoisting ceremony and oath taking on 1st November 2025. They have joined through video conferencing to attend the technical session organized at the Ahmedabad Local Centre.

BHAVNAGAR LOCAL CENTRE

The *Indian Mining Day* was celebrated with great enthusiasm by the Bhavnagar Local Centre of the Mining Engineers’ Association of India (MEAI) on 1st November 2025**,** highlighting the theme *“Mining Today for a Greener Tomorrow.”*The celebration began with morning flag-hoisting ceremonies at three lignite projects — Khadsaliya Lignite

Mine (GHCL Ltd.), Surkha North Lignite Project (GMDC Ltd.), and Ghogha Surka Lignite Mine (GPCL)—where the flags were hoisted by Shri Anil Wandkar, Shri Sanjay Mathur, and Shri Nitish Prajapati respectively. The ceremonies included a pledge and a briefing for workers and contractors on the significance of Indian Mining Day.

In the afternoon, a seminar was organized at the VTC, Surkha North Lignite Mine (GMDC Ltd.), attended by over 50 participants, including MEAI members, non-members, and contractor representatives from all three lignite mines. The session began with a welcome address by Shri Sanjay Mathur, Secretary, Bhavnagar Centre, followed by a keynote speech by Dr. Dhananjay Kumar, Chairman, Ahmedabad Chapter, emphasizing sustainable mining practices for a greener future. During the technical session, three papers were presented by Shri Sanjay Mathur (GMDC Bhavnagar Lignite Mine), Shri Anil Wandkar (Khadsaliya Lignite Mine, GHCL Ltd.), and Shri Sanjiv Kumar Pandey (Safety Officer, GHCL Ltd., Khadsaliya Lignite Mine), focusing on innovations, safety, and value addition in mining. The event concluded with a vote of thanks by Shri Sanjiv Kumar Pandey and a high tea session, with proceedings anchored by Rakshit Mehta, Mining Engineer, GMDC Bhavnagar.

SOUTH GUJARAT LOCAL CENTRE

The South Gujarat Local Centre (SGLC) organized a half-day seminar on the occasion of *Indian Mining Day* on 1st November 2025 at the *Guest House, Lignite Project, Tadkeshwar*. The theme of the seminar was *"Mining Today for a Greener Tomorrow."* A total of 34 participants representing various mining organizations of the region attended the event. The program began with registration and light refreshments (05:30 PM–05:45 PM), followed by

a welcome address by Shri Rakesh Jee, Convener, SGLC. The Chief Guest, Shri P. C. Goyal, General Manager, GIPCL, along with Shri Nipane Sir, GIPCL, addressed the gathering and shared insightful perspectives on sustainable and responsible mining practices.

The Technical Paper Presentation Session (06:00 PM–07:45 PM) featured four speakers — Shri Kishan Gadav (Tadkeshwar Lignite Mine, GMDC), Shri Gautham Agrawal (Vastan Mine, GIPCL), Shri Vineet Kumar (Valia, GIPCL), and Shri Tapendra Dhara (Kadipani, GMDC) — who presented papers on advancements and best practices in eco-friendly mining. This was followed by an Open House Discussion (07:45 PM–08:00 PM), providing participants an opportunity to exchange views on sustainable mining operations. The event concluded with memento distribution and a vote of thanks by Shri Alla Subba Rao, Secretary, SGLC, followed by dinner at the venue. The seminar proved to be a great success, fostering technical exchange and promoting environmental awareness among mining professionals.

BANGALORE CHAPTER

Indian Mining Day 2025 Celebrations

The Indian Mining Day was celebrated by the Bangalore Chapter at the Auditorium of the Institution of Engineers, Bengaluru, between 10am and 1.30pm on 01st November 2025. Dr. Meda Venkataiah, past president of MEAI and Director of MSPL Limited, has graced the occasion as chief guest, and Shri. Dhananjaya G Reddy, vice president-I of MEAI, presided over the function. Dr. T. N. Venugopal, Chairman; Dr. C. V. Raman, Vice Chairman; Shri Sitaram Kemmannu, Secretary; and Shri Mallikarjun Sarapur, Treasurer of the chapter, were also on the dais.

The program started with Kannada Nadageete—the state song of Karnataka—as November 1st also marks the statehood celebration of Karnataka. Dr. T. N. Venugopal welcomed the guests, members, invitees, and the students who were present on the occasion with opening remarks on the Indian Mining Day celebration. Mrs. Sarita Dange, executive committee member and DGM of Karnataka State Mineral Corporation Limited, administered the Indian Mining Day pledge to all the guests and the participants on this occasion. Shri. Mallikarjun Sarapur—General Manager. Karnataka State Mineral Corporation Limited has made a presentation on the IMD-2025 theme—"Mining Today for a Greener Tomorrow." As part of the Indian Mining Day celebration, competitions like essay writing and poster making were organized for students on the theme of the Mining Day—"Mining Today for a Greener Tomorrow." Around 25 students from Dr. T. Thimmaiah Institute of Technology-KGF & 30 students from School of Mines KGF actively took part in these competitions & they also physically participated & four of them delivered speeches on the IMD theme. The following students were declared as prize winners by the judges Shri. K. R. Krishnamurthy, Shri. T. R. Rajashekar & Shri. Subramanyam.

Essay Competition
Mr. Manthan Madival, Dr. TTIT, KGF. 1st Prize
Mr. Tharun. S, Dr. TTIT, KGF, 2nd Prize
Mr. Dharshan, Dr. TTIT, KGF, 3rd Prize
Mr. Rajendra Prasad, School of Mines, KGF, 3rd Prize

Poster competition
Mr. Sudharshan. P, Dr. TTIT, KGF. 1st Prize
Mr. M R Suraj, Dr. TTIT, KGF, 2nd Prize
Mr. Manthan Madival, Dr. TTIT, KGF, 3rd Prize

Speech Competition:
Mr. Nitish S, Dr. TTIT, KGF. 1st Prize
Mr. Md. Mustafa, School of Mines, KGF, 2nd Prize.
Mr. Usman Sheikh, Dr. TTIT, KGF. 3rd Prize
Mr. Ajit Kumar, Dr. TTIT, KGF. 3rd Prize

The cash prizes of Rs.3000, 2000, and 1000 and the certificates were presented to the students on the occasion, and the certificates were also distributed to all the participants. Shri Y. Ram Mohan Reddy read out the list of winners.

The Bangalore Chapter, as a part of the Indian Mining Day celebration, felicitates the senior members who have contributed significantly to the mining industry and the Bangalore Chapter. This year the following members were felicitated on the occasion by the guest:

1. Shri. C. R. N. Swamy, - LM/996/BAN
2. Shri. Y. S. Reddy -LM/2983/GOA/BAN
3. Shri. K. S. Raju -LM/2050/NAGPUR/BAN

The citations of the above members were read by Shri. Sitaram Kemmannu. All felicitated members addressed the gathering, sharing their rich industry experience and their association with MEAI.

Then, the young employees of Vedanta Limited, Mr. Mohammed Sameer & Ms. Maruthula spoke on the theme of IMD. Various senior members, including Dr. Basappa Reddy, Shri. T. K Rath, Shri. Krishnamurthy, Shri. Shobhachal and others also spoke on the theme of IMD.

Dr. Meda Venkataiah, chief guest, in his address, greeted all the members and students on the Indian Mining Day and highlighted the importance of the adoption of green energy in the mining industry.

Shri Dhananjaya G Reddy, VP-I, in his presidential address spoke about the Indian Mining Day celebrations' history and purpose & the importance of the adoption of the latest technology and green energy in the mining industry to reduce carbon footprints. Dr. C. V. Raman, Vice Chairman, delivered a vote of thanks & Mr. Sitaram Kemmannu has anchored the entire event.

A total of 115 members attended the meeting, including 55 students from both Dr. Thimmaiah Institute of Technology KGF & School of Mines KGF.

Welcome address by Chapter Chairman- Dr. T. N. Venugopal

Lightning of Lamp

Oath administration by Mrs. Sarita Dange

Oath Taking by members

Presentation on IMD theme by Shri. Mallikarjun Sarapur

Photos of Students participated in Speech Competition

Photos of Students

Young members speech

Photos of Felicitation Shri. C. R. N. Swamy

Photos of the felicitation of Shri. Y.S. Reddy.

Anchoring by Shri Sitaram Kemmannu

Administering the prize distribution by Shri. Y. R. Reddy

Photos of Felicitation of Shri K. S. Raju

Address by Chief Guest Dr. Meda Venkataiah, Director, MSPL Limited

President Sri. Dhanajay G Reddy VP-I, addressing the gathering.

Posters Photos

Certificates to speakers—from Vedanta Ltd by Shri. Mallikarjun Sarapur

Mementos to Chief Guest Dr. Meda Venkataiah by Dr. T.N. Venugopal

Vote of Thanks by Dr. C. V. Raman

Executive Committee of Bengaluru Chapter

BARAJAMDA CHAPTER

The Barajamda chapter celebrated Indian Mining Day on 1st November 2025 at Joda Valley Club marking the occasion with a solemn lamp lighting ceremony and a mining pledge, reaffirming the industry's commitment to sustainable mining practices.

Inauguration ceremony

Mining Pledge

Chairman's Address

Mr. Atul Bhatnagar, Chairman, Barajamda Chapter, felicitated the Quiz Competition winners and seminar participants.

He delivered a keynote address highlighting the imperatives of innovation and technological adoption for India's mining growth.

Address to the gathering

The gathering was addressed by esteemed dignitaries of the function

1. Mr. Deepak Behera, Chief, Kalamang and Gandhalpada Mine, Tata Steel
2. Mr. Rajesh Kumar, Chief, Joda East Iron Mine, Tata Steel
3. Mr. Satyanarayana Gedela, Chief, Khondbond Iron Mine, Tata Steel
4. Mr. Rahul Kishore, Secretary of the Barajamda Chapter.

Who shared their valuable insights and perspectives on the occasion of Indian Mining Day? They also shared their journey from college life to corporate life with young mining engineers.

Mining Mavericks – quiz competition

A quiz competition was organized for Assistant Manager's and Foreman's covering various topics like sustainability, legislation, environment, etc. 35 teams from different mines participated with enthusiasm, showcasing their talents.

Participating Companies

- Tata Steel
- JSW
- JSL
- AMNS
- OMC
- SAIL
- Rungta Group of Company
- M G Mohanty
- Llyod Steel
- Vedanta

Young Talent Showcase

An essay writing and painting competition was organized, drawing participation from 300 students across 28 schools in the Barbil & Barajamda region. This initiative aimed to foster creativity and awareness about the mining industry among young minds, providing a platform for them to express their thoughts and ideas.

Driver Fatigue Monitoring System demo. by Mach India

- Highlighting commitment to safety and employee well-being
- Advanced technology for real-time monitoring of driver fatigue and risk mitigation
- Educating students on the importance of safety in mining with hands-on experience of DFMS.

Green Initiative – Plantation Drive

In alignment with the theme "Mining today for a greener tomorrow," a plantation drive was conducted at Joda Valley Club. Around fifty students, along with teachers, actively participated in the drive, showcasing their commitment to a greener future.

Seminar on Mining topics

A seminar was conducted featuring representatives from various mines, focusing on key topics such as the mines auction process, safety in mining operations, advanced technology in mining, and sustainable mine closure. 6 teams from various mines participated actively and presented their on-the-ground expertise.

The seminar was conducted featuring representatives from various mines, focusing on key topics such as the mines auction process, safety in mining operations, advanced technology in mining, and sustainable mine closure. 6 teams from various mines participated actively and presented their on-the-ground expertise.

Felicitation of Winners

The winners of the essay and drawing competition were felicitated.

Vice – Chairman's Address

Mr. P. K. Patra, Vice-Chairman, Barajamda Chapter, felicitated the Quiz Competition winners and addressed the gathering. He spoke on aligning mining operations with sustainability goals and fostering community partnerships.

Glimpses of felicitation ceremony




Vote of Thanks

The vote of thanks was proposed by Mr. Ajay Goyal, Joint Secretary and Treasurer of the Chapter, expressing gratitude to the dignitaries, speakers, participants, organizing team, and the Joda Valley Club for their contributions to the event's success.

BELGAUM CHAPTER

On 28th October, on the eve of Indian Mining Day Celebrations. Chairman Dr. P. T. Hanamgond organized a drawing competition for 8th to 10th class students of Bharatesh Central School, Halaga, Belagavi. Over 90 students participated in the competition, and the top 4 drawings were selected on the given theme "Mining Today for a Greener Tomorrow." Smt. Shilpa Khadakbhavi, an artist, was the judge. Smt. Devyani Desai, principal, and Smt. Geeta Chougule coordinating teacher, were present with other staff members.





First Prize

Second Prize

Third Prize

Consolation Prize

On 31st October, on the eve of Indian Mining Day Celebrations. Chairman Dr. P. T. Hanamgond, Jt Secretary Mr. Suraj Mense, and Mrs. Priyanka Shinde conducted the "Essay Competition" for the students of the Department of

Geology at GSS College, Belgaum. The first prize was won by Ms. Shivani Kokitkar, a final-year B.Sc. student.

On 3rd November, on the eve of Indian Mining Day Celebrations. Chairman Dr. P. T. Hanamgond conducted the "Coin, Currency, and Geological Stamp Collection Exhibition" at Bharatesh Central School, Belagavi. The exhibits were displayed by Mr. Adesh Barde and his philately friends Abhishek Pauskar and Kuber Bogar. At the outset the winners of the drawing competition were awarded with trophies and certificates. School management members, faculty, and students from 1st Standard to 10th Standard visited the exhibition. At the outset, felicitation to winners of drawing competitions held on the 28th was done along with Karnataka Rajyotsava Day celebrations at the school.

Inauguration of Exhibition

Students visit to Exhibtion

Award winners of Drawing Competition: Mr Prithveesh Dombar, First Prize; Ms Veda S. J., Second Prize; Ms Bhavana S. N., Third Prize & Mr Suraj A. M., Consolation prize.

GOA CHAPTER

The Goa Chapter celebrated Indian Mining Day on November 1, 2025, from 10:00 a.m. to 1:00 p.m. at the Department of Mining Engg, Goa College of Engineering - Farmagudi. Shri. E. Hymakar Reddy, Chairman, welcomed the august gathering for the program. He mentioned the importance & objectives of the Indian Mining Day celebrations. Shri. T Victor, ex-national president, recollected the discussions held at various National Council meetings in organizing such events on the 1st of November every year, the design of the flag, and the pledge. He has given insight on the significance of Indian Mining Day and administered the pledge to the gathering.

The program comprised two technical talks by Shri. K Sivarao (Consultant in Mineral Processing) and Prof. Vijay Kumar (GEC Farmagudi) pertaining to the theme of the event. Shri. K Sivarao highlighted the possible techniques to upgrade the existing low-grade iron ore lying in dumps across Goa. He has shared his solutions given to low-grade ores across India. Shri Vijay Kumar explained as to how mining of critical minerals is essential for clean and green technologies in the field of energy and automobile sectors. An essay competition for the mining engineering students of Goa College of Engineering was conducted after the program, and selected students shall be given cash awards in upcoming MEAI programs. Shri. Raju Salgaonkar, Vice Chairman, expressed that MEAI Goa Chapter would conduct more programs in the future. Shri. T Victor summarized the entire session and thanked the participants for joining the celebrations/events.

Shri. E Hymakar Reddy, Chairman

Shri. T Victor, Former MEAI President

Shri. Raju Salgaonkar welcoming Shri. K Shivrao

Shri. Vijay Kumar, Resource Person

Organisers & resource persons

HYDERABAD CHAPTER

Indian Mining Day celebrations, 2025

Indian Mining Day was celebrated with great enthusiasm by the Mining Engineers' Association of India (MEAI), Hyderabad Chapter, showcasing the pivotal role of mining in national progress and self-reliance.

As part of the celebrations, a blood donation camp was organized on 30th October 2025 by the MEAI-Hyderabad chapter and the student chapter of the Department of Mining Engineering, Osmania University, Hyderabad, emphasizing the community spirit and social responsibility of mining professionals and students.

The blood donation camp organized by the Hyderabad Chapter underscored the chapter's commitment to social welfare, encouraging members and students to actively participate and support those in need.

Over 170 students and volunteers from Osmania University have participated in the blood donation camp.

Glimpses of Blood Donation Camp at UCE, OU

The Hyderabad Chapter of the Mining Engineers' Association of India (MEAI) observed "Indian Mining Day" on the theme *"Mining Today for a Greener Tomorrow"* on 1st November 2025 at the MEAI Headquarters in Hyderabad. The event saw enthusiastic participation from MEAI members, along with faculty and more than 70 students from Osmania University and Malla Reddy Engineering College.

Shri. Lakkarsu Krishna, secretary of the Hyderabad chapter, formally welcomed the gathering and administered the Indian Mining Day pledge to all members, distinguished guests, faculty, students, and participants present on the occasion.

Shri. Vinay Kumar, Chairman of the Hyderabad Chapter, remarked, "Our Indian Mining Day celebration is not just about commemorating the achievements of the mining sector but also about empowering the next generation of mining professionals. The involvement of students in skill-building activities is crucial for the sustainable growth of the industry."

Dr. V. D. Rajagopal, Past President, MEAI; Shri B. Ram Mohan, Former Regional Controller, IBM; Shri K. V. Shanker, Chair Professor, Osmania University; and Shri M. Narsaiah, Secretary General, shared their valuable insights on the significance of Indian Mining Day and the emerging technological advancements shaping the mining industry.
Essay writing, quiz, elocution, and poster presentation competitions were conducted by the student chapters of Osmania University and Malla Reddy Engineering

College. Also, a special skill development session by Ms. Atiya Nusrath, a certified soft skills trainer from IIT Bombay and an NLP (Neuro Linguistic Programming) Practitioner, was organized for the students, aimed at enhancing their technical knowledge and preparing them for future careers in the mining industry.

Shri. Lakkarsu Krishna, Secretary, Hyderabad Chapter, Welcoming the guests and students

Dignitaries observing the Indian Mining Day pledge

Shri. Vinay Kumar, Chairman, Hyderabad Chapter, addressing the occasion

Dr. Shanker, Chair Professor, Osmania University featuring the importance of Indian Mining Day

View of participants in the event

Skill development session by Ms. Atiya Nusrath, a Certified Soft Skills Trainer

Presentation of prizes and participation certificates to the winners of competitions and other students

View of students participated from Osmania university and Malla Reddy Engineering colleges

JABALPUR CHAPTER

Mining Day Celebration" and Workshop on "Innovative Geological Practices for Mining Technology"

Date: 1st Nov 2025, 10.00 am to 5.00 pm
Venue: AKS University, Satna, Madhya Pradesh
Members Present: 50 and 200 students

Prof G K Pradhan, Dean of Mining Technology
Inaugural Welcome Note,
Brief introduction of all guests.
Welcome to Chief Guest Shri P. K. Upadhyay; Secretary, Jabalpur Chapter, and the Purpose of Mining Day Celebration and Workshop on "Innovative Geological Practices for Mining Technology" on 1st November 2025 for the benefit of Mining and Geology Students.

Prof. B. A. Chopade, Vice Chancellor, AKSU
AKS University Introduction and Various steps taken for student welfare

Dr Pukhraj Nenival. CCOM, IBM, East Zone, Nagpur. MEAI, IBM, Jabalpur
Address the function through the video conferencing on the Importance of Mining Day and Inauguration of MEAI students' chapter, Jabalpur region. Digital transformation of the mining industry and their compliances towards industry growth as well provide guidance to mining students to learn new skills to make a better future in the industry.

Shri P K Upadhyay, Head Mining Division, Maihar Cement, UTCL. Secretary MEAI, Jabalpur Chapter
Importance of Mining Day and the Mining Industry's Role in GDP of India and Potential of Mining for Industrial Future Requirements with Digital Transformation. Importance of Sustainable Mining for Survival of Raw Material-Based Industry. Explained the importance of AI in mining.

Dr. B. K. Mishra. Head of the Department, AKS University
Introduction of All Members and Workshop-cum- Seminar importance for Student of AKS University

Shri S Pathak, Manager, Geology, NMDC, Panna
Role of Critical Minerals in NMDC Mines,

Dr Vivek Bhardwaj, Manager Geology, Maihar Cement, UTCL
Geological Practices in Mining Industries, Importance of Geochemistry in understanding of Cutoff Grade Reserve quality w.r.t Raw mix. Blending of Low grade with high grade as well as use of High MgO & LSF limestone deposits

Prof. R. N. Tiwari, Principal, Model Science College, Rewa
Geological importance in Mining Technology

Prof Ravi Chaurey, Department of Geology, MGCGV, Chitrakoot
Role of Geology in Mining

Dr. Ratnesh Dixit, Mining Officer, Katni, M. P.
Scope of Geotourism in Mining industries, conversion of abandoned mines for geotourism

Abhishekh Urmaliya, Safety officer, Prism Johnson's Ltd, Satna, Alumni of AKS university
Sustainable Mining Exploration of Second Band Limestone Mine,

Students' activities prize distribution
Approx 60 Students get award in different activities participation

Memento
All Guest for their participation in Workshop

NAGPUR CHAPTER

Indian Mining Day-2025 -TECHNICAL PAPER MEET

The Indian Mining Day for the year 2025 has been celebrated with great zeal by Mining Engineers' Association of India, Nagpur chapter on 1st November 2025 at Hotel Tuli Imperial, Nagpur. The event was jointly hosted by Mining Engineers' Association of India, Nagpur Chapter and Adani-Ambuja Cement Limited. On this occasion Shri Pankaj Kulshrestha, Controller General, Indian Bureau of Mines was the Chief Guest while Shri P. N. Sharma, Chairman, MEAI, Nagpur Chapter and former Controller General, IBM, Shri R. C. Sanodia, Vice Chairman, MEAI, Nagpur Chapter, Dr. Yogesh G. Kale, Chief Controller of Mines, IBM and Secretary, MEAI, Nagpur Chapter and Shri Mahendra Singh Rathore, Unit Head, Maratha Cement were prominently present. To commemorate the Indian Mining Day-2025, a technical paper meet in the series of activities of the Mining Engineers' Association of India, Nagpur chapter was also organized under the chairmanship of Shri Pankaj Kulshrestha, Controller General, Indian Bureau of Mines.

At the outset, the dignitaries were welcomed by the flower bouquet. This was followed by the Welcome address by Dr. Yogesh Kale, Secretary, Nagpur Chapter. In his welcome address, Dr. Kale gave background of the observance of Indian Mining Day and leading role played by the Mining Engineers' Association of India. He also highlighted about this year's theme **"Mining Today for the greater Tomorrow"** and on this theme how the critical minerals plays an important role in mineral sector.

Shri P.N. Sharma, Chairman of Nagpur Chapter and former Controller General, IBM who superannuated on 31st August 2025 was also felicitated on the occasion. In his address, Shri Sharma, highlighted and appreciated the role of Mining Engineers' Association of India in general and Nagpur Chapter in particular. He acknowledged the participation of each member for the active support for the growth of the Nagpur Chapter. He also stressed on the need for adoption of sustainable mining practices for brighter future of next generations.

The National Critical Mineral Mission (NCMM) was approved by the Government of India in January 2025 to ensure the availability, development, and secure supply of critical minerals essential for India's green energy transition, high-tech manufacturing, and national security. These include lithium, cobalt, nickel, rare earth elements, graphite, and others that are crucial for sectors such as renewable energy, electric vehicles (EVs), electronics, defense, and space. The National Critical Mineral Mission marks a pivotal step in securing India's mineral future and supporting the country's clean energy, industrial, and strategic goals. By integrating exploration, processing, recycling, and international cooperation, India aims to build a resilient and self-reliant critical mineral ecosystem. Moving forward, efficient implementation, strong private participation, and sustainable practices will determine the mission's success in making India a global hub for critical mineral value chains. Therefore, with this background and in consideration of theme of Indian

Mining Day i.e. “Mining Today for a Greener Tomorrow” the event has been celebrated with organizing a lecture as well as power point presentation on the topic of “Overview of National Critical Mineral Mission and Way Forward” jointly by Shri Gaurav Sharma, Mineral Economist, IBM and Ms. Liza Doifode, Young Professional, Indian Bureau of Mines. In their presentations, Shri Gaurav Sharma and Ms. Liza gave compressive analysis of status of critical minerals in India and the National Critical Mineral Mission (NCMM) initiated by the Government of India. They dealt about resources, mining, processing challenges and world scenario of critical minerals. Their presentation gave a sanguine scenario that with the efforts of all stake holders, it would be possible for India to overcome the challenges of shortage of critical minerals. Ms. Liza also highlighted the processing options and their technological limitations. The lecture was followed by the good interactions with questions and answers. Both authors were felicitated with presentation of mementoes.

The entire programme was conducted by Ms. Shakshi Gupta, Assistant Mining Engineer, IBM. Shri A.D. Selokar, Treasurer, MEAI, Nagpur Chapter presented a vote of Thanks. Shri Arun S. Chachane, Joint Secretary, MEAI, Nagpur Chapter and Assistant Controller of Mines, IBM worked hard for the success of the event. This was followed by a dinner. The event was attended by more than 125 members of the Nagpur Chapter, invitees along with their spouse.

On the dais from left to right: Shri Mahendra Singh Rathore, Unit Head, Maratha Cement; Shri P.N. Sharma, Chairman, Nagpur Chapter & Former Controller General, IBM; Shri Pankaj Kulshrestha, Controller General, IBM; Dr. Y.G. Kale, Chief Controller of Mines & Hon. Secretary, Nagpur Chapter; and Shri R.C. Sanodia, Ex-Chief General Manager, WCL & Vice-Chairman, Nagpur Chapter.

Welcome address by Dr. Y.G. Kale, Chief Controller of Mines, IBM & Hon. Secretary, Nagpur Chapter.

Address by Shri P.N. Sharma, Chairman, Nagpur Chapter & Former Controller General, IBM

Welcome of speaker Ms. Liza Doifode, Young Professional, TMP Division, Indian Bureau of Mines, by Shri Mohan Rahangdale, Nagpur Chapter.

Welcome of Speaker Shri Gaurav Sharma, Mineral Economist, Indian Bureau of Mines, by Shri Mohan Rahangdale, Nagpur Chapter.

Shri. Gaurav Sharma, Mineral Economist, Indian Bureau of Mines & Speaker presenting on the topic.

Ms. Liza Doifode, Young Professional, TMP Division, Indian Bureau of Mines & Speaker presenting on the topic.

Felicitation of Speakers by Dr. Y. G. Kale, Chief Controller of Mines, IBM & Secretary, Nagpur Chapter.

Dignitaries present during the Technical Paper Meet.

Dignitaries present during the Technical Paper Meet.

RAJASTHAN CHAPTER - JODHPUR

The Rajasthan Chapter—Jodhpur celebrated Indian Mining Day (IMD) on 1st November 2025 with great enthusiasm and active participation of around 100 MEAI members, professionals, academicians, and students from the Department of Mining Engineering, MBM University, Jodhpur. The celebration was held at the Institute of Engineers Building in Jodhpur. Indian Mining Day this year was celebrated on the theme "Mining Today for a Greener Tomorrow."

Er. Y. S. Sahwal, Additional Director of Mines, Jodhpur, Department of Mines & Geology, Govt. of Rajasthan, was the Chief Guest of the program. Prof. Sushil Bhandari. Er. Rajnish Sigar, Deputy Director, DGMS, Ajmer Region 1, was the Guest of Honor. Er. Deepak Tanwar, Chairman; Er. B.S. Bhati; Er. R. P. Gupta; Er. P. M. Jain; and Er. Amichand Dugar from CMRI from 1965 were other dignitaries on the dais.

Prof. D. M. Surana, former HOD of the Mining Department, JNV University, Jodhpur; Shri A. K. Jaiswal, National Council member; Er. M. C. Tater, treasurer; Er. R. Dave; Er. S. P. Goyal; Er. V. S. Mathur; Er. Rajiv Choudhary; Er. S. S. Patel; Er. S. B. Mathur; Er. Rakesh Purohit, secretary; and others also grace the occasion.

The program was conducted with the following events:

- Inauguration, Hoisting of IMD Flag, and Pledge: The event started with the Saraswati Pujan, followed by the hoisting of the IMD Flag and the Indian Mining Day Pledge administered to the Chapter Chairman, Er. Deepak Tanwar, by all attendees.
- Welcome Address: The Chapter Chairman delivered the welcome address, highlighting the significance of Indian Mining Day and explaining the importance of minerals available in Western Rajasthan.
- Technical Session 1: A Technical paper was presented by Prof. Ram Prasad Choudhary, HOD, Department of Mining Engineering, MBM University, Jodhpur, on

today's sustainable mining with emphasis on socio-economic aspects.

- Technical Session 2: Another technical paper was presented by Er. Rajnish Sigar about changes to be done in present mining for a greener tomorrow. MBMU alumni from the 1965 batch also share their thoughts on the theme of IMD.
- Student Activities: To encourage the future generation of mining professionals, an essay competition for students on the theme "Mining Today for a Greener Tomorrow" was conducted in the Mining Department, MBM Engineering College. A total of 36 students participated.

The chief guest and guests of honor also shared their views on the said theme.

- Sri P. M. Jain, Advisor, Wolkem India Ltd., explained sustainable mining activities carried out at Belka Pahar Mines of WIL.
- Sri R.P. Gupta, the former National President, talked about MEAI activities and the contribution of the Association in mining industries.
- Dr. Amichand Duggar, scientist, CMRI, expressed his views about the theme of the Mining Day and extended his availability for student guidance if required.
- **Prize Distribution and Honoring of Dignitaries and Speakers:** Mementos were given to all distinguished guests and speakers by the chapter chairman. The first three winners of the essay competition were also given a cash prize of Rs.3100, Rs.2100, and Rs.1100.

The program concluded with a vote of thanks given by the chapter secretary, acknowledging the chief guest, speakers, and all attendees.

Glimpses of the program

RAJASTHAN CHAPTER - UDAIPUR

Indian Mining Day Celebrations on 1st November 2025

The Indian Mining Day was celebrated on 1st November, 2025, by the Rajasthan Chapter-Udaipur in association with JK Lakshmi Cement Limited, Dabok, with great enthusiasm and zeal. MEAI invited all the stakeholders, including eminent mining engineers, mine owners, stockholders, and students of the region, to witness the occasion. Every year, this day is observed by the Mining Engineers Association of India to discuss various issues related to the current scenario, technological advancements, and other aspects of the mining industry. The theme of this year was "Mining Today for a Greener Tomorrow."

In keeping with its practice of celebrating this day by visiting operational mines, the Udaipur Chapter has earlier organized the event at Morwad Mines of RK Marble (2023), Jhamarkotra Mines of RSMM (2022), and Zawar Mines of Vedanta-HZL (2021), among others.

(L To R): Sh Arif Mohd Sheikh—ME (Vig.), Sh Asif M Ansari—Secretary, Dr Hitanshu Kaushal—Jt. Secretary, Sh DP Gaur—Vice Chairman, Sh Deepak Sharma, JK Lakshmi Cement Works & Sh KP Singh—VP (Mines) UCWL, Udaipur.

This year's event focused on technological advancement, sustainable mining, and environmental protection in the mining industry. Participants visited the floating solar power plant and the cement plant at JK Lakshmi Cement Daroli limestone Mines, witnessing first-hand the innovative integration of green energy with mining operations.


Approximately 160 mining engineers and geologists participated in the event. This occasion was organized under the chairmanship of Sh DP Gaur, Vice Chairman, MEAI-Udaipur. Sh Deepak Sharma of J.K. Lakshmi Cement, the guest of honor, emphasized ESG, the use of electric-operated vehicles, water conservation, reuse of waste material, use of green energy, and conservation of minerals. Mr. K.P. Singh, Vice President (Mines) of JK Lakshmi Cement Limited, welcomed all guests with an uparna and delivered an inspiring address highlighting mining's vital role in nation-building.



Sh AK Kothari, former National President, MEAI, administered the oath to all present in the hall to adopt the best scientific methods & practices to prospect, produce, and preserve the one-time crop from mother earth in the form of valuable mineral resources for the probity and prosperity of our nation.



Pledge administered by Sh AK Kothari, former National President, MEAI.

Sh DP Gaur, Vice Chairman, Udaipur chapter, welcomed the distinguished guests and offered a warm reception and informed them that MEAI is providing unique services to the mining industry. Also, Indian Mining Day is celebrated every year by MEAI all over India with the objective of discussing the current scenario of mining, technological progress, and various issues related to the mining industry, and to discuss the future development and this year's mining today for a greener tomorrow.


On this occasion, a technical presentation was delivered on the topic of "Mining Today for a Greener Tomorrow" by Mr. K.P. Singh, Vice President (Mines), Udaipur Cement Works Limited. In his technical presentation, Mr. K.P. Singh shared that Udaipur Cement Works has taken a major step toward sustainable mining through the installation of a 3.7 MW floating solar power plant in the Daroli mine area. This plant, installed on the water surface, not only generates clean electricity but also helps to reduce water evaporation, an ideal example of "green energy with water conservation." He further emphasized the company's ongoing tree plantation and initiatives, taken for thousands of local species that are planted annually to promote biodiversity and restore greenery in mining areas. "A true miner is one who extracts minerals from the earth and reclaims it with greenery," he remarked, underscoring that mining must be viewed not merely as an industry but as a responsibility toward nature.

The second speaker, Mr. Arif Mohd. Sheikh, Mining Engineer (Vigilance), Department of Mines and Geology, Govt. of Rajasthan, Udaipur, delivered an insightful presentation on sustainable mining practices (SMP). He highlighted the paradigm shift in mining—from unscientific and unsafe extraction in the past to a scientific, safe, and environmentally responsible approach today. He explained that technological innovation, policy reforms, and green initiatives such as tree plantation, waste management, and renewable energy adoption are guiding the industry toward sustainable development. Mr. Sheikh also emphasized the growing

importance of critical minerals—lithium, cobalt, nickel, copper, and rare earth elements—which are essential for the emerging green energy economy. He presented practical measures to reduce pollution and enhance sustainability through tailings reprocessing and the adoption of zero-emission transportation in mining operations.

Citing successful examples, he discussed Rampura Agucha's tree plantation and water recharge initiatives and Coal India's transformation of mined-out areas into ecotourism destinations with parks, water sports, and adventure zones. He also highlighted emerging technologies like automation, robotics, IoT, bioleaching, and phytomining, which are revolutionizing safety, efficiency, and environmental protection in mining.

In addition, he outlined key policy frameworks that support sustainable mining in India and Rajasthan:

- National Mineral Policy 2019 – Promoting environmentally responsible mining and e-governance.
- Rajasthan Mineral Policy 2024—Encouraging GPS-based tracking, scientific mining, and waste utilization.
- M-Sand Policy 2024 – Promoting the use of manufactured sand from waste rock as an eco-friendly alternative to river sand.
- Rajasthan Minor Mineral Rules 2017-emphasizing groundwater recharge, controlled blasting, and environmental safeguards.

Essay competition results announcement by Chapter Secretary Sh. Asif M. Ansari

The Udaipur Chapter organized an essay writing competition on the topic of "Mining Today for a Greener Tomorrow," in which four colleges of these region students participated. Prizes and certificates were given during the function. The first prize in the essay writing competition was awarded to two students, Ms. Shreya Noshliya & Ms. Muskan Solanki of CTAE, with a certificate and a prize of Rs. 3100; the second prize was awarded to two students, Ms. Pooja Suthar of Pacific College & Ms. Vishruti Paliwal of the Deptt. of Geology, MLS University, with Rs. 2100; and the third prize was awarded to two students, Mr. Sourabh Kumawat & Ms. Lipika Kalal of CTAE, with Rs. 1100. The consolation prize with a certificate was given to Ms. Saumyanshi Nagda, CTAE, College & Mr. Ravi Shanker Bairagi, SIR Padampat Singhania University, with Rs. 500.

Annual MEAI Scholarship and Best Student Award

On this occasion, Mr. Sanyam Gupta, a final-year student of CTAE College, was honored with the HZL Best Student Award of Rs 21000 (cash prize) and a certificate by MEAI.

Mr. Yash Malviya, a third-year student of CTAE College, was given the MEAI, Tata Bhupendra Singh Bhati Scholarship 2025, Certificate, and cash prize of Rs. 15000.

A view of the audience present at Indian Mining Day Celebration

At the end of the program, Sh Asif M. Ansari, Secretary, extended thanks to all the guests and participants and also to JK Lakshmi Cement Ltd. management for making this Indian Mining Day a grand success. At the conclusion of the program, Mr. Asif M. Ansari, Secretary, MEAI, Udaipur Chapter, extended his heartfelt thanks to all the guests and participants. In his address, he emphasized that as the world progresses towards the goals of "Net Zero" and

"Green Energy," Rajasthan can take pride in being at the forefront of this green transformation. Several companies and organizations across the state are undertaking commendable initiatives in this direction. He cited the 3.6 MW floating solar plants installed by Udaipur Cement at its Daroli mine as a remarkable example. This project not only generates clean energy but also contributes significantly to water conservation and environmental balance. Likewise, Hindustan Zinc Limited (HZL) has been leading by example through extensive tree plantation drives, solar and wind energy projects, and the adoption of e-fleet vehicles, thereby steering the mining sector towards a sustainable future.

Mr. Ansari remarked that "Mining and greenery—two words once considered contradictory—are now becoming complementary." Today's mining practices, driven by the synergy between technology and environmental stewardship, are laying the foundation for a "greener tomorrow."

He further highlighted the collective responsibility of the mining fraternity to focus on reclamation, afforestation, and community development in mining regions. Only through such efforts, he noted, can we truly fulfill the vision of "Greening the Land."

Concluding his address, Mr. Ansari stated that "Mining is not merely the extraction of minerals, but the preservation of the earth's vitality. Every step we take should be for the well-being of the environment, society, and the nation."

The program was anchored by Dr. Hitanshu Kaushal, Joint Secretary of the chapter.

RAYALASEEMA CHAPTER

As a part of Indian Mining Day on 01st November 2025, we at the Rayalaseema region have organized a gathering at their respective mining companies. Nearly 12 mining industries & 01 student chapter witnessed the event under the aegis of the Rayalaseema Chapter.

The theme for the year: "Mining Today for a Greener Tomorrow."

The celebrations started with the formal inauguration of the IMD flag hoisting & followed by the Indian Mining Day Pledge. The dignitaries shared the valuable inputs & latest ideas of innovation in mining. Also shared their thoughts on various aspects of mining, including safety practices followed from past to present scenarios of mining.

Some of the glimpses of the program from various mining industries:

Ultratech Cement Limited, Tadipatri

Yanakandla Limestone Mine of M/s. Sree Jayajothi Cements Private Limited

Penna Cement Industries Limited, Talaricheruvu Unit

Gudipadu Limestone Mine of M/s. Sagar Cements

Nawabpet Talamanchipatam Limestone Mine of M/s. Dalmia Cement (Bharat) Limited.

Kandikayapalli Limestone Mine of M/s. Panyam Cements

Kolimigundla Limestone Mine of M/s. The Ramco Cements Limited

DCW Limestone Mine of M/s. Andhra Cements Limited

Nallalingayapalli Limestone Mine of M/s. Bharathi Cement Corporation Private Limited

JSW Cement Limestone Mine of M/s. JSW Cement Limited

Zuari Limestone Mine of M/s. Zuari Cement Limited

IMD Celebrations @ MEAI Rayalaseema – Student Chapter

From the Student Chapter, Govt. College (A), Anantapur, Department of Geology, the Indian Mining Day was celebrated with great enthusiasm. The event highlighted the importance of the mining sector in the development of the nation and created awareness among students about sustainable mineral exploration and the aspects of responsibility towards the environment.

Students actively took part in various events such as quiz competitions on mining and mineral resources. These activities helped them showcase their knowledge and creativity. A short documentary on modern mining techniques and environmental conservation was also screened, which provided valuable learning to all participants.

SINGARENI CHAPTER

The Singareni chapter celebrated India Mining Day on Nov 1st, 2025, in association with the Dept. of Mining Engineering, Dr. Manmohan Singh Earth Science University (formerly UCE, KU, Kothagudem) by conducting competitions among mining students for quiz, essay writing, and poster presentation competitions. Prizes were distributed for winners and runners-up of the competition. On this occasion, Dr. Jagan Mohan Raju, Principal, Shri ALSV Sunil Varma, Council Member, MEAI, and Shri A. Ravikumar, Secretary, Singareni Chapter, were present. It was highlighted by all speakers about the future of mining and the importance of critical minerals.

Glimpses of the program:

TAMIL NADU CHAPTER

Indian Mining Day Celebrations – November 1st, 2025

Under the auspices of the Tamil Nadu Chapter–Ariyalur, the Indian Mining Day (IMD) was celebrated with great enthusiasm and participation at the Indian Medical Association Hall, Ariyalur.

The event witnessed active involvement from leading mining and cement organizations, including

- India Cements Limited (ICL)
- Dalmia Bharat Cement Limited (DBCL)
- The Ramco Cements Limited (TRCL)
- Chettinad Cement Corporation Limited (CCL)
- UltraTech Cement Limited (UTCL)

Highlights of the Celebration at Ariyalur

- Pledge Ceremony: All attendees took a solemn pledge to uphold safe, sustainable, and responsible mining practices, reinforcing the industry's commitment to environmental stewardship and worker safety.
- Safety Flag Hoisting: Symbolizing the importance of safety in mining operations, the safety flag was hoisted by senior executives from participating organizations.
- Recognition of Excellence: Employees were felicitated for their outstanding contributions to safety, innovation, and operational excellence in the mining sector.
- Interactive Events:
  - Blood Donation Camp: Organized in collaboration with local health authorities, promoting community welfare and employee engagement.
  - Quiz Competitions: Focused on mining history, safety protocols, and sustainability, encouraging awareness and learning among participants.
- Executive Addresses: Senior leaders from MEAI and participating companies delivered insightful speeches highlighting the significance of Indian Mining Day, the evolving landscape of the mining industry, and the role of technology and sustainability.

The event served as a platform to celebrate the achievements of the mining community, foster collaboration, and reaffirm the collective commitment to ethical and sustainable mining practices.

Glimpses of the program-Ariyalur

Anna University, Chennai

The Indian Mining Day 2025 was celebrated at Anna University, Chennai, organized by the Tamil Nadu Chapter in collaboration with the Department of Geology, CEG, Anna University, on 1st November 2025 at the Hall of Luminous, Sir C.V. Raman Block, Anna University.

The program began with Tamil Thai Vazhthu, followed by a welcome address by Prof. Dr. T. Subramani, Chairman, TN Chapter. The Chief Guest, Prof. Dr. M. Suresh Gandhi, Chairman of the School of Earth and Atmospheric Sciences and SEAC Member (TN), highlighted the need for sustainable and responsible mining practices.

Miss J. Binisha, Chairman, MEAI Student Chapter, introduced the Chief Guest, while Prof. Dr. G.R. Senthil Kumar and Dr. E. Kumar addressed the gathering. Prizes were distributed to outstanding students, and the event concluded with a vote of thanks and the National Anthem.

The celebration saw active participation from students, faculty, and MEAI members, marking the occasion as both inspiring and informative.

Glimpses of the program- Anna University, Chennai

(Continued from Page 32)

"The judge's decision shows what we have been saying for the last 10 years: it was not an accident, and BHP must take responsibility for its actions," she added. The claimants' lawyers accused BHP, the world's biggest miner by market value, of "cynically and doggedly" trying to avoid responsibility as the mammoth trial began in October.

BHP contested liability and said the London lawsuit duplicated legal proceedings and reparation and repair programs in Brazil. In the trial's first week, Brazil signed a 170 billion reais ($31 billion) compensation agreement with BHP, Vale and Samarco, with BHP saying nearly $12 billion has been spent on reparation, compensation and payments to public authorities since 2015.

BHP said after Friday's judgment that settlements in Brazil would reduce the size of the London lawsuit by about half. A second trial to determine the damages BHP is liable to pay is due to begin in October 2026.

($1 = 0.7451 pounds)

($1 = 5.4039 reais)

Reuters / November 14, 2025

CONFERENCES, SEMINARS, WORKSHOPS ETC.

INDIA

23 Dec 2025: **Workshop on IMIC implementation in India**. Organized by the Bangalore Chapter at Conference Hall, DMG, Khanija Bhavan, Bengaluru, Karnataka.

9-10 Jan 2026: **Odisha Mining & Infrastructure Conclave**. Organized by Futurex Trade Fair & Events Pvt Ltd, India.

10-11 Feb 2026: **Mining & Critical Minerals India Conference India Expo 2026**. Organized by at JW Marriott Mumbai Sahar. Contact: Spire Events Pte Ltd, 38 Maxwell Road, Airview Building, Singapore 069116. enquiry@spire-events.com.

ABROAD

25-26 Jan 2026: **International Conference on Geological and Earth Sciences ICGES (ICGES 2026)**. Paris, France. Website URL: https://waset.org/geological-and-earth-sciences-conference-in-january-2026-in-paris. Organization: World Academy of Science, Engineering and Technology.

9-12 Feb 2026: **Mining Indaba 2026 in CTICC**, Capetown, South Africa. Contact Birgit Hupe, Head of Delegate Registration at registration@miningindaba.com

25-26 Feb 2026: **International Conference on Earth Science (ICES 2026)**. Buenos Aires, Argentina. Website URL: https://waset.org/earth-science-conference-in-february-2026-in-buenos-aires.

3 - 7 Mar 2026: **CONEXPO-CON/AGG 2026**. Las Vegas Convention Center, 3150 Paradise Rd, Las Vegas, NV, 89109, United States. North America's largest construction trade show happens once every three years.

25-26 Mar 2026: **International Conference on Geosciences, Mineralogy and Petrology (ICGMP 2026)**. Madrid, Spain. Website URL: https://waset.org/geosciences-mineralogy-and-petrology-conference-in-march-2026-in-madrid. Contact international@conexpoconagg.com.

11-12 Apr 2026: **International Conference on Mining, Material, and Metallurgical Engineering (ICMMME - 2026)** in Barcelona, Spain. Mail: info@academicsworld.org. Web: www.academicsworld.org.

20-21 Apr 2026: **International Conference on Geosciences, Mineralogy and Petrology (ICGMP-2026)**. New York, United States. Organized by World Academy of Science, Engineering and Technology. Website URL: https://waset.org/geosciences-mineralogy-and-petrology-conference-in-april-2026-in-new-york.

21-22 Apr 2026: **International Mining Geology Conference 2026**. Brisbane Convention and Exhibition Centre, Brisbane, Australia. Contact AusIMM at T: 1800 657 985 or +61 3 9658 6100 (if overseas); https://www.ausimm.com/conferences-and-events/mining-geology/.

5-7 May 2026: **Global Resources Innovation Expo 2026. Perth Convention & Exhibition Centre**, Perth, Australia. Hosted by Austmine and AusIMM.

18-19 May 2026: **International Conference on Mining and Economic Geology (ICMEG -2026)**. London, United Kingdom. Website URL: https://waset.org/mining-and-economic-geology-conference-in-may-2026-in-london.

24-25 May 2026: **International Conference on Mining and Economic Geology (ICMEG 2026)**. in London, United Kingdom. Website URL: https://waset.org/mining-and-economic-geology-conference-in-may-2026-in-london.

24-26 Jun 2026: **The 27th World Mining Congress and exhibition in Peru**. Contact details: Phone: +48 32 324 66 03; e-mail: wmc@gig.katowice.pl.

29-30 Jun 2026: **International Conference on Geological and Earth Sciences ICGES** in Istanbul, Turkey. Website URL: https://waset.org/geological-and-earth-sciences-conference-in-june-2026-in-istanbul.

20 - 21 Jul 2026: **Accelerating Commercial Exploration, Discovery and Extraction** in Cairo, Egypt. Conference Enquiry: conference@egyptminingforum.com.

9-10 Aug 2026: **International Conference on Geology, Geophysics and Earth Sciences ICGGES** in New York, United States. Website URL: https://waset.org/geology-geophysics-and-earth-sciences-conference-in-august-2026-in-new-york.

6-7 Sep 2026: **International Conference on Mining and Petroleum Geology (ICMPG-2026)**. Málaga, Spain. Website URL: https://waset.org/mining-and-petroleum-geology-conference-in-september-2026-in-malaga.

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**.

Chief Editor, MEJ

Printed and Published by M. Narsaiah, Secretary General, Mining Engineers' Association of India,
on behalf of Mining Engineers' Association of India and printed at Deepu Printers, Raghava Ratna Towers, Chirag Ali Lane, Nampally, Hyderabad - 500 001.
and published at F-608 & 609, 'A' Block, VI Floor, Raghavaratna Towers, Chirag Ali Lane, Abids, Hyderabad - 500 001. **Chief Editor: Dr. P.V. Rao**

Date of Publication: 28-11-2025
Date of Posting: 4 / 5 of every month

Regd. with RNI R.No. 71519/1999; No. of Pages: 56+Cover 6
Postal Regd. No. H-HD-GPO/024/2024 - 2026
Posting at BPC-IV Patrika Channel, Nampally, Hyderabad - 500 001