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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

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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..

India's mining sector is witnessing significant progress in early 2026, driven by coal sector reforms and faster auctions of critical minerals such as lithium and rare earth elements to support clean energy and advanced technology needs. The government is also promoting mineral recycling, quicker mine development, and greater adoption of technology and ESG practices, while industry platforms like the ET Infra Global Metals and Mining Meet are focusing on sustainability and digital transformation across the sector.

The Mining Engineers' Association of India (MEAI) welcomes the MoU between TEXMiN Foundation and Bharat Sanchar Nigam Limited (BSNL) is a robust platform for indigenous technologies to make Indian mines 'Viksit' (developed) and 'Atmanirbhar' (self-reliant) in terms of technologies and to advance India's mining industry through AI, IoT, drones and other digital technologies for enhancing safety, efficiency and sustainable mining operations. TEXMiN, a Technology Translation Research Park set up by the Department of Science and Technology at IIT (ISM) Dhanbad under the National Mission on Interdisciplinary Cyber-Physical Systems, will leverage this collaboration to scale innovative digital solutions. The partnership is expected to improve operational performance, promote cost and resource-efficient practices, support start-ups and skill development, and accelerate the digital transformation of the mining sector.

I extend my appreciation to the Rajasthan–Jaipur Chapter for successfully celebrating its 17th Foundation Day and organizing the International Seminar on ***"Vision 2047 – Mining and Minerals Perspective"*** in a grand way. The chapter demonstrated commendable commitment and leadership by convening industry professionals to deliberate on the mining sector's future. My appreciation and congratulations to chairman, Jaipur chapter & his team for hosting the Second National Council Meeting of MEAI. These initiatives significantly strengthen our Association and advance the mining and minerals sector nationwide.

Ongole-Vijayawada Chapter convened its Annual General Body Meeting on 6th February 2026. I extend my congratulations to Shri. Subhaskar Reddy as Chairman for the second term and newly elected Office Bearers & Executive Committee of the chapter as they embark on their new responsibilities towards advancing the objectives of MEAI.

My appreciation to the Bengaluru Chapter for taking the initiative to organise the National Seminar on 12th March 2026 on the inspiring theme ***"Mining for Viksit Bharat Vision-2047."*** This commendable effort aligns perfectly with our nation's ambitious development goals.

I congratulate all the Chapters and extend my appreciation for their dedicated efforts in organising technical talks, workshops, and seminars. These initiatives will go a long way in enhancing the skills and knowledge of mining professionals.

D.B. Sundara Ramam
President

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CHIEF EDITOR'S DESK

Dr. P.V. Rao
Chief Editor, MEJ

India's Critical Mineral Strategy: Promise, Progress, and the Discovery Bottleneck

The recent report of NITI Aayog, *Scenarios Towards Viksit Bharat and Net Zero-Critical Mineral Assessment: Demand and Supply (Vol. 10, 2026),* offers a structured assessment of India's position in the global critical minerals landscape. Though advisory in nature, it carries an unambiguous message: domestic exploration and mining must form the foundation of India's Viksit Bharat and net-zero ambitions.

India's mineral policy framework has undergone significant reform over the past decade. Amendments to the MMDR Act, 1957, beginning in 2015, replaced the First-Come-First-Served (FCFS) regime with transparent auctions. The establishment of the District Mineral Foundation (DMF) and the National Mineral Exploration Trust (NMET) introduced institutional mechanisms for community benefit-sharing and exploration funding. Yet despite improved procedural transparency, the conversion of auctioned blocks into operational mines has remained slow, hampered by persistent regulatory, clearance, and execution challenges.

Critical minerals gained renewed policy attention in 2023, with auction rounds targeting minerals essential for clean energy technologies and advanced manufacturing. By mid-2025, five tranches covering 55 blocks had been launched, of which 34 were successfully auctioned-predominantly graphite. While this marks real progress, it also highlights limited commodity diversification and the persistent difficulty of building a robust discovery pipeline.

Discovery risk remains the fundamental constraint. Mineral exploration is capital-intensive, high-risk, and time-consuming; globally, only a small fraction of identified prospects ultimately evolve into mines. In India, early-stage exploration has largely been the preserve of public institutions such as the Geological Survey of India (GSI), whose mandate centers on regional mapping and baseline geoscience data generation rather than discovery-driven, high-risk exploration. Post-reform instruments, including non-exclusive reconnaissance permits, have attracted limited private participation because they conferred neither development rights nor transferable economic interest.

Although NMET has funded numerous projects, private participation remains modest and skewed toward early-stage or bulk commodity exploration. The Exploration License (EL), introduced in 2023 for deep-seated and critical minerals, was intended to broaden industry participation by allowing industry-proposed areas and competitive bidding. However, explorers are entitled only to a share of future auction premia if a discovery proceeds to mining. With no assured development rights and lengthy lead times before any return on investment, the risk–reward balance remains less attractive than in established international jurisdictions. The muted response to the initial EL auctions reflects this structural limitation.

Data transparency has improved with the launch of the National Geoscience Data Repository (NGDR) portal, but the challenge extends beyond data availability to its bankability. Much of the publicly generated exploration information follows domestic MEMC reporting formats that do not consistently address economic viability, resource classification confidence, or independent competent person validation. ***This limits alignment with CRIRSCO-based reporting frameworks such as JORC and the Indian Mineral Industry Code (IMIC) developed by NACRI***. As a result, investors frequently must revalidate or replicate publicly funded exploration work before committing capital-adding cost and delay.

The approval of the National Critical Mineral Mission (NCMM) in January 2025, with an outlay of ₹34,300 crore through 2030–31, signals a more integrated and strategic approach. Public sector enterprises are expected to play a catalytic role in this effort. Coal India Limited is evaluating diversification into lithium and overseas mineral assets; NMDC Limited is expanding beyond iron ore; IREL (India) Limited is leveraging its rare earth capabilities; and KABIL continues to pursue strategic mineral assets abroad. However, fragmentation across ministries and agencies risks duplication and delays. The binding constraint, as the report notes, lies not in institutional capacity but in coordinated implementation.

The report's central proposition is clear: introduce conditional FCFS access for early-stage exploration of priority. Critical Energy Transition Minerals, with defined milestones, data disclosure, and rights-based progression. Early discovery and timely development deliver more enduring economic and strategic value than the short-term maximization of auction premia. In an increasingly competitive and supply-constrained global environment, speed, certainty, and investment de-risking across the exploration-to-production value chain may matter more than price optimization alone. ***Mandating alignment with globally accepted CRIRSCO-compliant reporting standards, strengthening the pre-competitive geological intelligence for regulatory decision-making, and creating a more enabling framework for private and junior explorers will therefore be essential.***

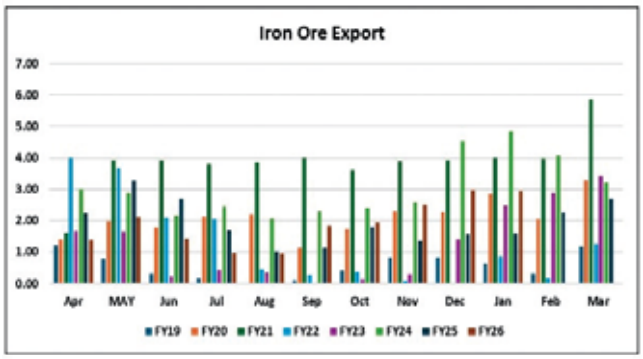
If past experience is a reliable guide-particularly in the case of the National Mineral Policy 2019, which stated in Para 5.1 that *"the resource inventory will be maintained in accordance with a globally accepted public reporting standard for ensuring reliability of reporting and acceptability to financial institutions and stock exchanges …"* - it remains to be seen how effectively these recommendations will be translated into action. Since this report is advisory rather than a formal policy instrument, the onus now falls on the concerned ministries to translate these recommendations into clear, time-bound, and coordinated strategies capable of delivering tangible results.

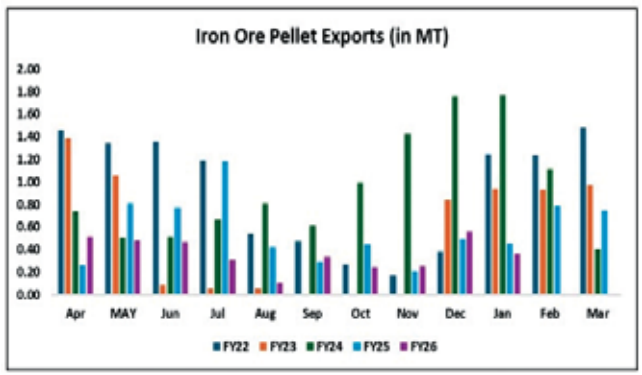
- Chief Editor

NEWS FROM THE MINERAL WORLD

➤ India's Iron Ore and Pellet Export down by 5.7% in January

India's iron ore and pellet exports registered a 5.7% MOM decline in January 2026, reflecting a mix of seasonal demand-side, and competitiveness factors in the global steel value chain. Total exports of iron ore eased marginally to 2.94MT in January from 2.96MT in December 2025, while pellet export saw an sharper contraction from 0.56MT to 0.36MT over the same period. The headline decline is therefore driven primarily by the fall in pellet shipments rather than in basic ore volumes.





Seasonal and Macroeconomic Demand Softness

- Major Asian buyers, especially China, typically enter a period of subdued construction and manufacturing activity around winter season and the run – up to the Lunar New Year.
- Mills often opt for de-stocking or minimal restocking during this phase, delaying fresh commitments for higher – value inputs like pellets.

Persistent macro uncertainties in Europe and parts of Asia, including uneven industrial recovery and pressure on steel spreads, have further dampened raw material procurement enthusiasm.

In January, Chinese port inventories of iron ore and pellets rose 5.5%, reaching 161.24 MT, up from 152.8 MT in December. This increase, united with a surplus of fines, lumps, and pellets, contributing the decline in the procurement of new orders.

The approach of the Lunar New Year further slowed spot buying, while many Chinese mills operated below full capacity, limiting raw material demand. Meanwhile, Malaysia's imports from India nearly doubled from 0.13 MT in December to 0.27 MT in January, highlighting potential for market diversification in Southeast Asia.

Export Mix Shift: Pellets Take the Bigger Hit

While overall iron ore exports remained broadly flat month-on-month, the 0.20 MT drop in pellet exports indicates weakening appetite for value-added ore products. Pellets, being higher grade and more price–sensitive, are directly linked to steel mill margins. In a softer pricing environment, buyers tend to revert to lower – cost fines and reduce reliance on costlier pellet cargoes, especially for spot purchases.

Outlook:

The iron ore export are likely to be subdued in February amid the holiday in China, but it will rebound after the holiday ends.

Metalogic Research & Advisory | Feb 20,2026

➤ Ilmenite shortage cripples titanium dioxide units in Thoothukudi; jobs hit

An official, however, pointed out that India imposed anti-dumping duties on Chinese TiO_2 pigment in May 2025.

TiO2 pigment, derived from ilmenite, is a crucial input for paper, inks, plastics, cosmetics, rubber, textiles and printing industries.(Photo | Express)

THOOTHUKUDI: Titanium dioxide (TiO2) pigment manufacturers are reeling under an acute shortage of ilmenite, the key raw material, leading to sharp production cuts and job losses in Thoothukudi.

Industry representatives have urged the Ministry of Mines (MoM) and the Tamil Nadu government to prioritise domestic supply, alleging that inadequate allocation by IREL (India) Limited has pushed units into distress.

TiO2 pigment, derived from ilmenite, is a crucial input for paper, inks, plastics, cosmetics, rubber, textiles and printing industries. It also has strategic applications in defence, aerospace, medical implants and electronics.

Of the five TiO_2 pigment manufacturers in the country, two are located in Thoothukudi. While one unit with a capacity of 15,000 tonnes per annum (TPA) has shut down operations, another plant with 18,000 TPA capacity has scaled down production due to insufficient ilmenite supply.

Following the Centre's move in 2019 to bar private players from beach sand mining, TiO_2 manufacturers have been dependent solely on IREL, the only licensed entity to mine and supply ilmenite in India.

However, members of the Beach Mineral Producers Association alleged that IREL has curtailed domestic supply while exporting ilmenite overseas, citing a lack of a value-chain industry within the country.

“As many as 189 shipments of ilmenite were exported to 34 foreign buyers in 2025,” association members claimed, citing data compiled by them.

An association member and Managing director of a city-based unit told TNIE that they receive only about 2,000 tonnes per month from IREL's Orissa Sands Complex (OSCOM), which has halved their annual production and forced them to downsize highly skilled technical staff.

He also flagged the logistical burden, stating that despite IREL operating a mineral separation plant at Manavalakurichi in Kanniyakumari, units in Thoothukudi are mandated to source ilmenite from Odisha, nearly 1,700km away by road.

Sources at another plant said they resorted to importing ilmenite from Australia and Brazil, escalating production costs. The unit eventually shut down in May 2025, resulting in the loss of employment for 250 graduates and 100 labourers.

The association further stated that nearly 80% of the domestic demand for Titanium dioxide in the manufacturing sector is being met through imports, with China alone supplying around 2.5 lakh tonnes of TiO_2 pigment annually to India.

An official, however, pointed out that India imposed anti-dumping duties on Chinese TiO_2 pigment in May 2025.

"Had the IREL units supplied to the operational capacities of the titanium pigment manufacturing companies, a sizable foreign exchange can be thus saved", said an industrialist.

Besides, the pricing and distribution should be rationalised by providing discounts for those procuring from OSCOM in Odisha considering its long distance. As coastal Tamil Nadu is rich in ilmenite, the union government must permit mining of ilmenite for the titanium dioxide companies to meet their production capacities, they appealed. In a memorandum submitted to the MoM, the association urged the Union government to allocate sufficient quantities of ilmenite to domestic manufacturers, rationalise pricing and align policy support with the ‘Make in India’ initiative.

Responding to the concerns, a senior IREL official, on condition of anonymity, said supply constraints stem from dwindling production at the Manavalakurichi unit, where the mining lease has expired, and a fresh lease for a new project is yet to be granted. Though the plant’s total production capacity stands at 1.14 lakh tonnes per annum, it currently produces only about 42,000 tonnes of heavy minerals, the official added.

The proposal of IREL for new mining lease sprawling 1144 hectare along Kanniyakumari coastal line is pending with the District Coastal Zone Management Authority (DCZMA). As Union Environment, Forest and Climate Change (MoEFCC) has exempted public hearing for the project recently, we foresee getting Environment Clearance (EC) for the mining of beach sand minerals, he said.

S Godson Wisely Dass,
New Indian express / Feb 12, 2026

➤ **Indonesia to give equal opportunities countries on critical mineral investment, minister says**

Indonesia will provide equal opportunities to the United States and other countries on investment related to critical minerals, its energy minister said on Friday, speaking after the conclusion of a trade agreement with the US concerning the energy sector.

Bahlil Lahadalia also said that Indonesia will negotiate further with copper miner Freeport on details about royalty and tax after an initial mining permit extension deal.

Reuters / February 20, 2026

LEVERAGING ARTIFICIAL INTELLIGENCE IN EXPLORATION AND MINING

Dr. Pradeep Kumar Jain

Abstract

India, endowed with vast and diverse mineral resources, plays a crucial role in global mineral production. However, the mining sector faces persistent challenges, including complex geology, deep-seated deposits, regulatory constraints, and environmental concerns. Emerging technologies—especially Artificial Intelligence (AI) and machine learning (ML)—offer transformative potential to address these challenges. This paper explores the integration of AI across the mining value chain in the Indian context, from mineral exploration and resource estimation to operations, safety, and environmental management. AI applications such as predictive modeling, 3D geological modeling, autonomous equipment, and real-time environmental monitoring are revolutionizing the sector. Case studies of organizations including the Geological Survey of India (GSI), Indian Bureau of Mines (IBM), Coal India Limited (CIL), and Hindustan Zinc illustrate the practical deployment and impact of AI in improving efficiency, accuracy, safety, and sustainability. The paper also reviews government initiatives like the National Mineral Policy 2019 and MCDR 2017 drone provisions that encourage AI adoption. Despite clear benefits, barriers such as data quality, high costs, and lack of a skilled workforce hinder widespread implementation. The study concludes that strategic investments, public-private collaboration, and AI capacity building are critical for India's transition to a technologically advanced and sustainable mining ecosystem.

Key words: Artificial Intelligence, Mining, Drone, National Mineral Policy, 3D modeling, Grade, Autonomous, Mineral exploration, Resource estimation, Sustainable mining

1. INTRODUCTION

India is a mineral-rich country with a diverse range of mineral deposits, including bauxite, chromite, iron ore, limestone, manganese, kyanite, magnesite, sillimanite, and precious metals. The country's vast mineral wealth plays a crucial role in its industrial and economic development. India ranks among the world's leading producers of various minerals, including coal, chromite, iron ore, limestone, bauxite, and manganese ore. However, the sector faces significant challenges such as critical, strategic, deep-seated minerals; complex geology; mining methods; beneficiation; processing; and stringent environmental and other regulations. A wide range of emerging technologies, such as blockchain, the internet of things (IoT), artificial intelligence (AI), machine learning (ML), robotics, and many others, have changed the way in which firm value chain activities or processes were executed traditionally. The mining industry has also witnessed the introduction of these emerging technologies in various processes from the exploration stage to the final processing of ores. (Bhattacharyya, S et al. 2021). Artificial Intelligence (AI) offers transformative potential by enabling data-driven decision-making and operational efficiency. In the mining industry, applications of AI have changed the sciences and technologies, as well as the performance of the mining industry, especially in mining and geological engineering. Smart mines were introduced and widely applied worldwide with advanced technologies based on the applications of AI.

2. APPLICATION OF AI IN GEOLOGY AND MINING

Big data and artificial intelligence (AI) have provided new methods and opportunities for many applications in geology and mining. Nevertheless, big data and AI-based geoscience applications are still in their infancy, and the methods and objectives are still scattered, lacking a unified theoretical and application framework.

Machine learning and artificial intelligence are the two fields of computer science dealing with the innovative idea of inducing smartness and intelligence in machines and automating complex tasks and operations through modern learning algorithms. While the rest of the operational fields have diligently developed new technologies, the mining industry has been lacking in applying these innovative methodologies to achieve operational autonomy with intelligence. However, this trend is beginning to change, with a few researchers adopting machine learning and artificial intelligence to improve the existing technologies. Geoscientists can now use AI to detect hidden mineral deposits with greater precision. (Dey, R., 2025). The applications of AI in the mining industry have changed the sciences and technologies, as well as the performance of the mining industry, especially in mining and geological engineering. Smart mines were introduced and widely applied worldwide with advanced technologies based on the applications of AI. In this context, a mining explorer company, Earth AI, discovered an untapped porphyry molybdenum deposit in New South Wales, Australia, using

Former Chief Mineral Economist, Indian Bureau of Mines, Email: pkjain3661@gmail.com

artificial intelligence. (Earth AI. 2024). Tata Steel is using AI and machine learning for real-time ore grade control, beneficiation plant optimization, and predictive maintenance across its mining operations at Joda, Noamundi and Katamati iron ore mining areas located in Odisha and Jharkhand, India

2.1 AI Applications in Mineral Exploration

Artificial Intelligence (AI) is transforming mineral exploration by enabling faster, more accurate identification of potential mineral deposits. By analyzing complex geological, geochemical, and geophysical datasets, AI improves resource targeting, reduces exploration costs, and enhances overall decision-making in mining operations.

2.1.1 Geological Data Analysis

AI is increasingly transforming geological data analysis by processing geophysical, geochemical, and remote sensing datasets to identify mineral-rich zones with greater accuracy. Globally, companies such as Goldspot *Discoveries* in Canada have applied machine learning to vast geophysical and geochemical datasets, successfully discovering new gold targets in the Abitibi Greenstone Belt (Grunsky et al., 2020; Goldspot Discoveries, 2021). Rio Tinto has leveraged AI-driven interpretation of hyperspectral remote sensing for mapping iron ore deposits in Western Australia (Rio Tinto, 2019), while KoBold Metals in the USA combines geochemical surveys, geophysics, and AI to pinpoint cobalt and lithium prospects in Africa (KoBold Metals, 2022). In India, the Geological Survey of India (GSI) is integrating AI and machine learning with airborne geophysical and geochemical data to delineate potential rare earth and lithium-bearing zones in Karnataka and Rajasthan (GSI, 2021). The National Remote Sensing Centre (NRSC), ISRO, is also using AI-based analysis of satellite imagery from Cartosat and Resourcesat to detect iron ore and bauxite zones in Odisha and Jharkhand (NRSC, 2020), while private sector players such as Tata Steel are applying AI to optimize exploration and resource planning in the Joda–Noamundi iron ore belt (Tata Steel, 2021). Together, these initiatives illustrate how AI can reduce exploration risks, cut costs, and accelerate mineral discovery.

2.1.2 Predictive Modeling

Machine learning models are increasingly applied in mineral exploration to predict the location of undiscovered deposits by analyzing historical exploration data, geological patterns, and multi-source datasets. Globally, BHP and Anglo American have deployed predictive modeling to integrate geochemical, structural, and geophysical datasets for identifying new copper and nickel targets in South America and Africa (BHP, 2020; Anglo American, 2021). Goldspot Discoveries in Canada has demonstrated the success of machine learning algorithms in predicting gold mineralization zones within the Abitibi Greenstone Belt by training models on decades of exploration data (Grunsky et al., 2020). In India, GSI has initiated projects to apply predictive modeling for locating rare earth elements and strategic minerals in states such as Rajasthan and Andhra Pradesh (GSI, 2021). The National Mineral Exploration Trust (NMET) has also funded research on AI-based prospective modeling, while organizations like MECL (Mineral Exploration Consultancy Limited) are experimenting with machine learning to refine exploration targeting in copper and bauxite belts (MECL, 2022). Such predictive modeling reduces exploration uncertainty, accelerates discovery, and optimizes the allocation of limited exploration resources.

2.2 AI Applications in Resource Estimation

AI technologies are being employed to create detailed 3D models of ore bodies, enhancing resource estimation accuracy and reducing drilling costs.

2.2.1 3D Modeling

AI-powered 3D modeling tools are revolutionizing mineral exploration and resource estimation by integrating drilling logs, geophysical surveys, and geological mapping into highly accurate three-dimensional representations of ore bodies. These models enable geologists to visualize complex subsurface structures, improve grade estimation, and reduce unnecessary drilling costs. Globally, mining majors such as Rio Tinto and Vale use AI-enhanced 3D modelling to optimize iron ore resource evaluation in Australia and Brazil, while Barrick Gold employs machine learning-driven geological modeling for more precise gold reserve estimation in Nevada (Rio Tinto, 2020; Vale, 2021; Barrick, 2019). In Canada, Seequent's Leapfrog Geo, powered with AI-assisted algorithms, is widely used to generate 3D geological models for base and precious metal deposits. In India, organizations like MECL and Tata Steel are adopting 3D modeling techniques to evaluate iron ore deposits in Odisha's Joda–Katamati–Noamundi belt, leading to better resource planning and cost savings (MECL, 2022; Tata Steel, 2021). The Indian Bureau of Mines (IBM) has also emphasized the use of 3D block models in mine plan approvals, integrating AI-based resource estimation for improved accuracy and transparency (IBM, 2021). Such AI-driven 3D modeling not only enhances ore body delineation but also reduces exploration risks and ensures sustainable extraction.

2.2.2 Grade Control

Machine learning techniques are increasingly being applied to optimize grade control in mining by classifying ore and waste material more accurately, thus ensuring efficient resource utilization and reducing dilution. These techniques integrate data from blast-hole sampling, drilling logs, geochemical assays, and sensor-based ore sorting to create predictive models that guide real-time decisions during mining operations. Globally, companies like BHP

and Rio Tinto use AI-based grade control systems in their iron ore mines in Australia, combining machine learning with automated haul trucks and ore sorting technologies to minimize misclassification (BHP, 2020; Rio Tinto, 2021). Barrick Gold has applied predictive analytics to optimize grade control in its Nevada gold operations, leading to improved recovery and lower processing costs (Barrick, 2019). In India, Tata Steel employs machine learning algorithms for grade prediction and ore–waste classification in the Joda–Noamundi iron ore mines, improving feed consistency for steel plants (Tata Steel, 2021). Similarly, NMDC has initiated projects to adopt AI-based ore grade monitoring and digital mine planning in Chhattisgarh's Bailadila iron ore complex (NMDC, 2022). Such AI-driven grade control systems not only enhance mine productivity and recovery but also contribute to sustainable mineral resource management.

2.3 AI Applications in Mining Operations

Digital transformation in mine planning and management leverages advanced technologies and data-driven strategies to optimize operations, enhance safety, and improve productivity (Chandrahas, N., 2025). A broad range of digital capabilities are being used to automate core mining value chain operations. IoT (Internet of Things) and machine learning are employed, for instance, to automate and enhance the dependability of mining equipment and trucks, sensors to gather data in real-time, drones for data collecting, inspection, and stock control, and wearables for field maintenance and operator safety. (IBM, 2025). Vedanta is applying AI-driven predictive maintenance, process optimization, and real-time monitoring to enhance efficiency and reduce downtime in its mining and metal processing operations. The adoption of automation, AI, and IoT is expected to enhance mining productivity, reduce operational costs, and support sustainable practices

2.3.1 Autonomous Equipment

AI-powered autonomous equipment is transforming both opencast and underground mining by enhancing operational efficiency, productivity, and worker safety. Autonomous trucks, haulage systems, drill rigs, and loaders are equipped with AI-based navigation, collision avoidance, and fleet management systems that allow continuous operations with minimal human intervention. Globally, Rio Tinto pioneered the deployment of autonomous haul trucks in its Pilbara iron ore operations in Western Australia under the "Mine of the Future" program, leading to a significant reduction in operating costs and accidents (Rio Tinto, 2021). BHP and Fortescue Metals Group have also implemented autonomous fleets across their Australian iron ore mines, while Sandvik and Caterpillar have developed AI-enabled autonomous drill rigs and underground loaders now deployed in gold and base metal mines worldwide (BHP, 2020; Caterpillar, 2022). In India, Tata Steel introduced the country's first AI-enabled "autonomous water sprinkler truck" and is experimenting with semi-autonomous dumpers and drone-based mine monitoring in its Noamundi iron ore mines (Tata Steel, 2021). Coal India Limited (CIL) has begun pilot projects for deploying autonomous dumpers and surface miners in its opencast coal mines to improve safety and reduce manpower risks (CIL, 2022). Such autonomous systems not only improve productivity by enabling round-the-clock mining but also significantly reduce worker exposure to hazardous environments, aligning with the global shift towards "zero-harm" mining practices.

2.3.2 Process Optimization

AI-driven real-time data analysis is increasingly being applied in mineral processing to optimize critical stages such as blasting, crushing, grinding, and downstream beneficiation. By analyzing sensor data, equipment performance metrics, and ore characteristics, machine learning models can recommend optimal blast designs, adjust crusher settings, and fine-tune grinding mill operations, thereby improving recovery rates, reducing energy consumption, and maximizing resource utilization. Globally, companies like Freeport-McMoRan and Newmont have deployed AI-based digital twins and process optimization platforms to enhance copper and gold recovery by dynamically adjusting mill performance (Freeport, 2020; Newmont, 2021). Similarly, Metso Outotec has developed AI-enabled smart sensors and control systems that optimize comminution and flotation circuits in real time (Metso Outotec, 2021). In India, Tata Steel has adopted advanced process control and AI algorithms in its beneficiation plants at Noamundi and Joda to optimize crushing and grinding efficiency, leading to better recovery of iron ore fines (Tata Steel, 2021). Hindustan Zinc Ltd. (HZL) has also implemented AI-driven process monitoring in its concentrators to improve metal recovery and reduce reagent use (HZL, 2022). These applications of AI not only enhance resource efficiency but also support sustainable mining by lowering energy intensity and minimizing waste generation.

2.4 AI Applications in Safety and Environmental Management

AI algorithms streamline ore fragmentation assessment, pre- and post-blast surveys, and site inspections in underground and open-pit mines using satellite imagery, drone surveys, aerial photographs, and 3D maps

2.4.1 Hazard Prediction

AI systems are increasingly being deployed in mining for hazard prediction, where real-time monitoring and predictive analytics are used to prevent accidents related to equipment failure, slope instability, and mine collapses. By analyzing large datasets from IoT sensors, vibration monitors, geotechnical instruments, and historical failure records, machine learning models can identify early warning signs of failures and recommend preventive actions. Globally,

Rio Tinto and BHP use AI-enabled predictive maintenance systems to monitor haul trucks, conveyors, and crushers, thereby reducing unexpected breakdowns and downtime (Rio Tinto, 2021; BHP, 2020). AI-based slope stability models have also been applied in Chilean copper mines, where companies like Codelco use real-time data from radar and geotechnical sensors to predict pit wall failures (Codelco, 2021). In South Africa, AI-assisted seismic monitoring systems are used in deep underground gold mines to anticipate rock bursts and collapse risks. In India, Coal India Limited (CIL) and Singrauli-based opencast coal mines have initiated pilot projects using AI-driven slope monitoring radar and drone-based photogrammetry to predict slope failures in overburden dumps (CIL, 2022). Similarly, Hindustan Zinc Ltd. (HZL) has implemented predictive maintenance systems for critical underground equipment to minimize failure risks (HZL, 2022). Such AI-enabled hazard prediction systems not only enhance worker safety but also support regulatory compliance and reduce economic losses due to accidents.

2.4.2Environmental Monitoring

AI-driven environmental monitoring systems are increasingly being integrated into mining operations to ensure sustainable practices and compliance with regulatory norms. These systems use a network of sensors, IoT devices, and satellite data to continuously track air quality, water quality, noise levels, and dust emissions in real time. Machine learning algorithms process this data to detect anomalies, predict environmental hazards, and trigger timely corrective actions. Globally, companies like Rio Tinto and BHP employ AI-enabled environmental monitoring to maintain optimal air and water quality, control dust emissions, and minimize noise impacts in their iron ore and copper mines (Rio Tinto, 2021; BHP, 2020). In India, Tata Steel has implemented AI-based IoT sensors and predictive analytics at its Joda and Noamundi mines to monitor particulate matter, effluent discharge, and water usage, enabling immediate mitigation of environmental risks (Tata Steel, 2021). Similarly, Hindustan Zinc Ltd. (HZL) uses AI systems for continuous water and air quality monitoring in its mining and smelting operations, helping optimize resource consumption while maintaining compliance with statutory environmental standards (HZL, 2022). Such AI-driven monitoring not only ensures environmental safety but also supports sustainable resource management and corporate social responsibility goals.

3. KEY AREAS OF AI APPLICATION

The Geological Survey of India (GSI), under the Ministry of Mines, plays a pivotal role in geological mapping, mineral exploration, mineral targeting, and resource estimation across India. Traditionally reliant on manual exploration methods, GSI is now leveraging Artificial Intelligence (AI) and Machine Learning (ML) to enhance efficiency, accuracy, and decision-making in geological, geochemical, and geophysical studies. GSI has initiated several AI/ML-based projects, including Mineral Prospectivity Mapping (MPM), which integrates multiple datasets using machine learning algorithms to identify potential mineral zones. In mineral exploration and prospecting, AI models analyze multi-source geological data—including satellite remote sensing imagery, geophysical surveys (magnetometry, resistivity), and geochemical datasets from soil and rock samples—to detect mineralization zones by recognizing complex patterns and anomalies. This approach enables faster identification of potential deposits, higher exploration success rates, and reduced costs. In geological mapping, AI processes large-scale geological maps and satellite imagery for lineament and fault detection, rock type classification, and structural analysis. Computer vision algorithms improve lithological boundary precision, allowing automated map updates with minimal manual intervention and enhancing accuracy for exploration strategies and mineral targeting. For earthquake and landslide prediction, ML models evaluate historical seismic data, topography, and climatic conditions to detect seismic wave anomalies and assess slope stability, rainfall, and soil moisture, facilitating real-time disaster risk assessment and early warning systems in vulnerable regions. In hydrogeology and water resource management, AI predicts groundwater availability and aquifer recharge by integrating geophysical, climatic, and topographical data, supporting sustainable water resource planning. Finally, in mineral resource estimation, deep learning models analyze drill core and geochemical data to predict the quality and quantity of mineral reserves, enabling accurate resource estimation, reducing exploration drilling costs, and assisting in mine planning and feasibility studies. Collectively, these AI applications illustrate the transformative impact of modern technologies on GSI's geo-scientific research, operational efficiency, and sustainable resource management.

The Indian Bureau of Mines (IBM), tasked with promoting systematic and sustainable development of India's mineral resources, has increasingly adopted Artificial Intelligence (AI) to enhance mine monitoring, regulation, and resource management. IBM uses drones under MCDR 2017 for surveying mines, where AI-powered image processing analyzes high-resolution data to track mine development, detect deviations from approved plans, and calculate overburden and mineral extraction volumes, enabling accurate reporting with minimal human intervention. The Mining Surveillance System (MSS) integrates satellite imagery, GIS mapping, and data analytics to detect illegal mining, monitor land-use changes, and ensure compliance. When integrated with platforms like Khanij Online and the Mining Tenement System (MTS), MSS provides comprehensive real-time data on lease boundaries, ownership, approvals, and operational status. MTS centralizes all mining lease-related information, including grant dates, lease extensions, and compliance records, enabling regulators to efficiently track mining

activities, prevent illegal operations, and support data-driven decision-making. The system also facilitates coordination between IBM, state mining departments, and enforcement agencies, ensuring transparency and accountability in the management of mineral resources. Furthermore, AI-based Natural Language Processing (NLP) tools cross-check mining plan submissions against field data, flagging discrepancies to reduce delays and increase transparency. Together, these AI applications demonstrate IBM's transformative approach to modernizing mining governance, improving compliance, minimizing environmental risks, and promoting sustainable resource utilization in India

Coal India Limited (CIL), one of the largest coal-producing companies globally and supplying over 80% of India's domestic coal, has adopted Artificial Intelligence (AI) and Machine Learning (ML) to enhance productivity, safety, and sustainability. In predictive maintenance, AI models analyze real-time sensor data from heavy machinery such as draglines, shovels, and dumpers, monitoring vibration patterns, lubrication levels, and temperature and pressure variations. This early detection of potential equipment failures reduces downtime by 20–30% and saves millions in maintenance costs annually. For coal quality management, AI-based spectral imaging and X-ray fluorescence (XRF) analysis predict coal grade and calorific value in real time, enabling optimized blending to meet end-user requirements, thereby improving consistency and pricing. In mine planning and optimization, AI simulates mining operations using geological, geophysical, and production data to support optimal pit design, ore extraction sequencing, and resource allocation, enhancing productivity and reducing overburden removal and transportation costs. For worker safety and hazard management, AI-driven computer vision systems monitor mining sites via CCTV and drone footage, detecting unsafe conditions, worker fatigue, and hazards such as gas leaks or fire, with real-time alerts reducing accidents by 15–20%. Finally, in environmental compliance, AI integrated with drone surveys monitors air and water quality and tracks land reclamation progress, ensuring adherence to regulations and promoting sustainable mining practices. Collectively, these AI initiatives demonstrate how CIL leverages advanced technologies to improve operational efficiency, safety, and environmental stewardship in India's coal mining sector.

Hindustan Zinc Limited (HZL), a subsidiary of Vedanta Resources and one of the world's largest integrated producers of zinc and lead, has embraced Artificial Intelligence (AI) to optimize mining operations, enhance safety, improve sustainability, and reduce operational costs. In predictive maintenance, AI algorithms analyze sensor data from critical mining equipment, including Load Haul Dumpers (LHDs), crushers, and ventilation systems, while machine learning models detect anomalies in temperature, vibration, and lubrication levels. This approach has reduced unplanned downtime by 20–25% and generated significant cost savings. For mine ventilation optimization, AI-driven IoT sensors monitor underground air quality, tracking gas emissions (methane, CO), temperature, and humidity, automatically adjusting ventilation fans to maintain optimal conditions, improving worker safety, and reducing energy consumption by 15%. In ore grade and mineral resource estimation, AI processes geological and geochemical data, including spectral imaging and core sample analysis, to predict ore grade distribution and estimate mineral reserves, minimizing drilling costs and maximizing resource recovery. Finally, for safety and risk management, computer vision integrated with CCTV systems monitors underground operations to detect worker fatigue, unsafe behaviors, and proximity to heavy equipment, generating real-time alerts that have led to a 30% reduction in workplace accidents and improved compliance with safety regulations. Collectively, these AI initiatives position HZL as a benchmark for "smart mining" in India, demonstrating how digital technologies can transform mining efficiency, safety, and sustainability.

4. GOVERNMENT POLICIES AND INITIATIVES

The Indian government has been actively promoting the adoption of Artificial Intelligence (AI) and modern technologies in the mining sector through strategic policies and regulatory frameworks. The National Strategy for Artificial Intelligence by NITI Aayog outlines a roadmap for AI adoption across multiple sectors, including mining, while the National Mineral Policy 2019 encourages the use of advanced technologies for mineral exploration, monitoring, and resource management. Under MCDR 2017, key provisions mandate an annual drone survey (Rule 34A) for lessees of major mineral mines (excluding coal, lignite, and atomic minerals). These surveys must capture high-resolution images covering excavation areas, mineral stacks, infrastructure, safety zones, and reclamation areas. The geo-referenced images are digitally submitted to the Indian Bureau of Mines (IBM) to assess mine development progress, environmental compliance, and reclamation efforts. Additionally, drone survey data must be integrated with geological reports and mining plans, enabling accurate mine boundary verification and precise volume estimation of excavated material. Non-compliance with these requirements may attract penalties, suspension of mining operations, or other legal actions. The use of drones offers multiple benefits, including accurate volume calculation, enhanced environmental monitoring, improved safety by identifying hazardous zones, greater transparency, and more reliable reporting. Furthermore, these initiatives align with the Make in India program, promoting domestic technological innovation and attracting foreign direct investment into the mining sector

5. CHALLENGES AND LIMITATIONS

Despite the substantial benefits of Artificial Intelligence (AI) in the mining sector, several challenges hinder its

widespread adoption. Data quality and availability remain critical, as inconsistent, incomplete, or heterogeneous historical geological data can limit the accuracy and reliability of AI models. The high initial investment required for AI implementation—including advanced sensors, software, and equipment—poses a barrier, particularly for smaller mining companies. Additionally, there is a shortage of a skilled workforce proficient in both mining operations and AI technologies, making training of field personnel in AI applications a significant challenge. Data integration is another hurdle, as legacy systems and diverse data formats complicate the consolidation of historical records with modern AI platforms. Furthermore, the deployment of AI solutions often demands high-performance computing (HPC) infrastructure, which adds to overall costs and complexity. Addressing these limitations is essential to fully realize AI's potential in enhancing efficiency, safety, and sustainability in mining operations.

6. FUTURE PROSPECTS OF AI IN INDIAN MINING

The future of Artificial Intelligence (AI) in India's mining sector holds significant promise, driven by collaborative research, strategic investments, and sustainable practices. Collaborative research involving government agencies, academia, and industry partners can accelerate the development and deployment of AI technologies, fostering innovation in mineral exploration, resource estimation, and operational efficiency. In addition, AI can facilitate sustainable mining by optimizing resource utilization, minimizing environmental impact, and supporting zero-waste practices. Such approaches are critical for meeting global energy transition goals and enhancing the long-term sustainability and competitiveness of India's mining industry.

7. CONCLUSION

The integration of Artificial Intelligence (AI) in exploration and mining offers transformative potential for India's mining sector, enhancing operational efficiency, reducing costs, and promoting environmental sustainability. To fully realize these benefits, challenges such as data availability, infrastructure requirements, and workforce skill development must be effectively addressed. Strategic policy support, including initiatives like Digital India and Make in India, alongside industry-academia collaborations, can accelerate the adoption of AI technologies and foster innovation in mineral exploration, resource management, and mine monitoring. By leveraging AI in a systematic and responsible manner, India can achieve sustainable mining practices while maintaining competitiveness in the global mining landscape.

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MINING IS POSITIVE

Ajay Kumar Jain*

Abstract

Mining is the backbone of our economic development and technological advancements. Mining is treated as a negative activity among society due to the haphazard puncturing of the earth's crust, which haphazardly increases many environmental and social impacts. Here the author tries to educate our act as mining treatments that initiate positivity among society for good things. Therefore, local society support for new mining projects is for smoothly running the existing mining projects. The cause of the negativity of mining is leaving abandoned pits without treatment after mining as a curse on local society. The post-mining treatment is essential to reclaim these abandoned mining pits for positive thinking overall in societies. The present paper lights up a few examples of the motto of positivity in mining and increases a source of earnings for mining companies and local communities as a new venture for recurring income.

***Key words**: ecotourism, geotourism, and mine tourism*

1. INTRODUCTION

Indeed, mining to extract the minerals from the earth's crust is the only way to match the pace of our requirements through the supply of raw material for secondary industries to fulfill our essential daily needs for luxury life. Mining provides essential raw materials for various secondary industries to fulfill our daily need for most everything, generates revenue and jobs, and stimulates economies. It means mining is of the utmost importance, and no one lives without mining. The past is a mirror for the future. The only cause of our past mining evils is the anger of societies. It is also one main reason for opposition as well as major environmental and social impacts, etc. The reason that we never advertise our good things and best practices about responsible mining and sustainable mining is that it has been a solution under discussion for the last two decades and is also in implementation in mining for mitigation of these impacts. The widely covers responsible mining concepts and their implementation in various corporate mining companies, from large to small mine sectors, through lots of promotional programs and awards to mining sectors for existing and new running mines.

The scar marks of ugly abandonment of mine are still in the minds of society in their left brain. Therefore, the author suggests that we think it should be replaced with the repair of old abandoned left-out pits, forecast as a simulation of the closure of the mine before starting the mining, which educates the local societies about the ultimate pit and impacts. There is attached few examples. The stage of final-shape sculptures, stage by stage from the beginning of the mining work, is also taken for periodic treatment; therefore, the live mines should obey to keep in the direction for finally bringing mining with positive through mining tourism (the term is imposed by the author) to geo-tourism (Ref 1) and ecotourism.

2. THE IMPORTANCE OF MINING

Many essential items for human survival and modern life come from mining products, like shelter—house construction with cement and steel; food crop and milk production increase due to farming machinery tools and processing plants; and clothing with fabrics, polyester, and various synthetic fibers due to minerals and processing of minerals. Luxury items like entertainment; transport; lots of infrastructure (rail, highways, airports, jetties, metro train stations), gardens, malls, business complexes, etc.

The common man starts his day with toothpaste and remembers a dialogue of " *kya aapke toothpaste me namak hai, kya koyla hai.*" Then he takes a bath for health and washes the clothes for hygiene with the use of soap and detergent. All soap and detergents are manufactured through the use of limestone and sodium chloride, etc., widely used in face cream and cosmetics, which contain kaolin clay, talc, etc. We use daily spray and telecom powder "*cool cool, stay cool, stay fresh," and then* we wear gold, silver, and diamond as ornaments after getting ready for breakfast, which means "*Hira sada ke liye."* Use crockery, tea & juice glasses from Borosil, Cello, La Opala, etc., or stainless steel from Vigshrise, SAIL, etc., at the dining table. These are all utensils made of clay, silica, iron, copper, etc., then moved to the office, shop, or market by cycle, bike, bus, car, local train, etc., all made of iron and steel and various metals, and even batteries made of lithium, etc. We draw sketches with pencils of graphite and write with pen tips made of steel,

* *Retired Head (Mineral Resources), Ambuja Cement. ajayku.jainmodi@gmail.com, Mob 8511144259, Nagpur*

tungsten, etc., and mobile phones and laptops use mining products like silver, gold, lithium, rare earth, etc. Ultimately, come back to shelter in the evening or night for rest, knowing that "ye *diwar nahi tutegi kyoki Ambuja Cement se bani hai*," then use the ceiling fan and air conditioner, "apparatus for hassle-free sleep," so everyone knows that cement cannot be manufactured without limestone and conventional power is a result of coal, gas, and petroleum, and renewable power also depends on mining, like the use of quartz and silver in solar panels and generator accessories of turbines in hydro and wind water, etc.

The above highlights the significant uses of products of mining in our daily lives. It's true that society benefits greatly from mining, and it's essential to acknowledge the importance of mining. Therefore, society should support that mining is positive and not negative. The obligation of mining should be highly appreciated by users, meaning our society.

3. SOCIETY – NEED TO CHANGE ITS PERCEPTION

Mining work is against nature; it's been talking since the beginning. Therefore, a general tendency has developed among society to view mining as a negative activity due to major environmental and social impacts. The demand for minerals and metals mining continues to rise; therefore, the volume of mining is increasing proportionately. Mining activities have severe environmental consequences, including deforestation and habitat destruction, water pollution, soil erosion, air pollution, noise pollution, etc., and the social impacts of mining are equally concerning, including displacement of communities, health risks, loss of livelihoods, and threats to cultural heritage. It is noted to be highlighted within a fraction of times in e-newspapers and through media. Therefore, society's perception is against mining without exploring in depth the good things of mining and obligation and never thinking about how support for mining leads to a continuity of our easy life in the world. There they forgot the good things and best practices of mining, which are in implementation for mitigation of bad impacts. Once negativity rests, then society starts to have different opinions about mining. But it's also not denying that it's most critical to operate, and even starting the mining is difficult due to strong opposition. Generally, the entire mining industry comes under the grip of opposition; therefore, new mining projects are affected. Everyone knows that Vedanta's Bauxite Mining Project in Rayagada District, Niyamigiri Hill Mining Project in Odisha, Tungsten Mining Project in Tamil Nadu, and Decha Pachami Coal Project in West Bengal, like several other projects, could not be commissioned due to strong opposition from society. After this dilemma, the Indian mining sector contributes significantly, with GDP ranging between 2.2% and 2.5%. If opposition solves and society supports, then the GDP of the nation as well as imports will be restricted. The money will flow within our country without draining overseas. In the present scenario, we are importing many minerals like high-grade bauxite, limestone, copper, phosphate, manganese, iron, etc., while we have good deposits. There is an urge for a surge of support of the mining industry to grow positively with support from society also.

We have significant deposits of REEs crucial for green technology that are being worked on in detail under NCMM initiatives. It will increase through the "Atmanirbhar *Bharat Initiative*" to increase mineral export and decrease import of minerals in the field of mining as well as green energy through mining. The expectation for support from the society for mining. It will increase our GDP and economic development.

4. MINING: NEED TO CHANGE PERCEPTION TOWARDS VALUE ADDITION

Sustainable and responsible mining (Ref. 2) planning and practices can significantly reduce the negative impacts of mining. Sustainable mining has been common nowadays with the use of renewable energy adoption, eco-friendly innovations, reclamation and restoration, sustainable mine closures, community development, computerized mine planning with state-of-the-art computer-based eco-friendly mining, etc. Responsible mining and sustainable mining have slightly different focuses, like ethical consideration and accountability in responsible mining, and a focus on doing the right things and respecting human rights involves transparent operations, community engagement, and adherence to standards and rules & regulations.

4.1 Pre-mining Measures

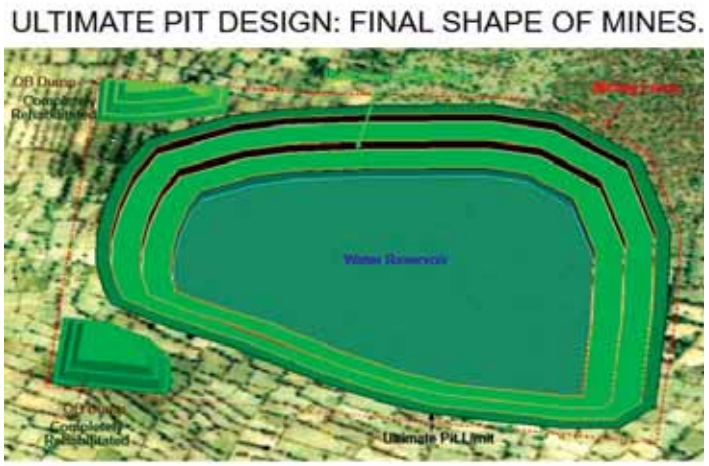

Fig. 1 (Ref. 2)

Before mining or during the pre-mining phase, several steps can be taken to implement sustainable and responsible mining practices like Environmental Impact Assessment (EIA), Stakeholder Engagement, and Mine Planning and

Design, which are better if state-of-the-art computerized-based long-term and short-term planning is used to blend low grade and minimize the waste with reference to the Geological Report, Biodiversity Conservation, Social Impact Assessment, and Development of a simulation for a closure plan before starting the mining on the basis of ore body configuration and presumed assumptions to consider all factors (Fig. 1: Ultimate pit and post-closure work). An example is given here: the Surjagarh Iron Mines of Lloyd Metal (Fig. 2 and Ref. 9) in Garchiroli District, Maharashtra.

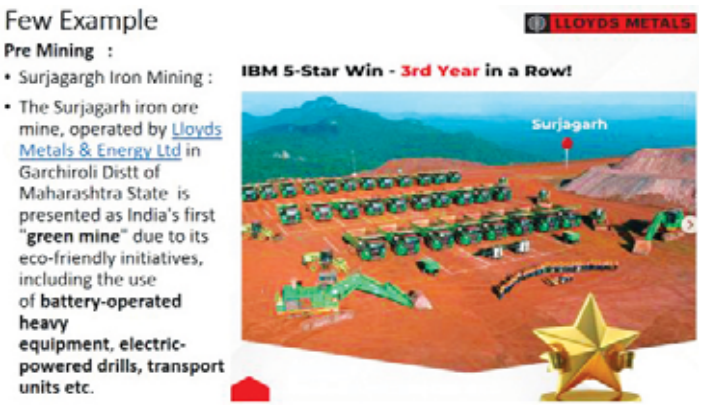

Fig. 2 (Ref. 9)

4.2 In-Mining Measures

During mining operations, sustainable and responsible mining practices can be implemented through various measures like mineral conservation and minimizing waste; therefore, mining should be carried out scientifically and systematically as per the Approved Mining Plan and Post-Mining Closure Plan (PMCP) implementation stage-wise every year. Apart from this repetition of the survey for notice of every adverse effect on the environment, including biodiversity, community, water, air, etc. Cost management and investing in local economics with proof to be kept for support of positive mining. The monitoring and reporting system is timely and effective for proving the best doing for mining. Technology and innovation for improving efficiency and research work should be continued for reducing the adverse impact of mining and tracking environmental, economic, and social performance.

Ongoing mining is a process of extraction of minerals through the use of technology and innovation, and lots of day-to-day and lots of eco-friendly practices are carried out in the mine. The mine is subjected to safety and security due to high risk; therefore, no outsiders are allowed in the mine. There is a different opinion of the author for the development of a viewpoint and visitor gallery; therefore, the community and visitor can observe safe, scientific, and systematic mines and propagate a message globally that mining is positive. The development of a museum in mines of machineries, survey instruments, gardens, playgrounds, etc. for visitors with specified instruction and timings (except blasting or any hazardous work; restricted areas can be fenced for general entry). This is called "mining tourism" (the term is introduced by the author). The expense towards mining tourism is already common in the scheme of mining, but it becomes an investment for mining because mining can earn through mining tourism. The reciprocate of such a scheme of mining tourism will convey the positive message about mining in society, and also the earnings of mines will increase. Presently most of the mines are doing nice work during the running of the mines. A few examples are attached here, like Ambuja Cement (fig. 3 and Ref. 2), Saoner u/g Coal Mines of WCL (fig. 4 and Ref. 8), etc. Apart from this, there are lots of mines of Hindalco, Ultratech Cement, Hindustan Zinc Limited, Hindustan Copper Limited, etc., also.

Fig. 3 (Ref. 2)

Fig. 4 (Ref. 8)

4.3 Post-Mining Measures

Post-mining in our country involves a range of activities aimed at restoring the land and mitigating the environmental and social impacts of mining. The MoC has initiated comprehensive mine closure strategies, identified 299 abandoned mines, and closed them for scientific closure (Ref 5). The closure of mine (as per the approved Final Mine Closure Plan FMCP) can induce a high level of social tension. Mine closure is a social license to operate for future endeavors (Rao & Pathak 2009). The object of mine closure is to minimize negative

externalities, including environmental, economic, and social impacts, while creating a suitable landform for future uses. (Ref. 4). By adopting responsible and sustainable mining practices step-by-step from the beginning to the closing of the mine, it is effective when exhausted total economic minerals and mines are fully covered in PRR (protective work, reclamation, and restoration as per FMCP); therefore, PMCP and rest measures for the endeavorer are easy, and we should go ultimate towards developing geo-tourism for post-mining use and earnings; therefore, the user of local society can appreciate the scientific and systematic mining. The proper closure with the development of landform for use of community or society will provide a recurring income to the landowner or local societies who care for the same.

Unorganized small opencast mines of minor minerals and major minerals and lots of abandoned pits for other purposes like road work, canals, infrastructure, etc., pose significant challenges in our country, particularly in terms of environmental degradation and safety risks where there is no PRR. There is an excellent example of PRR in the clay mines of England with the very famous Eden Project (Figs. 5 & 6 and Ref. 7), which is earning lots of money after restoration, and similarly other geo-tourism from Wieliczka Salt Mines, Krakow, Poland (Fig. 7 and Ref. 6).

Fig. 5 (Ref. 7)

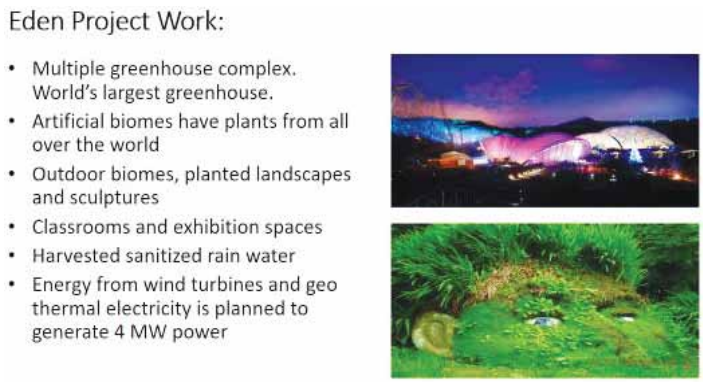

Fig. 6 (Ref. 7)

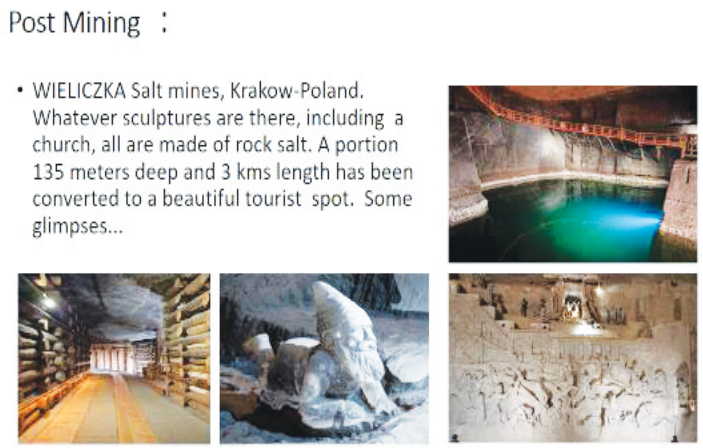

Fig. 7 (Ref. 6)

5. LEGAL SUPPORT

The mining sector has undergone significant reforms to improve mine closure practices. Some of the key reforms include mine closure planning, including PMCP for every five years of continuous implementation and FMCP submission two years for approval, then closure should be made accordingly. Approved FMCP, introduced District Mineral Foundation (DMF) for local area development, removed end-use restrictions and financial assurance, enforced Environment, Social, and Governance (ESG) norms, and made Mine Closure and Sec 3 of the Environment Protection Act say to take measures for environment protection. PRR implementation (Fig. 8) is mandatory, and it is mentioned in MCDR 2017 and M(OAHCEM)CR 2016 under the MMDR Act 2015 and MMR 1961 of the Mines Act 1952. And from time to time, guidelines and circulars of ministries are issued for implementation in favor of mine protective work, reclamation, rehabilitation, restoration, environment protection, etc.

6. CONCLUSION

Mining is a positive, not negative, activity, although environmental and social impacts are in the stage of mining, and their mitigation is possible through responsible and sustainable mining. GDP and economic development due to mining can be manifold if the lessee runs the mines as per sustainable mining systems, technologies, and legal support, but here a vital support is required from the surrounding society of the mine. The treatment for adverse effects of mining is a continuous process in mining, and lessee policy should be very transparent with stakeholder surroundings, like the development of mining tourism, ecotourism, and reuse of mined-out pits as the ultimate result with successful mine closure. The final result comes as geotourism. But not least in the activity of mining, however, it is most important to show our best practices and good things through propaganda, press releases, and publication and circulation among society; therefore, everyone says mining is positive, not negative.

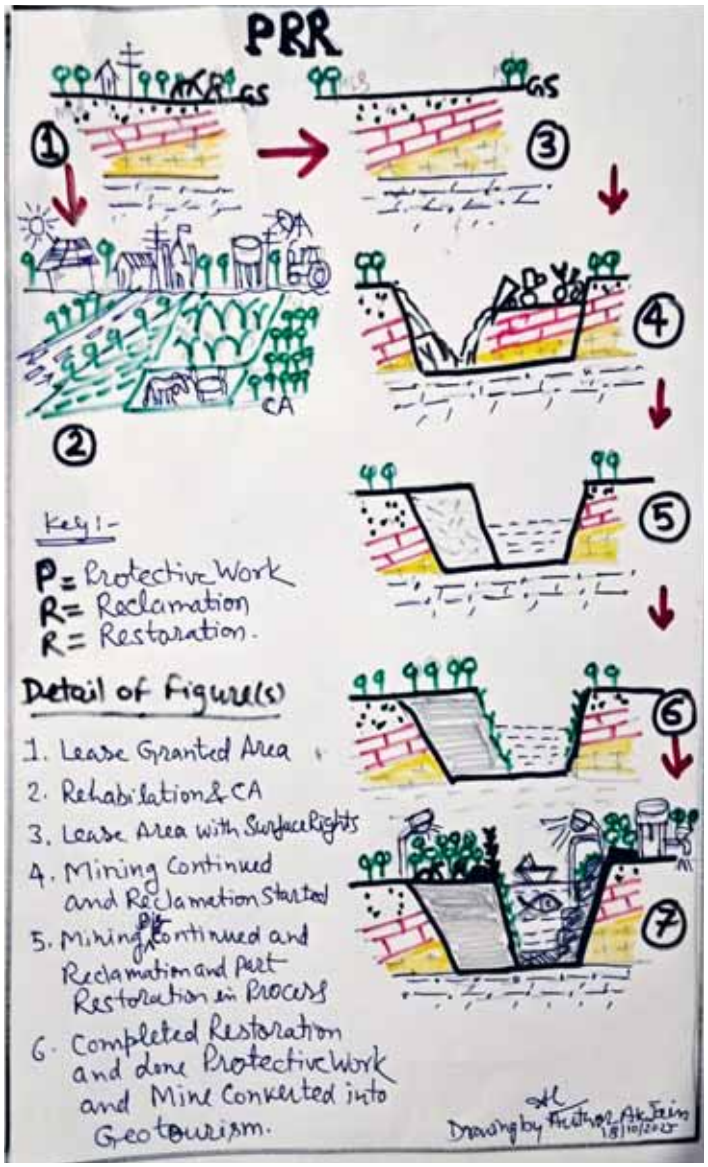

Fig. 8

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OBITUARY

Shri. B. G. Channappa (LM-4430 BNG)
(10-08-1932 to 17-01-2026)

Shri. B. G. Channappa was born in Basavanakote village in Jagalur taluk of Chitradurg district in Karnataka. After his primary school in his village and higher schooling in Jagalur, he moved to Bengaluru for his higher studies. He did his B.Sc. (Hon) in Geology & M.Sc. in Geology from Central College, Bengaluru University.

Immediately after his master's degree, he joined the Department of Mines & Geology—Government of Karnataka as an assistant geologist. He worked in the exploration wing of DMG for iron ore, limestone, and laterite exploration in the state. He travelled all over Karnataka for mineralogical investigation and published many geological reports of the department. He also worked in the mineral administration of Ballari district, and with hard work, he rose to Additional Director of DMG and retired in 1988. He was a fellow member of the Geological Society of India and a life member of MEAI. He was an active member of the Bangalore Chapter and served as an executive committee member of the Bangalore Chapter. He was attending all activities of the chapter and guiding youngsters. The Bangalore Chapter honored him in recognition of his service to the industry and MEAI during the 2021 Indian Mining Day celebration. He was a simple & friendly person known for discipline and strict administration work.

MEAI has lost a senior & valuable member. He is survived by two sons, two daughters, and grandchildren.

MEAI deeply condoles the passing away of its member and conveys deep condolences to his family members and prays for the Sadgati of the departed soul and to bless courage to his family members and friends to bear the irreparable loss.

SUMMARY OF RECORDS OF DISCUSSION

NACRI MEETING—MINISTRY OF MINES

3 February, 11am | Chaired by Shri Sanjay Lohiya, Additional Secretary, Mines

ATTENDED BY

Ministry of Mines

Shri Yogendra Singh Bhamboo, Director (Technical); Shri Abhishek Das, Sr. Geologist, O/o Director (Tech.)

NACRI

Shri Dhananjaya G Reddy, VP-I, MEAI; Dr. PV Rao, Co-Chair; Dr. A Srikant, Founder Member; Shri Shameek Chattopadhyay, Founder Member

PURPOSE

The meeting was convened to deliberate on the compatibility of geological reports prepared by Indian exploration agencies (GSI and MECL) with the Indian Mineral Industry Code (IMIC), a standardized framework developed by NACRI for public reporting of exploration results, mineral resources, and reserves.

KEY ISSUES DISCUSSED

Report Modification vs. Commentary. NACRI had provided observations and comments on five GSI/MECL reports rather than modifying their structure. The Additional Secretary clarified that the original request was to modify reports to align with the IMIC template. NACRI noted this would require full data access, raw datasets, and close collaboration with field geologists.

Cut-off Grade and Economic Viability. NACRI stressed that cut-off grades must be justified on economic grounds under international practice. The ministry clarified that, given India's auction-based system, geological reports are designed to provide comprehensive technical data (grades, tonnage, depth, geometry, and multiple cut-off scenarios) so that each bidder can form independent commercial judgements. Declaring economic viability is not within the Ministry's mandate; successful bidders may prepare IMIC-compliant reports based on their own techno-economic assumptions.

Ancillary Land Use and Infrastructure. Current reports focus primarily on mineralization and may under-represent land requirements for dumps, processing plants, and supporting infrastructure. NACRI agreed to list these gaps for the Ministry's consideration.

IMIC and Stock Exchange Listing. NACRI noted that mining companies seeking stock exchange listings increasingly adopt JORC and IMIC standards. The ministry requested specific examples of companies facing practical difficulties to better assess the policy implications.

AGREED ACTION POINTS

1. NACRI to prepare a technically revised version of the Dudhiasol East Block-G2 Geological Report (Mayurbhanj, Odisha), marking added/removed content and missing data per IMIC requirements, in collaboration with the concerned GSI officer. Deadline: 3 months. Coordination to be facilitated by the Director (Technical), Ministry of Mines.
2. Based on the revised report, the ministry is to examine which elements warrant incorporation into the MEMC framework and related rules.
3. After submission, the Ministry to convene a workshop with GSI, NACRI, and other stakeholders to discuss findings and deliberate on improvements.
4. NACRI to provide specific examples of companies facing practical difficulties with IMIC compliance (e.g., during listing or regulatory approvals) to inform the Ministry's policy response.

Overall Objective: To identify gaps in existing geological reporting practices and, where appropriate, refine MEMC rules and templates to ensure reports remain technically robust and auction-friendly, while progressively aligning with international best practices. This includes studying mining companies' challenges in adhering to parallel reporting systems for IBM and stock exchanges and recommending adoption of the IMIC reporting standard for listing exploration/mining companies on Indian stock exchanges to facilitate capital raising for mining projects.

MEAI NEWS

MEAI HEADQUARTERS

Highlights of the 2nd Council Meeting held at Jaipur on 14-02-2026

The Council Meeting commenced with the address by the Secretary General, who outlined the agenda and briefed the members on important developments since the previous meeting.

Members observed a solemn moment to pay homage to the departed members of the Mining Engineers' Association of India who passed away after the 1st Council Meeting, honoring their valuable contributions to the Association.

The president delivered the welcome address, extending greetings to all council members and emphasizing the importance of collective efforts towards strengthening the Association.

The minutes of the 1st Council Meeting held on 16.10.2025 at Hyderabad were presented by the Secretary General and duly confirmed. The Action Taken Report was also presented, highlighting the progress made on decisions taken during the previous meeting.

The Council deliberated on the Awards Review Committee Report, discussing recommendations and future improvements. Discussions were also held regarding chapters due for elections, ensuring timely compliance with constitutional provisions.

Further, members discussed the hosting of upcoming Council Meetings and considered proposals for effective coordination. Approval was granted for new life members and other membership applications, strengthening the Association's professional network.

The Council also reviewed measures for the revival and activation of dormant chapters, aiming to enhance regional participation and engagement.

The meeting concluded with a vote of thanks by the Joint Secretary-cum-Treasurer, expressing gratitude to the Chair and members for their active participation and valuable contributions.

View of Council Members present: Shri. A. K. Kothari, Shri. S. N. Mathur, Prof. Sushil Bhandari, Shri. Anil Mathur, Dr. S. K. Vashisth, Shri. K. Venkataramana, Shri. B. L. Kotriwala, Shri. Kedar Singh Yadav, Shri. Manish Verma, Shri. Sendil Kumar K., Shri. M. Muthukkumaran, Shri. Vijay Singh A. R., Shri. P. S. Upadhyaya, Shri. Deepak Gupta, Shri. Swagat Ray, Shri. Lalit Mohan Soni, Dr. Vivel Laul, Shri. Deepak Tanwar, Shri. Rakesh Purohit, Shri. Dhananjay Kumar, Dr. Venugopal T N, Dr. Pramod T. Hanamgond, Shri. Sagar M Waghmare, Shri. Sanjeevi. R, Shri. Jaya Bharath Reddy N, Shri. A Subhaskar Reddy, Shri. Asif Mohmmed Ansari, Shri. L. Krishna, Dr. Hitanshu Kaushal & Shri. Rakesh MM.

L to R—Shri. Rachappa M Saradagi, VP-III; Shri. Dhananjaya G. Reddy, VP-I; Shri. D. B. Sundara Ramam, President; Shri. M. Narsaiah, SG; Dr. Pukhraj Nenival, VP-II; & Shri. B. Sahoo, Jt. Sec. cum Treasurer

MEAI – Membership approved in the 2nd Council Meeting held on 14-2-2026

1. Fellow Members

S. No	F M No	Name	Chapter
1	174	Jagadish T Gudagur	Belgaum
2	175	Amit Ghooli	Belgaum
3	176	Suraj Subhash Mense	Belgaum
4	177	Muthukkumaran M	Tamilnadu
5	178	Prakash Kumar	Barajamda

2. Life Institutional members

S. No	L I M No	Name
1	89	H K & Associates
2	90	R. Praveen Chandra, ERM Group of Companies
3	91	Sree Kalyana Rama Company
4	92	RRR Granites
5	93	Pallava Granites Industries (India) Pvt Ltd
6	94	Sri Vasavi Granites
7	95	Sri Surya Granites
8	96	Apple Granites
9	97	Pearl Mineral & Mines Pvt Ltd
10	98	Giriraj Granites
11	99	Krishna Sai Granites
12	100	Sri Vishnu Granites
13	101	South Central Zone Metalliferous Mines Group Vocational Training Centre (SCZMMGVTC)

3. Life members

S. No	L M No	Name	Chapter
1	6616	Devaraj Shetty	Rayalaseema
2	6617	Sanjay Jichkar	Rayalaseema
3	6618	V Vasanth Kumar	Rayalaseema
4	6619	Nasari Prasanth	Rayalaseema
5	6620	Pochimireddy Vamsinath Reddy	Rayalaseema
6	6621	Janne Ramanjulunaidu	Rayalaseema
7	6622	Sirigireddy Vamseedhar Reddy	Rayalaseema
8	6623	P Rama Krishna	Rayalaseema
9	6624	Madhu Mohan Reddy Mooli	Rayalaseema
10	6625	Ramesh Narayan Yadav	Belgaum
11	6626	Satyendra Prakash Goyal	Rajasthan Chapter-Jodhpur
12	6627	Nagireddy Chandrashekar Reddy	Singareni
13	6628	Garlapaty Eashwaraiah	Hyderabad
14	6629	Malothu Naresh	Hyderabad
15	6630	Dr. Ganti Praful Kumar	Hyderabad
16	6631	Sasthran S	Tamil Nadu
17	6632	Vivek Nishant Nath	Bhubaneswar
18	6633	Devesh Kumar Khandelwal	Rajasthan Chapter-Jodhpur
19	6634	Ms. Santosh Dudi	Rajasthan Chapter-Jodhpur

20	6635	Reddy Sankara Rao	Barajamda
21	6636	Ms. Madhavi Sharma	Rajasthan Chapter-Jodhpur
22	6637	Dr. Sanjay Pathare	Belgaum
23	6638	Jayantbabu V Khanapurkar	Belgaum
24	6639	Venkatraman S Hegde	Belgaum
25	6640	Afroz Chishti	Rajasthan Chapter-Jaipur
26	6641	Swapnil Gupta	Hyderabad
27	6642	Asarapalli Sandeep Kumar	Hyderabad
28	6643	Asim Tewari	Mumbai
29	6644	Narendra Khatik	Rajasthan Chapter-Udaipur
30	6645	Veeresh kumar K J	Bellary- Hospet
31	6646	Vinodkumar Deshmukh	Bellary- Hospet
32	6647	Salil Sandip Kujur	Jabalpur
33	6648	Hakim	Rajasthan Chapter-Udaipur
34	6649	Amitabh Jagawat	Rajasthan Chapter-Udaipur
35	6650	Bhupesh Paliwal	Rajasthan Chapter-Udaipur
36	6651	Nihal Ram Sengwa	Rajasthan Chapter-Udaipur
37	6652	Rakesh Meghwal	Rajasthan Chapter-Udaipur
38	6653	Abhinav Sengupta	Rajasthan Chapter-Jaipur
39	6654	Bhavesh Singhavi	Rajasthan Chapter-Jaipur
40	6655	Waseem Ahmed Khan	Hyderabad
41	6656	Ram Chandra Shrimali	Rajasthan Chapter-Udaipur
42	6657	Ghanshyam Das Gupta	Rajasthan Chapter-Jaipur
43	6658	Sujit Kulkarni	Belgaum
44	6659	Trivikram Manuvachari	Belgaum
45	6660	Saleem Mulla	Belgaum
46	6661	Gorre Janardhan	Hyderabad
47	6662	Kodi Sampath	Hyderabad
48	6663	Damerakonda Srikanth	Hyderabad
49	6664	Allampati Sujitesh Reddy	Hyderabad
50	6665	Giriraj Prasad Jonliya	Rajasthan Chapter-Jaipur
51	6666	Gangireddy Krishna Reddy	Ongole – Vijayawada
52	6667	Pettugani Venkata Lokesh	Ongole – Vijayawada
53	6668	Yanamal Srinivasulu	Ongole – Vijayawada

4. Annual members

S. No	A M No	Name	Chapter
1	6033	Tejesh Nag Surya Nikhil Ayyagari	Ongole-Vijayawada
2	6034	Bikramjit Chanda	Kolkata
3	6035	Vemula Sai Kumar	Ongole-Vijayawada

5. Student members

S. No	Chapter	College / University	Applications Approved
1	Bangalore	Dr. T. Thimmaiah Institute of Technology, KGF	109
		Govt. School of Mines, Coromandel, KGF	30
2	Belgaum	GSS Degree College	3
3	Bellary - Hospet	Vijayanagar Sri Krishnadevaraya University Post-Graduate Centre Nandihalli	15
4	Hyderabad	Osmania University, Hyderabad	32
		Malla Reddy Engineering College	25
5	Rajasthan Chapter-Jodhpur	Maharaja Ganga Singh University, Bikaner	3
		Govt. Dungar College, Bikaner	1
		MBM University	2
6	Rajasthan Chapter-Udaipur	CTAE College - Udaipur	16
7	Singareni	JNTUH-University College of Engineering, Manthani	2

Total 238

BANGALORE CHAPTER

EXECUTIVE COMMITTEE MEETING (5/2025-27)

The Executive Committee meeting (05/2025-27) of the Bengaluru Chapter was held on Friday, 16th January 2026, at 16.00 hrs in the office of the Chapter at No. 106, Swiss Complex, #33, Racecourse Road, Bengaluru 560 001. The following members were present.

Dr. T. N. Venugopal, Mr. Dhananjaya G. Reddy, Mr. Sitaram Kemmannu, Mr. N. B. Rao, Mr.

N. Rajendran, Mr. T. K. Rath, Mr. Vijay Singh A. R., Mr. Shobachala Kakade & Mr. A. Samuel were present.

Other members requested a leave of absence.

Opening Remarks by Chairman

The Chairman, Dr. T.N. Venugopal, welcomed all members & initiated the EC meeting with his opening remark on the activities of the chapter and overall MEAI objectives.

Confirmation of the Minutes of the previous meeting (04/2025-27 held on 09/01/2026)

The minutes of the meeting held on 09th January 2026 were presented by Mr. Sitaram Kemmannu, and the same was approved.

Review of Minutes of Meeting of previous EC meeting 04/2025-27 held on 09/01/2026

The EC noted the successful completion of actions for the conductance of the IMIC workshop. The EC noted the completion of name board work & preparation for the opening of the student chapter, while the collection of funds paid back to the society is pending.

Review of Student Chapter formation work & approval of Student Chapter

The secretary updated that 109 students are enrolled from Dr. T. Thimmaiah Institute of Technology KGF as student members during 2025-26 & 4 students are enrolled during 2024-25 online from the same institute, totaling 113 student members from Dr. TTIT KGF. Mr. Shobachala Kakade, who has been nominated as mentor for this student chapter, updated that the students are willing to open the student chapter named as "Dr. TTIT MEAI Student Chapter" under its nearest Bengaluru Chapter & in this regard he has made several rounds of meetings with the enrolled students and faculty and proposed the names for the Student Chapter Committee as below as per the provisions of Sub Rule (b) of Rule-2 of Annexure-I (Rules & Regulations for Student Chapter) of the Memorandum of Association and Rules and Regulations of MEAI (as on 26/08/2022).

- Convenor—Mr. Tharun. T.
- Co-Convenor—Mr. Akash J.
- Student Members –
  - Usman Sheikh H.
  - Sanjay Kumar S.
- Faculty members –
  - Dr. Raja S.
  - Dr. Manjunath. A.

Mentor – Mr. Shobachala Kakade - EC member of MEAI Bengaluru Chapter.

The chairman approved the Student Chapter Committee as per the recommendation of the mentor, and the EC has adopted the same unanimously. The committee has advised to declare the student chapter committee of "Dr. TTIT MEAI Student Chapter-KGF" on the day of inauguration of the student chapter proposed on 30.01.2026.

The committee decided to conduct a small function during the student chapter inauguration and decided to invite the principal of the institute to inaugurate the student chapter at the institute's premise. Mr. Shobachala Kakade and Mr. Sitaram Kemmannu were entrusted to take all necessary preparation to conduct the inauguration of the student chapter on 30.01.2026.

Review and finalization of the brochure & related activities of National Seminar to be held on 13.03.2026

Shri. Dhananjaya G Reddy VP-I updated the members that the delegation of Israeli mining companies will be in Bengaluru during the proposed seminar time and their willingness to join the seminar as per the request of Ms. Veshala Gajaraj from the Consulate of Israel in India. The committee agreed to the same; accordingly, for the convenience of delegates, the date of the seminar is revised to 12.03.2026.

The secretary has presented the draft brochure, and the committee reviewed and finalized the brochure for circulation of the same. The following decisions are made in the EC meeting:

- Invite Secretary of Mines as Chief Guest
- Invite Director-DMG, MD-KSMCL & CMD-KIOCL as guests of honor.
- Formation of advisory committee, organizing committee, technical committee & organizing committee as in the finalized brochure enclosed as Annexure-1.
- Taking necessary permissions from the committee members for printing the brochure.
- Taking support of the Department of Mines and Geology for the seminar.
- Finalizing speakers and sending the request letter to them. Finalized speakers are Mr. Dattatreya Jeere-GSI, Mr. Anant Mahajan-Consulting Geologist, Dr. Dola Bhattacharjee-MoEF&CC RO, Dr. Hanuma Prasad MD-DGML, Mr. Sreenivasulu-Department of Forest, Environment & Ecology GoK, speakers from DMG, HZL (on critical minerals), and KSMCL, and 3 presentations from Israel's mining service providers.
- Request to be sent to sponsors & meet personally to pursue the same by EC members.
- The venue was fixed at the Auditorium, Institute of Engineers, Karnataka Centre, Bengaluru, and the secretary had advised booking the hall.
- Other facilities and arrangements to be made in coordination with EC members.

Any other matter with the permission of the Chair

- The EC also advised putting everybody's effort into increasing memberships from their known contacts and DMG.

The meeting has ended with the vote of thanks to the chair.

Inauguration of "Dr. T. Thimmaiah Institute of Technology MEAI Student Chapter KGF" (Dr. TTIT MEAI Student Chapter)

The Bangalore Chapter inaugurated its first student chapter, "Dr. T. Thimmaiah Institute of Technology MEAI Student Chapter KGF," on 30-1-2026 at Dr. T. Thimmaiah Institute of Technology KGF. 109 students from 3rd year and final year mining engineering, including two girl students, were enrolled to become student members of MEAI with the consent to be part of the MEAI Bengaluru Chapter. Shri. Shobachala Kakade & Mr. A. Samuel coordinated with college faculty. Dr. Raja S coordinated the enrollment of students to become student members of the MEAI.

The Bangalore Chapter EC, in its meeting dated 9.1.2026, nominated its EC member Shri. Shobachala Kakade as mentor for this student chapter and assigned him to recommend the members for the Student Chapter Committee interacting with students and faculty of the institution. Accordingly, Shri. Shobachala K, mentor of student chapter & Bengaluru Chapter EC member, after detailed interaction with students and faculty of Dr. TTIT KGF, recommended the following names for Student Chapter Committee of "Dr. TTIT MEAI Student Chapter" in the EC meeting held on 17.01.2026,

Sl. No.	Name	Designation
1	Mr. Tharun T	Convenor
2	Mr. Akash J	Co-Convenor
3	Dr. Raja S	Faculty member
4	Dr. Manjunath S	Faculty Member
5	Mr. Usman Sheikh	Student Member
6	Mr. Sanjay Kumar S	Student Member

The Chairman & EC committee of MEAI Bengaluru Chapter approved the recommendation of the mentor & decided to inaugurate the " Dr. T. Thimmaiah Institute of Technology's MEAI Student Chapter KGF" on 31.1.2026 at the institute premises.

Report of Inauguration of Student Chapter

The inauguration of "Dr. TTIT MEAI Student Chapter KGF" was a formal function conducted on 30.1.2026 between 10.30AM and 11.30AM. The function started with Prayer & Nadageete of Karnataka State and welcome and opening remarks by the Bangalore Chapter Chairman, Dr. T. N. Venugopal. He outlined the functions of the student chapter, its activity, and the advantages to the students of interacting with industry in pursuance of their career opportunities and acquiring skills required for the industry needs. The chapter is inaugurated by the Chief Guest, Dr. Syed Ariff, Principal of Dr. TTIT KGF, and he addressed the gathering with the advice to students to use the platform of the chapter for career growth and conducting student chapter activities and appealed to MEAI to support the institution. Shri. Dhananjay G Reddy—Vice President-I MEAI & COO of M/s ERM Group—presided over the function, and in his presidential address, he advised the students to conduct the technical programs and make use of the platform for the interaction between industry and institution for better career growth and to acquire proper skilling. Shri. Sitaram Kemmannu, Bangalore Chapter Secretary, paid a vote of thanks. Around 100 students attended the function along with faculty members Dr. Manas M, HOD Mining; Dr. S Raja; Dr. S Manjunath; and other faculty members from electrical and mechanical divisions. The function is also attended by EC members Smt. Sarita Dange & National Council Member Shri. N. B. Rao.

After the inaugural function, Shri Dhananjay G. Reddy & Dr. T. N. Venugopal installed the Student Chapter Committee. The Student Chapter Committee then conducted its first meeting, chaired by Mr. Tharun T, convenor, in the presence of its student members between 12.00 Noon and 12.30. The student chapter is composed of 113 students, including four students enrolled last year.

The Student Committee conducted its first program of interaction of students & faculty with industry representatives who were present at the function between 12.30 and 13.30. Students asked the questions related to career opportunities in mining and other related questions. The industry representatives answered their questions and guided the students with their rich experiences. Faculty members asked for the support of industry for fieldwork and industry-institute partnership in availing various studies in the mine, like slope stability and monitoring of mine slopes with the institute. The industry representatives were told the matter will be considered to pursue with mining companies to use facilities available with the institutes and were also advised to approach DGMS & IBM for necessary consideration of their reports for the statutory requirements.

A vote of thanks was delivered by Mr. Akash J, co-convenor. Student member Mr. Sam Daniel R. G. effectively anchored the entire function. All student members organized the function effectively under the leadership of faculty members Dr. S Raja & Dr. S Manjunath and Shri. Shobachala, mentor of the chapter.

The meeting ended with a vote of thanks followed by lunch.

Welcome & Opening remark by Dr. T. N. Venugopal

Presidential address by Shri. Dhananjay G Reddy VP-I MEAI

Lighting lamp by dignitaries

Vote of thanks by Shri. Sitaram Kemmannu, Secretary, MEAI BC

Inauguration of Student Chapter by Dr. Syed Ariff, Principal of Dr. TTIT KGF

Installation of Student Chapter Committee – Mr. Tharun T., Convenor

Faculty and student members in the function

Address by Shri. Shobachala K – Mentor student Chapter

Address by Chief Guest Dr. Syed Ariff Principal Dr.TTIT KGF

Mr. Sam Daniel Anchored the function

Student Chapter Committee (L to R): Dr. Raja S—Faculty Member; Mr. Sanjay Kumar S & Mr. Usman Shekh—Student Members; Mr. Akash J—Co-Convenor; Mr. Tharun T—Convenor; Shri. Shobachala K—Mentor; Dr. Manjunath S faculty member

Industry -Faculty-Students Interaction

Bangalore chapter members, faculty of Dr. TTIT KGF, and student chapter members

BELGAUM CHAPTER

On 2nd February, the chapter celebrated World Wetlands Day at the Geology Department, GSS College, organized by Mr. Suraj Mense (Jt Secretary) and his colleagues with MEAI Students Chapter members. I was the guest speaker and gave a talk about wetlands, their classification, biodiversity, importance, and traditional knowledge, as per the theme of the year, "Wetlands and traditional knowledge: Celebrating cultural heritage."

On 4th February, it organized an exhibition of geological stamps along with other important stamps, coins, and currency at Govindram Seksaria Science College, Belgaum. Collection of exhibits was done by Mr. Adesh Barde, an alumnus of the GSS College Geology department, along with his philately friends Shri Uday Lavate, Shri Abhishek Pauskar, and Shri Kuber Bogar. Management members, faculty, and students from colleges and schools visited the exhibition.

From 9th to 11th February, as a part of the MEAI Belgaum Chapter activity, it conducted a geological field visit for geology students of "Fatima Mata National College, Kollam Department of Geology and Digital Surveying," from Kerala, at Lokapur Limestone mines owned by our Council Member Shri HG Shreepada. En route, visited Calcareous Shale, Intertrappean beds, Tremolite (?) schist, etc. On the second day we visited Proterozoic sedimentary formations near Kanbargi, Godchinmalki, and Gokak Waterfall, and in the evening, they were taken to the Geology Department Museum at GSS College where Shri Yogesh Kutre (LMEAI). On the third day they were taken to Habbanatti to show laterite and bauxite deposits, guided by Mr. Rahul Lohar (LMEAI).

Limestone mine visit at Lokapur with Shri H G Shreepada, Council Member; Godchinmalki cascade; Kaladgi Sedimentary deposits; Geology Museum, GSS College; and laterite/bauxite deposit at Habbanatti.

On 13-15 Feb, three of our members, Shri Rachappa VP III, Dr. Hanamgond, and Shri Sagar Waghmare, participated in the Council Meeting, Foundation Day celebration, and International Conference at Jaipur organized by the Rajasthan Chapter-Jaipur.

BELLARY – HOSPET CHAPTER

Training for Electrical Supervisors and Wiremen Organized Under the Aegis of the Directorate General of Mines Safety

Place – MGVTC Sandur
Period – 2 - 7 Feb 2026
Inauguration of "Training to Electrical Supervisors and Wiremen" on 2.2.2026 at MGVTC Sandur

The inauguration of the training program was held on 2nd February, 2026. A total of 75 members attended the inaugural program, including the 48 participants representing the various mining companies from the states of Karnataka and Andhra Pradesh.

The senior officials from the Directorate General of Mines Safety (DGMS) and also from the various industries joined the inaugural session through virtual mode and conveyed their appreciation to the MEAI BH Chapter for this valuable initiative.

- Shri. Saifulla Ansari, DDG, Southern Zone, DGMS
- Shri G. Narasimha Rao, DMS (Electrical), Southern Zone, DGMS
- Shri Ajay Kumar Rathore, DDMS (Electrical), Southern Zone & other DGMS officials

The following dignitaries graced the occasion physically and expressed their views and suggestions and also appreciated the initiative of conducting the training session for electrical supervisors and wiremen, which had been pending for a long time.

1. Shri K. Madhusudhana, CEO, MSPL Limited
2. Shri Palleti Srinivas, CEO, BKG Mining Private Limited
3. Shri J. Srikanth, Treasurer, MEAI BH Chapter
4. Shri SHM Mallikarjun, Chairman, MEAI
5. Shri P. V. Rao, Secretary, MEAI
6. Shri Chandrashekhar Halli, DGM, MGVTC Sandur

The DGMS officials joined the inaugural session through a virtual platform.

Shri. Saifulla Ansari, DDG, appreciated the efforts of the chapter for conducting the training sessions for electrical supervisors and wiremen, which was really the need of the hour. In his presidential address, he emphasized the importance of work permits, safe operating procedures, and proper shutdown procedures, which play a crucial role in day-to-day operations. In his address, he advised that there should not be any shortcuts in terms of safety. He informed them that due to changes in technology and advancements in equipment and tools, these training sessions will not only provide them the awareness but also provide a platform to understand and implement them in the respective mines with adequate knowledge.

Shri G. Narasimha Rao, DMS (Electrical), South Zone, DGMS, appreciated the initiative and conveyed his best wishes to all participants for making effective and practical use of the knowledge gained during the sessions. He emphasized that such capacity-building programs play a vital role in strengthening safety, compliance, and operational efficiency in mining activities. He also thanked the managements of the participating companies for extending their continuous support and for deputing their officials to attend the program. Further, he placed on record his appreciation to the MEAI BH Chapter Council Members for their dedicated efforts.

The special recognition was given to the chairman and the secretary for taking the lead in organizing and initiating this valuable training for the benefit of the industry. He also mentioned that the MEAI & MSAK are acting as the two eyes of DGMS in achieving the objectives of DGMS, especially in imparting training sessions, conducting workshops, and creating awareness about the later amendments.

Delegates with training aspirants

DAY – 1 Training

Training Note – Basic Electrical Engineering, Power Transmission, Switchgear & Protective Devices.

The session on Basic Electrical Engineering provided participants with a refresher on fundamental principles such as voltage, current, power factor, load calculations, and safe operating limits of electrical systems commonly used in mines. Emphasis was laid on understanding single-line diagrams, earthing philosophy, and statutory compliance requirements.

In the Power Transmission module, supervisors reviewed the configuration and maintenance of overhead lines, underground cables, transformers, and substations to ensure reliable power supply to critical equipment like excavators, crushers, conveyors, and dewatering systems. Loss reduction, preventive inspection, and fault identification techniques were discussed in detail.

The segment on switchgear and protective devices focused on circuit breakers, relays, isolators, and earth leakage protection systems that safeguard both manpower and machinery. Practical guidance was given on relay coordination, testing procedures, and safe isolation practices during maintenance.

The above technical sessions were delivered and explained by:

1) Shri Venkatesh M, Head of Department, Sandur Polytechnic &

2) Shri Shivamurthy Kammar, Lecturer, Sandur Polytechnic.

Their expert inputs and practical illustrations were highly appreciated by the participants. Shri Chandrashekar Halli, Deputy General Manager, MGVTC Sandur, explained about the first aid principles and also about the preparedness during electrical emergencies.

Overall, the training strengthened the supervisors' ability to enhance system reliability, minimize downtime, and maintain high standards of electrical safety in mining operations.

The Session by Shri. Chandrashekar Halli, Deputy General Manager, MGVTC Sandur

The Session by Shri. Venkatesh M, HoD, Electrical Dept. of M/s. Sandur Polytechnic, Yeshwanthanagar

DAY – 2 Training

Training Note – Earthing System, Neutral System, Substation Design & Electrical Safety

A comprehensive training session was conducted on earthing systems, neutral grounding of power supply, design and layout of substations, and safety practices in substations, switchyards, and switchboards in line with DGMS guidelines. The program emphasized the statutory requirements and the critical role of effective earthing in preventing electric shock, equipment damage, and fire hazards in mining environments.

Participants were briefed on various methods of earthing, testing of earth resistance, maintenance of earth pits, and the importance of equipotential bonding for heavy mining machinery. The neutral system of power supply, including solid grounding, resistance grounding, and their application in mines, was explained with practical relevance to fault detection and system stability.

The faculty elaborated on best practices in substation design and layout, covering safe clearances, segregation of HT and LT systems, ventilation, illumination, and access control. Special attention was given to switchyard management, safe operation of breakers and isolators, lockout–tagout (LOTO) procedures, and permit-to-work systems.

The case examples were discussed to highlight frequent causes of electrical accidents and the preventive strategies expected from supervisors under DGMS compliance. The importance of routine inspection, testing of protective devices, and proper documentation was reinforced.

The Session by Shri. Rajesh, Lecturer, Electrical Dept. of M/s. TMAES Polytechnic, Hosapete

The Session by Shri. Nagaramu, Safety Officer, M/s. NMDC Ltd

The training was delivered by Shri Rajesh EH, Head of Department, TMAES Polytechnic; Shri Nagaramu, Safety Officer, M/s. NMDC Ltd.; and Shri M. Umapathi, Lecturer, TMAES Polytechnic. Their practical insights, field experience, and interactive approach were well received by the participants. The session enhanced awareness among electrical supervisors and strengthened their capability to maintain safe, reliable, and regulation-compliant electrical installations in mining operations.

DAY – 3 Training

Training Note – Electrical Machineries, Electrical Drives & Control, Switchgear, and Control Devices

A focused training session was conducted on electrical machinery, electrical drives and control systems, and the

application of switchgear and control devices in mining operations, in accordance with DGMS guidelines and statutory safety provisions. The module refreshed supervisors on the safe operation, inspection, and maintenance of motors, transformers, and associated control panels used in excavators, crushers, conveyors, pumps, and ventilation systems.

The program covered selection and protection of motors, starting methods, interlocks, and emergency stopping arrangements essential for preventing accidents and equipment damage. Participants were briefed on the importance of proper rating, enclosure, and flameproof or weatherproof features depending on site conditions.

In the drives and control segment, emphasis was given to variable frequency drives (VFDs), soft starters, braking systems, and automation interfaces that improve efficiency while maintaining safe operating parameters. Troubleshooting practices, thermal protection, overload management, and cable health monitoring were explained with field examples.

The switchgear and control devices portion highlighted relay coordination, breaker operation, arc-flash precautions, isolation procedures, and mandatory lockout–tagout practices before undertaking maintenance. The significance of routine testing, calibration, and record keeping to satisfy DGMS inspections was reinforced.

The training was provided by the following subject experts from both academia & industry backgrounds:

1) Shri Rajesh EH, Head of Department, Electrical TMAES Polytechnic;
2) Shri Venkatesh, Senior Manager, Electrical M/s. Baldota &
3) Shri M. Umapathi, Lecturer, TMAES Polytechnic.

Their blend of academic knowledge and industry experience provided practical clarity and was highly appreciated by the participants. The session ultimately strengthened the competence of electrical supervisors in ensuring reliability, minimizing downtime, and upholding the highest standards of safety and compliance in mines.

The Session by Shri. Rajesh EH, Head of Department, Electrical TMAES Polytechnic

The Session by Shri. Rajesh, Electrical Dept. of M/s. TMAES Polytechnic, Hosapete

DAY – 4 Training

Training Note – General Safety, Electrical Apparatus for Mine Installations, Emergency Management & Surge Protection

A detailed session was conducted on general electrical safety and the safe use of electrical apparatus and machinery in mine installations, aligned with DGMS regulations and statutory safety standards. The program highlighted the responsibility of electrical supervisors in ensuring that all equipment is installed, operated, and maintained within permissible limits to prevent hazards to personnel and property.

The faculty explained compliance requirements related to proper enclosures, insulation, guarding of live parts, display of danger notices, and maintaining safe approach distances in substations and operating areas. Emphasis was placed on regular inspection, preventive maintenance schedules, and documentation expected during DGMS examinations.

A key component of the training covered on-site emergency management planning for electrical contingencies such as fire, shock incidents, cable faults, and power failures. Participants were briefed on reporting protocols, communication flow, evacuation procedures, and coordination with rescue and medical teams. Mock drill concepts and the readiness of firefighting systems were also discussed.

The module further elaborated on protection against voltage surges and lightning, including the installation and upkeep of lightning arrestors, surge protection devices, and grounding networks to safeguard high-value equipment and maintain system stability.

The training was provided by:

1) Shri. Annadorai, Deputy General Manager, M/s. SMIORE,
2) Shri. Prashant N, Senior Manager (Plant Operation), M/s. JSW Steel Limited, and
3) Shri. Jagdish Galagali, Assistant General Manager, M/s. JSW Steel Limited.

Their extensive operational experience and practical case studies enriched the learning process and were highly valued by the attendees. The session significantly improved the preparedness of supervisors to manage risks, respond effectively to emergencies, and maintain DGMS-compliant electrical operations across mining establishments.

The Session by Shri. Annadorai, Deputy General Manager, SMIORE and his team members

The Session by Shri. Prashant, Senior Manager of M/s. JSW Steel limited

The Session by Shri. Jagadish Galgali, Assistant General Manager of M/s. JSW Steel limited

DAY – 5 Training

Practical Session & Site Visit – M/s JSW Steel Limited, Nandihalli Belt Conveyor System, and Control Room

As part of the training program, a practical session and industrial visit were arranged for all participants to M/s. JSW Steel Limited, Nandihalli, to provide field exposure to large-scale electrical installations used in material handling systems. The trainees observed the belt conveyor network operated through electrically driven systems designed for continuous and safe transportation of ore.

The visit included detailed interaction at the central control room, where the control room in charge explained the operational philosophy, monitoring systems, and interlocking arrangements adopted to ensure safe and reliable functioning. Supervisors were briefed on conveyor capacity, load management, emergency trip mechanisms, pull-cord switches, zero speed switches, and other critical safety devices.

At the substation, the participants studied the 6.6 kV single-line diagram, incoming and outgoing feeders, transformer protections, and relay schemes. The importance of proper isolation, earthing, and adherence to permit-to-work procedures as required under DGMS norms was emphasized. The practical demonstration helped bridge theory with real-time operations and enabled the trainees to understand statutory limits, inspection practices, and fault response systems. The participants appreciated the detailed explanations and the opportunity to witness best practices implemented in a major industry setup.

The Group Photo of the trainees during the visit to the control panel room of the Main Pipe Conveyor of M/s. JSW Steel Limited, Nandhihalli, Karnataka

The In-charge of the Control Room explaining the operation to the trainees during the visit to the main pipe conveyor of M/s, JSW Steel Limited, Nandhihalli, Karnataka

The Practical training at the main pipe conveyor of M.s, JSW Steel Limited, Nandhihalli, Karnataka

The Group Photo of the trainees during the visit to the main pipe conveyor of M/s JSW Steel Limited, Nandhihalli, Karnataka

DAY – 6 Training

Training Note – Legislation, Testing & Record Keeping, and Electrical Accident Case Studies

A comprehensive session was delivered on mining electrical legislation and statutory provisions, including amendments issued from time to time, with specific reference to DGMS requirements. The program reinforced the legal responsibilities of electrical supervisors in ensuring compliance, safe operation, and proper maintenance of installations

Participants were guided on mandatory testing procedures for equipment, cables, protective relays, and earthing systems. The importance of maintaining accurate logbooks, inspection registers, test reports, and calibration records was emphasized, as these documents form the backbone of statutory verification during DGMS inspections.

The speakers presented case studies of electrical accidents that have occurred in mines, analyzing root causes, human factors, and system failures. These discussions provided valuable lessons on preventive strategies, supervision standards, and adherence to safe operating procedures.

DGMS officials elaborated in detail on lockout–tagout (LOTO) practices, stressing the necessity of positive isolation, discharge of stored energy, and proper authorization before commencing any maintenance work. Recent DGMS circulars, safety alerts, and compliance expectations related to electrical operations were also explained for the benefit of the participants.

The session was handled by

1) Shri G. Narasimha Rao, Director of Mines Safety, DGMS,
2) Shri Ajay Rathore, Deputy Director of Mines Safety, DGMS &
3) Shri MD Suhail Ahmed, Technical Head, Universal Electrical & Electronics

Their regulatory perspective, combined with practical insights, provided clear direction to the supervisors on achieving zero harm and full statutory compliance. The training significantly enhanced awareness regarding legal accountability, documentation discipline, and proactive safety management in mining electrical systems.

The Interactive session of Director of Mines Safety (Electrical) Shri. G Narasimha Rao with trainees

The Interactive session of Deputy Director of Mines Safety (Electrical) Shri Ajay Kumar Rathore with trainees

VALEDICTORY FUNCTION ON 07.02.2026 at MGVTC SANDUR

The valedictory function of the *Training Program for Electrical Supervisors and Wiremen* was held on 07.02.2026 at MGVTC, Sandur. The occasion was graced by

1. Shri G. Narasimha Rao, Chief Guest and Director of Mines Safety (Electrical), DGMS
2. Shri Ajay Rathore, Guest of Honor and Deputy Director of Mines Safety (Elec), DGMS
3. Shri. K. Madhusudhana, CEO, M/s MSPL Limited
4. Shri K. Prabhakara Reddy, CEO, SUMS
5. Shri SHM Mallikarjun, Chairman, MEAI
6. Shri P. V. Rao, Secretary, MEAI

Mr. Rakesh MM, Executive Committee Member, extended a warm welcome to all the dignitaries and hosted the valedictory session. The certificates were provided to the candidates who have completed the training successfully.

Dignitaries on the dais

Dr. Prabhakar Reddy, National Council Member In his speech, he appreciated the efforts in organizing these kinds of training sessions, which are really required not only to comply with the regulatory requirements but also to understand the changes and new technologies and thereby provide safe and better working conditions. He also appreciated the young team doing good under the able leadership of the chairman and secretary of the chapter.

Shri G. Narasimha Rao interacted closely with the trainees and shared valuable guidance on the importance of maintaining the highest standards of electrical safety in mining operations. He emphasized strict adherence to statutory provisions, safe work procedures, and continuous skill development to prevent accidents and improve the reliability of installations. During the interaction, he invited feedback from the participants regarding the training content, field challenges, and expectations from regulatory authorities, and expressed satisfaction with the positive response.

He appreciated the mine management and the officials of the BH Chapter for taking the initiative to organize such a focused capacity-building program for electrical supervisors and wiremen. He encouraged the continued collaboration between industry, associations, and DGMS to achieve safer and more efficient mining operations. He also suggested conducting these kinds of training sessions at all the zones and also continuing them at regular intervals so that all are updated with the latest requirements to conduct day-to-day operations as well as to comply with the statutory requirements as mandated by DGMS and other concerned authorities.

Address by Shri G. Narasimha Rao, Chief Guest & Director of Mines Safety, DGMS

Shri Ajay Rathore interacted closely with the training aspirants and provided practical guidance on maintaining the highest standards of electrical safety in mining operations. He stressed strict compliance with statutory provisions, systematic implementation of safe operating procedures, and continuous skill and competency development of the workforce. He emphasized that proactive hazard identification, effective supervision, and proper documentation are essential to prevent electrical accidents and to ensure reliability of installations. During the session, he invited participants to share field challenges, training requirements, and expectations from regulatory authorities and appreciated the positive response and active involvement.

He also commended the initiative of the MEAI BH Chapter in issuing Training Completion Certificates to all participants. The certificates, presented by DDMS officials along with senior representatives of the mining industry, were appreciated as an important motivation for structured training, improved competency, and enhanced accountability toward electrical safety. He expressed satisfaction with the program and conveyed confidence that such efforts would help in strengthening the overall safety culture in mines.

Address by Shri Ajay Rathore, Guest of Honour and Deputy Director of Mines Safety, DGMS

Shri K. Madhusudhana, CEO, M/s MSPL Limited, in his address, conveyed sincere appreciation to the mine owners and management teams for their cooperation and support in successfully organizing the training program. He acknowledged that such collective efforts between industry, training institutions, and regulatory authorities are essential for building competence and strengthening safety systems across mining operations.

Address by Shri K. Madhusudhana, CEO, M/s MSPL Limited

Vote of Thanks by Shri SHM Mallikarjun, Chairman of the Chapter

He further extended his gratitude to the DGMS officials for their continued guidance to the MEAI BH Chapter and for their presence at the valedictory session. He mentioned that this kind of interaction between the officials and the trainees will help to bridge the practical field concerns with regulatory expectations. He appreciated the commitment shown by the participants and expressed confidence that the knowledge gained during the training sessions would be effectively implemented at their respective mines, contributing to safer and more reliable electrical practices. He also insisted the training aspirants teach the subordinates about what they learned during the training, which will help them to understand the importance of safety and other procedures defined by the regulatory authorities and the mine management. He also assured of imparting training to all the zones through MSAK.

The Vote of Thanks was delivered by Shri SHM Mallikarjun, Chairman of the Chapter. He expressed sincere gratitude to all those who contributed to the successful organization of the training program.

He conveyed respectful thanks to the DGMS officials for their valuable guidance, technical deliberations, and continued support towards improving electrical safety and statutory compliance in mines. He appreciated the mine management for deputing their personnel and promoting skill development and safe work practices. He placed on record special appreciation to the management and staff of the Mines Group Vocational Training Centre, Sandur, for providing the infrastructure, coordination, and hospitality that ensured the smooth conduct of the program.

He further acknowledged the efforts of the MEAI BH Chapter office bearers, faculty members, resource persons, and supporters who worked tirelessly behind the scenes. He also thanked all participants for their active involvement and keen interest throughout the training.

The Dignitaries with the trainees on the final day of the Training Session

Technical Talk on Kirloskar DG Sets: Engineering Excellence in Power Generation

Date: 14.2.2026
Location: Hotel Pearl – Priyadarshini, Toranagallu.
Report on Kirloskar Powergen

Kirloskar Powergen represents the power generation business of Kirloskar Oil Engines Limited (KOEL), a flagship company of the Kirloskar Group. The Kirloskar Group was founded in 1888 by Laxmanrao Kirloskar, laying the foundation for India's engineering and manufacturing excellence. KOEL was established in 1946 in Pune to manufacture diesel engines and later expanded into power generation equipment. Over the decades, the company emerged as one of India's leading manufacturers of diesel and gas generator sets (gensets), serving diverse industrial and commercial sectors. Under the brand **Kirloskar Green,** the Powergen division offers a wide range of gensets from small residential units to large industrial systems (2 kVA to 5000+ kVA). The company caters to sectors such as mining, infrastructure, healthcare, telecom, data centers, manufacturing, and commercial establishments requiring reliable backup and prime power solutions.

Kirloskar Powergen is known for fuel-efficient engines, emission-compliant products, and technologically advanced alternator integration. The company continuously aligns with CPCB emission norms and global environmental standards, reinforcing its sustainability commitment. With a strong pan-India sales and service network, trained technicians, and robust after-sales support, KOEL ensures high uptime and customer satisfaction. It also exports products to several international markets, strengthening its global footprint.

Today, Kirloskar Powergen stands as a trusted and established name in India's power backup industry, backed by over seven decades of engineering expertise, innovation, and commitment to quality.

Welcome Address by Shri T. Jitender Reddy AGM – Mines M/s Baldota

Shri T. Jitender Reddy extended a warm and cordial welcome to all dignitaries and participants assembled for the technical talk. He respectfully invited the esteemed dignitaries to the dais for the ceremonial lighting of the lamp, marking the formal inauguration of the program.

He welcomed **Dr. Prabhakar Reddy, CEO, M/s SUMS; Shri S.H.M. Mallikarjun, Chairman, MEAI BH Chapter; and Shri P.V. Rao, Secretary, MEAI BH Chapter** for their gracious presence and continued support of industry initiatives.

He also extended a special welcome to **Shri Suhas T., Manager, Kirloskar Power, and Shri Chandrashekhar D., Regional Manager, Kirloskar Power,** for sharing their technical expertise and insights. He expressed his appreciation to **Shri Suresh B., Proprietor, Arvind Power System,** for his association and support in organizing the program. Further, he warmly welcomed all mine representatives, electrical supervisors, engineers, members of the BH Chapter, and non-members who had gathered

from different mining organizations to participate in this technical session.

He stated that such technical talks strengthen knowledge sharing, improve operational efficiency, and enhance safety standards in the mining industry. He concluded by wishing the program great success and meaningful technical deliberations for all participants.

The inauguration of the technical talk with the ceremonial lighting of the lamp by Dr. K. Prabhakar Reddy, the chapter's chairman and secretary, along with the Kirloskar Powergen officials

Technical Talk on – Kirloskar DG Sets: *Engineering Excellence in Power Generation*

The technical talk on **"Kirloskar DG Sets—Engineering Excellence in Power Generation"** was delivered by Mr. Suhas T, Manager, Kirloskar PowerGen, and Shri Chandrashekhar D, Regional Sales Manager, Kirloskar PowerGen. The session provided detailed technical insights into the design, performance, and operational efficiency of Kirloskar diesel generator sets manufactured by Kirloskar Oil Engines Limited (KOEL). The speakers explained the advanced engineering features of DG sets, including fuel-efficient engine design, turbocharged and aftercooled systems, high-performance alternators with Class H insulation, and robust cooling systems suitable for high ambient conditions. They highlighted compliance with CPCB emission norms, low-noise acoustic enclosures, and digital control panels equipped with AMF functionality, real-time monitoring, and safety protection systems. Emphasis was also given to proper installation practices, preventive maintenance schedules, synchronization for parallel operation, and the importance of genuine spares to ensure reliability and longevity. The session was highly informative and beneficial, particularly for participants from mining, industrial, and infrastructure sectors who rely on dependable power solutions for continuous operations.

Engine Engineering & Design Features

The technical aspects related to **engine engineering and design features** were explained in detail by Mr. Suresh B, Proprietor, M/s Arvind Power System. He elaborated that Kirloskar DG sets are designed with high fuel efficiency engines incorporating optimized combustion systems to ensure maximum energy output with minimum fuel consumption. The advanced fuel injection technology ensures finer atomization of fuel, resulting in better combustion efficiency and reduced emissions. He further explained the advantages of turbocharged and aftercooled engines, which enhance air intake efficiency and improve power density. The low vibration design with precision-balanced crankshaft assemblies contributes to smooth operation and longer engine life. In addition, heavy-duty alternators with Class H insulation provide superior thermal endurance and reliable performance under continuous load conditions.

Emission Compliance & Environmental Standards

Under the topic of **Emission Compliance and Environmental Standards,** Mr. Suresh B emphasized that modern DG sets comply with CPCB II and CPCB IV+ norms, ensuring adherence to statutory environmental regulations. He highlighted the improved exhaust gas management systems that effectively reduce particulate matter (PM) and nitrogen oxide (NOx) emissions. Special attention was given to acoustic enclosures designed to maintain noise levels within prescribed limits, typically around 75 dB(A) at one meter distance, making them suitable for urban and industrial installations. He stressed that environmental compliance is now a critical factor in selecting DG sets for industrial and mining operations.

Control & Protection Systems

Explaining the **control and protection systems,** Mr. Suresh B detailed the advanced digital control panels integrated into modern DG sets. These panels are equipped with AMF (Auto Mains Failure) functionality, enabling automatic start and stop operations during power interruptions. Real-time monitoring of key parameters such as voltage, frequency, load, oil pressure, and coolant temperature ensures safe and efficient functioning. He also described the automatic shutdown mechanisms in case of abnormal conditions, protecting the engine from damage. Additionally, remote monitoring and IoT-enabled solutions in select models allow operators to supervise performance from distant locations. Synchronization panels for parallel DG operations were also discussed, which are essential for handling higher load demands in industrial applications.

Performance & Reliability Aspects

While discussing **performance and reliability aspects,** Mr. Suresh B explained that Kirloskar DG sets are engineered for high transient load acceptance, ensuring stability during sudden load variations. Voltage regulation is maintained within ±1%, and frequency stability is ensured for consistent power output. He highlighted the robust cooling systems designed to operate efficiently in high ambient temperatures up to 50°C, which is particularly important in mining and

construction sites. These features collectively enhance operational reliability and minimize downtime.

Application Areas Highlighted

In his concluding remarks, Mr. Suresh B elaborated on the wide **application areas** of DG sets, including the mining industry, construction projects, hospitals and healthcare facilities, data centers, commercial complexes, and large infrastructure projects. He emphasized that a dependable and uninterrupted power supply is critical in these sectors, and technologically advanced DG systems play a vital role in ensuring operational continuity and safety.

View of participants

Vote of Thanks

The Vote of Thanks was proposed by Shri P. V. Rao, Secretary, BH Chapter. He expressed his sincere gratitude to the team of Kirloskar Powergen for providing a valuable opportunity to enhance the technical knowledge and professional skills of the participants through the informative technical talk. He conveyed his appreciation to the speakers and management of Kirloskar Oil Engines Limited for sharing their expertise and practical insights. He also thanked all the managers, electrical engineers, and mechanical engineers from various mines and organizations whose active participation made the session meaningful and interactive.

He further extended his thanks to all the members of the MEAI BH Chapter for their coordination and support in organizing the program. Special appreciation was conveyed to Hotel Pearl Priyadarshini for their hospitality and arrangements. He mentioned that around 65 members attended the technical talk and emphasized that the session was highly beneficial in clarifying technical doubts and strengthening the understanding of power generation systems among the engineers.

HYDERABAD CHAPTER

Workshop on Mining Software Tools held on 31/01/2026

The Hyderabad Chapter successfully conducted a one-day workshop on "Mining Software Tools" in association with EDS Technologies Private Limited on 31st January 2026. The program was organized with the objective of providing an overview of the latest digital tools and software applications used in modern mining operations.

Shri. L Krishna, Secretary welcoming the participants

Mr. Lakkarsu Krishna, Secretary, expressed special thanks to Dr. P. V. Rao, Mr. B. Rammohan, and Mr. M. Bhaskar Rao for gracing the workshop with their presence and for sharing their valuable insights and motivating words, which greatly inspired the participants.

Shri. B. Rammohan, giving his insights on the workshop

View of participants in the workshop

The workshop focused on contemporary mining software solutions covering areas such as mine planning, design, scheduling, and data-driven decision-making. Experts from EDS Technologies, *Mr. Pramod Saragi, General Manager, Technical, and Mr. AVN Sastry, Senior Application Engineer*, delivered technical sessions and live demonstrations, highlighting practical applications of advanced software tools and their role in improving operational efficiency, accuracy, and safety in mining projects.

Mr. Pramod Saragi, GM Technical, EDS Technologies (P) Ltd., demonstrating on the Mining Software tools

Mr. Sastry delivering technical applications of Software tools in Mining operations

The event witnessed active participation of around 80 participants from MEAI members, industry professionals, academicians, and students from Mallareddy Engineering College, Osmania University, and JNTUH-UCE Manthani, who benefitted from the interactive sessions and discussions. Participants appreciated the hands-on approach and the insights shared on emerging digital trends in the mining sector.

Presentation of Certificates to Students of UCE, Osmania University, Hyderabad

Presentation of Certificates to Students of Malla Reddy Engineering College, Hyderabad

Presentation of Certificates to Students of JNTUH, University College of Engineering, Manthani

Presentation of Certificates to Mining Professionals

The MEAI Hyderabad Chapter expressed its appreciation to EDS Technologies Private Limited for their valuable support and technical expertise in making the workshop turn out to be a great success and a meaningful learning experience for everyone. The chapter reaffirmed its commitment to organizing such knowledge-sharing programs to enhance professional competency and promote the adoption of modern technologies in the mining industry.

Dignitaries presenting mementos to EDS Technologies Team

RAJASTHAN CHAPTER-JAIPUR

17th Foundation Day Celebration

The Rajasthan Chapter-Jaipur commemorated its 17th Foundation Day with great enthusiasm and professional pride by organizing an International Seminar titled “Vision 2047: Mining and Minerals Perspective” from 13–15 February 2026 at Hotel Clarks Amer, Jaipur. The Foundation Day celebration formed the ceremonial and commemorative core of the event, bringing together senior professionals, founding members, academicians, industry leaders, and young mining engineers under one roof to celebrate the chapter’s journey and achievements.

Inaugural Ceremony

The Foundation Day function, held at the Mining Welfare Centre, was graced by distinguished dignitaries from the fraternity. The chief guest for the occasion was Dr. Pukhraj Nenival, Controller of Mines, IBM & Vice President-II, MEAI, whose presence added prestige to the ceremony. Mr. S. N. Mathur, immediate past president of MEAI, and Mr. Arun Kothari, past president of MEAI, were the guests of honour.

Mr. Lalit Mohan Soni, Chapter Chairman, extended his heartfelt greetings to all dignitaries, members, sponsors, spouses present, and participants.

Chairman's Address: Journey of 17 Years

In his address, Mr. Lalit Mohan Soni reflected upon the inspiring journey of the Rajasthan Jaipur Chapter over the past seventeen years. He outlined the vision with which the chapter was established and the milestones achieved during its progressive evolution. He emphasized how the chapter has grown from a small professional initiative into a respected technical and networking platform for professionals across the state and beyond.

- Organization of national and international seminars
- Technical workshops and training programs
- Student outreach and academic collaborations
- Industry-academia interactions
- Policy discussions and stakeholder consultations
- Field visits and knowledge-sharing sessions

The chairman acknowledged the unwavering support of founding members, senior professionals, sponsors, and volunteers who contributed to strengthening the chapter's technical credibility and professional standing.

Reminiscences by Founding Members

One of the most cherished segments of the Foundation Day celebration was the sharing of memories by senior members who played a vital role in shaping the chapter during its formative years.

Mr. Arun Kothari, sponsor of the chapter; Mr. Anil Mathur, founder secretary; Mr. P. C. Bakliwal; Mr. Chand Chandna; and Mr. S. C. Sharma took the audience down memory lane, recalling the early discussions, challenges, and aspirations that led to the formation of the Jaipur Chapter. They spoke about the initial struggles, limited resources, and the collective determination that ultimately gave structure and direction to the association.

These recollections created a sense of continuity between generations of professionals and reinforced the importance of institutional legacy.

Felicitation of Senior Members (Above 80 Years)

A particularly emotional and memorable moment of the ceremony was the felicitation of octogenarian members by Mr. Anil Mathur and the Jaipur Chapter. This gesture symbolized respect, gratitude, and acknowledgment of decades of contribution to the geology and mining sectors.

The felicitation ceremony recognized the invaluable experience, mentorship, and leadership provided by these senior professionals throughout their careers. The audience responded warmly, reflecting deep appreciation for their service to the profession and the association. Following are the stalwarts.

1. Mr. Chand Chandna
2. Mr. S. C. Saraswat
3. Mr. P. C. Bakliwal
4. Prof. D. M. Surana
5. Prof. Sushil Bhandari
6. Mr. Y. C. Gupta

The commemorative mementos presented during this segment served not only as tokens of appreciation but also as reminders of the rich heritage of the fraternity in Rajasthan.

Chief Guest's Address

In his keynote address, Dr. Pukhraj Nenival congratulated the chapter on successfully completing 16 years of dedicated service to the mining and minerals sector. He emphasized the importance of sustainable mining practices, technological advancement, and responsible resource management in the context of India's long-term development goals.

He appreciated the role of professional bodies like MEAI in fostering dialogue, promoting technical excellence, and guiding young professionals toward ethical and sustainable mining practices. His remarks resonated strongly with the theme "Vision 2047," aligning the chapter's objectives with national development aspirations.

Vote of Thanks

The formal proceedings concluded with a vote of thanks delivered by Dr. Vivek Laul, Chapter Secretary. He expressed sincere gratitude to the chief guest, dignitaries, sponsors, organizing committee members, volunteers, and participants for their invaluable support in making the 17th Foundation Day celebration a grand success.

He particularly acknowledged the founding members and senior professionals whose guidance continues to inspire the younger generation of the fraternity.

Conclusion

The 17th Foundation Day celebration of the Jaipur Chapter was not merely a ceremonial event but a reflection of collective commitment, professional solidarity, and

institutional maturity. The occasion successfully blended remembrance of the past, recognition of contributions, and reaffirmation of the chapter's future vision.

The celebration strengthened the sense of belonging among members and reinforced the chapter's resolve to continue serving the mining and minerals sector with integrity, technical excellence, and a sustainable outlook.

International Seminar organised by Rajasthan- Jaipur Chapter

The International Seminar, "Vision-2047: Mining & Minerals Perspective," organized by the Jaipur Chapter of Mining Engineers' Association of India (MEAI) from 13 -15 February 2026, was inaugurated by Shri. Gopal Sharma, MLA at Hotel Clarks Amer. Experts from India and abroad gathered at the National Mining Seminar in Jaipur to discuss emerging trends shaping the future of the mining sector.

Shri. Lalit Mohan Soni, Chairman, Jaipur Chapter, Welcoming Shri Gopal Sharma, MLA

View of the Release of the Souvenir during the International Seminar Dignitaries From L to R: Shri. Lalit Soni – Chairman, Jaipur Chapter, Shri. Dhananjaya Reddy - Vice President I, Shri. D. B. Sundara Ramam – President, Dr. Pukhraj Nenival – Vice President II, Shri Rachappa M Saradagi- Vice President – III, Dr. Vivek Laul – Secretary, Jaipur Chapter

In the valedictory session of the three-day International Seminar organised by MEAI- Rajasthan Jaipur chapter, held at Hotel Clarks Amer in Jaipur, where Governor of Rajasthan, Shri. Haribhau Kisanrao Bagde attended as the Chief Guest.

Shri. Haribhau Kisanrao Bagde, Governor of Rajasthan, addressing the event.

The Governor highlighted the mining sector's vital role in achieving 'Vision-2047' and building a developed India, urging adoption of innovation, environmental protection, and responsible practices while prioritizing balanced development and ecological conservation alongside resource extraction

View of Dignitaries at the valedictory ceremony

Note: The detailed report of International Seminar will be published in the next issue

RAJASTHAN CHAPTER-JODHPUR

Training Workshop on Limestone Mine Category Transition Organized at J.K. White Cement Works, Gotan

Gotan, February 2, 2026 – A significant one-day training workshop focusing on the transition of limestone mining leases from the minor mineral to major mineral category was successfully held at J.K. White Cement Works, Gotan. The event was jointly organized by the Mining Engineers Association of India (MEAI), Rajasthan Chapter, Jodhpur, and J.K. White Cement Works, Gotan.

Objective of the Workshop

The workshop was conducted under Rule 45 of the Mineral Conservation and Development Rules (MCDR) 2017. Its central theme was "Training on Registration and Return Modules of Limestone Mining Leases—Facilitating Smooth Transition from Minor to Major Mineral." The program aimed to equip mining leaseholders, consultants, and industry professionals with the necessary knowledge to comply with the latest government directives.

Background and Policy Context

The training was organized in reference to the Ministry of Mines notification dated October 10, 2025, and the subsequent order issued on October 13, 2025. According to these directives, limestone—except when used for block or slab purposes—will now be classified as a major mineral. This reclassification requires all existing mining leases to operate under the Mines and Minerals (Development and Regulation) Act, 1957, the Mineral Concession Rules (MCR) 2016, and the Mineral Conservation and Development Rules (MCDR) 2017.

This change marks a crucial step in strengthening regulatory oversight, ensuring sustainable mining practices, and aligning limestone mining operations with national mineral development policies.

Participation and Representation

The workshop witnessed active participation from limestone leaseholders across Jodhpur, Nagaur, Pali, and other districts. Alongside them, MEAI members, mining consultants, officials from Rajasthan State Mines and Minerals Limited (RSMM Ltd.), representatives of J.K. White Cement Works, and officers from the Department of Mines & Geology, Rajasthan, were present.

Their collective presence highlighted the importance of collaboration between government bodies, industry stakeholders, and professional associations in implementing policy changes smoothly.

Key Sessions and Speakers

Mr. Chandresh Bohra, Regional Controller of Mines, IBM, served as the keynote speaker. He provided a comprehensive overview of the procedures required under the new government order and explained the implications for mining leaseholders.

Mr. Mithlesh Purohit and Mr. Sunil, officials from IBM, conducted an interactive Q&A session, addressing participants' queries and clarifying technical aspects of registration and return modules.

These sessions ensured that participants not only understood the regulatory framework but also gained practical insights into compliance requirements.

Acknowledgements and Vote of Thanks

The vote of thanks was delivered by Mr. Rakesh Purohit, Secretary of the Chapter. He expressed heartfelt gratitude to Dr. Sachin Gupta, Unit Head, J.K. White Cement Works; Mr. Tushar, Commercial Head; and Mr. Deepak Kalla, Mining Head, for their outstanding organizational support in hosting the workshop. He also acknowledged the contributions of the Jodhpur Chapter office bearers and the staff of the Mines & Geology offices at Gotan and Nagaur.

Prominent attendees included Mr. A.K. Jaiswal, Mr. Manish Verma, Mr. V.S. Mathur, Mr. P.R. Dave, and Treasurer Mr. M.C. Tated, whose presence added weight to the event.

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RCOM, IBM, Ajmer

Deepak Kalla, Mining Head J.K. White cement works Gotan

View the participants

Conclusion

The workshop at J.K. White Cement Works, Gotan, proved to be a vital platform for knowledge-sharing and capacity-building. By addressing the challenges of transitioning limestone mining leases into the major mineral category, the event reinforced the commitment of both government and industry stakeholders toward sustainable mineral development in Rajasthan.

RAJASTHAN CHAPTER-UDAIPUR

Minutes of the Fifth (5th) Executive Committee Meeting held on 21st December, 2025, at 11:00 AM at the MEAI-Office, Udaipur, for 2024-26.

The Fifth Executive Committee Meeting of the Rajasthan Chapter, Udaipur, was held under the chairmanship of Sh DP Gaur. The following members were present.

1.	Sh DP Gaur	--	In Chair
2.	Sh Asif M Ansari	--	Secretary
3.	Dr Hitanshu Kaushal	--	Joint Secretary
4.	Sh RC Purohit	--	Treasurer
5.	Sh RP Mali	--	Council Member
6.	Sh SM Ahmed	--	Executive Member
7.	Sh DD Shripat	--	Executive Member
8.	Sh Uttam Pal Pahadia	--	Executive Member
9.	Dr Anupam Bhatnagar	--	Permanent Invitee
10.	Dr SS Rathore	--	Permanent Invitee
11.	Sh Mangi Lal Paliwal	--	Member
12.	Sh SL Sukhwal	--	Member
13.	Sh Lalit Bachara	--	Member

At the outset, Sh DP Gaur welcomed all the members present in the meeting. Thereafter, agenda items were discussed, and the following decisions were taken.

1. Confirmation of Minutes of Previous Meeting (19.08.2025)

The minutes of the Executive Committee Meeting held on 19.08.2025 were presented before the Committee. As no comments or observations were received from the members, the minutes were confirmed unanimously.

2. Action Taken Report (ATR)

The Secretary, Shri Asif M. Ansari, presented the ATR on decisions of the 4th Executive Committee Meeting. He informed us that all decisions taken in the previous meeting have been implemented.

The report was noted and confirmed by the Committee.

3. Discussion on Upcoming Technical Events & Activities

3.1 Membership Strength Update

The Secretary, Shri Asif M. Ansari, briefed the Committee on the growth in membership:

- Council Meeting dated 26.04.2025 – 14 Life Members added
- Council Meeting dated 18.07.2025 – 8 Life Members added
- Council Meeting dated 16.10.2025—1 Fellow Member & 1 Life Member added

The committee emphasized the need to boost membership further, especially past student members from Student Chapters.

3.2 Technical Talk – 26th December 2025, 4 pm

Venue	UCCI, Udaipur
Topic	Weigh Bridge Automation and Vehicle Tracking System
Speaker	Shri Asif M. Ansari, Mining Engineer

3.3 EC Meeting & Technical Talk – 3rd January 2026

Session	Date & Time	Venue	Topic / Details
Executive Committee Meeting	03.01.2026, 10:00 AM	UCCI, Udaipur	EC Meeting
Technical Talk (Jointly with ISSPA & UCCI)	03.01.2026, 11:00 AM	UCCI, Udaipur	The New Regulatory Regime for Sustainable Mining and Conservation of the Aravalli Hills

3.4 Technical Talk – 24th January 2026

Date & Time	24.01.2026, 6:00 PM
Venue	MEAI Office, Indraprastha Complex, Udaipur
Topic	Mine Closure Planning
Speaker	Shri Arif Mohummad Shaikh, Mining Engineer (Vigilance)

3.5 Training Programme – 31st January 2026

Date	31.01.2026
Venue	CTAE, Udaipur
Keynote Address	Shri Akhilesh Joshi at 10:00 AM
Type	Full-day experience-sharing training

3.6 EC Meeting & Technical Talk – 08th February 2026

Event	Date & Time	Venue	Topic / Speaker
EC Meeting	08.02.2026, 10:00 AM	Khanij Bhawan, Sector-11, Udaipur	EC Meeting
Technical Talk	08.02.2026, 11:00 AM	Same Venue	*Minerals and Their Use in Daily Life* Speakers: Shri S. K. Vashishth / Shri Ritesh Purohit

Programme followed by lunch with families.

3.7 Two-Day Workshop—27–28 February 2026

Topic	Practical Training on QGIS for Mining Engineers & Surveyors
Dates & Time	27–28.02.2026, 10:00 AM–5:00 PM
Venue	CTAE, Udaipur
Key Speakers	Shri R. P. Mali & Shri Mangilal Paliwal

3.8 One-Day Workshop – 07 March 2026

Topic	Drone Survey and Volumetric Assessment
Date & Time	07.03.2026, 10:00 AM–5:00 PM
Venue	MEAI Office, Udaipur
Key Speaker	Dr Hitanshu Kaushal

3.9 International Conference – 17–18 March 2026.

A two-day international conference will be held at Sir Padampat Singhania University (SPSU), Udaipur, in association with SPSU and the Student Chapter.

Approval from MEAI Headquarters shall be obtained prior to finalization.

4. Discussion on Land for MEAI Office

The committee reviewed the progress on the land purchase for the MEAI office, as per the AGM decision dated 14.09.2025.

Committee Appointed:

- Shri R. P. Gupta, Ex-National President—Chairman
- Shri Hitanshu Kaushal, Joint Secretary – Member Secretary
- Shri R. C. Purohit, Treasurer– Member

The EC requested the committee expedite the process and submit a detailed progress report in the next meeting.

5. Agenda Suggestions

The Secretary may invite agenda suggestions from Life Members for future EC Meetings, if deemed appropriate.

6. Discussion regarding the representation received from Ex-Chairman Shri M. S. Paliwal

6.1 Role of Patrons

- Patrons serve in an advisory capacity.
- All decisions are taken by consensus or, when required, through voting by Executive Committee members holding voting rights, as per the rules.

6.2 Participation in Meetings

- Along with elected members, patrons, permanent/ special invitees, and committee members have traditionally participated in meetings.
- This inclusive practice will continue as per existing norms.

6.3 Use of Official Documents

- Current communication formats and letterheads are in use and recognized.
- Any changes, if required in the future, may be adopted appropriately following due process.

6.4 Dual Office Holding

- Holding positions simultaneously in the Executive Committee and National Council does not create conflict or undue advantage.
- The next election process will begin soon as per the scheduled term.

6.5 Immediate Past Chairman

- The role of the Immediate Past Chairman is acknowledged and respected.
- Due and dignified recognition will be ensured in all official communications and proceedings.

6.6 WhatsApp Group

- The WhatsApp group has been created and operated by a member, with admin rights subject to platform limitations.
- No misuse has been observed, and similar practices exist across other chapters. Hence, no immediate action is required.

The chapter appreciates the valuable contributions of Shri M. S. Paliwal. His experience, leadership, and guidance are instrumental in maintaining transparency, fairness, and democratic functioning of the chapter.

7. Participation of Life Members:

It was decided that, if deemed appropriate, the secretary may invite suggestions for agenda items for Executive Committee Meetings from the Life Members of the Chapter.

8. Vote of Thanks

With no further points to discuss, the meeting concluded with a vote of thanks by Shri Asif M. Ansari, Secretary.

Glimpses of Executive Committee Meeting

A Report on Technical Talk

Under the joint aegis of the Mining Engineers' Association of India (MEAI) Rajasthan Chapter–Udaipur and the Udaipur Chamber of Commerce & Industry (UCCI), a technical talk on the topic *"Weighbridge Automation and Vehicle Tracking System"* was organized on 26th December 2025 at UCCI, Udaipur.

(L to R): Dr Hitanshu Kaushal, Jt. Secretary; Sh. Asif M. Ansari, Secretary; Sh. Manish Galundia, President UCCI & Smt. Sheetal Agrawal, Additional Director (IT)

At the beginning of the program, Dr. Hitanshu Kaushal presented the outline of the event and gave a brief introduction of the chief speaker, Shri Asif M. Ansari.

The chief speaker of the technical talk was *Shri Asif M. Ansari*, Mining Engineer, Udaipur, and Secretary, MEAI, Udaipur. In his presentation, he explained that in accordance with the clear vision and directions of the Hon'ble Chief Minister *Shri Bhajanlal Ji,* the Government of Rajasthan, through the Department of Mines and Geology, has been continuously working towards adopting modern technologies to strengthen transparency, good governance, and revenue protection in the mining sector. In this direction, under the guidance of the Principal Secretary (Mines), *Shri T. Ravikant* Sir, a proposal has been presented to implement the Weighbridge Automation System and GPS-based Vehicle Tracking System (VTS) in a phased manner across the state.

With the implementation of this technology-enabled system, human intervention in mineral transportation will be minimized and effective and continuous monitoring of overloading, fake e-Rawanna, and illegal mining/transportation will be ensured. Under the Weighbridge Automation System, the integrated use of RFID, position sensors, cameras, LED displays, traffic lights, and the e-Rawanna system will enable fully automated processes for vehicle weighing, identification, and documentation. In the proposed system, the entire process from vehicle entry to exit will be digitally recorded. Vehicle images, weight details, and e-Rawanna passes will be automatically generated and securely stored in the State Data Centre, thereby strengthening accountability, transparency, and revenue protection.

Additionally, through the GPS-based Vehicle Tracking System (VTS), real-time location tracking of mineral transport vehicles will be possible. This system will be NavIC/GPS-based and will also have the capability to securely store data even during network disruptions, making the monitoring mechanism more robust and effective.

This entire initiative is based on API-based integration with the Raj Mines Application and will provide a strong foundation for future initiatives such as drone surveys, faceless digitization, and command-and-control systems.

The Department of Mines and Geology believes that under the vision of the Hon'ble Chief Minister and the guidance of the Principal Secretary (Mines), this initiative will become an important example of technology-driven governance in the state's mining sector.

On this occasion, Shri Manish Galundia, President, Udaipur Chamber of Commerce & Industry, welcomed all the guests. While giving a brief introduction of UCCI, he stated that UCCI has been continuously working for the overall development of industry, trade, and the mining sector for several decades. UCCI regularly organizes technical seminars, workshops, industry interactions, policy-related suggestions, and training programs, enabling entrepreneurs and the industrial community to gain updated knowledge. He also mentioned that

This program was organized with the cooperation of the Mining Engineers' Association of India, Rajasthan Chapter–

Udaipur, which allows participants to benefit from expert experiences on technical subjects related to the mining sector.

Director of Life Institutional Member Aravali Minerals & Chemical Ind. (P) Ltd., *Shri M. L. Loonawat*, in his address, stated that most mines are located in remote areas, where issues such as internet connectivity and the establishment of weighbridges pose several practical challenges. He suggested that this process should be implemented on a pilot basis for the next three months.

During the question-and-answer session, *Smt. Sheetal Agrawal*, Additional Director, Information Technology Cell, Department of Mines and Geology, responded to the questions and queries raised by the participants.

The program was attended by various mining engineers, members of the Mining Engineers' Association of India, representatives from different industries of UCCI, and other participants.

A view of the audience

The programme was conducted by *Dr. Hitanshu Kaushal,* Joint Secretary, MEAI, Udaipur.

Minutes of the Sixth (6th) Executive Committee Meeting held on 24th January, 2026, at 5:30 PM at MEAI-Office, Udaipur, for 2024-26

The Sixth Executive Committee Meeting of the Mining Engineers' Association of India (MEAI), Rajasthan Chapter – Udaipur, was held under the chairmanship of **Shri MS Paliwal.**

1.	Sh Akhilesh Joshi	--	Patron
2.	Sh MS Paliwal	--	Ex-Chairman
3.	Sh Asif M Ansari	--	Secretary
4.	Dr Hitanshu Kaushal	--	Joint Secretary
5.	Sh RC Purohit	--	Treasurer
6.	Dr SK Vashisth	--	Council Member
7.	Sh DD Shripat	--	Executive Member
8.	Dr SS Rathore	--	Ex-Chairman
9.	Sh YC Gupta	--	Ex-Chairman
10.	Sh PR Ameta	--	Member
11.	Sh SL Sukhwal	--	Member

The chairman and vice chairman were not present in the meeting. As per the suggestion of Sh. M. S. Paliwal, ex-chairman, and MEAI Rules and Regulation Rule number 2(1)(b), the meeting was chaired by Sh. Madhu Sudan Paliwal.

At the outset, the Chairman, Shri Madhu Sudan Paliwal, welcomed all the members present. Before the starting of the agenda, all issues raised by Sh Madhusudan Paliwal were resolved with healthy discussion. Thereafter, the agenda items were taken up for discussion, and the following decisions were recorded:

Agenda Item 1: Confirmation of Minutes of Previous Meeting (21.12.2025)
The minutes of the Executive Committee Meeting held on

21st December, 2025, were placed before the Committee. As per discussion and detailed deliberation, the minutes were confirmed unanimously.

Agenda Item 2: Action Taken Report (ATR)
The Secretary, Shri Asif M. Ansari, presented the Action Taken Report on the decisions of the 5th Executive Committee Meeting. He informed us that all decisions taken in the previous meeting were being implemented. One technical talk has been organized at UCCI, and other agenda items are under process.

The Committee noted and confirmed the ATR.

Agenda Item 3: Membership Strength Update
The secretary briefed the committee on the growth in membership, as follows:

- Council Meeting dated 26.04.2025: 14 Life Members added
- Council Meeting dated 18.07.2025: 08 Life Members added
- Council Meeting dated 16.10.2025: 01 Fellow Member and 01 Life Member added.
- Proposed Council Meeting dated 14.02.2026: 01 Life Institutional Member, 07 Life Members, 16 Student Members and other applications under process.

The Committee appreciated the sustained efforts towards membership expansion.

Agenda Item 4: Discussion on Aravalli Status and Its Effects on Mineral Supply Chain
Detailed deliberations were held on the present status of the Aravalli region and its implications on mining operations and the mineral supply chain. Members expressed concern over regulatory restrictions, environmental considerations, and their cascading impact on the availability of raw materials, employment, and downstream industries. After discussion, it was decided that MEAI shall compile technical inputs highlighting ground realities and the importance of a balanced approach between environmental protection and sustainable mineral development. Sh. Hitanshu Kaushal was nominated for the representation of the Rajasthan Chapter-Udaipur as a technical expert to assist the Honorable Supreme Court, or, by means of a committee member, in this matter.

Agenda Item 5: Other item with permission of chair
A. **Appreciation of Shri Akhilesh Joshi**: The Executive Committee placed on record its sincere appreciation for Shri Akhilesh Joshi for his valuable contribution to the mining fraternity through his authored book on mining. After deliberation, it was resolved that 70 copies of the book shall be purchased by the Association, and two copies of the book shall be circulated to each chapter of MEAI for reference and knowledge dissemination. Decision: Approved unanimously.

B. **Procurement of MEAI Brooches**: The secretary informed the Executive Committee that 250 MEAI brooches have been ordered and payment has been made through a joint work order with the Jodhpur Chapter. The Executive Committee approved the action taken and appreciated the efforts of the secretary for timely coordination and execution. Decision: Approved and appreciated.

C. **Nomination of Chairman** – Resource Committee: The Secretary apprised the Committee that, as per the decision taken in AGM 2025, Shri Pushkar Raj Ameta has been nominated as Chairman of the Resource Committee. The Executive Committee ratified and approved the nomination. Decision: Approved unanimously.

D. **Planned Events of the Chapter**: The secretary conveyed that the remaining planned events of the chapter shall be organized as per the approved calendar or as per mutual convenience, depending upon the availability of resource persons and logistics. Decision: Noted and approved.

E. Upcoming Academic & Technical Programs

- Training Programme at CTAE; Keynote Address: Shri Akhilesh Joshi.
- Technical Talk; Speaker: Shri S. K. Vashishtha; Venue: Khaniz Bhawan, Sector-11.
- Two-Day Workshop on QGIS; Dates: 27–28 February 2026; Resource Person: Shri R. P. Mali.
- One-Day Workshop on Drone Survey; Date: 7 March 2026; Resource Person: Shri Hitanshu Kaushal.

Decision: All programs approved.

Glimpses of Executive Committee Meeting

CONFERENCES, SEMINARS, WORKSHOPS ETC.

ABROAD

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.

5-7 Oct 2026: **Mine Health & Safety Conference 2026. Pan Pacific Perth**. Contact on: T: 1800 657 985 or +61 3 9658 6100 OR Po Box 660 Carlton, VIC 3053, Ground Floor, 204 Lygon St, Carlton VIC 3053.

19-21 Oct 2026: **Mill Operators Conference. Brisbane Convention and Exhibition Centre**, Brisbane. Contact on T: 1800 657 985 or +61 3 9658 6100 OR Po Box 660 Carlton, VIC 3053 Ground Floor, 204 Lygon St, Carlton VIC 3053.

25-26 Oct 2026: **International Conference on Hydrometallurgy and Mining ICHM** in Istanbul, Turkey. Website URL: https://waset.org/hydrometallurgy-and-mining-conference-in-october-2026-in-istanbul.

17-19 Nov 2026: **Strategic Mine Planning Conference 2026**. Residence on Langley Park, Perth. Contact on: T: 1800 657 985 or +61 3 9658 6100.

2-3 Dec 2026: **International Conference on Geosciences and Geological Engineering (ICGGE-2026)**. Tokyo, Japan. Website URL: https://waset.org/geosciences-and-geological-engineering-conference-in-december-2026-in-tokyo.

2-3 Dec 2026: **International Conference on Geosciences and Geological Engineering ICGGE** in Tokyo, Japan. Website URL: https://waset.org/geosciences-and-geological-engineering-conference-in-december-2026-in-tokyo.

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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

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