सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF MINES

Annual Report 2025-26







GOVERNMENT OF INDIA

MINISTRY OF MINES

ANNUAL REPORT 2025-26

MINISTRY OF MINES

Ministry of Mines	https://mines.gov.in
Geological Survey of India	www.gsi.gov.in
Indian Bureau of Mines	www.ibm.nic.in
National Aluminium Company Limited	www.nalcoindia.com
Hindustan Copper Limited	www.hindustancopper.com
Mineral Exploration & Consultancy Limited	www.mecl.co.in
Jawaharlal Nehru Aluminium Research Development and Design Centre	www.jnarddc.gov.in
National Institute of Rock Mechanics	www.nirm.in

ABBREVIATIONS

BEE	Bureau of Energy Efficiency
BGML	Bharat Gold Mines Limited
BISAG	Bhaskaracharya Institute for Space Applications and Geo-informatics
BSE	Bombay Stock Exchange
CGPB	Central Geological Programming Board
CHQ	Central Head Quarter
CIMFR	Central Institute of Mining and Fuel Research
CMPDI	Central Mine Planning & Design Institute
CPCB	Central Pollution Control Board
CPGRAMS	Centralized Public Grievance Redressal and Monitoring System
CSR	Corporate Social Responsibility
DGM	Directorate of Geology & Mining
DGMS	Directorate General of Mines Safety
DMF	District Mineral Foundation
DRM	District Resources Maps
EC	Environmental Clearance
EEZ	Exclusive Economic Zone
EIA	Environment Impact Assessment
EPMA	Electron Probe Micro Analyser
ERP	Enterprise Resource Planning
FC	Forest Clearance
FMCP	Final Mine Closure Plan
FS	Field Season
FY	Financial Year
GCM	Geochemical Mapping
GDP	Gross Domestic Product
GEM	Government e-Market
GIGW	Guidelines for Indian Government Websites
GPM	Geophysical Mapping
GQM	Geological Quadrangle Maps
GR	Geological Report
GSI	Geological Survey of India

GSITI	Geological Survey of India Training Institute
HCL	Hindustan Copper Limited
HINDALCO	Hindustan Aluminium Company Limited
IBAAS	International Bauxite, Alumina and Aluminium Society
IBM	Indian Bureau of Mines
ICC	Indian Copper Complex
ICSG	International Copper Study Group
IEC	Information Education and Communication
IGC	International Geological Congress
IMYB	Indian Mineral Year Book
ITEC	Indian Technical Economic Cooperation
JNARDDC	Jawaharlal Nehru Aluminium Research Development and Design Centre
JWG	Joint Working Group
KABIL	Khanij Bidesh India Limited
KCC	Khetri Copper Complex
KMS	Knowledge Management System
LEWS	Landslide Early Warning System
LME	London Metal Exchange
MCDR	Mineral Conservation & Development Rules
MCP	Malanjkhand Copper Project
MCR	Mineral Concession Rules
MDRD	Minerals Development & Regulation Division
MECL	Mineral Exploration & Consultancy Limited
ML	Mining Lease
MMDR Act	Mines & Minerals (Development and Regulation) Act, 1957
MoC	Ministry of Coal
MoEF & CC	Ministry of Environment, Forest and Climate Change
MoM	Ministry of Mines
MoU	Memorandum of Understanding
MPD	Mineral Processing Division
MSDE	Ministry of Skill Development and Entrepreneurship
MSS	Mining Surveillance System
MT	Magnetotelluric

MTS	Mining Tenement System
MEQ	Micro-Earthquake
NALCO	National Aluminium Company Limited
NER	North Eastern Region
NGCM	National Geochemical Mapping
NGDR	National Geoscience Data Repository
NIRM	National Institute of Rock Mechanics
NLSM	National Landslide Susceptibility Mapping
NMEP	National Mineral Exploration Policy
NMEDT	National Mineral Exploration and Development Trust
NMI	National Mineral Inventory
NMP	National Mineral Policy
NRSC	National Remote Sensing Centre
NRTC	NALCO Research & Technology Centre
NSDC	National Skill Development Corporation
NSE	National Stock Exchange
NCEGR	National Centre of Excellence in Geoscientific Research
NEA	Notified Exploration Agency
OAMDR	Offshore Areas Mineral (Development & Regulations) Act, 2012
OCBIS	Online Core Business Integrated System
OGP	Obvious Geological Potential
OL	Official Language
OLIC	Official Language Implementation Committee
OSPCB	Odisha State Pollution Control Board
PERC	Project Evaluation and Review Committee
PGRS	Photo Geology and Remote Sensing
PL	Prospecting Licence
PMCP	Progressive Mine Closure Plan
PMKKKY	Pradhan Mantri Khanij Khsetra Kalyan Yojana
PRAGATI	Pro-Active Governance and Timely Implementation
PWDs	Persons with Disabilities
REE	Rare Earth Elements
REIL	Rajasthan Electronics & Instruments Plant

RESCO	A Renewable Energy Service Company
RP	Reconnaissance Permit
RSAS	Remote Sensing and Aerial Survey
RTI	Right to Information
R&D	Research & Development
RMT	Regional Mineral Targeting
SAIL	Steel Authority of India Ltd.
SCSP	Special Component Plan for Scheduled Caste
SDF	Sustainable Development Framework
SDGs	Sustainable Development Goals
SGM	Systematic Geological Mapping
SGPB	State Geological Programming Board
SOP	Standard Operating Procedure
SSAG	Standing Scientific Advisory Group
STM	Specialised Thematic Mapping
SU	State Unit
TCC	Technical-cum-Cost Committee
TL	Thermo Luminescence
TOASS	Twin Otter Airborne Survey System
TSP	Tribal Area Sub-Plan
TW	Territorial Water
UNFC	United Nations Framework Classification
UTs	Union Territories
VC	Video Conference
VPN	Virtual Private Network
WPI	Wholesale Price Index

TABLE OF CONTENTS

S. No.	Chapters	Page No.
1.	Ministry of Mines An Overview	1-12
2.	Minerals and Metals in the Country	13-22
3.	Legislative Framework, Mineral Policy and Implementation	23-40
4.	Revenue from Mineral Resources	41-46
5.	International Cooperation	47-52
6.	National Critical Mineral Mission	53-60
7.	Attached / Subordinate Offices	61-124
8.	Central Public Sector Undertakings	125-178
9.	Science, Technology and Autonomous Bodies	179-204
10.	Corporate Social Responsibility	205-210
11.	Progressive Use of Hindi	211-222
12.	Exploration Activities in the North-Eastern Region	223-238
13.	Welfare Activities for SCs/STs, Women, Minorities & Persons with Disabilities	239-248
14.	Budget and Audit Paras	249-262
15.	Miscellaneous	263-292
16.	Annexures	293-348

01 CHAPTER



Ministry of Mines An Overview

Ministry of Mines An Overview

- Vision..... Page-3
- Role and Organization of the Ministry..... Page-3
- List of Subjects Allocated to the Ministry Page-3
- Organizational Structure Page-4
- Major Highlights / Achievements of Ministry of Mines Page-5

1.1 Vision

(i) India is well endowed with natural resources, particularly minerals, which serve as raw material for many industries, paving a path for rapid industrialization and infrastructural development. This, in turn, will facilitate the economy's ascent to a path of sustained growth and a five trillion-dollar economy.

(ii) During the last eleven years, the Government has introduced important reforms to open up the mineral sector to ensure its contribution in achieving the national policy goals. Major reforms include enactment of the Mines and Mineral (Development & Regulations) (MMDR) (Amendment) Act, 2015, which made the process of allocation of mineral concessions completely transparent by introducing public auctions with active participation of the State Governments in the federal set up, States are owners of mineral wealth in their respective territories. For realising the benefits of mineral wealth, States have primary and significant role to come up with auctionable mineral blocks that have clearance, to start production.

(iii) The Vision is to ensure security in minerals, including critical minerals, through enhanced domestic capacity, leveraging multilateral and bilateral cooperation for resilient mineral supply chain, enhancing the participation of private sector in mineral exploration, low carbon mining and recycling of used products for minerals/metal extraction, Ease of doing business for transparent & equitable allocation and regulation of mineral resources and technology adaptation and development for efficient exploration and mining.

1.2 Role and Organisation of the Ministry Main Functions

Ministry of Mines is responsible for survey, exploration and mining of all minerals, other than natural gas, petroleum, atomic minerals and coal. In the case of atomic minerals and coal, activities of the Ministry are limited to regional exploration. The Ministry is responsible for the administration of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) and rules made thereunder in respect of all mines and minerals other than coal, natural gas and petroleum. The Ministry also administers the Offshore Areas Mineral (Development and Regulation) Act, 2002 and rules made thereunder.

1.3 List of Subjects Allocated to the Ministry of Mines

(a) Legislation for regulation of mines and development of minerals within the territory of India, including mines and minerals underlying the ocean within the territorial waters or the continental shelf, or the exclusive economic zone and other maritime zones of India as may be specified, from time to time by or under any law made by the Parliament.

(b) Regulation of mines and development of minerals other than coal, lignite and sand for stowing and any other mineral declared as prescribed substances for the purpose of the Atomic Energy Act, 1962 (33 of 1962) under the control of the Union as declared by law, including questions concerning regulation and development of minerals in various States and the matters connected there-with or incidental thereto.

(c) All other metals and minerals not specifically allotted to any other Ministry/ Department, such as aluminum, zinc, copper, gold, diamonds, lead and nickel.

(d) Planning, development and control of, and assistance to, all industries dealt with by the Ministry.

(e) Administration and management of Geological Survey of India.

(f) Administration and management of Indian Bureau of Mines.

(g) Metallurgical grade silicon.

1.4 Attached Office/Subordinate Office:

Geological Survey of India (GSI), Headquarters at Kolkata is an attached office and the Indian Bureau of Mines (IBM), Headquarters at Nagpur is a subordinate office of the Ministry.

1.5 Public Sector Undertakings

There are three Public Sector Undertakings under the Ministry of Mines, namely: -

- National Aluminium Company Limited (NALCO), Bhubaneswar;
- Hindustan Copper Limited (HCL), Kolkata; and
- Mineral Exploration and Consultancy Limited (MECL), Nagpur

1.6 Autonomous Bodies

There are two Research Institutions which are Autonomous Bodies of this Ministry:

- Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), Nagpur;
- National Institute of Rock Mechanics (NIRM), Bengaluru.

Organizational Structure

1.7 The Ministry of Mines is headed by Shri G. Kishan Reddy, Hon'ble Minister of Coal and Mines who assumed the charge, after the formation of new Government, on 11th June, 2024.

1.8 Shri Satish Chandra Dubey has assumed the charge of Hon'ble Minister of State for Coal and Mines on 11th June, 2024.

1.9 The Secretariat of Ministry of Mines is headed by the Secretary, assisted by one Additional Secretary, four Joint Secretaries, one Joint Secretary & Financial Adviser (common for Ministry of Coal, and Ministry of Mines), one Economic Adviser and Eleven Directors / Deputy Secretaries, one Director (Economic Service), two Deputy Directors (OL & IES), one Assistant Director (IES) and one Assistant Director (OL). Sanctioned strength and present incumbency of officers/officials in the Ministry of Mines is given at **Table 1.1**.

Organizational structure of the Ministry of Mines is shown in **Annexure 1**

Table 1.1
Information in r/o Secretariat proper employees as on 31st December, 2025

Group	Sanctioned Strength	Total Number of present incumbents	No. of SC/ST/OBC/Women/PH Candidates in present incumbents				
			SC	ST	OBC	Women	PH
Group-A Gazetted	37	36	03	03	04	06	01
Group-B Gazetted	34	25	13	06	04	00	00
Group-B Non- Gazetted	56	46	15	04	19	07	00
Group-C	87	49	09	02	08	09	02
Total	214	156	40	15	35	22	03

Contribution of Mining and Quarrying Sector to the Gross Value Added (GVA) of the Nation

1.10 As per the first advanced estimates of GDP for 2025-26 released by the National Statistics Office (NSO), Ministry of Statistics and Program Implementation, the 1st AE of GVA of mining and quarrying sector during 2025-26 at 2011-12 prices is Rs 3,36,550 crore, which shows a negative growth of 0.7% as compared to PE of GVA during 2024-25 at Rs 3,38,884 crore. The contribution of mining and quarrying sector is in **Table 1.2**.

Table 1.2

Gross Value Added (GVA): Share/ Contribution of Mining and Quarrying (%)

GVA in Rs crore at current prices		
Sector	**2025-26 (FAE)**	**2024-25 (PE)**
Mining and quarrying	5,08,554	5,40,788
Total	3,23,47,873	3,00,22,033
Contribution in %	1.57	1.80

FAE: First Advanced Estimate; PE: Provisional Estimate; Source: MoSPI, Press Note on First Advance Estimates of GDP, FY 2025-26 released on internet till 4.00 pm on 07th January, 2026.

Major Highlights/ Achievements and Events

National Events/ workshops

1.10.1 In the august presence of Hon'ble Minister of Coal and Mines and Hon'ble MoS (Coal and Mines), this Ministry organized a Chintan Shivir at Vigyan Bhavan, New Delhi on 08.01.2025 covering topics like increasing Mineral Production and operationalization of mineral blocks, Circular Economy, encouraging private exploration, access to Geo-scientific data to all and developing Local Ecosystem of Mining Equipment Manufacturing.

1.10.2 The Ministry of Mines, in collaboration with the State Government of Odisha, successfully organized the 3rd National Mining Ministers' Conference at Konark, Odisha on 20th and 21st January, 2025 with the aim to enhance cooperation & coordination between Centre and States in the field of Mining Sector. The event saw the participation of Union Minister Shri G. Kishan Reddy, Chief Minister of Odisha Shri Mohan Charan Majhi, 02 Deputy Chief Ministers, 11 State Mining Ministers, 24 State Secretaries/DMGs, industry leaders, and key stakeholders. The Conference provided a platform for State Mining Ministers to share their visions for the mining sector in their respective States and also to Government of India to push reforms in mining.

1.10.3 On 13.03.2025, Hon'ble Minister of Coal & Mines, Shri G. Kishan Reddy and Hon'ble Chief Minister of Goa, Dr. Pramod Sawant jointly launched India's first ever auction of 13 Exploration Licence Blocks in Goa, a significant reform aimed at unlocking the nation's untapped critical and deep-seated mineral resources. The program also featured a Roadshow on the 5th Tranche of Auction of Critical Mineral Blocks and the inauguration of AI Hackathon 2025, focusing on "Mineral Targeting using AI".

1.10.4 The tranche V auction of critical and strategic mineral blocks which was launched on 28th January, 2025, has concluded in May, 2025 with successful auction of 10 out of 15 blocks put on auction. These 10 blocks comprise critical and strategic minerals such as Graphite, Phosphorite, Phosphate, Rare Earth Element (RRE), Vanadium, and Potash and Halite. Two highlights of Tranche V auction are (1) first ever auction of Potash block and (2) Rajasthan joining the league of successful auction of a critical and strategic mineral block in the State.

1.10.5 In a major step towards unlocking the mineral and coal potential of the North Eastern Region (NER), the Ministry of Mines, in collaboration with the Ministry of Coal and the Government of Assam, organised the 2nd North East Mining Ministers' Conclave on 27th-28th June 2025 in Guwahati. The conclave laid a road map for exploration projects, mineral auctions and coal mining in all the eight States.

1.10.6 Hon'ble Union Minister for Coal and Mines, Shri G. Kishan Reddy, inaugurated the Critical Mineral Seminar under the National Critical Mineral Mission (NCMM) on 06.06.2025 at New Delhi. The seminar featured a series of technical sessions and policy dialogue with participation from senior policymakers, industry leaders, experts, academic institutions, scientific research institutes and state government officials focusing on advancements in mineral processing technologies.

1.10.7 Ministry of Mines Introduced a new category of 7-star rating for mines during 2023-24 at an event held on 7th July in Jaipur. Hon'ble Union Minister of Coal & Mines, Shri G. Kishan Reddy, graced the occasion as the Chief Guest, and the Chief Minister of Rajasthan, Shri Bhajan Lal Sharma and the Hon'ble Union Minister of State for Coal & Mines, Shri Satish Chandra Dubey, were also present as distinguished Guests of Honour. During the event, three 7-star rated mines and ninety five, 5-star rated Mines for the year 2023-24 were honoured.

1.10.8 To enhance the effectiveness of DMF operations and promote cross-learning, the Ministry of Mines conducted a National DMF Workshop on 9th July, in New Delhi. The workshop was inaugurated by Hon'ble Union Minister of Coal & Mines, Shri G Kishan Reddy, and Minister of State for Coal & Mines, Shri Satish Chandra Dubey. Representatives from 10 Central Ministries, 300 DMF districts and CAG participated in the workshop.

1.10.9 Hon'ble President of India, Smt Droupadi Murmu, presented the National Geoscience Awards-2024 for outstanding contributions in the field of Geoscience at a ceremony held at Rashtrapati Bhavan Cultural Centre on 26.09.2025. The ceremony was graced by the presence of Shri G. Kishan Reddy, Hon'ble Minister of Coal and Mines. This year, 20 eminent geoscientists were honoured with 12 awards under three categories, which include National Geoscience Award for Lifetime Achievement (01 award), National Young Geoscientist Award (01 award) and National Geoscience Awards (10 awards across various fields of geosciences).

1.10.10 Hon'ble Minister of Coal and Mines Shri G. Kishan Reddy on 16.09.2025 launched the 6th tranche of auction comprising 23 blocks (19 Composite Licence and 4 Mining Lease). Key minerals include Rare Earth Elements (REE), Niobium, Tantalum, Caesium, Tungsten, Lithium, Tin, Graphite, Vanadium, Cobalt, Titanium, Gallium, Zirconium, Rock Phosphate, Potash, and other rare metals. Further, in the same event he announced the Preferred Bidders for the 1st Tranche of Exploration Licence (EL) blocks and facilitated interactions with stakeholders, which marked the successful completion of India's first auction of EL blocks for deep-seated minerals like Lithium, Copper, Gold, and Rare Earth Elements.

1.10.11 Ministry of Mines on 9.10.2025 organized a Roadshow for the 6th Tranche of the Auction of Critical and Strategic Minerals blocks in New Delhi. The event was attended by senior officials of the ministry, state representatives, industry leaders, prospective bidders, and exploration agencies. The Tranche VI of Auction was launched by the Ministry on 16.09.2025, it includes 23 critical and strategic mineral blocks, comprising 19 Composite Licences and 4 Mining Leases. These cover minerals such as Rare Earth Elements, Rare Metals, Tungsten, Lithium, Niobium, Tin, Graphite, Titanium, Vanadium, and Phosphate, spread across 13 states.

1.10.12 Hon'ble Union Minister of Coal & Mines, Shri G. Kishan Reddy, on 14.11.2025 inaugurated the Ministry of Mines Pavilion at the India International Trade Fair (IITF) 2025 at Bharat Mandapam. Aligned with the IITF 2025 theme "Ek Bharat, Shreshtha Bharat", the pavilion offered an immersive showcase of India's mineral wealth, technological innovation, community empowerment, and sustainability initiatives, reflecting the nation's journey towards Viksit Bharat @2047. This Pavilion was awarded Silver Medal for excellence in the display under the Central Ministries & Government Departments Pavilion Category at IITF-2025.

International Events / Cooperations

1.10.13 A Government of India delegation led by Shri. G. Kishan Reddy, Hon'ble Union Minister for Coal & Mines, visited Saudi Arabia to participate in 'Future Minerals Forum 2025' organized in Riyadh, Saudi Arabia from 14th to 16th January 2025.

1.10.14 Union Minister of Coal & Mines, Shri G. Kishan Reddy had a meeting with the Chilean delegation led by Ms. Aurora Williams, Minister of Mines, Chile on 01.04.2025 in New Delhi during India-Chile Mining Industry Round Table. Discussions were held for deepening cooperation between the two nations in the mining sector.

1.10.15 Given the importance of Nickel as a Critical mineral, India has joined the International Nickel Study Group (INSG) as a member country in June, 2025. The International Nickel Study Group (INSG) is an autonomous, inter-governmental organization established in 1990 and located in Lisbon, Portugal. INSG members are governments of nickel producing, consuming and trading countries other inter-governmental organizations responsible for implementing international agreements.

1.10.16 A Memorandum of Cooperation (MoC) between Ministry of Mines, Govt. of India and Ministry of Economy, Trade and Industry (METI), Japan in the field of Mineral Resources was signed on 28.8.2025. The MoC was exchanged in the presence of Hon'ble Prime Minister of India in Tokyo, Japan on 29.08.2025. The key areas of cooperation include information exchange on mineral policies, mining, extraction, stockpiling &

sustainability along with joint investments in exploration, mining & processing of critical minerals in India & beyond.

1.10.17 In the presence of Hon'ble Prime Minister of India and H.E President of Mongolia, a Memorandum of Understanding (MoU) between Ministry of Mines, GoI and the Ministry of Industry and Mineral Resources, Mongolia, on "Cooperation in the Field of Geology and Mineral Resources" was exchanged on 14.10.2025.

1.10.18 As a part of 175 Foundation Year celebrations of Geological Survey of India (GSI). Hon'ble Union Minister of Coal & Mines, Shri. G Kishan Reddy on 20.11.2025 inaugurated the two day long International Conference on "Unearthing the Past, Shaping the Future: 175 years of GSI" in Jaipur. The conference brought together global geological survey organisations including the British Geological Survey (BGS), United States Geological Survey (USGS) and Geoscience Australia, along with eminent experts and delegates from premier geoscience institutions in India and abroad, to showcase diverse technical sessions and cutting-edge insights, enrich scientific exchange, and lay the foundation for impactful, forward-looking geoscientific discussions.

Legislative Reforms

1.10.19 In exercise of the powers conferred in Clause (e) of Section 3 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957), the Central Government classified, Barytes, Felspar, Mica and Quartz as Major Minerals vide S.O. 924 (E) dated 20.02.2025.

1.10.20 Ministry of Mines issued order dated 01.05.2025 under Section 20A of the MMDR Act to facilitate the transition of existing mining leases of Barytes, Felspar (Feldspar), Mica & Quartz from minor minerals to major minerals category.

1.10.21 In exercise of the powers conferred by Section 35 of the Offshore Areas Mineral (Development and Regulation) Act, 2002 (17 of 2003), the Central Government made rules to amend the Offshore Areas Mineral (Auction) Rules, 2024, vide Notification dated 14.05.2025.

1.10.22 In exercise of the powers conferred by sub-section (1) and clause (c) of sub-section (2) of Section 35 of the Offshore Areas Mineral (Development and Regulation) Act, 2002 (17 of 2003), the Central Government made Rules namely, Offshore Areas Atomic Minerals Opening Right Rules, 2025. This will pave way for grant of operating right for atomic mineral to Government Companies in the offshore areas.

1.10.23 In exercise of the powers conferred by Section 13 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957), the Central Government made rules to amend the Minerals (Other than Atomic and veg Hydro Carbons Energy Minerals) Concession Rules, 2016, to specify the manner of computation of ASP of minerals Caesium, Zirconium & Rubidium.

1.10.24 The Mines and Minerals (Development and Regulation) Amendment Act, 2025 No. 28 of 2025 has received assent of the President on the 21st August, 2025 and published in the Gazette of India for general information vide Ministry of Law and Justice Notification No. CG-DL-E-22082025-265617 dated 21.08.2025. The Amendment Act came into effect from 01.09.2025. Salient features of the Mines and Minerals (Development and Regulation) Amendment Act, 2025 are as follows:

a. Renamed the National Mineral Exploration Trust as National Mineral Exploration & Development Trust, and increased the contribution from present 2% of the royalty payable to 3%. Further to widen the scope and territorial domain of the trust, use of funds for offshore areas as well as outside India for the purposes of exploration and development of mines and minerals, has been provided.

b. Enabled inclusion of any new mineral in a mining lease.

c. Enabled one-time extension of the area under a mining lease or composite licence to include therein a contiguous area not exceeding 10% or 30%, respectively, of the existing area under the lease or licence.

d. Empowered the Central Government to promote development of market, including trading, of minerals, its concentrate or its processed forms (including metals) through mineral exchanges.

e. Removed the limit on sale of minerals from the captive mines.

1.10.25 Ministry of Mines vide notification No. G.S.R. 751(E) dated 10.10.2025 amended the notification No. G.S.R. 786 (E) dated 23.08.1989 to classify limestone as a major mineral. Further, Mineral (Auction) Rules, 2015 were amended vide Notification No G.S.R. 764 (E) dated 17.10.2025 to introduce intermediary timelines or fast-tracking operationalization of auctioned mines.

1.10.26 The Second Schedule of the MMDR Act was amended with effect from 20.11.2025 to specify the royalty rates of minerals Caesium, Graphite, Rubidium and Zirconium. This will promote auction of mineral blocks containing Caesium, Rubidium and Zirconium, thereby not only unlocking these minerals but also associated critical minerals found with them, such as Lithium, Tungsten, REES, Niobium etc. Fixing of royalty rates of Graphite on ad valorem basis will proportionately reflect the change in prices of the mineral across grades. Increase in indigenous production of these minerals would lead to reduction in imports and supply chain vulnerabilities and also generate employment opportunities in the country.

Miscellaneous Events

1.10.27 Under Union Budget 2025-26, mining has been identified as one of the six domain areas for transformative reforms to augment the country's growth potential and global competitiveness. Mining sector reforms, including those for minor minerals, will be encouraged through sharing of best practices and institution of a State Mining Index. Also, a policy for recovery of critical minerals from tailings will be brought out. For critical minerals sector, duty has been eliminated on cobalt powder and waste; the scrap of lithium-ion battery, Scrap of Lead, Zinc and Copper and Scrap of some critical minerals. This will help secure their availability for manufacturing in India and promote more jobs for our youth.

1.10.28 On the directions of PM, operationalization of auctioned blocks was reviewed by Principal Secretary to PM and Cabinet Secretary on 4th April, 2025 with the Chief Secretaries of ten major mining States. A target of operationalizing 62 blocks has been set for 2025-26

1.10.29 Hon'ble Union Minister of Coal & Mines, Shri G. Kishan Reddy on 7th May, 2025, in the presence of Hon'ble Minister of State for Coal & Mines, Shri Satish Chandra Dubey launched a dedicated Non-Ferrous Stakeholders' Portal for Recycling https://

nfmrecycling.jnarddc.gov.in. The initiative aims to promote a structured, transparent, and sustainable recycling ecosystem in India.

1.10.30 Hon'ble Union Minister for Coal and Mines, Shri G. Kishan Reddy, on 04.06.2025 launched the 'Mining Dashboard', a centralized digital platform developed by the Ministry of Mines to monitor the operational status of auctioned mineral blocks and track statutory clearances across the country. The initiative is part of the Government of India's ongoing efforts to enhance transparency, efficiency, and accountability in the mineral sector.

1.10.31 Hon'ble Union Minister for Coal and Mines Shri G. Kishan Reddy on 4th July, released the Aluminium & Copper Vision Documents at the International Conference on Sustainable and Responsible Mining through Best Mine Closure Practices, organised by the Indian National Committee of the World Mining Congress in Hyderabad. The Aluminium Vision Document reflects the Government's commitment to building a self-reliant and resource-secure India. The document outlines a strategic roadmap to scale up aluminium production six fold by 2047. It also aims to expand bauxite production capacity to 150 MTPA. Whereas, the Copper Vision Document anticipates a six fold increase in demand by 2047 and outlines plans to add 5 million tonnes per annum of smelting and refining capacity by 2030.

1.10.32 The Ministry of Mines has recognized 9 institutes 4 IITs, IISC and 4 R&D Labs as Centres of Excellence (CoE) under the National Critical Mineral Mission (NCMM). The recognition of CoEs is an important step for fulfilling a key objective of the NCMM, which is research and technology development in critical minerals. The CoEs will undertake innovative transformational research to strengthen and advance the native and technology capability in the area of critical minerals.

1.10.33 All three CPSEs under the Ministry of Mines, i.e., National Aluminium Company Limited (NALCO), Hindustan Copper Limited (HCL) and Mineral Exploration & Consultancy Limited (MECL) have implemented a provision for accidental insurance of Rs. 1 crore for all regular employees and upto Rs. 20 lakh for every contractual employee.

1.10.34 The Union Cabinet chaired by the Hon'ble Prime Minister on 03.09.2025, approved a Rs.1,500 crore Incentive Scheme to develop recycling capacity in the country for the separation and production of critical minerals from secondary sources. This scheme is part of the National Critical Mineral Mission (NCMM), which is aimed at building the domestic capacity of and supply chain resilience in critical minerals. The scheme guidelines were issued and scheme launched on 2/10/25.

1.10.35 Seven Geoheritage sites from India have been included in the Tentative List of UNESCO World Heritage Sites (Natural Category). The Landslide forecasting bulletin has been made operational for Rudraprayag district, Uttarakhand w.e.f 04.09.2025.

1.10.36 Ministry of Mines has released the State Mining Readiness Index (SMRI) and State rankings on 14.10.2025, which is a significant step to encourage mining sector reforms in States. This also fulfils the announcement made under the Union Budget 2025-26.

1.10.37 Ministry of Mines, along with its attached and subordinate offices, CPSEs, and autonomous bodies, has successfully concluded Special Campaign 5.0. A key highlight of the campaign was a nationwide domestic e-waste recycling initiative coordinated by the Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), an autonomous body under the Ministry of Mines. Implemented across 58 locations in the

country, the campaign successfully collected 9.02 tons of e-waste. The initiative aimed to raise awareness about responsible e-waste management and recycling, promoting sustainable practices among employees and partner organizations.

1.10.38 As a part of hand holding of Union Territory of Jammu & Kashmir to conduct auction of Mineral blocks, Central Government on behalf of J&K launched the first-ever e-auction process for limestone mineral blocks in the Union Territory of Jammu & Kashmir during a dedicated launch programme and roadshow held in Jammu on 24.11.2025. Hon'ble Union Minister of Coal & Mines, Shri G. Kishan Reddy, along with Chief Minister of Jammu & Kashmir Mr. Omar Abdullah and Deputy Chief Minister Shri Surinder Kumar Choudhary, were present during the launch. This milestone initiative marks a significant step in implementing the mining reforms introduced under the Mines and Minerals (Development and Regulation) Act (MMDR Act), 2015 and positions Jammu & Kashmir among States and UTs adopting a transparent, digital, and auction-based system for mineral resource allocation.

1.10.39 To fasten the pace of auction and operationalize the auctioned mines, Secretary (Mines) visited and reviewed the States of Karnataka (15.12.2025), Goa (17.12.2025) and Odisha (24.12.2025) in the month of December 2025. During these visits, Secretary (Mines) interacted directly with preferred bidders of the auctioned blocks in the presence of senior officers from the Mining, Forest, Environment, and Revenue departments of the respective State Governments and other Central Government agencies in the State to address on-ground challenges, expedite the commencement of mining operations, and resolve pending issues. The deliberations also focused on accelerating future mineral block auctions and promoting transparency, efficiency, and sustainability in the mining sector.

1.10.40 Ministry's Participation in India Mobile Congress, 2025: India Mobile Congress (IMC) is a digital technology forum across the globe for showcasing innovative solutions, services and state-of-the-art use cases for industry, government, academics, startups and other key stakeholders in the technology and telecom ecosystem.

IMC, 2025 was held from October 08-11, 2025 at Yashobhoomi, Dwarka, New Delhi, focussed on spotlighting transformative domains that are reshaping the digital and sustainable landscape. The event centred around AI, Quantum Technology, and Cyber Security, with highlights on 5G use cases, electronics manufacturing, IoT, green technology and satellite communications. At IMC 2025, Ministry of Mines collaborated with IBM, GSI, NALCO and HCL to showcase the pioneering 5G use cases such as Mining Tenement System, Mine Communication System using leaky feeder cable, satellite-based truck dispatch system etc. in its dedicated 5G stall.

*****

02 CHAPTER



Minerals and Metals in the Country

Minerals and Metals in the Country

- National Mineral Scenario Page-15
- Index of Mineral Production..... Page-15
- Mining Page-17
- Self-reliance in Minerals and Mineral Based Products..... Page-20
- Production trends Page-21

National Mineral Scenario

2.1 Minerals are valuable natural resources. They constitute the vital raw materials for many basic industries and are a major resource for development. The history of mineral extraction in India dates back to the days of the Harappan civilization. The wide availability of the minerals provides a base for the growth and development of the mining sector in India.

2.2 The country is endowed with huge mineral resources of fuel, metallic and non-metallic minerals including minor minerals. Mining sector is an important segment of the Indian economy. Since independence, there has been a pronounced growth in the mineral production both in terms of quantity and the value as well. India produces as many as 95 minerals, which includes 4 fuel, 10 metallic, 27 non-metallic, 3 atomic and 51 minor minerals (including building and other materials).

Index of Mineral Production

2.3 Presently the base year of index of industrial production covering mining sector is 2011-12. Based on the overall trend so far, the index of mineral production (base 2011-12) for the year 2025-26 (up to Nov-25) is estimated to be 123.8 as compared to 132.8 of previous year showing a negative growth of 6.78%. The trend of index of mineral production and trend in value of mineral export and import is depicted in **Figure 2.1 and Figure 2.2** respectively. The value of minerals produced by groups for the last five years is given in **Figure 2.3**.

2.4 The total value of mineral production (excluding atomic, fuel minerals and minor minerals) during 2025-26 has been estimated at ₹171460 crore, which shows an increase of about 12.48% over that of the previous year.

2.5 During 2025-26, estimated value for metallic minerals is ₹157415 crore or 91.81% of the total value and non-metallic minerals is ₹14045 crore or 8.19% of the total value. Information on production and value of selected minerals from 2021-22 to 2025-26(Estimated) is given in **Annexure 2.1**. The details of Export and Import of Minerals during the period 2020-21 to 2024-25 are given at **Annexure 2.2** and **Annexure 2.3**. The trend of value of mineral exports and imports for last five years is depicted in **Figure 2.2**. The value of Minerals by groups for the last five years is given in **Figure 2.3**

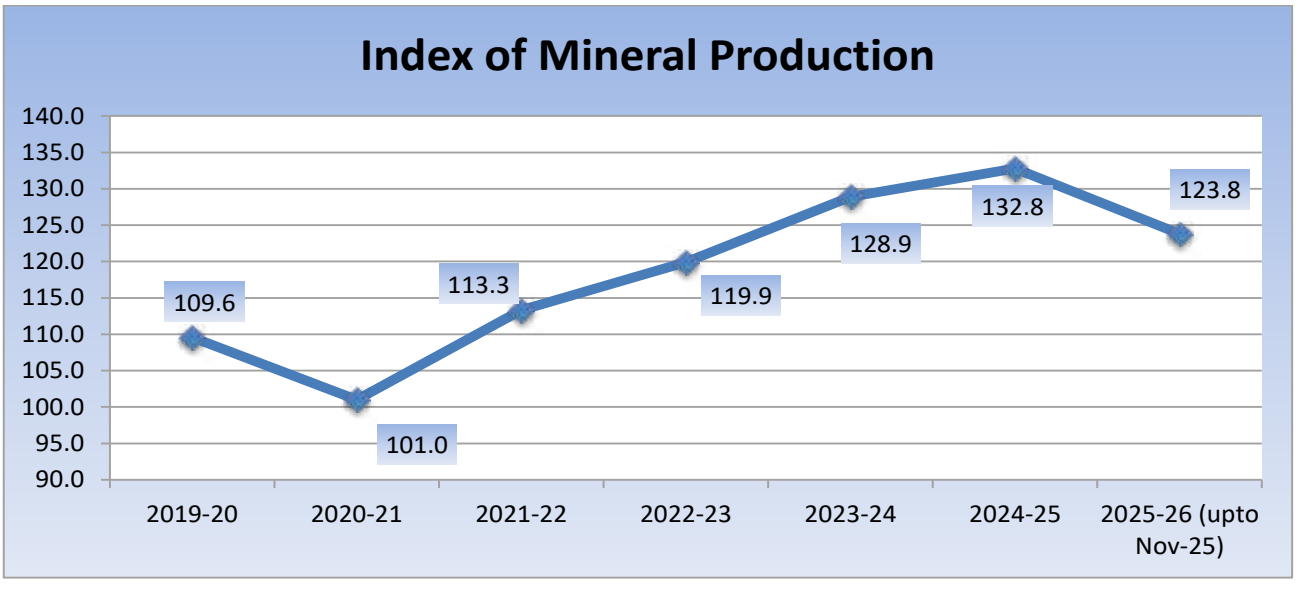


Figure 2.1: Index of mineral production (Base2011-12=100)

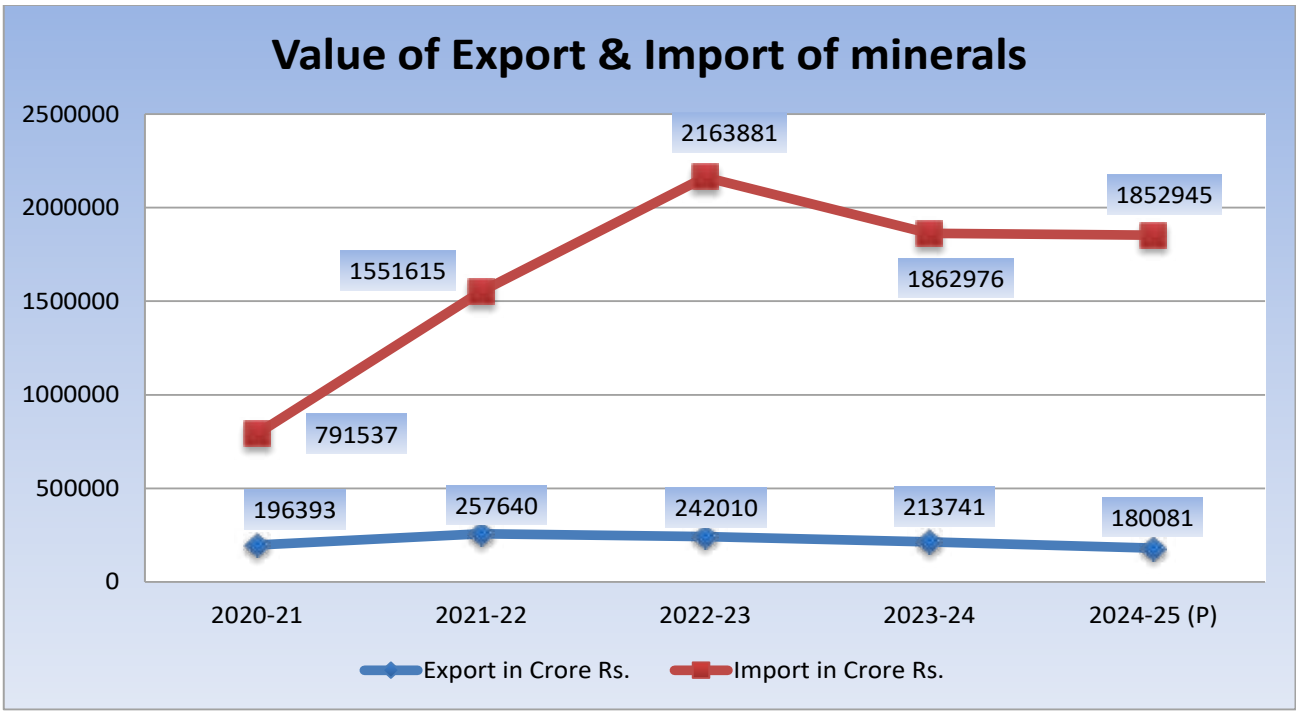


Figure 2.2: Trends in Value of Mineral Exports & Imports

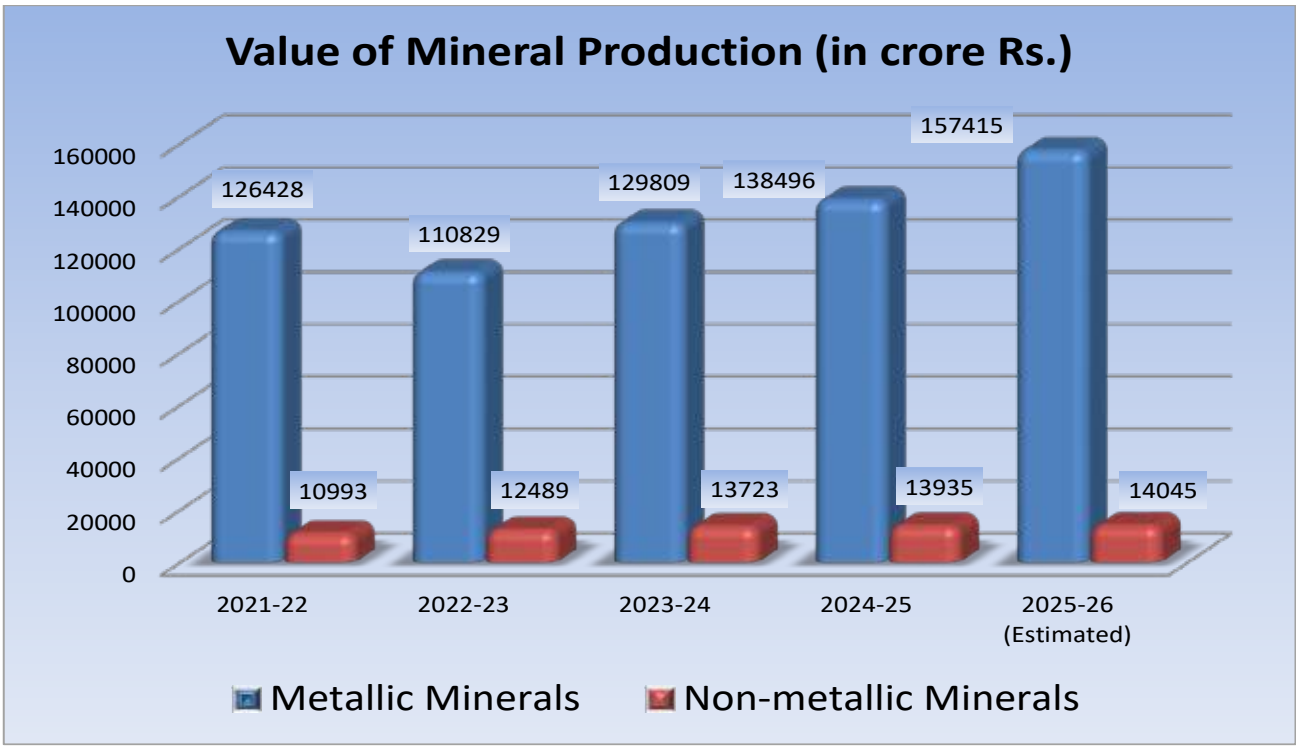


Figure 2.3: Value of Minerals Production (by groups) (excluding atomic, fuel minerals and minor minerals) (2025-26 figures are estimated)

Price Trend

2.6 Presently the base year for Wholesale Price Index covering minerals is 2011-12. The WPI for minerals (base 2011-12=100) stood at 253.3 in November 2025 and the corresponding index was 229.4 in November, 2024.

2.7 The minerals included in the wholesale price index are bauxite, chromite, iron ore, copper conc, lead conc., garnet, zinc conc, manganese ore, limestone, phosphorite, and sillimanite. The wholesale price index for metallic minerals was 248.5 in November, 2025 as compared to 219.8 in November, 2024 and that of other minerals was 270.2 in November, 2025 as compared to 263.2 in November, 2024. (Source : www.eaindustry.nic.in)

Mining

2.8 Indian mining industry is characterized by many small operational mines. The number of mines which reported MCDR Returns of mineral production (excluding atomic, fuel and minor minerals) in India was 1852 (estimation) in 2025-26 as against 1739 (Provisional) in the previous year.

2.9 Out of 1852 reporting mines, 367 were in Madhya Pradesh followed by Gujarat (289), Tamil Nadu (180), Andhra Pradesh (166), Karnataka (158), Chhattisgarh (129), Odisha (129), Rajasthan (119), Maharashtra (111) and Jharkhand (61) etc.

2.10 The numbers of mines reported in MCDR Returns are given in **Table 2.1**. Area-wise distribution of Mining Leases all over India pertaining to all minerals excluding fuel, atomic and minor minerals is given in **Table 2.2.**

Table 2.1

Number of Mines Reported As per MCDR Returns

Row Labels	2023-24	2024-25 (P)	2025-26 (E)
All Minerals*	1799	1739	1852
Metallic Minerals	692	674	707
Non-metallic Minerals	1107	1065	1145

** Excluding atomic minerals, fuel minerals & minor minerals (P) : Provisional, (E): Estimation*

Table 2.2

Area Wise Status of Lease (Frequency in Hect.)

(Other than Atomic, Hydro Carbons Energy and Minor Minerals)

As on 31/03/2024 (P) (All India)

Frequency (Hectare)	No. of Leases	Lease area (Hectare)
<2	337	398.30
2-5	777	2931.42
5-10	392	2817.74
10-20	303	4400.40
20-50	400	12891.16
50-100	223	15944.85
100-200	189	27245.18
200-500	204	65804.03
>500	170	161378.45
Total	2995	293811.54

Sources: Information received from respective State Government Departments and Regional Offices of IBM for minerals (excluding atomic minerals, hydrocarbon energy minerals and minor minerals).

Note: P: Provisional, figures rounded off
Details of mining leases for minerals recently reclassified from minor to major minerals—Baryte, Feldspar, Mica, Quartz are not included.

Details of limestone mining leases reclassified as major minerals under the Ministry of Mines notification dated 13 October 2025 are not included.

2.11 The number of underground mines in operation mineral-wise (excluding fuel, atomic and minor minerals) is given in **Table 2.3.**

Table 2.3

Number of Underground Mines 2024-25*
(By principal Minerals)

Minerals	A' Category	B' Category	Total
Chromite	3	-	3
Copper Ore	6	-	6
Gold	4	-	4
Lead & Zinc Ore	9	-	9
Manganese Ore	14	3	17
Rock Salt	-	1	1
Vermiculite	1	1	2

** Excluding fuel, atomic & minor minerals*

'A' Category: Mechanized Mines: >150 labour in all or >75 labour in workings below ground

'B' Category: Other than 'A' category

2.12 For the year 205-26, the estimated mineral production (excluding Atomic, Fuel and Minor Minerals) would be from 20 States of which the bulk of value of mineral production of about 97.59% was confined to 8 States only. The order was Odisha with a share of 38.37% followed by Rajasthan (23.17%), Chhattisgarh (13.52%), Karnataka (10.09%), Maharashtra (5.35%), Jharkhand (3.64%), Madhya Pradesh (2.43%) and Andhra Pradesh (1.01%) in the total value of mineral production (excluding Atomic, Fuel and Minor Minerals). Remaining states contributed 2.41%. The estimated contribution of States/ UTs in the value of mineral production for 2025-26 is pictorially shown in **Figure 2.4**

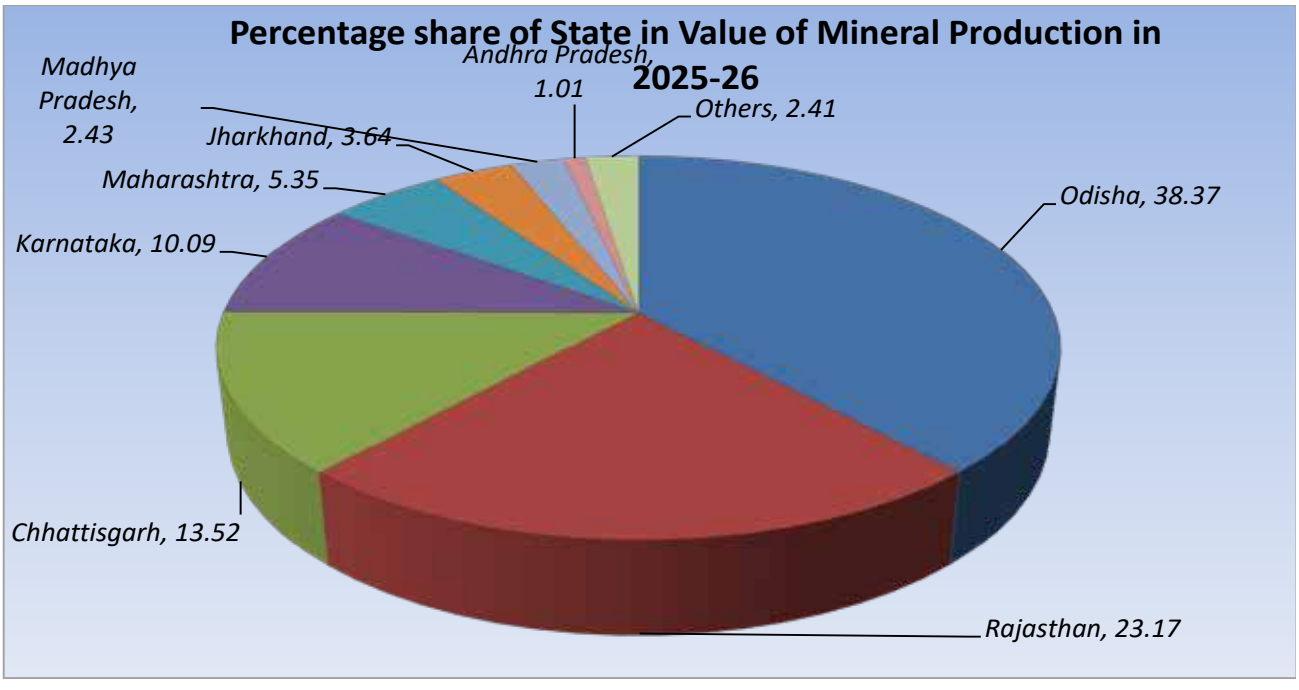


Figure 2.4: Share of States in Value of Estimated Mineral Production 2025-26 (Excluding Atomic, Fuel Minerals, minor minerals) Source: Statutory returns submitted to IBM

2.13 The principal mineral producing States, which have indicated an increase in the value of mineral production during 2024- 25 with respect to 2023-24, are Goa (11237.80%), Madhya Pradesh (26.08%), Jammu & Kashmir (15.51%), Gujarat (14.46%), Maharashtra (14.39%), Karnataka (11.62%), Meghalaya (9.46%), Rajasthan (9.36%), Himachal Pradesh (5.06%), Odisha (4.44%) and Chhattisgarh (3.09%). However, some of the principal mineral producing States revealed a decrease in value of mineral production

and those include Andhra Pradesh (1.60%), Telangana (1.98%), Tamil Nadu (5.64%), Assam (6.06%), Jharkhand (10.62%), Bihar (12.56%), Uttar Pradesh (18.50%), Kerala (18.62%) and Uttarakhand (58.41%).

2.14 All India Reserves and Resources of various minerals as on 01.04.2025, are given in **Annexure 2.4**.

2.15 During the year 2024-25, the Private Sector contributed for 59.33% or Rs. 90431 crores (including metallic and non-metallic) in the total value. The minerals which were wholly mined/ recovered by the private sector in 2024-25 were Zinc concentrate, Lead concentrate, Garnet, Wollastonite, Moulding Sand, Vermiculite and Sillimanite. In 2024-25, the Private Sector accounted for sizeable 95.92% of Limestone, 58.52% of Magnesite, 51.32% of Iron Ore, 49.17% of Chromite, 48.54% of Bauxite and 43.35% of Manganese Ore.

2.16 During the year 2024-25, the Public Sector contributed for 40.67% or Rs. 61999 crores (including metallic and non-metallic) in the total value. The minerals which were wholly mined / recovered by the public sector in 2024-25 were Copper ore and concentrate and Diamond. In 2024-25, the Public Sector accounted for sizeable 99.39% of Phosphorite, 98.72% of Gold Ore, 87.62% of Tin concentrate and 52.99% of Fluorite (graded).

Mining

2.17 As per World Mineral Production, 2019-23, British Geological Survey, India's ranking in world production in terms of quantity in the year 2023 was 2nd in aluminium (primary) & steel (crude/liquid); followed by 3rd in chromite, iron ore & zinc (slab); 5th in manganese ore; 6th in bauxite; 10th in copper (refined) & lead (refined); 15th in magnesite and 18th in apatite & rock phosphate (**Table 2.4**).

Table 2.4

Contribution and Rank of India in World Production of Principal Minerals & Metals, 2023

Sector	Unit	Production quantity		Contribution (Percentage)	India's rank in World order$
		World	India*		
Metallic Minerals					
Bauxite	'000 tonnes	416300	23962	5.75	6th
Chromite	'000 tonnes	37500	3148	8.39	3rd
Iron ore	million tonnes	2507	277	11.05	3rd
Manganese ore	'000 tonnes	53000	3442	6.49	5th
Industrial Minerals					
Magnesite	'000 tonnes	24200	132	0.55	15th
Apatite & Rock phosphate	'000 tonnes	237000	1558	0.66	18th
Metals					
Aluminium (primary)	'000 tonnes	69900	4159#	5.95	2nd
Copper (refined)	'000 tonnes	27600a	509#	1.84	10th
Steel (crude/liquid)	million tonnes	1877	141	7.51	2nd
Lead (refined)	'000 tonnes	15000b	216#	1.44	10th
Zinc (slab)	'000 tonnes	14200	817#	5.75	3rd

Source: World Mineral Production, 2019-2023, British Geological Survey for world production and MCDR returns & individual plants for production with respect to India.

** Figures relate to financial year 2023-24 (P)*

Note: Data in respect of World Mineral Production is on calendar year basis, however the data on India's production is based on financial year.

$: India's rank is based on world's production mentioned in World Mineral Production 2019-23; British Geological Survey and considering India's production as per MCDR returns.

#: As per World Mineral Production, 2019-23, the production of Aluminium (primary), Copper (refined), lead (refined) and Zinc (Slab) in India during 2023 are 3306 thousand tonnes, 509 thousand tonnes, 1038 thousand tonnes and 748 thousand tonnes, respectively.

a: Figures relate to both primary and secondary refined copper, whether electrolytic or fire refined. Metal recovered from secondary materials by remelting alone is excluded

b: Figures related to both primary & secondary refined lead and include the lead content of antimonial lead.

Self-reliance in Minerals & Mineral Based Products

2.18 India continued to be wholly or largely self-sufficient in minerals which constitute primary mineral raw materials that are supplied to industries, such as, iron & steel, cement etc. India is self-sufficient or near to self-sufficient in bauxite, chromite, iron ore, kyanite, limestone, aluminium (primary), lead (primary) and zinc. In spite of significant production, some ores/minerals are also imported to meet the demand either for blending with locally available mineral raw materials and/or to meet special requirement for manufacturing special qualities of mineral based products. India is deficient in magnesite, manganese ore, rock phosphate and copper, which were imported to meet the domestic demand. To meet the increasing demand of uncut diamonds, emerald and other precious & semi-precious stones by the domestic Cutting and Polishing Industry, India is dependent on imports of raw uncut stones for their value-added re-exports. The Degree of Self-sufficiency in respect of various principal minerals and metals in 2024-25 is furnished in **Table 2.5**.

Table 2.5: Degree of Self-sufficiency in Principal Minerals & Metals, 2024-25 (P)

Sl. No.	Commodity	Apparent Consumption# ('000 tonnes)	Supply/Domestic supply ('000 tonnes)	Order of self-sufficiency (%)
Minerals*				
1	Bauxite	27405	24742	90
2	Chromite	3228	2971	92
3	Iron ore	270163	293773	100
4	Kyanite	3	2	59
5	Limestonea	485511	456686	94
6	Magnesite	659	115	17
7	Manganese ore	10365	3805	37
8	Rock phosphate	13756	1806	13

Sl. No.	Commodity	Apparent Consumption# ('000 tonnes)	Supply/Domestic supply ('000 tonnes)	Order of self-sufficiency (%)
Metals				
9	Aluminium	4769	3990	84
10	Copper (Cathode)[b]	1542	536	35
11	Lead (primary)[c]	409	225	55
12	Zinc[d]	876	827	94

Source: MCDR Returns for production and DGCI&S, Kolkata for export & import.

Figures rounded off P: Provisional.

#: Apparent Consumption = (production+ import-export)

a: Excludes production of limestone as a minor mineral, calcite & chalk and includes limeshell, limekankar & marl.

b: Based on production of copper cathode and imports & exports of copper & alloys.

c: Based on production of lead (primary), and imports & exports of lead & alloys.

d: Based on production of zinc (ingots) and imports & exports of zinc & alloys.

Note: Even in cases where almost entire domestic demand is satisfied by domestic supplies, some quantities of certain special quality/types of minerals and metals/ferroalloys are imported to meet the requirement in certain specific end-uses.

Production Trends

Metallic Minerals

2.19 The estimated value of metallic minerals in 2025-26 at Rs. 157415 crores increased by about 13.66% over the previous year. Among the principal metallic minerals, iron ore contributed Rs 109623 crore or 69.64%, Zinc concentrate Rs. 23225 crore or 14.75%, Silver Rs. 7359 crore or 4.68%, Chromite Rs. 4511 crore or 2.87%, Lead Conc Rs. 4072 crore or 2.59%, Bauxite Rs. 3267 crore or 2.08% and Manganese Ore Rs. 2629 crore or 1.67%.

2.20 The estimated production of bauxite at 25.78 million tonnes in 2025-26 increased by 4.18% compared to the previous year. Companies, namely Utkal Alumina, NALCO, Odisha Mining Corporation, HINDALCO dominated the mining activities of bauxite of the country in 2025-26. Odisha (75.13%), Gujarat (8.35%) and Jharkhand (7.94%) are the major bauxite producing states in the country.

2.21 The estimated production of Chromite at 3.05 million tonnes in 2025-26 increased by 2.79% as compared to the previous year. Odisha Mining Corporation (OMC), Indian Metals and Ferro Alloys, and Tata Steel Mining Ltd. are the major producers of Chromite. Odisha reported the entire production of chromite (100%) in the country.

2.22 The estimated production of copper concentrate at 105.98 thousand tonnes in 2025-26 increased by about 0.92% as compared to the previous year. Hindustan Copper Limited is the sole producing company. Madhya Pradesh (66.10%) and Rajasthan (33.90%) are the major producers of copper concentrate in the country.

2.23 The estimated production of primary gold at 1302 kg in 2025-26 registered a decrease of about 19.98% as compared to the previous year. Hutti Gold Mines Company Ltd is the top producing company. Karnataka was the leading producer of gold accounting 92.40% of the total production. The remaining production was reported from Andhra Pradesh and Jharkhand.

2.24 The estimated production of iron ore at about 289.19 million tonnes in 2025-26 registered a decrease of 1.56% over the previous year. Major producer of Iron Ore in the year 2025-26 are NMDC Limited, SAIL, Odisha Mining Corporation, Tata Steel Limited, Lloyds Metals, JSW and Rungta Sons. Odisha (50.28%), Chhattisgarh (17.08%) and Karnataka (16.55%) are the major Iron Ore Producing states.

2.25 For the year 2025-26, the estimated production of lead concentrates at 336.94 thousand tonnes decreased by 14.17% and that of zinc concentrate at 1727.48 thousand tonnes showed an increase of 0.35% over the previous year. Rajasthan accounted for the entire production of lead concentrate and zinc concentrate during the year 2025-26. Hindustan Zinc Limited is the sole producing company.

2.26 The estimated production of manganese ore at 3.58 million tonnes in 2025-26 decreased by about 5.81% compared to that in the previous year. MOIL continued to be the largest producer of manganese ore, followed by Tata Steel and Gudur Sasidhar Reddy Mines. Maharashtra (32.80%), Madhya Pradesh (29.75%), Odisha (15.97%) and Andhra Pradesh (12.41%) are top producing states.

Non-Metallic Minerals

2.27 The estimated value of production of non-metallic minerals at Rs 14045 crore during 2025-26 increased by 0.79% as compared to the previous year. Limestone retained its leading position by contributing 91.09% (Rs 12793 crore) of the total estimated value of non-metallic minerals in the year 2025-26, following that, the other non-metallic mineral is Phosphorite Rs 989 crore or 7.04%.

2.28 The production of limestone was at 461.50 million tonnes in the year 2025-26 increased by 1.06%, as compared to that in the previous year. Limestone is widely produced in India. Major producers of Limestone are Ultra Tech Cement Limited, Shree Cement Limited, Ambuja Cement Limited, ACC Limited, Dalmia Cement Limited and J.K. Cement Limited. Rajasthan (23.44%), Madhya Pradesh (13.99%), Andhra Pradesh (13.54%), Chhattisgarh (10.33%) and Karnataka (8.76%) are top producing states.

2.29 The production of magnesite at 75.33 thousand tonnes during 2025-26 decreased by 34.57% as compared to that in the previous year. Major producing companies are Sri Ponguru Magnesite Mine, Pithoragarh Magnesite & Minerals and India Magnesia Product Limited. Tamil Nadu (69.42%) and Uttarakhand (23.38%) are the top producers of Magnesite in the country.

2.30 The production of phosphorite at 1212.60 thousand tonnes in 2025-26 has decreased by 32.85% as compared to that in the previous year. Major producing companies are Rajasthan State Mines and Minerals Ltd and MP State Mining Corporation Ltd. Rajasthan contributed 77.07% and the rest was accrued from Madhya Pradesh.

State-wise Mineral Scenario:

2.31 Scenario of Mineral rich states of India is at **Annexure 2.5**.

*****

03 CHAPTER



Legislative Framework, Mineral Policy and Implementation

Legislative Framework, Mineral Policy and Implementation

- National Mineral Policy, 2019 ..... Page-25
- Measures taken to control illegal mining Page-26
- Mining Surveillance System (MSS) Page-27
- Mineral Concession System Page-29
- The Offshore Areas Mineral (Development and Regulation) Act, 2002 and the Mines and Minerals (Development and Regulation) Act, 1957 ..... Page-29
- Subordinate Legislation Page-33
- Auction of Mineral Blocks Page-33
- District Mineral Foundation (DMF) and Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) Page-38
- Revision Applications Page-40

National Mineral Policy, 2019

3.1 National Mineral Policy, 2019 has been approved by the Union Cabinet on 28th February, 2019.

3.2 National Mineral Policy, 2019 replaced the National Mineral Policy 2008 ("NMP 2008"). The impetus to review NMP 2008 came about by the Supreme Court vide its judgment dated 02.08.2017 in Writ Petition (Civil) No. 114/2014 titled Common Cause vs. Union of India & Others.

3.3 Objective

The aim of National Mineral Policy 2019 is to have a more effective, meaningful and implementable policy that brings in further transparency, better regulation and enforcement, balanced social and economic growth as well as sustainable mining practices.

3.4 Details

- The National Mineral Policy, 2019 includes provisions for giving boost to the mining sector such as:
- introduction of Right of First Refusal for RP/PL holders;
- encouraging the private sector to take up exploration;
- auctioning in virgin areas for composite RP cum PL cum ML on revenue share basis;
- encouragement of merger and acquisition of mining entities;
- transfer of mining leases and creation of dedicated mineral corridors to boost private sector mining areas;
- proposes to grant status of industry to mining activity to boost financing of mining for private sector and for acquisitions of mineral assets in other countries by private sector;
- proposes to auction mineral blocks with pre-embedded clearances to give fillip to auction process;
- proposes to make efforts to harmonize taxes, levies & royalty with world benchmarks to help private sector.

3.5 National Mineral Policy, 2019 focuses on Make in India initiative and gender sensitivity in terms of the vision. In so far as the regulation in minerals is concerned, the main focus of the policy is on ease of doing business by adopting e-Governance, IT enabled systems, awareness and information campaigns. Regarding the role of State in mineral development online public portal with provision for generating triggers at higher level in the event of delay of clearances has been suggested. NMP 2019 aims to attract private investment through incentives while the efforts would be made to maintain a database of mineral resources and tenements under mining tenement system. The new policy focuses on use of coastal waterways and inland shipping for evacuation and transportation of minerals and encourages dedicated mineral corridors to facilitate the transportation of minerals. The NMP 2019 reiterates the utilization of the district mineral fund for equitable development of project affected persons and areas. NMP 2019 proposes a long-term export-import policy for the mineral sector to provide stability and as an incentive for investing in large scale commercial mining activity.

3.6 The NMP 2019 also introduces the concept of Inter-Generational Equity that deals with the well-being not only of the present generation but also of the generations to come and also proposes to constitute an inter-ministerial body to institutionalize the mechanism for ensuring sustainable development in mining.

3.7 Benefits

The NMP 2019 will ensure more effective regulation. It will lead to sustainable mining sector development in future while addressing the issues of project affected persons especially those residing in tribal areas.

Measures taken to control illegal mining:

3.8 Illegal mining means any reconnaissance or prospecting or mining operation undertaken by any person or a company in any area without holding a reconnaissance permit or a prospecting license or, as the case may be, a mining lease as required under sub-section (1) of section 4 of the MMDR Act. The Section 23C of the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957 empowers the State Governments to frame rules to prevent illegal mining, transportation and storage of minerals and for purposes connected therewith. Therefore, the control of illegal mining is primarily the responsibility of the State Government. The Central Government supports and augments these efforts through policy initiatives from time to time.

3.9 There is a three-pronged strategy for prevention of illegal mining viz. constitution of Task Force by the State Governments at State and District Level, framing of rules under Section 23C of the MMDR Act, 1957 and furnishing of quarterly returns on illegal mining for review to the Central Government. The details of States who have constituted task force at State level, framed Rules under section 23C of the MMDR Act, 1957 and have furnished quarterly returns on illegal mining to Indian Bureau of Mines (IBM) (a subordinate office of the Ministry) are as follows:

(i) Constitution of State Level Task Force: 22 State Governments namely, Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal; have set up Task Forces, specially constituted to control illegal mining and review the action taken by member departments for checking the illegal mining activities.

(ii) Framing of Rules under section 23C of MMDR Act, 1957: 25 State Governments namely, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Orissa, Punjab, Rajasthan, Tamilnadu, Telangana, Uttar Pradesh, Uttarakhand, and West Bengal have framed rules under section 23C of MMDR Act, 1957 to curb illegal mining. Some states/UTs have included provisions to curb illegal mining under minor mineral concession Rules.

(iii) Receipt of Quarterly returns on illegal mining: The State Government submits quarterly returns on prevention of illegal mining to IBM. These returns contain details such as the number of cases detected and action taken there on etc. IBM on receipt of the returns from the various State Governments, consolidates the information and sends it to the Ministry at the end of each quarter.

3.10 The Mineral Conservation and Development Rules, 2017 (MCDR) provides measures to ensure systematic and scientific mining. Rule 45 of the MCDR provides for the

mining companies to submit periodic reports on the extraction and disposal of the mined material. Rule 45 of MCDR also facilitates end-to-end national-scale accounting of all minerals produced in the country from the pit head to its end-use, reducing the scope for illegal mining, royalty evasion, etc. The amended Rule 45 now makes it mandatory for all miners, traders, stockists, importers, exporters and end-users of minerals to register and report on the production, trade and utilization of minerals to the State Government(s) and Indian Bureau of Mines.

3.11 Details of miners/traders registered with IBM as given in **Table 3.1**.

Table 3.1

	Registers as on December,2025
Mining Leases	7687
End users	4156
Traders	7993
Stockists	2549
Exporters	1325

Note: IBM has also requested the State Governments not to issue transit passes for movement of minerals to unregistered operations.

3.12 The MMDR Act, 1957 was amended through the MMDR Amendment Act, 2015. Through MMDR Amendment Act, 2015, Central Government has inserted the following provisions under the MMDR Act with the objective to curb illegal mining in the Country:

a. Penalty for illegal mining has been made more stringent by amendment of the MMDR Act in 2015. Penalties for contravention of Section 4(1) and 4(1A) of the Act have been increased from Rs. 25 thousand per hectare to Rs. 5 Lakh per hectare and the term of imprisonment has been increased from 2 years to 5 years. [Section 21(1) & Section 21(2)]

b. Section 30B of the MMDR Act, 1957 provides for constitution of Special courts by State Governments for speedy trial of Illegal mining/Transportation/ Storage cases and 30C of the Act provides that such Special Courts shall be deemed to be a Court of Session.

Space Technology for checking Illegal Mining

Adoption of Modern Technology for monitoring and capturing Mine data

3.13 Indian Bureau of Mines (IBM) has set up two GIS and Remote sensing laboratories at Nagpur & Hyderabad with technical assistance of National Remote Sensing Centre (NRSC), Hyderabad. The laboratories are fully equipped to carry out the work for monitoring the mining activities using GIS and Remote sensing software.

3.14 Necessary amendments have been brought out in the Mineral Conservation and Development Rules 2017 mandating the mineral concession holders to submit drone images & satellite imageries to IBM. Based on these images it is proposed to use technology to monitor the mining activities in the country remotely without much human intervention. It is also proposed to create a data bank of images of land use of the mining areas of the country and effectively plan for their systematic & scientific mine closure.

Mining Surveillance System

3.15 Mining Surveillance System (MSS) is a satellite-based monitoring system which aims to establish a regime of responsive mineral administration by curbing instances of illegal mining activity through automatic remote sensing detection technology.

Ministry of Mines & Indian Bureau of Mines (IBM) have developed the MSS, with assistance from Bhaskaracharya Institute for space applications and Geo-informatics (BISAG), Gandhinagar and Ministry of Electronics and Information Technology (MeitY).

The system works on the basic premise that most minerals occur in the continuity and their occurrence is not limited to the lease area but is likely to extend in the vicinity. The MSS checks a region of 500 meters around the existing mining lease boundary to search for any unusual activity which is likely to be illegal mining. Any discrepancy found is flagged-off as a trigger.

The MSS is a transparent & bias-free system, having a quicker response time and capability of effective follow-up. The deterrence effect of 'Eyes watching from the Sky' would be extremely fruitful in curbing instances of illegal mining.

A user-friendly mobile app for MSS has been created and launched on 24th January, 2017 at Gandhinagar for enabling public participation in assisting the government's endeavor to curb illegal mining, which was being used by the inspecting officials to submit compliance reports of their inspections.

The training of all the States for its adoption of the MSS for minor minerals has also been done. Total 179, MSS have been developed by Ministry of Mines & Indian Bureau of Mines (IBM), with assistance from Bhaskaracharya Institute for space applications and Geo-informatics (BISAG), Gandhinagar and Ministry of Electronics and Information Technology (MeitY).

Details of triggers generated, verified and cases of unauthorised mining detected are given below in **Table 3.2**:

Table 3.2

Phase	Generated	Verified	Unauthorized Mining Confirmed
Phase-I (Major) (2016-17)	296	287	47
Phase-II (Major) (2018-19)	52	45	5
Phase-II (Minor) (2018-19)	130	104	9
Phase-III (Major) (2021-22)	177	98	12
Phase-IV (Major) (2022-23)	138	40	7
Phase-V (Major) (2023-24)	157	21	1
Phase-VI (Major) (2024-25)	138	0	0

IBM has entered into a Memorandum of Understanding (MoU) with National Remote Sensing Centre (NRSC), for a pilot project "Sudoor Drushti" to demonstrate the feasibility of using High-Resolution Satellite imagery and Digital Elevation Model (DEM) in monitoring mining activities/changes over a period of time over selected group of mines.

The Ministry of Mines has begun use of Geo-spatial technologies such as GIS and Satellite imagery to monitor and prevent illegal mining activities. The Ministry of Mines has launched the Mining Surveillance System (MSS) in

October 2016. It aims at developing a system for detection of incidences of illegal mining by use of space technology and surveillance of the area up to 500m outside the lease boundary to check incidences of illegal mining. The MSS has been developed through Indian Bureau of Mines (IBM) in collaboration with Ministry of Electronics and Information Technology (MeitY) and Bhaskaracharya Institute for Space Applications and Geo- informatics (BISAG) Gandhinagar.

Since, the inception of MSS in 2016-17, the project was implemented in major mineral rich states which includes State Government of Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Rajasthan, Tamilnadu, Telangana and Uttar Pradesh; in total 5 phases. The MSS analyzes land pattern changes within a 500-meter radius of mining leases. If discrepancies are detected, alerts are generated and sent to the respective State Government for ground verification. A mobile app has also been developed and launched to facilitate reporting of cases of illegal mining.

Mineral Concession System

3.16 As per the Amendment to MMDR Act in 2015, the system of allocation of Mineral Concession has been changed from first come first serve basis to a transparent and non-discriminatory auction process. The Amendment has also brought in a uniform tenure of 50 years for Mining Leases.

Policy Initiative:

3.17 The Offshore Areas Mineral (Development and Regulation) Act, 2002 and the Mines and Minerals (Development and Regulation) Act, 1957:

Ministry of Mines is responsible for the legislation for regulation of mines and development of minerals within the territory of India, including mines and minerals underlying the ocean within the territorial waters or the continental shelf, or the exclusive economic zone and other maritime zones of India. The Ministry is also responsible for the regulation of mines and development of minerals other than coal, lignite and sand for stowing and any other mineral declared as prescribed substances for the purpose of the Atomic Energy Act, 1962 (33 of 1962) under the control of the Union as declared by law. The Ministry is allocated all metals and minerals not specifically allotted to any other Ministry/ Department, such as, aluminium, zinc, copper, gold, diamonds, lead, nickel, etc. and planning, development and control of, and assistance to, all industries related thereto.

The Ministry administers the Mines and Minerals (Development and Regulation) Act, 1957 ('**MMDR Act, 1957**') and the Offshore Areas Mineral (Development and Regulation) Act, 2002 ('**OAMDR Act, 2002**'). In performing its functions, the Ministry is assisted by Geological Survey of India and Indian Bureau of Mines.

(A) Mines and Minerals (Development and Regulation) Amendment Act, 2025

The Mines and Minerals (Development and Regulation) Act, 1957 [MMDR Act] has been amended through MMDR Amendment Act, 2025. Following amendments have been introduced through the aforesaid amendment:

i. The scope and territorial domain of the National Mineral Exploration Trust has been widened to enable use of

the funds accrued to the Trust within India, including the offshore areas, and outside India for the purposes of exploration and development of mines and minerals. The National Mineral Exploration Trust has been renamed as 'National Mineral Exploration and Development Trust' to reflect its enlarged scope. The amount of payment to the Trust by the lessees has been slightly increased from present 2% of the royalty payable to 3% of the royalty payable.

ii. Provision has been made in the Act for inclusion of any new mineral in a mining lease. Any major mineral can also be included in a minor mineral mining lease, subject to the conditions prescribed by the Central Government. For inclusion of minerals, additional amount payable is specified in new eighth Schedule to the Act. No additional amount is applicable on inclusion of critical and strategic minerals specified in the Part-D of First Schedule to the Act or minerals specified in the Seventh Schedule to the Act to incentivize production of these minerals which are found in small quantity and are difficult to mine and process.

iii. One-time extension of the area under a mining lease (ML) or composite licence (CL) has been allowed by the State Government to include a contiguous area on additional payment prescribed by the Central Government. In case of ML, the contiguous area shall not exceed 10% and in case of CL, the contiguous area shall not exceed 30% of the existing area under the lease or licence. This will promote optimal mining of deep-seated minerals, which are locked up in contiguous areas and may not be economically viable to be extracted under a separate lease or licence.

iv. The Central Government has been empowered to promote development of market, including trading of minerals, its concentrate or its processed forms (including metals) through mineral exchanges. Setting up of mineral exchanges will help miners and end-users of minerals in determining fair and transparent market prices based on supply and demand dynamics, stabilize markets and aid in budgeting and planning.

v. The limit on sale of minerals from the captive mines has been removed. The miners can now sell minerals after meeting the requirement of the end use plant linked with the mine and on payment of additional amount specified in the Act. Further, the miners have been allowed to sell dumps which have been stacked up to such date as may be specified by the Central Government in captive leases which cannot be captively utilized. This will enable the miners to ensure optimal mining of mineral resources, reduce environmental hazards and increase safety in mine workings, increase production and supply of minerals in the market and provide additional revenue to the States.

vi. Further, the requirement of prior approval of the Central Government for auction of mineral blocks of

notified minerals i.e., bauxite, iron ore, limestone and manganese for grant of composite has been removed to expedite auctions.

(B) Amendment of Rules framed under MMDR Act, 1957

The following Rules have been framed and notified in pursuance of the MMDR Act:

i. The Mineral Conservation and Development (Amendment) Rules, 2025 were notified vide G.S.R. 232(E) dated 16.04.2025 for amendment of definition of calibrated lump ore and corresponding changes in the formats for monthly and annual returns.

ii. The Mineral (Auction) Amendment Rules, 2025, were notified vide G.S.R. 255(E) dated 23.04.2025 to allow the consideration of the net worth of the holding company of the subsidiary company for the purpose of net worth criteria for participating in auction of mineral blocks, irrespective of whether the holding company is incorporated in India or outside India.

iii. The Minerals (Evidence of Mineral Contents) Amendment Rules, 2025 were notified vide G.S.R. 382(E) dated 12.06.2025 to include exploration norms for different types of Rare Metal and Rare Earth Elements (REE) deposits such as REE occurring in pegmatites, reefs, veins and other alkali igneous rocks of tabular and lenticular habits under the exploration norms for different type of deposits in G4 / G3 / G2 stage in the Rules.

iv. The Minerals (Other than Atomic and Hydrocarbons Energy Minerals) Concession (Amendment) Rules, 2025 were notified vide G.S.R. 486(E) dated 21.07.2025 to specify the manner of computation of ASP of minerals Caesium, Zirconium & Rubidium.

v. The Central Government has amended the Mineral (Auction) Rules, 2015 vide Notification No. G.S.R. 764(E) dated 17.10.2025 to introduce intermediary timelines or fast-tracking the operationalization of auctioned mines.

(C) Other reforms

i. In exercise of the powers conferred in clause (e) of section 3 of the MMDR Act, the Central Government omitted the minerals Barytes, Felspar, Mica and Quartz from the list of minor minerals vide S.O. 924 (E) dated 20.02.2025. These minerals are found in association with other critical minerals and have important industrial uses.

ii. Ministry of Mines issued order dated 01.05.2025 under Section 20A of the MMDR Act to facilitate the transition of existing mining leases of Barytes, Felspar, Mica and Quartz from minor minerals to major minerals category.

iii. The Central Government has undertaken the power to auction mineral blocks for grant of exploration licence vide order dated 21.10.2024 under Section 20A of the MMDR Act.

iv. The Central Government has amended following rules to implement the provisions of MMDR Amendment Act, 2025:

a. The National Mineral Exploration Trust Rules, 2015 vide Notification No. G.S.R. 780(E) dated 23.10.2025.

b. The Mineral (Auction) Rules, 2015 vide Notification No. G.S.R. 776(E) dated 22.10.2025.

v. The Central Government has amended the Notification No. G.S.R. 786(E) dated 23rd August, 1989 vide Notification No. G.S.R. 751(E) dated 10.10.2025 to classify limestone as a major mineral.

vi. The Central Government has appointed the Indian Bureau of Mines as the authority to register and regulate mineral exchanges for minerals other than those specified in Part A and Part B of the First Schedule to the MMDR Act, vide Notification No. S.O. 4570(E) dated 07.10.2025.

vii. The Central Government has amended the Second Schedule of the Mines and Minerals (Development and Regulation) Act, 1957 with effect from 20.11.2025 whereby royalty rates of minerals Caesium, Graphite, Rubidium, and Zirconium have been specified. The details are given in **Table 3.3**:

Table 3.3

Sl. No.	Minerals	Rates of Royalty
1	Caesium	Two per cent. of the average sale price of Caesium metal chargeable on the Caesium metal contained in the ore produced.
2	Graphite: (i) With eighty per cent. or more fixed carbon (ii) With less than eighty per cent. Fixed carbon	 Two per cent. of average sale price on ad valorem basis. Four per cent. of average sale price on ad valorem basis.
3	Rubidium	Two per cent. of the average sale price of Rubidium metal chargeable on the Rubidium metal contained in the ore produced.
4	Zirconium	One per cent. of the average sale price of Zirconium metal chargeable on the Zirconium metal contained in the ore produced.

(D) Offshore Areas Mineral (Development and Regulation) Amendment Act, 2023

a) Article 297 of the Constitution of India vests all minerals in the offshore area in the Union. The Parliament enacted the OAMDR Act, 2002 to provide for development and regulation of mineral resources in the offshore areas which include the territorial waters, continental shelf, exclusive economic zone and other maritime zones of India.

b) The OAMDR Act provides for development and regulation of mineral

resources in the territorial waters, continental shelf, exclusive economic zone and other maritime zones of India and to provide for matters connected therewith or incidental thereto.

c) The OAMDR Act, 2002 was amended through the OAMDR Amendment Act, 2023, with effect from 17.08.2023. Through the said amendment, inter-alia a provision was made for grant of production lease for minerals other than atomic minerals to private sector only through auction by competitive bidding.

(E) Status of framing of subordinate legislation/rules under OAMDR Act, 2002

The following rules have been framed and notified in pursuance of the OAMDR Act in 2025:

i. The Offshore Areas Mineral (Auction) Amendment Rules, 2025 have been notified vide G.S.R. 311(E) dated 14.05.2025 to allow the consideration of the net worth of the holding company of the subsidiary company for the purpose of net worth criteria for participating in auction of mineral blocks, irrespective of whether the holding company is incorporated in India or outside India.

ii. The Offshore Areas Atomic Minerals Operating Right Rules, 2025 have been notified vide G.S.R. 468(E) dated 14.07.2025. These rules provide the procedure for the grant of operating rights to the Government, a Government company or a corporation, in respect of atomic minerals.

3.18 Auction of Mineral Blocks:

i. The MMDR Amendment Act, 2015 instituted the system of e-auction for the grant of mineral concession for major minerals with a view to bring in greater transparency and removal of discretion in the allotment.

ii. Subsequent to the 2015 amendment, the MMDR Act was further amended in the year 2020 with the objective of maintaining sustainable mineral production in the country and in the year 2021 with the objective of inter-alia increasing employment and investment in the mining sector, boosting mineral production, time-bound operationalization of mines, increasing the pace of exploration, and auction of mineral resources. Further, the subordinate rules to implement the above reforms have been notified within the stipulated time.

iii. The MMDR Act, 1957 has been further amended through the MMDR Amendment Act, 2023 in FY 2023-24 empowering the Central Government to exclusively auction mining leases and composite licences for 24 critical minerals and introducing the auction of Exploration Licence (EL) for 29 deep-seated and critical minerals.

iv. These amendments in the MMDR Act and subsequently in Mineral Auction Rules have resulted in a significant increase in the auction of mineral blocks. So far, 592 blocks have been auctioned across the 17 major minerals states. It is worth noting that the number of blocks auctioned per year has increased a lot since the reforms of 2021. From 2015-2021, in 6 years, 108 mineral blocks (Mining Lease-99, Composite Licence-9) were auctioned whereas since 01.04.2021, 484 blocks

(Mining Lease -274, CL-210) have been auctioned from FY 2021-22 to FY 2025-26 till 31.12.2025. The summary of Yearwise/Statewise auctions is as under in **Table 3.4**:

Table 3.4 : State-wise Auction Summary updated as on 31.12.2025
Year wise/Statewise Auction Summary

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	Total
State												
Andhra Pradesh	-	1	2	2	-	-	4	11	3	3	8	34
Arunachal Pradesh										4		4
Assam										5	2	7
Bihar										4		4
Chhattisgarh	3	-	2	-	-	2	2	20	6	8	16	59
Gujarat	-	-	3	-	-	4	3	2	6	7	18	43
Jharkhand	2	1	1	3	-	-	-	-	3	1		11
Karnataka	-	7	-	7	4	1	8	11	6	3	17	63
Madhya Pradesh	-	1	-	5	2	5	4	29	22	34	16	118
Maharashtra	-	-	2	1	10	-	9	6	10	3	2	43
Odisha	1	2	2	-	25*	1	9*	10		3	9	60
Rajasthan	-	3	1	1	-	3	7	8	31	34	26	114
Tamil Nadu	-	-	-	-	-	-	-			2		2
Telangana	-	-	-	-	-	-	-			2	2	4
Uttar Pradesh	-	-	-	-	-	-	-	4	3	3	3	13
Uttarakhand											1	1
Goa	-	-	-	-	-	-	-	4	5	3		12
Total	**6**	**15**	**13**	**19**	**41***	**16**	**46***	**105**	**95**	**119**	**120**	**592****

**2 Iron Ore Blocks auctioned in 2019-20 in Odisha were forfeited. The same are re-auctioned in September, 2021. Therefore, in total 594 mineral blocks were auctioned but in actual, the net figure is 592.*

***Including 34 Critical Mineral Blocks auctioned by the Ministry of Mines*

v. Largest number of mineral blocks auctioned are of Limestone (196) followed by Iron Ore (140), Manganese Ore (49), and Bauxite (69). The mineral-wise summary is as under in **Table 3.5**:

3.19 Mineral-wise Auction Summary as on 31.12.2025:

Table 3.5

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	Total
Mineral												
Limestone	4	5	10	5	4	9	18	20	35	55	31	196
Iron Ore	1	7	2	9	17	1	13*	32	24	10	25	140
Iron Ore & Manganese	0	0	0	0	6	0	1*	2	1	1	5	15
Gold	1	1	1	1	0	2	2	5	4	5	4	26

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	Total
Mineral												
Manganese	0	1	0	1	3	0	3	19	11	5	6	49
Limestone & Manganese											1	1
Manganese & Dolomite										1		1
Diamond	0	1	0	0	1	0	-			1		3
Cement Grade Limestone & bauxite											1	1
Bauxite	0	0	1	0	5	1	5	14	8	13	23	69
Graphite	0	0	0	3	2	0	1	5	1	9	2	23
Vanadium & Graphite	0	0	0	0	0	0	0	0	0	3	1	4
Chromite	0	0	0	0	3	0	-					3
Copper	0	0	0	0	2	0	-		2		3	7
Kyanite	0	0	0	0	0	0	1					1
Rock Phosphate	0	0	0	0	0	0	1	3				4
Copper & Gold	0	0	0	0	0	0	1					1
Phosphorite	0	0	0	0	0	0	0	3	2	2	1	8
Phosphorite & Limestone	0	0	0	0	0	0	0	0	0	0	2	2
Phosphate & REE	0	0	0	0	0	0	0	0	0	0	1	1
Potash & Halite	0	0	0	0	0	0	0	0	0	0	2	2
REE	0	0	0	0	0	0	0	0	0	0	1	1
Ni, Cr and associated PGE	0	0	0	0	0	0	0	2		2		4
Ni,Cr,Co										1		1
Glauconite (Potash)	0	0	0	0	0	0	0	0	2	3		5
Basemetal	0	0	0	0	0	0	0	0	5		3	8
Siliceous Earth	0	0	0	0	0	0	0	0	0	2	2	4
Semi Precious Stone	0	0	0	0	0	0	0	0	0	1		1
Lithium & REE	0	0	0	0	0	0	0	0	0	1		1
Co,Mn &Iron										1		1
Tungsten	0	0	0	0	0	0	0	0	0	2		2
Garnet										1		1
Aluminous Laterite & Laterite											2	2
Magnesite											1	1
Lead & Zinc											1	1
Fluorite											1	1
Emerald											1	1
Total	**6**	**15**	**14**	**19**	**43**	**13**	**46***	**105**	**95**	**119**	**120**	**592**

**2 Iron Ore Block auctioned in 2019-20 in Odisha was forfeited. The same were re-auctioned in September, 2021. Therefore, in total 594 mineral blocks were auctioned but in actual, the net figure is 592.*

vi. During the calendar year 2025, 332 Notice Inviting Tenders (NITs) for the auction of mineral blocks have been issued by the various State Governments and Central Government., of which 143 mineral blocks (ML-81, CL-62) have been successfully auctioned across 17 major mineral states.

vii. It is important to note that State of Uttarakhand issued Notice Inviting

Tender and conducted successful auction of magnesite mineral block for the first time since the introduction of auction regime in 2015.

3.20 Operationalization of Auctioned Mineral Blocks:

i. Out of the 592 blocks auctioned so far, mining leases have been executed in respect of 95 auctioned mines and production has started in respect of 82 mineral blocks. Further Composite Licence deed has been executed in 90 blocks. Odisha has the highest number of auctioned mines in production with 30 operational mines, followed by Karnataka (16) ,Gujarat (9), Madhya Pradesh (6), Andhra Pradesh (5) ,Rajasthan (5) and Goa (5).

ii. During the calendar year 2025, lease deeds have been executed for 74 mineral blocks (23 ML and 51 CL) and 26 mineral blocks were operationalized, marking the highest number of blocks becoming operational in a single year to date.

3.21 Efforts of Ministry of Mines to increase operationalisation of auction blocks:

i. Pragati Meeting: Pursuant to the directions of the PRAGATI meeting held on 26.12.2024, the States were classified into three categories (A/B/C) based on their respective challenges, progress achieved, and the level of intervention required. A Committee comprising the Principal Secretary to the Prime Minister, the Cabinet Secretary, and the Secretary, Ministry of Mines was constituted to hold review meetings with the Chief Secretaries of the States. Accordingly, two review meetings of the Committee with Chief Secretaries of Category 'A' States were held on 03.04.2025 and 17.11.2025.

Ii. Review by Secretary (Mines): Secretary (Mines) has initiated monthly review meetings with Category-A States to closely monitor the progress of operationalization of auctioned blocks and to address key issues impeding overall progress. So far, four such meetings have been convened on 19.09.2025, 14.10.2025, 12.11.2025 and 11.12.2025. Further, 14 State specific individual review meeting have also been conducted under the chairmanship of the Secretary(Mines).

3.22 Auction by the Designated officer, Ministry of Mines:

1. Auction of Critical and Strategic Mineral blocks:

i. The Mines and Minerals (Development and Regulation) Act, 1957 has been amended in 2023 which inter alia, inserted Section 11D in the Act which empowers the Central Government to exclusively auction Mining Leases (ML) and Composite Licences (CL) in respect of 24 critical and strategic minerals specified in Part D of the First Schedule of the Act such as Cobalt, Graphite, Lithium, Molybdenum, Nickel, Platinum Group of Elements (PGE), Minerals of the "Rare Earths" group (not containing Uranium and Thorium), Tin, Tungsten, Vanadium, fertilizer minerals such as Phosphate (without uranium), Glauconite, and Potash.

ii. So far, Central Government has issued 104 Notice Inviting Tenders (NITs) for the grant of mineral concession for 76 unique Critical and Strategic Mineral blocks such as Chromium, Cobalt, Glauconite, Graphite, Lithium, Nickel,

PGE, Phosphorite/Phosphate, Potash, REE, Tungsten, Vanadium in 06 tranches across the various States. 34 blocks (5 Mining Lease and 29 composite licence) have been successfully auctioned.

iii. During the Calendar Year 2025, the launch of Tranche V of critical minerals listed in Part D of the First Schedule of the MMDR Act, covering 15 blocks, was notified on 20th January 2025 and Preferred Bidders were declared for 10 blocks on 27th May 2025. Further, the ongoing Tranche VI of critical minerals, comprising 23 blocks, was launched on 16th September 2025. The 2nd round e-auction process is underway and the preferred bidders will be declared till 30th January 2026.

2. Auction of Exploration Licence Blocks:

i. Taking significant strides towards unlocking the potential of critical and deep-seated minerals, the MMDR Act, 1957 amended through the MMDR Amendment Act, 2023 dated 17th August 2023 further inserted Section 10BA incorporating provisions for grant of Exploration Licence ("EL") for 29 critical and deep-seated minerals specified in Seventh Schedule through auction. Further, the process for grant of Exploration Licence has been notified in chapter III A of the Mineral (Auction) Amendment Rules, 2024, with respect to the minerals specified in Seventh Schedule of the MMDR Act.

ii. Accordingly, 20 blocks of critical minerals specified in the Seventh Schedule of the Act have been handed over to 14 states to initiate the auction process for EL. Subsequently, NITs for auction for grant of Exploration Licence for 12 blocks were issued by 6 States namely Andhra Pradesh (1), Chhattisgarh (3), Karnataka (1), Madhya Pradesh (2), Maharashtra (2), and Rajasthan (3).

iii. Ministry of Mines in the national interest, for the scientific and sustainable development and exploration of mineral resources, issued Order dated 21.10.2024 under section 20A of the Act and notified that for the purpose of Sub-sections (4) and (6) of Section 10BA of the Act, Central Government will conduct the auction process for grant of Exploration Licence. Additionally, provision of Section 10BA of the Act and the Rules made thereunder, Auction of EL, as applicable to a State Government, shall mutatis mutandis be also applicable to the Central Government for notifying the blocks for auction or conduct auction of EL.

iv. Accordingly, Tranche I of Exploration Licences (EL) for 13 mineral blocks for minerals listed in the Seventh Schedule of the MMDR Act has been launched on 13th March 2025, of which 07 blocks were successfully auctioned from the states of Andhra Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra and Rajasthan consisting of minerals notably Gold, Copper, REE, PGE, Lead and Zinc.

v. The Exploration Licence holders will play a pivotal role in exploring the blocks and identifying areas suitable for mining lease auctions, potentially bolstering revenue for state governments. This concerted effort by the Government underscores the commitment to harnessing the potential of critical minerals, fostering economic growth, and advancing the exploration

landscape in India. This new EL regime aims to boost exploration of minerals like lithium, copper, silver, diamond, and gold by involving the private sector. The licensees can conduct reconnaissance and prospecting to identify mining prospects and receive a revenue share from the auction premium for 50 years thereby enhancing potential revenues for State Governments.

3. Auction of Notified Mineral Blocks:

Additionally, upon request of the Government of J&K, auctions for 07 Limestone blocks of Jammu & Kashmir, under Section 10B(2) and Sections 11(4) & 11(5) of the MMDR Act, were notified by the Central Government on 24 November 2025 and the e-auction process is underway.

Table 3.6

A summary of the achievements of the Ministry (Designated officer):

Sl. No.	Category	Tranche / Details	Launch date	No. of Blocks	Successfully auctioned
1	Critical Minerals (Part D of the First Schedule of MMDR Act)	Tranche V	20th Jan 2025	15	10 (Preferred Bidders declared on 27th May 2025)
2		Tranche VI	16th Sep 2025	23	2nd round of e-auction is ongoing
3	Exploration Licences (EL) (for minerals listed in Seventh Schedule of MMDR Act)	Tranche I	13th Mar 2025	13	07 (Preferred Bidders declared on16th Sep 2025)
4	Limestone Blocks (J&K)	Under Sections 10B(2), 11(4), & 11(5) of MMDR Act	24th Nov 2025	07	Auction Ongoing

3.23 District Mineral Foundation (DMF) and Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)

i. As per the Mines & Minerals (Development & Regulation) (MMDR) Act, 1957, the Government of India made provisions for the establishment of District Mineral Foundations (DMFs) in all districts affected by mining activities. Section 9(B) of the Act stipulates the creation of DMFs as non-profit entities, defines their objectives, and empowers State Governments to prescribe their composition and functions.

ii. The primary objective of DMF is to work for the interest and benefit of persons and areas impacted by mining-related operations. This includes mitigating adverse effects of mining and promoting sustainable development in affected regions. To date, DMFs have been constituted in 656 districts across 23 States that have framed DMF rules.

iii. Under Section 20A of the MMDR Act, the Central Government directed States to incorporate the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) guidelines, issued in 2015, into their DMF rules. Following

extensive stakeholder consultations, the Ministry of Mines issued revised PMKKKY guidelines on 15 January 2024 to enhance implementation and ensure improved outcomes for mining-affected communities.

iv. DMF addresses the long-standing demand of local communities in mining-affected areas for inclusive growth. As per the MMDR Amendment Act, 2015, DMF funds are sourced from additional contributions—30% of royalty from existing miners and 10% from miners of auctioned mines, effective 12 January 2015. Further, the MMDR Act was amended through the MMDR Amendment Act, 2021 (effective 28 March 2021), revising sub-sections (5) and (6) of Section 9(B) to clarify DMF contribution rates for different categories of mines. Detailed information is available on the official web link.

https://mines.gov.in/admin/storage/app/uploads/6638a345632971714987845.pdf

v. On 15/01/2024, the Government of India has issued the revised PMKKKY guidelines and increased the percentage of utilization in high priority sectors from at least 60% to at least 70%. New sectors of Housing, Agriculture and Animal Husbandry, along with general guidelines regarding convergence of schemes, project management unit, endowment fund and affected areas in more than one district are introduced. Further, new guidelines have also incorporated amendments and addition in the section 'Transparency & Accountability' for the development of online portal by the Central Government for facilitating the administration of DMF, State Level Monitoring Committee, CAG audit of DMFs, grievance redressal and compliance mechanism. The details are available at the web link:

https://mines.gov.in/admin/storage/ckeditor/Revised_Guidelines_PMKKKY_1712904597.pdf

vi. The Ministry launched the National DMF Portal in July 2024 as a centralized digital platform for the efficient administration and real-time monitoring of District Mineral Foundations (DMFs) across the country. This portal features a dynamic dashboard offering advanced analytics, project tracking, and a comprehensive repository of best practices. It plays a crucial role in promoting transparency, accountability, and systematic management of funds and initiatives under the DMF/PMKKKY scheme. The link to the National DMF portal is as follows:

https://dmfindia.mines.gov.in/login

vii. In order to strengthen the formulation of schemes and to prioritize achievement of targets under the Aspirational Districts Programme and Aspirational Block Programme, the Ministry issued the Aspirational DMF Programme Guidelines on 9th July 2025. The primary objective of the guidelines is the alignment of DMF works with key ADP/ABP sectors. The details are available at the web link:

https://mines.gov.in/admin/download/686f5ebd87d181752129213.pdf

viii. As of December 2025, a total of ₹1,22,909 crore has been collected under the District Mineral Foundation Trust (DMFT). Additionally, 4,32,914 projects across various sectors have been sanctioned under DMF/PMKKKY for different programmes

and development schemes. For these projects, ₹1,02,317.66 crore has been allocated, and ₹65,321.55 crore has been spent during the said period.

Revision Applications

3.24 Under Section 30 of the Mines and Minerals (Development and Regulation) Act, 1957 and Rule 35 of the Minerals (Other than Atomic & Hydro Carbons Energy Minerals) Concession Rules, 2016, the Ministry of Mines exercises its Revisionary Powers in dealing with the Revision Applications filed by the applicants who are aggrieved by any order passed by the State Government or any other authority. Under Rule 35 and 36 of MCR 2016, detailed procedure for filing and disposal of Revision Application has been prescribed.

3.25 In order to ensure transparency in disposal of Revision cases, a public interface i.e. a Web Link has been developed for effective monitoring of the Revision Applications. The Web Link of Status of Revision Application is www.ras.nic.in/WebQuery.aspx. This system keeps track of the various stages of the Revision Applications filed by the applicants till the final disposal of the applications. As far as possible, cases are being heard in a chronological order and their age of pendency. Hearing details etc. are available on this website. Revision Application numbers, Final Orders are generated by the system automatically. The system is web enabled and has a link on the website of the Ministry of Mines. The website is accessible to the public and the copy of Final Order & Hearing dates can be obtained from the Website.

3.26 During the period 1st January, 2025 to 31st December, 2025, a total number of 132 Revision Applications were disposed of by the Revisionary Authorities in the Ministry of Mines.

*****

04 CHAPTER



Revenue from Mineral Resources

Revenue from Mineral Resources

- Royalty – Legal provisions Page-43
- Revision of rates of royalty and dead rent in respect of major (non-coal minerals) Page-43
- Existing royalty rates for ores and minerals Page-44

Royalty - Legal Provisions

4.1 Under the provisions of Section 9(3) of the MMDR Act, 1957, the Central Government may, by notification in the Official Gazette, amend the Second Schedule, so as to enhance or reduce the rate at which royalty shall be payable in respect of any minerals with effect from such date as may be specified in the Notification, provided that the Central Government shall not enhance the rate of royalty in respect of any minerals more than once during any period of three years. Similarly under Section 9A(2) of the Act, the Central Government may, by notification in the Official Gazette, amend the Third Schedule so as to enhance or reduce the rate at which the dead rent shall be payable in respect of any area covered by mining lease and such enhancement or reduction shall take effect from such date as may be specified in the notification, provided that the Central Government shall not enhance the rate of the dead rent in respect of any such area more than once during any period of three years.

Revision of rates of royalty and dead rent in respect of major minerals (non-coal minerals)

4.2 In exercise of the powers conferred under Section 9(3) of the MMDR Act, 1957, the Central Government has amended the Second Schedule to the said Act and notified the same vide notification No. G.S.R. 630(E) dated 01.9.2014. Further, in exercise of the powers conferred under Section 9A (2) of the above said Act, the Central Government has amended the Third Schedule of the said Act and notified the same vide notification No. G.S.R. 631(E) dated 01.9.2014. Recently, the Central Government/Ministry of Mines has also amended the Second and the Third Schedule to the MMDR Act, 1957 vide Notification No. G.S.R. 621(E) dated 02.09.2019 and G.S.R. 622(E) dated 02.09.2019, respectively. After that the Central Government/Ministry of Mines rescinded the above said both the Notifications vide Notification No. G.S.R. 634(E) and GSR 635(E) dated 02.09.2019 respectively. Further, vide notification No. G.S.R. 204(E) dated 15.03.2022 the Central Government made the amendments in the Second Schedule of the MMDR Act, 1957 for specifying the rate of royalty in respect of Glauconite, Potash, Emerald, Platinum Group of Metals (PGM), Andalusite, Sillimanite, Kyanite and Molybdenum.

The following amendments in the Second Schedule to the MMDR Act, 1957 have also been notified-

(i) Further, vide notification No. G.S.R. 736(E) dated 12.10.2023 the Central Government made the amendments in the Second Schedule of the MMDR Act, 1957 for specifying the rate of royalty in respect of Lithium, Niobium (i) Primary (produced from ores other than Columbite- tantalite) (ii) By-product (produced from ores other than Columbite-tantalite) and Rare Earth Elements (produced from ores other than Monazite occurring in beach sand minerals).

(ii) Further, vide notification No. G.S.R. 152(E) dated 01.03.2024 the Central Government made the amendments in the Second Schedule of the MMDR Act, 1957 for specifying the rate of royalty in respect of Beryllium, Cadmium, Cobalt, Gallium, Selenium, Tantalum (produced from ores other than Columbite-tantalite), Titanium (produced from ores other than Brown Ilmenite (Leucoxene), Ilmenite and Rutile occurring in Beach Sand Minerals found in teri or beach sands), Vanadium

as (i) Primary (ii) By-product, Indium, Rhenium, Tellurium, Tungsten, Zircon.

(iii) In exercise of the powers conferred by sub-section (2) of section 16 of the Offshore Areas Mineral (Development and Regulation) Act, 2002 (17 of 2003), the Central Government has amended the First Schedule to the OAMDR Act 2022 and notified the same vide notification No. S.O. 4760(E) dated 29.10.2024 for specifying the rate of royalty in respect of Construction Sand, Dolomite, Limestone and Lime mud, Polymetallic Nodules and Crusts, Overburden or waste.

(iv) In exercise of the powers conferred by sub-section (3) of section 9 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957), the Central Government has amended the Second Schedule to the said Act and notified the same vide notification No. G.S.R. 858(E), dated 20.11.2025 for rationalization of rate of royalty in respect of Graphite, Caesium, Rubidium, and Zirconium.

4.3 Existing royalty rates (updated as on 12.10.2023) for ores & minerals, as per Second Schedule to the MMDR Act, 1957, are available at -

https://ibm.gov.in/writereaddata/files/17192309526679 61e85a0a8Rates_of_Royalty_of_major_minerals.pdf

Further, the rates of royalty, as amended by vide notification No. G.S.R. 152(E) dated 01.03.2024, is given at-

https://mines.gov.in/admin/download/65e955082e7bb1709790472.pdf

Royalty accrual for major minerals (other than coal, lignite & sand for stowing and minor mineral) by the various State Governments for the year 2022-23 to 2024-25(P) is given below in **Table 4.1**:

Table 4.1: State wise Royalty accrual on major minerals (other than Minor, Atomic, Coal, Lignite, Sand for Stowing) during last 03 years

(Rs. in Lakhs)

State	2022-23(R)	2023-24(P)	2024-25(P)
Andhra Pradesh	43280	49267	NA
Assam	557	808	633
Bihar	759	832	1071 .73
Chhattisgarh	NA	NA	NA
Daman Diu	Nil	Nil	Nil
Goa	95	744	NA
Gujarat	NA	NA	NA
Haryana	Nil	Nil	NA
Himachal Pradesh	983	NA	NA
Jammu & Kashmir	NA	NA	NA
Jharkhand	364688	321359	NA
Karnataka	384426	531940	NA
Kerala	1725	NA	NA
Madhya Pradesh	56393	NA	NA

State	2022-23(R)	2023-24(P)	2024-25(P)
Maharashtra	55869	82629	98848
Meghalaya	NA	NA	NA
Odisha	1085292	1427875	NA
Rajasthan	413464	394557	425187
Tamil Nadu	20563	22697	21386
Telangana	21077	21134	21976
Uttar Pradesh	NA	NA	NA
Uttarakhand	NA	NA	NA
West Bengal	Nil	Nil	NA

Source: Data received from concerned state Government/DGM offices.

P: Provisional; R: Revised, NA: Not Available (Data not received from concerned State Government); figures rounded off

*****

05 CHAPTER



International Cooperation

International Cooperation

- Objectives Page-49
- Memoranda of Understanding (MoUs) signed during the period Page-49
- Joint Working Group (JWG) and Sub-Group Meetings..... Page-49
- Bilateral Meetings Page-49
- Exploration activities carried out in various countries..... Page-51
- Participation in International Groups Page-52
- Participation in the International Mining events to showcase India's capabilities, interests and opportunities in mining sector Page-52

Objectives:

5.1 To augment India's long-term resource security, enhance domestic technological capacity, support the mines and mineral development sector, and build supply-chain resilience for critical minerals, the Ministry of Mines, Government of India has entered into several bilateral agreements with the counterpart Ministries in various countries.

5.2 The high-level bilateral meetings and Joint Working Groups with the representatives from foreign countries further strengthened long-term cooperation, promoted mutually beneficial resource development, helping the country to identify investment opportunities and cooperate on resilient and secure mineral supply chains.

5.3 Participation in international mining events during this period provided strategic platforms to showcase India's mining capabilities, policy reforms, and technological advancements to a global audience, positioning the country as a reliable and competitive destination in the international mining sector.

Memoranda of Understanding- signed during the Period:

5.4 A Memorandum of Understanding between MECL and Province of Catamarca was signed and exchanged on 19.2.2025 in New Delhi. The objective of this MoU is to establish a framework for cooperation for the identification and execution of mineral exploration projects in Catamarca, Argentina.

5.5 A Memorandum of Cooperation (MoC) between Ministry of Mines, Government of India and Ministry of Economy, Trade and Industry (METI), Japan in the field of Mineral Resources was signed on 28.08.2025. The MoC was exchanged in Tokyo, Japan on 29.08.2025.

5.6 A Memorandum of Understanding between Ministry of Mines, Government of India and the Ministry of Industry and Mineral Resources, Mongolia, on "Cooperation in the Field of Geology and Mineral Resources" was signed and exchanged on 14.10.2025 in India.

5.7 The Protocol of Extension of the MoU between Ministry of Mines, Government of India and the Government of Plurinational state of Bolivia in the Field of Geology & Mineral Resources, was signed on 24.10.2025 in Bolivia.

Joint Working Group meetings:

5.8 The 1st Joint Working Committee (JWC) meeting between India and Argentina under the MoU on Cooperation in the field of Geology and Mineral Resources was held in Buenos Aires, Argentina, from 28.01.2025 to 30.01.2025. The Indian delegation was led by Secretary (Mines) Govt. of India.

5.9 The 1st Joint Working Group (JWG) meeting between India and Cote d'Ivoire under the MoU between the two countries in the field of Geology and Mineral Resources was held on 18.09.2025 through video conference under the co-chairmanship of Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines.

5.10 The 4th Joint Working Group (JWG) meeting between India and Peru under the MoU between the two countries on cooperation in the field of geology and mineral resources was held on 23.9.2025 at Arequipa, Peru on the side lines of PERUMIN-2025, under co-chairmanship of Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines.

Bilateral meetings:

5.11 A bilateral meeting was held between Shri G. Kishan Reddy, Hon'ble Union Minister of Coal & Mines and H.E Mr. Bandar Alkhorayef, Minister of Industry and Mineral Resources, Kingdom of Saudi Arabia on 04.02.2025 in New Delhi. During discussions, the Saudi Side expressed positive intent of their Ministry for

finalization of the proposed MoU between GSI and the Saudi Geological Survey and also for designating GSITI as a Centre of Excellence. Discussions also explored cooperation in adopting advanced mining technologies for sustainable mineral exploration and extraction.

5.12 Shri Satish Chandra Dubey, Hon'ble Minister of State of Coal & Mines held a meeting with Shri Sunil Handunnetti, Hon'ble Minister of Industry and Entrepreneurship Development, Govt. of Sri Lanka on 15.02.2025 in New Delhi. Discussions were held on potential exploration and mining activities of graphite, beach sand, etc that can be carried out by Indian entities in Sri Lanka.

5.13 Shri G. Kishan Reddy, Hon'ble Union Minister of Coal & Mines, had a meeting with H.E Mr. Raul Jalil, Governor of Catamarca, Argentina on 19.2.2025 in New Delhi. The discussions focused on expanding cooperation in the mining sector, particularly in lithium exploration and investment opportunities.

5.14 A virtual meeting was held between Secretary (Mines), Govt. of India and Ms. J.M. Thilaka Jayasundara, Secretary, Ministry of Industry & Entrepreneurship Development, Govt. of Sri Lanka on 10.03.2025. The key areas of discussion included opportunities for India in exploration and mining of graphite, Rare Earth Elements, beach sands & phosphate and the possibility of signing a Memorandum of Understanding between India and Sri Lanka on cooperation in the field of geology and mineral sector.

5.15 Secretary (Mines), Govt. of India had a meeting with Australian High Commissioner to India, H.E Philip Green on 20.03.2025 and discussions were held on opportunities for exploration and mining of critical minerals in Australia, the KABIL-CMO MoU, etc.

5.16 Shri G. Kishan Reddy, Hon'ble Union Minister of Coal & Mines, had a meeting with the Chilean delegation led by H.E. Ms. Aurora Williams, Minister of Mines, Chile on 01.04.2025 in New Delhi during the India-Chile Mining Industry Round Table. Discussions were held for deepening cooperation between the two nations in the mining sector.

5.17 An Indian delegation led by Dr. Ashish Saxena, Deputy Secretary, Ministry of Mines visited Sri Lanka from 20.05.2025 to 22.05.2025 and held a meeting with the Hon'ble Minister of Industry & Entrepreneurship Development, Govt. of Sri Lanka along with the relevant stakeholders of Govt. of Sri Lanka. The discussions focused on development of downstream mineral industries, Indian expertise in fertilizer-grade rock phosphate processing, industrial cooperation in graphite-based battery materials and REEs, emphasis on environmentally sustainable mining practices along with potential collaboration for geological mapping, resource estimation, and geotechnical research. The delegation also visited several sites of graphite, phosphate and beach sand minerals deposits.

5.18 A meeting in hybrid mode with the Indian mining companies operating internationally and a few major domestic mining companies was held under chairmanship of Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines on 04.06.2025. The meeting was intended to understand the overseas experiences and the barriers faced by Indian companies, operating models, explore potential avenues for collaboration with foreign stakeholders towards the objective of securing a sustainable and resilient supply of critical minerals.

5.19 A meeting was held between Secretary (Mines), Govt. of India, and H.E. Mr. Javier Paulinich, Ambassador of Peru to India on 05.06.2025 in New Delhi to discuss ways to strengthen cooperation between the two countries in the mining sector. The Ambassador shared that Peru has good potential for minerals such as molybdenum, copper, iron ore, and rock phosphate. Also, the Ambassador invited the Indian delegation, along with representatives from

Indian industries, to participate in Perumin—a major mining event scheduled from 22nd- 26th September, 2025 in Peru.

5.20 Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines, Govt. of India and Mr. Konstantin Fedorov, Deputy Director, Department of Metallurgy and Materials, the Ministry of Industry and Trade of the Russian Federation, co-chaired the 10th meeting of India-Russia Subgroup on Mining under the India-Russia Working Group on Modernization and Industrial Cooperation on 14.07.2025. Discussions were held on cooperation in the areas pertaining to the field of Rare-Earth and Critical Minerals sector; Mining Sector Equipment; Exploration and Capacity Building; Aluminium Sector; intent to have a Memorandum of Understanding (MoU) in the field of Geology and Mineral Resources.

5.21 A VC meeting was held between Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines, Govt. of India and Mr. Martin Kaluluma Phiri, Secretary of Mining, Ministry of Mining, Malawi on 17.07.2025 to expedite the process of finalization of the revised MoU.

5.22 A VC meeting was held between Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines and Ms. Lorraine Ngwenya, Chief Director Global Relations, Economic Growth & Investment Promotion, South Africa on 18.07.2025 to discuss the potential opportunity in mining and minerals sector of South Africa and issues related to the draft MoU shared by Indian side. During the discussion, the South African side informed that they will share the counter draft of MoU by mid August-2025.

5.23 A meeting between Secretary (Mines) Govt. of India and a delegation led by Dr. Ken Zikhale Ng'oma, Hon'ble Minister of Mines, Malawi was held on 28.08.2025 in New Delhi to discuss ways to strengthen cooperation between the two countries in the mining sector and also the revision of MoU between the two sides.

5.24 A meeting was held between Secretary (Mines), Govt. of India and Mr. Alexey Gruzdev, Deputy Minister of Trade and Industry of Russian Federation on 13.11.2025 in New Delhi .The discussions focused on strengthening collaboration between the two countries in the critical mineral sector.

5.25 A meeting was held between Secretary (Mines), Govt. of India with Ms. Yvette van Eechoud, Secretary Trade and Economic Security, Ministry of Foreign Affairs of the Kingdom of the Netherlands and Ms. Marisa Gerards, Ambassador of the Kingdom of the Netherlands to India on 17.11.2025 in New Delhi. The discussions focused on strategic cooperation on Critical Raw Materials for building a sustainable and resilient mineral value chain including processing, recycling, stockpiling etc.

5.26 A meeting was held under chairmanship of Hon'ble Union Minister of Coal and Mines on 26.11.2025, to discuss the possibilities of collaboration in the mining sector between India and Canada. The Canadian delegation was led by Mr. Christopher Cooter, High Commissioner of Canada. The discussions focused on initiating collaboration between the two countries in the critical minerals sector, including opportunities across the value-chain.

Exploration activities carried out in various countries:

5.27 A delegation consisting of geoscientists from Geological Survey of India carried out mineral exploration related activities in Somaliland from 03.03.2025 to 07.03.2025. The analysis of samples collected has revealed that the area is geologically fertile and has potential for gold, lithium and associated mineralization.

5.28 A team comprising geoscientists from Geological Survey of India and Mineral Exploration and Consultancy Limited visited Zambia from 25.06.2025 to 29.06.2025 to carry out reconnaissance traverses and from 15.9.25 to 31.10.25 to carry

out geological mapping related activities in Kasempa Province of Zambia.

Participation in International Groups

5.29 An Govt. of India delegation led by Secretary (Mines) participated in the International Lead and Zinc Study Group (ILZSG) and the International Copper Study Group (ICSG) 2025 meetings held from 24th to 25th April, 2025 in Lisbon, Portugal. India is a member of both ICSG & ILZSG. Every year, these groups hold meetings at the international level for discussing/sharing technology developments, key areas of industry, case studies etc.

5.30 India joined the International Nickel Study Group (INSG) as a member country in June, 2025. The International Nickel Study Group (INSG) is an autonomous, inter-governmental organization established in 1990 and located in Lisbon, Portugal. INSG members are governments of nickel producing, consuming and trading countries or other inter-governmental organizations responsible for implementing international agreements.

Participation in International Mining events to showcase India's capabilities, interests and opportunities in mining sector:

5.31 An Indian delegation, led by Shri G. Kishan Reddy, Hon'ble Union Minister of Coal & Mines, visited Saudi Arabia to participate in the 'Future Mineral Forum' organized at Riyadh, Saudi Arabia from 14.01.2025 to 16.01.2025.

5.32 An Indian delegation led by Sh. Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines participated in Mining Indaba-2025 during 03.02.2025 to 06.02.2025 in Cape Town, South Africa.

5.33 An Indian delegation led by Shri Sanjay Lohiya, Additional Secretary, Ministry of Mines participated in the Prospectors and Developers Association of Canada (PDAC), the world's premier mineral exploration & mining convention, a leading event for people, companies and organizations connected to mineral exploration, in Toronto, Canada from 2.03.2025 to 5.03.2025.

5.34 An Indian delegation led by Shri Dinesh Mahur, Joint Secretary, Ministry of Mines participated in the CRU-World Copper Conference 2025 and CESCO Week 2025 held at Santiago, Chile from 07.04.2025 to 10.04.2025. During the event, various high-level meetings were conducted with key stakeholders from the Chilean government and global mining corporations and a visit was made to the EL Teniente underground copper mine of Codelco, Rancagua, Chile.

5.35 An Indian delegation led by Ms. Nirupama Kotru, AS & FA, Ministry of Mines participated in 'Mining World Russia - 2025' in Russia from 23.04.2025 to 25.04.2025.

5.36 An Indian delegation led by Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines visited Lubumbashi, Democratic Republic of Congo (DRC) to participate in DRC Mining Expo & Conference from 11.06.2025 to 13.06.2025.

5.37 An Indian delegation led by Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines participated in 37th Mining convention, 'PERUMIN-2025' from 22.09.2025 to 25.09.2025 held in Arequipa, Peru.

*****

06 CHAPTER



National Critical Mineral Mission

National Critical Mineral Mission

- Launch of National Critical Mineral Mission Page-55
- Vision..... Page-55
- Objectives Page-55
- Governance framework..... Page-55
- Progress made since the establishment of the Mission Page-55
- Other important Activities..... Page-57
- Conferences/Workshops/Seminars Page-58
- Important Bi-lateral meetings Page-59

6.1 Launch of National Critical Mineral Mission

The Union Cabinet has approved the setting up of the National Critical Mineral Mission (NCMM) on 29 January, 2025 with a financial outlay of ₹16,300 crore and expected investment of 18,000 crore from PSUs and others. The Mission aims to secure a long-term sustainable supply of critical minerals and strengthen India's critical mineral value chains encompassing all stages from mineral exploration and mining to beneficiation, processing, and recovery from end-of-life products.

6.2 Vision

The NCMM will be implemented under the Ministry of Mines for a period of seven years from FY 2024-25 to 2030-31 with the following vision-

"As India embarks on the journey of Viksit Bharat 2047, minerals will continue to play an important role for the nation's progress. The National Critical Mineral Mission (NCMM) envisions securing a long-term sustainable supply of critical minerals and strengthen India's critical mineral value chains encompassing all stages from mineral exploration and mining to beneficiation, processing, and recovery from end-of-life products. The NCMM seeks to develop a holistic action plan through strategic interventions in the form of policy reforms, financial support, infrastructure facilities, human resource development, technological advancements and international collaboration. The Government's aim is to build a globally competitive and resilient critical mineral ecosystem for India."

6.3 Objectives

The National Critical Mineral Mission aims to achieve the following two objectives:

i. To secure India's critical mineral supply chain by ensuring mineral availability from domestic and foreign sources.

ii. Strengthening the value chains by enhancing technological, regulatory, and financial ecosystems to foster innovation, skill development, and global competitiveness in mineral exploration, mining, beneficiation, processing, and recycling.

6.4 Governance framework

The Ministry of Mines is the administrative Ministry of the National Critical Mineral Mission. The Mission's activities are being coordinated by an Empowered Committee, chaired by the Cabinet Secretary and including members from relevant stakeholder ministries/ Departments.

6.5 Progress made since the establishment of the Mission

6.5.1 Enhancing Domestic Production

- Geological Survey of India (GSI) has intensified the exploration of critical and strategic minerals. GSI has carried out 195 critical mineral exploration projects in 2024–25. During 2025-26, GSI has taken up 230 projects for various critical minerals across the country.
- NMEDT has funded/sanctioned 62 projects for exploration of critical minerals during 2024-25 and 36 during 2025-26 to NEAs (Central PSUs, State PSUs, State DGMs) and NPEAs (Pvt Companies).
- The Central Government has successfully auctioned 34 blocks under 05 tranches. The auction process for Tranche-6 is under progress in which 23 blocks put up for auction.

- For easier environment and forest clearances for critical mineral projects, a Separate window is made in PARIVESH Portal on recommendation of Ministry of Mines, and also, the following initiatives have been taken-

  i) The Van (Sanrakshan Evam Samvardhan) Rules, 2023 has been amended w.e.f. 31.08.2025 to allow raising compensatory afforestation over degraded forest land, minimum double in extent, in case of mining of Critical and Strategic Minerals.

  ii) Critical Mineral Mining Projects have been included as projects of Security and strategic importance and exempted from public hearing. Further, these projects will now be appraised at Central level irrespective of lease area involved.

  iii) In December 2025, the MoEFCC directed to conduct joint surveys at the pre-auction or post-auction stage by teams comprising representatives from the Revenue, Forest and Mining Departments of the concerned State in respect of mining leases, to avoid duplication and reduce procedural delays.

- State Governments of selected states have been requested to explore the possibility of establishing the processing park in existing Industrial Regions/ Parks.

6.5.2 Acquisition of Critical Mineral Assets Abroad

- The MMDR Act has been amended in 2025 for expanding the scope of NMEDT to support critical mineral exploration and mining in other countries.

- Ministry of Mines recommended an Indian project (by Altmin Pvt. Ltd.) for Setting up Lithium refinery in Brazil to the Mineral Security Partnership. The project has now been included in under the MSP project list. This will help securing minerals for Indian Industries.

6.5.3 Recycling

- On 3rd Sep 2025, the Union Cabinet approved a ₹1,500 crore Incentive Scheme to develop recycling capacity in the country for the separation and production of critical minerals from secondary sources.

- The Scheme Guidelines have been issued and scheme rolled out on 02.10.2025.

- Eligible feedstock is e-waste, Lithium Ion Battery (LIB) scrap, and scrap other than e-waste & LIB scrap e.g. catalytic convertors in end-of-life vehicles.

6.5.4 Trade and Market

- During 2025-26 Budget, GoI exempted Basic Customs Duty cobalt powder and waste, the scrap of lithium-ion battery, Lead, Zinc and 12 more critical minerals.

- Government has eliminated customs duties on 25 minerals and reduced Basic Customs Duties (BCD) on two minerals during budget 2024-25.

6.5.5 Scientific Research & Technological Advancement for Critical Minerals:

- Ministry of Mines has recognized 9 institutes – 4 IITs, IISc and 4 R&D Labs – as Centres of Excellence (CoE) under NCMM.

- Guidelines for funding Pilot Projects for Recovery of Critical Minerals from overburden/tailings/fly ash/ Red mud etc. issued on 14.11.2025. One project has been approved under this scheme.
- As per the recommendation of Ministry of Mines, ANRF has identified "Critical Raw Materials (CRM)" as a research priority area to include under the Mission for Advancement in High Impact Areas (MAHA) with ₹210 Crore funding for critical resource material projects of recognized CoEs. The CRM Research Program will help channel funding for R&D through ANRF, utilizing a hub-and-spoke model, where nine COEs, recognized by the Ministry of Mines, would submit their research proposals.
- From January 2025 to October 2025, a total 955 patents have been filed and 249 patents are granted in India for critical mineral value chain.

6.5.6 Human Resource Development:

- The Government will offer Capacity Building Programmes to resource-rich countries through GSI, MECL, IBM, Indian institutes and universities.
- Geological Survey of India will be leading the Data Access group along with Saudi Geological Survey (SGS) as the co-leader as discussed in the International Geological Surveys Meeting in Riyadh in January 2025, held as part of the Future Minerals Forum.
- Under NCMM, ₹ 100 Crore has been earmarked for Skill Development.
- More than 1000 persons skilled in critical mineral related fields by GSI, NFTDC, ISM, IMMT etc.

6.5.7 Developing Effective Funding, Finance and Fiscal Incentives

- Technical Assistance (TA) is being received from World Bank and Asian Development Bank to support the activities of NCMM.
- On 3rd Nov 2025, Proposal on Fiscal Incentives such as tax credits, accelerated depreciation, and tax pass-through on share sales to incentivize exploration and mining companies, particularly in critical minerals exploration and development was submitted to Ministry of Finance.

6.6 Other important Activities:

6.6.1 Critical Mineral Processing Seminar

The 'Critical Minerals Processing Seminar' was organised by the Ministry of Mines, Government of India on 6 June 2025, inaugurated by Hon'ble Union Minister for Coal and Mines, Shri G. Kishan Reddy. The seminar convened senior representatives from government, industry, academia, and research institutions to foster collaboration, share technical knowledge, and catalyse innovation in the processing and recycling of critical minerals such as lithium, cobalt, graphite, and rare earth elements (REEs).

6.6.2 Launch of National Critical Mineral Mission Outreach Forum

On the sidelines of the seminar, the National Critical Mineral Mission Outreach Forum was launched on 6 June 2025 by Union Minister for Coal & Mines, Shri G. Kishan Reddy as a collaborative platform to strengthen cooperation among government agencies, industry, academia, research institutions, and private sector players. The forum aims to facilitate policy dialogue, research, investment, and industry growth, highlighting the critical

minerals sector's vital role in national security, food security, and employment generation. Shri Reddy called on all stakeholders, including PSUs and private companies, to actively invest, innovate, and engage in building a resilient and sustainable critical minerals ecosystem in India.

6.6.3 Inter-Ministerial Group (IMG) on Critical Minerals

The fourth meeting of the Inter-Ministerial Group (IMG) on " Critical Minerals for formulating overall coordinated approach for formation of a holistic strategy for critical minerals and action plan to support the same" was held on March 20, 2025, under the chairmanship of Secretary, Ministry of Mines. The meeting brought together participants from Public Sector Undertakings (PSUs), state governments, ministries, private companies, and research institutions to collaborate in strengthening India's critical minerals value chain.

6.6.4 Meeting of the Empowered committee under NCMM

The first meeting of the Empowered Committee of NCMM, chaired by the Cabinet Secretary on 11.09.2025. As per the recommendation of the Empowered Committee, a working group has been formed headed by Secretary (MoPNG), to formulate strategies and procedures for supporting the private sector in acquisition of critical mineral assets.

i) The 1st meeting of the Working Group headed by Secretary (MoPNG) was held on 3rd October, 2025.

ii) The 2nd meeting was held on 17 October 2025 with participation from OIL, ONGC Videsh Ltd., BPCL, Coal India Ltd., KABIL, and EXIM Bank to discuss successful case studies and models for overseas asset acquisition.

6.6.5 Minerals Security Partnership (MSP)

Minerals Security Partnership is an ambitious new US-led multilateral partnership to secure supply chains of critical minerals, aimed at reducing dependency on China. In June 2023, India became newest partner (14th member country) in MSP, to accelerate the development of diverse and sustainable critical energy minerals supply chains globally while agreeing to the principles of the MSP including environmental, social and governance standards. A list of 40 projects has been shared by MSP Team in November 2025. Ministry of Mines recommended an Indian project (by Altmin Pvt. Ltd.) for Setting up Lithium refinery in Brazil to the Mineral Security Partnership. The project has now been included in the MSP project list.

6.7 Conferences/Workshops/ Seminars

6.7.1 Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines, led the Special Session on Critical Minerals in "15th Energy Security Conference" organized by the Confederation of Indian Industry (CII) in collaboration with the Ministry of External Affairs and Ministry of Mines, on 13 November 2025. The Key objective of the Conference is to facilitate a wider discussion on specific strategies for ensuring India's energy security as well as to secure a sustainable and low carbon future. Also, Shri Mohammad Sadiq, Director (G), Ministry of Mines chaired the Session on Advancements in Critical Mineral Processing with a Special Focus on Rare Earths in the same event.

6.7.2 Shri Dinesh Mahur, Joint Secretary, Ministry of Mines, led the delegation to participate in the Knowledge Sharing on Critical Minerals to Manufacturing Value Chains, held from 22 to 26 September 2025 in the Republic of Korea. The event, organised

by the Asian Development Bank (ADB), was designed for resource-rich developing member countries (DMCs) seeking to build more diversified and resilient value chains in the critical minerals sector.

6.7.3 Shri Anshoo Pandey, Director, National Critical Mineral Mission, Ministry of Mines, participated in the High-Level Roundtable on "Policy to Reality for India's Sustainable Manufacturing (PRISM) for Viksit Bharat," organized by the Shakti Sustainable Energy Foundation on 16.07.2025 at The Imperial, New Delhi, where he deliberated on key policy interventions of the Ministry of Mines and highlighted initiatives under the National Critical Mineral Mission to support India's clean-tech manufacturing vision.

6.7.4 Mohd. Sadiq, Director (G) participated in the Advancing India-Africa Collaboration on Electric Vehicles (EVs) workshop, convened by the Chair on India and Emerging Asia Economics at the Center for Strategic and International Studies (CSIS) in Nairobi, Kenya on 19 September 2025. The event brought together several senior policymakers, industry leaders, development partners, and technical experts from India and key African nations, including Kenya, Nigeria, and others.

6.8 Important Bi-lateral meetings:

6.8.1 A meeting was held with H. E. Mr. Philip Green OAM, Australian High Commissioner to India, under the chairmanship of Shri. Piyush Goyal, Secretary (Mines) on 11th July, 2025 to discuss the India Australia Critical Minerals Investment Partnership.

6.8.2 A meeting was held with H.E. Mr. Fernando Xavier Bucheli, Ambassador of the Republic of Ecuador to India on 03rd July, 2025 under the chairmanship of Shri. Dinesh Mahur, Joint Secretary (Mines) at Ministry of Mines, to discuss opportunities for critical minerals exploration in Ecuador.

6.8.3 A meeting was held with the SONAREM Group, Algeria, under the chairmanship of Shri. Dinesh Mahur, Joint Secretary (Mines) on 24th July 2025 to discuss potential collaboration in the field of geological and mining research.

6.8.4 Meetings were held with Govt. officials of Argentina and the provincial company REMSA (Recursos Energéticos y Mineros de Salta), on 13th August 2025 and 08 September, 2025 under the chairmanship of Shri. Dinesh Mahur, Joint Secretary (Mines) to explore mining Opportunities in Catamarca and other provinces of Argentina.

6.8.5 A meeting was held with govt. officials of Ecuador under the chairmanship of Shri. Dinesh Mahur, Joint Secretary (Mines) on 18th August, 2025, to discuss potential collaboration in the exploration, development, and sustainable utilization of critical minerals such as lithium, cobalt, nickel, and copper.

6.8.6 A meeting was held on 4 December 2025, under the chairmanship of Shri Piyush Goyal, IAS, Secretary, Ministry of Mines, with Ms. Mary Warlick, Deputy Executive Director, IEA, on strengthening cooperation in the critical minerals value chain, enhancing data-driven collaboration, and exploring joint opportunities to support India's clean energy ecosystem.

*****

07 CHAPTER



Attached / Subordinate Offices

Attached / Subordinate Offices

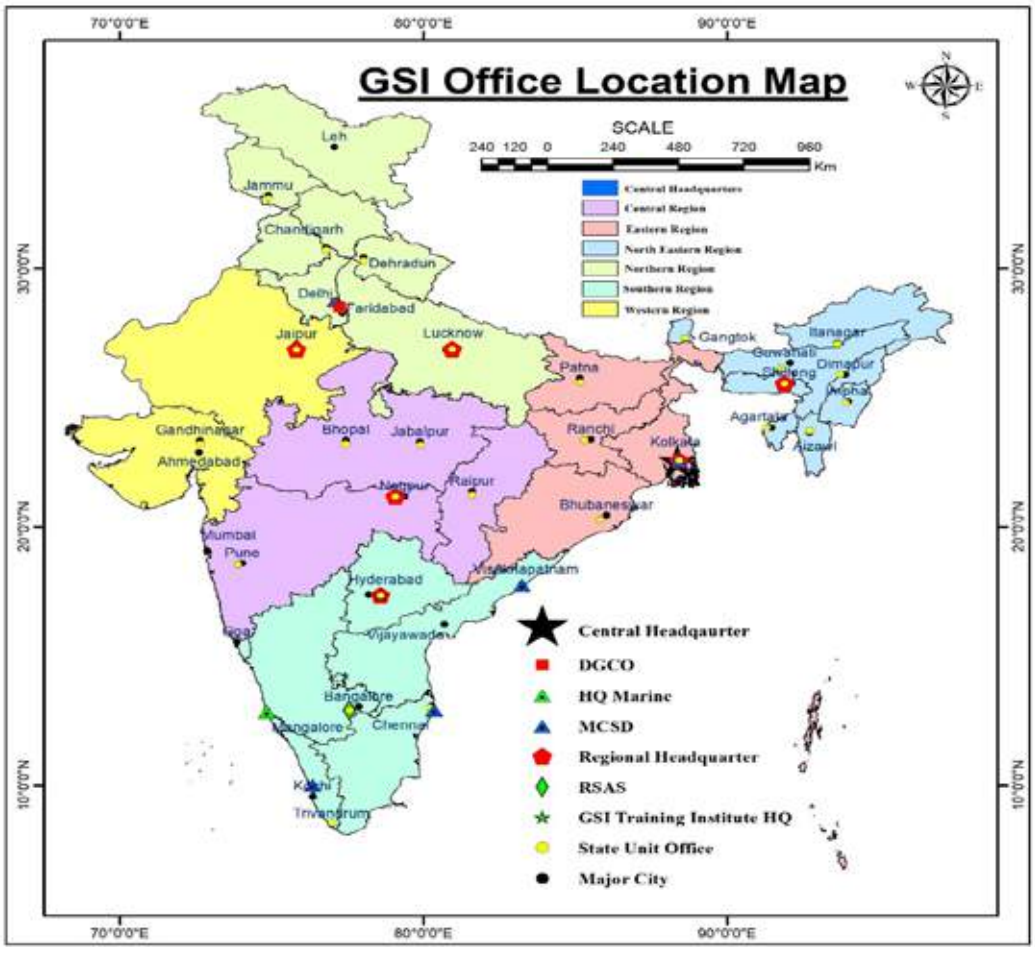
- Geological Survey of India Page-63
- Organistion of GSI Mission Page-63
- Mission – I Baseline Geoscience Data Generation Page-64
- Mission – II Natural Resources Assessment Page-67
- Mission – III Geo-informatics Page-69
- Mission – IV Fundamental, Multi-disciplinary Geoscience and Special Studies Page-75
- Mission – V Training and Capacity Building Page-78
- Central Geological Programming Board (CGPB) Page-79
- Quality Management (QM) Cell of GSI Page-84
- International Cooperation Page-85
- Bilateral Collaborative Activities Page-85
- Indian Bureau of Mines Page-104
- Mining Tenement System (MTS) Page-120
- Sustainable Development Framework (SDF) Page-122
- Mining Surveillance System (MSS) Page-122

Geological Survey of India (GSI)

7.1 The Geological Survey of India (GSI), founded in 1851, began its voyage with the mission to explore and evaluate the country's coal and mineral resources through regional exploration. Over the years, GSI has expanded its scope to encompass a wide range of geoscientific activities, significantly contributing to the field of geosciences and, consequently, to India's economic development. The primary functions of GSI include the creation and updating of national geoscientific information and the assessment of mineral resources. GSI undertakes ground, airborne, and marine surveys, mineral exploration, multidisciplinary geoscientific studies, geotechnical and geo-environmental research, natural hazard assessments, glaciology, seismotectonic studies, and fundamental research.

Organization of GSI Mission

7.2 The Geological Survey of India (GSI) designs and implements its geoscientific programs through five key Missions: Baseline Geoscience Data Generation (Mission-I), Natural Resources Assessment (Mission-II), Geo-informatics (Mission-III), Fundamental, Multi-disciplinary Geoscience and Special Studies (Mission-IV), and Training and Capacity Building (Mission-V). These programs are executed across six regions. To facilitate effective planning, coordination, and evaluation, GSI operates three Support Systems: the Scientific & Technical Support System (STSS), the Administrative Support System (Ad.SS), and the Policy Support System (PSS).



Organization of GSI Mission

MISSION - I: Baseline Geoscience Data Generation

The activity under this mission involves Ground Surveys (Geological, Geophysical and Geochemical surveys), Marine & Coastal Surveys (Marine Survey within Territorial Water, Exclusive Economic and beyond, Zone, Coastal survey), Remote Sensing and Aerial Surveys (Aero-geophysical Survey; Photo Geology & Remote Sensing-Multispectral and Hyperspectral studies). GSI is the only organization in India which is actively engaged in three layers of ground mapping (geology, geochemical & geophysics) of the Indian landmass. The integration of all geo-scientific data (Geological, Aero-geophysical, Geophysical, Geochemical and Remote sensing) in GIS platform is also being done for prognostication of potential mineralized belt, to resolve geological problems as well as to do public good geoscience and all data are uploaded in GSI's "BHUKOSH" portal (https://bhukosh.gsi.gov.in/Bhukosh/Public) and in "NGDR" portal (https://geodataindia.gov.in/login) for use of all other stakeholders.

7.3 Systematic Geological Mapping

Systematic Geological Mapping (SGM) (1:50,000/63,360scale) is the most fundamental and basic mapping program of GSI. The whole country, excluding a few patches of inaccessible and difficult terrains, has been covered under this program. Out of the total mappable area of 3.146 million sq.km. of the country, 3.123 million sq.km. has already covered bringing the total coverage to 99.27%. Presently no further SGM work is being carried out as GSI now carrying out second generation Specialized Thematic Mapping on 1:25,000 scale. The SGM data along with all other geoscientific data of GSI are available on Bhukosh and in "NGDR" portal (https://geodataindia.gov.in/login) for use of all other stakeholders.

The data generated through SGM is largely used in exploration and other activities. The data generated through this mapping activity has helped to build up the knowledge base and data base for National Geo-scientific information. This knowledge base has been providing the baseline data to earth science related activities of the Nation.

7.4 Specialized Thematic Mapping

Geological Survey of India launched specialised theme-oriented large-scale mapping on 1: 25,000 or larger under the Specialised Thematic Mapping (STM) Programme to resolve the complex geological problems. It involves collection of multidisciplinary data, and is backed by advanced laboratory studies. STM plays a pivotal role in natural resource prognostication through generation of follow-up reconnaissance mineral investigation programmes (mostly G4 stage). A total of 43405.50 sq.km area has been mapped on 1:25,000 scale map during the period of 1st January 2025 to 31st December 2025 making the cumulative coverage of 4.82 lakh sq. km area up to December, 2025. The remaining target area to be covered by March, 2026.

7.5 National Geochemical Mapping

The National Geochemical Mapping (NGCM), aims to create a seamless baseline geochemical base map of 64 elements on 1:50,000 scale for the entire country. However, presently 62 elements are analysed except Platinum & Palladium (Pt & Pd), as these are only analysed for areas containing basic/ultrabasic rocks. The data helps in deriving anomalous zone(s) of elemental concentration, which may be prospective for future mineral investigation (mostly G4 stage). It also finds application in environmental, agricultural, human health and other social concerns. The elemental

analyses of NGCM samples are being done in the laboratories of GSI and are being outsourced from other government institutes/ organisations on a need basis.

The procedure follows international standards, which are considered benchmarks for deciding anomalous value of different elements for preparation of geochemical anomaly maps. For detailed reports visit BHUKOSH of GSI at www.gsi.gov.in or "NGDR" portal (https://geodataindia.gov.in/login). GSI has completed the NGCM survey programme in the targeted areas of country excluding Indo-Gangetic-Brahmaputra Alluvium, parts of Thar Desert, core Deccan Trap areas and some inaccessible parts in 2024 with a total coverage of 2.139 million sq. km. Further, few projects on NGCM have been taken up in the Indo-Gangetic-Brahmaputra alluvium to complete Degree sheets for data compilation & integration. The Deccan Trap areas falls under hard rock terrains of the country and cannot be completely ruled out from mineralization of PGE, Cu, Ni, Cr etc. Therefore, during FS 2024-25, GSI devised a methodology with a plan to cover the core areas of Deccan Volcanic Province (DVP) by geochemical mapping under the programme **'Geochemical Assessment of Core Deccan Trap (GCA-CDT)'** with collection of additional information in comparison from earlier NGCM programmes. During the period from 1st January 2025 to 31st December 2025, 71,794 sq. km of area has been covered by Geochemical mapping.

7.6 National Geophysical Mapping

Geophysical mapping under the National Geophysical Mapping Program (NGPM) comprises ground gravity and magnetic survey on 1: 50,000 scale. It aims at generating a baseline ground gravity-magnetic data and prepare a geophysical anomaly map of the country. The analysis and interpretation of the NGPM data will facilitate deriving the crustal architecture and delineating the mineral prospective zones. The results of the NGPM survey are integrated with other available geological, geochemical and aero-geophysical data set and further mineral exploration programmes are launched in the favourable areas delineated by integration study.

During the period from January to December 2025, an area of 190602 sq. km was covered by GSI utilizing in-house resources and 202484 sq. km by outsourcing utilizing NMEDT fund, thereby completing a total area of 19.98 lakh sq.km by NGPM since inception of the project.

7.7 Aero-geophysical Survey

Airborne geophysical surveys are being carried out by GSI with the fixed-wing Twin Otter Aircraft Survey System (TOASS), consisting of Magnetic and Gamma Ray Spectrometric Sensors. During the period from January to December 2025, Airborne Magnetic & Spectrometric Surveys over East Coast of India, Parts of Andhra Pradesh, Puducherry Tamil Nadu, Odisha and West Bengal using Twin Otter Airborne Survey System (TOASS) have been carried out and acquired 10,500 Line Km of aero-geophysical data, covering an area of 26,250 Sq.km.

7.8 Multi-sensor Aero-geophysical surveys

The "National Aero-Geophysical Mapping Program" (NAGMP) was initiated in April, 2017, to acquire uniform aero-geophysical data. The project is aimed to delineate concealed, deep-seated structure/litho-units capable of hosting mineralization, delineate extension of the existing mineralized zone and understating of shallow crustal architecture in the context of mineral occurrence. The project is being funded by National Mineral Exploration and Development Trust (NMEDT).

The Project Implementing Agencies [PIAs] are being selected through global tendering/ GeM. The total target for Phase-I (Blocks-1 to 12) and Phase-II (Blocks-13 to 21) of NAGMP survey is 11.6 lakh sq.km.

During the period from January to December 2025, 0.92 lakh sq.km has been covered by NAGMP surveys over blocks, 5, 14 and 15. The total coverage under NAGMP surveys since inception to December 2025 is 5.67 Lakhs Sq.km against the total target of 11.6 lakh sq. km.

7.9 Heliborne Magnetic and Time Domain Electromagnetic (TDEM) survey

Advanced Heliborne Time Domain Electromagnetic (TDEM) and magnetic survey funded by the National Mineral Exploration and Development Trust (NMEDT) of the Ministry of Mines has been initiated. Surveys over 10 potential target zones identified from the Interpretation of NAGMP Block-1 and available legacy data covering a total of 3,354 Sq. km area with 24,595 Line km in the states of Rajasthan, Odisha, Andhra Pradesh, Telangana and Karnataka with a traverse line spacing of 150 m and 1500 m control line spacing with an altitude of 40 m above ground level. The first block Block-1 was completed by covering a total of 195 Sq. km in Rajasthan. During the period from January to December 2025, an area of 517 Sq. km has been covered. The results from this survey will provide critical insights into the geological structures and mineral potential zones that are not visible on the surface.

7.10 Hyperspectral/Multispectral Remote Sensing technique in exploration

The Remote Sensing and Aerial Survey (RSAS) division has been engaged in surface mineral mapping using ASTER multispectral data on 1:50,000 scale over the potential areas of the country. In the FSP year 2025-26, mapping has been extended to cover an area of 9,85,708 sq km, with an envisaged target to cover a cumulative area of 18.56 lakh sq.km under multi-spectral geological mapping.

7.11 Marine and Coastal Surveys

GSI acquires baseline data on bathymetry [sea bottom topography], sea surface sediment distribution, sub-seabed characters, gravity, magnetic, etc. and carries out mineral exploration within the and beyond Exclusive Economic Zone (EEZ) of India. Marine and Coastal Survey Division (MCSD) of the GSI has carried out 827 cruises so far within the EEZ of India since 1983 using deep-sea vessels RV Samudra Manthan (1983-2013) and R V Samudra Ratnakar (Since 2014) and coastal vessels RV Samudra Shaudhikama and RV Samudra Kaustubh (since 1984) to generate baseline marine-geoscientific data and to collect seabed samples for delineation of economic mineral deposits within the EEZ of India. An area of 20,44,857 sq. km out of the total EEZ area of 21,59,620 sq.km (on 1:5,00,000 scale) accounting for 94.68% in EEZ has already been covered by systematic seabed mapping.

The compilation and synthesis of this enormous volume of marine geoscientific data resulted in the identification of 5,89,160 sq. km as Offshore Prospective Area (OPA) for marine minerals within EEZ of India. GSI also carries out preliminary and detailed mineral investigation programmes. These mineral investigation programmes paved the way for demarcation of prospective areas of offshore minerals in the Indian EEZ namely heavy mineral placers (47,823 sq.km), sand (37,570 sq.km), limemud (1,32,300 sq.km), phosphorite (1,04,367 sq.km), polymetallic nodules and crust (1,37,100 sq.km), metalliferous mud (20,000 sq.km) and hydrothermal deposits

(1,10,000 sq.km). An area of 3,10,761 sq.km has been covered by preliminary mineral investigation programmes out of the targeted potential area of 5,89,160 sq.km within the EEZ of India (52.7% coverage in preliminary exploration target area).

During the period from January to December 2025, GSI has carried out preliminary marine mineral investigation (G3) over an area of 907 sq.km out of the targeted area of 1790 sq.km and reconnaissance survey (G4) has been carried out over an area of 1650 sq.km out of the targeted area of 5820 sq.km within the EEZ.

Mission II: Natural Resources Assessment

7.12 Mineral Resource Assessment

GSI has successfully completed Systematic Geological Mapping (SGM) of the entire country (31.23 lakh sq. km) at a 1:50,000 scale. The country-wide geological mapping at this scale is at par with the best in the world. Based on this, GSI has, by and large, already explored and established resources of all high-grade, non-bulk mineral deposits of the country with surface manifestations. The current challenge is to discover concealed, deep-seated and low-grade deposits, including in areas not considered fertile earlier.

Exploration within a country is governed by the threshold value of a mineral, which determines whether the element of interest can be economically extracted. This threshold varies across nations and is influenced by the level of technological advancement in mineral extraction and downstream industries. Consequently, exploration remains a continuous process, shaped by evolving cut-off grades, advancements in beneficiation and metallurgical technologies, and fluctuations in mineral economics.

Following the amendment of the MMDR Act in 2015, GSI was mandated to undertake G2-stage general exploration for non-energy minerals, aimed at generating geological reports to support the auctioning of mineral concessions. This responsibility is in addition to conducting reconnaissance surveys (G4) and preliminary exploration (G3), in line with the United Nations Framework Classification (UNFC) guidelines and Minerals (Evidence of Mineral Contents) Amendment Rules, 2021.

Since the 2020–21 field season, till 2025-26, GSI has integrated baseline datasets with newly acquired exploration data to identify potential mineralized zones. Building on this foundation, the organization has progressively expanded its exploration programs—from 251 in 2020–21 to a planned 463 in 2025–26—focusing on accessible and prospective regions across the country.

During FS 2025-26, a total of 463 mineral exploration programs were taken up by GSI, which include 16 projects on 'offshore mineral investigation', 381 projects on Mineral Exploration [28 on Ferrous Minerals, 29 on Precious Metals and Minerals, 275 on Non-Ferrous and Strategic Minerals (including fertilizer minerals), 49 on industrial Minerals] and 21 projects on Natural energy resources [12 coal, 5 lignite, 1 shale gas, and 3 geothermal], 13 Regional Mineral Targeting (RMT) projects, 11 CMAP projects, and 21 R&D projects.

To give impetus to exploration for Critical and Strategic Minerals (CSM), 195 CSM projects executed during FS 2024-25 and 230 CSM projects are under execution in the current field season 2025-26 which also includes 93 exploration programmes on Rare Earth Elements (REEs) of FS 2025-26. The state-wise break-up of REEs exploration programme are as follows: 17-Rajasthan, 11-Jharkhand, 10-West Bengal, 6 each in Karnataka, Meghalaya,

and Bihar, 5 each in Telangana and Odisha, 4 each in Andhra Pradesh, Assam, Chhattisgarh, and Maharashtra, 3 each in Gujarat, Madhya Pradesh, and Tamil Nadu, and one each in Tripura and Kerala.

To encourage participation of private and other exploration agencies for exploration of larger areas, GSI has provided 7 Regional Mineral Targeting (RMT) blocks to the National Mineral Exploration and Development Trust (NMEDT) for exploration by Notified Private Exploration Agencies (NPEAs) for implementation with the support of NMEDT fund. Out of these, 5 blocks have already been taken up by NPEAs. GSI has also carved out and handed over 15-G3 mineral blocks in Siwana Ring Complex, Rajasthan to NMEDT for exploration of REEs and other critical minerals by NPEAs for expediting exploration of an identified large mineral deposit.

7.13 Handing over of G2/G3 Reports and Geological Memorandum (GMs)

In January 2025, GSI has submitted a total of 70 G2/G3 stage resource-bearing mineral investigation reports for considering in auction process. Out of this, 31 reports relating to critical minerals were handed over to the Ministry of Mines, Government of India. The critical mineral reports include 9-Vanadium, 7-Rare Earth Elements (REE), 4 each on Graphite and Potash, 2- Phosphorite, and 1 each on Cobalt, Glauconite, Molybdenum, Tungsten, and Nickel. The remaining 39 reports were entrusted to the respective State Governments for auctioning, the report includes, 22-Limestone, 5-Iron, 4 each on Manganese and Copper, 3- Gold, and 1- Gypsum.

Simultaneously, GSI has also submitted 20 G4 stage Geological Memorandums (GM) for considering in auction process. Out of this, 12 are of critical minerals were handed over to the Ministry of Mines. These include 2-Graphite and 1 each on Nickel, Cobalt, Molybdenum, Potash, REE, Titanium, and Vanadium. The remaining 10 GM were entrusted to the respective State Governments for considering in auction process, comprising 4 GM on Bauxite and 1 each on Copper, Limestone, Iron, and Lead.

GSI has also handed over 04 resource-bearing coal blocks to Ministry of Coal in the month of January, 2025.

In addition, GSI has also handed over 11 Exploration License (EL) Blocks in the month of October 2025.

7.14 Natural Energy Resources [Coal and Lignite]

In 2025-26 (from January 2025 to December 2025), GSI has augmented total non-coking coal resources of 8228.43 million tonnes (1953.66 MT G3, 6274.77 MT G4) in Wardha Valley CF (Maharashtra). Pench & Kanhan CF (Madhya Pradesh), Talcher & IB coalfield (Odisha), Godavari CF, Telangana, Hura (Rajmahal-Birbhum CF, Bihar), Birbhum (Rajmahal-Birbhum CF, West Bengal) and semi-coking coal resources of 12.311 million tonnes in Gorakghat area, Kanhan CF (Madhya Pradesh). Lignite resource of 352.52 million tonnes (31.91 MT in G3 and 320.61 MT in G4) has been augmented from 80RD sector in Palana basin, Rajasthan and Valantharavi area, Ramnad Sub-basin, Tamil Nadu, respectively.

GSI has discovered natural hydrogen resource in the Andaman and Nicobar Islands, marking India's first finding of naturally occurring hydrogen in the month of February 2025.

7.15 GEOTHERMAL STUDIES

During FS 2025-26, a total of three (03) geothermal projects, one (01) in Ladakh, one (01) in Arunachal Pradesh and one (01) in Jharkhand have been taken up to identify

geothermal sprout and to define the geothermal resource and the work is in progress.

Mission-III: Geoinformatics

Geoinformatics is dedicated to the effective management and use of geoscientific data to provide accurate, current, and comprehensive products and services. It plays a crucial role in supporting users, missions, and stakeholders. The mission also oversees the maintenance and management of IT infrastructure, the archiving of datasets, formulation of IT policies, and the planning required for the organization's overall IT enablement.



The new Homepage of OCBIS Portal (https://www.gsi.gov.in/webcenter/portal)

7.16 Mission-III A: Data Repository and Management, Advanced Spatial Data System, IT Infrastructure & Connectivity OCBIS

As per the National Geospatial Policy (NGP), 2022, GSI is declared as Nodal Agency for National Fundamental Geospatial Data Themes on Geology and it has become imperative to prepare a uniform structured Geospatial standard for all organizations in sync with National policy and international best practices. The importance of harmonizing standards is for streamlining workflows, and ensuring interoperability across geospatial datasets across all organisations. Development of Standards for National Fundamental Geospatial Data Themes on Geology in India is being carried out by GSI and the draft standard document is under wide Circulation stage to all stakeholders for further comments.

GSI has implemented Online Core Business Integrated System (OCBIS) portal in the year 2016 to fulfil the responsibility to disseminate multi-thematic geoscientific information freely for the use of all concerned stakeholders through "Bhukosh" following extant policies and guidelines. This data can be utilised by anyone for mineral prognostication as well as to generate new knowledge through research. Till date 1499 publications (including the GSI own Journal), 31 coffee table books, 3448 published maps and 35766 progress reports have been made freely available for public use.

The Bhukosh geoscientific data repository provides OGC Compliant Map Services with

latest Geodata base (.gdb) and Map Exchange Document (.mxd) covering 20 themes like Geology, Geophysics, Geomorphology, Geo-chemistry, Mineral, Geochronology, Geothermal, Tectonic, Seismotectonic, Landslide Inventory, NLSM, Meteorites, Glacial retreat etc. which facilitate the users to visualise, query data, create maps, print with dynamic legend and download. A total of 173 geospatial layers with 1,35,15,288 features are available. Till date 2,76,561 geospatial map data and geophysical data sets have been downloaded among which 2,31,396 are by registered users. The data uploaded as map services in Bhukosh acts as a feeder database for National Geoscience Data Repository (NGDR). Till date, data of 13,380 boreholes have been fed into Borehole Information.



The new Bhukosh Portal (https://bhukosh.gsi.gov.in/Bhukosh)

Next Generation Portal (Portal-NG) is under development engaging BISAG-N as System Integrator (SI) and Implementation Agency (IA) which will be more user friendly, having simplified approach and has facility for integration of App based services and upgradable as per user demands (National and International).

Field Data Acquisition (FDA) An App based service has already been deployed, used by all field officers of GSI and all standard FSP items have been integrated and generating data. The FDA App will become part of the FSPMIS module of new generation Portal of GSI and will lead to more efficient management and coordination of the field activities.



Field Data Acquisition (FDA)

In line of new age emerging exploration techniques, GSI is strongly moving ahead with Mineral Prospectivity Mapping (MPM), using geostatistical methods, leveraging Geological, Geochemical (NGCM) and Geophysical (NGPM, NAGMP etc.) datasets. These initiatives are further enhanced through Artificial Intelligence (AI) and Machine

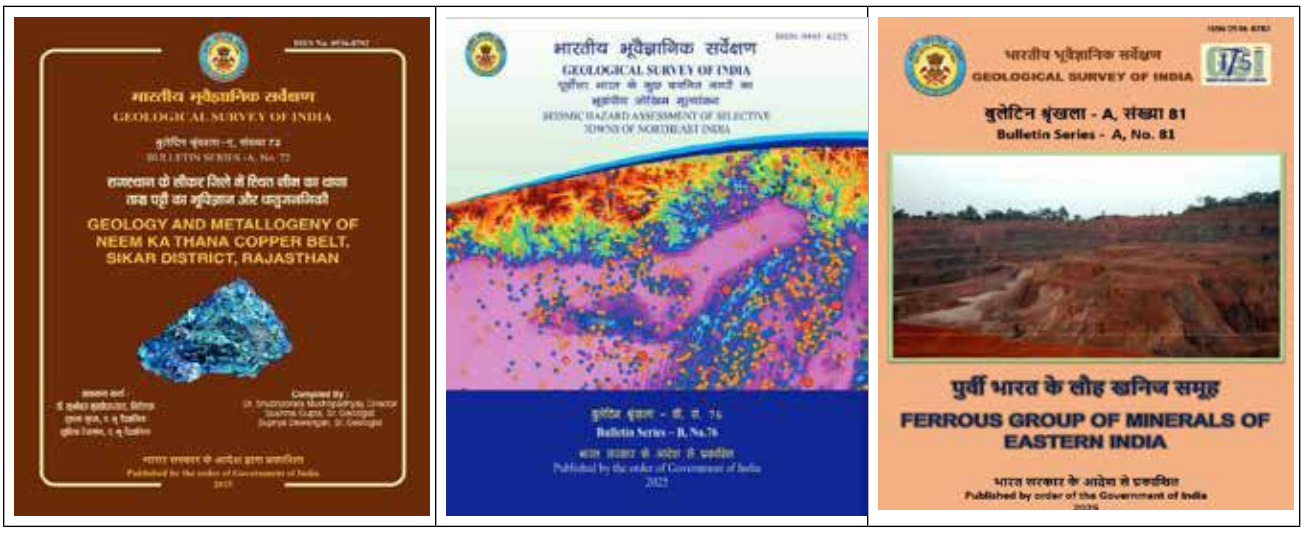
Learning (ML) models aimed at optimizing efforts of mineral exploration programs across the country. GSI has already launched the Hackathon for innovative Mineral Hunt Techniques by using Emerging Technology like AI/ML for identification of new potential areas for exploration on deep seated/concealed mineralized bodies with depth modelling and few mineral explorations projects have also been taken up on the basis of results of the Hackathon.

7.17 Mission-III B: Publication and Central Library

Geological Survey of India brought out its first publication as 'Memoir' in 1856. Published since 1861, as Monographs or Memoirs, these publications record the results of comprehensive palaeontological research and since then these publications are brought out in series. Over the years, GSI expanded the activities in different field of geosciences and generated huge data. To disseminate this huge data and share the knowledge, GSI publications are now brought out under following categories namely:

(i) Memoirs (detailed report on survey & investigations); (ii) Records (activities of regions and CHQ); (iii) Palaeontologia Indica (palaeontological studies); (iv) Special Publications (proceedings symposia and seminars organized by GSI/papers dedicated to a particular field of study in Earth Science or on special projects); (v) Miscellaneous Publications (consolidated document on geology and mineral resources of states); (vi) Bulletins- A, B & C (compilation of work on: A- Economic Geology; B- Engineering Geology & Ground Water and C- Basic data generated by laboratories/specialized divisions); (vii) Catalogues (relevant aspects of scientific information, collected and collated in the department); (viii) Manuals (analytical methodology and procedures carried out in laboratories of GSI) and (ix) Indian Journal of Geosciences.

During the period, Total 24 scientific publications have been released viz. Special Publications on Manual of Geology of India, Economic Geology of India, Geology and metallogeny of Neem ka Thana copper belt, Rajasthan, Seismic Hazard Assessment of selective towns of North East India.





Glimpses of GSI Publications available in OCBIS Portal [viz. Special publications, Miscellaneous publications, Records, and Indian Journal of Geosciences]

7.18 Mission-III C: Map, Geoinformatics & Data Integration

This sub-mission is mandated to prepare, scrutiny and disseminate both analogue and digital geological maps/databases for the entire country. This sub-mission also includes compilation of maps like Geological Quadrangle Maps (GQM), District Resource Maps (DRM), Geological and Mineral maps of States, Mineral belt maps (MBM), Coalfield maps, Territorial water (TW) Maps, etc.

The following type of maps on various scale were published and released in 2025 State Geological Map of Arunachal Pradesh (1:1M), Nagaland (1:1M), map of North Eastern Region (1:2M), Metallogenic Map of India, Quaternary Geological Map of India (1:5 M), DRMs of MP (10), WB (02), A&N (02), Bihar (15), Jharkhand (05), Odisha (13), Meghalaya (06), Assam (14), Manipur (5), Arunachal Pradesh (06), UP (11), UK (03), Punjab (06), Haryana (02), HP (04), J&K (06), Karnataka (06) and Gujarat (11)

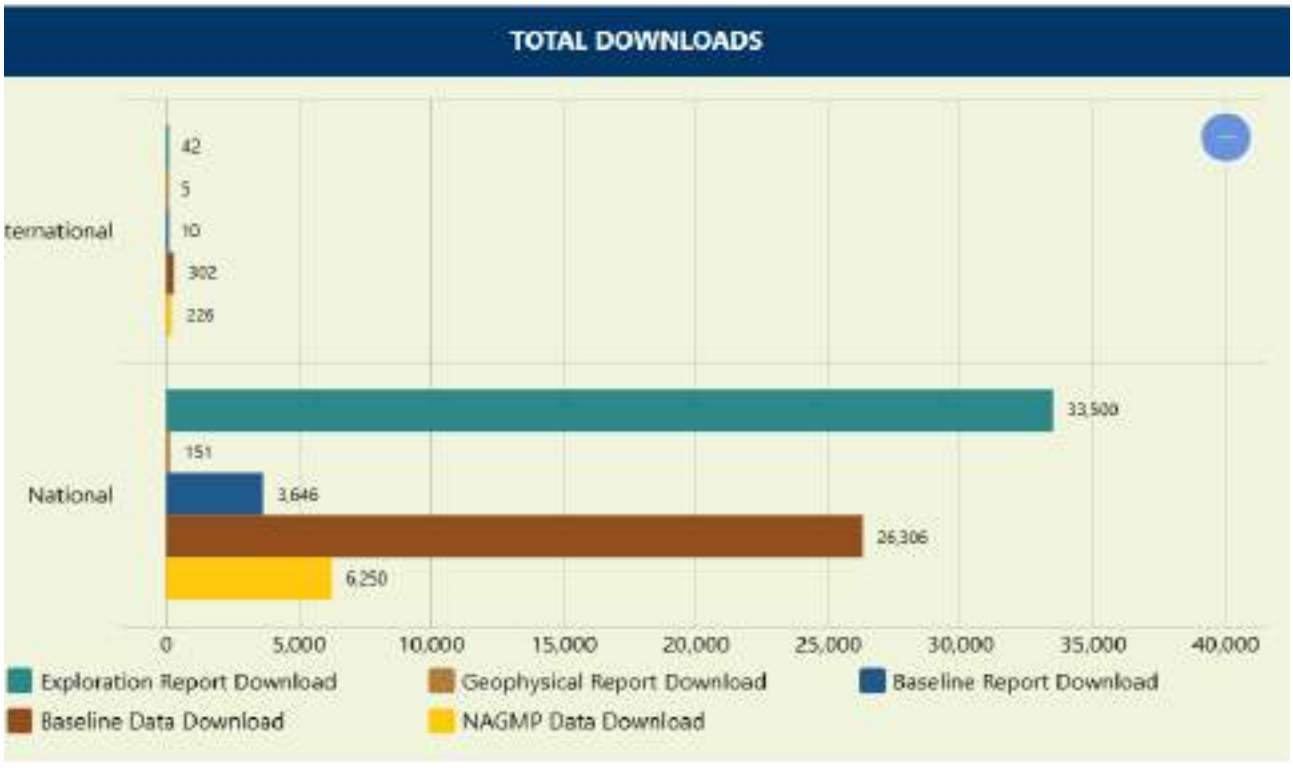
National Geoscience Data Repository (NGDR):

As a follow-up of National Mineral Exploration Policy (NMEP)-2016, the National Geological Data Repository (NGDR) portal (https://

geodataindia.gov.in/) was conceptualized with the objective of establishing a single, GIS-enabled online platform to host all baseline and exploration-related geoscientific data of the country. January to December, 2025, NGDR has seen significant growth, with the uploading of 5918 reports (GSI: 3678, Stakeholder: 2240) during the year 2025, bringing the total number of geoscientific reports presently available on the NGDR portal to 16369 nos. (GSI: 13080 Stakeholder: 3289). During the period, 34 number of stakeholder organisations have registered under NGDR for uploading their current reports. Addition of new map services and updating of the existing layers have also been carried out as per the updated data received from different stakeholders. The data layers which have been updated/ added in NGDR are:

- Electromagnetic heliborne geophysical data for 5 blocks from AMD
- Basin & sub-basin layer from CGWB, NMEDT funded project block boundaries
- Ongoing project boundary layers of KIOCL, SCCL, Geovale, GeoExpOre, CMPDIL, DGM-Karnataka & DGM Odisha
- NAGMP blocks (2 nos.) of GSI
- Legacy Geophysical (TOASS) data of GSI
- Exploration Licence Block Boundaries
- Geophysical (NGPM) Block Boundary layer
- Baseline Block boundary layer
- Project Boundaries of FS: 2024-25 & 2025-26 of GSI
- District Resource Maps, (till FS 2022-23)
- NGCM-NGPM data and updated Landslide inventory data

Till date, 65,030 no of downloads (Data+ Reports) have been carried out by National and International organizations /institutions.



Status of data download from NGDR portal by registered users (till December, 2025)

Downloads by:

National Agencies: Adani Enterprise, AMD, CMPDIL, Coal India, NGRI, Fomento, Engeotech, Geoexpore, Geomarine, Geovale, Gemco Kati, Hindalco, HZL, IDPeX, IBM, ISRO, JSW, KIOCL, KPMG, Maheswari Mining, MECL, ONGC, Neurons AI, NMET, NMDC, Novomine, OMC, Tata Steel, SCCL

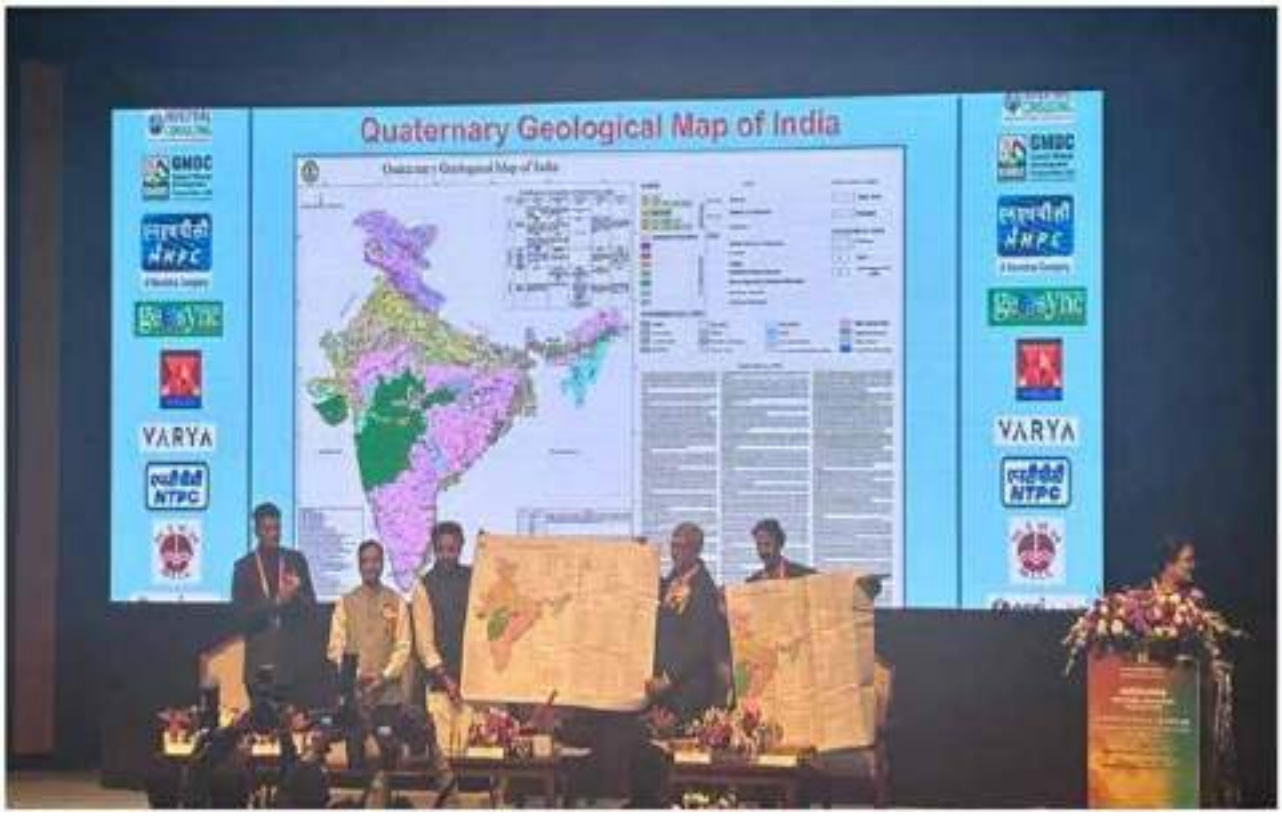
Academic Org: Adamas University, Andhra University, Benaras Hindu University, Aligarh Muslim University, Birbal Sahni Institute, IIT Bombay, ISM Dhanbad, IIT Kharagpur, IIT Roorkey, Lucknow University, NRSC

DGMs: Gujrat, Rajasthan, Tamilnadu, J&K, Kerala, Chhattisgarh, MP, Assam, Odisha, Karnataka, Jharkhand, Andhra Pradesh.

ALS Golspot, Canada
Queen's University, Canada
Tim Archer, Natural Resource Consulting, United Kingdom
University of Western Australia
Radixplore, Australia
Lombardi Group, Switzerland
Bell Geospace, USA
Bandung Institute of Technology, Indonesia
Ivan Portnov , Russia
Universite de Poitiers, France
University of the Free State, Bloemfontein, South Africa

Foreign Organizations	Country
National University of Rosario	Argentina
University of Western Australia	Australia
RadiXplore	Australia
Queensland University of Technology	Australia
Fortescue Metals Group	Australia
Sibelco	Belgium
UniLaSalle	France
CAU Kiel	Germany
Beak Consultants GmbH	Germany
Bandung Institute of Technology	Indonesia
Mineral exploration corporation limited	Iran
Adepth minerals as	Norway
Universite de Poitiers	Ukraine
Reid Geophysics Limited	United Kingdom
Natural Resource Consulting	United Kingdom
Getech	United Kingdom
University of Exeter	United Kingdom
University of California	United States
SLB	United States
Stanford	United States
University of Maryland College Park	United States
CSM	United States
LithoAyas LLC	United States

Download details from NGDR portal by registered users



Release of Quaternary Geological Map by Hon'ble Union Minister, Coal and Mines

Mission-IV activities: Fundamental & Multidisciplinary Geosciences and Special studies

The Geological Survey of India, through its Mission-IV activities encompasses a comprehensive suite of activities including engineering geological studies, landslide hazard assessment and slope stability analysis, investigations on geogenic contamination, climate change and ecosystem studies, polar research, and fundamental geoscience research, thereby contributing significantly to public safety and informed environmental decision-making. It is implemented through three targeted sub-missions including Mission-IVA focusing on geotechnical and geohazard management, Mission-IVB addressing climate change, ecosystems, polar studies, and environmental geology, and Mission-IVC advancing fundamental geosciences research and development. Backed by cutting-edge infrastructure, Mission-IV leverages GSI's three National Centres of Excellence in Geoscientific Research (NCEGR) located in Kolkata, Bengaluru, and Faridabad, along with six regional laboratories across India, enabling the organization to effectively address emerging challenges posed by the increasing frequency of natural disasters, environmental degradation, and the growing impacts of climate change.

During Field Season (FS) 2025–26, GSI undertook 181 multidisciplinary projects across the country, including 91 under Mission-IVA, 39 under Mission-IVB and 51 under Mission-IVC. Collectively, these projects strengthened India's capabilities in understanding Earth processes, improving public safety, and advancing national priorities in climate resilience, geo-hazard management and mineral resource development.

7.19 Geotechnical & Geohazards Management (M-IVA)

As the designated nodal agency for landslide hazard studies, the Geological Survey of India continues to advance disaster risk reduction through robust scientific research, technology-driven methodologies, and strategic partnerships. During Field Season 2025–26, GSI undertook multi-scale landslide susceptibility mapping, site-specific geotechnical investigations, early warning and forecasting initiatives, and the development of mitigation measures to reduce vulnerability and enhance resilience in high-risk areas.

The National Landslide Forecasting Centre (NLFC), Kolkata, the country's first operational landslide forecasting facility established in July 2024, NLFC has been issuing daily operational landslide forecast bulletins for Darjeeling and Kalimpong districts in West Bengal and the Nilgiris district in Tamil Nadu, utilizing real-time rainfall inputs, terrain parameters, and GIS-based modelling. On 4th September 2025, GSI also commenced issuing operational landslide forecast bulletin for Rudraprayag district in Uttarakhand. The initiative, which began with coverage of 16 districts across six states in 2024, has grown to 21 districts in 08 states during 2025, with the inclusion of high-risk districts in Nagaland, Karnataka, and Kerala this monsoon season. Moving forward, GSI aims to establish a fully operational, nationwide Landslide Early Warning System (LEWS) across hazard-prone states by 2030, significantly strengthening preparedness and response capabilities. To enhance accessibility and public awareness, the Bhusanket web portal and Bhooskhalan mobile app offers real-time updates, critical data, and resources for disaster response and planning.



(a) (b)

Dissemination of Landslide Forecast bulletins through Bhusanket web portal (a) and the Bhooskhalan mobile app (b).

To refine, enhance and expand coverage of vulnerable areas under its Landslide Early Warning System (LEWS), GSI has taken eight projects in FS 2025-26 in landslide-prone districts including Assam, Meghalaya, Mizoram, Nagaland, Manipur, Tripura, Kerala, Karnataka, Tamil Nadu, Sikkim, West Bengal, Goa, Maharastra, Jammu & Kashmir, Uttarakhand, and Himachal Pradesh. Daily experimental bulletins were issued to district authorities/ SDMA during the southwest and northeast monsoons for ground validation and refinement of forecasting models. Additionally, the national landslide geodatabase has been integrated with the National Database for Emergency Management (NDEM), supporting disaster management plans across states and union territories.

Advancing Disaster Risk Reduction through Strategic International & National Partnerships; GSI signed key MoUs with the Central Water Commission (CWC) and the National Water Informatics Centre (NWIC) for real-time sharing of hydrological and rainfall data to enhance glaciological, hydrological, GLOF and landslide studies. A collaboration with CNR-IRPI, Italy is enabling the adoption of international best practices in LEWS implementation.

During FS 2025–26, GSI prioritized meso-scale (1:10,000) and site-specific (1:1,000/1:2,000) investigations in susceptible road corridors, undertaking 28 meso-scale projects and five detailed site-specific studies aimed at addressing slope stability issues and recommending scientifically validated mitigation measures. Focused geotechnical investigations are in progress at Haflong, Assam and Gyalshing, Sikkim, with the objective of enhancing resilience and reducing landslide risks in these highly vulnerable regions.

Geodynamic Studies Division (GSD) and Seismo-Geodetic Data Receiving and Processing Centre (SGDRPC) in Kolkata continued their critical work in seismotectonic studies. GSD operates a pan-India network of 34 Permanent GNSS stations to acquire high-precision data for monitoring long-term crustal deformation and geodynamic activity. Research projects include DEM-based morphotectonic studies, traverse mapping, and campaign-mode GPS surveys in the Darjeeling-Sikkim Himalayas to analyze tectonic controls, crustal deformation, and fault dynamics.

The Seismo-Geodetic Data Repository and Processing Centre (SGDRPC) focuses on real-

time acquisition, processing, and analysis of seismo-geodetic data from 10 broadband seismic observatories. During FS 2025–26, the division undertook a Micro-Earthquake (MEQ) survey in the Darjeeling–Sikkim Himalayas to record and analyze micro-seismic activity in this geodynamically sensitive region. Additionally, seismic microzonation study are being carried out for Ayodhya city and Muzaffarpur to support resilient urban planning and earthquake risk mitigation. SGDRPC has also prepared a Compendium on Micro-Earthquake studies undertaken by GSI across India, which will serve as a valuable resource for understanding seismic activity.

Geotechnical and engineering geology studies remain a core strength of GSI. During FS 2025-26, GSI undertook 28 geotechnical projects to provide geological support for critical infrastructure initiatives. These included investigations for road alignments, bridges, tunnels, hydropower facilities, water resource projects and railway expansions across the Himalayas, Northeastern India, the Western Ghats and other sensitive terrains. GSI provided technical appraisal and review of geological and geotechnical chapters of six Pumped Storage Projects (PSPs) and enabled timely scientific clearances for eight PSPs (total capacity: 10,200 MW) concurred by CEA during 2024–25. Another 13 PSPs (22 GW) remain under appraisal for 2025–26, demonstrating GSI's increasing role in advancing India's renewable energy storage infrastructure.

Also, GSI played a central role in strengthening road and tunnel infrastructure across strategic corridors by reviewing DPRs for major tunnel projects in Jammu & Kashmir (Chenani–Nashri, Vailoo), Ladakh (Fotu La), Assam, and the Varanasi–Kolkata corridor and signed collaboration frameworks with NHAI and MoRTH to provide continuous geotechnical support for national infrastructure.

To further expand its role in national infrastructure development, GSI signed MoU with Nuclear Power Corporation of India Ltd. (NPCIL) for the cooperation in Geological, Geophysical, and Seismotectonic Studies for setting up of greenfield and brownfield Nuclear Power Projects by NPCIL across the country.

7.20 Climate Change & Eco systems, Polar Studies, Environmental Geology, and Medical Geology (M-IVB)

Sub-Mission M-IVB focuses on addressing the diverse impacts of climate change through glaciology, GLOF studies, polar research, and environmental geology. During FS 2025-26, these efforts have provided critical insights into climate dynamics, disaster preparedness, and environmental sustainability.

GSI undertook seven glaciology projects during FS 2025–26, focusing on glacier recession, evolution of proglacial lakes and GLOF (Glacial Lake Outburst Flood) susceptibility mapping. Long-term mass balance observations continued on the benchmark Hamtah Glacier (Himachal Pradesh), monitored since 2000. After the catastrophic GLOF disaster of South Lhonak glacial lake in Sikkim in October, 2023, taking cognizance of the hazard scenario GSI has significantly enhanced its thrust on mitigation of GLOF.

Key GLOF investigation covered pro-glacial lakes like Baihal and Kashang Khad (Himachal Pradesh), Vishav Rambiara basin (Jammu & Kashmir), Dalung Glacier (UT Ladakh), Pyungru and Syunti Yankti (Uttarakhand). GSI aims to systematically cover the entire Himalayan terrain, from Ladakh to Arunachal Pradesh, in the next 3–4 years to strengthen GLOF risk mitigation and climate resilience.

GSI's NCEGR Faridabad continued its scientific leadership in East Antarctica through specialised studies on ice-sheet behaviour, climate variability and tectonic evolution.

Investigations in the Polararboken and Dalk Glaciers of the Larsemann Hills focused on ice dynamics and climate signals, while research in the Lomonosov Mountains contributed to understanding the continuation of the East African Orogeny into Antarctica, providing key insights into ancient tectonic reconstructions

Under environmental geology, GSI undertook 25 projects addressing groundwater contamination, riverbank stability, urban flooding, and carbon sequestration. Eighteen projects, some in collaboration with CGWB, focused on arsenic, fluoride, and heavy metal contamination in states like Andhra Pradesh, Karnataka, Telangana, Haryana, Bihar, Assam, and Rajasthan, West Bengal. Additionally, Studies on CO_2 sequestration potential in parts of the Sahyadri Group of the Deccan Volcanic Province and in the Parvati Arga and Bakhira wetlands underscored GSI's role in supporting India's climate commitments and net-zero objectives.

7.21 Fundamental Geosciences & Research (M-IVC)

Fundamental research remains the backbone of GSI's activities under Sub-Mission M-IVC. During FS 2025-26, GSI has undertaken diverse research initiatives across Petrology, Palaeontology, Geochronology, Isotope Geology, and niche fields such as Meteorite and Planetary Sciences, Gemmology, and Quaternary Geology.

Petrological research focuses on unraveling mineralization processes in various geological terrains, with 26 R&D projects targeting critical and strategic minerals like Rare Earth Elements (REE), Lithium, Cobalt, and Vanadium, along with Copper, Gold, and Platinum Group Elements (PGE). Notable studies include REE mineralization in the Samalpatti and Hogenakal carbonatites (Tamil Nadu), Ladera area (Rajasthan), and porphyry Cu-Au-Mo potential in the Ladakh Batholith. Focused studies on pegmatites, laterites, and schist belts continue to reveal prospective zones for nickel, cobalt, and chromium, supporting national priorities for country's mineral self-reliance.

Mission V: Training and Capacity Building

7.22 Human Resource Development

Geological Survey of India Training Institute (GSITI) presently conducts training programmes across the country through its headquarters in Hyderabad, six Regional Training Divisions (RTDs), and four Field Training Centres (FTCs). The GSITI Hyderabad Centre functions as the Headquarters, housing specialized divisions for laboratory and classroom training, and also hosts the Regional Training Division for the Southern Region. The remaining RTDs are located in Nagpur, Kolkata, Jaipur, Lucknow, and Shillong, while the four FTCs; Chitradurga (Karnataka), Raipur (Chhattisgarh), Kuju (Jharkhand), and Zawar (Rajasthan) focus on field-intensive modules, laboratory modules, and administrative courses.

From January 2025 to December 2025, GSITI conducted a total of 150 training programmes, benefitting 3473 participants. In addition to domain-specific and administrative courses, specialized training was provided in critical mineral exploration and emerging technologies such as Drone Technology, Artificial Intelligence, and Machine Learning. Customised training programmes, including Regional Mineral Targeting (RMT) for NPEAs, and workshops/seminars on the use of the National Geoscience Data Repository (NGDR) portal, were also conducted in coordination with the Ministry of Mines for stakeholders, exploration agencies, and State DGMs.

During this period, two international courses were organised under the Indian Technical and Economic Cooperation (ITEC) Programme of the Ministry of External Affairs (MEA), Government of India, with participation from

39 international professionals representing 31 countries.

GSITI, with a vision to prepare the next generation for contributing to India's transformation into a developed nation, in association with its RTDs and FTCs, organized 33 Azadi Ka Amrit Kaal (AKAK) outreach programmes featuring short field-based training courses, in which 898 students from various colleges and universities across the country participated.

In Commemoration of the 175 years of its foundation of Geological Survey of India, GSITI hosted the Conference on "Next-Gen Geophysics: 2025 – Unlocking Earth's Hidden Treasures", which witnessed the participation of 326 national and international delegates. Under the Rashtriya Karmayogi Large Scale Jan Seva Program- GSITI have trained 115 Master Trainers through whom 45 workshops have been conducted in the nationwide various offices of GSI, imparting the training to 1259 officers and staffs.



Hon'ble Minister of Coal and Mines Shri G. Kishan Reddy at the Next-Gen Geophysics: 2025 conference at GSI Training Institute, Hyderabad.



International participants in the ITEC training program studying aerial photographs at GSI Training Institute, Hyderabad.



GSITI faculty demostrating the measurement of dip and strike to trainee participants.



GSI employees participating in group activities under the Rashtriya Karmayogi – Large Scale Jan Seva Programme.

Participants attending training programmes in GSITI Training Centres

PSS: Policy Support System

7.23 Central Geological Programming Board (CGPB)

The Central Geological Programming Board (CGPB), chaired by the Secretary (Mines), is the principal national body in charge of coordinating geological mapping, mineral

prospecting, and exploration activities throughout the country. Each state has its own State Geological Programming Board (SGPB) that oversees geoscientific activities inside the state, in collaboration with the CGPB and the Geological Survey of India.

GSI functions as the Nodal Department (Member Secretary), with participation from State Geology and Mining Departments, Central Government Agencies, PSUs, Other Ministries, and Industry Representatives.

The CGPB meeting is organized annually under the chairmanship of the Secretary, Ministry of Mines, Govt. of India, to discuss geological programs as well as related issues and concerns of state governments, central institutes, and other stakeholders involved in mineral exploration and other geoscience fields. The annual Field Season Program (FSP) of GSI is also placed before the august gathering to avoid duplicity in work.

To keep up with significant reforms in the mining sector and amendments to the Mines and Minerals (Development and Regulation) Act, 1957, from 2015 to 2023, the central government established various entities at the central and district levels, such as NMEDT and DMF. NMEDT focuses on facilitating mineral exploration, while DMF addresses the socio-economic development and welfare of mining-affected areas and communities. In line with the emphasis on self-reliance, the central government has accredited several private exploration agencies to conduct prospecting operations and mineral explorations across the country. The CGPB and its twelve committees have been reconstituted through a series of resolutions, with the latest being resolution F. No. M.I-4/1/2021-Mines-I dated 18.08.2023. This reconstitution includes representatives from 12 Ministries/Departments of the Government of India, the Advisor (Minerals) from NITI Aayog, 30 Heads of Central Organizations, 6 Industry Representatives, Secretaries (Mining and Geology) of State Governments, Directors of Geology & Mining of States, GSI, and any other special invitees approved by the Chairman.

Outcome of 64th CGPB along with focus/main agenda of 64th CGPB Meeting

The 64th meeting of the Central Geological Programming Board (CGPB) was held on 19th January 2025 at State Convention Centre, Lokseva Bhavan, Bhubaneswar, Odisha. The event was chaired by Shri V. L. kantha Rao, Secretary, Ministry of Mines and Chairman, CGPB. Shri Asit Saha, Director General, GSI, Shri Sanjay Lohiya, Additional Secretary, Ministry of Mines and Dr. Joyesh Bagchi, ADG, PSS, GSI were the other dignitaries gracing the occasion. The meeting attracted the presence of senior functionaries of different Central Ministries/Organisations, State Directorates of Mining & Geology, PSUs, Representatives from private mining industry, Mining associations and other stakeholders. Also, an exhibition on various themes of geoscience was inaugurated by Secretary, Ministry of Mines, in the presence of other senior officials, in which GSI, PSUs, private exploration agencies and start-ups showcased their achievements/activities in the mineral and mining sector.

During his address, Secretary, Ministry of Mines emphasized the platform's vital role in fostering collaboration and advancing geosciences. He outlined key initiatives taken by the Ministry of Mines, aligned with two significant recent budgetary announcements, on Critical Mineral Mission and Offshore Mining. He encouraged exploration agencies to utilize NMEDT funding to enhance mineral exploration efforts and execution of R&D projects. Secretary (Mines) also stressed the utilization of legacy geological data available in the NGDR portal and underscored new

initiatives to issue more exploration licenses, enabling private agencies to contribute to the mineral exploration landscape.

A highlight of the event had been the announcement of winners from the Mineral Hunt Techniques Hackathon, showcasing start-ups and unicorns employing AI/ML-driven prospectivity analysis to accelerate target, identification of new mineral deposit discovery. Additionally, the session had presentations on recent changes in guidelines for forest clearance by Ministry of Environment, Forest & Climate Change. Other highlights include the launch of publications, including Geology and Mineral Resources of Jharkhand; Andaman & Nicobar Islands and Geology and Mineral Resource Map of the North Eastern Region.

The agenda discussed during the 64th CGPB meeting held at Bubaneswar, Odisha wherein the actions have been completed:

1. Collaborative project between GSI and DoMG, Odisha, on the "Assessment of Low grade Chromite and associated Nickel in the stabilized Mine dumps of Sukrangi Chromite Mines of Odisha Mining Corporation, Jajpur district, Odisha".
2. Declaration of Mica as a major mineral and the average sale price for Emerald.
3. Projects on geochemical mapping, mineral exploration, geohazard management, and geotechnical investigations as requested by the State DMGs/DGMs
4. DMG Karnataka has requested G3-level exploration of Kyanite and Sillimanite in Honaganahalli and Shantipura blocks, HD Kote taluk, Mysuru District.

In addition, the following new key agenda items were taken up for discussion in the 64th CGPB meeting held at Bubaneswar, Odisha

1. Calculation of Potash and Halite resources with submission of the report to the Punjab Government, along with a recommendation for fast-track drilling of additional boreholes in evaporite basins to boost the State's economic and mineral potential.
2. Block explored by State DGMs/DMGs (prior to MMDR Amendment Act, 2021) which has neither been auctioned nor given for further stage of exploration.
3. Fixation of Threshold/ Cut-off value of Critical minerals for exploration.
4. Declaration of the non-metallic industrial minerals like Calcite, Dolomite and Dunite as major minerals.
5. Uploading of the geological reports of all stakeholders prior to FS 2021-22, in NGDR portal.

Salient points of 21st CGPB Committee meetings

The 21st CGPB Committee Meetings (I to XI) were conducted in the months of September and October 2025. The salient points of 21st CGPB Committee meetings are as follows:

- A SoP titled "Sampling and analysis of coal and associated rocks for exploration of Trace Elements & REE" was formulated jointly by GSI and CMPDI and is now available on OCBIS portal.
- A collaborative project has been proposed by GSI with CSIR-CIMFR and CMPDI on "Mapping and categorization of un-mineable deep-seated coal and lignite seams for UCG (Underground Coal Gasification) potential in India".
- Stakeholders to address the issue of developing a standard unified

methodology for analysis of trace element and REE for all Indian laboratories.

- Indian Standard Procedure (ISP) for lignite was finalised under the chairmanship of NLC India Limited.
- Stakeholders to share the landslide related data with GSI to enhance forecasting accuracy.
- A committee constituted under the chairmanship of Chief Controller of Mines (CCOM), IBM for fixing the threshold values of critical minerals.
- Memorandum of Understanding (MoU) to be signed between GSI and NRSC/ ISRO for future collaboration on Pan-India Natural Hydrogen study.
- MoU was signed between GSI and National Centre for Seismology (NCS), MoES to develop "General Framework for Sharing of Seismo-Geodetic Data and collaboration for enhancement of geoscientific knowledge base for Sustainable Development".
- Joint Working Group (JWG) to be formed for preparation and monitoring of the collaborative projects between GSI and CGWB.
- A perspective action plan has been prepared by GSI for carrying out mineral exploration and mining in North Eastern Region (NER) and the action plan to be circulated among the State DGMs of NER for reference.
- To establish a nationwide isotopic mapping programme.
- Emphasis laid on exploring advanced technologies, including multi sensor systems, quantum-based gravity sensors for drones, and novel satellite-based techniques that can predict subsurface features from high-resolution imagery.
- Taking up the exercise on reserve calculation of North Eastern coal and classification of high sulphur North Eastern coal by CSIR-CIMFR.
- IBM is carrying out a pilot project wherein the analyses for 30 critical minerals from the mine dump and tailings are being done.

The outcome of 64th CGPB meeting are summarized as under:

- 39 programs proposed by GSI for FSP 2025- 26 were formulated on the request of State Governments/ SGPB committee recommendations/ CGPB committee recommendations. Also, 57 programs proposed in collaboration with universities, agencies, or under sponsorship from various authorities.
- Identification of potential areas for REE and Critical minerals using remote sensing techniques.
- Collaboration between GSI and NRSC, ISRO for hydrogen exploration for identification of sub-circular depressions (SCDs)/Fairy Circles.
- Fixing threshold values of Critical and Strategic minerals for exploration purpose.
- Preparing a future perspective plan for strengthening of National Landslide Forecasting Centre (NLFC).
- AI/ML-driven mineral prospectivity analysis.
- Using state of the art geophysical techniques for mineral exploration.
- Reappraisal of underexplored areas.
- Taking up geohazard studies including landslides and geo-environmental issues.

- Border region geoscience investigations by State DGM/DMGs.
- Enhancing exploration activities in North-Eastern Region.
- Sharing of annual programme by stakeholders.
- Revamping of CGPB.

In preparation to 65th CGPB Meeting:

28 States/UT have conducted the State Geological Programming Board (SGPB) meeting for the year 2025-26. New agenda items have been proposed by 07 State DGMs, 03 Central Organisations and 03 Industries for discussion to be taken up during 65th CGPB Meeting, namely, Telangana, Chhattisgarh, Odisha, Jharkhand, Ladakh, Assam, West Bengal, SCCL, AMD, NDMA, FIMI, NACRI and RMML-Baldota Group.

The Central Geological Programming Board (CGPB) operates through 12 thematic sub-committees (I–XII). During this year, all sub-committee meetings were conducted in hybrid mode and were organized from the various regional headquarters of the Geological Survey of India (GSI).

The 65th meeting of the Central Geological Programming Board (CGPB), for the year 2025-26, is scheduled to held on 21st January 2026 at A.P. Shinde Symposium Hall, ICAR, Pusa, New Delhi. under the chairmanship of Shri Piyush Goyal, Secretary, Ministry of Mines.



Secretary, Ministry of Mines addressing the stakeholders of 64th CGPB meeting



Shri Asit Saha, Director General, GSI addressing the stakeholders of 64th CGPB meeting



Inauguration of exhibition in 64th CGPB meeting by Secretary, Ministry of Mines



Shri Sanjay Lohiya, Additional Secretary, Ministry of Mines addressing the stakeholders of 64th CGPB meeting



Discussion on follow-up of the 63rd CGPB meeting by Dr. Joyesh Bagchi, ADG, PSS, GSI



Release of Geology and Mineral Resource Map of the North Eastern Region by the dignitaries.



Release of Annual Report of GSI for Field Season 2023-24



Awarding of the winners of Mineral Hunt Techniques Hackathon in 64th CGPB meeting



View of various stakeholders participating in the 64th CGPB meeting

7.24 Quality Management (QM) Cell of GSI

The Geological Survey of India (GSI) has continued to reinforce its quality management framework, the QM Cell of GSI ensures compliance with Standard Operating Procedures (SOPs) established by GSI across Regions, Mission and Central Facilities, covering diverse geoscientific activities such as geological mapping, geophysical surveys, offshore exploration, mineral and energy investigations, geotechnical studies, glaciology, geo-environmental and seismological research,

drilling, laboratory services, photogeology, and remote sensing.

During the period from January to November, 2025 the following initiatives were implemented to ensure the quality: (i) 10% per cent of the randomly selected geological reports circulated in 2021–22 was subjected to external peer review by the retired officers of GSI, eminent academics, and professionals from reputed organizations/institutions, (ii) 20% of the proposed Field Season projects of 2025–26 was peer reviewed by the set of panels comprising retired GSI officers, eminent academics, and professionals from reputed institutions.

Alongside peer reviews, SoP formulation and revision remained a cornerstone of GSI's quality management system. In 2024–25, a new draft SoP on HR-SIMS (CAMECA IMS 1300-HR3) was prepared and is currently undergoing internal review, with plans for external review after addressing comments. This multi-tier process—drafting, internal scrutiny, external peer review, and final approval—ensures that SOPs are precise, reliable, and aligned with international best practices.

NABL accreditation of GSI's Chemical Laboratories further guarantees the quality of diverse analyses, ensuring that results incorporated into technical reports meet global standards and satisfy stakeholders. The continual development and refinement of SoPs reflect GSI's proactive approach to keeping pace with evolving scientific methodologies and technological advancements.

7.25 International Cooperation

The Geological Survey of India (GSI), actively pursued international cooperation to advance knowledge and technology. During the period under review, its International Affairs Division strengthened global outreach through collaborations with international scientific organizations, institutions, and agencies. This included participation in seminars, symposia, workshops, and meetings, fostering ongoing scientific exchange and cooperation.

7.26 Bilateral Collaborative Activities

A. MoU's / Bilateral Meetings

The Geological Survey of India (GSI) maintains active Memoranda of Understanding (MoUs) with several leading geoscientific organizations and geological surveys across the world, including those of Australia, the United Kingdom, Russia, Italy, the United States, Brazil, Peru and Finland.

I. Geological Survey of India (GSI) – Geological Survey of Brazil (SGB, Brazil)

The MoU with SGB, renewed until January 2030, continues to support cooperation in mineral resource assessment. A high-level virtual workshop on mineral resources in May 2025 advanced joint exploration initiatives, featuring five presentations— three from GSI and two from SGB.



Glimpses of the presentation of Maisa Bastos Abram, Geologist / Head of the department of Mineral Resources, SGB during online workshop between GSI and SGB, Brazil.

II. Geological Survey of India (GSI) - Geoscience Australia (GA)

As part of the ongoing GSI-GA collaboration, two secondment programs focused on Geochronology and Mineral Systems were successfully conducted in 2025, with four GSI officers participating in each program. These secondments were facilitated under the extended Terms of Reference under GSI-GA MoU. During the secondment, GSI geoscientists received hands-on training in advanced analytical laboratories at Geoscience Australia.

GSI and Geoscience Australia advanced discussions to extend their longstanding Memorandum of Understanding beyond its current validity of August 2025. Both institutions are working toward a new collaborative framework that will encompass critical minerals, geochronology, application of advanced exploration technologies, and capacity building.

Under this proposed fresh MoU, a major joint project titled "Mineral System Development for Critical Minerals and Geothermal Prognostication in the Sakoli Belt, Central India" are proposed to be undertaken.



GSI geologists at GA SHRIMPII Lab (from left to right: Shri Utkarsh Tripathi, Sandip Nandy, Md. Merajuddin Khan, Geoff Fraser, Trisrota Chaudhuri, Marina Costelloe and Andrew Cross).



Under the extended Term of Reference Mineral System/Mineral Potential Secondment Team from Geological Survey of India at Geoscience Australia.

III. Geological Survey of India (GSI) - The Research Institute for Geo-Hydrological Protection, of the National Research Council, Italy (CNR-IRPI)

GSI signed a MoU with the Research Institute for Geo-Hydrological Protection (CNR-IRPI) of Italy, signed in January 2025, laying the foundation for advanced cooperation on landslide early warning systems (LEWS). Technical discussions held in February 2025 were followed by a scientist delegation visit to GSI Kolkata in April 2025 to explore integrated monitoring solutions. A meeting in the side-lines of International Seminar at Jaipur was convened on 21.11.2025 to discuss furtherance of collaborative activities under the MoU followed by joint field work in Uttarakhand in November 2025.





Glimpses of virtual signing of MoU and Implementing Arrangement with the Research Institute for Geo-Hydrological Protection of the National Research Council (CNR-IRPI), Italy.

IV. Geological Survey of India (GSI) – Florida International University (FIU, USA) The MoU with the University of Florida, extended to January 2028, supports two key tectonic research projects in the Ladakh/Indus Ophiolite region and the Mishmi Tectonic Belt. Laboratory analyses involving petrography, geochemistry, and isotope studies are underway to refine tectonic evolution models. Joint field work is scheduled in December 2025.

V. Geological Survey of India (GSI) – British Geological Survey (BGS, UK)

The MoU between GSI and BGS, has been extended to July 2030, enabling continued cooperation in strategic areas such as critical minerals, hydrogen, carbon capture and sequestration (CCS), landslides, and geoheritage. A collaborative project on critical mineral prospectivity analysis for FY 2025-26 is under progress. Secondment of 4-5 GSI officers to BGS is proposed during Feb-March 2025. A four-member BGS team, led by Prof. Kathryn Goodenough, Head of Regional Geoscience (International), visited GSI Western Region, Jaipur. During the technical session, the team shared expertise on lithium (Li) and tungsten (W) mineralization, including their genesis, host rocks, sampling methods, and the application of AI/ML for mineral prospectivity mapping. Joint fieldwork in the RMT project area (Harsore-Jaitaran-Motia) and surrounding pegmatite-rich regions highlighted significant potential for Li and W mineralization.





Extension of MoU between Geological Survey of India, Ministry of Mines, Republic of India and the British Geological Survey of the Natural Environment tResearch Council of UK, a component of the United Kingdom Research and Innovation (virtually signed).



Group photo of BGS team and team of GSI, WR, Jaipur at RTD, GSI, WR.



Field work at Rewat hill, Degana Tungsten prospect, Nagaur district, Rajasthan by BGS team and team of GSI.

VI. Geological Survey of India (GSI) – The Geological, Mining and Metallurgical Institute of the Republic of Peru (INGEMMET)

GSI signed and exchanged an Inter-Institutional Cooperation Agreement with the Geological, Mining and Metallurgical Institute (INGEMMET) of the Republic of Peru on the sidelines of PERUMIN 2025 in September 2025.The agreement is valid for five (5) years. Preliminary discussions are underway to identify and advance mutually beneficial collaborative opportunities under the MoU.





Signing and exchange of the inter-institutional cooperation agreement between GSI and The Geological, Mining and Metallurgical Institute of the Republic (INGEMMET) of Peru.

VII. Geological Survey of India (GSI) – Saudi Geological Survey (SGS)

A bilateral meeting with the Saudi Geological Survey (SGS) was held during the Future Mineral Forum 2025 in Riyadh. The discussions focused on strengthening collaboration between the two geological surveys. To advance this objective, it was agreed to expedite the finalization of the MoU between GSI and SGS.

The MoU has since been finalized and is tentatively proposed to be signed during the Future Mineral Forum 2026.

VIII. Geological Survey of India (GSI) – Geological Survey of Finland (GTK, Finland)

Two GSI officials attended an exclusive interactive session with the Ambassador of Finland to India, Mr. Kimmo Lähdevirta, in Kolkata. The session focused on fostering bilateral collaboration, discussing trade and economic priorities, promoting investment opportunities, and strengthening long-term business linkages between India and Finland.



Glimpses of the Ministerial Round Table during FMF-2025, Riyadh.

A. Other international activities

The International Affairs Division continued its efforts to provide and facilitate the necessary technical inputs, comments, agenda points, action-taken reports, notes, and talking points to the Ministry of Mines, as required from time to time. Provided technical inputs and agenda for draft MoU like Algeria, Chile, Israel, Tanzania etc.

B. Geotechnical Consultancy Services

The Geological Survey of India (GSI) continues to provide geotechnical consultancy services for hydroelectric projects in Nepal and Bhutan. During the reporting period, GSI has actively engaged in site investigations, officer deputations, and collaboration with Nepali authorities to support proposed and ongoing hydropower projects.

Key Highlights:

1. MoU Progress

- A new Memorandum of Understanding (MoU) between GSI and the Joint Project Office – Sapta Kosi Sun Kosi (JPO–SKSKI), Biratnagar, Nepal, is under progress.
- The MoU focuses on geotechnical and geological investigations and preparation of DPR for the Sapta Kosi Multipurpose Project and the Sunkosi–Kamala Diversion Multipurpose Project.

2. Officer Engagements

- Site Visit to Sapta Kosi Multipurpose Project: 1 officer visited Nepal from 7 to 10 April 2025.
- Delegation for West Seti and SR-6 Hydropower Projects: 3 officers conducted site visits from 29 April to 7 May 2025.

GSI's continued involvement ensures technical expertise and support for hydropower development in Nepal and Bhutan, facilitating project planning, geological assessment, and geotechnical investigations.

C. International Visits/Workshops/ Seminars/ Symposiums/Exhibitions

During the period under consideration, multiple international deputation programs for 46 GSI geoscientists were facilitated, which includes:

- **01 officer** participated in the Future Mineral Forum during 14.01.2025 to 16.01.2025, Riyadh, Saudi Arabia.
- **01 officer** participated in the 1st meeting of JWG under the existing MoU between India and Argentina on Cooperation in the field of Mineral Resources during 28.01.2025 to 30.01.2025, Buenos Aires, Argentina.
- **01 officer** participated in the Mining Indaba – 2025 event during 03.02.2025 to 06.02.2025, Cape Town, South Africa.
- **04 officer's** delegation to Somaliland for carrying out mineral exploration in Somaliland during 03.03.2025 to 07.03.2025.
- **01 officer** participated in the Prospectors and Developers Association of Canada (PDAC) – 2025 event during 02.03.2025 to 05.03.2025, Toronto, Canada.
- **01 officer** participated in the CRU World Copper Conference 2025 during 07.04.2025 to 11.04.2025, Santiago, Chile.
- **04 officer's** delegation visited to Australia for Geochronology Secondment at GA during. 14.04.2025 to 16.05.2025.
- **01 officer** visited Moscow, Russia to attend Mining World Russia 2025 during from 23.04.2025 to 25.04.2025.
- **01 officer** participated in Geothermal training programme in Iceland on a GRO GTP Fellowship during 23.05.225-18.11.2025.
- **01 officer** visited Virginia Tech University, USA for training on aspects of CO2 sequestration during 26.05.2025 to 30.05.2025.
- **01 officer** participated in DRC Mining Week Expo and conference in Congo during 11.06.225 to 13.06.2025.
- **01 officer** participated in International intensive course on UNESCO Global Geo-parks 2025 in Lesvos Island, Greece during 20.06.2025-29.06.2025.
- **04 officer's** delegation visited to Kasempa, Zambia for Phase-I reconnaissance in respect of proposed geological mapping and exploration project in Zambia during 25.06.2025 to 29.6.2025.
- **04 officer's** delegation visited to Australia for Mineral Secondment with GA during. 28.07.2025 to 17.08.2025.
- **01 officer** visited Montreal, Canada as part of MECL inspection team for Pre Dispatch Inspection (PDI) of digital core during. 30.07.2025 to 01.08.2025.
- **01 officer** visited Bolivia to attend the Bicentenary celebrations of Bolivia's Independence Day during. 04.08.2025 to 07.08.2025.
- **06 officer's** delegation (Team 1) visited Zambia to carry out 1st phase work of Geological mapping and exploration project in Kasempa region during. 15.09.2025 to 31.10.2025.
- **06 officer's** delegation (Team 2) visited Zambia to carry out 1st phase work of

Geological mapping and exploration project in Kasempa region during. 20.09.2025 to 31.10.2025.

- **01 officer** visited Nairobi, Kenya to attend the Workshop on '' India-Africa Collaboration to Accelerate Electric Mobility Transition" Sponsored by Center for Strategic & International Studies (CSIS) on 19.09.2025.
- **01 officer** visited in Arequipa, Peru to Participate in PERUMIN-2025 during. 22.09.2025 to 25.09.2025.
- **01 officer** visited in Republic of Korea to attend a workshop on Knowledge Sharing on Critical Minerals to Manufacturing Value Chains during. 22.09.2025 to 26.09.2025.
- **01 officer** visited Zambia to supervise the 1st phase work of Geological mapping and exploration project in Kasempa region during. 29.09.2025 to 13.10.2025.
- **01 officer** visited Zambia to supervise the 1st phase work of Geological mapping and exploration project in Kasempa region during. 04.10.2025 to 18.10.2025.

7.27 Collaborative Projects with Other Organizations

During the year 2025, GSI has signed thirty (30) MoUs with different organizations and institutes like IIT (ISM); MoRTH, CES&HS; NCS; Indian Navy; NGRI; Assam SDMA; Water Resource Dept. (WRD), MP; NEEPCO; CGWB; DDMR, Mizoram; Meghalaya SDMA; WRD, Tamil Nadu; Dibrugarh University; TDMA, Tripura; SDMA, Arunachal Pradesh; SDMA, Manipur; PDEU; Narmada Valley Development Authority (NVDA); VMF Technology; IIT Bombay; NPCIL; IITM, Pune and IIT KGP etc.

STSS: Scientific & Technical Support System

7.28 ISO certification of Chemical Laboratories & Central Headquarters

The Central Chemical Laboratories at GSI, Central Headquarters and the Regional Chemical Laboratories at NR, SR, WR, CR, ER & NCEGR Faridabad along with SU: Chemical Laboratories at Pune, Bhubaneswar and Chennai have been accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL), Government of India as per ISO/IEC 17025:2017. The Re-assessment of all the regional laboratories have been done in the field of Testing as per ISO/IEC 17025:2017 which is a continuous process. All the laboratories have been participating in Proficiency Testing (PT) GeoPT Program and Inter-Laboratory comparison on a regular interval, and the performance of the laboratories was found satisfactory, i.e. Z score within ± 2. The newly established Coal Testing Laboratory of Chemical Division, SR and the water testing laboratory of NR Chemical Division were also granted NABL accreditation in accordance with ISO/IEC 17025:2017 in the discipline of Chemical testing by the NABL in the year 2024. Recently one LTGK (Low Temperature Gray King) apparatus was also installed in this Coal laboratory.



Inauguration of the LTGK apparatus of the Coal Unit of Southern Region Chemical Laboratory, Hyderabad by the DG, GSI.

7.29 Modernization program in GSI

The state-of-the-art instrumental facilities of GSI mainly operate under the aegis of National Centre of Excellence in Geoscience Research (NCEGR) with main centre in Kolkata and satellite centres at Bangalore and Faridabad. Existing laboratories are operating successfully.

High end machineries and equipment are being procured in a phased manner to improve the capabilities of GSI in generating vital geoscience data.

The important machineries procured recently and functional in different chemical laboratories are Hot plates, UV Spectro photo meter, Fire Assay Furnace, Fume Hoods with Scrubbers, Atomic Absorption Spectrometer, Inductively Coupled Mass Spectrometer.

Similarly Differential Global Positioning System (DGPS), Total Precision Magnetometer, Gravimeter, Ultra-Wideband MT System have been procured for geological and geophysical research activities. Field vehicles, Consultancy for Geo Heritage Sites and Setting up of National Geological Data Repository.

Keeping in pace with the thrust in the mineral exploration activities and search for critical minerals GSI is procuring hydrostatic deep drilling rigs as well as other laboratory instruments in phased manner during FY-2024-25. Apart from these process for procurement of EPMAs and Digi loggers have also been initiated. Some of them are listed below in **Table 7.1**-

Table 7.1

S. No	Major instruments procured/ planned to be procured	No of units	Concerned laboratories/ Divisions
1	Hydrostatic Drill Rigs - 150m, 300m and 600m	1	Engineering Divisions
2	HCV Truck	12	
3	Staff Cars	39	
4	Field Vehicles	50	
5	Magnetometer	35	Geophysics Division
6	DGPS	35	
7	Gravimeter	35	
8	UMT instrument	24	
9	Winglink Software	6	
10	Upgradation of Geosoft software	2	
11	Coastal Research Vessel	2	Marine and Coastal Survey Division
12	Laptops	640	Information Technology Division
13	All in One PC (Mid end and High end)	200	
14	Workstation	35	

S. No	Major instruments procured/ planned to be procured	No of units	Concerned laboratories/ Divisions
15	National Landslides Forecasting Center	1	GHRM Divisions
16	Automatic Weather Station	10	
17	Scanning Electron Microscope	1	Mission-IV Laboratory
18	Stereo zoom Microscope	1	
19	Inverted Biological Microscope	1	
20	Scanning Electron Microscope (SEM- EDX)	1	
21	Hand Held XRF	66	Research and Development activities
22	Electron Probe Micro Analyzer	4	
23	213nm Laser	24	
24	Isotope Ratio Mass Spectrometer (IRMS)	1	
25	Digital Core Logger	2	Mission- II
26	Atomic Absorption Spectrometer	1	Chemical Divisions
27	Inductively Coupled Mass Spectrometer	1	
28	Ultrapure water Purification System	1	

7.30 Internal Resource Generation

In the year 2025, total Rs. 1,83,53,629 (Rupees one crore eighty-three lakh fifty-three thousand six hundred twenty-nine) only has been generated as Internal Resource and Rs. 28,14,972 (Rupees twenty-eight lakh fourteen thousand nine hundred seventy-two) only collected as Service Tax and Cess by way of undertaking various commercial activities such as sponsored commercial geotechnical works; multidisciplinary & fundamental research; sale of maps, unpublished reports; providing analyses of samples (petrological/ chemical/ mineral physics/ geotechnical Labs.), EPMA studies and gem testing etc.

7.31 Activity – wise budget expenditure of GSI

Activity-wise budget expenditure of GSI against the approved budget grant during FY 2024- 25 and the activity wise total BE grant and expenditure of FY 2025-26 is given in **Annexure 7.1**.

7.32 Human Resources

Out of the total sanctioned strength of GSI i.e., 8648 as on 31.12.2025, 6241 posts are occupied. The group wise and category wise details of personnel as on 31.12.2025 are given in the **Table 7.2**.

Table 7.2: Statement showing category wise details of sanction and filled up strength in GSI as on 31.12.2025

Class	Sanctioned Strength	Men in position	SC	ST	OBC	No. of Women	PH	Total (SC, ST, OBC, Women, PH)
Group-A	3428	3171	485	240	928	904	43	2600
Group-B (Gaz.)	905	505	87	59	126	86	10	368
Group-B (NG) (Min.)	841	629	80	66	104	125	11	386
Group-B (NG) (Tech.)	695	356	42	26	74	38	11	191
Group-C (Min.)	605	385	59	22	109	57	10	257
Group-C (Tech.)	1152	534	73	56	173	26	11	339
MTS (Erstwhile Gr-D)	1022	661	132	89	141	115	23	500
TOTAL	**8648**	**6241**	**958**	**558**	**1655**	**1351**	**119**	**4641**

7.33 Public Relation and Media Management

The Public Relations and Media Management (PRM) Cell of the Geological Survey of India serves as the organisation's principal communication and outreach interface, enhancing institutional visibility, strengthening stakeholder engagement, and effectively conveying GSI's scientific contributions to the nation. Through strategic planning, timely information dissemination, and integrated use of traditional and digital media, the PRM Cell ensures that GSI's missions, initiatives, and achievements reach diverse audiences across the country and abroad.

In 2025, GSI further expanded its outreach through enhanced press engagement, targeted digital campaigns, and strategic collaborations, with PRM Cells across regions communicating regularly in English, Hindi, and regional languages to ensure consistent messaging and widespread accessibility.

On social media, GSI registered substantial growth, adding approximately 44,360 new followers, generating 1,38,85,381 cumulative impressions, 2,54,677 engagements, and a total post reach of 42,28,424 across Facebook, X, Instagram, YouTube, and LinkedIn. These figures reflect a strengthened digital outreach strategy and growing public interest in GSI's scientific initiatives. Content throughout the year highlighted GSI's work in mineral exploration, hazard mitigation, landslide forecasting, carbon sequestration, National Critical Minerals Mission activities, and natural hydrogen research in the Andaman region, along with creative outreach through interactive series, quizzes, geoscience explainers, historical narratives, and employee-focused content.

Traditional media coverage was equally impactful, with 426 media coverages including 181 print coverage, 71 electronic (television and All India Radio), and 174 online/ digital media coverage. This broad-spectrum

coverage underscored GSI's relevance across diverse geoscientific and public domains.

Key milestones that received wide visibility included the 64th Central Geological Programming Board (CGPB) Meeting, major activities commemorating 175 years of GSI, the 175th Foundation Day celebration in Kolkata, the International Seminar at Jaipur inaugurated by Hon'ble Union Minister of Coal & Mines, Shri G. Kishan Reddy, the All India Walkathon, the Next-Gen Geophysics Conference, the first anniversary of the National Landslide Forecasting Centre (NLFC), and the National Seminar at Jabalpur.

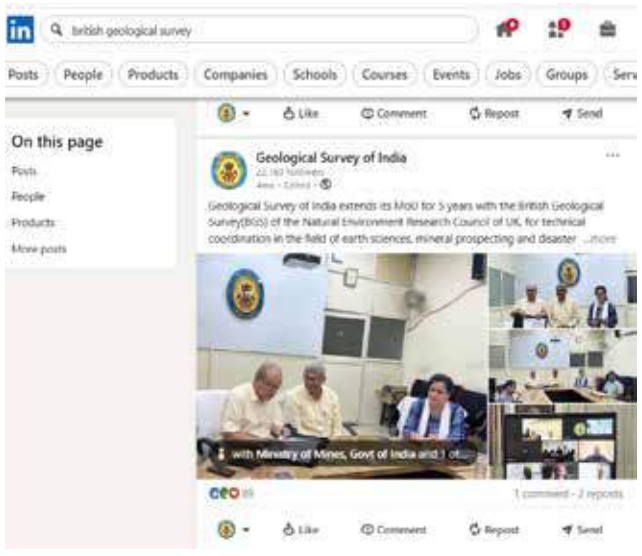
Landmark achievements such as adding seven geo-heritage sites to the UNESCO Tentative World Heritage List and hosting Hackathon 2.0 with IndiaAI, were effectively showcased. Key public campaigns, including Swachhata Hi Seva 2025, Special Campaign 5.0, International Yoga Day, the TB Awareness Campaign, Geoheritage Day 2025, the UNESCO International Geodiversity Day, and Geoethics Day, also received significant visibility. Significant partnerships through MoUs with institutions like the British Geological Survey (BGS), CGWB/NCS, NPCIL, and USDMA received meaningful visibility.

Social media posts featuring geoscientific activities like Pump Storage Projects, historical narratives, interactive series such as "Any Guess?" videos to promote geoheritage, Myth or Fact, Chain of Nature, quizzes, riddles, Did You Know, and themed content like Mineral/ Rock/Fossil of the Week, Meteorites, Dinosaur Series, and the "Story of GSI" series engaged audiences by simplifying complex geoscientific topics. GSI also strengthened public connect through initiatives like Women's Day celebrations, employee recognition posts, and testimonial videos from national and international personalities, fostering a strong sense of institutional community.

GSI plans to elevate its outreach by adopting new technologies, creating more engaging content, and expanding connections with diverse audiences. The PRM Cell will further strengthen science–society linkages, reinforcing GSI's leadership in geoscience communication nationally and internationally.




Geological Survey of India
Like
Comment
Share


british geological survey
Posts
People
Products
Companies
Schools
Courses
Events
Jobs
Groups
On this page
Geological Survey of India

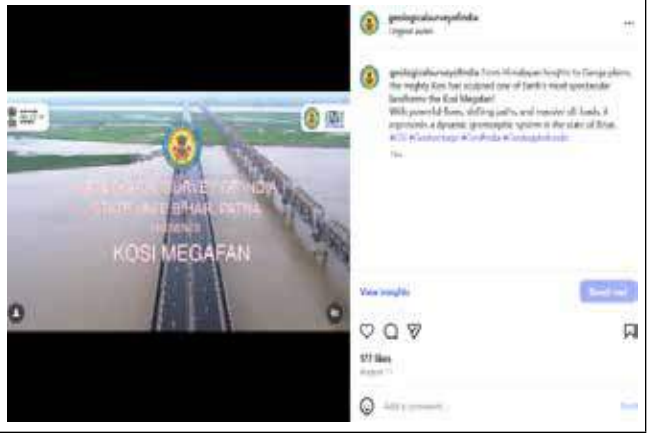

#Walk with GSI
Geological Survey of India

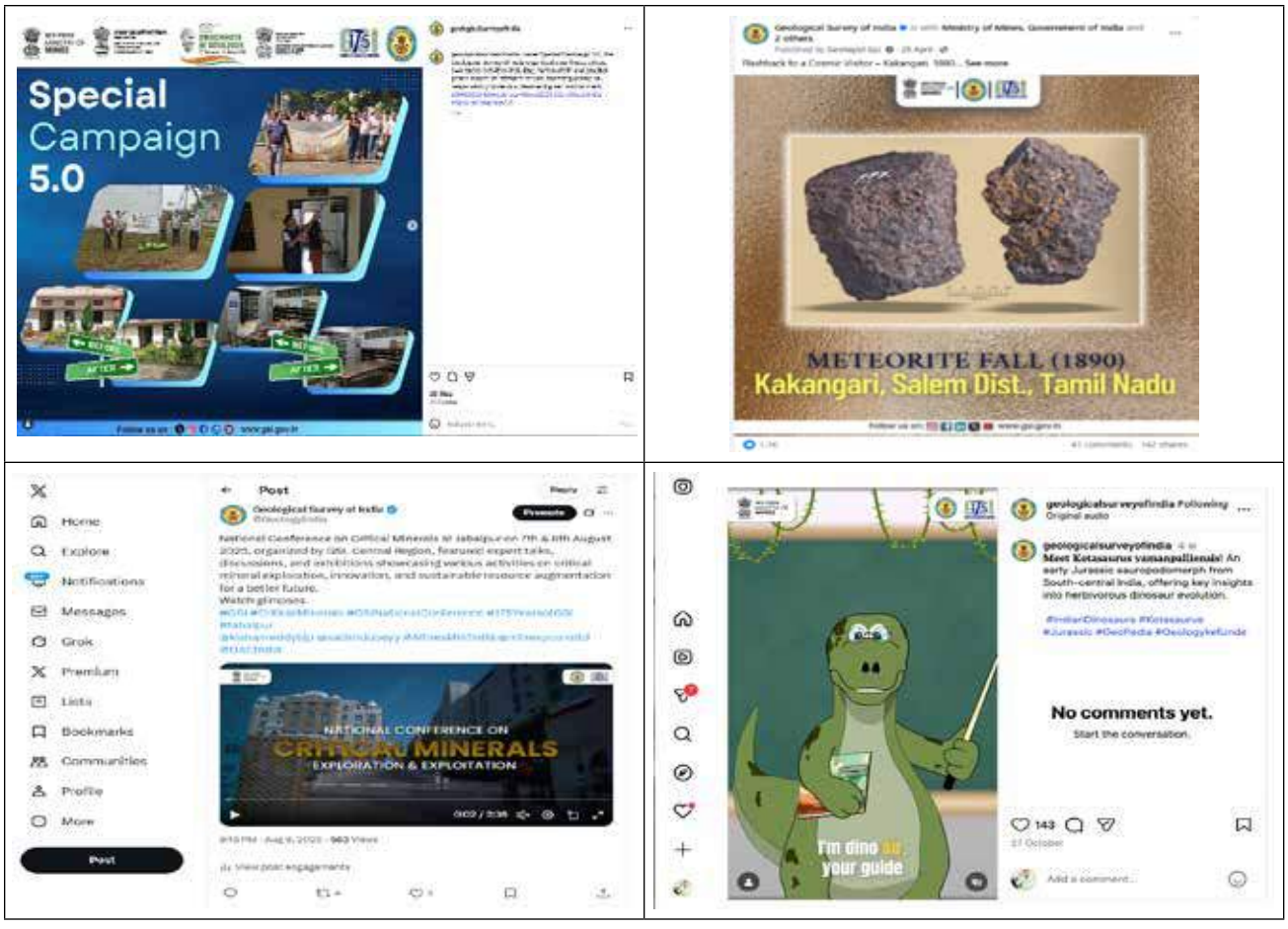

LANDMARK MILESTONE
geologicalsurveyofindia


GSI'S STRATEGIC CONTRIBUTION TO TUNNEL INFRASTRUCTURE
geologicalsurveyofindia


Youtube
Workshop to commemorate the first anniversary of the National Landslide Forecasting Centre (NLFC)
Watch Live! 1st Anniversary Celebration of the National Landslide Forecasting Centre | July 18 | 3PM


Geological Survey of India is with Ministry of Mines, Government of India and 4 others
A vibrant blend of energy, harmony, and collective spirit marked the International Day of Yoga 2025 celebrations at the Geological Survey of India, CHQ Kolkata. From sy... See more
INTERNATIONAL DAY OF YOGA 2025


KOSI MEGAFAN
geologicalsurveyofindia



Some of the Snippets from the Social media handles of GSI

7.34 UNCOVER (India) Projects

A pilot scale project [Northern Transect] has been taken up by the GSI under Project "Uncover (India)" to probe for deep-seated/ concealed mineral deposits. The highlights of the projects are given below.

NORTHERN TRANSECT

7.35 Deep Seismic Reflection Survey (DSRS) And Magnetotelluric (MT) Survey along Churu, Rajasthan to Tikamgarh, M.P Northern Transect, Project Uncover (Phase-III)

Under Phase III of Project Uncover, the Deep Seismic Reflection Survey (DSRS) and Magnetotelluric (MT) Survey along the 600 km northern transect from Churu, Rajasthan to Tikamgarh, MP are being executed by CSIR–NGRI under an MoU with GSI (January 2024–December 2026). The transect covers parts of the Marwar Craton, North Delhi Fold Belt, and Bundelkhand Craton across 14 districts. MT survey involves 611 stations using Long Period, Broad Band, and Audio MT techniques, of which about 50% data has been acquired and partially processed despite challenges of terrain, power lines, and mining disturbances. DSRS work includes completion of Low Velocity Layer and uphole surveys, providing crucial near-surface data for seismic acquisition.

GEOHERITAGE ACTIVITIES:

GSI plays a proactive role in outreach, capacity building, preservation, and promotional activities related to India's geoheritage resources through its Central Headquarters in Kolkata and its Regional and State Units, in partnership with a wide range of stakeholders.

During the period, the following significant achievements have been made:

- Listing of seven geologically significant sites of India included in the Tentative List of UNESCO World Heritage Sites (Natural Category): (i) Columnar volcanics, St. Mary's island, Karnataka; (ii) Eparchaean Unconformity, Andhra Pradesh; (iii) Erra Matti Dibbalu, Andhra Pradesh; (iv) Mawmluh Cave, Meghalaya; (v) Naga Hill Ophiolite, Nagaland; (vi) Varkala Cliff, Kerala; (vii) Mahableshwar Panchagani Plateau, Maharashtra.
- GSI announced two new Geoheritage Sites: (i) Orbicular Granite of Pichhor in Madhya Pradesh and (ii) Guryul Ravine in Jammu & Kashmir, marking an important step in enhancing geoconservation efforts.
- GSI launched the BHUVIRASAT App aimed at promoting and conserving India's geological heritage
- GSI conducted a series of workshops and seminars in 2025 to enhance geoheritage conservation and stakeholder engagement in Andhra Pradesh, Chandigarh and Jaipur.
- As an outreach program to create public awareness, GSI participated in 32 exhibitions held nationwide to disseminate geoscientific knowledge.



Columnar volcanics, St. Mary's island, Karnataka



Eparchaean Unconformity, Andhra Pradesh



Erra Matti Dibbalu, Andhra Pradesh



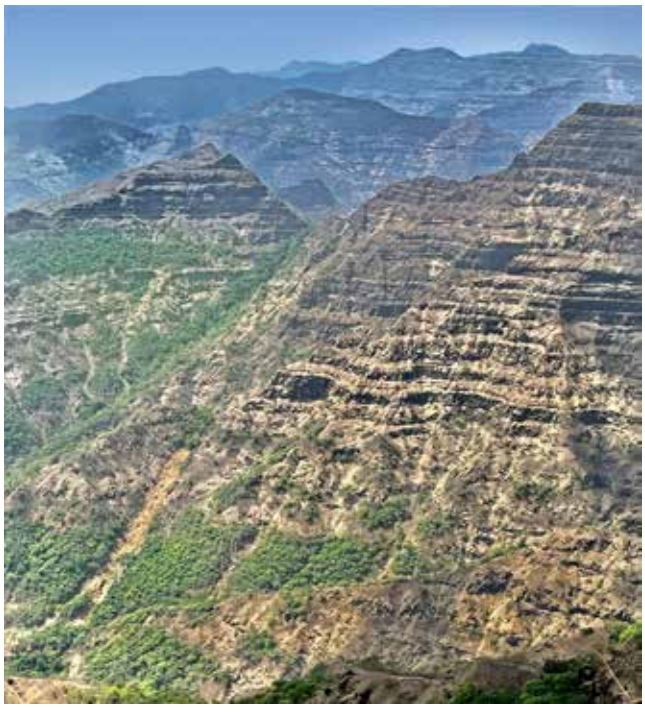
Mawmluh Cave, Meghalaya



Naga Hill Ophiolite, Nagaland



:Varkala Cliff, Kerala



Mahableshwar Panchagani Plateau, Maharashtra





Review meeting chaired by Secretary, Ministry of Mines, Govt. of India at Gandikota Geoheritage Site, Andhra Pradesh



Launching of BHUVIRASAT APP by Hon'ble Minister of Coal and Mines, Govt. of India





Celebration of 4th International Geodiversity Day and 9th International Geoethics Day in GSI, CHQ, Kolkata





64th CGPB Meeting and 3rd Mining Ministers' Conference





175th GSI Foundation Day Celebration in CHQ, Kolkata

7.36 Hackathon on Innovative Mineral Hunt Techniques

GSI participated in the inauguration ceremony of the Hackathon-2025 "Mineral Targeting using Artificial Intelligence" organized by Ministry of Mines in association with India-AI Mission and Digital India Corporation, MeitY. Honourable Minister of Coal & Mines, Shri G. Kishan Reddy and Honourable Chief Minister of Goa, Dr. Pramod Sawant inaugurated the Hackathon 2025 on 13.03.2025 in the presence of Secretary, Ministry of Mines. This initiative integrates AI-driven techniques with geoscience data to identify new mineral-rich zones, mainly concealed and deep-seated deposits.

Two GSI teams including one All Women Team have secured two prizes in the India AI Hackathon 2025 organized under the Applications Development Pillar of the IndiaAI Mission, in collaboration with GSI, Ministry of Mines. The winners were announced on 06.11.2025 and

felicitated in presence of Prof. Ajay Kumar Sood, Principal Scientific Advisor to the Govt. of India, Shri S.Krishnan, Secretary, MeitY and other distinguished guests.



Winners announced for the IndiaAI-GSI Hackathon on Mineral Targeting 2025

7.37 Data processing Interpretation and Integration Centre (DPIIC)

The Data Processing, Interpretation, and Integration Centre (DPIIC) is being established with funding from National Mineral Exploration and Development Trust (NMEDT) as a national-level facility dedicated to processing, analyzing, and interpreting geoscientific data. Leveraging AI, ML, and deep learning techniques, this center will support mineral exploration projects. GSI has engaged Digital India Corporation (DIC), a Section 8, not-for-profit entity under MeitY, as the Project Management Unit (PMU) for the DPIIC implementation. This will enable to accelerate mineral deposit discovery, including concealed and deep-seated mineralisation. Currently, the DPR has been prepared and is under different stages of scrutiny.

7.38 Commemoration of the 175th Anniversary of the GSI Foundation:

Geological Survey of India (GSI) established in 1851 celebrated a historic milestone of 175th Anniversary of its foundation on 4th March 2025. GSI celebrated this momentous milestone with an ambitious and impactful calendar of events, beginning with the 175th Foundation Day Celebration on March 4th at the Central Headquarters in Kolkata. Shri G Kishan Reddy, Hon'ble Union Minister of Coal and Mines, was the chief guest for the 175th foundation day celebration of GSI. This was followed by a series of high-level national and international technical gatherings addressing contemporary geoscientific priorities.



Shri G. Kishan Reddy, Hon'ble Union Minister of Coal and Mines, inaugurating the 175th Foundation Day of GSI at Kolkata on 4th March 2025.



Release of India Post Special Cover and My Stamp on the occasion of the 175th Foundation Day of GSI

7.38.1. National Conference on Advances in Geosciences: New insights and sustainable solutions for safe living in the mountainous region (AG-ISM 2025) at Shillong

The year's academic events commenced with the National Conference on Advances in Geosciences: New insights and sustainable solutions for safe living in the mountainous region (AG-ISM 2025) on April 8–9, at Shillong. In the conference specifically aimed at mountain safety and sustainable solutions, experts presented cutting-edge research on hazard mapping, landslide prediction, and resilient infrastructure development to safeguard communities in the Himalayan and other mountainous terrains.

7.38.2. Conference on Next-Gen Geophysics 2025: Unlocking Earth's Hidden Treasures at Hyderabad

This focus on technological advancement continued with the Conference on Next-Gen Geophysics 2025: Unlocking Earth's Hidden Treasures, held from June 9–10 at the GSI Training Institute in Hyderabad, exploring modern methods for subsurface exploration. The conference focused on leveraging state-of-the-art geophysical methods, data analytics, and artificial intelligence to enhance subterranean imaging and accelerate the discovery of concealed mineral and energy resources.

7.38.3. National Conference on Critical Minerals: Exploration and Exploitation at Jabalpur

A critical national agenda item was addressed in the National Conference on Critical Minerals: Exploration and Exploitation, held on August 7–8 in Jabalpur, which convened experts to strategize on securing resources vital for the nation's energy transition. Directly addressed the national imperative for securing the supply chain of Critical Minerals. The conference centred on innovative exploration strategies for deep-seated deposits and environmentally sustainable exploitation techniques to support India's energy transition goals.

To bring together global geoscientific leaders to reflect on GSI's historical contributions and deliberate on future challenges, including global collaboration in Earth Science research, technology transfer, and sustainable resource management for the coming century, GSI organized an International Seminar on "Unearthing the Past, Shaping the Future: 175 Years of GSI" on November 20–21 at the Rajasthan International Centre (RIC) in Jaipur, serving as the flagship global forum for reflection and future planning.



Shri Asit Saha, Director General, GSI addressing the gathering at the National Conference on Advances in Geosciences: New insights and sustainable solutions for safe living in the mountainous region (AG-ISM 2025), Shillong.

The technical discourse continued with a celebration of GSI's footprints in the cryosphere and polar science through a one-day National Symposium on Cryosphere Response to Climate Change, held on 5th December 2025 at Lucknow, offering a focused look at ice mass balance, glacial retreat, glacial lake outburst floods due to climate change and associated geo-hazards.

This comprehensive series of events successfully celebrated GSI's 175 years of legacy while strategically positioning it for future leadership in sustainable resource management and disaster mitigation and commitment to national development, safety, academic excellence, and strengthening collaborations both nationally and internationally.



Shri G. Kishan Reddy, Hon'ble Union Minister of Coal and Mines inaugurating the conference on Next Gen Geophysics at Hyderabad.



Shri Asit Saha, Director General, GSI lighting the lamp during the inaugural ceremony of the National Conference on Critical Minerals: Exploration and Exploitation at Jabalpur.





Glimpses from the International Seminar on "Unearthing the Past, Shaping the Future: 175 Years of GSI" on November 20–21 at the Rajasthan International Centre (RIC) in Jaipur



Inaugural ceremony of the National Symposium on Cryosphere Response to Climate Change, Lucknow.

Indian Bureau of Mines (IBM)

7.39 The Mineral Policy Conference held in January 1947 resulted in the enactment of the Mines and Minerals (Regulation and Development) Act, 1948, the first legal framework in independent India for the regulation and development of mines. The Mines and Mineral (Regulation and Development) Act, 1948 received the assent of the Governor General on 8th September 1948. The Act empowered the Central Government to regulate mines and oilfields and mineral development on the lines contemplated in the Industrial Policy Resolution of the 6th of April 1948. The deliberations of the conference led to the establishment of the Indian Bureau of Mines in March 1948 as the main regulatory agency for monitoring and supervising mining activity in the country.

7.40 Indian Bureau of Mines (IBM) is a subordinate office under the Ministry of Mines. It is engaged in the promotion of scientific development of mineral resources of the country, conservation of minerals, protection of environment in mines, other than coal, petroleum and natural gas, atomic minerals and minor minerals. It performs regulatory functions with respect to the relevant provisions of Mines and Minerals (Development and Regulation) Act, 1957 and enforcement of the rules framed there under, namely Mineral Conservation and Development Rules, 1988/2017 and Mineral Concession Rules, 1960/ 2016 and Environmental (Protection) Act, 1986 and Rules made there under.

7.41 It undertakes scientific, techno economic, research-oriented studies in various aspects of mining, geological studies, ore beneficiation and environmental studies.

7.42 Vision for IBM

The National Mineral Policy, 2019 (NMP) has envisioned on strengthening the regulatory mechanism by incorporating e-governance, including satellite and remote sensing applications, evaluations of miners in terms of their comparative performance on suitable development framework and enforce commitment on part of the mining companies to adopt sustainable development.

Accordingly, the vision envisaged is: "IBM to perform as a National technical regulator and to discharge the developmental functions for the sustainable development of the mineral industry and to work as repository of database on mines and minerals".

7.43 Mission

To ensure effective regulation of Indian Mineral Sector which promotes long term benefits for its sustainable growth.

To provide capacity building to State regulatory agencies and also to provide quality technical assistance to the mineral industry, and

To work as data bank on mines and minerals and to disseminate mineral information for policy formulations.

7.44 Objectives

- To work as National Technical Regulator operating at national-level designing systems, processes and guidelines for regulation of the mining sector;
- To function as a facilitator for creation and improvement of state-level regulatory mechanisms and to facilitate state agencies to ensure adherence to standards and parameters for scientific and systematic mining in the sector;
- To work as catalytic agent for development of mineral sector by evolving capability & proficiency in beneficiation techniques; dissemination of knowledge and skills in mining and allied areas through its training facilities; consultancy services.
- To play crucial role of that of an Advisor to the Government in matters and issues relating to the mineral sector in areas of short-medium and long-term mineral-wise strategies, mineral taxation and legislative processes.
- To play the role of National Repository of mineral data through maintaining a data bank of mines and minerals in the country by developing advanced IT based Mineral Information System enabling the industry to report and access information online, and
- To broaden its interactive base and reach out to overseas counter parts through consultations and exchange programmes and to build capacity, skill & expertise through academic and training programmes at institutes of international repute.

7.45 Present Charter of Functions

In the wake of liberalization of the policy regime governing mineral sector and increasing need for adequate environment management as part of systematic and scientific mining, the mandated functions for IBM, as given for notification in Official Gazette vide Resolution No. 31/ 49/ 2014 – M. III, dated 3rd November, 2014. Charters of functions of IBM are available at ibm.gov.in.

7.46 Key Activities and Functions of IBM

In light of the role and charter of IBM, the key functions being performed by IBM can be broadly classified as (i) Regulatory Functions, and (ii) Developmental Functions. The same are available at: https://ibm.gov.in/writereaddata/files/06232020153619Functions%20and%20activities%20Indian%20Bureau%20of%20Mines.pdf

Organizational set up of IBM

7.47 IBM has its headquarters at Nagpur, 4 Zonal Offices at Bengaluru, Nagpur, Udaipur and Kolkata, and 14 Regional Offices at Ajmer, Bengaluru, Bhubaneswar, Chennai, Gandhinagar, Goa, Dehradun, Guwahati, Hyderabad, Jabalpur, Nagpur, Ranchi, Raipur and Vijayawada. During the year 2017, IBM opened two new skill development centers for sustainable mining practices at Udaipur and Kolkata.

7.48 IBM has modern mineral processing laboratory and pilot plant at Nagpur and well-equipped Regional Mineral Processing Laboratories and pilot plants at Ajmer, Bengaluru.

7.49 Performance of IBM

The activities of IBM have been conducted through the following continuing schemes:

Scheme No. 1. Inspection of mines for scientific and systematic mining, mineral conservation and mine environment;

Scheme No. 2. Mineral beneficiation studies, utilization of low-grade and subgrade ores and analysis of environmental samples;

Scheme No. 3. Technological Upgradation and modernization;

Scheme No. 4. Collection, processing, dissemination of data on mines and minerals through various publications

Scheme No. 5. Mining Tenements System (under implementation)

7.50 These schemes are being implemented by the following divisions of IBM:

Minerals Development & Regulation Division (MDRD);

Mineral Processing Division (MPD);

Technical Consultancy, Mining Research and Publication Division & Offshore cell and Critical Mineral Cell;

Mineral Economics Division;

Mining and Mineral Statistics Division; and

Planning and Coordination Division.

Performance relating to various regulatory and development functions of IBM during the year 2025-26 is given hereinafter. The same is also enclosed at **Annexure 7.2**.

7.51 Inspection of Mines

During the year 2025 (January to December), 1922 inspections for enforcement of the provisions of Mineral Conservation and Development Rules (MCDR) 2017 and for examination of mining plans/ review of mining plan /mine closure plans were carried out. Consequent to inspection of mines, 1363 violations were pointed out to 721 mines during 2025. 857 (pointed out to 531 mines) violations in 2024. Total 356 violations were rectified during the year. Mining operations were suspended under Rule 11(2) of MCDR 2017 in 28 mines for not carrying out mining operations in accordance with the approved mining plan/ review of mining plan and recommended 18 cases revoked. A list of principal violations observed during inspection of mines for the year 2024 and 2025 are given at **Table 7.3**

Table 7.3

Principal Violations of MCDR, 2017 detected by IBM during 2025 (January to December, 2025)

Rule No	No. of Violations Pointed out 2024	No. of Violations Pointed out 2025, (Jan. to Dec. 2025)	Rule description
11(1)	313	553	Rule11 (1) - Mining operations in accordance with mining plans
11(3)	0	0	Rule 11 (3) - Submission of Review of Mining Plan / Scheme of mining
20	0	0	Rule 20 - Notice of opening of mine
23	0	0	Rule 23 - Submission of progressive mine closure plan
26 (2)	16	15	Rule 26 (2) - Responsibility of the holder of mining lease to submit yearly report
27(2)	14	0	Rule 27(2) - Submission of Financial assurance
28(1)	5	9	Rule 28 (1) - Notice of temporary discontinuance of mining operations
31(4)	38	48	Rule 31(4) - Maintenance of plans and sections
33	28	28	Rule 33 - Copies of plans and sections to
35, 36, 37, 38, 39, 40, 41, 42, 43, 44	26	42	Rule 35, 36, 37, 38, 39, 40, 41, 42, 43, 44 - Sustainable mining, removal and utilization of top soil, Storage of overburden, waste rock Precaution against ground vibrations, Control of surface subsidence, Precaution against air pollution, Discharge of toxic liquid, Precaution against noise, Permissible limits and standards, Restoration of flora respectively.
45(5)(b)	188	129	Rule 45 (5) (b) - Submission of Monthly Return
45(5)(c)	13	81	Rule 45 (5)(c) - Submission of Annual Return
55(1)(c)(i)	38	29	Rule 55(1)(c)(i) - Employment of Whole time Mining Engineer/Geologist
55(1)(c)(ii)	4	1	Rule 55(1)(c)(ii) - Employment of Part time Mining Engineer/Geologist
Others	174	428	
Total	**857**	**1363**	

Table 7.4

Inspection of Mines carried out by IBM during 2025 (January to December, 2025)

Andhra Pradesh	121
Assam	7
Bihar	0
Chhattisgarh	124
Goa	9
Gujarat	215
Haryana	7
Himachal Pradesh	41
J & K	19
Jharkhand	79
Karnataka	173
Kerala	0
Madhya Pradesh	333
Maharashtra	168
Manipur	0
Meghalaya	29
Odisha	220
Punjab	0
Rajasthan	181
Sikkim	0
Tamil Nadu	121
Telangana	69
Uttarakhand	3
Uttar Pradesh	3
West Bengal	0
Total	**1922**

Mining Plan, Review of Mining and Mine Closure Plan

7.52 The Mineral (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 and the Mineral Conservation and Development Rules, 2017 stipulate that mining operations are required to be conducted as per an approved Mining Plan and after extraction of minerals, the mines are required to be reclaimed as per an approved Mine Closure Plan. The Mining Plans are approved by the IBM and in case of mines of minor minerals including 31 notified (on dated 10.02.2015) non-metallic or industrial minerals; the powers have been delegated to respective State Governments. The Mine Closure Plan is required to comprise a Progressive Mine Closure Plan (PMCP) prepared for five yearly periods of the successive Review of Mining Plan and a Final Mine Closure Plan (FMCP). Mine Closure Plan is expected to address issues relating to environment protection including air, water and land protection, management of top soil and overburden, reclamation & rehabilitation of land and control on ground vibration, surface subsidence and restoration of flora.

Indian Bureau of Mines has been mandated to exercise the power stipulated under clause (b) of sub section (2) of section 5 of the MMDR Act 1957 and in accordance with the Rules 15, 16 & 17 of the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 for processing and approval of Mining Plan. In line with the initiative undertaken by the Government of India for ease of doing business a new system for preparation & submission of Mining Plan /Review of Mining Plan / Modified Mining Plan has been launched under MTS. With the launch of Mining Plan Approval system (MPAS), the entire process of approval of mining plan has become online in digital form. The lessee can submit his mining plan, on the click of the mouse and the process has become simpler and less time consuming. Refer to **Annexure 7.3**.

7.53 Till the year, 2025 (January to December), Financial Bank Guarantees for a value of Rs. 39,91,03,07,375 /- i.e., 39910.30738 million Rupees (As per revised per hectare rate of Rule 27(1) of MCDR, 2017) have been collected.

7.54 During the year 2025 (January to

December, 2025), 211 mining plans were approved and 7 were rejected, 303 reviews of Mining Plan were approved and 42 were rejected and 76 final mine closure plans were approved and 1 was rejected. State-wise break-up is given at **Table 7.5**.

Table 7.5: State-wise Mining Plans/Review of Mining Plans/Final Mine Closure Plans approved by IBM during 2025. (January to December 2025)

State	Mining Plan		Review Of Mining Plan		Final Mine Closure Plan	
	Approved	Rejected	Approved	Rejected	Approved	Rejected
Andhra Pradesh	14	0	28	4	10	1
Assam	2	0	0	0	0	0
Bihar	1	0	7	3	0	0
Chhattisgarh	6	2	18	6	0	0
Gujarat	25	0	30	3	11	0
Goa	6	0	0	0	0	0
Himachal Pradesh	3	0	5	0	2	0
Jammu & Kashmir	0	0	1	0	0	0
Jharkhand	4	1	6	0	0	0
Karnataka	23	2	35	0	6	0
Kerala	0	0	0	1	0	0
Meghalaya	4	1	3	3	0	0
Madhya Pradesh	39	1	78	7	10	0
Maharashtra	15	0	12	1	4	0
Odisha	26	0	35	5	4	0
Rajasthan	30	0	13	4	3	0
Telangana	1	0	2	0	0	0
Tamil Nadu	11	0	28	5	26	0
Uttar Pradesh	0	0	1	0	0	0
Uttarakhand	1	0	1	0	0	0
Total	**211**	**7**	**303**	**42**	**76**	**1**

7.55 Monitoring of mining activities using Digital Aerial (Drone and Satellite) Images:

Mineral Conservation and Development Rules, 2017 were amended in the year 2021 requiring submission of digital aerial images (Drone/Satellite) of the lease hold areas by the mineral concession holders/preferred bidders to Indian Bureau of Mines (IBM). Every lessee is required to submit the digital aerial images to IBM on or before 1st day of July every year. Further, all mine plans are also required to be submitted along with the digital aerial images. Vide Gazette Notification No. S.O. 719(E) dated 14.02.2023, the mineral concession holders have also been directed to submit a copy of the Digital Aerial Images under Rule 34A of MCDR 2017 to the State Government. IBM has developed a Drone Data Management System (DDMS) application for online submission of these images. The mineral concession holders are required to submit the images in this portal. The images can then be accessed by the various offices of IBM and also the State Governments for monitoring the mining activities.

During the year 2025-26, 1360 digital images have been received on DDMS portal. These digital images are being validated and analysed using GIS by the regional offices for the purpose of MCDR inspections.

For capacity building of IBM officials to process the drone and satellite image data on GIS platform, necessary hands-on training on "Basics of GIS & Processing of Drone Survey Data" has been commenced from March 2022. Internal SOP for processing and utilization of Digital Aerial images of mining lease area has been specified for the officers of IBM. A road map has been carved out to train all the technical officials of the Minerals Development and Regulation Division through a series of in-house training program to develop expertise in analysing the aerial images and to make appropriate use of these images in inspection of mines and approval of mining plans. During the year 2025-26, one training program was conducted to train 18 government officers, including 03 IBM officers, in processing and analysis of Digital images using GIS software. Cumulatively, 18 training programs over 135 days involving 191 nos. of technical officers of State Governments and Central Governments (IBM) have been provided for effective use of digital images by the officers. The training has been conducted by GIS & Remote Sensing Centre, GM & MM Cell, IBM, Nagpur. During the year 2026-27, it is proposed to conduct 4 training programs for officers of IBM, industry and the state government covering a total of 80 participants.

7.56 National Geochemical database of Mines and Potential of Critical Minerals from Legacy Dumps, Tailings & Process Wastes







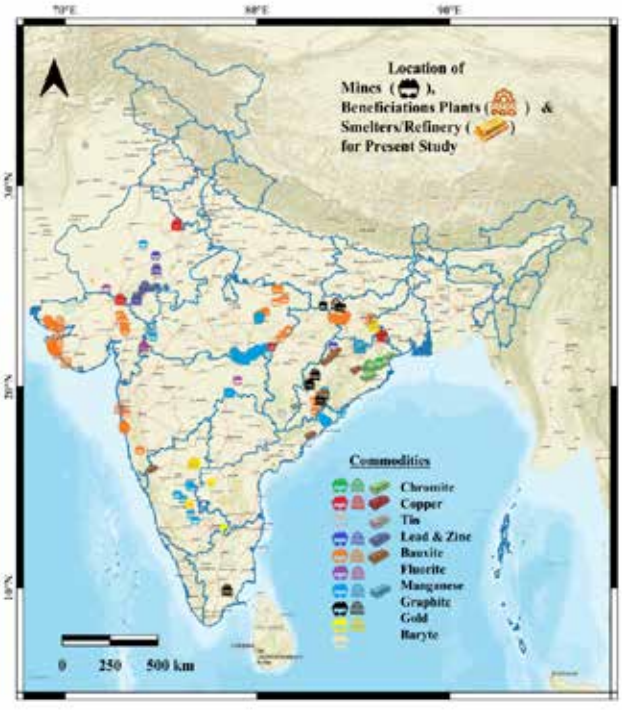






With the vision of Viksit Bharat, the Government of India has strengthened its national agenda on critical and strategic minerals, placing special focus on tapping secondary resources from legacy dumps, tailings, and processing wastes such as smelter slags. Recognising this potential, the Ministry of Mines entrusted the Indian Bureau of Mines (IBM) with a nationwide assessment of waste dump, mine tailings and process wastes generated across the entire mining value chain to ascertain the presence of critical mineral and possibility of recovering the critical minerals from mine dumps and tailings.

Under this initiative, Indian Bureau of Mines undertook a preliminary scoping study covering ten primary commodities consisting of Chromite, Copper, Tin, Lead & Zinc, Bauxite, Fluorite, Manganese, Graphite, Gold and Baryte. A total of 2,383 samples were collected from 311 mines, 32 beneficiation and 27 Smelting and refinery plants across the country and analysed for various radicals.



Based on the promising findings of critical minerals across various waste streams such as Nickel, Cobalt, and Platinum Group of Elements (PGEs) from chromite waste dumps; Gallium, Vanadium, and Rare Earths Elements (REEs) from bauxite mines; Molybdenum, Selenium, Tellurium, and Platinum Group of Elements (PGEs) from copper smelters; Cadmium, Antimony, and Bismuth from lead–zinc smelters; Niobium and Tantalum from tin slag; and Rare Earths Elements (REEs) from fluorite mines and beneficiation plants discussions are in progress with stakeholders to take up further detailed work for the feasibility of recovering the critical minerals available from these mine and process waste tailings.

A national seminar on "Critical Minerals' Extraction from Mine Tailings & Waste: Opportunities and Challenges", was also organised as a part of this initiative, jointly by the Indian Bureau of Mines (IBM) and National Mineral Development Corporations Limited in Nagpur on 09 May 2025.

With active participation from 30+ organisations, including government bodies such as AMD, CSIR-IMMT, GSI, JNARDDC, HGML, GGML and NMDC; PSUs like MECL, MOIL, OIL and Hindustan Copper Ltd.; academic and research institutions including AKS University, CSIR-CIMFR, CSIR-NGRI and VNIT; major private companies such as Hindalco, HZL, RMML, Tata Steel, Vedanta, Adani, Lloyds, Rungta, Om Sairam Steels and FACOR; as well as consultancies and think tanks including Deloitte, PwC, CEEW and Geo Marine Solutions, the national seminar brought together experts for collaborative discussions on harnessing critical minerals from mine tailings and waste.

It enabled participants to explore emerging technologies for mineral recovery, review successful national and international case studies, and discuss the regulatory reforms needed to support large-scale tailings reprocessing in India.



Projections for the period from 01.01.2026 to 31.03.2026 for GM & MM Cell, IBM, Nagpur

From January onwards, focused work will be carried out for systematic sampling of limestone and iron ore mines specifically for critical mineral analysis. The scope of work will include selection of appropriate sampling locations following standard sampling protocols. All samples will be carefully labeled, documented, and preserved to maintain integrity before dispatch to approved laboratories for detailed geochemical analysis. The analytical results will be used to identify the presence and concentration of critical minerals, assess resource potential, and provide technical inputs for further exploration, beneficiation studies, and strategic planning.

Mineral Beneficiation

7.57 Mineral Beneficiation - Mineral beneficiation studies including mineralogical studies and chemical analysis are carried out for conservation and development of mineral resources. During the year 2025 45.75 Ore Dressing investigations, 71,244 Chemical analysis, 2749 Mineralogical Examinations study were completed on different low-grade ores and critical minerals.

Beneficiation studies of Mineral deposits set for auction.

7.58 Beneficiation study is essential to assess the auction potential of mineral blocks. IBM conducts beneficiation studies on exploration samples to assess the amenability of the ore for upgradation. To meet the growing demand of Indian industry and to fulfill the objective of "Atma Nirbhar Bharat" and "Viksit Bharat", enhancement of mineral production and utilization of low-grade ores and processing & extraction of critical minerals are need of the hour.

7.59 IBM has been carrying out laboratory scale beneficiation studies on exploration samples of different exploration agencies. IBM has conducted beneficiation studies on a large number of exploration samples comprising different ores and minerals received from various parts of the country. Till date beneficiation studies on total 201 mineral blocks have been completed and reports were submitted by IBM to the respective organizations for auctioning. Out of these, several mineral blocks comprising of Gold ore, Graphite ore, Copper-Lead-Zinc ores, Iron ore,

Bauxite ore, Rock Phosphate etc. have already been auctioned successfully and remaining blocks are under process of auction.

Since the year 2016, IBM has been carrying out bench scale beneficiation studies on all G2 Level of exploration samples of GSI, MECL and state DGM's. Till date studies on 175 nos. G2/G1 Level samples of GSI, 17 nos. G2/G1 level sample of MECL and 09 Nos. G2/G1 level sample of State DGM's have been completed. Besides, studies on 15 blocks of GSI and 01 State DGM's are in progress.

Mineral Processing Division (MPD) is catering to the need of mineral industry sector by development of process flowsheets through beneficiation study on different ores and minerals.

MPD also provide technological solutions to industry for improvement of grade and recovery, up-gradation of existing process, to enhance process efficiency and Value addition, recovery of by-products/co-products.

Training

MPD, IBM also imparts training on mineral beneficiation, mineralogy and chemical analysis to industry personnel, State Govt. Departments and academic institutions. Two training programs were conducted by IBM on Mineral Processing, Characterization and Chemical Analysis of Ore and Minerals on January and November 2025.

Investigations for private industry

MPD, IBM has carried out 139 investigations on private industry samples during last 5 years, out of which 27 investigations carried out in the year 2025.

Studies on Critical Minerals by IBM

IBM has carried out several projects on extraction of critical minerals beneficiation from primary sources and developed process flowsheet for extraction from exploration sample and ores supplied by industry. The critical minerals include Lithium, Gold, Copper-Gold, Graphite, REE, Niobium, Tungsten, Tantalum, Molybdenum. Potash, Phosphorus etc.

Adaptation of Modern Technology

MPD, has recently upgraded its characterization and processing facility at MMPL, Nagpur and RMPL, Bengaluru keeping in view the present need. Modernization of the IBM laboratories is under progress to meet the future requirements of critical minerals.

The equipment's procured with the National Mineral Exploration & Development Trust (NMEDT) assistance are mentioned below with captions:



Inductively Coupled Plasma Mass Spectrophotometer (ICP-MS)



Wavelength Dispersive X-ray Fluorescence



Column Flotation



High Temperature Furnace



Hindered Settling Bed



Flotation Cell – Rougher & Scavenger Cell Circuit



Electrostatic Roll Separator

PROJECTIONS FOR THE PERIOD JANUARY TO MARCH 2026 IN RESPECT OF MINERAL PROCESSING DIVISION

SCHEME No.2: Mineral beneficiation studies, utilization of low-grade and sub-grade ores and analysis of samples are given below in in **Table 7.6**

Table 7.6

Sr. No.	Item	Annual Target	Target January 2026 to march 2026	Projections for the period January 2026 to March 2026
1	Ore Dressing Investigations (ODI)	45	11	10
2	Chemical Analysis (Radicals)	35000	8750	8250
3	Mineralogical Examinations (M.E.)	3000	750	675
4	Plant Visit (As And When Required)	As and when required	As and when required	

7.60 National Mineral Inventory (NMI) as on 01.04.2025

Quinquennial updation of NMI as on 01.04.2025 - The updation of the National Mineral Inventory (NMI) as on 01.04.2025 is under progress, however, the provisional data as on 01.04.2025 is attached as Annexure-2.4. Upon updation of NMI, the work will be published through two key publications titled "National Mineral Inventory as on 01.04.2025 – At a Glance" and "National Mineral Inventory as on 01.04.2025 – An Overview." These publications present UNFC grade-wise reserves and resources at the All-India, State-wise, and mineral-wise levels, along with consolidated summaries of total reserves and resources. In addition, detailed chapters for each of the 46 major minerals, highlighting grade-wise, State-wise, and category-wise (freehold and leasehold) changes compared with the previous inventory, as well as district-wise reserves and resources.

The National Mineral Inventory (NMI) database as on 01.04.2020 has been migrated from the older Oracle system to the new NMI–MTS module. The preparation of the National Mineral Inventory (NMI) as on 01.04.2025 through the NMI–MTS module is underway. This process involves the processing, mapping, checking, and validation of existing freehold and leasehold deposits of the NMI (as on 01.04.2020 in the Oracle database) against the new MTS module for accuracy.

Statistical Publications

7.61 IBM disseminates statistical information on mines, minerals, metals and mineral-based industries through various publications. Information on mineral production, stocks, dispatches, employment, inputs in mining, mining machinery and related matters received from the mine owners on statutory basis under the MCDR, 1988 and ancillary statistics on metals

production, mineral trade and market prices of minerals, revenue from the mining sector, rent, royalty and cess on minerals, etc. from other agencies is compiled regularly by IBM.

7.62 Published ASP for Minerals and of Metals up to November 2025. The statistical publications released during the year 2025-26 include Monthly Statistics of Mineral Production (MSMP) up to advance release up to October 2025.

Consultancy Service

7.63 IBM provides technical consultancy services on prescribed charges for geological appraisals, survey of the areas, preparation of feasibility study reports, environment impact assessment and environment management plan, selection of suitable mining equipment, evaluation of feasibility report prepared by other consultants, financial institutions, etc. During the year 2025-26, "Automation in Indian Mining Industries", was published and hosted at IBM Portal.

7.64 In 2025-26, IBM Technical Consultancy and Mining Research Division also associated in formulation of offshore areas rules and exploration plan format. The rules as per **Table 7.7** have been notified so far :

Table 7.7

Sl No	Rules	Notified on
1.	Offshore Areas Mineral Conservation and Development Rules	31.12.2024
2.	Offshore Areas Atomic Minerals Operating Right Rules	14.07.2025
3	Offshore Areas Mineral (Prevention of Illegal Mining, Transportation and Storage) Rules.	Yet to be notified (Draft prepared)

For the execution of Mineral Conservation and Development Rules, activities as per **Table 7.8** have been completed:

Table 7.8

Sl No	Rules	Notified on
1.	Format for Exploration Plan as specified under rule 6(2) of OAMCDR-2024	24.02.2025
2.	Notification of Authorized Officer to take action in respect of Offshore Areas Mineral Conservation and Development Rules 2024 (OAMCDR-2024) and the matters relating to rule/rules.	06.11.2025
3.	Notification of Competent Authority to take action in respect of Offshore Areas Mineral Conservation and Development Rules 2024 (OAMCDR,2024) and the matters relating to rule/rules.	06.11.2025
4.	Notification for non-refundable fee under Rule 8, 9,17, 18 & 25 for submission of exploration plan, production plan, final mine closure plan, it's modification and review	06.11.2025
5.	Notification regarding jurisdiction under Offshore Areas Mineral Conservation and Development Rules 2024 (OAMCDR-2024) and the matters relating to rule/rules.	06.11.2025

TMP Division work Projection for the period 01.01.2026 to 31.03.2026

I. Finalization of report "Technical study on availability of associated critical and strategic Minerals (including REE) at Tin Mines of Dantewada and Bastar Districts of Chhattisgarh State" with the competent authority.

II. Finalization of the technical study report on "Review and future strategy of offshore mineral exploration & extraction technologies in India." with the competent authority & upload at website.

III. Finalization of the report "Study on metallurgical extraction technology utilization of critical and strategic minerals" with the competent authority & upload at website.

Technical Publications

7.65 IMYB is a flagship publication of IBM which is brought out in three (3) parts. It consists of Part I having as many as 10 General Chapters, Part II consists of 19 reviews on Metals and Alloys and Part III consists of 26 Mineral reviews. This publication covers information on minerals and mineral-based commodities, their development, production, resources/reserves, consumption, trade & policy etc. It also covers world's scenario in minerals & metals sector. Furthermore, IMYB provides a status report of Mining and Mineral Industry in India on an annual basis. This publication has wide readership, both at National as well as at international level.

For publishing of IMYB, 2023 (Data 2022-23), total 55 general/metals & alloys/mineral reviews were prepared, technically edited, finalized and uploaded on the IBM's website.

7.66 Preparation of IMYB, 2024 (Data 2023-24) was taken up and the preparation of the same is under progress.

7.67 Annual Bulletin of Mining Leases, Composite Licences, Exploration Licence and Auction- 2024, as per is released and uploaded at IBM's website (URL: https://ibm.gov.in/writereaddata/files/1763377395691b00f36d15cMLPL_2024.pdf)

IBM generates revenue through sale of publications & data. Revenue generated during 2025 (January 2025 to 31st December 2025) is Rs 1.10 Lakh from sale of All India Mining Lease Directory.

Training

7.68 IBM is discharging its roles and responsibilities through a mandated charter of functions. In the wake of recent policy initiatives and statutory amendments, IBM needs to enhance its skills in various advanced technologies for mine regulation and development.

Method envisaged for carrying out Training

7.69 The IBM officials are imparted trainings at Headquarter for 2-3 days and at its regional offices as well as at two Skill Development Centres located at Udaipur and Kolkata. Nominations are sought in advance. After approval of the Competent Authority, training programmes are organized through classroom lectures / presentation by the faculties drawn from IBM as well as Industry.

In the year 2025-26, IBM conducted trainings, webinar, seminar, workshop in both offline and online mode. IBM officials were also nominated for attending training programmes in GSI, Nagpur. Further training programmes, wherever necessary, will be conducted in association with these organizations

/ institutions. Further, through bilateral cooperation with other countries, capacity building programme will be taken up.

Skills for which Training required for other stakeholders connected to IBM are:

7.70 Implementation of provisions of MMDR Amendment Act, 2015 and subordinate legislation framed there under; preparation of Mining Plan/Mining Scheme, including Mine Closure Plan, Mine Reclamation, Rehabilitation; Sustainable Development Framework, Star Rating System for Mines; Mining Surveillance System; Reporting of Mineral Resources as per United Nations Framework Classification (UNFC) & The Minerals (Evidence of Mineral Contents) Rules, 2015; Technological improvements and innovative advances in the areas of mineral processing and beneficiation. Capacity Building programmes on Critical Mineral and Offshore Mining.

7.71 IBM imparts training to technical and non-technical officials of IBM and also to persons from the mineral industry and other agencies in India and abroad. During the year 2025-26, 24 training programmes were conducted, in which a total of 854 IBM officials, 834 Industry personnel and 65 from the State DGM have participated. IBM makes its presence in the meetings as organized by GSI/ MECL for its active participation, towards synergic approach. Further, IBM officials are participating in various Training Programmes conducted by other Institutes.

7.72 IBM has initiated its efforts to upload its training modules on iGOT platform, YouTube Channel and IBM website. In the year 2025-26, 02 lecture videos on Offshore Mining were published on iGOT portal. So far, 02 lecture videos have been uploaded on YouTube, 08 courses on i-GoT portal and 10 lecture videos on IBM website. Further preparation is underway to upload more such videos in various platforms.

Status of Capacity Building Plan of IBM-reg.

As per Ministry of Mines Letter No. A-33/2/2021-ESTT. (Part-1) dated 21.09.2023 regarding "Capacity Building Plan for Employees under the administrative control of M/o Mines", IBM entrusted M/s Ernst &Young LLP to prepare the Annual Capacity Building Plan (ACBP) of IBM.

In pursuance of RFQ No. IBM/TC/2023, the said agency submitted its draft Deliverables on stipulated time and ACBP of IBM came into effect from 01.05.2024. The ACBP consists of both training & non-training interventions. Based on competency requirements identified for each cadre training interventions have been recommended across domain, behavioral & functional areas. The Training Centre collects, compiles and monitors the ACBP progress on monthly as well as quarterly basis. The total learning hours prescribed in the ACBP 2025-26 as given below in **Table 7.9**:

Table 7.9

Level	Total Learning HRs.
Level 13 and above	52 hrs.
Level 10,11 and 12	52 hrs.
Level 9 and below	53 hrs.
MTS and Others	24 hrs.

Rashtriya Karmayogi Jan Seva

Under the aegis of Capacity Building Commission, Indian Bureau of Mines have conducted multiple batches of Rashtriya Karmayogi Jan Seva Programme in its Headquarters, Zonal Offices and Regional Offices across the country. A total of 666 employees attended the Jan Seva Training Programme held till November 2025.

Discussion Forum

With the aim of facilitating structured dialogue and inter-departmental exchange of views on the identified subjects, and to foster meaningful dialogue and collaborative learning, Training Centre rollout a monthly discussion forum since June 2025 on the topics given below in **Table 7.10**:

Table 7.10

Sr.	Month	Topic
1	June	Self-Sustainability in Mineral Resources
2	July	Lowering of Threshold Value of Iron Ore (from45%Fe)
3	August	Preparation of Feasibility Report
4	September	Hand-holding of IBM with Prominent Educational Institutes and Professional Bodies
5	October	Critical Mineral Resources of India and the Present Scenario
6	November	Geotechnical Assessment of Mining Projects and Ground Truthing with Suitable Case Studies

Projected data of training from January 2026 to March 2026

Estimated Nos. Of Training	No. Of Participants			
	IBM Officials	State DGMs	Industry Personnel	Total
4 Nos.	125	NIL	200	325

Measures for Abatement of Pollution and Environmental Protection

7.73 The IBM undertakes inspections/ studies for the enforcement of provisions of MCDR, 2017 which include provision on protection of mine environment to ensure that due care is being taken by the mine operators. During inspection it ensures that mine operators are taking due care for preservation and utilization of topsoil, storage of overburden / waste rocks, reclamation and rehabilitation of land, precaution against ground vibration, control of ground subsidence, abatement measures against air, water- and noise pollution, restoration of flora, etc. in addition to other conservation and developmental measures. Necessary guidance to mine managements/ operators is also given for systematic and scientific development of mine including protection of environment. While approving the mining plans, Review of mining plan and mine closure plans, IBM ensures that environment impact assessment studies have been carried out and to that effect environmental management plan has been incorporated for its effective implementation, besides reclamation and rehabilitation of mined-out areas.

Revenue Generation

7.74 IBM generates revenue through consultancy, training, statutory processing and sale of publications & data etc. Revenue generated during 2025 (January 2025 to 31st December) is Rs 1.10 Lakh from sale of All India Mining Lease Directory.

Revenue generated during 2025 (January to December 2025) is Rs. 822.25081 Lakh from processing of mining plans/Review of Mining plans and compounding fees & fines.

Mineral Processing Division, IBM generates

revenue during the course of its functional activities to meet the demands of the industry. Rs. 76,73,749/-(Revenue has been generated for sponsored work from Mineral Industries and Notional Charges for work carried out on NCMM/Promotional/Conservation/NER Project amount Rs. 2,60,20,158/- has been generated during the year 2025 (January to December, 2025).

Computerization

7.75 The Regional (Except Raipur & Gandhinagar RO) /Zonal offices and Headquarters of IBM have been linked through a sophisticated system based on client server architecture established with the help of BRGM, France. Proposal for connecting Raipur & Gandhinagar RO with said system along with VC facility is under process. IBM has well established LAN facility, besides WAN system to communicate and exchange data with Regional, Zonal offices and Headquarter offices. In all RO/ZO offices, VC facility is operational.

7.76 The Web Portal of IBM i.e. https://www.ibm.gov.in provides information on IBM's history, functions, organization, divisions of IBM and its activities, jurisdiction of regional and zonal offices, services offered by IBM. The upgradation of existing web portal is going on, which facilitates stakeholders with updated and faster information.

7.77 The domain https://ibmregistration.gov.in is functional for grant of IBM Registration number and https://ibmreturns.gov.in is also functional for facilitating the stake holder to submit the monthly and annual returns online and for further communications with stake holders in case of refer back cases.

7.78 After introduction of online submission of returns system consequent to the amendments to Rule 45 of MCDR, 1988 vide notification No. 75(E) dated 9th February, 2011, the mine owners have commenced submission of monthly and annual returns online. IBM is monitoring and guiding/ encouraging the mine owners and their representatives for online submission of returns.

7.79 The month-wise monthly returns submitted online are given in **Table 7.11**.

Month-wise Returns Submitted online (up to December, 2025)

Table 7.11

Month-wise Returns Submitted online

S. No.	Month	Monthly returns received
1	January,2025	1846
2	February,2025	1849
3	March,2025	1878
4	April,2025	1890
5	May,2025	1871
6	June,2025	1854
7	July,2025	1873
8	August,2025	1956
9	September,2025	2290
10	October,2025	2519
11	November,2025	2508
12	December,2025	2454

7.80 Mineral Wise Summary of Mining Lease (excluding Atomic, Hydro Carbon Energy and Minor Minerals) as on 31.03.2024(P) (All India) is given in **Annexure 7.3**.

Mining Tenement System (MTS)

7.81 Mining Tenement system (MTS) is a flagship project of Indian Bureau of Mines and it's a unique application, first of its kind in the world which is a digital transformation of Mineral Concession life cycle. With MTS, IBM envisions digitizing of entire processes of the core modules which in turn can induct a workflow-based system to increase

the efficiency, and service delivery and transparency in its charter of functions.

1.0 As part of this project, IBM also envisions conducting enhancements, wherever applicable. The following modules were launched /upgraded.

i. Notices/ Reports: - Launched on 20/01/2025 at 3rd National Mining Ministers' Conference 2025, Konark, Odisha

ii. Revision - Launched on 20/01/2025 at 3rd National Mining Ministers' Conference 2025, Konark, Odisha

iii. Mineral Processing - Launched on 20/01/2025 at 3rd National Mining Ministers' Conference 2025, Konark, Odisha, which address the vision of National critical Mineral Mission.

iv. Inspection - Launched on 20/01/2025 at 3rd National Mining Ministers' Conference 2025, Konark, Odisha

2.0 Prestigious Gold Award

Gold award under the category Government Process Re- engineering by use of Technology for Digital Transformation at the National Award for e-Governance (NAeG) 2025, Presented by the Department of Administrative Reforms and Public Grievances (DARPG), Government of India.

3.0 Other Benefits accrued

i. Reduction in the compliance burden & Ease of Doing Business to various stake holders.

ii. Reduction in Carbon footprint as now entire process is paperless. E.g. Mining Plans earlier were a bulky paper book/ Plans is now paperless work.

iii. Facilitate Quartz, Felspar, Mica, Barytes mining lease holder by simplification in registration Modules for them.

iv. Development of Hon'ble Minister's Dashboard.

v. Upgradation and Dashboard of Drone Data Management System.

vi. Upgradation in MIDPAS Module facilited virtual Inspections.

vii Mineral processing module aligning with National Critical Mineral Mission by facilitating sample reports uploaded online by all Ro's, RMPL Labs, JNRDC and GMRDC.

viii. Development of registration module for Offshore Minerals.

ix. API with PM Gati Shakti (WIP).

x. API with Unified Portal of Mining (WIP).

Reclassification of Barytes, Feldspar, Mica and Quartz as Major Minerals:

Reclassification of Barytes, Feldspar, Mica, and Quartz from minor to major minerals has brought these resources under the regulatory framework of the Central Government, ensuring uniform royalty and taxation, transparent monitoring through IBM and the MTS portal, and accurate reporting of production and dispatches. As a result of this change, a total of 3,641 mines has been registered on the MTS portal, comprising 1,941 working and 1,700 non-working leases. This reform strengthens revenue realization for the exchequer, promotes scientific and sustainable mining practices, curbs illegal mining, enhances data availability for policy-making, and aligns India's critical mineral management with global best practices.

Sustainable Development framework (SDF)

7.82 Star Rating System: The Star Rating System is a good governance initiative, designed as a tool for mapping of mining footprints from the view point of Sustainability. The Star rating has been mandated by Rule 35 of Mineral Conservation and Development Rules (MCDR), 2017. Every holder of a mining lease is required to submit online, its self-assessment report before the 1st day of July every year for the previous financial year to IBM.

7.83 All the mine operators are mandated to achieve at least three-star rating within a period of four years with effect from the date of notification of the Rules (i.e. 27th February, 2017) or four years from the date of commencement of mining operations, as the case may be, and thereafter maintain the same on year-on-year basis, failing which mining operations are liable to be suspended.

7.84 Based on evaluation of the performance of mining lease holders on the various parameters encompassed by the principals of the Sustainable Development Framework (SDF), validation of self-assessed templates is carried out by IBM and accordingly final ratings are awarded. Selected five star rated mines are recommended for award by Technical Evaluation Committee.

7.85 The selected lease holders of five star rated mines are felicitated during National Conclave on Mines & Minerals held from time to time. The details of year wise awards given to 5 Star rated mines since 2014-15 are given below in **Table 7.12**.

Table 7.12

Performance Year	No. of 5 Star Rated mines selected for award	Felicitation held on
2014-15	9	4-5 July 2016, Raipur (Chhattisgarh)
2015-16	32	15 February 2017, New Delhi
2016-17	57	20 March 2018, New Delhi
2017-18	57	23 November 2021, New Delhi
2018-19	52	23 November 2021, New Delhi
2019-20	40	23 November 2021, New Delhi
2020-21	40	12th July 2022, new Delhi
2021-22	76	1st March 2023, Nagpur
2022-23	68	9th August 2024, New Delhi
2023-24	95*	7th July, 2025, Jaipur

** 3 mines out of these 95 five-star rated mines with their exemplary performance in advancing Green Mining practices were conferred with seven-star rating.*

7.86 During the financial year 2025–26, up to 31st December 2025, a total of 1,225 online self-assessment reports pertaining to the performance of 2024–25 were submitted by the lease holders. These reports are currently undergoing validation at different stages, with the entire validation process scheduled for completion by 31st March 2026.

Mining Surveillance System

7.87 Mining Surveillance System (MSS) is a satellite-based monitoring system which aims

to establish a regime of responsive mineral administration by curbing instances of illegal mining activity through automatic remote sensing detection technology.

- Ministry of Mines & Indian Bureau of Mines (IBM) have developed the MSS, with assistance from Bhaskaracharya Institute for space applications and Geo-informatics (BISAG), Gandhinagar and Ministry of Electronics and Information Technology (MeitY).
- The system works on the basic premise that most minerals occur in the continuity and their occurrence is not limited to the lease area but is likely to extend in the vicinity. The MSS checks a region of 500 meters around the existing mining lease boundary to search for any unusual activity which is likely to be illegal mining. Any discrepancy found is flagged-off as a trigger.
- The MSS is a transparent & bias-free system, having a quicker response time and capability of effective follow-up. The deterrence effect of 'Eyes watching from the Sky' would be extremely fruitful in curbing instances of illegal mining.
- A user-friendly mobile app for MSS has been created and launched on 24th January, 2017 at Gandhinagar for enabling public participation in assisting the governments endeavour to curb illegal mining, which was being used by the inspecting officials to submit compliance reports of their inspections.
- The primary objective of MSS is to empower State Governments with a technology-driven tool that enhances their ability to detect and respond to unauthorized mining operations.
- To ensure effective implementation, 179 officers—including Mining Engineers and Geologists—from 28 States and one Union Territory have received specialized training at BISAG.

Details of triggers generated, verified and cases of unauthorised mining detected are given below in **Table 7.13**:

Table 7.13

Phase /Year	Triggers Generated	Triggers Verified	Unauthorized Mining confirmed
Phase-I (Major) (2016-17)	296	287	47
Phase-II (Major) (2018-19)	52	45	5
Phase-II (Minor) (2018-19)	130	104	9
Phase-III (Major) (2021-22)	177	98	12
Phase-IV (Major) (2022-23)	138	40	7
Phase-V (Major) (2023-24)	157	21	1
Phase-VI (Major) (2024-25)	138	0	0

7.88 Human Resources

The total sanctioned personnel strength of IBM is 1477. The present filled-in strength is 861 as on 1st January 2026. The cadre-wise employment position in IBM as on 1st January 2026 is given in **Table 7.14**

Table 7.14

Employment of Personnel in IBM as on 1st January 2026

Sl No.	GROUP	SANCTIONED	FILLED	VACANT	SC	ST	OBC	EWS	WOMEN	PH
1.	GROUP 'A'	459	256	203	37	10	64	10	15	01
2.	GROUP 'B'	251	150	101	26	08	40	05	19	04
3.	GROUP 'B' (Non-Gaz)	251	111	140	12	05	23	10	17	07
4.	GROUP 'C'	516	344	172	56	22	109	18	49	14
TOTAL		**1477**	**861**	**616**	**131**	**45**	**236**	**43**	**100**	**26**

7.89 Strengthening of IBM's Regional Infrastructure

During 2025-26, the Indian Bureau of Mines significantly upgraded its regional infrastructure. A new Regional Office at Vijayawada was established to ease workload in Andhra Pradesh and was inaugurated by the Hon'ble Minister of Coal & Mines. In addition, the Regional Offices at Guwahati, Ranchi, and Raipur have been provided with newly constructed office buildings and already been inaugurated, thereby removing the rental burden. These initiatives mark a major step in strengthening IBM's infrastructure and improving efficiency in regional operations.

- **Inauguration of IBM Regional Offices at Guwahati and Ranchi by Hon'ble Union Minister of Coal & Mines**

  The Indian Bureau of Mines achieved significant milestones with the inauguration of its new Regional Office premises at Guwahati on 28th June, 2025 and at Ranchi on 12.09.2025 by the Hon'ble Union Minister of Coal & Mines, Shri G. Kishan Reddy. This establishment strengthens IBM's presence in the eastern region and reinforces its commitment towards enhanced outreach, regulation, and facilitation of the mining sector.

- **Inauguration of IBM Regional Offices at Raipur by Hon'ble Union Minister of State for Coal & Mines**

  Hon'ble Union Minister of State for Coal & Mines, Shri Satish Chandra Dubey inaugurated the newly constructed office building of the Raipur Regional Office of the IBM on 08.10.2025.

*****

08 CHAPTER



Central Public Sector Undertakings

Central Public Sector Undertakings

- National Aluminium Company Limited (NALCO) Page-127
- Hindustan Copper Limited (HCL) Page-144
- Mineral Exploration & Consultancy Limited (MECL) Page-165
- Bharat Gold Mines Limited (BGML) Page-177

National Aluminium Company Limited (NALCO)

Introduction

8.1 National Aluminium Company Limited (NALCO), a 'Navratna' company under the Schedule 'A' category, was founded on January 7, 1981, with its registered office in Bhubaneswar. It is one of the country's largest complexes integrating bauxite, alumina, aluminium production, and power generation. Currently, the Indian government owns 51.28% of NALCO's equity capital. The Company has been operating its captive Panchpatmali Bauxite Mines for the pit head Alumina Refinery at Damanjodi, in the District of Koraput in Odisha and Aluminium Smelter & Captive Power Plant at Angul. As a part of green initiative, NALCO has installed 198 MW Wind Power Plants at various locations in India and 1,061 kWp roof top Solar Power Plants at its premises to join hands for carbon neutrality. From the days of first commercial operation since 1987 the Company has continuously earned profits for last 38 years.

For details please visit: https://nalcoindia.com/investor-services/annual-reports/

8.2 With its consistent track record in capacity utilization, technology absorption, quality assurance, export performance and profitability, NALCO is an example of India's industrial might.

8.3 The company is a significant contributor to India's foreign exchange earnings. The Company continues to retain its position of lowest cost producer in Bauxite and Alumina production in the World as per the latest Wood Mackenzie report-2025.

8.4 NALCO is the first Public Sector Company in the Country to venture into international metal market in a big way with London Metal Exchange (LME) registration since May,1989. The Company is listed at Bombay Stock Exchange (BSE) since 1992 and at National Stock Exchange (NSE) since 1999. It boasts of multiple ISO certifications, including ISO 9001, ISO 14001, ISO 45001, ISO 50001, and SA 8000. The Data Centre at NALCO's Corporate Office and the Disaster Recovery Site at the Alumina Refinery have been awarded the ISO 27001:2013 Certification for Information Security Management System, accredited by International Accreditation Services, USA.



NALCO Corporate Office, Bhubaneswar

Existing Operations & their Locations

Bauxite Mines

8.5 The Company has its fully mechanised open cast Bauxite Mines which is one of the most sophisticated and eco-friendly mining operations to be found worldwide, situated on Panchpatmali plateau in Damanjodi, Koraput, in the State of Odisha. The Company is operating two mining leases i.e. Panchpatmali North & Central Blocks and Panchpatmali South Block.

The mined-out bauxite is transported from the Mine to Refinery by a 14.6-km. long single-flight, multi-curve, variable-speed cable belt conveyor of 1800 TPH capacity.



Panchpatmali mine

Alumina Refinery

8.6 The Alumina Refinery is located at Damanjodi, Odisha, approximately 14 km from the Bauxite Mines at Panchpatmali. The Alumina produced is transported to Aluminium Smelter at Angul (Odisha) and to Vizag (Andhra Pradesh) port by rail with NALCO's captive wagons.

8.7 The present normative capacity of Alumina Refinery is 21 lakh tonne per annum. Alumina produced is used to meet Company's requirements for production of primary Aluminium at Smelter. The surplus Alumina that remains after internal consumption is sold in international market. A small portion is also sold in domestic market.



Alumina Refinery

Aluminium Smelter

8.8 The Aluminium Smelter is located at Angul, Odisha and approx. 5 km away from the captive thermal power plant. Aluminium produced in the form of ingots, sow ingots, tee ingots, billets, wire rods, alloy ingots, flat products and chequered sheets are sold in the domestic market directly from Smelter and through its stockyards located across the country. The Aluminium produced is also exported through Vizag port and Kolkata Port.



Aluminium Smelter

8.9 The Aluminium Smelter entered into production progressively from 1987. The present capacity of Smelter is 4.60 lakh tonne per year. Alumina is converted into primary Aluminium through a smelting process using electrolytic reduction. From the pot-line, the molten Aluminium is routed to the casting units, where the Aluminium can be cast into ingots, sow ingots, tee ingots, billets, wire rods, alloy ingots and rolled products.

Captive Power Plant

8.10 The Aluminium Smelter and coal-based pit head captive power plant at Angul are strategically located. The Power Plant is located approximately 5 km away from Aluminium Smelter. The location of captive thermal power plant at Angul is also strategic to the availability and supply of coal.

NALCO sources part of its coal requirement for captive thermal power plant from the

Talcher coalfields of Mahanadi Coalfield Ltd. (a subsidiary of Coal India Ltd.), located approximately 15 km from Angul. The 18.5 km captive railway system links the captive thermal power plant to the Talcher (Bharatpur) coalfields, enabling transport of the critical and bulk requirement of coal.

8.11 The captive thermal power plant commenced operations in 1986. Presently the captive thermal power plant has a generation capacity of 1200 MW by way of 10 turbo-generators, each rated at 120 MW. While the captive thermal power plant provides entire electric power requirement of Aluminium Smelter, it also provides a small amount of power to the Alumina Refinery through wheeling.



Captive Power Plant

Utkal D&E Coal Mines:

8.12 Utkal D & Utkal E Coal Mine is situated in Chhendipada Tehsil of Angul District. Coal Mine is operational since November 2022, serving the feedstock to Captive Power Plant situated at NALCO's Smelter & Power Complex, Angul. Present capacity of coal mine is 4 Million TPA.



Utkal Coal Mines

Wind Power Plants

8.13 The 1st wind power plant of capacity 50.4 MW in Gandikota, Andhra Pradesh was commissioned in FY 2012-13 and the 2nd wind power plant of capacity 47.6 MW at Ludarva site, in Jaisalmer, Rajasthan was commissioned in FY 2013-14. The 3rd & the 4th wind power plants of capacity 50 MW at Devikot site, Jaisalmer, Rajasthan and the 50.4 MW Wind Power Plant at Sangli, Maharashtra were commissioned in FY 2016-17.



Wind Power Plant, Jaisalmer

Rooftop Solar System

8.14 NALCO utilised the available roof top space in Corporate Office, Township and NRTC at Bhubaneswar for setting up of 630 kilowatt peak (KWp) solar power plant. 220 KWp Roof-top Solar PV Plant had been installed at Mines & Alumina Refinery, Damanjodi. Also 170 KWp Roof-top Solar PV Plant had been installed at Port Facilities, Visakhapatnam Office Buildings. The total installed Roof-top Solar PV Plant capacity now stands at 1,061 KWp.



Roof Top Solar facility

Port Facilities

8.15 On the Northern arm of the inner Harbour of Visakhapatnam port on the Bay of Bengal, NALCO has established mechanized storage and ship handling facilities for exporting Alumina in bulk.



Port Facility, Vizag

Performance of NALCO

8.16 Physical performance, financial performance and sales performance are presented at **Table 8.1, Table 8.2** and **Table 8.3**.

Table 8.1

Physical Performance of NALCO

Product	Unit	2021-22 Actual	2022-23 Actual	2023-24 Actual	2024-25 Actual	2025-26 (Target)	2025-26 Actual upto Dec'25	2025-26 (Expected)
Bauxite	Lakh tonne	75.11	74.57	75.27	72.62	77.00	56.60	77.00
Alumina Hydrate	Lakh tonne	21.22	21.23	21.24	20.76	22.00	17.27	23.00
Aluminium Metal	Lakh tonne	4.60	4.60	4.63	4.60	4.70	3.54	4.70
Net Power	Million Unit	5,712	5,788	6,386	6,641	7,053	5,205	6,957
Coal-Utkal D&E	Lakh MT	-	-	20.00	28.20	40.00	30.74	40.00

Table 8.2
Financial Performance of NALCO

(in Rs. crore)

Sl. No.	Particulars	2021-22 Actual	2022-23 Actual	2023-24 Actual	2024-25 Actual	2025-26 achievement upto H1	2025-26 Expected
1.	Income *	14,478	14,490	13,400	17,145	8,374	Sensitive data. Shall be Furnished after declaration of Q4 result.
2.	Operating Cost**	9,664	11,806	9,849	9,223	4,681	
3.	Interest & Transaction Loss	23	13	17	59	16	
4.	Depreciation & Amortization	837	716	750	728	352	
5.	Profit before Income tax and Dividend	3,955	1,955	2,784	7,135	3,325	

** Income and expenditure are net of excise duty on sales.*
*** Operating cost includes exceptional items*

Table 8.3
Sales Performance of NALCO

Sales	Unit	2021-22 Actual	2022-23 Actual	2023-24 Actual	2024-25 Actual	2025-26 (Target)	2025-26 Actual upto Dec'25	2025-26 (Expected)
Total Alumina/ Hydrate Sale	Lakh Tonne	12.33	12.47	11.68	11.06	12.75	11.03	14.95
Aluminium Export	Lakh Tonne	1.33	0.25	0.51	0.061	0.25	0.07	0.13
Domestic Aluminium Sale	Lakh Tonne	3.24	4.39	4.19	4.55	4.45	3.45	4.57
Total Aluminium Sale	Lakh Tonne	4.57	4.64	4.70	4.61	4.70	3.52	4.70

Ongoing Projects

8.17 The major activities during FY 2025-26 pertaining to various projects of NALCO are as under:

(a) **5th Stream Refinery** (Capacity: 1 million Tonne):

- Project conceived to be executed through 21 LSTK packages, 16 Work contracts & 119 Supply Items.
- All 37 LSTK & works packages orders with value around ₹ 3984 Cr have been placed.
- Procurement completed for all 119 bought out items, which shall be supplied to works contractors as free issue materials for erection / installation. Orders placed for 119 items valued at about ₹ 825 Crore.
- Site work for awarded packages / works are under execution. The progress of project at the end of December'25 is 79.42% for Refinery & 86.96% for SPP (Steam and Power Plant).
- The work progress of various packages / works is being monitored closely at various levels to expedite the execution.

(b) Development of Pottangi Bauxite Mines (Capacity: 3.5 million Tonne):

- Pottangi Mines is planned through Mine Developer and Operator (MDO) mode.
- M/s. Dilip Buildcon Ltd has been appointed as MDO on 09.12.2025 and agreement signed on 20.12.2025.
- The Mine is planned for opening by May'2026.

(c) Bauxite Transportation System from South Block of Panchpatmali Mines (Capacity: 3.15 million Tonne):

- All the packages (04 LSTK & 06 Works) amounting to an order value of about ₹ 496 Crore have been placed.
- Overall project progress at the end of December'25 is 91.31 %.
- The work progress of various packages is being monitored closely at various levels to expedite the execution.

(d) Angul Aluminium Park (AAPPL) in JV with IDCO:

- Angul Aluminium Park is a JV of NALCO (49%) and IDCO (51%) to promote downstream aluminium industries such as conductors, extrusions, castings and foils.
- Land acquisition has been completed, and modalities for supply of molten/ primary metal from NALCO have been finalized.
- SOP for supply of molten metal to units in the Park has been approved.
- Major infrastructure including administrative building, boundary wall, internal & approach roads, hot metal corridor, aluminium development centre, ITI, tool room & skill development centre (CTTC), product evaluation centre, bank and post office has been completed.
- Six units have been allotted land; four units are under construction and one unit has commenced production.

(e) Acquisition of Strategic minerals in overseas (KABIL):

KABIL is exploring options for various mineral deposits in Argentina and Australia. JV Company among NALCO, HCL and MECL named Khanij Bidesh India Limited (KABIL) formed in Aug'2019 to identify, acquire, develop, process and make commercial use of strategic minerals in overseas locations for supply in India and thus boost "Make in India" initiative of Government of India. At present, KABIL is focusing on identifying and sourcing these critical battery minerals like Lithium and

Cobalt.

Argentina: The non-invasive exploration has been completed in Jul'2025. KABIL is taking up preparatory activities to start detailed exploration in the Blocks.

Australia: Investment provision in a few of the projects by KABIL, jointly with other Government of India Companies is being explored.

(f) Brownfield Expansion of Smelter (Capacity: 0.5 million TPA):

In the Brownfield Expansion of the Smelter, key pre-project activities are currently underway to facilitate smooth project implementation. The process of acquiring the required land (both private and Government lands) is in progress, along with the structured technical evaluation and selection of a suitable technology licensor to ensure adoption of the most efficient and advanced smelting technology. Parallelly, actions for obtaining the Environmental Clearance (EC) are being pursued, including necessary studies and stakeholder consultations. The process for appointing a consultant to prepare the Detailed Project Report (DPR) is underway, which will define the technical, financial, and implementation framework of the project, forming the groundwork for timely project execution.

(g) Sourcing of Power for Smelter expansion (Capacity: 1080 MW):

Currently, key pre-project activities are underway for brownfield CPP expansion project, including coordinated efforts for eviction of people encroaching on NALCO's land and initiation of the process to engage a consultant for obtaining the required Environmental Clearance (EC). The consultant has been engaged, and preparation of the Detailed Project Report (DPR) is currently in progress, covering technical, financial and implementation aspects of the project. These steps are essential for enabling smooth project execution.

Information Technology (IT)

8.18 Role of IT in NALCO's Business Functions: Information Technology (IT) serves as a foundational pillar of NALCO's business strategy, catalysing operational excellence, fostering transparency, and driving innovation to enhance the organization's competitive edge.

8.19 Digital enablement: Since 2010, NALCO has undertaken a digital transformation journey, spearheaded by the implementation of Enterprise Resource Planning (ERP). This comprehensive system integrates all core business functions, including sales & distribution, finance & controlling, materials management, human resources and production planning. The ERP system ensures uniformity in processes, enhances information availability, and fosters transparency, empowering informed decision-making. Additionally, NALCO has made significant strides in digitalizing its operational workflows. The implementation of Plant Maintenance solution has optimized asset utilization.

NALCO is embarking on the journey to migrate the on-premise SAP ERP to SAP S4HANA on cloud enhancing business efficiency through in-memory processing. This would also help in reducing the overhead of on-premise datacentre maintenance.

NALCO is planning to implement Industry 4.0 projects through digital transformation. NALCO organized an Industry 4.0 Conference in Bhubaneswar titled 'Smart Aluminium: Driving Operational Excellence'.

On the administrative front, the adoption of an electronic file handling system (e-Office)

across all plants and offices has streamlined document management processes, paving the way towards a paperless office environment. The e-Office Knowledge Management System elevates organizational efficiency by enabling seamless access to digitized documents, while ensuring secured and controlled dissemination of critical information. e-Office licences are further extended by 5 years.

8.20 Employee self-service: NALCO is committed to enriching the employee experience by leveraging digitally-enabled self-service applications that empower employees to seamlessly manage diverse aspects of their work-life, including payroll, attendance, income tax, appraisals, leave, loans, perquisites, tours, medical reimbursements, and probation confirmations. The major new modules like employee grievance, IR dashboards, Rake monitoring systems, Annual Business Plan dashboard, digitization of land records. Furthermore, the implementation of a state-of-the-art Computerized Hospital Management System at its company-operated hospitals in Angul and Damanjodi ensures the provision of efficient and timely medical care, reinforcing a culture of health and well-being within the organization.

8.21 Digital enablement for stakeholder:

Acknowledging the critical role of stakeholder engagement, NALCO has developed a suite of online platforms and mobile applications designed to address their diverse needs with precision and efficiency. These include:

- **Customer Mobile App "NAGINAA":** Provides customers with information and networking opportunities.

- **Vendor Mobile App "NAMASYA":** Facilitates communication and collaboration with vendors, particularly micro and small enterprises.

- **Citizen Mobile App "NISARG":** Raises awareness about NALCO's Corporate Social Responsibility (CSR) initiatives among citizens.

- **Retired Employees Mobile App "Hamesha NALCOnian":** Offers access to relevant resources and updates for the retired employees.

- **"Suraksha" Mobile App:** Streamlines onsite safety inspection reporting at plants, ensuring a secure work environment.

- **"NurtureNest" Mobile App:** Systemic Development of Quality-Based Safe Motherhood with Newborn Care.

- **"NETRA" Mobile App:** *unified employee mobile app providing on-the-go access to key information and self-service functions, enabling real-time approval workflows, with features like notifications and an AI chatbot under development.*

8.22 Cloud based services: NALCO leverages cloud-based services for efficient procurement and invoice management. E-procurement of goods is seamlessly conducted through platforms such as Government e-Marketplace (GeM), Central Public Procurement Portal (CPPP), and Supplier Relationship Management (SAP SRM). The integration with the Invoice Registration Portal (IRP) strengthens financial transparency and ensures seamless compliance with regulatory standards in transaction processing. IT security solution is migrated to cloud. Planning to migrate e-Office and e-Mail solutions to cloud

8.23 Governance & Monitoring: The organization has deployed a range of advanced web-based applications to elevate governance and monitoring capabilities. These tools facilitate real-time tracking of capital expenditure, fund utilization, compliance management, employee probation, departmental promotions and the resolution

of vigilance complaints. By fostering data-driven insights, these initiatives empower timely decision-making, optimize resource allocation, and ensure adherence to statutory regulations.

8.24 Analytics: NALCO leverages advanced data analytics and visualization tools to streamline and enhance processes across production, sales and distribution, and human resource management. By transforming data into actionable insights, the organization drives strategic decision-making and achieves unparalleled operational efficiency.

8.25 IT Infrastructure: To ensure uninterrupted service delivery, NALCO has invested in robust IT infrastructure, including:

- Primary Data Center located at Corporate Office, Bhubaneswar, equipped with server virtualization technologies, and hosts all Centralized Applications including ERP and e-Office. Disaster Recovery Data Center is located in a separate seismic zone.

- For increased network availability across locations a state-of-the-art SDWAN technology for an intelligent provisioning of application policies that align to business intent.

- Dual MPLS circuits connecting plants and offices to the Corporate Data Centre, ensuring uninterrupted access to applications and services.

- Gigabit Ethernet LAN with Firewall at each plant location and Corporate Office, ensuring network security and integrity.

- Multichannel video conferencing solution facilitating effective communication across all business units.

8.26 Cyber Security: NALCO places paramount importance on data security and regulatory compliance, exemplified by its ISO 27001:2022 certification for its Data Centre and Disaster Recovery site. The organization employs advanced IT security measures, including network gateway defences and endpoint protection solutions, to safeguard against cyber threats. Regular audits and strict adherence to government-mandated cybersecurity protocols further reinforce the integrity, confidentiality, and resilience of its digital infrastructure.

8.27 Adoption of emerging technologies:

AI/ML Solutions: RAG (Retrieval Augmented Generation) based architecture will be used to implement company-wide chatbot apart from live data chatbots for various department users. Started adoption of AI tools to enhance office productivity. Process automation and improvement in efficiency to be achieved using agentic AI.

Action Taken on Pollution Control and Environment

8.28 As a responsible corporate entity, NALCO has prioritized environmental management and pollution control, ensuring a cleaner, greener, and safer environment at all its production units and surrounding areas. All production units are certified to International Standards on Environmental Management Systems (ISO14001) as well as Occupational Health and Safety Management Systems (ISO 45001) affirming commitment to comply proactively with continual improvement. To ensure cleaner and greener surroundings at all its operating units, NALCO has adopted the 5S principle and initiated extensive plantation efforts in and around its plants. Additionally, all production units are operating with valid consents, licenses, and authorizations in compliance with various statutes.

8.29 Global climate change and warming have led to increasingly stringent

environmental regulations. NALCO, certified to international standards, proactively addresses these challenges by periodically updating its policies and strategies. The revision of our Sustainable Development policy is a key step in this direction. Each year, we publish a sustainable development report aligned with the international Global Reporting Initiatives (GRI) Standards.

8.30 In our endeavour to maintain a clean and green environment, we have invested in upgrading our pollution control infrastructure and initiated extensive plantation and afforestation drives for a better planet. For developing awareness on environmental issues, NALCO imparts internal as well external training to its employees, as well as contractor workers on pollution control measures and on prevention of pollution. NALCO encourages active participation of its employees in environmental functions like Earth Day, World Environment Day, Vana Mahotsav, Chemical Disaster Prevention Day, Ozone Day, National Pollution Prevention Day etc.

8.31 The unit Specific major improvements taken up in the field of environment management at different units of NALCO during the year 2025-26 are as follows:

a) Bauxite Mines:

- A biodiversity conservation policy was developed for Mines to for protection of biodiversity by adopting best biodiversity management practices.
- 1,65,029 trees were planted in and around Mines against the target of 1,50,000 trees. Also, around 6500 fruit bearing seedlings were distributed to local villagers to improve awareness about plantation among the villagers.
- Appx 15.51 Ha of mined out area were rehabilitated with plantation.
- 7,000 square meter of grass-turfing was carried out inside the Mines as per the target.
- Apart from the existing Miyawaki Garden at South Block with an extent of 0.25 Ha, Two more Miyawaki gardens have been established during 2025-26 in Central North Block (1 Ha) and South block (0.5 Ha) mined out area with an extent of 1.50 Ha with indigenous plant species of 22 varieties including fruit bearing, medicinal, flowering and of timber value towards improvement of biodiversity with creation of dense forest within short span of time)

b) Refinery Plant

- 16,415 trees were planted in and around Alumina refinery in year 2025-26.
- Total 37,84,726 plantation done covering area 1818.69 hector.
- 2nd Red Mud Pond construction work is completed but amendment (Rectification) for obtaining CTO are under progress.
- E-Waste have been channelized to authorized collection center/ Recycler as per E-Waste Management & Handling Rule.
- Hazardous wastes (discarded asbestos and Used oils) are channelized through the authorized agency.
- Plastic wastes (Used filter clothes) are disposed through authorized co-processing cement plant.
- Empty Chemical containers/ Barrels are being disposed through authorized recycler.

c) Smelter Plant:

- As a part of commitment to environmental sustainability and ecological balance, Nalco Smelter has undertaken extensive Plantation initiatives aimed at reducing its carbon footprint, enhancing green cover and fostering biodiversity around its operational area. To develop green belt, 3,280 Nos. of saplings were planted inside Smelter Plant and 6,889 Nos. of saplings were distributed in the outside peripheral villages during April 2025 to November 2025.
- As a part of resource conservation and waste water recycling, 4,08,636 m3 of treated waste water was recycled inside Smelter Plant premises during April 2025 to Nov 2025 which is 39.86% of fresh water consumption.
- As a part of Hazardous waste management, (during April 2025 to Dec 2025),
  - (i) 2,542 MT of Carbon Area hazardous wastes was disposed of at Common Hazardous Waste Treatment, Storage & Disposal Facility (CHWTSDF), Sukinda, Jajpur.
  - (ii) 2,880 MT of carbon portion of spent pot lining (SPL) was disposed of by Authorized Actual users.
  - (iii) 4,825 MT of dross was sold to Authorised Actual Users.
  - (iv) 122 MT used/ spent oil was sold to Authorised Actual Users.
- As a part of compliance to the order of Hon'ble Supreme Court of India, Third Party Audit on HW management in Smelter Plant, NALCO for FY 2024-25 has been carried out by an ISO 14001 Certified Agency and report submitted to OSPCB on 22.07.2025.
- As a part of compliance to the order of Hon'ble Supreme Court of India, ESA II & Contaminated Site Remediation Study had been completed by M/s NEERI, Nagpur in May 2023. As a part of remedial action, total 20,000 MT of Spent Pot Lining (SPL) have been excavated departmentally from Site-1 & 2.
- As a part of plastic waste management, EPR (Extended Producer Responsibility) Registration in CPCB (Central Pollution Control Board) portal for use of plastic materials for both Importer and Brand owner done under Plastic Waste Management Rule 2016. Annual filing for plastic waste also done for FY 2024-25 by Corporate SH&E in time.
- Re-calibration and data validation of PM-CEMS (Particulate Matter Continuous Emissions Monitoring System) for Star Rating Programme has been carried out for ten major stacks (FTP-1 to 8 attached to Potline & FTC-1 to 2 attached to Bake Oven) in the month of Nov 2025 by OEM and NABL Accredited Lab. Report is under preparation.
- As a part of compliance to special conditions of CTO, performance evaluation of APCD (Air Pollution Control District)/ WPCD (Water Pollution Control Division), online monitoring Systems and HD IP Surveillance Cameras conducted by M/s IIT Bhubaneswar and report submitted to OSPCB.
- Installation of online flow measuring

device at Drain-1, 2 & 3 completed on 04/04/2025 and working satisfactorily.

- Installation of de-dusting & conveying system in GAP-1 in CP Coke downstream is in progress & the project will be completed by 31.05.2026.
- One bigger mechanized road sweeping machine for cleaning of internal roads in all work zone areas has been deployed through third party contract for 36 months w.e.f. 18.06.2025.
- Work order placed on M/s Eesavyasa Technologies Pvt. Ltd. on 09.08.2025 for installation of ETP based on RO Technology of Capacity 1200 KLD with recirculation system with provision for online fluoride monitoring system for surface water accumulated in the lowland near WT- 23. The same is expected to be completed by August 2026.
- Augmentation of Defluoridation Plant of capacity from 1 MLD to 2 MLD project is under way. Placement of Work order is expected by end of February 2026.
- Provision of water mist sprinkler at Carbon Area to control the fugitive emission is under progress & the same is expected to be commissioned by December 2025.

d) Captive Power Plant (CPP):

- Stack emission is maintained within the specified norm as prescribed by SPCB. To further improve stack emission, revamping of Electrostatic Precipitators has been carried out.
- CPP has planted 2,310 saplings in 2025-26. The plantation done since its inception is covering around 34.75 % of total area.
- Adopted eco-friendly manner of ash disposal to allotted mine void of South Bharatpur after commissioning of most coveted Lean slurry project (LSP). In the year till November 2025, the total ash utilization in mines void filling is 12.48 lakh MT.
- Implemented incentive scheme of Rs 150/MT to Brick manufacturer to enhance ash utilization. In the year 2025-26 (Upto November 2025) around 4.78 lakh MT of dry ash has been supplied to Brick manufacturer.
- In the year 2025-26 till November 2025, around 1.58 lakh MT of pond Ash has been supplied to NH for road construction. Further, follow up is being done with National highway & State high way to enhance utilization of Pond ash in upcoming project for using in road and flyover construction.
- Zero discharge has been achieved with respect to industrial effluent, ash pond overflow water and sewerage treatment plant treated water which has been certified by State Pollution Control Board.
- During the FY 2025-26, till November 2025, 19326021 cubic meter water has been recycled and reused after treatment in CPP from sources like mine void overflow water, rain water harvesting, Industrial Drain water, Ash Pond.

Energy Conservation

8.32 NALCO is having Energy Management System in its energy intensive Production units i.e. Refinery, Smelter & CPP and certified to International Standard on Energy Management System (ISO 50001). Unit wise energy conservation measures taken up during

FY 2025-26 (as on Dec'2025) are as follows:

a) Bauxite Mines

- In a step forward to augment its green energy capability, Panchpatmali Bauxite Mines has added 40 kWp of solar panels into the existing grid of 180.76 kWp system increasing the total installed capacity at Panchpatmali Bauxite to 220.76 KWp.
- Towards continual effort for electrical energy conservation, procurement and installation of 35 nos. of occupancy sensor for plant office buildings and 6 nos. of twilight sensor for outdoor lightings are in progress. Additionally, replacement of energy efficient induction motors with existing inefficient motors is in progress. Procurement of motors is completed and installation is underway.

b) Alumina Refinery

- Boiler-5 Advanced Profile Heating Element replacement in RAPH (Regenerative Air Preheater) at SPP (Steam & Power Plant) (FY 2025-26) resulted in annual coal saving of 6,079 MT, equivalent to energy saving of 20,041.79 Mkcal and CO_2 reduction of 7,646.25 tons.
- Replacement of Direct Contact Preheater with Heat Exchanger in Evaporation Batteries at Area-08 (FY 2025-26, ongoing) is under implementation & will result in annual coal saving of 54,437.76 MT, HFO saving of 779.44 KL, and steam saving of 241,338 MT, corresponding to energy saving of 187,246.65 Mkcal and CO_2 reduction of 70,807.63 tons.
- Up gradation of Pump-152 & Pump-153 at Area-06/07 (FY 2025-26) resulted in annual electrical energy saving of 1,642,500 kWh, equivalent to energy saving of 1,412.55 Mkcal and CO_2 reduction of 1,194.10 tons.
- Spent Liquor to Green Liquor conversion at Area-08 (FY 2025-26) resulted in annual coal saving of 510.23 MT, HFO saving of 7.31 KL, and steam saving of 2,262 MT, equivalent to energy saving of 1,755.02 Mkcal and CO_2 reduction of 663.66 tons.
- DM water preheating using hot sodic condensate at Area-08 & SPP (FY 2025-26, ongoing) is under implementation & will result in annual coal saving of 19,878.72 MT, HFO saving of 284.62 KL, and steam saving of 88,128 MT, corresponding to energy saving of 68,375.77 Mkcal and CO_2 reduction of 25,856.41 tons.

c) Smelter

- Graphitization of cathode to reduce specific DC energy consumption in pot line, saving @ 55kwh/MT of hot metal, is going on. 30 nos. of graphitized Pot started from April 2025 to November 2025. Out of the total operating pots, 931 nos. are Graphitized pots till November 2025.
- A pilot project i.e. "Development of low energy cell technology for Smelter plant (AP2XN)" had been taken up with an objective to reduce specific energy consumption under the development co-operation agreement between Rio Tinto/Alcan, Canada and NALCO. 15 pots in EG2 section of pot lines were under trial operation. After trial, it was found that there is an energy saving of 150 KWH/MT of hot metal

compared with reference pots. NALCO has planned to go for trial of AP2XN technology in additional 45 no. of pots. For this project, 45 sets of Graphitized bottom block and simultaneously 45 sets of side slabs are being procured.

- Installation of 2nd Anode slot cutting machine at ABF-2&3 is completed, with DC Energy saving potential@140 kwh/MT of hot metal. Over 20,000 slotted anodes supplied to potline till November 2025.
- 2 nos. of old obsolete screw compressor of New- compressor house have been replaced by 2 nos. of energy efficient centrifugal compressor having potential annual energy saving of 0.396 MU.
- Replacement of 05 electrically heated desiccant air dryer by refrigerated air dryers at both old and new compressor house. The desiccant dryers were old and inefficient with external heaters consuming substantial electrical energy. Energy efficient Refrigerated air dryers consume less energy with better dew point performance. Commissioning of 2 dryers completed till November 2025 and commissioning of remaining dryers is under progress.
- 15 nos. of standard motor have been replaced by IE4 motors (ranging from 15 KW to 55 KW) for better energy efficiency having potential annual energy saving of 0.18 MU.
- 64 5-star rated Window Air conditioners (58, 1.5T / 6, 2T) and 5 (4, 1.5T and 1, 2T) of 5 star rated split air conditioners are being procured during this year.

d) Captive Power Plant:

- 49 nos. of old conventional 70 Watt ceiling fan has been replaced with energy efficient 35 Watt BLDC (Brushless Direct Current) fans. Annual energy saving will be 7,511 kWh.
- Inefficient HPH-5 of Unit-1 & 2 will be replaced with newly purchased HP Heaters. Material already received. Installation will be done in coming overhauling of the Units.
- Computational Fluid Dynamics (CFD) analysis of flue gas ducts (Economizer outlet to ESP inlet) of Unit- 2 carried out. The requisite modification carried out during overhauling of Units. After implementation of analysis result it has reduced the flow imbalance and duct leakages which helped in reduction of auxiliary power consumption.
- Revamping of Cooling Tower of Unit -3 will be carried out to improve Condenser vacuum thereby reduction of heat rate and coal consumption. Material received. Installation Commissioning and testing will be carried out in coming overhauling of Unit-3 in January 2026.
- Replacement of old HP water line in Unit-1 to 6 has been carried out. Replacement of old LP water line is going on. After complete replacement saving of water and there by reduction in power consumption will be achieved.

Procurement

8.33 NALCO has achieved 29.68% of procurement from MSE for the CY 2025 till December'2025.

8.34 Total procurement by the Company from MSEs for the CY 2025 including SC/ ST owned & women owned MSEs is Rs. 1340.89 crore till December'2025 (against Rs. 898.76 crore in FY 2024-25) out of which procurement

from SC/ST owned MSEs is Rs.7.281 crore till December'2025 (against Rs. 14.7 crore in FY 2024-25) & Women owned MSEs is Rs. 76.137 crore till December'2025 (against Rs. 48.66 crore in FY 2024-25).

8.35 Total procurement by the Company through GeM portal is Rs. 4,517.65 crores in CY 2025 till December'2025 (against Rs. 3,955 crores in FY 2024-25).

8.36 Total 682 reverse auction were done in CY 2025 till December'2025 (against 563 in FY 2024-25) and notional cost reduction due to reverse auction is Rs. 90.59 crore (against Rs. 100.30 crore in FY 2024-25).

Industrial Relations

8.37 Industrial Relations: During the fiscal year 2025-26, the Company sustained a constructive and harmonious industrial relations environment, with zero man-days loss due to labour disputes. Rigorous compliance with applicable labour regulations, strict adherence to governmental directives and a collaborative approach to Decision-making were integral to the effective management of employee benefits and welfare. The Company's unwavering commitment to discipline, underpinned by a zero-tolerance policy, remained a cornerstone of its industrial relations framework.

MoU rating of NALCO during the last five financial years is given in Table 8.4 :

Table 8.4

Year	Composite Score	Grade
2020-21	90.75	Excellent
2021-22	95.03	Excellent
2022-23	65.00	Good
2023-24	79.00	Very Good
2024-25	83.61	Very Good

Aluminium Industry in India

8.38 The Indian primary Aluminium industry consists of three major primary producers i.e. National Aluminium Company Limited (NALCO), Hindalco Industries and Vedanta Ltd. The annual Production of Aluminium metal by the above primary producers was 4.24 Mln. T in FY 2024-25. The total domestic sales of primary metal by the major primary producers, i.e., NALCO, Hindalco and Vedanta for the FY 2025-26 (up to Dec'25) was 1.95 Mln T thereby witnessing a Y-o-Y growth of 8.03% CPLY. The domestic primary aluminium consumption in India for FY 2025-26 (upto Dec'25) reached 2.32 Mln. T showcasing an increase of about 9.8% Y-o-Y CPLY. India's total aluminium consumption (including primary metal and imports of Primary metal and scrap) in FY 2025-26 (upto Dec'25) reached 4.62 Mln. T embarking a 13.43% growth compared to the corresponding period last year. The current per capita Aluminium consumption in India is around 3.5 kg compared to the world average of 12 kg which envisages immense consumption potential as India is projected to be one of the fastest-growing economy. As per RBI Outlook, the Indian GDP is expected to expand to 7.3% for FY 2025-26 with moderation in the inflation outlook (from 4.6% in FY 2024-25 to 2% in FY 2025-26). Therefore, the Indian Aluminium Market is expected to grow at a CAGR of around 7.6% till 2030 witnessing robust production & consumption.

8.39 The Global Primary Aluminium production for the FY 2025-26 is projected to reach 74.39 Mln. T, showing growth of 1.9% vis-ŕ-vis 73.0 Mln. T achieved during FY 2024-25. At the same time, the Global Consumption is projected to increase by 1.77% from 73.20 Mln. T in FY 2024-25 to 74.49 Mln. T in FY 2025-26. The market is expected to remain in deficit of 0.11 Mln.

T in FY 2025-26. The Aluminium average LME Cash Settlement prices upto Nov'25 has surged by 4.59% CPLY attributed by US federal reserve interest rate cut, weakening US dollar, US government shutdown, Trade restrictions, economic stimulus measures by China, ongoing geopolitical tensions, falling LME inventory levels and squeeze in LME future prices which has disrupted global supply chains and increased uncertainty lending support to prices. On the contrary, the Alumina prices have dropped significantly during the period on account of supply surplus mainly from Indonesia, Vietnam, China, and India with new refineries capacity ramp-ups in Indonesia, relocation of refining capacities in China, smelting capacity cap in China and expected smelter disruption in Australia, Mozambique and Iceland.

8.40 India is the world second-largest aluminium producer, contributing nearly 6% to the global aluminium production. Indian Aluminium demand has remained balanced in FY 2025-26 driven by robust end-use demand growth in key sectors including construction and automotive & GST reforms from GoI. According to Vision Document on Aluminium Sector 2025, the key sectors driving primary aluminium consumption in India are Power (55%), Building & Construction (15%), Auto (7%), Packaging (8%), Consumer Durables (7%), Others (8%), other's (6%).

8.41 Aluminium companies have planned to achieve carbon neutrality by 2050, with the transition to renewable energy sources, implementation of key low-carbon technologies, improved energy efficiencies, increased recycling rates and adoption of advanced manufacturing processes. India has a projection to reduce carbon emissions by 01 Bln. T by 2030 and also aim to reduce oil import dependency through diversified energy strategies. The developments in the EV / Solar / Wind market has made aluminium play pivotal role in driving innovation and sustainability with improved usage.

8.42 The Aluminium industry in India faces several challenges including surging imports, trade tariffs, escalating production of green aluminium and logistical costs. The industry's sustainability is also affected by non-competitive energy costs and is expected to face further difficulties with advent of Carbon pricing (CBAM, ETS, CCTS etc.). Corrective measures such as rationalization of duties and improved input tax credits to attract fresh investments and boost downstream fabrication are needed to align with "Make in India" goals of GoI. Despite these challenges, India has sufficient domestic aluminium capacity to meet the country's aluminium demand of about 5.5 Mln. T.

8.43 The total domestic production of Aluminium metal by Aluminium producers in the year 2022-23 to 2025-26 (upto Dec'25) is given at **Table 8.5:**

Table 8.5
Production of Aluminium in India

(Figs. in Tons)

Sl	Producer	2022-23	2023-24	2024-25	2025-26 (upto Dec'25)
1	NALCO	4,60,000	4,63,428	4,60,137	3,54,482
2	HINDALCO	13,49,862	13,70,742	13,58,797	10,19,142
3	VEDANTA GROUP	22,87,689	23,58,813	24,17,655	18,42,265
TOTAL		**40,97,551**	**41,92,983**	**42,36,589**	**32,15,889**

(Note: Production figures pertaining to other primary producers are based on available market data)

The sales figure of Aluminium (Domestic Sales of Aluminium & Export Sales of Aluminium in India are given at **Table 8.6 and Table 8.7**

Table 8.6
Domestic Sales of Aluminium

(Figs. in Tons)

Sl	Producer	2022-23	2023-24	2024-25	2025-26 (upto Dec'25)
1	NALCO	4,38,876	4,18,946	4,54,600	3,45,008
2	HINDALCO	6,84,421	8,13,834	8,55,361	7,12,115
3	VEDANTA GROUP	7,75,198	9,78,706	11,75,326	8,91,854
TOTAL		**18,98,495**	**22,11,486**	**24,85,287**	**19,48,977**

(Note: Domestic sales figures pertaining to other primary producers are based on available market data)

Table 8.7
Export Sales of Aluminium

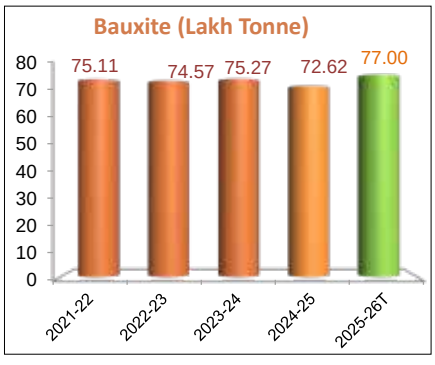
(Figs. in Tons)

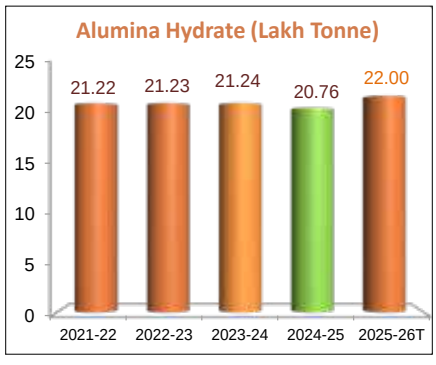
Sl	Producer	2022-23	2023-24	2024-25	2025-26 (upto Dec'25)
1	NALCO	25,214	51,163	6,114	7,126
2	HINDALCO	6,63,188	5,55,010	5,05,079	3,02,464
3	VEDANTA GROUP	15,10,452	13,79,979	12,39,665	9,41,201
Total		**21,98,854**	**19,86,152**	**17,50,858**	**12,50,791**

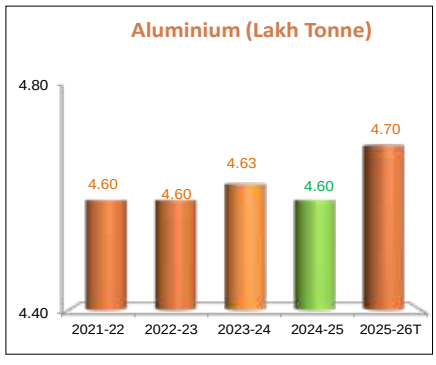
(Note: Export sales figures pertaining to other primary producers are based on available market data)

Trends of Production & Sales Parameters

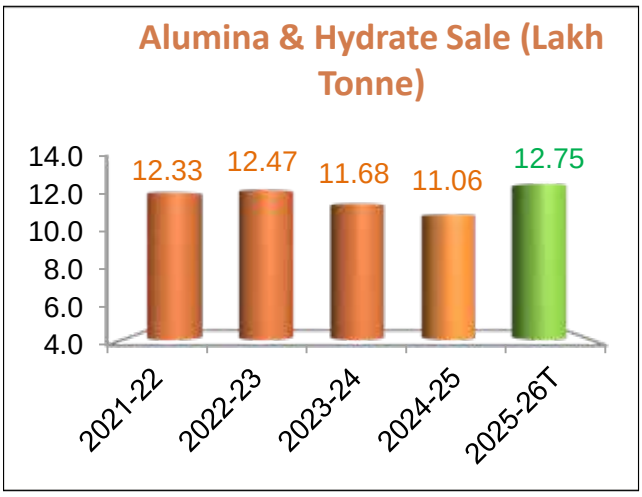
Production:

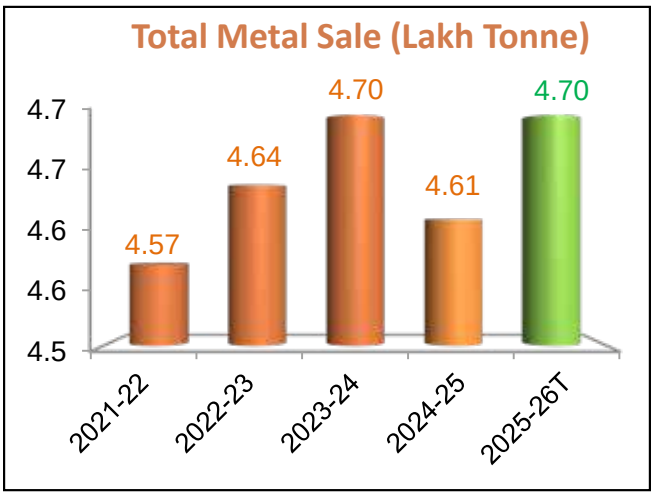






Sales:





Hindustan Copper Limited (HCL)

INTRODUCTION

8.44 Hindustan Copper Limited (HCL), a Miniratna Category-I, Government of India (GoI) Enterprise under the administrative control of the Ministry of Mines, was incorporated on 9th November 1967 under the Companies Act., 1956. It was established as a Govt. of India Enterprise to take over all plants, projects, schemes and studies pertaining to the exploration and exploitation of copper deposits from National Mineral Development Corporation Ltd. It is the only company in India engaged in mining of copper ore and owns all the operating mining lease of Copper ore. Major activities of HCL include mining, ore beneficiation and tolling of refined copper metal into continuous cast rod (CCR) as downstream product. HCL has five units - one each in the states of Rajasthan, Jharkhand, Madhya Pradesh, Maharashtra and Gujarat. HCL is a listed company on BSE and NSE, with 66.14 % equity owned by the Government of India.

HIGHLIGHTS OF YEAR (01.01.2025 to 31.12.2025)

- The Company has achieved copper ore production of 3.60 million tonne in CY 2025.
- The Metal in Concentrate (MIC) production for CY 2025 of the company reached 25,284 tonnes.
- In CY 2025, Malanjkhand Copper Project (MCP) Unit has achieved ore production of 2.60 Million tonne and Khetri Copper Complex (KCC) Unit has achieved ore production of 0.82 million tonne.
- Taloja Copper Project (TCP) Unit has achieved 14942 tonnes of CCR production (for third party tolling) in CY 2025.
- HCL has achieved capital expenditure of Rs. 381.21 Crore (provisional) in CY 2025 against the target of Rs. 330.30 Crore.
- The Board of Directors of HCL, in its meeting held on 27.05.2024 in Kolkata, had approved the financial results for FY 2024-25. The PBT achieved for FY 2024-25 was at Rs. 633.51 crore and Revenue from Operations of Rs. 2070.97 crore as against Rs. 410.43 crore and Rs. 1717.00 crore in FY 2023-24 respectively. The EBITDA of the Company has risen to Rs. 816.00

crore with a robust margin of 35%. The Board had recommended a dividend of 30.13% of PAT for FY 2024-2025, the payout on this account is Rs. 141.19 Crore to the shareholders of the company and paid in October 2025.

- The Profit Before Tax on standalone basis during the nine-month ended December 2025 has been Rs. 640.52 crore as against Rs. 373.92 crore in the corresponding period of the last year showing an increase of around 71%. The Revenue from operations of the company for nine-month ended December 2025 has been achieved at Rs. 1921.84 crore which is higher by around 43% compared to corresponding period of the last year. The EBIDTA margin achieved in nine-month ended December 2025 has been a robust 41%.
- MCP has bagged overall 1st prize in underground category along with 5 prizes in the 34th MEMC final day celebration held on 11.01.2025 at Jabalpur under the aegis of IBM, Jabalpur.
  - 1st Prize: Systematic and Scientific Development
  - 1st Prize: Waste Dump management
  - 1st Prize: Environmental Monitoring-First
  - 2nd Prize: Afforestation
  - 2nd Prize: Sustainable Development- Second
- HCL has achieved an 'Excellent' rating from the Department of Public Enterprises (DPE) for FY 2023–24 based on its performance against MoU parameters. The Company has been bestowed with this achievement by DPE after a span of 12 years.
- Pradhan Mantri Bhartiya Jan Aushadhi Kendras were inaugurated at Khetrinagar and Kolihan on 15.02.2025 at KCC unit, marking a significant milestone in ensuring affordable and high-quality medicines are accessible to all sections of society.



- MCP Mines won multiple accolades at the 2nd Metalliferous Mines Safety Week Celebration–2024, held under the aegis of DGMS, Parasia Region, on 14.02.2025 at Chhindwara.
  - 1st Prize: Overall
  - 1st Prize: Storage Transport and Use of Explosive
  - 1st Prize: Plant & Machinary
  - 1st Prize: Electrical Equipment & Installations
- At the 62nd Annual Metalliferous Mines Safety Week Celebration 2024–25, held under the aegis of the Directorate General of Mines Safety (DGMS), Chaibasa Region, Chaibasa, the Kendadih Copper Mine of the ICC Unit won several prizes in Group A3-B categories.
  - 1st Prize: Winding /underground machineries, garage, plant & equipment maintenance
  - 2nd prize: VTC Training facilities/ First Aids
  - 2nd Prize: Statutory Manpower, provision and records(departmental)
  - 2nd Prize: Firefighting, emergency preparedness, mock drills
- Mining Indaba, 2025 was held between 3 - 6 Feb'25 at Cape Town, South Africa. HCL was the nodal organization showcasing Indian Mining Sector on behalf of MoM, GoI. INDIA pavilion was inaugurated on 03.02.2025 by Shri Prabhat Kumar, High Commissioner of India to South Africa & Shri Vivek Kr. Bajpai, Jt. Secretary, Mines.



- The Safety Department of the MCP Unit successfully organized two significant events on 11.02.2025 to reinforce safety practices in our mining operations. In the first event, the much-awaited Pocket SOP Diary was launched and distributed to employees, providing easy access to critical safety protocols for daily operations. This was followed by a dedicated training session on the storage, transportation, handling, and use of explosives in the MCP UG Mine.
- During the 31st Mines Environment and Mineral Conservation Week, Ranchi Region, held on 22.02.2025, Surda and Kendadih Mines of the ICC Unit won the following awards.
  - Surda Mine:
    1. Overall 1st prize winner
    2. Winner: Systematic and Scientific Development
    3. Winner: Mineral Conservation
    4. Winner: Waste Dump Management
    5. Winner: Publicity & Propaganda
  - Kendadih Mine: 1. Winner: Sustainable Development
- As per the instructions of the Forest, Environment and Climate Change Department, Government of Jharkhand, the Jamshedpur Forest

Division, in collaboration with HCL/ ICC, organized a 10 km 'Run for Forest' marathon on 23.02.2025 to spread awareness about forest conservation, which saw the participation of around 3,500 male and female runners from various places.

- Khetri Copper Mine won the 3rd Prize in Overall Performance in Fully Mechanised Mine (Underground) Category along with following other prizes in the 35th Mines Environment & Mineral Conservation Week 2024-25 final day Celebrations held on 27.04.2025 at Ajmer under the aegis of IBM, Ajmer Region.
  - ➢ Mineral Beneficiation- 2nd Prize
  - ➢ Waste Dump Management- 2nd Prize
  - ➢ Sustainable Development- 3rd Prize

  HCL's Kolihan Copper Mine also won the following prizes: -
  - ➢ Environmental Monitoring- 1st Prize
  - ➢ Waste Dump Management- 3rd Prize
- During the 15th Rozgar Mela held on 26.04.2025 at various locations, Offers of Appointment were issued to candidates belonging to the Survey and HR cadres selected for different units of HCL.
- The Safety Department of Surda Copper Mine successfully launched the Pocket SOP Diary on 01.04.2025, with the initiative aimed at enhancing safety practices across the mine, strengthening workplace safety, and improving operational efficiency.
- HCL signed a historical Memorandum of Understanding with Codelco (Corporacion Nacional del Cobre), the State-owned Copper Mining Company of Chile, on 01.04.2025. The main objective of this Agreement is to identify and implement joint activities and to foster strategic partnership in exploration, mining and mineral beneficiation.



- HCL/Vigilance Department organized a seminar on "Business Ethics" on 21.04.2025 at GSI, to promote integrity and ethical practices.
- The Annual Plan Meeting for the financial years 2025–26 and 2026–27, a two-day brainstorming workshop, was held at the HCL Corporate Office on 2–3 May 2025.

- In a significant step towards strengthening rural healthcare infrastructure, HCL handed over a fully equipped ambulance to the Primary Health Centre, Gothra, Khetri under its CSR on 07.05.2025.
- MCP Unit has provided a vehicle on 22.05.2025 under its CSR Programme to Annamrita Foundation, ISKCON for free distribution of meals to poor and needy in and around Balaghat.
- DRC Mining Week 2025 was held from 11-13 June 2025 in Lubumbashi, DRC, where HCL served as the nodal organization showcasing the Indian mining sector on behalf of the Ministry of Mines, GOI. The India Pavilion was inaugurated on 11.06.2025 by Shri Vajapayajula Venkataraman, Ambassador of India to the DRC, and Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines.
- Both KCC and MCP were felicitated with a 5-Star Rating for the year 2023–24 by the Hon'ble Union Minister of Coal & Mines, Shri G. Kishan Reddy, at a grand event hosted by the Indian Bureau of Mines on 07.07.2025 in Jaipur.





- As part of a Research and Development pilot project, HCL successfully established a WhatsApp video call through the Centre for Development of Telematics (C-DOT) from a depth of 400 metres below the surface at its Khetri Underground Mine on 24.07.2025. By integrating a 5G private network with the existing surface network, HCL enabled internet access inside the underground mine, a development that is increasingly vital for improving communication, safety, and productivity.
- The Nagpur Chapter of MEAI organized a seminar titled 'Indian Mining – Present Scenario and Future Prospective' on 25–26 July 2025 at Radisson Blu, Nagpur. A team of executives from the MCP unit presented two technical papers titled 'Operational and Environmental Achievements of Paste Fill Plant at Hindustan Copper Limited' and 'Emerging Technologies in Critical Mineral Recovery from Tailings and Mine Waste'.
- HCL was awarded the Distinction Award for implementation of Official Language in the meeting held on 25.08.2025 by Official Language Implementation Committee (Undertaking), Kolkata for the year 2024-25.
- HCL has partnered with the State Bank of India, to launch a 'Group Personal Accident Insurance Scheme' for all regular employees under its Corporate Salary Package. This landmark initiative provides comprehensive Accident insurance coverage (duty & off-duty) of ₹1 crore for all regular employee.
- HCL introduced Group Personal Accident Insurance Policy, providing coverage of Rs 20 lakh while on duty

for every contractual person engaged in the Company.

- In a significant milestone for the copper mining sector, the Rakha Mining Lease deed and Kendadih Mining Lease deed was formally executed on 19.09.2025 and 04.10.2025 respectively. These Mining Leases has been granted for a period of 20 years, marking the completion of a crucial step towards reopening and commencement of Copper Ore Production from the Kendadih Copper Mine, which holds strategic importance for the growth of copper production in the region.
- The 58th Annual General Meeting (AGM) was held in virtual mode in Kolkata on 28.09.2025.
- HCL launched e-Office on 07.10.2025, marking a significant step forward in digital governance and paperless operations, with the implementation enhancing transparency, accountability, and efficiency in office processes through a fully digital workflow.
- CMD/HCL has been honored with the Mining & Minerals Excellence Award 2025 – "CEO of the Year" at the 11th Asian Mining Congress organized by MGMI in Kolkata on 30.10.2025.
- The Rescue Team from the MCP Unit secured the Second Prize in the Turnout Drill event at the 54th Zonal Mine Rescue Competition, organized by MOIL under the aegis of DGMS and held from 12–15 October 2025 at Mansar Mine.
- The Kolihan and Khetri Rescue Teams of the KCC Unit won multiple awards at the 11th Intra Zonal Rescue Competition–2025, held from 11–13 October at Rampura Agucha Mines, HZL. The Kolihan Team secured the 1st prize in Rescue Relay, 2nd prize in FAB, and 3rd prize Overall, while the Khetri Team won the 2nd prize in Rescue & Recovery. Additionally, Shri Rishi Yadav of the Khetri Team was adjudged Best Member.



- A Walkie-Talkie based wireless communication system has been installed in the vertical shaft of Surda Mine on 29.10.2025. This system will significantly enhance safety and ensure effective communication between the cage and surface, particularly during emergencies and critical operations.
- An Indian delegation led by Shri Vivek Kumar Bajpai, Joint Secretary, Ministry of Mines, participated in the PERUMIN 37 International Mining Convention in

Arequipa, Peru from 22–26 September 2025, with HCL as the Nodal Agency and mining industry officials to explore collaboration opportunities in copper and critical mineral exploration and development in Peru and Latin America.

- HCL organized an International Seminar on Critical and Strategic Minerals for Viksit Bharat @ 2047 in Kolkata on 09.11.2025 to mark its 59th Foundation Day. The event was graced by the presence of several foreign dignitaries, diplomats, mining stalwarts, and delegates.



- The Zonal Mines Rescue Competition – 2025, organized under the aegis of DGMS, Chaibasa Region and hosted by Uranium Corporation of India Limited (UCIL), Jaduguda on 20–21 November 2025, was conducted at UCIL, Bhatin Mine, where two Rescue Teams from the ICC Unit participated, demonstrating technical excellence, discipline, and precision in mine rescue and emergency response capabilities.
- HCL signed a Contract Agreement with M/s S. K. Khetan Infraprojects Pvt. Ltd. for the Development, Operation and Maintenance of Kendadih Mine, Jharkhand, for a period of 10 years on 15.11.2025.
- A National Workshop on 'Rock Mass Classification and Support Design for Improving Stability of Workings in Metal Mines' was held at Jaipur on 28.11.2025, jointly organized by DGMS and IIT Kharagpur, with HCL acting as nodal agency.
- To strengthen its corporate identity as a united workforce, HCL has introduced a common uniform for all employees across its units and offices. This initiative reflects the Company's core values of unity, equality and projects a professional image to its stakeholders.
- HCL has launched an online payment portal, developed with the assistance of Axis Bank (a consortium banker of HCL), to streamline revenue collection from lease-based quarters and shops of the KCC unit.
- HCL achieved commendable results at the 54th All India Mines Rescue Competition (Coal & Metal) – 2025, held at Nagpur, organized under the aegis of the Directorate General of Mines Safety and hosted by MOIL Limited.

Malanjkhand Copper Project (MCP):

- 2nd Prize – Rescue & Recovery Drill
- 3rd Position – Overall Team Performance

Khetri Copper Complex (KCC):

- Overall 2nd Prize – Metal Mines
- 3rd Prize – Rescue & Recovery
- Best Captain Award

- The 32nd Mines Environment & Mineral Conservation (MEMC) Week 2024–25 was successfully observed on 08.12.2025 at Kendadih Copper Mine under the aegis of the Indian Bureau of Mines (IBM), Ranchi Region. The programme included awareness competitions on environment and mineral conservation, CSR and plantation activities and sustainable mining practices.
- KCC Unit won awards in various categories at the ceremony of the 39th Mine Safety Week under the aegis of DGMS hosted by Barsingsar NLC Lignite Mine at Bikaner: -
  - 1st prize: plant, machinery, maintenance & operation of winder,
  - 2nd prize: publicity, propaganda & awareness.
  - 2nd prize: vocational training, first aid, accident statics & control measures such as SMP & Emergency preparedness.
  - Kolihan mines won the 2nd prize in Occupational Health & safety.
  - Khetri Mine also won the 3rd Prize in the overall performance of underground metal mine.
- HCL won the IEI Industry Excellence Award "For excellence in Overall Performance in the category Engineering Manufacturing & Processing" at the 40th Indian National Congress at National Institute of Technology, Durgapur on 19.12.2025.
- A successful WhatsApp video call was conducted on 23 December 2025 from the underground mines of the Khetri Copper Complex at depths of 400 meters and 700 meters. The live interaction connected the CMD, Director (Operations), Director (Finance), Unit Head – KCC, and other senior officials. The call was enabled by extending the existing Local Area Network (LAN) from surface to underground workings, demonstrating the effectiveness of the digital communication infrastructure and real-time connectivity in deep underground mining operations.
- Embracing the latest trends and innovations in safety, the ICC Unit has introduced LED Vest/jackets designed for the underground workforce.
- The Bureau of Indian Standards is privileged to be associated with HCL as an esteemed licensee for the Quality Management System as per IS/ISO 9001:2015 and presented a memento to HCL on the occasion of its 78th Foundation Day celebration.
- During the Critical Mineral Processing Seminar organized by the Ministry of Mines, Government of India, at the India Habitat Centre, New Delhi, CMD/HCL and CMD/ RITES Ltd. signed an MoU in the august presence of Shri G. Kishan Reddy, Hon'ble Union Minister for Coal and Mines; Shri V. L. Kantha Rao, Secretary, Ministry of Mines; and Shri Dinesh Mahur, Joint Secretary, Ministry of Mines. The partnership will focus on joint exploration, extraction, refining, and production activities in India and

overseas, leveraging the complementary technical and financial strengths of both organizations to fulfil the strategic objectives outlined in the MoU.

- As part of their India visit, the Normet Group Oy Board held a strategic discussion with the CMD/HCL in New Delhi on 05.09.2025. The interaction reflected strong synergies and a shared vision between Normet and HCL, and with HCL's ambitious expansion plans and Normet's underground mining expertise, the meeting set the stage for a high-impact partnership aimed at driving innovation, enhancing productivity, and supporting India's mining ambitions through smart, future-ready solutions.
- HCL signed multiple Memorandum of Understanding (MoU) with Coal India Limited (CIL), CSIR-IMMT, Oil India Limited (OIL), Western Coalfields Limited (WCL) and NTPC Mining Limited (NML) to collaborate on the exploration and exploitation of copper and critical mineral deposits in India and abroad, along with mineral beneficiation, technology sharing, knowledge exchange, and other value-adding activities.
- HCL settled/disposed of 65 cases during January-December 2025, including four cases settled amicably and two cases resolved under the Vivad se Vishwas Scheme.

The capital structure of the Company as on 31st December, 2024 was as follows: -

a) Authorised Capital:

i)	180 crore Equity shares of ₹5/- each	- ₹ 900 crore
ii)	20 lakh Preference shares of ₹ 1000/- each	- ₹ 200 crore
	TOTAL	**- ₹ 1100 crore**

b) Issued, Subscribed And Paid-Up Capital

i) 96,70,24,020 equity shares of ₹ 5/- each ₹ 483,51,20,000

Present capacities of HCL's Mines, Smelters and Wire Rod plant are given in **Table 8.8, Table 8.9** and **Table 8.10**.

Table 8.8
Ore Milling Capacity of HCL

Location of Mines	Ore milling Capacity (million tonnes per annum)
Malanjkhand Copper Project (MCP), M.P.	2.5
Khetri Copper Complex (KCC), Rajasthan	1.8
Indian Copper Complex (ICC), Jharkhand	0.4
Total	**4.7**

Table 8.9
Refined Copper Production Capacity of HCL

Location of Smelters	Refined Metal Capacity (Tonnes per annum)
Indian Copper Complex (ICC), Jharkhand	18,500*
Gujarat Copper Project (GCP), Jhagadia	50,000*
Total	**68,500**

** Production under temporary Suspension.*

Table 8.10
Production Capacity of Wire Rod Plant of HCL

Location of Plant	Capacity (Tonnes per annum)
Taloja Copper Project (TCP), Maharashtra	60,000
Total	**60,000**

Physical performance: Physical performance details of HCL are as under in **Table 8.11**:

Table 8.11
Physical Performance of HCL

Product	Actual for the previous two years		Target for CY 2025	Actual for the CY 2025	Projection for Jan'26 to Mar' 26
	CY 2023	CY 2024			
Ore Production ('000 Tonnes)	3837	3538	4315	3601	1689
* Metal in Concentrate (MIC) (Tonnes)	25719	27125	34856	25284	16492
Refined Copper (Cathode) (Tonnes)	-	-	-	-	-
** Wire rod (Tonnes) (Tolling)	22903	19676	30000	14942	17578

** As per the business plan of the Company, Copper concentrate of MCP, KCC and ICC origin are being sold directly in the market.*

*** Production of wire rod (Tonnes) is based on tolling of 3rd Party cathodes.*

Financial performance: Financial performance details of HCL are as under in **Table 8.12**:

Table 8.12
Financial Performance of HCL

(₹ in crore)

Sl No	Details	Actual for the previous two years		Target for CY 2025	Actual for the CY 2025 (Jan'25-Dec'25)
		CY 2023	CY 2024		
1.	Turnover	1690.83	1881.56	(*)	2622.17
2.	Net Profit before Tax (PBT)	401.04	557.21	(*)	900.11
3.	Net Profit after tax (PAT)	303.24	402.3	(*)	667.15

(*) HCL being a listed Company, price sensitive data may not be disclosed. As & when financial results are published, the figures get disclosed.

SALES PERFORMANCE: Sales performance details of HCL are as under in **Table 8.13**

Table 8.13
Sales Performance of HCL

Product	Actual for the previous two years		Target for CY 2025	Actual for CY 2025	Projection for jan'26 to Mar' 26
	CY 2023	CY 2024			
Total Copper Sales (MT)	24701	23052	34856	27006	8494

8.45 Mine Expansion Schemes

The Company's strategy is to aggressively expand its mine and ore beneficiation capacities. Such a strategy would also enable the company to sustain its profitability even at significantly lower copper prices and also position it to remain a dominant copper player in the country.

The Company has plans to increase its mining capacity from current level of around 4.0 million tons per annum to 12.2 million tons per annum through expansion of existing mines, re-opening of closed mines and opening of new mines. During CY 2025, HCL has achieved an ore production of 3.60 million tonnes.

HCL carried out surface exploration drilling & underground definition drilling from 01.01.2025 to 31.12.2025 to the tune of 31368.80 meters and 16952.70 meters for enhancing copper ore reserve and resources within its mining leases. Above exploration work was funded by HCL through its own resources.

8.46 R&D Activities

- Scientific Study and numerical modelling at Malanjkhand underground Copper Mine by M/s CIMFR, Nagpur and M/s NIRM, Nagpur.
- Modelling and simulation studies for designing the ventilation system of MCP by M/s PMRC Pvt. Ltd, Dhandbad.
- Slope Monitoring Study of Malanjkhand Mine for a period of 2023 to 2026 by M/s CIMFR, Dhanbad.
- R&D work for Development of an IoT (Internet of Things) Enabled Online Monitoring and Data Analysis System for Rock Mechanics Instrumentations at Kolihan Copper Mine has been awarded to M/s IIT-Kharagpur.
- Three-Dimensional Numerical Modeling Studies for deciding stoping parameters and support system between 120 ML and 60 ML, and between 60 ML and 0 ML at Banwas Block of Khetri Copper Mine was awarded to IIT-Kharagpur.
- Subsidence Monitoring Survey of Surda Mining Lease, Kendadih Mining Lease and Rakha Mining Lease for Three (03) years.
- Study on plant capacity enhancement from 0.4 to 0.9MTPA of Ore Milling at Mosabani Concentrator plant.

8.47 Energy Conservation

- Conventional motors in continuous running equipments in all plant areas were replaced by conventional motor and motor starters with the energy

efficient VFD drive systems & energy efficient motors, to improve efficiency and reduction in energy consumption as well.

- Energy consumption is constantly monitored at the mines, plants and townships with a view to achieve overall reduction. In place of conventional lights, LED lights are installed in all five units to save energy and environment, whereas the procurement of conventional lighting fixtures has been stopped. Total Rs. 113 Lakhs have been saved at various unit by replacing conventional lights by these LED lights.
- Approximately 106.48 Lakh unit of solar electricity has been generated by the installed Solar Power Plants across various units at HCL resulting in a saving of Rs. 651.17 Lakhs at various units.
- HCL has saved electricity charges of Rs. 712.98 Lakhs approx. by taking various initiatives like reduction of contract demand, power factor improvement, TOD Rebate in Electricity Bill & introducing energy efficient equipment etc. across various units.
- "IE3 energy efficient motors" has been made the standard specification, for motor procurement, across all applications in the Units.

8.48 Harvesting Renewable Energy

- The project for design, supply and installation of solar power plant of various capacities under RESCO and CAPEX model has been carried out across HCL. Out of total 8156.5 KWp solar plant installed in HCL, 7095.5 KWp carried out under RESCO model and remaining under CAPEX mode.

8.49 Environment

- At MCP unit, mineral handling area has been provided with dust control arrangements. At primary crusher and transfer points water sprinkling system and at secondary & tertiary crushing and screening area water scrubber system is in place. Regular water sprinkling over haul road is being done through three nos. water tankers. Wet drilling is practiced to reduce fugitive emissions.
- Separate pumping and dedicated pipeline installed at MCP unit for collection and complete recycling of mine and dump Seepage water. Mine pit water is being recycled through multistage pumping arrangement and collected in recycled holding pond near concentrator plant. From the recycled holding pond it is being supplied to Concentrator plant process. Since inception the project has carried out extensive tree plantation in open areas available within and around the mine premises in consultation with expert agency i.e. Madhya Pradesh Rajya Van Vikash Nigam Limited.
- Continuous Ambient Air Quality Measuring Station (CAAQMS) has been installed at Town Administration building premises of MCP unit and the information is uploaded in MPPCB Portal live. Real Time Online Water Monitoring System installed at Chhinditola is functioning properly and the data is transmitted live on MPPCB Portal. Online flow meter with telemetry system has been installed at two different locations (a) Mine dewatering pipeline near reclamation pond, (b) Intake well pipe line near Water Treatment Plant.

- MCP unit has maintaining Zero Liquid Discharge (ZLD) System, separate pumping and dedicated pipeline installed for collection and complete recycling of mine and dump Seepage water. Mine pit water is being recycled through multistage pumping arrangement and collected in recycled holding pond near concentrator plant. From the recycled holding pond it is being supplied to Concentrator plant process. Similarly, dump seepage water at Bhimjori and Khursipar are collected in concretized sumps. Both the sumps have pumping and separate pipeline arrangement to collect and recycle seepage water to process water holding tank at Water treatment plant. From the water treatment plant seepage water is supplied to Concentrator plant for reuse in process.
- Saplings of native species are being planted in and around the Mining Lease area, backfilled and reclaimed areas, around water bodies, and along roads, etc. of MCP unit.
- 100% of Mine discharge water/STP treated water at KCC unit is getting recycled in the system by using it in the mineral processing plant. The air borne dust during various mining operations is regularly suppressed by proper water sprinkling arrangements. To control fugitive dust emissions in crusher operations water based misting control system has been trailed in crusher operations and procurement is in process. Water spraying system on conveyor belt has been installed and effective operation of Rotocyclone has been implemented in concentrator plant for control of dust. Milli Second delay detonators are used in blasting to control noise & ground vibration and to get better fragmentation. Wet drilling is practiced invariably for reducing the generation of dust during drilling operation. To increase recovery water discharged through tailing, feasibility study was awarded to M/s Engineers India Limited, New Delhi. Draft report received in Dec.,25. It will increase the recovery of water from discharged tailing.
- A Monsoon Plantation Drive was conducted in the KCC Unit, during which 8,500 saplings were procured and planted in the mines and township areas, and also distributed to nearby villagers.
- To reduce dependence on fresh water for beneficiation plant operations, an MoU has been signed with Khetri Nagar Palika for the supply of 1.2 MLD of treated sewage water. This initiative will significantly reduce the fresh water footprint of KCC, and infrastructure development, including a pumping station and pipeline laying, is currently in progress.
- Ambient Air, Noise and Effluent Monitoring has been carried out at ICC unit periodically through JSPCB web portal. Desiltation of Mosaboni pond has been carried out to enhance the water table. Telemetry based water flow meter has been installed at Surda Mine to check the ground water abstraction. Revamping of STP (Sewage Treatment Plant) rotors for treatment of domestic sewage effluent.
- Under the ***Zero Carbon Emission*** Initiative programmed of Jharkhand State Pollution Control Board (JSPCB), HCL has provided 85 nos Teak wood

saplings among the households whose Geo-Tag has been completed and managed by Plantation software mapping system as created by JSPCB. 3400 nos. local growing tree saplings planted near Surda Mining lease area and Kendadih Mining lease area. Distribution of local growing 5000 nos. of tree sapling among the local people. Construction of Road at village Durgabasti and Dhapua of Surda Mine.

- TCP unit has comprehensive effluent treatment system consisting of primary, secondary, and tertiary treatment and being operated continuously to achieve the quality of the treated effluent as per Maharashtra Pollution Control Board (MPCB).
- TCP unit is a member of 'Common Effluent Treatment Plant' (CETP) and 'Mumbai Waste Management Limited' (MWMS) for disposal of treated effluent and ETP sludge.

8.50 MoU Ratings Achieved By HCL is given in Table 8.14

Table 8.14

Sr.No.	FY year	Rating
1	FY 2020-2021	Very Good
2	FY 2021-2022	Good
3	FY 2022-2023	Good
4	FY 2023-2024	Excellent
5	FY 2024-2025	Very Good

8.51 Reserves & Resources

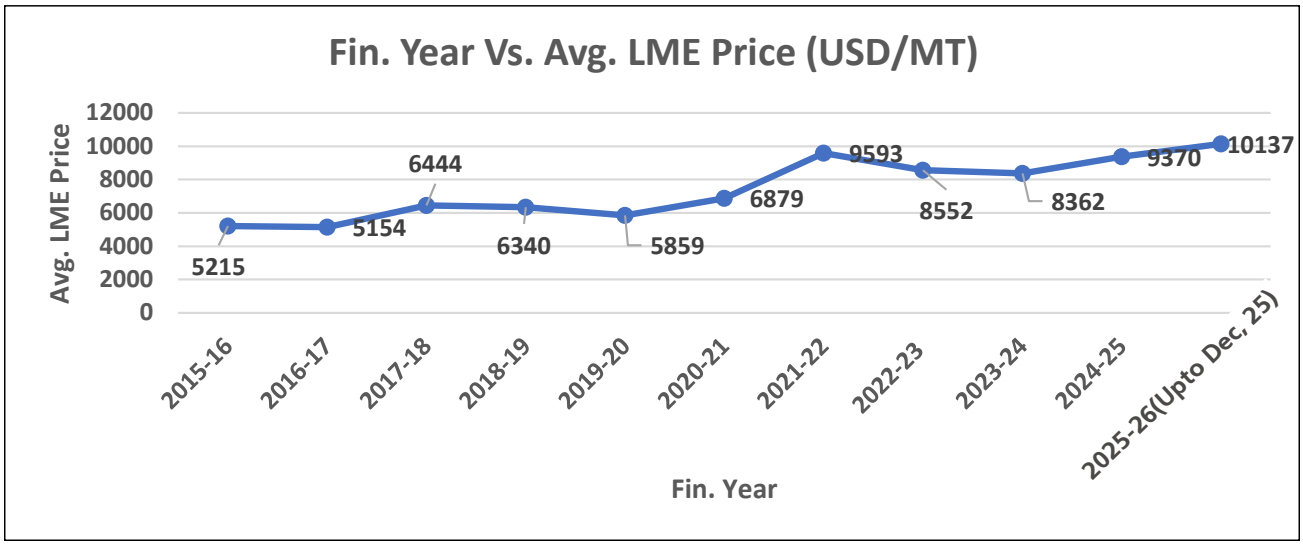
- India has very limited known reserves of copper ore exploitable for copper production. The total reserves/resources of copper ore in the country as on 1.4.2020 as per NMI database based on UNFC system are estimated at 1.66 billion tonnes/ 1660.87 million tonnes with about 12.20 million tonnes of copper metal. Of these, 163.89 million tonnes (9.87%) fall under 'Reserves category' while the balance 1.50 billion tonnes (90.13%) are placed under 'Remaining Resources' category.
- Rajasthan is credited with 867.85 million tonnes ore (52.25%) containing 4.63 million tonnes of copper metal, Madhya Pradesh 386.66 million tonnes ore (23.28%), Jharkhand 251.46 million tonnes ore (15.14%), and the rest 9.33% are accounted for by other states namely Andhra Pradesh, Gujarat, Haryana, Karnataka, Maharashtra, Meghalaya, Nagaland, Odisha, Sikkim, Tamil Nadu, Telangana, Uttarakhand and West Bengal (As per Indian Mineral year book 2023). India's share of world reserve is around 0.22% only. According to United States Geological Survey (USGS), copper reserves amount to 1000 million tonnes (Mt) of copper According to the United States Geological Survey (USGS), copper reserves amounted to around 980 million tonnes (Mt) in 2024. (The World Copper Factbook 2025). Globally, Chile has the largest reserves of copper followed by Australia, Peru, Russia, Mexico, USA, Congo, Poland, China are the other countries.
- The undiscovered totals for porphyry and sediment-hosted deposits are 3,100 million metric tons and 400 million metric tons respectively, resulting in a global total of 3,500 million metric tons of copper. With identified copper resources estimated at 2,100 million metric tons, total copper resources (undiscovered + identified) are estimated at 5,600 million metric tons (Source: The World Copper Factbook

2025). HCL holds around two-fifths of the copper ore reserves and resources in India with an average grade 0.88%. As on 01.04.2025, HCL has reserves (proved & probable) of about 2.05 million tonnes in terms of copper metal and total resources (reserves and resource) of 6.75 million tonnes in terms of copper metal (i.e. 767.36 million tonnes of ore with average grade of 0.94% based on UNFC system).

8.52 Price of Copper

- The price of copper is linked to London Metal Exchange (LME) price. The price of MIC is derived based on the LME price after adjustment of ruling TC/RC (Treatment & Refining Charge). The TC/RC is market driven dynamic parameter which depends on supply and demand of copper in the international market.

The year wise trend of average LME price per tonne of copper is indicated below:



- HCL is the only Company having captive mines in India, whereas private producers have to depend on import of copper concentrate or buy from HCL to operate their smelter & refining plants and their profitability is dependent on the international variation in Treatment Charges and Refining Charges but they offset the risk of LME copper price volatility through hedging.

8.53 Copper Industry in India

- Copper finds widespread use in a wide range of application in all major sectors namely, construction, electric & electronic products, industrial machinery & equipment, transportation equipment & consumer and general products.

- At present, the demand for copper minerals in the country for primary copper production is met through two sources i.e. copper ore mined from indigenous mines and imported concentrates. The indigenous mining activity among the primary copper producers is limited to only Hindustan Copper Limited (HCL). The other primary copper producers in the private sector import the required mineral in the form of concentrate.

- Currently, three major players dominate the Indian copper industry. Hindustan Copper Limited (HCL) in Public Sector (Annual Refining Capacity: 0.685 lakh tonnes), M/s Hindalco Industries Ltd. (Annual Refining Capacity: 5.00 lakh

tonnes), M/s Vedanta Ltd. in private sector (Annual Refining Capacity: 2.16 lakh tonnes), and M/s Kutch Copper Ltd. In private sector (Annual Refining Capacity: 5.00 lakh tonnes) having current total installed refined copper capacity in the country is 12.85 lakh tonnes.

Capacity & Production of cathode is given below in **Table 8.15 :**

Table 8.15

Commodity	Installed Capacity (Lakh tonnes)	Production during CY 2024 (Lakh tonnes)	Production during the period CY 2025 (Upto Oct'25) (Lakh tonnes)
a) HCL	0.685	-	-
b) Vedanta Ltd.	2.16	1.07	1.42
c) Hindalco Ind. Ltd. (Unit: Birla Copper)	5.00	3.33	3.59
d) Kutch Copper Ltd.	5.00	0.08	0.333
Total >>>	**12.85**	**4.48**	**5.343**

#Source: Monthly Summary on Non – Ferrous minerals & Metals, Ministry of Mines

8.54 Refined Copper Consumption

- The Indian demand is expected to be strong on the back of improved outlook for Industrial and infrastructure growth. The government's thrust on power sector, smart city, housing for all, ambitious plan of harnessing renewable energy resources, electric vehicles, Infrastructure development, Atma nirbhar Abhiyan and Make in India spells good news for copper industries. The per capita copper consumption in India is expected to increase from the current level of 0.6 Kg to 1 kg in coming years. The average per capita copper consumption in the world is 3.2 kg.
- Copper is essential to EV technology and its supporting infrastructure, and the increase in the electric vehicles in the market will have a substantial impact on copper demand.
- If India's per capita copper consumption moves towards the per capita copper consumption levels in the rest of the world, India's copper market has the potential for significant growth.
- The global demand for copper continues to grow, world refined usage has more than tripled in the last 50 years, thanks to expanding sectors such as electrical and electronic products, building construction, industrial machinery and equipment, transportation equipment, and consumer and general products.
- Demand of copper is increasing due to progress of implementation of electric vehicle worldwide with associated charging infrastructure, decarbonization policy push by US and EU and more and more emphasis on green energy to mitigate climate change. The antimicrobial properties of copper are finding newer application in view of global pandemic situation. Copper being the green metal has been considered as a core driver for moving

the global economy toward net zero emissions. Copper has been termed as new oil.

- As the global economy moves toward net zero carbon emissions through energy transition, the role of Copper remains pivotal as the most efficient conductive material, indispensable for capturing, storing and transporting the green energy. Hence significant rise in demand of copper has been predicted on account of thrust on low carbon economy.

8.55 INFORMATION TECHNOLOGY (IT) INITIATIVES

The following IT initiatives, spanning all operational areas taken up by the Company for bringing about dynamism, transparency and business efficiency, are being maintained and updated. Major initiatives are:

- Role of IT in HCL's Business Functions: Information Technology (IT) is a cornerstone of HCL's business operations, playing a pivotal role in driving dynamism, business efficiency, transparency, and innovation across the organization.
- Digital enablement: Since 2008, HCL has undertaken a digital transformation journey, spearheaded by the implementation of Enterprise Resource Planning (ERP). HCL has upgraded its Enterprise Business Suite (EBS) to R12.2.12. This comprehensive system integrates all core business functions, including Human resources, Finance & Control, Sales & Distribution, Material Management, Manufacturing, Enterprise Asset Management. The ERP system ensures uniformity in processes, enhances information availability, and fosters transparency, empowering informed decision making. Additionally, HCL has made significant strides in digitalizing its Provident Fund Ledger, implementing Township Billing solution. Audited financial results are being finalized within scheduled planned time.
- Internet & CCTV access inside Under Ground mines: Internet connectivity and CCTV surveillance access have been successfully extended up to 400 meters below surface level and 700 meters inside the underground workings of Khetri Copper Complex (KCC). The facility enhances real-time monitoring, communication, and safety management within underground operations.
- Employee self-service: HCL has prioritized enhancing employee experience through ERP self-service applications. Employees can conveniently manage various aspects of their work- life, including payroll, income tax, appraisal, leave, monitoring PF balances and submitting Property return. On-Line Performance Management system of Executive in Grade E-0 to E-7 has already been implemented and is functioning smoothly.
- Digital enablement for stakeholder: Recognizing the importance of engaging stakeholders, HCL has implemented online Bill Tracking and payment system through which supplier can track their status of Invoices and payment released against their Invoices as on date against respective contracts on HCL portal.
- Procurement/EPS: HCL's e-procurement of goods & services is seamlessly being conducted through platforms like

ERP, Central Public Procurement (CPP) Portal and Government e-Marketplace (GeM). This improves transparency and efficiency in Enterprise Procurement System.

- On-line Recruitment: On-line recruitment module is developed and is in operation at HCL. It is well-integrated with payment gateway to accept the online applications for recruitment. Through the module HCL can operate multiple online recruitment processes in parallel.
- VIDEO Conferencing: Video Conferencing solution is implemented across HCL to enable stakeholders interacting on a real time basis. This has helped in improving efficiency and enabling faster decision taking along with reducing travel expenses. Also, Executives are facilitated to interact with external agencies from any place.
- Prohibition of Insider Trading (PIT) implementation: The application captures the data pertaining to price sensitive information according to SEBI regulations. It is hosted at HCL's Data Centre located at our Kolkata Corporate Office. The application stores the data in untampered form along with time stamps on real time basis.
- Contractual employee PF implementation: HCL is maintaining & managing its Contractual employee PF transactions and balances in ERP which shows its commitment towards "SABKA SAATH, SABKA VIKAS".
- Anti DDOS (Distributed Denial of Service) facility for ILL (Internet Lease line): HCL has implemented cloud Anti DDOS facility with all ISPs (Internet Service Providers) for an extra layer of protection against outside attacks.
- Upgrade of firewall: HCL has upgraded its firewall to the latest next generation firewall (NGFW) having greater computing power and enhanced security features in Apr-2023. This has enabled enhanced perimeter level security on the HCL Network and provides more secured environment to work.
- IT Infrastructure: To ensure uninterrupted service delivery to its stake holders, HCL has invested in robust IT infrastructure, including Primary Data Center located at Corporate Office, Kolkata, equipped with server virtualization technologies, and hosts all Centralized Applications including ERP, E-Mail solution, Video Conferencing and PIT. HCL's unit are connected through MPLS VPN network.
- Dual MPLS circuits implemented for connecting plants and offices to the Corporate Data Center, ensuring uninterrupted access to applications and services. Gigabit Ethernet LAN at each plant location with next generation Firewall (NGFW) implemented at Corporate Office, ensuring network security and integrity. Multichannel video conferencing solution facilitating effective communication across all business units.
- Cyber Security: HCL prioritizes data security and compliance, with the Data Centre secured by Next Generation Firewall, Anti-Spam Filter (mail gateway), Robust IT security measures, including network gateway and endpoint security solutions, anti DDOS Internet Lease Line, ensure protection against cyber threats. Regular audits and adherence to government-mandated cyber security guidelines

uphold the integrity and confidentiality of organizational data.

- Up-gradation and Migration of SAN Storage: HCL has recently done up-gradation and migration of SAN Storage placed in its data center from 38 TB to 80 TB to support data growth, improve performance, uninterrupted operations, and ensure scalability for future requirements. All data has been migrated and verified, system stability has been ensured, and no operational issues have been observed post-implementation.
- Implementation of Digital Board Meeting Solution: HCL has implemented Digital Board meeting software solution which offers an easy-to-use, secure, and paperless experience for board and committee meetings. The software helps board members, management teams, corporate secretary, and meeting administrators to collaborate more efficiently for critical board meetings. Leadership collaboration becomes more productive with Board Meetings Software Solution.

  The main functionality of the software are:

  - ➢ End-to-end agenda management solution with features to prepare, create, collaborate & finalize meeting documents – all in one solution.
  - ➢ Cross-platform compatibility gives a seamless experience on iOS, Android, and Windows, among other systems.
  - ➢ Flexible voting and survey features for board meeting schedule performance evaluation
  - ➢ Access meetings documents on the go, securely and easily
  - ➢ In-built workflow management solution for online approvals of documents along with integrated digital signature
- E-Office: To comply with the Govt.'s mission to move to a Digital India, HCL has implemented e-Office (eFile) version hosted on CSC SPV (Common Services Centres a Special Purpose Vehicle), a Govt. of India Data Centre cloud. E-Office is one of the key IT projects of National Informatics Centre (NIC), aimed at improving internal efficiencies in an organization through electronic administration leading to informed and quicker decision making, which in turn results in better public service delivery. It is a complete digital work place solution for Government offices and is based on Central Secretariat Manual of eOffice Procedure (CSMOP), formulated by Department of Administrative Reforms and Public Grievances (DAR&PG). It provides a convenient way for officials to access information related to every aspect of their working and knowledge sharing by presenting a single gateway to information and services. It enhances efficiency, transparency, &accountability as well as helps in fast tracking government decision making. It also promotes less paper office with greater collaboration and knowledge sharing.

Transparency

- ➢ Accessibility & availability of file movement trial
- ➢ Set procedures/norms followed
- ➢ No tampering with data

Efficiency

- Speed in decision making
- Error free output
- Optimum utilization of resources/ space

Effectiveness

- Result oriented
- Quality of output
- Cost-effectiveness
- Culture of discipline

Accountability

- Monitor the file Movement
- Traceability of decisions
- Record Electronic Foot Print

Employee Convenience

- Easy to use
- Easy to retrieval of files/letters-advanced search
- Remote functioning

- License to Operate (LTO) portal in ERP: The LTO portal has been developed in-house to streamline and strengthen HCL's compliance framework by eliminating reliance on spreadsheets, emails, and manual checklists. It serves as a centralized digital repository encompassing regulatory authorities, rule types, descriptions, particulars, and essential documents—all on a single unified platform. Key features such as automated reminders and alerts, a central versioning model, smart document linkage, and a comprehensive audit trail enable efficiency, accuracy, and accountability at every level of the compliance process. By integrating automation with transparency, the License to Operate system empowers teams to move from reactive compliance to proactive governance. With this innovative step, Hindustan Copper Limited continues its journey toward excellence through technology, reinforcing its vision of building a more compliant, efficient, and future-ready enterprise.

- Online Vigilance Clearance System in ERP: HCL has developed an in-house Online Vigilance Clearance System using Oracle ERP modules and Oracle Form Builder to make the clearance and NOC process simpler, faster, and more reliable. Unit users submit a clearance form with the required documents, which moves through local approvals and then seamlessly flows to Head Office, while Head Office users can also submit and process requests directly through their own approval chain, all from a single, easy-to-use forms. By automating IPR and property checks, standardizing NOC validations, generating digital NOCs, sending timely status alerts, and maintaining a complete audit trail, the system removes manual delays, minimizes errors, improves transparency and compliance, and ensures that all development, data, and support remain fully within the organization.

- Bank Payment Gateway Integration for Town Admin module in ERP: The Bank Payment Gateway integration for the Town Admin module in Oracle ERP has been implemented to shift town-related bill payments from an earlier offline, manual process to a fully online system. This allows town residents to pay their bills easily without visiting offices, while officials can track payments in real time from a single system. The integration reduces queues, paperwork, and cash handling, minimizes errors and delays, improves transparency and accountability, and

ensures faster billing, collection, and reconciliation making the overall process more convenient for both citizens and the administration.

- ERP Email Notification Services and User login Assistance in ERP: HCL has recently in-house configured and enabled email notification services in ERP for leave management, procurement processes. User login assistance have also been successfully implemented and are fully operational ensuring timely alerts, improved workflow efficiency, and effective user support.

8.56 SUSTAINABLE DEVELOPMENT

HCL adheres to the sustainable development requirement as per the guidelines and policy of the Department of Public Enterprises (DPE). Following projects are implemented under sustainable development plan for the year 2025:

1. MCP has commissioned a 3.0 MTPA paste fill plant employing state-of-the-art paste filling technology to backfill underground mine voids using a mixture of tailings (approximately 90%) and binder (approximately 10%). The binder is prepared using ground granulated blast furnace slag (GBFS) and cement. The plant produces a non-segregating paste that is pumped into underground stopes to enhance structural stability and mine safety. This facility supports sustainable waste management by utilizing tailings, reducing surface disposal requirements, and minimizing the project's environmental footprint. In addition, the paste fill plant enhances water recovery through efficient thickening and filtration, enabling recycling and reuse of water and promoting responsible resource management.
2. Significant progress has been done towards implementation of roof top/ ground mounted solar plant across the organization. Total 8156.5 KWp solar plant implementation completed till date under RESCO & CAPEX model. Additional 800 KWp solar plant at KCC, 350 KWp solar plant at ICC & 250 KWp solar plant at TCP are in proposed stage.
3. Covering top soil through plantation at the waste rock dump. As a waste to wealth initiative, MCP unit is disposing waste material for auxiliary purposes.
4. Waste management initiatives including waste reduction.
   - Repaired MSRL pipes (used in main tailing disposal lines) and very old cyclone header pipes are being used in and around open discharge area in Tailing dam of MCP unit instead of procuring new MS ERW pipes. Recycling of sand filter drain water in Water Treatment Plant into process water by new submersible pump.
   - Minimum amount of waste is generated in underground mine development activities at KCC unit. Most of the waste generated is disposed in underground void stopes and a minimum amount is hoisted to surface for disposal in surface waste dump yard fulfilling the statutory requirements.
   - An MoU was signed with the Central Water Commission (CWC) and the Central Soil and Mineral Research Station (CSMRS) in October 2021 for consultancy and design to raise the height of the existing tailings dam by 7

meters, at KCC unit. The height increase provides an additional storage volume of approximately 98 lakh cubic meters, equivalent to about 12.5 years of extended life of the tailings dam. As per the drawings and design of the embankment prepared by CWC, the height enhancement work has been completed.

- 118.232 kg of Bio Medical Waste of ICC (W) Hospital is being safely disposed at authorized TSDF (Treatment Storage and Disposal Facility) M/S Adityapur Waste Management, Jharkhand through M/s Agiltech QR code system as recognized by JSPCB. Solid waste management seminar has been attended by HCL/ICC officials on topic "Technological Advancements in Waste Management: Challenges and Opportunities (TAWMCO – 2025)" on December 5-6, 2025, at IIT (ISM) Dhanbad.

5. Water conservation by recycling of mine water and adoption of rain water harvesting system across the Units has been implemented. Rain water harvesting at 16 locations of KCC unit has been completed. 'Tamra Jheel' of 40,000 cum capacity at MCP unit has been developed in the township as rain water harvesting system apart from the Admin Building, Hospital, R&D and Geology Buildings, and other MCP premises, to effectively capture and conserve rainwater. The system is designed to collect runoff water from surrounding areas, allowing it for underground recharge. One roof top rain water harvesting system has been made each at Surda Admin building and at Rakha Mine agent office of ICC unit.

8.57 Mineral Exploration And Consultancy Limited (MECL): Pioneering Mineral Exploration & Consultancy with Unmatched Expertise

Introduction

Mineral Exploration and Consultancy Limited (MECL), established in 1972 under the Ministry of Mines, Government of India, has been a leading and trusted institution in India's mineral exploration sector for over five decades. MECL provides scientific, technical and consultancy-driven solutions across the full spectrum of mineral exploration and geoscientific services.

MECL's core services include geological mapping, geophysical surveys, exploratory drilling, resource estimation and mineral consultancy. The organisation has strong expertise in bulk minerals such as iron ore, bauxite, limestone and manganese; energy minerals including coal and lignite; and precious and base metals such as gold, copper and lead–zinc.

In recent years, MECL has expanded its activities into critical and strategic minerals, including lithium-bearing pegmatites, rare earth elements, graphite, PGE-associated systems and other minerals identified under the national critical minerals strategy. This diversification supports India's resource security and the development of clean energy, advanced technologies and future-oriented industries.

MECL's consultancy services also support mineral block auctions, resource evaluation for emerging mineral sectors and geo-technical studies, contributing to informed decision-making and efficient project development.

The organisation is supported by strong in-house capabilities, including R&D facilities,

an Instrumentation Centre and specialised units for the manufacture, repair and maintenance of drilling and geophysical equipment, ensuring quality, reliability and timely execution. Operating across diverse geological terrains of the country, MECL combines advanced technology with domain expertise to deliver precise, cost-effective and customised solutions.

With these integrated capabilities, MECL functions as a trusted technical partner to the Government and industry, delivering exploration and consultancy services aligned to the specific requirements of each project.

Core Services and Capabilities

Being an exploration and consultancy company, Mineral Exploration and Consultancy Limited (MECL) provides a wide array of services, which include:

A. Mineral Exploration Services:

- **Mineral Targeting and Site Selection:** Utilizing remote sensing and GIS technologies, MECL excels in identifying high-potential exploration zones, ensuring optimal resource discovery through data-driven decisions.
- **Ground Exploration and Core Drilling:** Equipped for drilling depths up to 1,500 meters, MECL ensures thorough exploration with precise geological sampling, laying the foundation for accurate resource estimation and analysis.
- **Advanced Geological Modeling and Visualization:** Using advanced geological software and 3D modeling tools, MECL delivers accurate visualizations and detailed analysis of mineral deposits, enhancing both exploration efficiency and resource management strategies.
- **Geophysical Investigations:** Employing advanced borehole geophysics and surface geophysical techniques, MECL offers detailed subsurface profiling, aiding in precise mineral deposit identification and exploration planning.
- **Comprehensive Mineral Analysis:** Our state-of-the-art chemical laboratories provide reliable, high-precision testing for a broad range of minerals, including energy and non-energy types, ensuring quality and consistency in every analysis.
- **Digital Core Scanning Technology:** MECL utilizes non-destructive, high-resolution core scanning technology, enabling in-depth analysis of mineral composition and structure for enhanced resource evaluation.

B. Diversified Services:

- **Technical Consultancy for Critical Mineral Auctions:** MECL offers expert consultancy services for critical mineral auctions to Ministry of Mines through the complexities of the auction process, from technical assessment to bidding strategy.
- **Manufacturing and Maintenance of Drilling Accessories:** MECL's in-house manufacturing unit specializes in the production and supply of high-quality drilling accessories, ensuring operational reliability and efficiency in the field.
- **Geophysical Instrumentation Services:** Our dedicated Instrumentation Centre provides comprehensive repair, calibration and

maintenance services for geophysical instruments, ensuring that exploration equipment remains in optimal condition for accurate and reliable results.

Human Capital and Workforce Development

MECL recognizes its employees as the cornerstone of sustained growth, operational excellence and technical leadership in the mineral exploration domain. We continue to strengthen our human resource practices to build a competent, future-ready workforce capable of delivering high-quality outcomes across diverse geological terrains and multidisciplinary projects.

Strategic Workforce Management

MECL considers its employees as the foundation of sustained growth, technical leadership, and operational excellence in mineral exploration. Company, continuously strengthens human resource practices to build a competent, future-ready workforce capable of delivering high-quality outcomes across diverse geological terrains and multidisciplinary projects.

During the year, the Human Resources Division focused on recruitment, capability enhancement, and talent development initiatives to ensure a robust and agile workforce. **This year, till December, 2025, MECL recruited 22 executives and 35 non-executive personnel, and inducted 14 Young Professionals**, expanding the talent pipeline and fostering skills aligned with corporate needs.

- Other recruitment activities included:

Onboarding of paid interns, CMAs and apprentices.

Workforce separation trends across regular and other categories were closely monitored to ensure smooth operations and organizational efficiency.

Specialized training programmes were conducted in core drilling operations, geophysical and geochemical investigations, AI-driven data analytics, advanced instrumentation, safety management, contract administration and project management. Structured leadership development initiatives were also implemented to prepare high-potential employees for critical technical and managerial roles.

Employee Wellbeing and Workplace Excellence

MECL promotes employee wellbeing, workplace harmony, and inclusivity. The Corporation has embraced digital HR tools, including e-office systems, online performance appraisal and ERP-based solutions, enhancing transparency, accountability, and workflow efficiency.



Leadtalk : A leadership Development Program



Annual Project Manager Meet : 2025

8.58 Physico-Financial Performance

Performance during FY 2025-26

During 2024–25, MECL delivered strong financial and operational performance, recording a revenue of ₹406.45 crore against ₹343.08 crore in the previous year and achieving a PAT of ₹84.09 crore, reflecting sustained financial discipline. The Company's paid-up capital stood at ₹119.55 crore and reserves at ₹670.34 crore as on 31 March 2025. A final dividend of ₹212 per equity share amounting to ₹25.34 crore equivalent to 30% of PAT has been given to Government of India contributing to the nation's exchequer and reinforcing MECL's profitability as a responsible public sector entity.

Operationally, MECL completed 4.51 lakh meters of exploratory drilling and 3.26 lakh meters of borehole geological profile logging across 53 projects covering critical minerals, coal, base and precious metals, bulk minerals and gemstones. Under the National Geophysical Mapping Programme, 80 toposheets were generated in collaboration with the Geological Survey of India. MECL also demonstrated its global technical capability through the successful execution of a non-invasive exploration project in Catamarca, Argentina, under its JV KABIL. Domestically, the Company strengthened collaborations with Oil India Limited and GSI, supported the critical mineral auction process for 56 blocks (with 24 blocks successfully auctioned), and secured NMEDT funding for establishing a National Facility with advanced analytical instrumentation. MECL's learning and capacity-building initiatives were acknowledged nationally, with the Company being recognized as the Top Performer during the National Learning Week (October 2024) by the Hon'ble Minister of Mines. Also, Women officials of MECL were awarded Women Achiever Award by the Hon'ble Minister of Mines.

Since inception, MECL has completed over 1700 projects /geological report and established 220 billion tons of resources in various mineral deposit till December, 2025.

Key Achievement during since FY 22-23 to FY 25-26 (up to December, 2025)

Table 8.16

Particulars	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26 (up to Dec,25) **
Total Exploration Reports	40	44	53	36
Borehole Geophysical Logging (lakh meters)	1.04	2.31	3.26	2.03
Geological Mapping (Sq. km.)	1246	1610	794.25	1635
Chemical Analysis (lakh samples)	0.93	1.07	0.93	0.51
Exploratory Drilling (lakh meters)	2.35	3.49	4.51	3.17
Total Revenue	**230.03**	**343.08**	**406.45**	**268.95**
Profit After Tax	**13.94**	**79.09**	**84.10**	**49.39**

***: Provisional*

8.59 MECL Achievements during the year

MECL has demonstrated consistent growth in both operational and financial performance from FY 2022–23 to FY 2025–26 (up to December 2025). Operationally, exploratory drilling increased from 2.35 lakh metres in FY 2022–23 to 4.51 lakh metres in FY 2024–25, with 3.17 lakh metres already completed in FY 2025–26 (up to December 2025), reflecting steady progress across ongoing projects. Borehole geophysical logging, geological mapping and Geological activities have also strengthened over the period, with 53 Exploration reports prepared in FY 2024–25 and 36 reports completed in FY 2025–26 (up to December 2025).

Financial performance shows a strong upward trajectory. Total revenue increased from ₹230.03 crore in FY 2022–23 to ₹406.45 crore in FY 2024–25, while Profit After Tax (PAT) rose from ₹13.94 crore to ₹84.10 crore. During FY 2025–26 (up to December 2025), the Company has recorded a gross revenue of ₹268.95 crore and a PAT of ₹49.39 crore, demonstrating sustained financial strength and operational efficiency.

Project acquisition and execution also remained robust. MECL secured 23 NMEDT-funded work orders valued at ₹72.69 crore in FY 2025–26 (up to December 2025). Additionally, 6 projects with estimated cost of ₹15.95 has been approved by PSC. Further MECL successfully Completed baseline data generation at 24769 stations across 108 toposheets under NGPM assignments till December 2025 for GSI reinforcing its position as a reliable and technically capable exploration organization.

Capacity augmentation initiatives further supported performance improvement. During the year, MECL inducted advanced equipment including a LIBS Core Scanner, Gamma Ray Spectrometers, a borehole geophysical logging system, a 120-electrode Multi-Electrode Resistivity Imaging System, and advanced machinery for the Manufacturing Centre and Chemical Laboratories. These investments enhanced MECL's technical capability, data quality, and operational efficiency. Overall, this period reflects MECL's strengthening role as a technologically advanced, financially resilient, and operationally robust institution supporting India's mineral exploration and resource security objectives.

Projection for FY 2025–26 (up to March 2026)

Based on ongoing exploration and operational activities, MECL anticipates continued progress during the final quarter of FY 2025–26. Provisional estimates indicate that exploratory drilling, borehole geophysical logging, geological mapping, and chemical analysis will further contribute to the Company's operational output. Correspondingly, total revenue and Profit After Tax (PAT) for the period January–March 2026 are expected to strengthen the financial performance recorded up to December 2025. The detailed provisional figures for this quarter will be finalized and included in the Annual Report once actual data becomes available:

- **Exploratory Drilling (lakh metres): 4.69**
- **Borehole Geophysical Logging (lakh metres):** 3.40
- **Geological Mapping (Sq. km.):** 1900
- **Chemical Analysis (Thousand samples):** 75
- **Total Revenue (₹ crore):** 361.25
- **Profit After Tax (PAT) (₹ crore):** 84.00

Important Exploration Initiatives:

- Commenced Exploration for REE in Kachh and Banaskantha District, Gujarat.
- Commenced lignite exploration at Nichahom Block, Kupwara (UT of J&K) a significant milestone towards supporting energy diversification in the Jammu & Kashmir region.
- Commenced fertilizer mineral exploration in Bikaner, Rajasthan.
- Molybdenum exploration in Harur–Uttangarai belt, Tamil Nadu.
- REE & Associated Minerals exploration in Assam.
- Critical and Polymetal exploration in Uttarakhand.
- High priority Scientific Drilling to Address CO Emissions in BCCL Area, Dhanbad, Jharkhand.
- Exploratory drilling for the assessment of critical minerals at the tailing pond of the Khetri Copper Complex, Rajasthan.



Exploration of Lignite in Nichahom Block, Kupwara, J & K



Auger drilling for REE exploration in Gujarat.



High priority Scientific Drilling to Address CO Emissions in Jharkhand



Hon'ble Union Minister, Shri Arjun Ram Meghwal visited Bikaner potash Exploration Site

Quality Certifications: During this year, MECL Conferred with international certifications—

- ISO 9001:2015 (Quality Management System),
- ISO 14001:2015 (Environmental Management System),
- ISO 45001:2018 (Occupational Health & Safety Management System).

International Collaboration:

- During FY 2025–26, MECL further advanced its international engagement strategy through strategic collaborations aimed at strengthening India's access to critical minerals and enhancing global geoscientific partnerships.
- MECL continued its active participation in Khanij Bidesh India Limited (KABIL) a joint venture mandated to identify, acquire, develop and secure critical mineral assets abroad. Through KABIL-led initiatives, MECL has been contributing technical expertise for overseas mineral evaluation, project assessment and due-diligence studies in priority geographies.
- As part of these efforts, MECL supported ongoing cooperation with the Government of Catamarca Province, Argentina, under existing MoUs for exploration and development of lithium and other strategic minerals.
- In parallel, MECL, in collaboration with the Geological Survey of India (GSI), commenced field investigations for geological mapping in Zambia, further extending India's geoscience footprint in Africa and fostering avenues for knowledge exchange, capacity building and future resource development.

Business Development and Commercial Partnership

Through its business development initiatives, MECL has leveraged its domain expertise, technological capabilities and strategic partnerships to steadily expand its presence across India's mineral exploration landscape and beyond. By integrating advanced exploration techniques with competitive techno-commercial offerings, MECL has positioned itself as a trusted partner for a wide spectrum of public and private sector organisations. The current portfolio under MECL's ambit comprises a diverse range of assignments with premier clients across central and state agencies as well as public sector undertakings, reflecting sustained demand for its services and growing institutional confidence in the organisation

A. Strategic Memorandums of Understanding (MoUs)

1. Ongoing MoUs

- Odisha Mineral Exploration Corporation Limited (OMECL)
- Central Mine Planning and Design Institute (CMPDIL)
- Directorate of Mines & Geology, Govt. of Goa (DMG, Goa)
- Directorate of Geology & Mining, Madhya Pradesh (DGM, MP) and Madhya Pradesh State Mining Corporation Limited (MPSMCL)
- Directorate of Geology & Mining, Assam (DGM, Assam) & RITES Ltd.
- Hindustan Copper Limited (HCL)
- National Mineral Development Corporation Limited (NMDC)

2. New MoUs and Agreements

- **Provincial Government of Catamarca, Argentina –** Mineral exploration project execution in Catamarca.
- **Oil India Limited –** Support in exploration of critical minerals and subsequent development.
- **GSI (NR, CR & ER) –** Ground

gravity and magnetic survey, data processing, and technical reporting.

- **NLCIL –** Supplementary MoU for mineral exploration support.
- **IIT Bombay –** Principal technical collaboration in mining and exploration.
- **Indian Bureau of Mines (IBM) –** Standard operating procedures for geochemical analysis and quality management.
- **MECON Ltd. –** Cooperation in mining and mineral sector.
- **CSIR-National Metallurgical Laboratory (CSIR-NML) –** Beneficiation and processing of coal and other mineral projects.



MoU with Catamarca Province, Argentina



MoA with GSI



MoU with OIL



MoU with NML -CSIR

B. Diversified Business Activities

- **Support for Critical Mineral Auctions –** Assisting government in preparation and execution of upcoming critical mineral auctions.
- **Geophysical Surveys –** Conducted ground geophysical surveys for fault delineation at Mungoli Nirguda opencast coal mine, WCL.
- **Equipment Support Services –** Repairing geophysical loggers for South West Pinnacle operations.
- **Referee Laboratory Services –** As a QCI-recognized referee laboratory, MECL analyzed 9,223 coal samples (Jan–Nov 2025) for government and private agencies.
- **Collaboration with GSI –** Supporting

baseline geological data collection under the National Geochemical Mapping Program (NGPM).

- **Technical Support to State DMGs –** Assisting with mineral auctioning regimes across India.
- **International Collaboration –** Joint mapping exercise in Zambia under Phase-I Geological Mapping/ Exploration in collaboration with GSI.
- **Exploration License Auction Support –** Participating in EL auction-related technical activities.

C. Exhibitions and Public Engagements

During FY 2025–26, MECL actively showcased its technological expertise and contributions to India's mineral sector through participation in key exhibitions and public engagement initiatives. At the 64th CGPB Meeting held in Bhubaneshwar on 19 January 2025, MECL demonstrated critical mineral samples and handheld XRF technology, with the event attended by Shri V.L. Kantha Rao, Secretary, Ministry of Mines, and CMD, MECL.

- At Bharat Parv in New Delhi (26–31 January 2025), MECL highlighted its pivotal role in promoting India's mineral heritage and sustainable development, with the inauguration conducted by Smt. Farida M. Naik, Joint Secretary, Ministry of Mines. During the NextGen Geophysics event at GSITI Hyderabad (09–10 June 2025), a live demonstration of the Gamma Ray Spectrometer was conducted, attended by Shri Asit Saha, DG, GSI, and Dr. S. Ravi, DDG & Head, Mission-V, GSITI.
- MECL further showcased North-East India's mineral potential at the 2nd Northeast Mining Ministers' Conclave in Guwahati (27–28 June 2025), where the booth was visited by the Hon'ble Chief Minister of Assam, Shri Himanta Biswa Sarma, the Hon'ble Union Minister of Mines, Shri G. Kishan Reddy, and the Hon'ble MoS for Mines & Coal, Shri Satish Chandra Dubey. Additionally, at IITF–2025, MECL demonstrated advanced exploration technologies through critical mineral core samples, precision mapping, and analytical instruments, highlighting its crucial role in driving India's mineral resource development and supporting the Atmanirbhar Bharat mission.



IITF-2025



NextGen Geophysics, GSITI Hyderabad



Rajasthan Mineral Wealth-ET Business Summit



Hon'ble MoS visit to MECL

Sustainability, Innovation, and Responsible Operations

At MECL, sustainable development, environmental stewardship, and operational excellence form the core of our exploration and consultancy activities. During the year, the organization has undertaken a series of initiatives to enhance efficiency, reduce environmental impact, and strengthen resource management across its operations.

A. Adoption of Advanced Hydrostatic Drilling Rigs

In line with MECL's commitment to environmentally responsible exploration, the organisation has begun replacing age-old drilling rigs with advanced hydrostatic rigs. These modern rigs deliver higher precision with minimal surface disturbance while ensuring superior safety and operational reliability. Their improved preventive-maintenance systems also reduce downtime, supporting sustainable and uninterrupted exploration operations.

B. Renewable Energy: Solar Rooftop Initiatives

MECL has actively deployed solar energy to reduce carbon footprints and promote clean energy:

- 670 kWp grid-connected rooftop solar PV systems commissioned across office and operational units.
- Estimated annual savings of 8,00,000 kWh, reducing ~500 tonnes of CO_2 emissions and conserving 200 tonnes of coal.
- IoT-based real-time monitoring systems for energy efficiency and performance tracking.
- Alignment with MNRE Grid-Connected Rooftop Solar Programme and green building certification initiatives.



Solar Pannel Installation



Tree Plantation Drive

- At MECL, sustainability, environmental stewardship, and operational excellence remain integral to all exploration and consultancy activities. During FY 2025–26, the organization advanced several initiatives to enhance operational efficiency, reduce environmental impact, and strengthen resource management. In line with our commitment to environmentally responsible exploration, aging drilling rigs have been progressively replaced with advanced hydrostatic rigs, offering higher precision, minimal surface disturbance, and superior safety, while improved preventive-maintenance systems ensure uninterrupted operations.
- MECL has also championed clean energy through rooftop solar deployment, commissioning 670 kWp of grid-connected systems across offices and operational units, with estimated annual energy savings of 8,00,000 kWh, reduction of ~500 tonnes of CO_2 emissions, and conservation of 200 tonnes of coal. IoT-based real-time monitoring ensures optimal performance, aligned with MNRE's rooftop solar and green building initiatives.
- Water conservation remains a key priority, with rainwater harvesting systems installed across administrative blocks, workshops, and residential colonies covering over 25,000 sq.m., complemented by groundwater recharge, stormwater management, and reuse for landscaping, flushing, and industrial purposes. Staff training programs further strengthen awareness and adoption of water-efficient practices.
- Energy efficiency has been enhanced through complete transition to LED lighting, motion sensors, timers, and automated outdoor lighting, realizing up to 60% energy savings across all facilities. Collectively, these initiatives underscore MECL's commitment to sustainable, innovative, and responsible operations while supporting India's environmental and resource management goals.

8.60 Research, Innovation and Strategic Collaboration at MECL

- MECL continues to strengthen its position as a centre of excellence in mineral exploration through research, innovation, and process optimization. Key initiatives include development of in-house drilling accessories, advanced drilling-fluid technology, and operational best practices, enhancing productivity and technical self-reliance. The Instrumentation Section now provides advanced repair and refurbishment services to external agencies, generating revenue and boosting expertise.
- MECL has deployed advanced geophysical instruments and the LIBS Core Scanner for precise, minimally intrusive exploration, integrating AI and machine learning to improve data analysis and operational efficiency. Strategic collaborations and MoUs with premier research institutions and international partners advance critical mineral assessment, beneficiation, and geoscientific analytics, supporting sustainable resource development. These initiatives reinforce MECL's technical capabilities, promote innovation, and strengthen India's mineral security.



MoU with IIT Bombay



LIBS Core Scanner



Training for Gamma Ray Spectrometer



Multi Electrode Resistivity Imaging System

8.61 Information Technology (IT)

- MECL's Information Technology Centre provides a secure, robust, and reliable digital ecosystem supporting exploration, consultancy, and administrative operations across all divisions. During FY 2025–26, the IT Division focused on system maintenance, infrastructure upgrades, and deployment of digital solutions to enhance operational efficiency and ensure uninterrupted operations.
- Key initiatives included continuous monitoring and preventive maintenance of enterprise systems, SAP ERP (Khanij Sanjeevani), and geological data platforms, enabling geologists seamless access to technical data for timely preparation of Geological Reports. Digital infrastructure upgrades improved data centre performance, network connectivity, and hardware deployment across offices and project sites, while strengthened cybersecurity measures safeguarded critical IT assets. User training and support sessions further enhanced system utilization and operational compliance.
- The IT Division also developed vendor and sample management portals, including a BG and EMD tracking portal for Finance and Procurement divisions and a Referee Sample Tracking Portal for coal samples, improving transparency and reducing manual coordination. Ongoing digitization initiatives include website revamp with GIGW 3.0 compliance and evaluation of an advanced EPF Trust Management

application to streamline HR and financial operations.

Bharat Gold Mines Limited (BGML): -

8.62 Operations of BGML were closed in 2001 and the Central Cabinet, in 2006, decided to dispose of the assets and liabilities of BGML through an open global tender, with First Right of Refusal in favour of the Co-operative society formed by the ex- employees of the Company. The matter went into litigation and Hon'ble Supreme Court in July 2013 permitted UoI to proceed with the global tender. However, as a lot of time lapsed, various changes in mining laws and other issues had taken place and therefore, the decision of Cabinet could not be implemented yet.

8.63 With the amendment of MMDR Act and other reasons as elaborated in para above, implementation of Cabinet decision for sale of assets of BGML through global tender became difficult and the future course of action for BGML was discussed in the Ministry. Accordingly, a Monitoring Committee was constituted on 18.04.2019 to suggest a way forward for BGML consisting of CMD/MECL, MD/BGML and officers from Geological Survey of India, Indian Bureau of Mines and Ministry of Mines. The task of Monitoring Committee was to get done legal review, asset valuation and hiring of Technical Consultant for preparing Techno Economic Feasibility Report (TEFR).

8.64 Mineral Exploration Consultancy Limited (MECL) was assigned exploration of dumps & two un-mined blocks (i.e. Mectagart and Oriental) of BGML. MECL submitted its report in 2018. For identifying mineral resources in the other areas of BGML, exploration was also undertaken by MECL between September 2020 and February 2021 at Betraswamy and Doddabeta Blocks of BGML. MECL submitted its report in March, 2021. Simultaneously, Non Ferrous Materials Technology Development Centre (NFTDC) under the S & T schemes of M/o Mines also conducted a study on Gold Ore Tailings of BGML. NFTDC submitted its TEFR in February 2021.

8.65 The TEFR for tailing dumps of BGML and the exploration reports of MECL were given to the Management Consultant hired for reviewing the legal status, undertake valuation of the assets and financial due diligence for recommending possible alternatives. The Management Consultant had submitted its report in 2021 and suggested that operationalisation of BGML does'nt look practical.

8.66 The entire land parcel of BGML is 12,109.70 acres of land of which about 10,375.05 acres has been mutated upto March 31, 2025 in the name of BGML. Record of Right, Tenancy and Crops (RTC) for remaining area of BGML land is being pursued with the local land and revenue offices of State Government of Karnataka along with reconciliation of BGML land as per RTC and sale deed. In Andhra Pradesh the entire 77.62 acres of land in Ramagiri area, Sri Sathya Sai district has been mutated in the name of BGML.

8.67 All employees of the BGML at the time of closure were retrenched by giving Special Terminal Benefit Package (STBP). BGML also sold sital area of residential accommodation to 2812 retrenched ex-employees of BGML as one of the components of STBP benefits on concessional rate and not charged any amount for building/structure. However, title deeds could not be transferred to the beneficiaries because the properties were earlier not

reflected in the name of BGML in land records of Government of Karnataka. Now the land has been mutated in the name of BGML. On 27.02.2024, Union Minister of Mines, Coal and Parliament Affairs, Government of India, has graced the occasion as Chief Guest and 570 possession certificates were distributed out of total 2,812 beneficiaries. Subsequently, 338 certificates were distributed from the corporate office of BGML (908 beneficiaries have received the possession certificates) in due course. The distribution of remaining possession certificates will be carried out soon.

8.68 Subsequently, Ministry of Mines appointed SBICAPS as 'Transaction Advisor' on 13.08.2024 to assist in sale (by auction) of gold tailings of BGML. Accordingly, this Ministry after consultation with Govt. of Karnataka vide gazette notification dated 31.07.2024 (under Section 17 of the MMDR Act) has reserved the 1003.4 acres area in areas covering the tailing dumps of the expired mining lease of BGML to undertake mining operations for recovering gold and other precious metal from the tailing dumps. Further, Engineers India Limited (EIL) has been engaged on 06.11.2024 for preparing a Techno Economic Feasibility Report (TEFR) in respect of Tailing Dumps. It has been decided that a CPSE will be appointed as the project manager, which will then select a Mine Developer and Operator (MDO) for prospecting, mining and processing tailing dumps of BGML.

8.69 The EIL has submitted TEFR on 03.10.2025. In order to conduct the tendering process for selection of the PM and further the MDO, a Technical Evaluation and Tender Appraisal Committee (TETAC) has been constituted on 27.08.2025. Accordingly, the appointment of CPSE as Project Manager for Monetization of Tailing Dumps of BGML through MDO (on global tender basis) is underway.

*****

09 CHAPTER



Science, Technology and Autonomous Bodies

Science, Technology and Autonomous Bodies

- Research and Development Page-181
- Jawaharlal Nehru Aluminium Research Development & Design Centre (JNARDDC), Nagpur Page-184
- National Institute of Rock Mechanics Page-189
- National Mineral Exploration & Development Trust (NMEDT) Page-200

Research & Development

Introduction

9.1 Recognizing the paramount importance of safety, economy, speed and the efficiency in extraction of mineral resources and in its convergence into viable economic alloys and metals, National Mineral Policy has accorded higher priority to Research and Development (R&D) programmes. For fructification of principles as enunciated in the National Mineral Policy, guidelines for support to 'Mining Research' was issued in May 2013 and revised in August 2023. With a view to promoting R&D in the mining sector, Ministry of Mines has launched a comprehensive Science & Technology Programme which includes (i) Research and Development (R&D) component, (ii) Information Education and Communication (IEC) component, (iii) Promotion of Research and Innovation in Startups and MSMEs in Mining, Mineral Processing, Metallurgy and Recycling Sector (S&T-PRISM) component.

Science & Technology Programme - Research and Development (R&D) component

9.2 The underlying principle behind R&D component is to foster utilisation of the available mineral resources judiciously, economically efficiently and in an environmentally sustainable manner. Under the R&D component of the Science & Technology Programme, Research projects are funded through grant–in–aid. The broad thrust areas for supporting research in mining sector include(i) Prospecting exploration for strategic and rare earth minerals; (ii) Research in mining methods, which includes rock mechanics, mine designing, mining equipment, energy conservation, environmental protection and mine safety; (iii) Improve efficiency in process, operations, recovery of by-products and reduction in specification and consumption norms; (iv) Research in metallurgy and mineral beneficiation techniques to utilize lower grade and finer size ores; (v) Extraction of value-added products from mine waste, plant tailings etc.; (vi) Development of new alloys and metal related products, etc.; (vii) Evolve low capital and energy saving processing systems; (viii) Production of materials of high purity. Ministry of Mines has launched SATYABHAMA (Science and Technology Yojana for Aatmanirbhar Bharat in Mining Advancement) Portal for Science and Technology Programme Scheme of Ministry of Mines. The SATYABHAMA Portal can be accessed at https://research.mines.gov.in/.

9.3 Based on scrutiny which passes through different stages of evaluation including presentation of shortlisted projects before the Project Evaluation and Review Committee (PERC) and final approval of an inter-ministerial Standing Scientific Advisory Group (SSAG) chaired by Secretary (Mines), grants are given to the projects submitted by R&D institutions.

9.4 During the Financial Year 2025-26, 48 project proposals have been recommended by PERC for approval of SSAG. Out of these, 42 project proposals, which are considered as relevant to the identified priorities, have been approved by SSAG for grant-in-aid by the Ministry under S&T programme. The details are available at research.mines.gov.in.

Science & Technology Programme - Information Education and Communication (IEC) Component

9.5 The purpose of this component of the Scheme is to create awareness regarding issues relating to the mining and mineral sector by organizing or being associated with promotional events, like seminars, workshops, exhibitions etc. evaluation studies, surveys,

awareness programmes, consultation with stakeholders, organization of national and international events/conference, creating audio-visual publicity materials and propagation of policies and programmes.

9.6 The detailed guidelines are available at https://research.mines.gov.in/.

Science & Technology Programme - Promotion of Research and Innovation in Startups and MSMEs in Mining, Mineral Processing, Metallurgy and Recycling Sector (S&T- PRISM) component

9.7 Ministry of Mines has decided to promote Research and Innovation in Startups and MSMEs and has brought out guidelines for "Promotion of Research and Innovation in Startups and MSMEs in Mining, Mineral Processing, Metallurgy and Recycling Sector (S&T-PRISM)" in November, 2023. Proposals have been invited from eligible beneficiaries for funding so as to enable them to graduate to a level where they will be able to raise investments from angel/Venture Capitalist or they will reach a position to seek loans from commercial banks/financial institutions. The funding is positioned to act as a bridge between development and commercialization of innovative technologies/products/services in a relatively hassle free manner. The main idea of the S&T-PRISM is translation of research into technology (product/process/services) but not to carry out open ended fundamental research. Investigations must lead to innovation or new product/process ready for demonstration or pilot scale deployment (not only publication/ patent).

9.8 Jawaharlal Nehru Aluminium Research Development and Design Center, Nagpur, an autonomous body under the administrative control of Ministry of Mines is the Implementing Agency for S&T – PRISM.

9.9 Selected Startups and MSMEs will be provided mentorship or incubation support and technical advisory support during entire project development period and additionally for two years from the date of Technical Completion, by a Facilitation & Mentorship Team under the Implementing Agency. Scope of Mentoring Support will include Advisory, Networking, Tapping Resources, Piloting, Business Planning, Funding Raising. Further, piloting opportunity for supported Startups and MSMEs, shall be provided in the mining, mineral processing, metallurgy and recycling sector. Preference is given to Startups/ MSMEs of North East Region and women led enterprises.

9.10 Based on scrutiny which passes through different stages of evaluation including presentation of shortlisted projects before the Technical Expert Committee (TEC) and final approval of APEX Committee chaired by Secretary (Mines), grants are given to the projects submitted by Startups and MSMEs. During the Financial Year 2025-26, 6 project proposals, which are considered as relevant to the identified priorities, have been approved by APEX Committee for grant-in-aid by the Ministry under the S&T-PRISM Component of S&T programme. The details are available at https://research.mines.gov.in.

"Grants for Creation of Capital Assets" Component for up-gradation of R&D facilities

9.11 The quality of R&D hinges upon availability of state-of-the-art research facilities in the country. Apart from the initiatives of the public and private enterprises in the mining sector, R&D activities are also being pioneered by the two autonomous bodies functioning under Ministry of Mines i.e. (i) Jawaharlal Nehru Aluminium Research Development &

Design Centre (JNARDDC), Nagpur, and (ii) National Institute of Rock Mechanics (NIRM), Bengaluru. During the financial year 2025-26, grant to the tune of Rs. 11.00 crore has been released to JNARDDC and Rs. 3.50 crore has been released to NIRM for up-gradation of R&D facilities under "Grants for Creation of Capital Assets" Component.

9.12 Grants for Creation of Capital Assets provided to the two autonomous institutions under Ministry of Mines during 2025-26 is given in **Table 9.1**.

Table 9.1

Grants for Creation of Capital Assets

Institute	Amount (Rs.in crore)
JNARDDC	11.00
NIRM	3.50

Circular Economy and National Non-ferrous Metal Scrap Recycling Framework, 2020

9.13 India is one of the fastest growing economies in the world. Strong domestic demand coupled with several reforms that the government has undertaken are on track to maintain the economic growth momentum going forward. As non-ferrous metals find widespread applications across the economy, the current policy measures provide a tremendous opportunity for the development of the Indian non-ferrous metals industry in the future.

9.14 One of the key challenges faced by the non-ferrous metals industry is its heavy dependence on import of metal scrap. A major share of metal scrap demand is served by imports owing to the underdeveloped metal scrap collection, segregation and processing infrastructure in the domestic market. The material recycling rates in India are well below global standards and is mostly conducted in the informal sector. Thus, strengthening material recycling, including metal recycling, under the formal sector can provide a good opportunity to cut down scrap imports.

9.15 At the core of an effective material recycling eco system is a systematic, organized and user friendly collection, segregation and sorting process. Strengthening this value chain by segregating waste at source and then channelizing the disaggregated scrap through a network of scrap pickers and collectors and eventually to the scrap recycler through appropriate policy interventions would earn rich dividends.

9.16 In this context, in FY 2020-21, Ministry of Mines has published National Non- ferrous Metal Scrap Recycling Framework, 2020 to promote a formal and well organized recycling ecosystem by adopting energy efficient processes for recycling leading to lower carbon footprints and to work towards sustainable development and intergenerational equity. Major objectives of the framework include: to minimize the effect of end of life products on landfills and environmental pollution by promoting an environmentally sound processing and recycling system for secondary industry; to work towards economic wealth creation, job creation and increased contribution to GDP through metal recycling; to shift towards a circular economy in the coming years for base metals, critical raw materials and other essential materials, etc. To drive this initiative, the "Recycling Promotion Division (RPD)" was established by the Ministry of Mines under JNARDDC to promote recycling of Al, Cu, Pb & Zn. The transformation of recycling industries into a formal ecosystem, technology upgradation, capacity building, research, and standardisation are the major focus areas of the RECYCLING PROMOTION DIVISION. The Website & Stakeholders' Portal (nfmrecycling.jnarddc.gov.in) was launched

on 7th May, 2025 by Shri G. Kishan Reddy, Hon'ble Minister of Coal and Mines, as a national database and facilitation platform for Non-Ferrous Metal Recycling. The framework can be accessed at https://nfmrecycling.jnarddc.gov.in/assets/pdf/NFMScrapRecyclingFramework-2020.pdf.

Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), Nagpur

9.17 JNARDDC is a Central Government Autonomous Body under Ministry of Mines. The Institute was set up in 1989 with a view to provide major R&D support system for the emerging modern aluminium industry in India.

9.18 JNARDDC is an ISO/IEC-17025:2017 & ISO-17034:2016 NABL accredited lab and is also recognized as a scientific & industrial research organization by the Department of Scientific & Industrial Research, Ministry of Science & Technology, Government of India. It is the only institute of its kind in India pursuing the cause of R&D from bauxite to finished product under one roof.

9.19 The Centre's objective is to assimilate domestic and international technology for the production and processing of non-ferrous metals and the extraction of critical minerals, as well as to develop technical know-how for basic engineering, downstream and recycling applications. It also provides training for personnel employed in the Indian non-ferrous metal industries. Another key objective is to promote and develop the recycling industry, enhance recycling technologies, and support the transition to a circular economy in the Non-Ferrous Metal Sector.

9.20 JNARDDC has made key contributions in the areas of beneficiation, characterization, technological evaluation, upgradation of bauxites, Bayer process modeling, reduction of energy consumption and environmental pollution in smelter, development of alloys, product development, effective utilization of aluminium industry residue such as red mud, dross, spent pot lining and scrap for both primary and secondary industry. The annual reports are available at http://www.jnarddc.gov.in/en/rti/rti_annual_report.aspx

9.21 Major activities:

The Centre successfully completed six projects, and 20 R&D projects are currently in progress for various government and non-government organizations. Details are provided in Annexure- 9.1. JNARDDC has also been empanelled as a BIS-recognized laboratory under the Laboratory Recognition Scheme (LRS), enabling the Institute to offer accredited testing services in alignment with forthcoming QCO requirements. JNARDDC is playing a key role in National Critical Mineral Mission (NCMM) through setting up of pilot plants for critical mineral recovery, REE and critical mineral characterization, and strategic support to IBM and GSI. The Centre is also serving as a "Spoke" to two national Centres of Excellence, CoEs viz IIT Hyderabad and IISc Bangalore.

9.22 Designated Sector Expert

JNARDDC is the designated aluminium sector expert for the following key authorities: -

Bureau of Energy Efficiency (BEE), Ministry of Power -

BEE utilizes the expert services of JNARDDC in the aluminium sector in Carbon Credit Trading Scheme (CCTS). India's National Carbon Market framework aims at meeting climate goals which includes a Compliance and Offset mechanism. The CCTS targets carbon dioxide and perfluorocarbons from aluminium smelting, building on the existing PAT framework.

Bureau of Indian Standards (BIS)

Guidelines for Al-scrap & Standard for aluminium alloy scrap

Ministry of Coal -

Third party referee lab for coal sample analysis by Ministry of Coal / Power.

Ministry of Mines (MoM) –

- Metal Recycling Authority (MRA) - to carry out the functions earmarked for MRA as stipulated in the "National Non-Ferrous Metal Scrap Recycling Framework 2020."
- EPR for aluminium scrap
- Implementing agency for promoting startups and MSMEs through S&T-PRISM program.
- Project Management Agency (PMA) for implementation of incentive scheme on critical mineral recycling.
- Project Management Agency for Ministry of Mines' Scheme titled "Pilot Projects for Recovery of Critical Minerals from Overburdens / tailings/ fly ash / red mud etc."

9.23 JNARDDC as PMA for Incentive Scheme on critical mineral recycling

Following the approval by the Union Cabinet on 29.01.2025, the National Critical Mineral Mission (NCMM) has been set up, comprising several key components such as increasing exploration and auction of critical mineral blocks to increase domestic production, acquisition of critical mineral assets abroad, recycling, skilling, research & development, etc. Specifically, as per the NCMM, an incentive scheme for the recycling of critical minerals, with the quantum of incentive pegged at ₹1,500 crore, has been envisaged with JNARDDC as the Project Monitoring Agency (PMA). The Scheme will provide financial incentives to the industry to develop recycling capacity for critical materials in the country for the separation and production of critical minerals from secondary sources through recycling. The objective of the scheme is to foster economic resilience in critical minerals through increased domestic capacity and reduced import dependence; and to address recycling capacity shortfalls amidst increasing availability of feedstock. The scheme was rolled out on 2nd Oct, 2025.

9.24 Implementation of S&T- PRISM Scheme for Startups & MSMEs

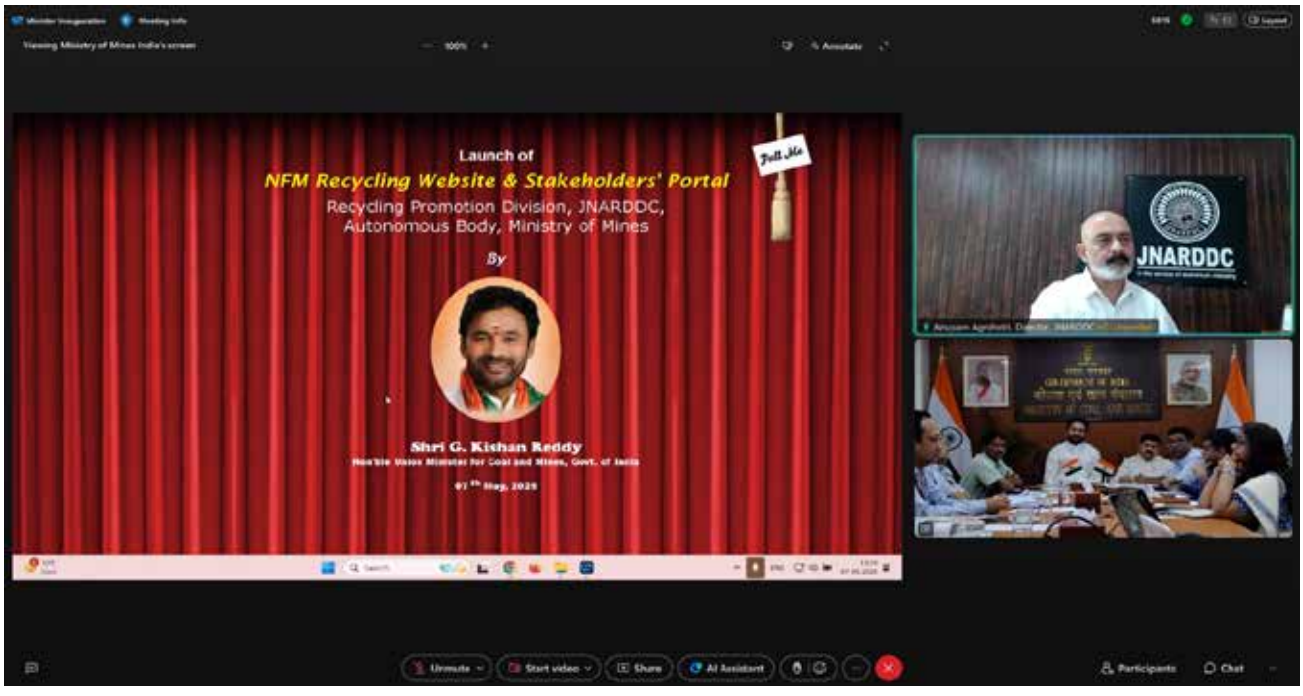
Under PRISM 4.0 the Ministry of Mines sanctioned funds to the following six agencies (i) Spectrum Industries, Mangalore, Karnataka (ii) K2BJN Industries LLP; Srirangam, Tamil Nadu (iii) Fonsmet Materials Private Limited, Raigad, Maharashtra (iv) NiLiCo Green Technologies Pvt Ltd; Bengaluru (v) Bhagyanagar magnesium Pvt Ltd, Hyderabad, Telangana and (vi) Aegion Aerospace Private Limited, Sonipat, Haryana. JNARDDC successfully carried out technical and financial due diligence of these entities before release of funds. The funding is positioned to act as a bridge between development and commercialization of innovative technologies/products/services in a relatively hassle free manner. JNARDDC played the pivotal role as the implementing agency by evaluating the proposals to the final award of the project with Director, JNARDDC as the chairman of the Technical Evaluation Committee. It underscores the Ministry's focus on innovation-driven growth through Startups and MSMEs.

9.25 Setting up of Recycling Promotion Division to promote circular economy

The following activites were undertaken for

implementation of the National Non-Ferrous Metal Scrap Recycling Framework 2020.

- JNARDDC is setting up a state of art Centre of Excellence for Non-Ferrous Metal Recycling (Demonstration, Research & Skill Development Unit).
- Launch of the Non-Ferrous Metal Recycling Website & Stakeholders' Portal (nfmrecycling.jnarddc.gov.in) as a national database and facilitation platform by Shri G Kishan Reddy, Hon'ble Minister of Coal and Mines on 7th May, 2025.
- Over 600 recycling industries are registered.



- Stakeholder consultations were held under the supervision of Ministry of Mines for deliberations on the draft guideline documents prepared by JNARDDC:
  - ➢ Process standards for scrap recycling Products
  - ➢ Laying down Minimum Infrastructure requirement for recycling units
  - ➢ Develop performance indicators and a mechanism for ranking and evaluation of units in coordination with MoEF&CC and other stakeholders
- Vision document for Circular Economy for Non-Ferrous Metals (NFM) in India through PwC: Facilitated stakeholder consultations to support the development of the inception report and Module 1 prepared by PwC. The drafts of Module 1 and Module 2 are currently under review by JNARDDC.

9.26 International Collaborations

During the year, JNARDDC expanded its global footprint by initiating meaningful negotiations for collaborations that strengthen India's capabilities in critical minerals, recycling, and advanced materials.

- **Blacksmith Institute dba Pure Earth Lab, New York, USA:** Ongoing project for lead contamination in recycled aluminium cookware-Identifying sources and developing strategies for lead removal.
- **Ma'aden Bauxite and Alumina Company, Saudi Arabia:** Project commenced on study on effect of addition of dust suppression chemicals in bauxite processing.
- **JSC Titanium Institute, Ukraine –** Collaboration for indigenization and pilot-scale demonstration plant for gallium extraction (1000 litre capacity) from Bayer liquor, including technology transfer and pilot plant engineering.
- **Daiki Aluminium Industry Co., Ltd., Japan –** Technical cooperation on aluminium recycling, alloy development (ADC12/LM24), and best practices in circularity, feeding into the Centre of Excellence for Non-Ferrous Recycling. Ongoing project for utilization of aluminium dross in synthetic slag preparation for secondary steel making
- **RUSAL & Russian institutes (MiSIS) –** Knowledge exchange on red mud processing, iron recovery, alumina refining improvements, and sustainable metallurgical technologies.
- **Arabian Extrusions Factory L.L.C, Umm Al Quwain, U.A.E. –** JNARDDC having NABL ISO-17034:2016 accreditation exported certified reference materials, CRMs which will be used as stands for calibration and other commercial purposes.

9.27 Patent:

"A Process for Producing Pilot Scale Extrusion Billets and Extrudates From Machining Swarf". Appl. No. 202521042386, Date: 01-05-2025 (Filed)

9.28 Transfer of Technology:

i. Transfer of SPL detoxification technology/process for safe handling, treatment, and detoxification of hazardous SPL (first cut) generated from Aluminium smelters, particularly in the state of Odisha and its further utilization to following agencies:
   - ARCANE Minerals Trading, AMT, Cuttack
   - A3 Minerals and Metal Export Private Limited Cuttack
   - Evolve Karbons Private Ltd. Bhubaneshwar

ii. Transfer of Technology of "Process for Producing Pilot-Scale Extrusion Billets and Extrudates from Aluminium Machining Swarf" to:-
   - Greenmetalix, Kalmeshwar, Nagpur

9.29 Review of JNARDDC by Shri Satish Chandra Dubey, Hon'ble Minister of State for Coal & Mines

Shri Satish Chandra Dubey, Hon'ble Minister of State for Coal and Mines, Government of India, visited JNARDDC on 27 November 2025 to review the Centre's ongoing R&D programs. During the visit, he inaugurated the new XRF Laboratory—an important addition that substantially strengthens JNARDDC's analytical and testing capabilities. The laboratory will serve key stakeholders such as the Geological Survey of India (GSI), Indian Bureau of Mines (IBM), Odisha Mining Corporation (OMC), and various other public and private agencies. It holds particular significance for critical mineral

assessment, offering enhanced capabilities for analyzing fluorine, cobalt, rare earth elements, and other strategic or high-value minerals vital to India's expanding mineral sector.



9.30 Seminars and technical collaborations

JNARDDC along with other academic and scientific institutes organized and participated in the following major events.

- Workshop on "Discovering the Power of Critical Minerals for the Next Generation" JNARDDC, Nagpur; 25 April 2025
- 3-day Training program on Alumina Making Process, JNARDDC, 28-30 April 2025
- Workshop for nonferrous metal recycling stakeholders, Hyderabad; 31 May 2025
- 2-day AL-MATCH Workshop dedicated to the Aluminium Utensil Manufacturing industry! VNIT & JNARDDC, Nagpur; 21-22 Jun 2025
- 29th International Conference on Non-Ferrous Metals (ICNFM2025) Kolkata; 11-12 Jul 2025
- Vidarbha Non-Ferrous Metals (NFM) Recycling Stakeholders' Meet at JNARDDC, Nagpur; 28 Jul 2025

9.31 Awards / Recognition

Best Research scholar award to Ms Prachi P Pradhan, Scientist at the 5th International Conference on Recent trends in biological and chemical science for sustainable future and society, Kawarbandh, Gondia.

JNARDDC has been recognized among the **Top Five Innovative Research Institutions** in the country for the year 2025 by the **Confederation of Indian Industry (CII), New Delhi.** Dr Anupam Agnihotri Director JNARDDC was formally felicitated during the CII Innovation Award Ceremony 2025.



9.32 Technical Testing & Consultancy work:

JNARDDC carried forward its reputation of being an outstanding analytical lab by analyzing around 9,500 third party referee sample analysis of coal samples provided by QCI, New Delhi and others. Besides coal the Centre carried out characterization of bauxite, Limestone, graphite, Pulp, iron ore, Manganese ores, rare earth elements, PGE/ Gold, critical minerals analyses of Ore , tailing, dumps, wastes etc. of M/s Lloyd Metals and Energy Ltd. of Surjagarh Iron mine, Gadchiruli, OMC, MECL, IBM, MOIL and other agencies. The institute also sold around 21 CRMs.

9.33 Special Campaign 5.0

JNARDDC spearheaded the nationwide domestic e-waste recycling initiative under special campaign 5.0 of Ministry of Mines. Implemented across 58 locations in the country, the campaign successfully collected 9.02 tons of e-waste through authorized recyclers such as ATTERO Recycling and MRAI, with over ₹11 lakhs disbursed. The initiative aimed to raise awareness about responsible e-waste management and recycling, promoting sustainable practices among employees and partner organizations.

9.34 Finances

The Centre has achieved an Internal revenue generation of ₹ 17.13 crores till now against target of ₹25 crore for 2025-26. A capital budget of ₹ 11.00 crore for creation of capital assets was released by Ministry of Mines in 2025-26 for the centre.

9.35 National Institute of Rock Mechanics (NIRM)

NIRM has been in the service of the nation for 35 years combining industry specific applied research activities in enabling scientific and engineering solutions through site characterisation, design and excavation of underground structures, advanced monitoring of rock mass and testing services.

Key area of NIRM activities is:

1. **Site Characterisation–** NIRM has capability to characterise various project sites like mining, tunnel, dam, power plants, and critical infrastructures based on engineering geological, seismotectonic, engineering geophysical, engineering seismological and in-situ geotechnical tests of rockmass.
2. **Design and Excavation –** surface and underground mine design, excavation engineering, controlled blasting, numerical modelling, design of hill slopes
3. **Advanced Monitoring –** microseismic monitoring, slope stability monitoring, conventional instrumentation monitoring
4. **Testing Services -** laboratory testing of rock samples & wire ropes and in-situ testing of various mining accessories using NDT technique

9.36 NIRM Performance and Projections

Work Completed Projects during 01 January 2025 till 31 December 2025: 28

Cost of Work Completed Projects ₹9.90 crores.

Projects in pipeline: 33, Cost of Projects in pipeline: 11.15 Cr

Expected Cash Flow till March 31, 2026: ₹13 Cr.

Projects Awaiting Closure: ₹20Cr.(tentative)

The cashflow of work at NIRM is dependent on industry requirements and duration of projects running at national and state level which is always variable. During this period, NIRM has 75% of annual cash flow target.

NIRM is striving to meet industry demands through its workforce and resources with augmented scientific instrumentation and upgraded facilities. As the institute is pursuing self-sustenance model based on earnings from projects, for financial sustainability, to continue high-quality services under challenging and variable industry trends, NIRM needs strong support in terms of skilled young human resources, strong administrative framework, and healthy financial outlay for sustainability and growth. NIRM aims to strengthen its workforce and improve its resources through effective planning and the support of Ministry of Mines, Govt. of India. With this support NIRM looks forward to gear up its activities to better its performance by reaching out to various industries and global organisations.

In order to meet the demands and challenges of the industry, skills and awareness of industry trends are prime for the scientific workforce. The scientists and scientific staff of the institute are self-motivated to give their best for the challenges provided through work enquiries and provide efficient solutions that are site specific. NIRM scientists have been members of various expert Committees in providing their professional services for BIS, ISRM, ISEG, MEAI, KSDC, KSDMA, IGS, IGU, ISET, and ISRMTT. To engage young minds and budding engineers and scientists from academics, students are engaged in dissertation and internship programmes from time to time.

9.37 MoU

NIRM has so far signed MoU with GSI, MoRTH, NHIDCL, NPCIL, SCT (NSW) and different mining technology and services companies for augmenting its services in various sectors.

9.38 Glimpse of NIRM Scientific Outcome

Engineering Geological Investigations for Railway Tunnels





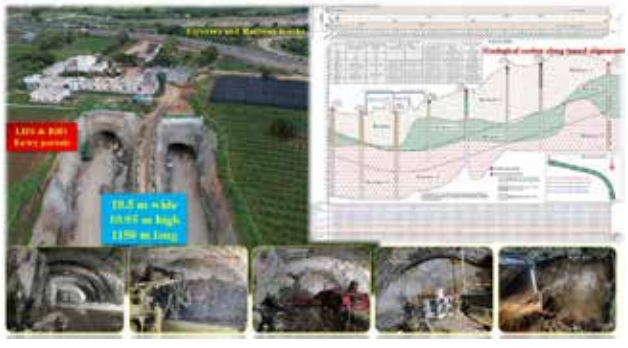
Tarapur Atomic Power Project (above) and The railway tunnel site (below)

(i) The Engineering Geology Scientists teamed up for remapping (on 1:100 scale) at Tarapur Atomic Power Project Units 1, 2, 3, and 4 in Maharashtra to evaluate foundation parameters for the Onsite Emergency Support Centre (OESC). Mapping of all the critical discontinuities in the rock mass, the assessment of RMR for basaltic rock masses, led to vital recommendations for the treatment of the foundation. See here is the bird's-eye view of the OSEC Building foundation, the grids are being marked for geo-mapping

(ii) A new railway broad gauge line is being constructed between Dhansiri to Zubza by Northeast Frontier Railway (NFR) to meet its future rail connectivity needs for both passenger and freight traffic. The project includes the construction of 14 tunnels in total. Northeast Frontier Railway (NFR) management approached NIRM for carrying out the design review and audit of under construction railway tunnels (Tunnel No. 1, 4, 6, 7 and 10) in Dimapur-Kohima railway line, Nagaland. NIRM scientists worked at the site and provided comprehensive engineering geological investigation report recommending excavation method for safety and durability.



Engineering and Geological investigations and mapping for 1.2 km twin tunnels at Kurnool, Andhra Pradesh



Excavation of half semi-circular (width : 18.50 m and height: 10.95 m) tunnels at Kurnool, Andhra Pradesh

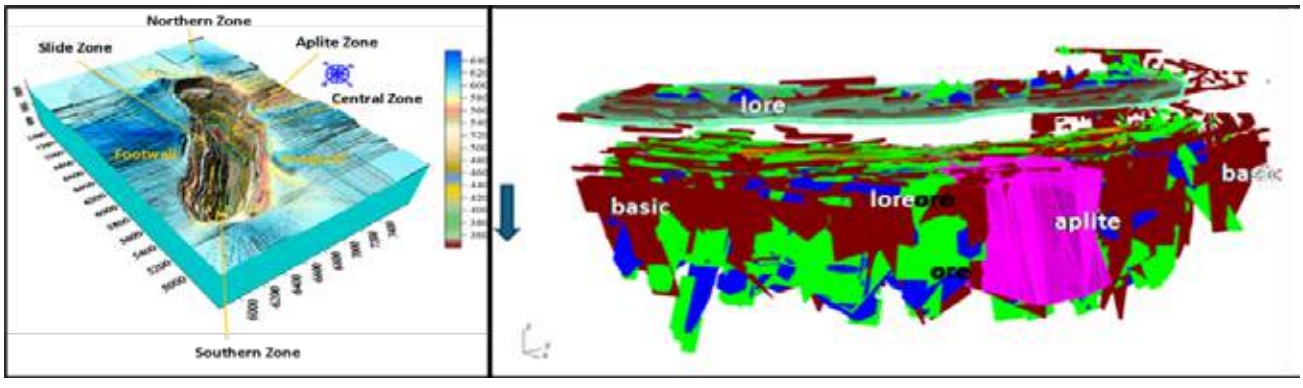
(iii) Northeast Frontier Railway is constructing the Jiribham-Imphal Railway Project and is facing significant geotechnical challenges at critical locations, including slope stability and tunnel alignment in complex geological conditions. These challenges were address by detailed study by NIRM scientists at the site particularly at Portal-1 of Tunnel No.8 (chainage km 34/111), Tupul Yard (chainage km 96.040 to km 97.958), and Noney Yard (chainage km 87.400 to 88.502). Stability analysis was carried out for the identification of vulnerable/risky zones,

recommended for mitigation measures enabling safe tunnels for transport.

(iv) NIRM carried out engineering geological investigations and mapping for the 1.2 km twin tunnels (NH150A) during the construction stage at Kurnool, Andhra Pradesh. The shape of a tunnel is half semi-circular, and the maximum excavated width & height are 18.50 m and 10.95 m. As this area is situated near the contact between Kurnool and Cuddapah formations. Due to mixed ground conditions and wide variations in physical, mechanical, and structural characteristics of different litho-units, anisotropic and inhomogeneous behaviour of tunnel media is observed all along the tunnel periphery. The work helped the tunnelling work to address the challenges at the site during excavation and provided timely solution for progress.

9.39 Numerical Modelling and Analysis for subsurface excavation for tunnels

(i) The Open pit mine of Malanjkhand Copper Project (MCP), Hindustan Copper Limited (HCL), has reached its ultimate pit limit. Moreover, a large slide has occurred in the mine site, resulting in the redistribution of stress regimes and the destruction of planned benches. NIRM scientists worked on geological and mine development details and provided vital inputs through 3D geological model of the mine that enabled insights into the stability of the underground mine during excavation in places such as the footwall drive, sub-footwall drive, ore drive, and junctions.



Digital Elevation Model of the open pit (left) and 3D Geological model of the pit (right)

(ii) The Kadipani opencast fluorspar and Kadipani expansion project of GMDC spanning over 252 hectares is one of the significant mines in Gujarat for their fluorspar deposits. The processed fluorspar is a key raw material for manufacturing hydrofluoric acid, refrigerant gases, and as a flux in metallurgical industries. NIRM worked on critical mine parameters through 3D numerical modelling, kinematic analysis and stability analysis of the ultimate pit slope and its design. The work of NIRM had facilitated safety and sustained productivity at the mines.

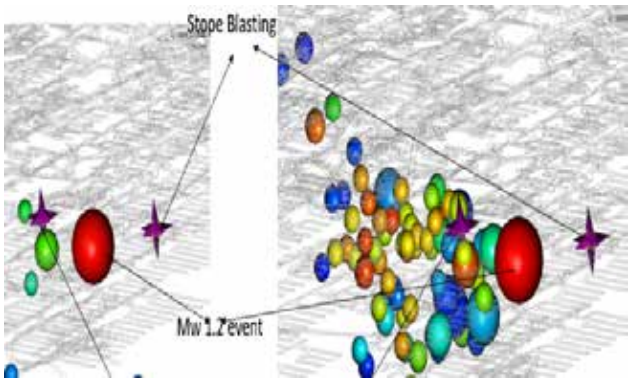




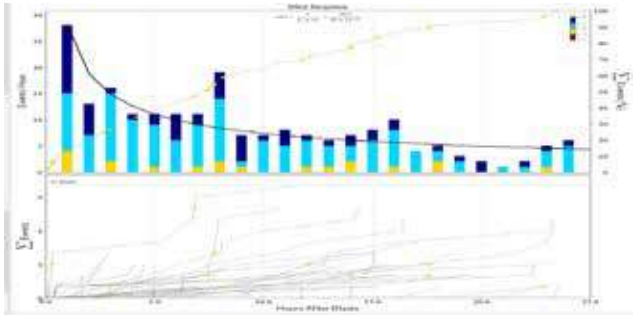
3D numerical modelling, kinematic and stability analysis of ultimate pit slope and design at Kadipani opencast fluorspar deposits expansion project of Gujarat Minerals Development Corporation (GMDC)

9.40 Microseismic monitoring of seismic hazard in underground mines

(i) NIRM scientists provided support through guidance on Underground mine induced seismicity analysis and continuously evaluated seismic hazard and probability of major disturbances in the form of rockbursts and anomalous stress zones in the Rampura Aughca underground mines. This real-time monitoring for the deep mine that is working at 1000 m depth with increased mining-induced seismicity led to crucial analysis for support of stope design and that of workings. The trigger action response plan was refined leading to better management of underground hazard and sustained production.



Stope Design and workings at the Rampura Aughca Underground mines



Evaluation of seismic hazard and probability of major disturbances in the form of rock bursts and anomalous stress zones the Rampura Aughca Underground mines

9.41 Controlled Blasting for additional units of turbine at NPCIL Kaiga site

(i) NIRM technically guided critical excavation in the area of NPCIL power plant at Kaiga using controlled blasting. Hard rock must be excavated by drilling and blasting methods at additional turbine building units 5 & 6 locations, which are closer to the structures of units 1 to 4. Based on the study of ground vibration, air overpressure and specific site predictor equation designed safe excavation for different structures. The adopted blast designs ensured that the monitored ground vibrations and air overpressure levels near the critical structures were well within the permissible limits. In total more than 1400 blasts were carried out close to the operating unit of nuclear power plant as close as 20m to 300m.



NIRM technical guidance for Critical Excavation of NPCIL power plant at Kaiga using controlled blasting

9.42 Landslide site restoration and further mitigative recommendations

Detailed studies by NIRM scientists carried out at the landslide affected areas along the highway section of NH-66 CH. 148.000 (14.603554°N / 74.371219°E) of NH-66, in Shirur village, Ankola Taluk, Uttara Kannada District, Karnataka. Vulnerable/risky zones were identified and recommendations for mitigation measures to prevent further landslides were done in record short duration. This helped the highway authorities restore the highway for public transport. One of the worst landslide scene in the recent history of highway slopes.



Detailed studies by NIRM scientists at the landslide affected areas in Shirur village, Ankola Taluk, Uttara Kannada District, Karnataka

9.43 NIRM excavation design at the Chennai Airport

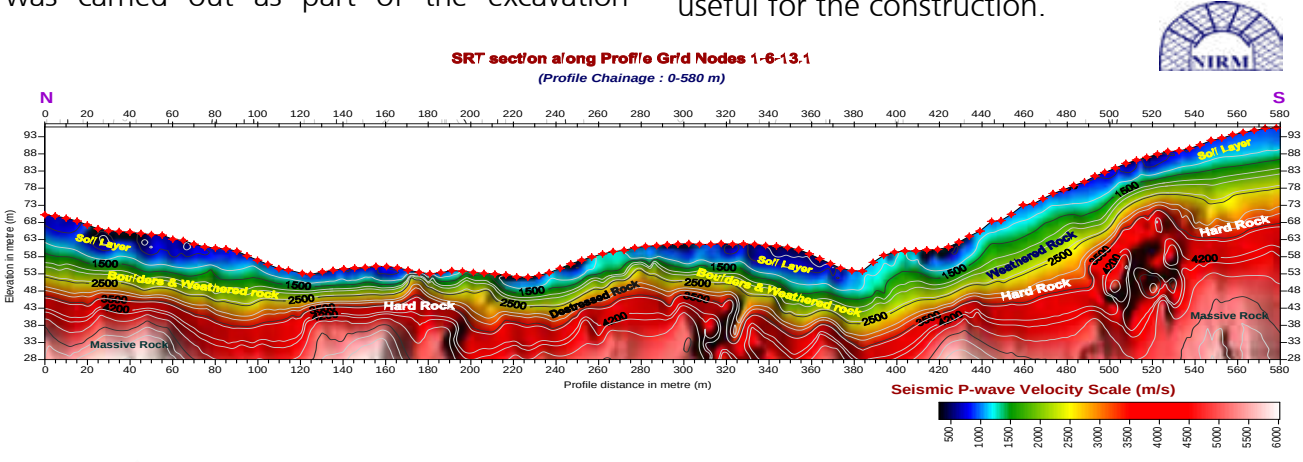
For the expansion of Terminal 3 at Chennai airport adjacent to the operating terminal buildings and flight parking area, critical blasting was carried out as part of the excavation activities. All the blasts conducted during the field investigation close to the existing public infrastructure were safe and unaffected by the excavation work owing to NIRM skill.



Safe excavation and critical blasting conducted by NIRM for the expansion of Terminal 3 at Chennai airport

9.44 NIRM geophysical investigations quantifies rock resources for the Vadhvan Port Project, Navi Mumbai

As per the estimate, the quantum required for the project is more than 65 MMt. For the quantum of armour rocks and aggregates requirement for the Vadhvan Port Project, Navi Mumbai, Navi Mumbai, from the three quarry sites in the Palghar District, geophysical imaging of the subsurface rock conditions proved significant for the optimal utilisation of the resource up to 40 m depth, unearthing the estimated weathered rock/ boulders/ destressed rock layer, and hard rock that was useful for the construction.



NIRM carried out Geophysical Imaging and investigations of the subsurface rock for quantifying the rock resources for the Vadhvan Port Project, Navi Mumbai

9.45 Slope Stability Studies for Left Bank Slope/Abutment of Concrete Dam of Subansiri Lower Hydroelectric Project (2000 MW) NM2307C

NHPC Ltd reached out to the National Institute of Rock Mechanics (NIRM) for a comprehensive analysis of the slopes, requesting both continuum and discontinuum analysis. The slope stability analyses were performed through continuum modelling using FLAC3D and discontinuum modelling, utilising the 3DEC software. The modelling approach focused on the representation of critical joint sets and geological structures, for assessing the stability conditions of the left bank slopes. NIRM has recommended the stabilisation measures based on the outcome of the numerical modelling results. Final Report submitted in September 2025



Visit of NIRM Scientists along with NHPC officials to the Left Bank Slope/Abutment of Concrete Dam of Subansiri Lower HEP

9.46 Analysis of Instrumentation Data of Powerhouse Complex of Phuentsangchhu-II Hydroelectric Project, Bhutan (January 2025 to February 2026) (NM2404C)

The Punatsangchhu-II Hydroelectric Project in Bhutan was instrumented by NIRM with MPBX, anchor load cells, instrumented rock bolts, piezometers, strain gauges, and borehole stress meters installed across major underground caverns. NIRM has been monitoring, and analysing the data analysing the data and periodically recommended measures for stabilising deformations and loads at most locations. NIRM scientists inspect to validate the analysis and the outcome.





Instrument cables interfaced to DAS, and NIRM Scientist visit to PHPA-II PHC along with PHP Engineers

9.47 Advanced Training Program to Industry

(i) Druk Green Employees at Thimphu, Bhutan. HR-2501

NIRM conducted a five-day training

program for Druk Green employees (20 officials) on RocScience Software at Thimphu, Bhutan. The training program was conducted from 23-06-2025 to 27-06-2025. The training program covered Rocscience software, namely RS2, RS3, Dips, Unwedge, Slide2D and Slide 3D.



(ii) Numerical Modelling Department scientists attended 'Advanced software training program on Itasca codes from 21st July to 31st July 2025 at Itasca Minneapolis office, Minnesota, USA. The training program conducted by Itasca was designed to provide comprehensive coverage of both fundamental and advanced aspects of 3D modeling, equipping the participating Scientists with the expertise to address complex 3D stress analysis problems in rock mechanics and rock engineering using Itasca's 3DEC and FLAC3D codes. The program covered a wide range of software applications in rock mechanics and engineering modelling including IMAT software. The Scientists visited Itasca Denver office related to MINEDW Itasca software and Colorado School of Mines, Denver for discussions and future .



NIRM scientists attending software training program at Itasca Office, Minneapolis and interacting/discussion with Itasca Officials during the training programme

9.48 NIRM Scientific Publications:

In addition to providing timely solutions to industries, NIRM has published 12 technical papers through national and international conferences, symposium, peer reviewed journals and other technical publications.

9.49 NIRM Participation in IITF2025 and Awareness Activities

During November 14-27, 2025, NIRM participated in the annual event at the Pragati Maidan, New Delhi as part of the Ministry of Mines Pavilion at the IITF2025 to showcase its activities and capabilities in providing solutions to various mining and infrastructural sectors. The integrated pavilion had digital displays and models related to various mining projects, NIRM's role in mining and tunnelling and infrastructure projects. The deep sense of involvement of scientists presents at the venue kindled widespread interest among children, men and women and various dignitaries from government organisations and private sector.



Honorable Minister of Mines Shri G. Kishan Reddy visited NIRM Stall in the Mining Pavillion, at IITF 2025 in New Delhi, accompanied by Shri Piyush Goyal, IAS, Secretary, Ministry of Mines and Ministry of Mines Joint Secretary Smt. Farida M Naik. Director NIRM (addl charge) Dr Sripad R Naik seen explaining the displays and activities.



Shri Asit Saha, Director General, GSI visited the NIRM stall at IITF2025. NIRM scientists explained various activities to him on the occasion.




Ministry of Mines Joint Secretary Smt. Farida M Naik and the Joint Secretary (FA) Ministry of Mines Shri Asim Kumar Modi visited the NIRM stand at IITF2025 and interacted with the scientists.







NIRM scientists explaining the activities to students and public who were engrossed in the spectrum of applications of the various specialisations at NIRM





NIRM scientists explaining the activities to students and public who were engrossed in the spectrum of applications of the various specialisations at NIRM.















NIRM 3D geological and tunnel models on display at the IITF2025 keenly observed by children.

9.50 National Mineral Exploration & Development Trust (NMEDT)

1) The National Mineral Exploration Trust (NMET) was established by the Central Government by notification dated 14th August, 2015, in pursuance of sub-section (1) of Section 9C of The Mines and Minerals (Development & Regulation) Amendment Act, 2015, with the objective of expediting mineral exploration in the country.

2) The Trust has been renamed as the National Mineral Exploration and Development Trust (NMEDT) to reflect its expanded mandate beyond exploration, to include mine and mineral development both within India, including offshore areas & overseas. The amendment has also increased the lessee's contribution from 2% to 3% of royalty. These changes align with the objectives of the National Critical Mineral Mission to strengthen India's resource security and reduce import dependence.

3) To accelerate project implementation under the expanded mandate, a Project Sanctioning Committee (PSC), chaired by the Director General, NMEDT, has been constituted with the approval of Hon'ble Union Minister of Mines/ Chairman, Governing Body, with the power to approve projects with a financial limit of up to ₹20 crore each.

4) To accelerate exploration activities and promote ease of doing business through faster and more efficient project clearance, the meetings of Technical-cum-Cost Committees (TCCs) are being convened weekly.

5) During the period Jan-Dec, 2025, 183 project proposals related to mineral exploration, procurement of machinery/ equipment, instruments and software, R & D activities under the S&T Prism scheme, project of special studies for undertaking geochemical analysis of mine samples by IBM and the Pilot project for mineral recovery were approved.

6) Since inception up to 31st December, 2025, the total NMEDT fund accrued is ₹ 7158.13 Cr. and total expenditure incurred is ₹ 3589.59 Cr. (including expenditure incurred in Coal Promotional Scheme for exploration of Coal & Lignite). During the year 2025 (Jan-Dec), the total NMEDT fund accrued is ₹ 971.42 Cr. and expenditure of ₹ 396.08 Cr. has been incurred. The estimated expenditure for the period from January to March 2026 is ₹ 137 Cr (approx.).

7) The category-wise details of projects sanctioned during the period Jan-Dec, 2025 are given below in **Table 9.2**:

Table 9.2

S. No.	Category	No. of Projects approved	Total approved cost (Rs. Cr.)
1.	Mineral Exploration	154	437.23
2.	Financial assistance for procurement of machineries/ equipment, instruments and software	10	200.44
3.	Pilot Project for recovery of critical minerals under NCMM	1	13.52
4.	Projects under S & T Prism Scheme	17	23.56
5.	Special Study (Geo-chemical Analysis of mine samples)	1	12.80
Total		**183**	**687.55**

8) Since the establishment of NMEDT, a total of 648 projects have been approved for NMEDT funding, out of which 540 projects are of mineral exploration, 23 projects for baseline geosciences data generation, 55 Projects of financial assistance and 28 projects of S&T PRISM, 1 project of Geo-chemical Analysis of mine samples by IBM and 1 Pilot Project for Rare Earth Mineral(s) Separation from Multiple Feedstocks under NCMM. Out of 540 mineral exploration projects, 112 projects of 19 Notified Private Exploration Agencies (NPEAs) have been approved, amounting to Rs. 279.49 Cr.

9) A total of 40 blocks explored with NMEDT funding have been successfully auctioned. During the year 2025, 16 blocks were successfully auctioned. The year wise break up of mineral blocks successfully auctioned is given below in **Table 9.3**:

Table 9.3

Sl. NO.	Block	Mineral	State	Year of Auction
1	Nahardih-Maghaipur Block	Limestone	Chhattisgarh	2021
2	Diggaon Block (G-3)	Limestone	Karnataka	2022
3	Ramsthan- Ghunchihai (G-2) Jamodi- Mahanna Part-A (G-2)	Limestone	Madhya Pradesh	2021
4	Purheibahal Block (G-2)	Iron	Odisha	2021
5	Chandiposhi Block (G-2)	Iron	Odisha	2021
6	Jumka- Pathiriposhi (G-2)	Iron	Odisha	2021
7	Gothra-Parasrampura East Block (G-3)	Limestone	Rajasthan	2022
8	Gothra-Parasrampura West Block (G-3)	Limestone	Rajasthan	2022
9	Mandri-Panchala Block	Manganese	Maharashtra	2022
10	Sonrai Phosphorite Block II-IV	Phosphorite	Uttar Pradesh	2022
11	Lanjera- Futala	Manganaese	Maharashtra	2022
12	Jaisinghpura North Block	Iron	Karnataka	2023

Sl. NO.	Block	Mineral	State	Year of Auction
13	Jaisinghpura South Block	Iron	Karnataka	2023
14	South of Damuda	Coal	Jharkhand	2024
15	Lamatola/North URTAN	Coal	Madhya Pradesh	2024
16	Pahadi Kalan-Gora Kalan Block	Phosphorite	Uttar Pradesh	2024
17	Babja Graphite and Manganese Block	Graphite and Manganese Ore	Odisha	2024
18	Biarpalli Block	Manganese & Graphite block	Odisha	2024
19	Ulia-Gamhardih Block	Coal	Chhattisgarh	2024
20	Dandkesra North Block	Bauxite	Chhattisgarh	2025
21	Parpatia Block,	Bauxite	Chhattisgarh	2025
22	Dumarguda Block	Bauxite	Chhattisgarh	2025
23	Chendradadar Block	Bauxite	Chhattisgarh	2025
24	Naubasta Kolard Part A (Damha_ Barethiya & Kothar)	Limestone	Madhya Pradesh	2025
25	Naubasta Kolard Part B (Helaundha)	Limestone	Madhya Pradesh	2025
26	Naubasta Kolard Part A (Padriya_ Rajarwara_Khamhariya Kala)	Limestone	Madhya Pradesh	2025
27	Jamodi-Mahanna Sector-I (Part -B)	Limestone	Madhya Pradesh	2025
28	Jamodi-Mahanna Sector-II (Part -B)	Limestone	Madhya Pradesh	2025
29	Jamodi-Mahanna Sector-III (Part -B)	Limestone	Madhya Pradesh	2025
30	Piparhat-Kubri block	Limestone	Madhya Pradesh	2025
31	Talwa Block	Iron & Manganese	Madhya Pradesh	2025
32	Salepali Graphite Block	Graphite	Odisha	2025
33	Ganacharpura Graphite Block	Graphite	Karnataka	2025
34	Udagi Block	Limestone	Karnataka	2024
35	Saidulanama Block	Limestone	Telangana	2024
36	Sultanpur Block	Limestone	Telangana	2024
37	Saraipani Block	Bauxite	Chhattisgarh	2024
38	Sendurkhar Block	Bauxite	Chhattisgarh	2024
39	West of Tubed Block	Coal	Jharkhand	2025
40	Bhimagundam Block	Limestone	Andhra Pradesh	2025

10) As part of the efforts towards capacity building of State Governments for carrying out mineral exploration, NMEDT provides financial assistance to the State DMGs/ DGMs, for procurement of machinery/ equipment, etc. for enhancing the exploration activities: During the year, 10 projects amounting to ₹ 200.44 Cr were sanctioned to GSI, IBM and State DGMs/DMGs.

11) Incentive of ₹ 7.0 Cr. was provided to 7 States (Rajasthan, Madhya Pradesh, Bihar, Goa, Telangana, Assam and Chhattisgarh) for successful auction of mineral blocks during the year.

12) NMEDT also provides funding support for R & D projects to Start-ups and MSMEs under the S&T PRISM scheme of Ministry of Mines. Since inception upto 31st Dec, 2025, 28 projects with sanctioned cost of ₹36.02 Cr have been approved.

13) Scheme for partial reimbursement of exploration expenses for holders of Composite Licences: CL holders will be reimbursed up to 50% of direct costs as per the SoC of NMEDT in various components like geological mapping, sampling, geochemical analysis, geophysical investigations, exploratory drilling, research collaboration/consultancy/advisory and logistics subject to a maximum ceiling of ₹8 crore.

14) A total of 112 projects amounting to ₹ 279.49 Cr have been sanctioned to 19 Notified Private Exploration Agencies (NPEAs). Of these, 67 projects pertain to critical minerals. During the year, 72 Projects amounting to ₹ 224.30 Cr. were sanctioned to NPEAs, of which 43 projects amounting to ₹ 163.93 Cr are of critical minerals.

15) To enhance the pace of mineral exploration and infrastructure strengthening of Directorates of Mining & Geology in the North-Eastern Region, financial support of Rs. 10 Cr. to each NER State was introduced during FY 2025-26 for carrying out systematic exploration.

16) NMEDT funded a special study of ₹12.80 crore for geochemical analysis of samples from mine faces, mineral stacks, dumps, tailings, process materials and smelter slags across the country to develop a reliable national-level geochemical database and assess the potential for critical minerals in mine waste.

17) Guidelines for Pilot Projects for Recovery of critical minerals from overburden/tailings/fly ash/Red mud, etc were issued on 14.11.2025 to encourage optimum recovery of critical minerals from secondary sources, develop and commercialize innovative technologies for mineral recovery and promote technologies such as hydro-metallurgy, solvent extraction, electrochemical bio-hydrometallurgy, advanced separation techniques etc. for low grade complex ores.

18) Seven RMT project proposals were handed over to the NPEAs by the Hon'ble Union Minister of Mines on 4th March, 2025, during the 175th-anniversary celebration of GSI in Kolkata. Of these seven blocks, six Regional Mineral Targeting blocks have been sanctioned to various NPEAs. This would result in the creation of more exploration blocks of critical minerals.

19) To encourage the State Governments to set up SMET and give further impetus to exploration, research & innovation activities for minor minerals, the scheme for providing a matching grant to State Governments to the extent of 10% of annual collection by the State Governments in SMET for 3 years up to FY 2026-27 was introduced on 12.08.2024. A matching grant amounting to ₹ 7.89 Cr. was released to Rajasthan, Telangana and Andhra

Pradesh in FY 2024-25. During the year (Jan-Dec), SMET was set up in 08 States i.e. Assam, Gujarat, Mizoram, Tripura, Uttarakhand, Kerala, Punjab and Sikkim. This will give further impetus to the exploration of minor minerals in the respective States.

20) Capacity building initiatives: During the year, NMEDT funded 07 workshops & 01 Regional Mineral Targeting (RMT) workshop organized by GSI for NPEAs to build the capacity of exploration agencies. These workshops have strengthened collaboration among the stakeholders in the mineral sector.

21) The revised Schedule of Charges (SoC) of NMEDT came into effect on 15.12.2025.

*****

10 CHAPTER



Corporate Social Responsibility

Corporate Social Responsibility

- National Aluminium Company Limited (NALCO) Page-207
- Hindustan Copper Limited (HCL) Page-209
- Mineral Exploration & Consultancy Limited (MECL) Page-209

National Aluminium Company Limited (NALCO)

10.1 Periphery Development & CSR Initiatives

- CSR policy of NALCO is in compliance with schedule –VII (section 135) of Companies Act 2013 and DPE Guidelines. The Company allocates 2% of average net profit of last 3 financial years as CSR fund as per Companies Act, 2013.
- The company has spent Rs. 18.28 crore in the FY 2025-26 (Till December, 2025) on various CSR projects against the mandated CSR obligation of Rs 79.13 crore.

10.2 Highlights on CSR activities for the financial year 2025-26 are furnished below.

Health Care Initiatives

- **Mobile Health Units:** 9 MHUs covering ~260 villages, providing free primary healthcare to over **1 lakh patients annually** across Damanjodi, Pottangi and Angul.
- **TB Nutritional Support:** Nutritional food baskets provided to **1,633 TB patients** across Koraput, Angul and Puri; medical equipment supported for TB treatment facilities.
- **Project Poshan:** Nutritional support extended to **150 tribal women** at Bhubaneswar.
- **Assistive Devices: 315 assistive aids** distributed to **214 differently-abled beneficiaries** in collaboration with ALIMCO.
- **Project Palna:** Support for a **Day Care–cum–Child Development Centre** at Chandaka, Bhubaneswar.

Education Initiatives

- **Indradhanush:** Mainstream education support to **~1,500 students** from tribal dominated Aspirational District of Koraput in reputed residential institutions of the State.
- **NALCO Ki Ladli:** Educational support to **1,050+ meritorious BPL girl students** in line with Government of India Initiative "Beti Bachao Beti Padhao".
- **Community Awareness:** Support for **Cyber Safety Awareness Campaign 2025** and provision of school bus for safe student transport.
- **Best Matriculate Felicitation:** Recognition of meritorious students from peripheral schools at Angul.

Skill & Employment

- **Skill-Linked Employment Training:** NSDC-aligned residential training to **100 tribal and vulnerable youths** at SDI and CTTC, leading to industry placements.

Iconic City Projects

- **Puri Heritage Development:** PSU partner for **Shri Jagannath Temple, Puri,** including cleanliness, beautification, illumination and free battery-operated transport services for Divyangjan, women and elderly devotees.

Art & Culture

- **Cultural Promotion:** Support to **Panchpattamali Natya Mahotsab** and temple infrastructure development at Simhachalam.

Rural Sports

- **Sports Promotion:**
    - **Support to national-level** Wushu players **and organisation of Sansad Khel Mahotsav** for grassroots sports.
    - Organised Rural Athelete Meet at Balianta Block, Khordha in which 315 students from 18 Schools participated.
    - Support to Andhra Pradesh Special Protection Force (APSPF) for organisation Annual Sports Meet at Visakhapatnam.

Drinking Water

- Potable Water Supply: Drinking water tankers in Angul and spring-based water systems & tube well in Damanjodi villages for sustainable access.

Rural Development

- Infrastructure Development: Traffic signals, Street Lights in NH-55 & Renovation of Road Infrastructure in collaboration with district administrations and other infrastructure development such as renovation of drains, cremation grounds, smasan ghats and community centres developed at various peripherial villages of operational units.

10.3 Training & Development

In order to enhance the functional and behavioural competency of its employees and to align the individual need with the business objective of the organization towards increasing production and productivity as well as to improve business culture in the organization, there has been an unstinting effort by the Company to impart skill and behavioural training to its employees. In its commitment for corporate social accountability and good corporate governance, the company also imparts skill development training to contract workers, apprentices, students from managerial and technical institutes as well as for local populations.

- Total 11554.5 training man-days provided to regular employees during the year 2025-2026 (Upto 31st December 2025).
- 849 regular employees were given virtual as well as external training on management development programme during the year 2025-26 (Upto 31st December 2025) from reputed National organisations.
- In-house skill development programmes organized for 4,567 Security personnel, contract labours and trainees across the company during the year 2025-26 (Upto 31st December 2025).
- 905 apprentice trainees were engaged during the year FY 2025-26 (Upto 31st December 2025), which is 18.84 % of total regular employees and 4.54 % of total employees including contractual workers engaged by different contractors.
- 1,281 students from different technical and management institutes across the country had undergone summer internship programme in various functional disciplines during the year 2025-26 (Upto 31st December 2025).
- 34 students have been engaged under Prime Minister Internship Scheme (PMIS) during the year 2025-2026 (Upto 31st December 2025) & 2024-25 across all the units.

10.4 Hindustan Copper Limited (HCL)

HCL's CSR Policy revolves round the principles laid down in the Sustainable Development Goals (SDGs), Companies Act, 2013, Company (Corporate Social Responsibility) Rules, 2014 and Department of Public Enterprise Guidelines on CSR.

The actual expenditure on the CSR activities during last two financial years and current financial year is given in the **Table 10.1** below:

CSR expenditure during last two financial years and current financial year.

Table 10.1

(₹ in lakhs)

Financial Years	Required Spent (2 % of average net profit (PBT) of last three FYs) #	Spent
2023-24	321.59	266.92
2024-25	791.87	621.77
2025-26	959.73	349.95 (31.12.2024)

The allocation has been done for important ongoing projects having direct impact on communities around company's operation.

Major projects planned are as under.

1. Drinking Water
2. Health and Nutrition
3. Livelihoods
4. Promotion of Sports
5. Conservation of Environment
6. Rural Development Projects

The projects are being implemented in the target communities with the help of State government, CSR Implementing Agencies and other agencies.

10.5 Mineral Exploration & Consultancy Limited (MECL)

MECL has consistently prioritized the welfare of communities in the vicinity of its project areas, implementing CSR initiatives that promote sustainable development, health, education, and environmental stewardship. In the previous fiscal year (FY 202425), MECL's CSR activities, with a total expenditure of ₹106.74 lakhs, focused on improving healthcare facilities, supporting vulnerable groups, promoting education, and ensuring environmental sustainability. Key initiatives included the provision of portable water purification units, distribution of wheelchairs, and support for healthcare campaigns and educational programs across project regions in Chhattisgarh, Jharkhand, Maharashtra, Madhya Pradesh, Odisha and Rajasthan.

Building on this foundation, during FY 2025-26, MECL has further strengthened its CSR efforts with an allocation of ₹160.50 lakhs, targeting critical areas in the vicinity of its operational sites. Major initiatives include the installation of 30 portable water purification systems, distribution of 55 manual wheelchairs to government hospitals, and procurement of 3 ECG machines to enhance diagnostic capabilities in Chhattisgarh. MECL has also extended financial support to socially impactful programs, including free cervical cancer vaccination drives by Swasthya Vriksha Foundation, Nagpur, pediatric surgical care under the Bal Shalya Kriya Mission (BSM) by G.S.B. Sabha, and HPLC testing for university students conducted by the Thalassemia and Sickle Cell Society, Nagpur.

Through these sustained efforts across consecutive years, MECL demonstrates a strategic and need-based approach to CSR, ensuring that interventions are meaningful, community-focused, and aligned with

local priorities. By addressing healthcare, education, support for vulnerable groups, and environmental sustainability, MECL continues to make a tangible impact on the well-being and development of communities surrounding its project areas, reinforcing its commitment to inclusive growth and responsible corporate citizenship.



Distribution of Ambulance through CSR activities

*****

11 CHAPTER



Progressive Use of Hindi

Progressive Use of Hindi

- Hindi Advisory Committee Page-213
- Official Language Implementation Committee (OLIC)..... Page-213
- Official Language Inspection of Offices..... Page-213
- Inspection by the Parliamentary Committee on Official Language Page-213
- Geological Survey of India (GSI)..... Page-214
- Indian Bureau of Mines (IBM)..... Page-217
- National Aluminium Company Limited (NALCO) Page-219
- Hindustan Copper Limited (HCL)..... Page-220
- Mineral Exploration and Consultancy Limited (MECL) Page-221
- Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC) Page-222

Introduction

11.1 The Ministry of Mines undertakes various initiatives to ensure compliance with the Official Language Policy of the Union in the Ministry, its attached and subordinate offices, and Public Sector Undertakings. Due compliance of Section 3(3) of the Official Languages Act, 1963 is also ensured.

Hindi Advisory Committee

11.2 The Hindi Advisory Committee is a high-level body tasked with overseeing the implementation of Official Language policy. On September 24, 2025, a meeting of the Ministry of Mines' Hindi Advisory Committee was convened in New Delhi, presided over by the Hon'ble Minister of Coal and Mines, **Shri G. Kishan Reddy**. During the session, esteemed committee members offered recommendations to promote Hindi and to encourage its integration into daily official works. In his address, the Hon'ble Minister of Coal and Mines cum Chairman emphasized that Hindi is indispensable for operations on a pan-India scale. He appealed to adopt Hindi not only as a mode of communication but also as a language of technology, asserting that its adoption is vital to the nation's ongoing digital transformation and progress.

Official Language Implementation Committee (OLIC)

11.3 An Official Language Implementation Committee (OLIC) has been constituted in the Ministry under the chairmanship of the Joint Secretary (Administration). Meetings of the Committee are held every quarter, in which the quarterly progress reports of the Ministry's divisions and attached/subordinate offices are reviewed.

Official Language Inspection

11.4 As per the Annual Programme 2025–26 of the Department of Official Language, Ministry of Home Affairs, Ministries/ Departments are required to conduct Official Language inspections of a minimum of 25% of their offices located outside the headquarters. Accordingly, the Ministry conducted official language inspections of eight subordinate/ attached offices of the Ministry of Mines by December 2025, specifically GSI, DGCO, New Delhi on 27.01.2025; NIRM, Bengaluru on 27.05.2025; Training Institute, GSI, Hyderabad on 10.07.2025; IBM, Goa on 15.10.2025; NALCO, Mumbai on 17.10.2025; JNARDDC, Nagpur, Nagpur on 14.11.2025; MECL, Nagpur on 14.11.2025; and IBM, Nagpur on 15.10.2025.

Inspection by the Parliamentary Committee on Official Language

11.5 The Parliamentary Committee on Official Language conducted inspections of IBM, Udaipur (04.03.2025); GSI State Unit: Rajasthan, Jaipur (06.03.2025); IBM and GSI State Unit: Assam, Guwahati (21.04.2025); GSI North Eastern Region, Shillong (25.04.2025); GSI State Unit: Karnataka & Goa, Bengaluru and GSI Remote Sensing & Aerial Survey, Bengaluru (29.05.2025); GSI State Unit: Uttarakhand, Dehradun and IBM Dehradun Office (19.06.2025); GSI State Unit: Odisha, Bhubaneswar (10.09.2025); IBM Gandhinagar Office (12.09.2025); and GSI Central Headquarters, Kolkata along with GSI State Unit: West Bengal & Andaman & Nicobar, Kolkata and HCL Corporate Office, Kolkata(24.12.2025). The Committee suggested certain measures for improvement in the use of Hindi in official work, and necessary action has been taken by the concerned offices on the assurances given to the Committee.

Ministry's Website

11.6 The Ministry's website serves as an

important link for connecting with the public. The content on the website is available in bilingual form and is updated periodically by the concerned divisions. The Ministry's website addresses are https://mines.gov.in. and its Hindi URL is खानमंत्रालय.सरकार.भारत

Hindi Workshops

11.7 To encourage officers and employees to carry out official work in Hindi, Hindi workshops are organized from time to time as required. During the year, four Hindi workshops were organized for officers in the Ministry.

Observance of Hindi Fortnight

11.8 Hindi Fortnight was observed in the Ministry of Mines from 14 to 29 September 2025. During this period, various competitions were organized to create awareness among officers about Official Language policies. A Hindi Fortnight Prize Distribution Ceremony was held on 18 December 2025 in which winners of these competitions were felicitated with certificates and books.

During the year 2024–25, the Incentive Scheme for Doing Official Work Originally in Hindi, implemented by the Department of Official Language, Ministry of Home Affairs, was implemented in the Ministry of Mines. Under this scheme, eight employees were awarded cash prizes.

Geological Survey of India (GSI)

11.9 The Geological Survey of India (GSI) is an attached office of the Ministry of Mines. Since its establishment in 1851, the organization has been carrying out geological and geotechnical activities across the country. Through its Training Institute Headquarters at Hyderabad and regional training institutes, GSI provides advanced training to geologists from India and abroad. The Geological Survey of India is continuously making efforts to increase the use of Official Language Hindi in administrative as well as scientific and technical activities in all its offices. The provisions relating to Official Language contained in the Constitution of India, the Official Languages Act, 1963, the Official Languages Rules, 1976, and the instructions issued from time to time by the Department of Official Language, Ministry of Home Affairs, Government of India, are being duly and consistently complied with by the organization.

Official Language Inspection of Subordinate Offices

11.10 With a view to assessing progress in the use of Hindi in various offices, the Geological Survey of India, Central Headquarters, Kolkata, conducted Official Language inspections of 10 offices during the period under review. In addition, regional offices also carried out Official Language inspections of their respective subordinate State Units and divisions/sections.

Organisation of Hindi Workshops

11.11 In compliance with the guidelines issued by the Department of Official Language, Ministry of Home Affairs, Government of India, Hindi workshops are being organized regularly in the Geological Survey of India. The details of the workshops organized at the Central Headquarters, GSI, during the period under review are as follows:

- A workshop on *"Filling up the Inspection Questionnaire of the Parliamentary Committee on Official Language"* was organized on 03.02.2025.
- A workshop on *"Diversity of Butterflies in India – A Glimpse"* was organized on 23.06.2025.
- A workshop on *"Contribution of*

Bengal to the Development of Hindi" was organized on 29.08.2025.

Observance of Hindi Day / Week / Fortnight

11.12 Hindi Fortnight, 2025 was celebrated with great enthusiasm at the Central Headquarters of the Geological Survey of India, Kolkata. As in previous years, the grand inauguration of Hindi Day was held under the chairmanship of the Hon'ble Union Minister of Home Affairs and Cooperation, Shri Amit Shah, at the Fifth All India Official Language Conference, Gandhinagar, Gujarat, in which Official Language functionaries from GSI offices participated, and Hindi Day was inaugurated from the same platform.

Subsequently, various competitions and the valedictory Program associated with Hindi Week/Fortnight were organized in the concerned offices. Accordingly, Hindi Fortnight was observed at the Central Headquarters, GSI, Kolkata from 18.09.2025 to 26.09.2025, during which various competitions such as Hindi Quiz, Hindi Self-Composed Poetry Recitation, Hindi Dictation (for MTS), Hindi Antakshari and Hindi Typing Competition were organized. Officers and employees participated in large numbers with great enthusiasm. During the valedictory function, participants were awarded prizes and certificates. Officers who made outstanding contributions towards the promotion and propagation of Official Language Hindi were also felicitated on this occasion.

Hindi Translation

11.13 In accordance with Section 3(3) of the Official Languages Act, 1963, gazette notifications, office orders, circulars, tender notices, materials related to the Right to Information Act, documents to be laid on the Tables of both Houses of Parliament, and various official correspondence of GSI were translated from English into Hindi and from Hindi into English, as required. Compliance with Rule 5 of the Official Languages Rules, 1976 was also ensured. In addition, Hindi translations of the summaries of scientific reports of the Geological Survey of India were carried out.

Review of Quarterly Progress Reports (QPRs) of All GSI Offices

11.14 The Central Headquarters of the Geological Survey of India conducted quarterly reviews of the Hindi Quarterly Progress Reports submitted by all subordinate regional offices and drew their attention to relevant points requiring appropriate action. Similar reviews were carried out by all regional offices in respect of their subordinate State Unit offices.

Meetings of the Official Language Implementation Committee

11.15 As per the directions of the Department of Official Language, Ministry of Home Affairs, Government of India, Official Language Implementation Committees have been constituted in all offices of the Geological Survey of India under the chairmanship of the administrative heads. Regular quarterly meetings are held to review the status of Official Language implementation in the offices, necessary decisions are taken, and the minutes of these meetings are forwarded to the concerned Regional Implementation Offices of the Department of Official Language through the Central Headquarters. During the period under review, meetings of the Official Language Implementation Committee at the Central Headquarters were held on 31.01.2025, 29.04.2025, 25.07.2025 and 31.10.2025.

All India Annual Official Language Review Meeting and All India Scientific

and Technical Official Language Seminar

11.16 A two-day All India Annual Official Language Review Meeting and Scientific and Technical Official Language Seminar were jointly organized by the Central Headquarters of the Geological Survey of India under the chairmanship of Shri Asit Saha, Director General, GSI, from 03 to 04 February 2025 at BhaBUS, Northern Region, Lucknow, in which a total of 90 officers participated.

- Senior officers on the dais released the 11th issue of the Hindi in-house magazine *"Bhoomanthan"* of BhaBUS, Central Headquarters, and the compilation of abstracts of research papers presented in the Scientific and Technical Official Language Seminar.
- Three outstanding Hindi in-house magazines published by various offices of the Geological Survey of India during the year 2023–24 were awarded prizes and certificates.
- Four technical sessions were organized during the Scientific and Technical Official Language Seminar, in which a total of 28 research papers were presented.

During this event, four scientists who presented outstanding scientific and technical research papers were awarded prizes and certificates.

Chairmanship of Town Official Language Implementation Committee

11.17 The Central Headquarters of the Geological Survey of India, Kolkata, has been designated as the Chair Office of Town Official Language Implementation Committee (TOLIC), Kolkata – Office No. 3, and the Director General is the ex-officio Chairman of the Committee. At present, the Committee has 61 member offices. The half-yearly meetings of the Committee were held under the chairmanship of the Director General on 21.05.2025 and 07.11.2025, during which the half-yearly reports were reviewed. Similarly, the Northern Region Headquarters has been accorded the chairmanship of the Lucknow Town Official Language Implementation Committee, where meetings are being organized as per the calendar prescribed by the Department of Official Language.

Inspection of GSI Offices by the Parliamentary Committee on Official Language

11.18 The Third Sub-Committee of the Parliamentary Committee on Official Language conducted Official Language inspections of the following nine offices of the Geological Survey of India:

- State Unit: Rajasthan, Jaipur – 06.03.2025
- State Unit: Assam, Guwahati – 21.04.2025
- North Eastern Region, Shillong – 25.04.2025
- State Unit: Karnataka & Goa, Bengaluru – 29.05.2025
- Remote Sensing and Aerial Survey, Bengaluru – 29.05.2025
- State Unit: Uttarakhand, Dehradun – 19.06.2025
- State Unit: Odisha, Bhubaneswar – 10.09.2025
- Central Headquarters, Kolkata – 24.12.2025
- State Unit: West Bengal & Andaman & Nicobar, Kolkata – 24.12.2025

Indian Bureau of Mines (IBM)

11.19 The Indian Bureau of Mines is effectively implementing the Official Language Policy of the Government of India not only at its Headquarters but also in all its subordinate offices. The Headquarter of the Indian Bureau of Mines is located at Nagpur, Maharashtra, which falls under Region 'B'. Six of its subordinate offices are located in Region 'A', two in Region 'B', and the remaining eight offices are located in Region 'C'. All subordinate offices of the Indian Bureau of Mines have achieved the targets prescribed under the Annual Programme of the Department of Official Language. The progress made during the year 2025–26 in the implementation of Hindi is given in subsequent sections.

Meetings of Departmental Official Language Implementation Committee

11.20 The 132nd, 133rd, 134th and 135th meetings of the Departmental Official Language Implementation Committee were held on 13.01.2025, 24.04.2025, 10.07.2025 and 16.10.2025, respectively. In addition, meetings of the Official Language Implementation Committees in all regional offices are also held regularly, and the reports thereof are forwarded to the Headquarters.

Hindi Fortnight

11.21 Hindi Fortnight was observed at the Headquarters of the Indian Bureau of Mines from 14.09.2025 to 30.09.2025. As per the directions of the Department of Official Language, Ministry of Home Affairs, New Delhi, the central inauguration of Hindi Day was held on 14 September 2025 at Mahatma Mandir, Gandhinagar. During the Fortnight, various competitions were organized.

Hindi Translation

11.22 During the year, important technical and administrative documents were translated into Hindi. These included approximately 300 pages of the Annual Report 2024–25 received from the Ministry of Mines and the Technical Secretary Section, and material related to mineral production specifications received from the Mining and Mineral Statistics Division. In addition, 95 pages of the background note on Atmanirbharta in Minerals and Metals received from the Technical Secretary Section were also translated into Hindi.

Official Language Inspection

11.23 During the year, Official Language inspections were carried out in various divisions and sections of the Indian Bureau of Mines, including GM Cell, MMPL and Pilot Plant, IBM Hingna, Nagpur; Vigilance Section; General Section; Publication Section; Legal Cell; Nagpur Regional Office; Training Centre; Recruitment Section; MMS Division; Mineral Economics Division; TS Section; CCOM Office; Stores Section; Accounts Section; and COM (Central) Office. Similarly, Official Language inspections were also conducted in the Regional Office, Raipur, and the Regional Office, Goa. Official Language inspections were also conducted in the Ranchi Regional Office on 31.01.2024, 19.06.2024 and 05.09.2024.

11.24 Hindi Workshops

Hindi workshops were organized at the Headquarters of the Indian Bureau of Mines on 25.02.2025, 27.06.2025, 26.09.2025 and 11.11.2025, in which a total of 90 officers and employees participated. Similarly, Hindi workshops were also organized in various regional offices of the Indian Bureau of Mines, as detailed below:

Hindi workshops were organized at the Bhubaneswar Regional Office on 11.03.2025 and 20.05.2025; at the Gandhinagar Regional Office on 13.02.2025, 26.06.2025

and 30.06.2025; at the Modern Mineral Processing Plant, Hingna on 04.07.2025 and 02.09.2025; at the Udaipur Zonal Office on 12.03.2025, 10.06.2025 and 18.09.2025; at the Jabalpur Regional Office on 25.02.2025, 26.03.2025, 11.06.2025 and 08.09.2025; at the Bengaluru Office on 27.03.2025 and 24.06.2024; at the Kolkata Zonal Office on 11.02.2025, 17.06.2025, 09.09.2025 and 10.09.2025; at the Chennai Regional Office on 26.02.2025, 27.02.2025, 11.06.2025, 12.06.2025, 11.09.2025 and 12.09.2025; at the Raipur Regional Office on 20.03.2025 and 23.09.2025; at the Hyderabad Regional Office on 25.03.2025 and 23.06.2025; at the Ranchi Regional Office on 27.03.2025 and 27.06.2025; at the Dehradun Regional Office on 20.03.2025, 10.06.2025 and 17.09.2025; at the Goa Regional Office on 21.03.2025 and 13.06.2025; at the Guwahati Regional Office on 25.03.2025 and 30.06.2025; and at the Ajmer Regional Office on 17.01.2025.

11.25 Awards under the Incentive Scheme for Original Noting and Drafting in Hindi

For the year 2024–25, under the Incentive Scheme for Original Noting and Drafting in Hindi, 92 employees from 17 offices of the Indian Bureau of Mines were honoured.

11.26 Official Language Inspection by the Parliamentary Committee on Official Language

The Third Sub-Committee of the Parliamentary Committee on Official Language conducted Official Language inspections at the Bhubaneswar Regional Office on 27.02.2025, the Udaipur Zonal Office on 03.03.2025, the Guwahati Regional Office on 21.04.2025, and the Dehradun Regional Office on 19.06.2025.

11.27 Online Review Meeting of the Ministry of Mines

The Ministry of Mines organized an online review meeting on 25.03.2025 under the chairpersonship of Smt. Farida M. Naik, Joint Secretary, Ministry of Mines, to review the implementation of Official Language during the year 2024–25 in the Headquarters of the Indian Bureau of Mines, Nagpur, and all zonal/regional offices, mineral processing laboratories, etc.

11.28 First Prize to Goa Regional Office

A Regional Official Language Implementation Conference was held at Jaipur on 17.02.2025, in which the Goa Regional Office was awarded the First Prize for excellent implementation of Official Language Hindi during the year 2023–24.

11.29 First Prize to IBM Headquarters under the Official Language Shield Scheme

Under the Official Language Shield Scheme of the Ministry of Mines for the financial year 2024–25, the Headquarters of the Indian Bureau of Mines was awarded the First Prize and honoured with the Official Language Shield for outstanding performance in Official Language work, primarily in Hindi.

11.30 All India Special Hindi Workshop at Udaipur Zonal Office

Under the aegis of the Headquarters of the Indian Bureau of Mines, Nagpur, an All India Special Hindi Workshop was organized at the Udaipur Zonal Office on 28.08.2024.

11.31 Award to Raipur Regional Office by Town Official Language Implementation Committee

The Raipur Regional Office of the Indian Bureau of Mines was awarded the First Prize

and the Official Language Shield for the year 2024–25 by the Town Official Language Implementation Committee for promoting Hindi and effectively implementing the Official Language Policy.

11.32 Second Prize to Dehradun Regional Office

On 11.03.2025, the Evaluation Committee of the Town Official Language Implementation Committee awarded the Second Prize to the Dehradun Regional Office for excellent work done in Hindi during the year 2023–24.

11.33 All India Special Hindi Workshop at Hyderabad Regional Office

Under the aegis of the Headquarters of the Indian Bureau of Mines, Nagpur, an All India Special Hindi Workshop was organized at the Hyderabad Regional Office on 13.08.2025. The workshop was chaired by the Controller General (I/c), Shri Peeyush Narayan Sharma.

National Aluminium Company Limited (NALCO)

11.34 Measures for Implementation of Official Language Policy

- Progressive implementation is being carried out to ensure compliance with the provisions of the Official Languages Act, 1963 and the Official Languages Rules, 1976.
- NALCO is responsible for the coordination of NARAKAS at both Bhubaneswar and Angul, where regular meetings are held involving all local Public Sector Undertaking offices. During these meetings, representatives of the Regional Implementation Office of the Government of India appreciated the efforts made by the Company.
- Official Language inspection of the Corporate Office at Bhubaneswar was carried out on 12.06.2025 by Dr. Vichitrasen Gupta, Officer-in-Charge, Regional Implementation Office, Department of Official Language, Ministry of Home Affairs, Government of India.
- Official Language inspection of the Regional Office (West), Mumbai was completed on 17.10.2025 by representatives of the Ministry of Mines.
- The Company's website is being regularly updated in both Hindi and English.
- Hindi Fortnight 2025 was observed at the Corporate Office, production units and regional offices to promote the use of Hindi in official work, during which various competitions were organized for employees.
- A Hindi Extempore Speech Competition was organized on 27.05.2025 under the banner of NARAKAS (Undertakings), Bhubaneswar for its member undertakings.
- On the occasion of Hindi Fortnight 2025, a Kavi Sammelan was organized on 08.11.2025 at the Mining and Refinery Complex, Damanjodi, with participation of nationally renowned poets.
- Faculty support was provided to member offices of NARAKAS, Bhubaneswar on tools and techniques for Kanthastha (Translation Tool), Unicode and Hindi computing.
- NARAKAS (Undertakings), Bhubaneswar, coordinated by NALCO, was honoured during the

conference of NARAKAS of the Eastern Region organized by the Regional Implementation Office (East), Department of Official Language, Ministry of Home Affairs.

11.35 Hindustan Copper Limited (HCL)

Progressive Use of Hindi

- During the year 2025, Hindi Day/Week/ Fortnight was observed from 14 to 29 September 2025 in all units/offices of HCL, including the Corporate Office. Various programmes were organized to promote the use of Official Language Hindi, and winners of competitions were encouraged with prizes and certificates during the valedictory function.
- Meetings of the Official Language Implementation Committee are held regularly in HCL, and Hindi workshops are also organized.
- Under the aegis of the Town Official Language Implementation Committee (Undertakings), Kolkata, participation of HCL employees was ensured in various competitions organized by different CPSEs for the promotion of Official Language Hindi.
- In the meeting of the Town Official Language Implementation Committee (Undertakings), Kolkata held on 25.08.2025, Hindustan Copper Limited was awarded the Award of Excellence for outstanding performance in the field of Official Language implementation.
- Progressive use of Hindi is regularly reviewed in the Board meetings of the Company. The in-house magazine "Tamralipi" is published in Hindi and English. Recruitment advertisements are issued bilingually, and all employees are issued service certificates in Hindi at the time of retirement. During the year 2025, Hindi translations of the Company's Annual Report, Memorandum of Understanding, Outcome Budget and various other documents were carried out.
- On 24.12.2025, the Third Sub-Committee of the Parliamentary Committee on Official Language inspected the Corporate Office of Hindustan Copper Limited, during which the Company was awarded a certificate of "Excellent" for Official Language performance.

National Institute of Rock Mechanics (NIRM)

11.36 With a view to promoting the progressive use of Official Language Hindi, Hindi Fortnight was organized with various programmes at the Headquarters, Bengaluru and Registered Office, KGF of the National Institute of Rock Mechanics from 09 September to 23 September 2024.

- During Hindi Fortnight, competitions such as essay writing on *"Importance of Hindi Day"*, *"Role of Teachers in Nation Building"* and *"My Duties Towards the Nation"*; poster making on *"Hindi Day and Hindi Language"* and *"Safety at Workplace"*; slogan writing; and poetry recitation were organized. The inaugural function was graced by Prof. Sanjay Kumar Sharma, IIT (BHU), as the Chief Guest.
- Almost all officers and employees regularly sign the attendance register in Hindi.
- Summaries of all technical reports are also being provided in Hindi.



Dr. H. S. Venkatesh, Director and Chairman (Official Language), expressed his views on the importance of the Hindi language and inspired officers and employees to carry out official work in Hindi.



At the inaugural ceremony, Prof. Sanjay Kumar Sharma of IIT (BHU), the Chief Guest, expressed his views.

11.37 Mineral Exploration Corporation Limited

Progressive Use of Hindi

Major Measures for Implementation of the Official Language Policy

- **Training, Workshops and Seminars:** Regular one-day workshops were organized for technical and non-technical employees to enhance their understanding and proficiency in the Hindi policy.
- **Hindi Fortnight / Festival:** Hindi Day was observed on 14 September, followed by the organization of Hindi Fortnight. Employees and their family

members participated in various competitions, thereby promoting the use of Hindi. Prizes were distributed by the Chairman-cum-Managing Director.

- **Translation Work:** The Hindi Department translated important official documents, orders, circulars, press releases and tender notices (under Section 3(3)), thereby promoting the use and propagation of official Hindi.
- **In-house Publication:** The internal Hindi magazine *"Khanij Pravah"* publishes essays, technical articles and official language–related material contributed by employees. This year, *"Khanij Pravah"* was awarded the Third Prize by NARAKAS in recognition of its outstanding contribution to the promotion of Hindi among PSUs.

11.38 Special Efforts by the PSU for Promotion of Hindi

- Institution of the Official Language Incentive Award to encourage the use of Hindi in official correspondence.
- Late Shri Shankar Dayal Singh Memorial Award, an annual cash award for contributions to the promotion of Hindi.
- Purchase of Hindi literature to enhance the language proficiency of employees.
- Munshi Premchand Memorial Essay Competitions organized to honor his literary contributions.
- Self-composed Hindi poetry writing competition (26 March 2025, NARAKAS K-1, Nagpur) for employees of Central Government organizations, autonomous bodies and CPSEs.
- Under the Hindi Training Scheme, Nagpur, 15 employees were provided Hindi Proficiency Training.



MECL's in-house Hindi magazine received the Third Prize.

11.39 Jawaharlal Nehru Aluminium Research, Development and Design Centre (JNARDDC)

Progressive Use of Hindi

Jawaharlal Nehru Aluminium Research, Development and Design Centre (JNARDDC) is a Central Government autonomous body under the Ministry of Mines. The Centre was established in 1989 with the objective of providing a major research and development support system for the emerging modern aluminium industry in India. JNARDDC continued its efforts to promote the progressive use of Hindi. The Centre observed Hindi Pakhwada from 12 to 26 September 2025, during which several competitions were organised. A team led by Shri Anoop Singh, Assistant Director (OL), Official Language Committee, Ministry of Mines, conducted an Official Language inspection on 13 November 2025. The team appreciated the initiatives undertaken by the Centre and offered suggestions to further enhance the use of Hindi in day-to-day official communication.

*****

12 CHAPTER



Exploration Activities in the North-Eastern Region

Exploration Activities in the North-Eastern Region

- Geoscience Activities in the North- Eastern Region Page-225
- Work done by Geological Survey of India (GSI) in the North – Eastern Region Page-225
- Work done by IBM North- Eastern Region Page-236
- Work Carried Out by MECL in North – Eastern Region Page-237

Geoscience Activities in the North-Eastern Region

Introduction

12.1 The North Eastern Region (NER) of India consists of eight states-Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Sikkim. This region stands apart from the rest of the country due to its distinctive geomorphological and geological characteristics. Stratigraphically, Northeast India exhibits a wide temporal range, extending from the Precambrian to the Quaternary. The oldest lithological units comprise the Precambrian gneissic complexes of the Meghalaya Plateau and the Karbi-Anglong Plateau.

The northern boundary is marked by the Himalayas, which contain diverse rock assemblages ranging from the Proterozoic to the Early Palaeozoic. The adjoining foothill zones are predominantly composed of Tertiary sediments. Much of the remaining area is underlain by Cretaceous–Tertiary successions that span the Eocene to Pliocene period. The Brahmaputra Valley forms the prominent Assam Plains, tectonically enclosed by the Eastern Himalayas to the north, the Indo-Myanmar Ranges to the east and southeast, and the Shillong Plateau gneissic complex to the south.

Work Carried Out by the Geological Survey of India (GSI) in the North Eastern Region

12.2 The Geological Survey of India (GSI), North Eastern Region (NER), undertakes a wide spectrum of activities including baseline data generation through geological, geochemical, and geophysical mapping; mineral exploration; compilation and preparation of thematic maps and publications; and fundamental geoscientific research. The organization also carries out public-good geoscience studies such as landslide, geotechnical, and earthquake investigations.

To support the geoscientific development of the NER, GSI provides training and capacity-building programmes to officers from various State Directorates of Geology and Mining (DGMs). Additionally, GSI regularly extends technical assistance to state DGMs by conducting chemical analyses and petrological examinations of representative samples as per their requirements.

Geological Mapping on 1:25,000 Scale

12.3 In FS 2024–25, thirteen Systematic Thematic Mapping (STM) projects at a 1:25,000 scale were carried out across the NER. These include one project each in Arunachal Pradesh and Assam, four in Meghalaya, six in Tripura and Mizoram, and one in Sikkim. From 1st April 2024 to 31st December 2024, 1,562 sq km was mapped out of the total 2,870 sq km. Remaining, 1,308 sq km was completed during the period from 1st January 2025 to 31st March 2025 (**Annexure-12.1**).

12.4 During FS 2025–26, seventeen STM projects at a 1:25,000 scale is being implemented in the NER. These include four items in Arunachal Pradesh, two spread across Assam, Manipur, and Nagaland, four in Meghalaya, and four in Tripura and one in Mizoram. Between 1st April 2025 and 31st December 2025, 3169.5 sq km has been mapped out of the planned 3,751 sq km (**Annexure-12.2**).

Geochemical Mapping (GCM)

12.5 The National Geochemical Mapping (NGCM) programme, initiated in FS 2001–02, aims to generate a uniform, countrywide geochemical baseline for 64 elements at a 1:50,000 scale. Currently, 62 elements are routinely analyzed, while Platinum (Pt) and

Palladium (Pd) are analyzed selectively in areas underlain by basic and ultrabasic rocks. The resulting dataset plays a critical role in identifying geochemical anomalies that may indicate prospective zones for future mineral exploration.

12.6 During FS 2024–25, four Geochemical Mapping items at a 1:50,000 scale—based on systematic grid-based sampling were executed in parts of Assam. Of the targeted 11,684 sq km, 6,392 sq km was covered between 1st April 2024 and 31st December 2024 and the remaining targets of 5292 sq km have been covered between 1st January 2025 to 31st March 2025. (**Annexure-12.3**).

12.7 In FS 2025–26, three GCM projects at a 1:50,000 scale are under execution in Assam. Out of the proposed 9,632 sq km, 8528 sq km has been completed during the period from 1st April 2025 to 31st December 2025 (**Annexure-12.4**).

Geophysical Mapping (GPM)

12.8 Geophysical Mapping (GPM) is undertaken to generate gravity-magnetic anomaly maps aimed at delineating subsurface geological structures. These datasets, when integrated with geological and geochemical information, help in formulating conceptual models for identifying potential mineral targets at both shallow and deeper levels.

12.9 In FS 2024–25, three GPM projects were carried out in parts of Assam and Meghalaya. 8,400 sq km. has been completed between 1st April 2024 and 31st March 2025 of which 5515 sq km area was covered during the period from 1st January 2025 to 31st March 2025 (**Annexure-12.5**).

12.10 From 1st April to 31st December 2025, GSI completed geophysical mapping over 4430 sq km using in-house resources, while an additional 16009 sq km was covered through outsourcing supported by NMEDT funding (**Annexure-12.6**).

Photo Geology and Remote Sensing (PGRS)

12.11 During FS 2024–25, three Photo Geology and Remote Sensing (PGRS) projects were carried out in parts of Arunachal Pradesh, Manipur, Nagaland, and Tripura using ASTER data. Out of the assigned 42,249 sq km, an area of 20,786 sq km has been completed between 1st April 2024 and 31st December 2024 and 21463 sq km has been completed during 1st January 2025 to 31st March 2025. (**Annexure-12.7**).

12.12 For FS 2025–26, two PGRS projects are in progress in selected areas of Meghalaya and Assam. Of the total 3,085 sq km planned for the season, 2175 sq km has been completed during the period from 1st April 2025 to 31st December 2025 (**Annexure-12.8**).

Mineral Exploration in NER

12.13 The major mineral resources in NER that are partially explored include coal, limestone, dolomite, graphite, vanadium, Rare Earth Elements (REE), lateritic bauxite, clay etc. Besides, minor occurrence of low-grade iron ore, base metal sulphides, nickel, cobalt, lithium, vanadium, molybdenum, gold, tin, tungsten, Platinum Group of Elements (PGE) are also reported.

GSI has given thrust on the mineral exploration and development activities in North Eastern Region through resource appraisal of various mineral commodities including minerals like graphite, vanadium, Rare Earth Element (REE) etc. in which our country is deficient. The entire activity is being planned to be supplemented by baseline data generation through Geochemical Mapping, Geophysical

Mapping, Specialized Thematic Mapping, Photo geology & Remote sensing which are of immense help in delineating areas for systematic mineral exploration. Further, application of Machine learning and Artificial intelligence (AI-ML), drone based magnetic survey have been adopted to predict more potential mineralized zones.

In addition to the accredited programmes in exploration work, GSI has also accorded priority for creation of multi- thematic database for data dissemination to invite and attract private investments in mineral sector through recently developed National Geo-science Data Repository portal.

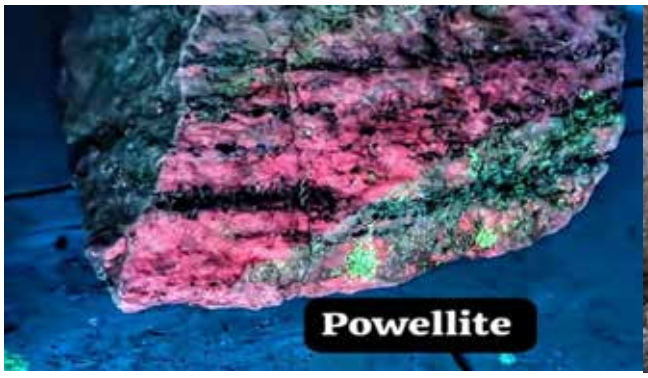
GSI has expanded its exploration activities as part of the Government of India's Atmanirbhar Bharat initiative, recognizing the rich mineral potential of Arunachal Pradesh, Assam, Meghalaya. GSI has augmented resource of graphite, vanadium, REE and copper in Arunachal Pradesh; limestone, Iron ore, glass sand in Assam and limestone in Meghalaya which leads to handing over of 34 nos. resource bearing Geological Report (GR) and 4 nos. Geological Memorandum (GM) for consideration in the auction process after 2015.

During FS 2024-25, a total of twenty-eight items (1 G2, 4G3, 19 G4, 3 CMAP and1 RP item) have been completed in the states of Arunachal Pradesh, Assam, Meghalaya, Manipur- Nagaland, Tripura and Sikkim of North East India and during the period 1st January 2025 to 31st March, 2025, a total 462 sq km Large Scale Mapping, 0.37 sq km Detailed mapping and 2122.75 m drilling have been done in these 28 projects and all field activities have been completed.

During FS 2025-26, a total of thirty-three items (1 G2, 5 G3, 22 G4, 3 CMAP and 2 RP) have been taken up in the states of Arunachal Pradesh, Assam, Meghalaya, Manipur-Nagaland, Tripura, Mizoram and Sikkim of North East India and a total 943 sq km Large Scale Mapping / Geological Mapping, 8.43 sq km Detailed mapping and 6346.05m drilling have been done during 1st April, 2025 to 31st December, 2025 and work is in progress in all 33 items. The projected quantum of work for large scale mapping, detailed mapping and drilling from January, 2026 to March, 2026 is 223 sq.km, 4.25 sq.km and 3318.35 m respectively.

The commodity-wise and stage-wise details of the projects of FS 2024-25 and 2025-26 are given in **Annexure - 12.9**.

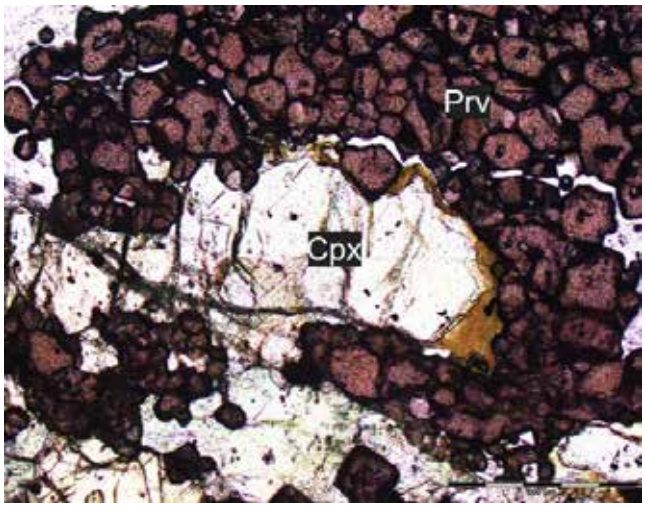
During mining conclave held during 64th CGPB meeting in January, 2025 GSI, NER handed over 2 nos. Geological Reports (GR) on graphite & vanadium (Pakro and Sito-Sikhe blocks, Arunachal Pradesh), 2 nos. GR on limestone (Krungming block, Assam and Khunti block, Meghalaya) and 02 nos. of Geological memorandum's (Pipa limestone block, Arunachal Pradesh and Mollen-Washello Nickel block, Nagaland).



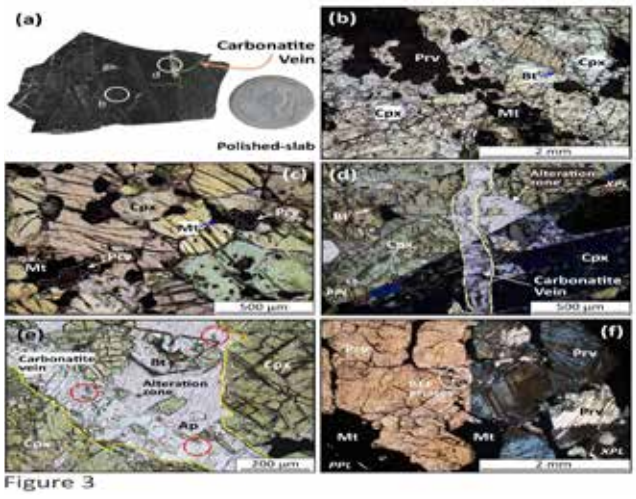
Fluorescent of Powellite (CaMoO4) (under UV lamp) within tourmalinite bearing quartz–carbonate veins intruded into Talc-tremolite-actinolite schist and Dolomitic marble, Saleri area, West Kameng dist., Arunachal Pradesh.



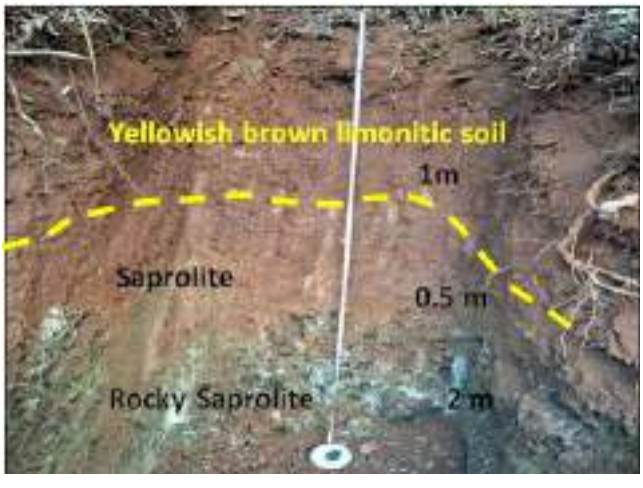
Carbonaceous phyllite, Khunglo block, Lower Subansiri dist., Arunachal Pradesh.



Perovskite-magnetite cumulates in pyroxenite, Jashora block, Karbi Anglong district, Assam.



Carbonatite veins and altered zones in pyroxenite, Jashora block, Karbi Anglong district, Assam.



Regolith profile in Aken area, Phek district, Nagaland.



Magnetite apatite rock, Ganjang block, Karbi Anglong district, Assam.

Publications by GSI, NER

12.14 (A) During the Field Season 2025-26, the following items on Publication and Maps have been taken up:

- Publication of GSI Records, Vol. 159, Part 4, Extended Abstracts of Progress Reports of FS 2024-25 of North Eastern Region and Special publication on Graphite and vanadium Mineralisation of Arunachal Pradesh Himalaya.
- Compilation and updation of District Resource Maps (DRMs) of Aizawl, Kolasib, Mamit, Khawzawl, Saitual, Champhai, Serchhip, Hnathial, Lunglei, Lawngtlai, Siaha of Mizoram state on 1:250,000 scale in GIS platform.
- Creation of bedrock geochemistry database (BGD) for North-Eastern Region **(Annexure 12.10)**.
- Creation of GIS database in respect of Strategic and Critical group of minerals like REE, Tin, Tungsten, Lithium & Molybdenum; Basemetal like Lead and Zinc; Ferrous metal like Iron; Industrial and Fertilizer minerals like Limestone, Glass sand, Gypsum, Phosphate; Precious metals and minerals like Gold, Placer Gold and Coal pertaining to Assam State.
- Creation of GIS database in respect of Strategic minerals, base metals, precious metals, ferrous and non-ferrous, REEs, industrial and fertilizer minerals etc pertaining to Arunachal Pradesh.
- Creation of GIS database in respect of strategic minerals, base metals, precious metals, ferrous & non-ferrous, Rare Earth Elements, Rare metals and fertilizer minerals etc. pertaining to Meghalaya.
- Creation of GIS database in respect of ferrous & base metals, precious metals, strategic mineral, industrial & fertilizer minerals, natural energy resources like iron ores, Cr, Ni, Cu, Au, PGE, REE, Li, limestone, coal, salt springs pertaining to Nagaland and Manipur state.
- Creation of Legacy Borehole Data Repository (LBDR) in FSPMIS, NER.
- Mineral Prospectivity Mapping using geostatistical (with Geological, NGCM, NGPM datasets) and AI/ML modeling for Barapani – Tyrsad Shear Zone and surrounding area in parts of Meghalaya and Assam.

12.14 (B) Following publications and maps were released during FS 2025-26 as a part of Public Good Geoscience:

- Bulletin Series B: Seismic Hazard Assessment of Selective Towns of Northeast India.
- Manual of Geology of India, Special Publication No.77 Vol-111: Economic Geology of North-Eastern India.
- Geology and Mineral resources of Manipur, Mizoram, Nagaland and Tripura. (Miscellaneous. Publication No. 30, Pt. IV. Vol.1 (ii), 3rd edition).
- Geology and Mineral Resources of Arunachal Pradesh, (Miscellaneous Publication, Number-30, Part-IV, Volume-1 (i) (3rd Edition).

The following 29.nos. of DRMs (1:250000 scale) were released by Map & Cartography Division, GSI, RHQ, NER Shillong during FS 2025-26.

- **Assam:** 11 DRMs (Biswanath, Dhemaji, Dibrugarh, Goalpara, Golaghat,

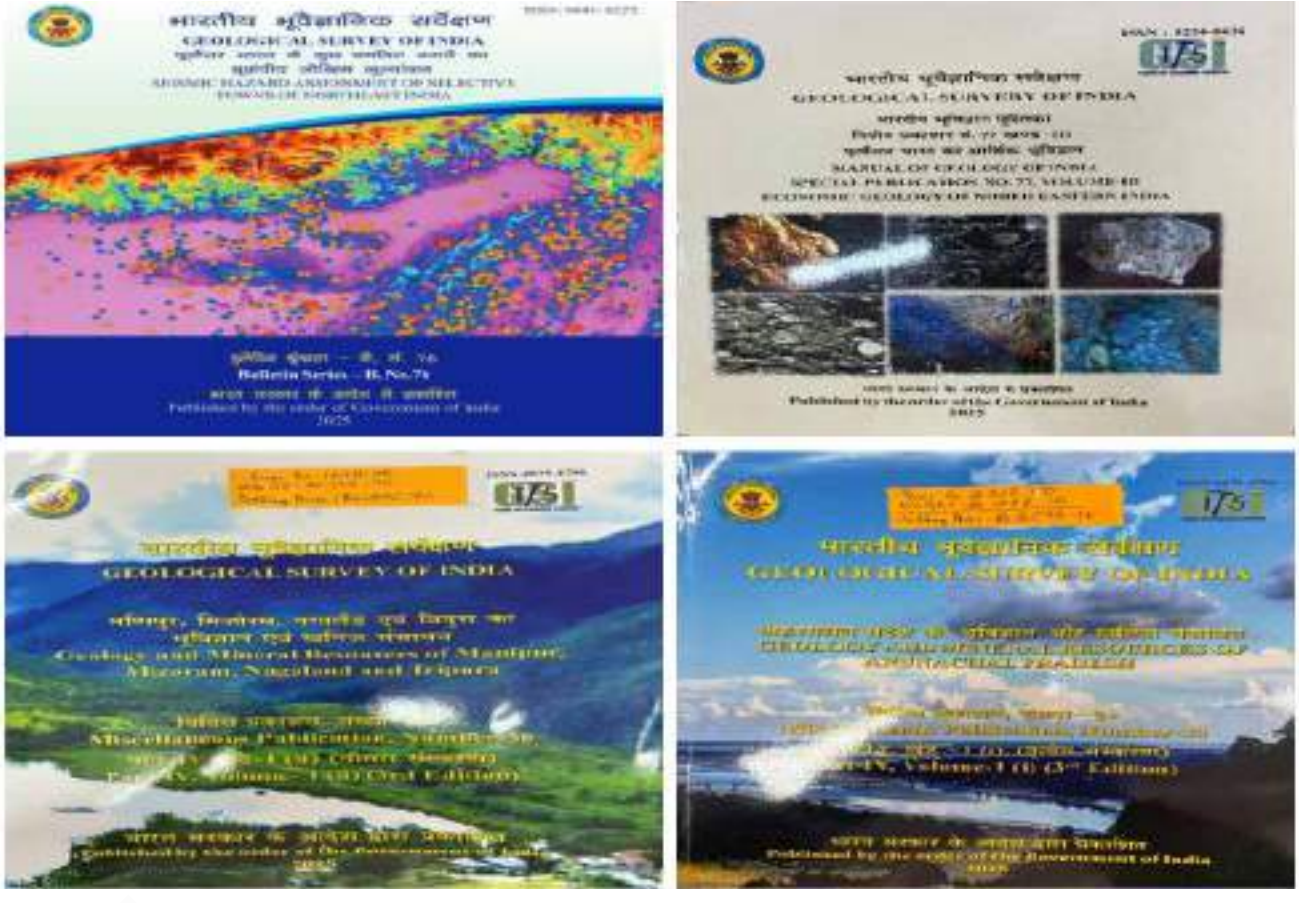
Hailakandi, Sribhumi, Morigaon, Nalbari, Tamulpur & Tinsukia districts of Assam)

- **Arunachal Pradesh:** 5 DRMs (Lower Subansiri, Kra-Daadi, Kurung Kumey, East Kameng and Pakke Kessang of Arunachal Pradesh).
- **Meghalaya:** 3 DRMs (West Garo Hills District, South Garo Hills District and South West Garo Hills District of Meghalaya).
- **Mizoram:** 3 DRMs (Aizawl, Kolasib and Mamit districts of Mizoram).
- **Tripura:** 7 DRMs (Gomati, Khowai, Sepahijala, North Tripura, South Tripura, West Tripura, Unakoti of Tripura).
- **State Geological and Mineral Maps (03 nos.) of Assam, Arunachal Pradesh and Meghalaya** (1:1 million scale) was released.
- **2nd edition of Geology and Mineral Resources of NER** on 1:2M scale was released.

Research and Development

Petrological Studies

12.15 Two Research items had been undertaken during FS 2024-25: (a) Systematic Mineralogical and Micro-Geochemical Characterisation of the Laterites/Lateritic Bauxite of East Garo Hills, West Khasi Hills and Ri-Bhoi districts, Meghalaya to investigate REE, RM and strategic minerals dispersion and distribution in lateritic profiles developed over granitoids and granite gneiss, and (b) Oxybarometry and Crystallization history of Trans-Himalayan Lohit Plutonic Complex (LPC) to assess the metal fertility of different components of the (LPC). High Sr/Y ratios



Publication of North Eastern Region

ranging from 33.37 to 61.45 have been recorded in the granodiorite-tonalite suite near Endolin, while values between 22.62 and 59.53 have been observed along the Anini-Mipi transect. These elevated Sr/Y ratios fall within the range typically associated with adakitic magmatism, which is known to be favorable for the development of porphyry-type Cu mineralisation systems.

12.16 During current FS 2025-26, one research item is being executed on the study of Oxybarometry and Crystallization history of Trans-Himalayan Lohit Plutonic Complex (LPC) to assess the metal fertility of different components of the (LPC) based on trace element compositions of zircons and/or whole rock, a continued item from FS 2024-25.

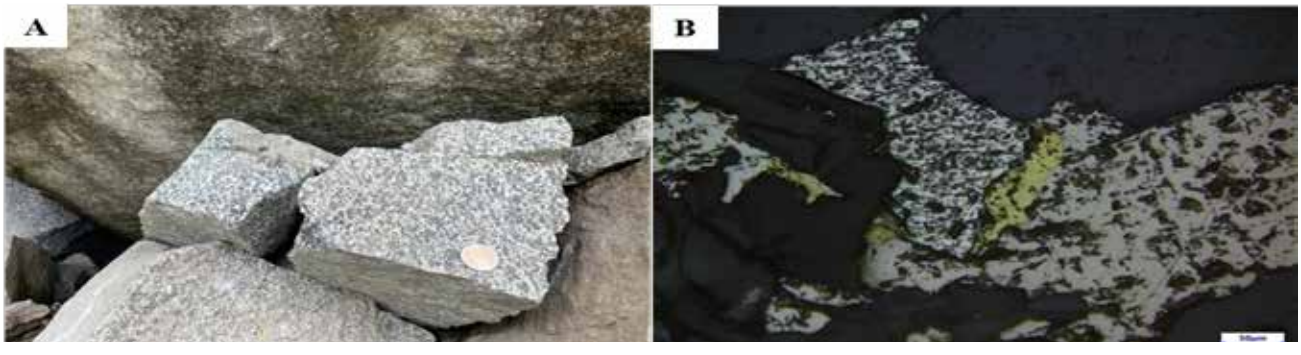
Paleontological Studies

12.17 During FS 2024-25, one Research item on Palaeoenvironment and Palaeobiogeographic correlation of vertebrate and invertebrate fossils of Late Eocene Kopili Formation of the Jaintia Group in Meghalaya had been taken up by Paleontology Division, GSI, NER. The aim is to understand the palaeobiodiversity, palaeoenvironmental conditions, and palaeobiogeography of the Late Eocene vertebrate and invertebrate fauna, as well as to examine the mineralized phosphatic nodules for biotic signatures. The decapods occurring with foraminifers, bivalves, gastropods, and corals suggests a tropical to subtropical marine environments with normal salinity. The bivalves represent typical shelf taxa, gastropods indicate subtidal zones, and coral Caryophyllia suggests mixed siliciclastic-carbonate shelf settings. Protunid decapods lived in shallow waters, while brachyuran crabs enclosed in phosphatic nodules lived in offshore outer-shelf settings. These nodules suggest high-energy depositional environments.

12.18 During FS 2025-26, one research item on Palaeoenvironment and Palaeobiogeographic correlation of vertebrate and invertebrate fossils of Late Eocene Kopili Formation of the Jaintia Group in Meghalaya, is being continued from FS 2024-25.

Geotechnical Investigations

12.19 Presently the country is committed towards clean energy/green energy. North-Eastern Region has a huge role towards as it has huge hydropower generation potential. Northeastern states of India's, with their mountainous topography and perennial streams, have the largest hydropower potential of our country. Together, Arunachal Pradesh, Sikkim, Assam, Meghalaya, Manipur, Mizoram, Nagaland and Tripura account for almost 40 percent of the total hydropower potential of the country. Arunachal Pradesh among the other states has the maximum potential. The state producing hydro power from river basins like Kameng, Subansiri, Siang, Lohit and Dibang. The total production is about 35,000 MW at 60% load factor (CEA) i.e., about 90% of the total hydropower resources of NER. GSI, NER is intimately associated with the development of all the hydel power projects in NER.



Field photograph of granodiorite, and (B) Photomicrograph showing pyrrhotite, pyrite and chalcopyrite in granodiorite [Loc.1 km south of Punliarea].



Images of Vertebrate and Invertebrate fossils recorded from the Kopili Formation. A-Pyreneplaxsp, B-Neptunussijuensis, C-Magyarcarcinus sp.(?), Bivalves: D-Corbulasp, Ostreasp, Pectensp, Arcasp, Nuculasp and Mytilussp.Gastropods: E-Conus sp., F-Cypreasp., G-Oliva sp., H-Caryophylliasp., I- Bryozoans [Loc. DapsiJadigiri and Semasi, South Garo Hills and East Jaintia Hills districts, Meghalaya].

GSI, NER conducts geotechnical studies at various stages of geotechnical investigation to identify suitable sites for locating dams, powerhouses, selecting tunnel alignments and suggesting remedial measures during construction.

Besides, Hydro-Electric project, GSI also carried out geotechnical investigation of various transport and communication projects. The North East is located at a crossroads between three major economies - East Asia, South Asia and Southeast Asia. Therefore, development of transport and communication system is quite important for the development of our country.

12.20 During the FS 2024-25, GSI, NER has taken up nine investigations under hydropower development project viz., one construction stage project: Lower Kopili Hydroelectric Project (120MW)in Assam; and four DPR stage projects: Oju HE Project (2220MW) in Arunachal Pradesh; Selim HEP (96MW) in Meghalaya; Mawblei Hydroelectric Project (75MW) in Meghalaya and MyntduLeshka stage-II HEP (210MW) in Meghalaya; Tlwang HEP (120 MW) in Mizoram; and three small hydroelectric projects including Bakcha Chhu, Ringyang Khola and Rimbi Chhu in Sikkim. Besides, three Irrigation Projects viz., Mebo Project in Arunachal Pradesh; Madhura Project in Assam; and Damring Project in Meghalaya. Besides Umsoo-Mootang Block-III limestone mine located near to Kotsati Cave in Meghalaya; and National Highway 702, connecting Sonari in Assam to Longleng and Mokokchung in Nagaland were investigated under transport and communication project.

Apart from the above sponsored projects, a pilot project on geotechnical mapping in and around New Shillong city, in parts of East Khasi Hills and Ri-Bhoi districts, Meghalaya was taken up with objectives to generate baseline geotechnical database and to suggest probable areas that may be geologically suitable / feasible for infrastructure development.

12.21 During the FS 2025-26, GSI, NER has taken up different investigations under water resource development project viz., Teesta VI Hydro Electric Project in Sikkim which is a run-of-the-river project; Mawblei HEP in Meghalaya; Umiam-Umtru Stage-III Link Tunnel in Meghalaya; Umian-Umtru Stage-III Kyrdemkulia HEP and Buroi Irrigation Project in Assam.

Besides, geotechnical investigations of Tower

locations (Tower no 17, 62 & 72) of 400kv Teesta-III - Kishanganj D/C transmission line in Sikkim; slope stability along Mon-Tamlu Road in Nagaland; and River Training work of Teesta River between Meli and Lachen in Sikkim were taken up under transport and communication project.

Landslide Hazard Studies

12.22 During FS 2024-25, Eleven (11) Meso-scale Landslide Susceptibility Mapping projects have been taken up covering part of the GSI-NDMA approved priority sectors for meso-scale landslide susceptibility mapping in NER. In addition, two site specific landslide investigations have been undertaken based on the request of State Government.

Important road corridors such as Yupia-Hoj-Potin-Possa road in Arunachal Pradesh, Lumding-Badarpur rail track in Assam, Zunheboto-Yehemi road and Kohima-Tadubi road in Nagaland, Singtam-Ravanglaroad in Sikkim, Seling-Chhingchhip road and New Dawn-Bualte-Tawipui N II roadin Mizoram, Chandrasadhupara-Hawaibari and Chakmaghat-Tankypara road and Pecharthal-Kumarghat and Manu-Ambassa road in Tripura, Laitlyngkot-Langyrdem road and Seven Mile-Markasa in Meghalaya have been mapped on 1:10,000 scale under meso-scale Landslide Susceptibility Mapping (LSM) project. Under meso-scale LSM, landslide-type specific susceptibility analysis is being carried out and areas susceptible to different landslide types are categorized as 'high', 'moderate' and 'low' class. The outputs form inputs for land use planning and disaster mitigation. Besides, detailed landslide mapping and slope stability analysis of Mahadev Tilla and Haflong Hills in Haflong, Dima Hasao District in Assam and Ambithang landslide in Sikkim were completed.



Rock mass exposed at the foundation level of Auxiliary Powerhouse [Loc. Lower Kopili HEP, Assam].

12.23 During FS 2025-26, nine (09) Meso-scale Landslide Susceptibility Mapping projects have been taken up covering part of the GSI-NDMA approved priority sectors for meso-scale landslide susceptibility mapping in NER. In addition, two site specific landslide investigations viz., Geyzing landslide in Sikkim and Muolhoi and Khongsai area in Assam; and two Comprehensive multi hazard risk analysis along Teesta River from Meli to Zeema have been undertaken based on the request of the respective State Governments.



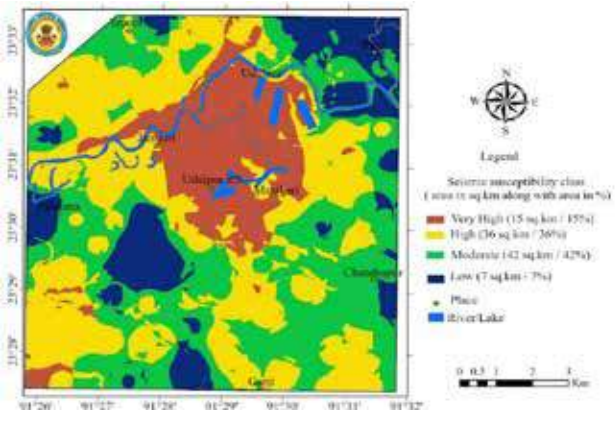
Rock fall along NH-27 [Loc. Kaishmaipur, Assam].

Earthquake Studies

12.24 Two regular projects have been

executed in NER on Seismic Microzonation and earthquake studies during FS 2024-25 on the request of the State government of Tripura and Mizoram. The Seismic Microzonation of two towns: Udaipur City in Tripura and Kolasib Town in Mizoram have been completed. The work involved integrated studies of seismic source, seismic response through geological, geotechnical and geophysical parameters and their relation to seismic susceptibility following guidelines of GSI, 2017. The results from Udaipur city reveal that about15% area falls under very high, 36% in high, 42% in moderate, and 7% in low susceptibility zones. Rapid urbanization and shallow groundwater amplify risks, making Udaipur prone to seismic and liquefaction hazards. In Kolasib, about 22% area falls under very high seismic susceptibility zone, 32% in high, 31% in moderate and the remaining in low seismic susceptibility zone.

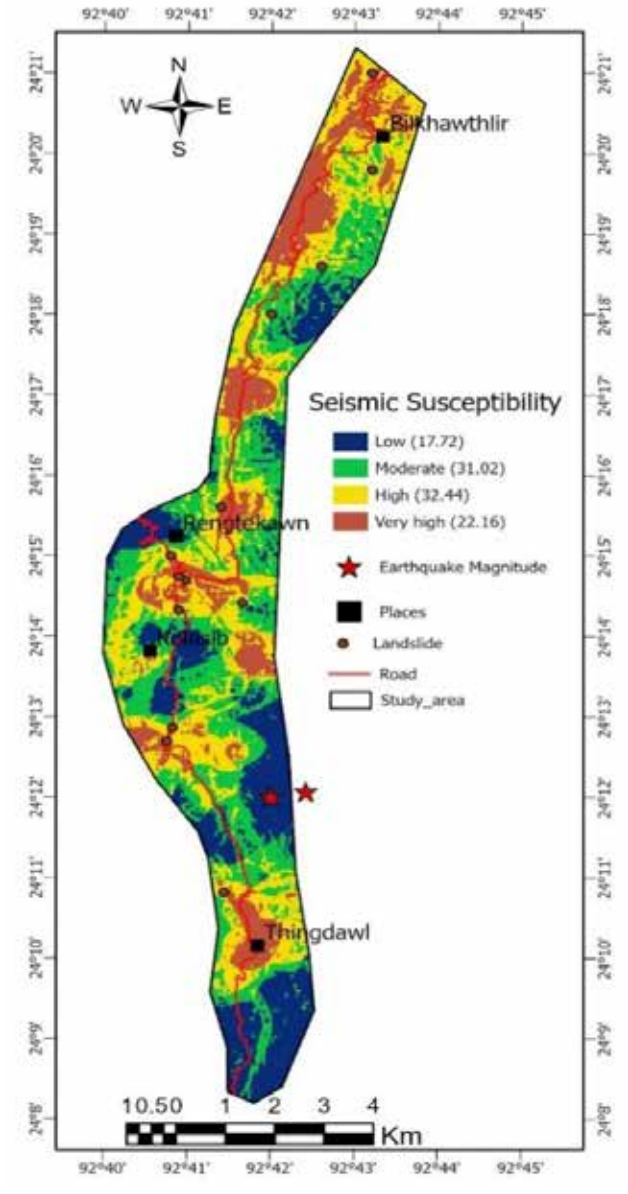
12.25 Two regular projects are being executed in NER on Seismic Microzonation and Active Fault studies in the current FS 2025-26 on the request of the State government of Nagaland and Manipur. Active tectonic study of Tupul and Ijai Faults in and around Noney and adjoining areas, Noney District in Manipur; and Seismic Microzonation of Nagaki Global City, Jalukie and Peren towns in Chumoukedima and Peren districts in Nagaland.



Seismic susceptibility map of Udaipur City, Gomati District, Tripura.



Flame structure within the Bokabil Formation [Loc. West of Bilkhawthlir village].



Seismic susceptibility map of Kolasib Town, Kolasib, Mizoram.

Environmental Geology

12.26 During FS.2024-25, the following three projects have been taken up under Environmental Geology:

i. Study on Uranium, Lead, Arsenic, Fluoride and Mercury contamination of groundwater in the industrial areas of North Guwahati, Kamrup (M) District, Assam: A collaborative study by GSI and CGWB.

ii. Geo-environmental hazard study of flood and erosion-prone river banks areas of Brahmaputra river at Dibrugarh and Tinsukia district of Assam.

iii. Late Quaternary glacial reconstruction from the glacier features around Sela Pass North-Eastern Himalayas: Implication of climate change.

In the groundwater contamination study, the industrial waste samples of North Guwahati, Kamrup (M) District, Assam show high concentration F, Pb, Cu, Ni. Cr, and Zn. The regolith/ soil samples also show moderately high values of F, Hg and Pb. The groundwater quality data reveals seasonal fluctuations in contamination levels, with post-monsoon showing the higher value for fluoride, iron, and arsenic. The study on the Geo-environmental hazard of Brahmaputra river banks reveals that the direction of water flow is affected due to the variations in depth and morphology of mid channel bars as a result of the bathymetric changes during the monsoon and post monsoon seasons. Preliminary findings of Late Quaternary glacial reconstruction around Sela Pass in Arunachal Pradesh indicate major phase of glacial recession with intermittent short duration advancement and an existence of palaeo-permafrost during Late Quaternary.

12.27 During FS.2025-26, the following two projects are being executed in NER:

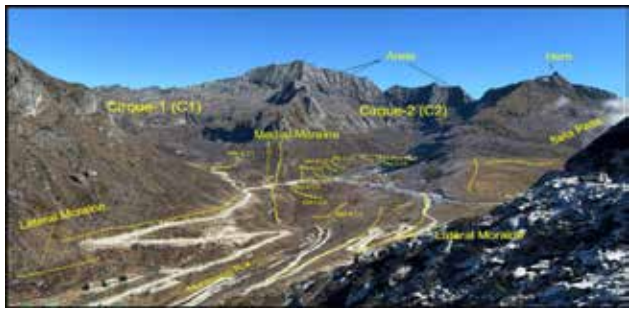
i. Assessment of heavy metal contamination in surface water and sediments of Loktak Wetland Complex, Manipur.

ii. Integrated geo-environmental appraisal of Barpeta town, Hawli town, Barpeta Road and its adjoining area to assess the causes and remedies of urban flood. A collaborative study by GSI, ASDMA and NIH, Roorkee.

iii. Late Quaternary glacial reconstruction from the glacier features around Sela Pass North-Eastern Himalayas: Implication of climate change. This is a continued item of FS 2024-25.



Rotational/Gravity failure along the bank of the Brahmaputra River[Loc. Milanpur, Assam].



Glacial landforms of Arunachal Himalaya [Loc. Sela Pass, Arunachal Pradesh]

12.28 Budget and expenditure of the North-Eastern Region for the Financial Year 2025-26 is given in **Table-12.1**.

Table-12.1

(Rs. in Crores)

Sl. No.	Name of Activities	BE 2025-26 (for GSI NER)	Actual Expenditure in GSI NER (FY 2025-26 up to 31st December 2025)
1	Survey & Mapping (M-I)	0.75	1.23
2	Mineral Exploration (M-II)	1.40	2.29
3	Information & Dissemination (M-III)	0.02	0.25
4	Research & Development (M-IVC)	0.30	0.68
5	Investigation (M-IVB)	0.32	0.57
6	Human Resource Development (M-V)	0.05	0.11
7	Scheduled Caste Sub Plan (SCSP)	0.00	0.09
8	Tribal Area Sub Plan (TASP)	0.00	2.99
9	Modernisation & Replacement	0.10	1.01
10	Direction & Administration / ASA / Other Exp.	63.46	82.97
Grand Total		**66.40**	**92.19**

Work done by Indian Bureau of Mines in North Eastern Region

12.29 The Regional Office of Indian Bureau of Mines (IBM) at Guwahati continued to undertake inspection of mines and studies on development of resources in North-Eastern Region. During the year 2025 (1st January to 31stDecember 2025), 36 nos. of inspections were carried out for enforcement of provisions of MCDR, 2017 and for processing and disposal of mining plan/review of mining plan. The details of inspections, results and follow up actions thereof are given below in **Table 12.2**:

Table 12.2

Parameter	Details
No. of inspections	Total - 36 Nos. MCDR– 18 Nos. MP/RoMP/FMCP– 15 Nos. Check-up/ Others– 3 Nos.
No. of violations issued	25 Nos.
No. of rules violated	37 Nos. [Rule 11(1), 11(4), 12(4), 14(3), 31(4), 33, 35(2), 45(7), 55(1)(3), & 56(2) of MCDR 2017]
No. of show cause notices issued	03 Nos. (incl. notices issued on the basis of office scrutiny)
No. of mines where violations not complied even after issue of show cause notice	25Nos. (In process of its compliance) – 9 Nos.
Action taken: Court case – Suspension –	0 Nos. 0 Nos.

Work Carried Out by MECL in North Eastern Region

MECL has been associated with mineral exploration activities and geo-technical studies in the North Eastern Region since 1977, playing a significant role in the development of the mineral industry across the region. Over the decades, MECL has contributed to systematic exploration and assessment of mineral resources, supporting informed decision-making for mineral development.

12.30 Since January 2025, MECL has initiated four projects in Assam funded by the National Mineral Exploration and Development Trust (NMEDT). These projects involve G-4 level exploration for Tungsten, Rare Earth Elements (REE), and associated minerals in the Nellie Area covering Morigaon and West Karbi Anglong districts, as well as in three REE and associated mineral blocks located at Langmipi–Laching Thing Area in Karbi Anglong District, Umprikhola Block in Kamrup District, and Pipargaon Area in West Karbi Anglong District.

12.31 In addition to critical mineral exploration, MECL is carrying out detailed exploration of coal in Assam under promotional coal blocks on behalf of the Central Mine Planning and Design Institute Limited (CMPDIL). The coal exploration work is being undertaken in the Bishnupur Block and Nimgaon Block of Tinsukia District, where exploratory drilling operations are currently in progress.

12.32 MECL remains keenly committed to the development of the North Eastern States and continues to expand its collaborative efforts in the region. In this direction, MECL has signed a Memorandum of Understanding with Oil India Limited for carrying out exploration activities in the Phop Graphite and Vanadium Block in Arunachal Pradesh. Further, discussions are in progress to examine the possibility of undertaking detailed copper exploration in the Dikchu Copper–Zinc Project. This block was earlier explored by MECL in 1983, after which the mining lease was granted to the Sikkim Mining Corporation, and the area is now being re-evaluated for its remaining mineral potential.

*****

13 CHAPTER



Welfare Activities for SCs/STs, Women, Minorities & Persons with Disabilities

Welfare Activities for SCs/STs, Women, Minorities & Persons with Disabilities

- Ministry of Mines Page-241
- National Aluminium Company Limited (NALCO) Page-242
- Hindustan Copper Limited (HCL) Page-244
- Mineral Exploration & Consultancy Limited (MECL) Page-246
- Indian Bureau of Mines (IBM) Page-247
- Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC) Page-247
- Geological Survey of India (GSI) Page-247

Ministry of Mines

13.1 The Ministry of Mines, along with its attached and subordinate offices, Public Sector Undertakings (PSUs), and Autonomous Bodies, adheres to government guidelines for the welfare of marginalized communities. In line with these guidelines, PSUs design and implement various programs aimed at uplifting weaker sections of society in the surrounding areas of their operations.

13.2 A number of activities like community education programmes, facilitating availability of drinking water, development/repair of approach roads of surrounding areas, arranging health awareness programmes and medical camps in rural areas have been undertaken by the PSUs for upliftment of the community in and around their townships as part of their social responsibility.

Welfare of Women and other Sections

13.3 Internal Complaint Committees (ICC) have been constituted to look into cases of sexual harassment of women at work place for Ministry of Mines as well as organizations under its administrative control in accordance with The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.

13.4 Ministry of Women & Child Development has developed an online complaint Management System titled Sexual Harassment electronic –Box (SHe-Box) (www.shebox.nic.in) to receive complaints related to Sexual Harassment at workplace. The complaints received in She-Box portal are disposed on priority basis as per extant rules/ guidelines.

13.5 The Geological Survey of India GSI), attached office of Ministry of Mines and Indian Bureau of Mines (IBM) subordinate office under Ministry of Mines have also undertaken a number of activities for the welfare of Scheduled Caste (SC) / Scheduled Tribe (ST), Other Backward Class (OBC), persons with disabilities (PWD) and other weaker sections of the Society.

13.6 Measures have been undertaken for officials belonging to SC, ST, OBC and PwD communities for strict compliance of filling all the posts against vacancies reserved for them as per order issued by the Govt. of India/ MoM/DoP&T from time to time. Reservation has been followed strictly in case of their employment/promotion wherever applicable.

13.7 SC/ST/OBC cells have been established in Headquarters as well as in the respective Regional offices under supervision of the Liaison Officer to address difficulties faced by these communities and also to initiate appropriate measures for resolving their issues.

13.8 The total strength of employees in the Ministry of Mines (Secretariat) and the representation of SC/ST/OBC and other weaker sections on 31.12.25 may be seen at **Table 13.1**.

Table 13.1

Information in r/o Secretariat proper employees as on 31st December, 2025

Group	Sanctioned Strength	Total Number of present incumbents	No. of SC/ST/OBC/Women/PH Candidates in present incumbents				
			SC	ST	OBC	Women	PH
Group-A Gazetted	37	36	03	03	04	06	01
Group-B Gazetted	34	25	13	06	04	00	00
Group-B Non-Gazetted	56	46	15	04	19	07	00
Group-C	87	49	09	02	08	09	02
Total	**214**	**156**	**40**	**15**	**35**	**22**	**03**

National Aluminium Company Limited (NALCO)

13.9 The Company follows the Presidential Directives issued from time to time on reservation of SC/ST persons in employment. The Company has constituted cells exclusively for the welfare of SC/ST employees at its Corporate Office and Units. Periodic meetings are held at Complex level and Corporate level to discuss issues related to SC/ ST employees.

13.10 The following concession/relaxations are given to SC/ST candidates in the matter of direct recruitment.

(a) Age relaxation of 5 years.

(b) Exemption from payment of application fee.

(c) Re-imbursement of travelling expenses for attending both written test and interviews.

(d) Relaxation in qualifying marks for eligibility.

(e) Relaxation of 10% marks both in written test and interview (for posts requiring interview).

- Relaxation/concession in promotions - relaxation of 10% of marks both in written test and interview is given to SC/ST employees in promotion up to lowest rung of Group-A.
- 10% reservation in A & B type quarters & 5% in C, D & E type quarters are given to SC/ST employees in allotment of residential quarters.
- Liaison Officers have been appointed for each of the units for implementing the presidential directives as well as to look after the welfare of SC/ST employees. SC/ST cell has also been constituted under the control of the respective Liaison Officers to ensure prompt disposal of grievances and

representations of SC/ST employees.

- 20% of the scholarships are reserved for the children of SC/ST employees under Nehru memorial scholarship awarded to the children of NALCO employees along with relaxation of 10% in marks.
- Invariably in all the selection committees/ boards for recruitment and the departmental promotion committees for promotion, an officer from SC/ ST category of appropriate status is included as one of the members in order to take care of the interest of the SC/ST candidates

13.11 Minority Welfare

- A member of the minority community is associated in the selection committees for recruitment in order to give a fair deal to the minority community.

13.12 The Persons with Disability (PWDs)

The Company has been making efforts to achieve representation of PWDs (Divyangs) in all posts in Group: A, B, C & D as per Section - 34 of the Rights of Persons with Disabilities Act, 2016. From 19th Apr' 17 onwards, 4% of vacancies are being reserved for persons with disabilities as provided in the Act. As on 31st December 25, there are 89 Persons with disability in employment of the Company in various identified posts. An 'Equal Opportunity Policy' as required under the Act has been formulated and the same has been widely circulated in addition to web-hosting. The different facilities/establishments of the Company have been made accessible as required under the Rights of Persons with Disabilities Act, 2016 and the 'Accessible India' campaign. However, these are being constantly monitored to bring about further improvement in the facilities.

13.13 Perspective Plan for Women Welfare

The Company has adopted the principle of equal opportunity to the women employees in the matter of employment and the Company as on 31st December 2025 has 320 nos. of women employees at different levels and categories.

MANPOWER STRENGTH:

13.14 National Aluminium Company Limited (NALCO): Employment of SC/ST/Ex-SM/PWD/ LDP/Minorities in the Company as on 31st December 2025 is given in **Table 13.2**

Table 13.2

Group	Total No of Employees	SC	ST	EX-SM	PWD	LDP	Minority
Executives	1734	262	155	1	36	16	66
Non-executives	2830	426	677	6	53	1108	99
Total	**4564**	**688**	**832**	**7**	**89**	**1124**	**165**

It may be seen from above that every third employee of the organization belongs to SC or ST Community.

Hindustan Copper Limited (HCL)

13.15 Welfare Activities

Employees Participation in Management over the years has been the backbone of harmonious Industrial Relations in the Company. The successful operation of various Bi-partite forums at all three levels, namely, at the Apex level, Unit level and Shop floor level has immensely contributed in the smooth performance of the Company.

Representation of SC/ST and OBC

The representation of SC, ST and OBC employees out of the total manpower of 1193 as on 31.12.2025 is 17.93%, 9.80% and 25.40% respectively.

Other Welfare Measures

a. Group Personal Accident (GPA) Insurance Policy has been implemented for regular employees of HCL under the Corporate Salary Package arrangement with SBI and IOB, extending accidental death and disability coverage against unforeseen accidents of up to Rs.1 Crore per employee.

b. Group Insurance Accident (GPA) Policy is introduced for the first time in HCL, in the year 2025, as a welfare and financial security measure extending coverage to the Contractual Persons engaged in HCL (both surface and underground) of Rs. 20 Lakhs in case of death and for Rs.10 Lakhs in case of Permanent disablement and Permanent Partial Disablement.

c. The Group Term Life Insurance (GTLI) Policy has been introduced with effect from 2025 as a welfare measure to provide financial security to employees' families in the event of death while in service with a coverage equivalent to 30 months of pay (Basic Pay plus Dearness Allowance) as on the date of policy issuance, subject to a minimum of Rs.20 Lakh and a maximum of Rs.60 Lakh per employee.

d. Under HCL's Contributory Post-Retirement Medical Scheme (CPRMS) 2026 IPD and OPD benefits are extended to eligible superannuated employees, their spouses, and spouses of deceased superannuated employees with IPD coverage of Rs.5 Lakh per person, clubbed up to Rs.10 Lakh per family and with Rs.1 Crore corporate buffer on First-Come-First-Serve basis (Rs.5 Lakh per member cap) and OPD coverage upto Rs.20,000 per member with family clubbing up to Rs.40,000, revised from Rs.15,000 per member and Rs.30,000 per family. The per-day limit for ICCU/ITU/ICU/HDU charges has also been increased from 1% to 1.5% of the sum insured for Executives in Grades E0–E2 and Non-Executives.

e. The retired employees of the Company and their spouses are extended medical treatment at the Company's Hospitals at the Projects.

f. In the townships of the Company located at Khetri, Malanjkhand and Ghatsila as well as in other places of work, the employees of different caste, creed, religion, live together and celebrate all religious festivals with pomp and gaiety.

g. The Company maintains Cultural Clubs for the employee at all the production Units.

13.16 Industrial Relations

Industrial Relations situation in all the Units of the Company continued to be harmonious and peaceful during the year 2025.

13.17 Redressal of Public Grievances

All grievances are received from Centralized Public Grievance Redress and Monitoring System's (CPGRAMS) website of https://pgportal.gov.in. The grievances are being regularly monitored and are suitably disposed off. During 01.01.2025 to 31.12.2025, 95 public grievances were received and there was previous carry forward of 4 grievances as on 31.12.2025. Total 86 cases were disposed-off during the year and as on 31.12. 2025.

13.18 The Status of Implementation of The Persons with Disability Act, 1995.

During last few years, there has been limited recruitment in the company. Therefore, there was hardly any scope of fresh inductions of physically challenged persons. In addition, the mining operations of the Company being hazardous in nature, the scope of engagement of physically challenged persons is limited. The number of physically challenged persons employed in the Company as on 31.12.2025 is as under in **Table 13.3** :

Table 13.3

Group	Persons with Disabilities (PwBDs)
A	16
B	1
C	9
D	1
Total	**27**

13.19 Manpower Strength

The manpower strength of the Company as on 31.12.2025 is 1193.

Table 13.4

Category	Gen	OBC	SC	ST	EWS	Total
Executive	288	143	89	30	14	564
Non-Executive	256	160	125	87	01	629
Total	**544**	**303**	**214**	**117**	**15**	**1193**

13.20 Human Resource Development

Training and Development of all levels of employees is given due priority by HCL to increase efficiency and effectiveness. Special emphasis was given to organization building and shaping right attitudes, team building and work culture besides preparing employees to understand the trends in fast changing technology/switching over to latest technology for achieving higher results in production, productivity and profitability.

Mineral Exploration & Consultancy Limited (MECL)

13.21 Welfare of SC/ST, Women and Weaker section-

The category wise employment position including General /SC /ST /OBC /Minorities /Women (As on 31-12-2025) in the company is given in below in **Table 13.5**:

Table 13.5

Employment of personnel as on 31.12.2025

Group	Total No. of employees	General	SC	ST	OBC	EWS	Minorities	Women
A	272	124	42	14	84	8	15	31
B	33	14	5	3	11		1	1
C	530	160	95	29	240	6	19	29
D								
Total	**835**	**298**	**142**	**46**	**335**	**14**	**35**	**61**

**(Strength break-up category-wise excluding Directors & CVO)*

Employment under all categories (group-wise) including General/EWS/SC/ ST/OBC/Minority from 01.01.2025 to 31.12.2025

Group	Total No. of employees	General	SC	ST	OBC	EWS	Minorities	Women
A	22	5	4	2	7	4	2	8
B								
C	35	9	4	1	19	2	2	3
D								
Total	**57**	**14**	**8**	**3**	**26**	**6**	**4**	**11**

**(Break-up category-wise of new recruitments from 01.01.2025 till 31.12.2025 excluding Directors & CVO)*

MECL upholds its commitment to gender equality by providing equal opportunities to women employees, with service rules uniformly applicable to both male and female staff. The company operates a Creche facility to support working mothers. Further, women employees are entitled to maternity benefits in accordance with established rules and statutes. Further, Policies on Paternity Leave, Child Care Leave, Child Adoption Leave, are also in place.

Furthermore, MECL adheres to the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013, by maintaining an Anti-Sexual Harassment policy. An Internal Complaints Committee (ICC) has been established to address any complaints of sexual harassment, covering all employees including permanent, contractual, temporary and trainees. Further, "Special Leave connected with inquiry on sexual harassment" to be granted to an aggrieved female employee on the recommendation of the Internal Complaints Committee, during pendency of inquiry under Statute, is also in place.

Additionally, in compliance with the Rights of

Persons with Disability Act, 2016, MECL has implemented an Equal Opportunity Policy as directed by the Ministry of Social Justice & Empowerment. This policy ensures fair treatment and opportunities for individuals with disabilities within the organization.

Indian Bureau of Mines (IBM)

Reservation of Vacancies for persons with Disabilities

13.22 IBM is strictly following the various instructions of the Government issued from time to time regarding reservation of vacancies for PWDs in respect of Group A, B and C posts in promotion as well as direct recruitment. As on **1st January 2026, 26** physically handicapped persons were under employment in IBM.

Welfare activities for SC/ST, Women, Minorities and PWD's

13.23 Women employees constitute about **11.61 per cent**. Training is imparted to women employees in the field of technical as well as administrative matters.

13.24 An Internal Complaints Committee constituted under the provisions of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 is active in Indian Bureau of Mines to redress the complaints, if any, of the victims of sexual harassment at work place in a time bound manner with proactive approach strictly within the stipulations of the Act.

Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC)

13.25 The Centre is following the various government guidelines w.r.t PWD, SC, ST and OBC reservation. The process for recruitment of various reserved categories of scientists and other posts were completed. Women employees were made aware about the various aspects of POSH Act and SHE portal by a workshop conducted by Senior Admin Officer of JNARDDC.

Geological Survey of India (GSI)

13.26 The Geological Survey of India, an attached office of the Ministry of Mines, has undertaken several activities for the welfare of SCs/STs/OBCs/PWDs & other weaker sections and is following the rules and regulations as issued by the DoP&T from time to time so far the employment through SSC and UPSC is concerned.

13.27 SC/ST Cells have been set-up under the direct control of the Liaison Officers at different Regional offices of the Department including CHQ to secure their representation in employment, to address difficulties faced by them and also for their welfare measure. The Liaison Officers designated for the purpose are acting as Nodal Authority in this regard. The Meetings are being arranged time to time at different offices. The Reservation Rosters are also being maintained properly at the end of each and every Cadre Controlling Authority. The yearly inspection of rosters has been carried out by the concerned Liaison officers of the different Regional offices to ensure prescribed representation of the SC/ST/OBC/PWD & other weaker sections in employment/promotion, wherever applicable.

Women's Welfare

13.28 The Internal Complaint Committee (ICC) has been constituted in different Regional offices of GSI including CHQ to look into the cases of sexual harassment of women in the workplace. Moreover, the Nodal Officer for the SHe-Box portal has been nominated in GSI for effective implementation of the SH Act, 2013.

13.29 The total strength of employees in the

GSI and the representation of SC/ST/OBC and other weaker sections during the year 2025 is given in **Table 13.6.**

Table 13.6

Class	Sanctioned Strength	Men in position	SC	ST	OBC	No.of Women	PH	Total (SC, ST, OBC, Women, PH)
Group-A	3428	3171	485	240	928	904	43	2600
Group-B (Gaz.)	905	505	87	59	126	86	10	368
Group-B (NG) (Min.)	841	629	80	66	104	125	11	386
Group-B (NG) (Tech.)	695	356	42	26	74	38	11	191
Group-C (Min.)	605	385	59	22	109	57	10	257
Group-C (Tech.)	1152	534	73	56	173	26	11	339
MTS (Erstwhile Gr-D)	1022	661	132	89	141	115	23	500
TOTAL	**8648**	**6241**	**958**	**558**	**1655**	**1351**	**119**	**4641**

Welfare Activities for PwBDs

13.30 GSI being an attached office of the Ministry of Mines, implements the Reservation Policy for persons with disabilities as notified by the Government of India from time to time. In line with the Rights of Persons with Disability Act, 2016 (RPwD Act), 2016, GSI has implemented Equal opportunity Policy as per the directives of the Ministry of Social Justice & Empowerment. In the office, barrier-free access to employees with disabilities for attending their duties is provided. For this purpose, ramps are provided so as to enable disabled employees to reach upto their lift and from the lift upto their place of work. While allotting the work, due care is taken to avoid any hardship or inconvenience to the PwBD employees. Equal opportunity for career advancement through promotions is given to the PwBD employees at par with others. Reservations for Persons with Benchmark Disabilities (PwBD) in Direct Recruitment (DR) and promotion in GSI are implemented as per provisions mentioned in the DoP&T OM dated 29.12.2005 and 17.05.2022, respectively. Moreover, Liaison officers of different Regional Offices carry out annual inspection of rosters to ensure prescribed representation of the PwBD in employment/promotion, wherever applicable.

*****

14 CHAPTER



Budget and Audit Paras

Budget and Audit Paras

- Budget Allocation for the year 2025-26 and 2026-27 ..... Page-251
- GSI Budget Allocation Page-252
- IBM Budget Allocation Page-256
- Audit..... Page-261

Budget Allocation for the year 2025-26 and 2026-27

14.1 The Ministry of Mines plays a key role in managing India's mineral resources by supporting exploration, regulation, research, and development activities. The ministry's budget includes allocations for its **Secretariat; Geological Survey of India (GSI)** for national-scale geological mapping, exploration, and data collection to support mining and mineral assessments**; Indian Bureau of Mines (IBM)** for promotion of scientific development of mineral resources of the country, conservation of minerals and protection of environment in mines; **National Mineral Exploration and Development Trust Fund (NMEDT)** for carrying out regional and detailed exploration for augmentation of mineral resource of the country.

Further, budgetary support is extended to Central Sector Scheme under Ministry i.e. **'National Critical Minerals Mission (NCMM)'**, aimed at strengthening domestic exploration, processing, recycling, and global partnerships to ensure long-term supply chain resilience of critical and strategic minerals essential for India's energy transition, advanced manufacturing, and economic resilience.

Ministry provides Grants-in-aid to autonomous bodies **i.e. National Institute of Rock Mechanics (NIRM)** and **Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC)** for creation of capital assets. Allocations are also made to support research, innovation and technical programmes/institutions, etc. under **Other Research Programmes** of the Ministry; to maintain essential services in **Bharat Gold Mines Limited (BGML);** and to fund **International Contribution and National Geoscience Awards** in order to enhance global collaboration and recognize excellence in geoscience respectively.

The summary of the 'Demands for Grants' during FY 2025-26 and 2026-27 is as under in **Table 14.1.**

Table 14.1: Summary of Demands for Grants 2025-26 And 2026-27

(Rs.in crore)

Sl. No.	Name of the Organisation/scheme/ programme	2025-26		2026-27
		BE	RE	BE
1	National Critical Mineral Mission (NCMM)	410.00	90.00	440.00
2	NCMM activities funded through NMEDT	0.00	0.00	500.00
3	Secretariat (Proper)	81.85	80.85	84.50
4	Geological Survey of India	1447.45	1564.24	1587.64
5	Indian Bureau of Mines	135.00	132.66	148.00
6	Bharat Gold Mines Limited	8.00	9.70	8.75
7	National Institute of Rock Mechanics (NIRM)	3.50	3.50	4.50
8	Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC)	11.00	11.00	12.00
9	International Cooperation (IC)	0.50	0.79	0.66
10	National Geoscience Awards (NGA)	0.70	0.40	0.40

Sl. No.	Name of the Organisation/scheme/ programme	2025-26		2026-27
		BE	RE	BE
11	Other Research Programme	15.00	22.00	20.00
12	NMEDT Programme Component	500.00	350.00	410.00
13	NMEDT Inter Account Transfer	925.00	1250.00	1500.00
14	Deduct amount met from NMEDT	-500.00	-350.00	-910.00
	Total	**3038.00**	**3165.14**	**3806.45**

Geological Survey of India

Budgetary support under Revenue and Capital is obtained for different geo-scientific activities in mission mode and implemented by Geological Survey of India (**GSI**). A brief summary of Demands for Grants (2026-27) and last two years is given in the **Table14.1.2.**

Table 14.1.2: Summary of Demands for Grant

(Rs. in crore)

Sl. No.	Name of the organization	2024-25		2025-26		2026-27
		BE	RE	BE	RE	BE
1.	Geological Survey of India	1300.00	1425.60	1447.45*	1564.24	1587.64

14.2 GSI has been provided Rs.1587.64 crore [Rev. Rs.1428.03 crore & Cap. Rs. 159.61 crore] against the budget demand of Rs. 1948.03 crore (Rev. Rs. 1674.80 crore & Cap. Rs. 273.23 crore) in FY 2026-27 for all activities of GSI including administrative and establishment expenditure and the committed expenditure of FY 2026-27. GSI budget grant of Rs.1587.64 crore includes Rs. 67.80 crore for all activities of NER. The budget outlay for Establishment Expenditure under Administrative support head is Rs. 1077.39 crore and Rs.98.61 crore for administrative support activities & other expenditure. The budget outlay for GSI Mission (I to V) activities is Rs.252.03 crore and Capital outlay is Rs.159.61 crore for modernization & replacement including ICT activities and Infrastructural assets of GSI. The activity-wise budget outlay as received BE 2026-27 is presented in **Table-14.2**.

Activity-wise details of budget allocation in FY 2026-27 are summarized below-

Under 'Survey & Mapping' (Mission-I) head an amount of Rs. 77.90 crore has been provided for operation and maintenance of three GSI vessels for 2026-27 to Shipping Corporation of India (SCI), operation & maintenance of the TOASS airborne Survey System, execution of ground survey projects e.g. Specialized Thematic Mapping (STM), Geochemical Mapping (GCM), Geophysical Mapping (GPM) etc.

Under 'Mineral Exploration' (Mission-II) head, Rs.70.70 crore has been provided for execution of the mineral exploration programmes of GSI including payment towards the outsourced

drilling. Every year GSI is taking up G4, G3 and G2 stage exploration programmes (as per UNFC) with a view to augment resources for various mineral commodities including energy minerals (coal & lignite) in different parts of the country.

Under 'Information & Dissemination' (Mission-III) head, Rs. 13.71 crore has been provided, out of which Rs. 1.51 crore has been provided for printing & publication of journals, maps, reports etc., Rs. 11.00 crore has been allocated for repair & maintenance which includes payments related the operation/ maintenance of OCBIS, Oracle Annual Technical Services and other miscellaneous activities under IT in all offices of GSI and Rs. 1.20 crore has been provided under digital equipment's which includes purchase of consumables and other miscellaneous activities under IT in all offices of GSI.

Under Mission-IV, Rs. 35.75 crore has been allotted for 'Research & Development'; & 'other exploration (Antarctica)' activities. Out of this, Rs. 0.05 crore has been allotted for polar studies in Antarctica.

Under 'Research & Development' head fund has been provisioned for taking up fundamental research and development programmes, execution of field work in research and development activities, AMC of the laboratory instruments and equipment of GSI; outsourcing of chemical analysis and also for the expenditures towards procurement of laboratory consumables.

Further, funds have been provisioned for execution of field work of Geotechnical investigation on societal issues, landslide studies, seismological studies, studies related to climate change and eco-systems, environmental, medical geology, glaciology etc. and expedition to Antarctic, Arctic regions, miscellaneous expenditure related to AMC and maintenance of seismic and Geo-technical laboratories.

Under 'Training (Human resource development)' head (Mission-V), Rs. 2.00 crore has been provided for carrying out various training courses e.g. orientation courses, thematic refreshers course, promotion linked training programme, courses for international participants for capacity building of GSI personnel as well as geoscientists from other geological institutes.

As per the mandatory guidelines of Government of India, Rs. 17.75 crores have been provided under 'Tribal area Sub Plan (TSP)' head and Rs. 34.22 crore has been provided under 'Scheduled Caste Sub Plan (SCSP)' head for welfare service to the ST/SC people indirectly by utilization of the funds under mandated Mission-I, II, IV & V field activities and capacity building programmes falling in Scheduled Tribe and Scheduled Cast dominated areas in different parts of the country.

Under 'Modernisation & Replacement' head, capital grant of Rs.159.61 crore has been provided. Out of which Rs. 5.00 crore has been provided for procurement of field vehicles to carry out field activities, Rs. 43.01 crore for procurement of machinery and equipment to improve the capabilities in the field as well as GSI laboratories with an aim to generate quality earth science data contemporary in nature, Rs. 10.00 crore for procurement of information, computer, telecommunication (ICT) equipment's for digital transformation of GSI's activities, Rs. 100.00 crore for Infrastructural Assets for milestone payment of two nos. coastal vessels for (GSI) as a replacement for the existing two coastal vessels; Rs. 1.50 crore

for furniture and fixtures and Rs.0.10 crore for purchase of land.

Under the Administrative Support Activities (ASA) and other expenditure, Rs. 98.61 crore has been provided out which Rs. 98.16 crore has been provided to meet the expenditure on domestic & foreign travel expenses, office expenses, materials and supplies; advertisement and publicity; minor civil and electrical work; rent, rates and taxes for land & building, professional services and Rs. 0.45 crore has been provided under 'Other Expenditure' head which includes printing publication and other revenue expenditure.

Under 'Establishment Expenditure-Administrative Support' head, Rs. 1077.39 crore has been provided out of which Rs. 521.94 crore has been provided under Salary head, Rs. 492.25 crore for allowances, Rs. 6.25 crore for leave travel concession and remaining fund has been provided for various establishment expenditures such as wages, rewards, medical treatment, Swachchta Action Plan etc.

The distribution of outlay for the allotted budget grant for 2026-27 is given in the **table 14.2.**

Table 14.2: Allotted Total Budget Grant 2026-27

(Rs. in crore)

GEOLOGICAL SURVEY OF INDIA

Head	GSI	NER	Total
Establishment Expenditure			
Administrative Support			
Salary	487.94	34.00	521.94
Wages	0.10	0.00	0.10
Rewards	2.10	0.00	2.10
Medical treatment	8.75	0.00	8.75
Allowance	467.25	25.00	492.25
Leave Travel Concession	6.15	0.10	6.25
Domestic Travel Expenses (DTE)	11.00	0.00	11.00
Office Expenses (Voted)	30.00	0.00	30.00
Fuels and Lubricants	1.25	0.00	1.25
Repair & Maintenance	1.25	0.00	1.25
Other Revenue Expenditure	2.00	0.00	2.00
Swachchta Action Plan - Other Revenue Expenditure	0.50	0.00	0.50
Total	**1018.29**	**59.10**	**1077.39**

Head	GSI	NER	Total
Administrative Support Activities (ASA)			
Domestic Travel Expenses (DTE)	37.50	2.50	40.00
Foreign Travel Expenses (FTE)	2.20	0.00	2.20
Office Expenses (OE)	22.50	2.50	25.00
Rents, Rates and Taxes (RRT) for land & building	4.65	0.35	5.00
Material &Supplies	0.50	0.00	0.50
Advertising & Publicity	2.00	0.00	2.00
Minor civil & electrical works	20.00	0.00	20.00
Professional Services	3.44	0.02	3.46
Total (A)	**92.79**	**5.37**	**98.16**
Activities / Mission			
Survey & Mapping (Mission-I)			
Wages	4.70	0.30	5.00
Fuels and Lubricants	0.85	0.15	1.00
Repair & Maintenance	64.90	0.00	64.90
Other Revenue Expenditure	6.70	0.30	7.00
Total	**77.15**	**0.75**	**77.90**
Mineral Exploration (Mission-II)			
Wages	18.80	0.70	19.50
Fuels and Lubricants	8.25	0.25	8.50
Repair & Maintenance	0.70	0.00	0.70
Other Revenue Expenditure	41.25	0.75	42.00
Total	**69.00**	**1.70**	**70.70**
Information Dissemination (Mission-III)			
Printing and Publication	1.50	0.01	1.51
Digital Equipment	1.20	0.00	1.20
Repair &Maintenance	11.00	0.00	11.00
Total	**13.70**	**0.01**	**13.71**
Other exploration (Antarctica) (Mission-IV B)			
Other Revenue Expenditure	**0.05**	0.00	**0.05**
Research & Development (Mission-IVC)			

Head	GSI	NER	Total
Wages	1.95	0.25	2.20
Material &Supplies	7.40	0.10	7.50
Fuels and Lubricants	1.00	0.00	1.00
Repair & Maintenance	9.00	0.00	9.00
Other Revenue Expenditure	15.70	0.30	16.00
Total	**35.05**	**0.65**	**35.70**
Training (Mission-V)			
Training Expenses	1.95	0.05	2.00
Tribal Sub Plan (TSP) (Object Class V)			
Other Revenue Expenditure	17.75	0.00	17.75
Scheduled Caste Sub Plan (SCSP)			
Other Revenue Expenditure	34.22	0.00	34.22
Other Expenditure			
Other Revenue Expenditure	0.40	0.05	**0.45**
Total	**0.40**	**0.06**	**0.46**
Total (Revenue)	**1360.35**	**67.68**	**1428.03**
Capital Expenditure			
Motor Vehicle	5.00	0.00	5.00
Machinery & Equipment	43.01	0.00	43.01
Information, Computer, telecommunication (ICT) equipment	9.93	0.07	10.00
Infrastructural Assets	100.00	0.00	100.00
Furniture and fixture	1.45	0.05	1.50
Land	0.10	0.00	0.10
Total (Capital)	**159.49**	**0.12**	**159.61**
GRAND TOTAL (Revenue +Capital)	**1519.84**	**67.80**	**1587.64**

Indian Bureau of Mines (IBM)

14.3 The Demands for Grants i.e. sanctioned Budget Estimates for the Financial Year 2025-26 is Rs.135.00 crores including Rs.18.58 crores under IBM Activities and Rs.116.42 crores under Establishment received vide Ministry's Letter No.1/5/2024-IF (576) dated 1st January, 2025. Head-wise cum Scheme-wise breakup of Activities & Establishment Budget is given in **Table 14.3 (1).**

Table 14.3 (1)

(Rupees in lakhs)

Sl. No.	Object Heads	Estt.	Activities									Grand Total
			Sch. No.1	Sch. No.2	Sch. No.3	Sch. No.4	Sch. No.5	Other Heads	Total	NER	Total Activities	
1	Salaries	4880.00	30.00	0.00	0.00	0.00	0.00	0.00	30.00	90.00	120.00	5000.00
2	Wages	12.00	1.00	1.00	1.00	1.00	0.00	0.00	4.00	0.50	4.50	16.50
3	Rewards	39.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	40.00
4	Medical Treatment	120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	120.00
5	Allowances	4392.00	27.00	0.00	0.00	0.00	0.00	0.00	27.00	81.00	108.00	4500.00
6	Leave Travel Concession	59.00	5.00	0.00	0.00	0.00	0.00	0.00	5.00	1.00	6.00	65.00
7	Domestic Travel Expenses	249.00	21.00	0.00	0.00	0.00	0.00	0.00	21.00	4.00	25.00	274.00
8	Foreign Travel Expenses	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00
9	Office Expenses	1035.00	36.00	20.00	15.00	15.00	0.00	0.00	86.00	4.00	90.00	1125.00
10	Rent, Rates & Taxes for Land and Buildings	91.00	29.00	0.00	0.00	0.00	0.00	0.00	29.00	0.00	29.00	120.00
11	Printing & Publication	0.00	0.00	0.00	25.00	0.00	0.00	0.00	25.00	0.00	25.00	25.00
12	Rent for others	80.00	10.00	10.00	0.00	0.00	0.00	0.00	20.00	0.50	20.50	100.50
13	Materials & Supplies	34.00	10.00	0.00	0.00	0.00	0.00	0.00	10.00	1.00	11.00	45.00
14	Fuels & Lubricants	0.00	7.00	2.00	1.00	0.00	0.00	0.00	10.00	0.50	10.50	10.50
15	Advtertising & Publicity	0.00	3.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	3.00	3.00
16	Minor civil & Electric Works	470.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	470.00
17	Professional Services	67.00	10.00	0.00	0.00	0.00	0.00	0.00	10.00	1.00	11.00	78.00
18	Repair & Maintenance	39.00	10.00	0.00	0.00	0.00	0.00	0.00	10.00	0.50	10.50	49.50
19	Other Revenue Expenditure	50.00	5.00	0.00	0.00	0.00	0.00	0.00	5.00	1.00	6.00	56.00
20	Mining Tenement System (ORE)	0.00	0.00	0.00	0.00	0.00	600.00	0.00	600.00	0.00	600.00	600.00

Sl. No.	Object Heads	Estt.	Activities									Grand Total
			Sch. No.1	Sch. No.2	Sch. No.3	Sch. No.4	Sch. No.5	Other Heads	Total	NER	Total Activities	
21	Training Expenses	0.00	0.00	0.00	0.00	0.00	0.00	20.00	20.00	0.00	20.00	20.00
22	Swachhta Action Plan (ORE)	0.00	0.00	0.00	0.00	0.00	0.00	20.00	20.00	0.00	20.00	20.00
23	Digital Equipment (IT)	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00	50.00	50.00
24	"Special Component Plan for Scheduled Castes (ORE)"	0.00	0.00	0.00	0.00	0.00	0.00	154.00	154.00	0.00	154.00	154.00
25	Tribal Area Sub-Plan (ORE)	0.00	0.00	0.00	0.00	0.00	0.00	80.00	80.00	0.00	80.00	80.00
	TOTAL (REVENUE) :	11642.00	204.00	33.00	42.00	16.00	600.00	324.00	1219.00	186.00	1405.00	13047.00
26	Machinery and Equipment	0.00	0.00	0.00	0.00	0.00	0.00	250.00	250.00	0.00	250.00	250.00
27	Information, Computer, Telecommunications (ICT) equipment	0.00	0.00	0.00	0.00	0.00	0.00	103.00	103.00	0.00	103.00	103.00
28	Furniture and Fixtures	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	0.00	100.00	100.00
29	Other Capital Expenditure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL (CAPITAL) :	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**453.00**	**453.00**	**0.00**	**453.00**	**453.00**
	GRAND TOTAL :	**11642.00**	**204.00**	**33.00**	**42.00**	**16.00**	**600.00**	**777.00**	**1672.00**	**186.00**	**1858.00**	**13500.00**
1	Scheme No. 1 - Inspection of Mines for Scientific and Systematic Mining, Mineral Conservation and Mines Environment											
2	Scheme No. 2 - Mineral Beneficiation studies utilization of low grade and sub grade ores and analysis of Environmental samples											
3	Scheme No. 3 - Technological Upgradation and Modernisation											
4	Scheme No. 4 - Mines and Minerals through various publications											
5	Scheme No. 5 - Computerised Online register of Mining Tenement System.											

14.3 (i): The proposal of Revised Estimates for the Financial Year 2025-26 has been sent to Ministry vide this office letter dated 11.09.2025. However, the approval of Revised Estimates 2025-26 is awaited. Head-wise cum Scheme wise breakup of Activities & Establishment of Proposed Revised Estimates is given in **Table 14.3(2).**

Table 14.3 (2)

(Rupees in lakhs)

Sl. No.	Object Heads	Estt.	Activities									Grand Total
			Sch. No.1	Sch. No.2	Sch. No.3	Sch. No.4	Sch.No.5	Other Heads	Total	NER	Total Activities	
1	Salaries	4880.00	30.00	0.00	0.00	0.00	0.00	0.00	30.00	90.00	120.00	5000.00
2	Wages	12.00	1.00	1.00	1.00	1.00	0.00	0.00	4.00	0.50	4.50	16.50
3	Rewards	39.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	40.00
4	Medical Treatment	130.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	130.00
5	Allowances	4412.00	27.00	0.00	0.00	0.00	0.00	0.00	27.00	81.00	108.00	4520.00
6	Leave Travel Concession	59.00	5.00	0.00	0.00	0.00	0.00	0.00	5.00	1.00	6.00	65.00
7	Domestic Travel Expenses	249.00	21.00	0.00	0.00	0.00	0.00	0.00	21.00	4.00	25.00	274.00
8	Foreign Travel Expenses	45.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.00
9	Office Expenses	1015.00	36.00	20.00	15.00	15.00	0.00	0.00	86.00	4.00	90.00	1105.00
10	Rent, Rates & Taxes for Land and Buildings	161.00	29.00	0.00	0.00	0.00	0.00	0.00	29.00	0.00	29.00	190.00
11	Printing & Publication	0.00	0.00	0.00	25.00	0.00	0.00	0.00	25.00	0.00	25.00	25.00
12	Rent for others	80.00	10.00	10.00	0.00	0.00	0.00	0.00	20.00	0.50	20.50	100.50
13	Materials & Supplies	34.00	10.00	0.00	0.00	0.00	0.00	0.00	10.00	1.00	11.00	45.00
14	Fuels & Lubricants	0.00	7.00	2.00	1.00	0.00	0.00	0.00	10.00	0.50	10.50	10.50
15	Advertising & Publicity	0.00	3.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	3.00	3.00
16	Minor civil & Electric Works	620.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	620.00
17	Professional Services	67.00	10.00	0.00	0.00	0.00	0.00	0.00	10.00	1.00	11.00	78.00
18	Repair & Maintenance	39.00	10.00	0.00	0.00	0.00	0.00	0.00	10.00	0.50	10.50	49.50
19	Other Revenue Expenditure	50.00	5.00	0.00	0.00	0.00	0.00	0.00	5.00	1.00	6.00	56.00
20	Mining Tenement System (ORE)	0.00	0.00	0.00	0.00	0.00	350.00	0.00	350.00	0.00	350.00	350.00

Sl. No.	Object Heads	Estt.	Activities									Grand Total
			Sch. No.1	Sch. No.2	Sch. No.3	Sch. No.4	Sch.No.5	Other Heads	Total	NER	Total Activities	
21	Training Expenses	0.00	0.00	0.00	0.00	0.00	0.00	20.00	20.00	0.00	20.00	20.00
22	Swachhta Action Plan (ORE)	0.00	0.00	0.00	0.00	0.00	0.00	20.00	20.00	0.00	20.00	20.00
23	Digital Equipment (IT)	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00	50.00	50.00
24	"Special Component Plan for Scheduled Castes (ORE)"	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	Tribal Area Sub-Plan (ORE)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL (REVENUE) :	11892.00	204.00	33.00	42.00	16.00	350.00	90.00	735.00	186.00	921.00	12813.00
26	Machinery and Equipment	0.00	0.00	0.00	0.00	0.00	0.00	250.00	250.00	0.00	250.00	250.00
27	Information, Computer, Telecommunications (ICT) equipment	0.00	0.00	0.00	0.00	0.00	0.00	103.00	103.00	0.00	103.00	103.00
28	Furniture and Fixtures	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	0.00	100.00	100.00
29	Other Capital Expenditure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL (CAPITAL) :	0.00	0.00	0.00	0.00	0.00	0.00	453.00	453.00	0.00	453.00	453.00
	GRAND TOTAL :	11892.00	204.00	33.00	42.00	16.00	350.00	543.00	1188.00	186.00	1374.00	13266.00

NOTE (1) Rs 155.00 lakhs under the object head "SCPSC" and Rs 80.00 lakhs under "TASP" has been transferred to GSI vide reappropriation order No 41 & 42 dated 17.09.2025
(2) Rs 20.00 lakhs under the object head " Office Expenses (Estt.) reappropriated to the object head F.T.E (Estt) vide reappropriation order No 43 dated 17.09.2025
(3) Rs 250.00 lakhs under the object head " Mining Tenement System - Scheme No 5 reappropriated to the object head Medical Treatment, Allowances, R.R.T for Land & Building and Minor Civil & Electric works under Establishment of Rs 10 lakhs, 20 lakhs, 70 lakhs and 150 lakhs respectively vide reappropriation order No 44 dated 06.11.2025

1	Scheme No. 1 - Inspection of Mines for Scientific and Systematic Mining, Mineral Conservation and Mines Environment
2	Scheme No. 2 - Mineral Beneficiation studies utilization of low grade and sub grade ores and analysis of Environmental samples
3	Scheme No. 3 - Technological Upgradation and Modernisation
4	Scheme No. 4 - Mines and Minerals through various publications
5	Scheme No. 5 - Computerised Online register of Mining Tenement System.

Audit

As on 31.12.2025, no PAC para is pending in respect of Ministry of Mines.

As on 31.12.2025, 10 C&AG Audit Paras [06 civil (uploaded by audit on APMS Portal in Dec, 2025) & 04 commercial] are pending in respect of Ministry of Mines. Details are as under **Table 14.4**

CA&G Paras (CIVIL)

Table 14.4

S.N.	Report and Para No.	Subject of para
1	Para No. 4.7 of Report No. 31 of 2022	Non-surrender and surrender of savings on last day of the financial year
2	Para No. 4.2.2.4 of Report No.16 of 2025	Non-surrender of savings
3	Para No. 4.2.2.3 of Report No. 16 of 2025	Significant savings at minor/sub-head
4	Para No. 3.2.2 of Report No. 7 of 2021	Analysis of savings
5	Para No.3.6 of Report No. 7 of 2021	Non-surrender and surrender of savings on last day of the financial year
6	Para No.4.2.2 of Report No. 31 of 2022	Analysis of savings

C&AG PARAS (COMMERCIAL)

S.N.	Organization	Para No/Report No.	Subject of para/report
1	NALCO	Report no 06 of 2019	Operational performance and productivity of the refinery and smelter plants of NALCO
2	NALCO	Para no. 13.1 of report no. 13 of 2014	Irregular payment towards encashment of half pay leaves as well as employers share of EPF contribution on leave encashment
3	NALCO	Para no 6.2 of report no. 14 of 2021	Avoidable expenditure of Rs. 8.56cr towards stamp duty and registration fees
4	HCL	Report no. 12 of 2023	Operational performance of HCL

*****

15 CHAPTER



Miscellaneous

Miscellaneous

- National Informatics Center (NIC) Page-265
- E-Office Page-267
- E-Samiksha Page-267
- Skill Development Page-268
- Redressal of Public Grievances Page-273
- Vigilance cases Page-274
- Swachh Bharat Abhiyan Page-290
- RTI Page-291
- Government e-market (GeM) Portal Page-292

National Informatics Centre (NIC)

15.1 IT Support by NIC at Ministry of Mines

The following are the IT Services that NIC is providing to Ministry of Mines.

Management Information Systems for the Ministry

15.2 The computerization has been done in the area of Science and Technology Schemes , Registration under Rule 45 of MCDR , Revision Applications, e - indent, Conference Hall Booking. The following MIS are operational:

a) Satyabhama - a Web Portal for Science and Technology Schemes (https://research.mines.gov.in) to promote research in mining sector. A New development portal for Start-ups in mining sector to submit research project is completed and Gone-Live.

b) Revision Application System (RAS) (https://ras.nic.in)

c) Intra-mines Web portal (Covers e-Indent of various stationary items and cleaning material, online booking of Conference Rooms, also to facilitate financial support through Canteen Bill Processing System to officer for hospitality management as per Govt. of India rule). This service is operational on Local Area Network of the Ministry.

d) Non - Ferrous Metal Import Monitoring System (NFMIMS)

e) Mining Tenement System comprising 12 modules (Major Modules are Registration, Returns, Final Mine Closure Plan and Average Sale Price System)

Support for e - Governance Applications

15.3 The following e-Governance applications have been implemented and supported by NIC in the Ministry:

- Public Financial Management System
- e-Office and SPARROW
- Swagatam Portal

Local Area Network (LAN)

15.4 All kind of trouble shooting is done by NIC to facilitate the smooth functioning of internet on user machines with the help of FMS team of the Shastri Bhawan Network Centre. EDR and UEM is installed on clients for advance protection from virus, malware etc. Exclusive Access is granted to scanning in all scanners of the Ministry of Mines. Security postures of ministry have been upgraded with installation of EDR/UEM to all the systems in the network as per Government of India Guidelines.

Wi-fi Support

15.5 More than 16 wi-fi access points are installed in the Ministry covering 'A' and 'D' Wings. Trouble shooting of wi-fi related problems is done on regular basis.

Videoconferencing Support

15.6 Videoconferencing of the Ministry Officials with the State Governments, Subordinate Offices, PSUs and PRAGATI VC is being facilitated by the NIC-Mines team. There are 9 VC studios operational in Ministry of Mines. To cater the excessive demand of VC, 5 exclusive Web VC rooms (Links) have been created for Ministry of Mines to organise VC from any remote location having internet connectivity. Approximately 950 VC meetings have been conducted over the video conferencing system of NIC.

VPN Cloud Support

15.7 Requests related to Virtual Private Network (VPN) accounts to access the e-Office from networks other than NIC net are also processed through NIC team of Ministry of Mines. NIC also Managing Cloud Hosting of various websites of Ministry.

IT support to Associated Offices of the Ministry

15.8 Besides the routine coordination work at Ministry of Mines, the team is also extending support to all the associated offices of the Ministry (through NIC staff) such as:

I. Indian Bureau of Mines (IBM) – Mining Tenement System

II. Geological Survey of India (GSI) – for conducting video conferencing sessions with the Ministry.

III. PSUs of Ministry of Mines-for conducting video conferencing sessions with the Ministry.

Mining Tenement System (MTS)

15.9 Mining Tenement System (MTS) Project of Indian Bureau of Mines (IBM) an attached office of the Ministry of Mines :-

Starting from Registration by Miners to regularly submission of Mining plan, Annual Return/ Monthly Return, Interaction with various Mining officers through online system helps the miners in executing and submitting various data, reports in a very short concise time. There are 12 Modules. These are Registration, Calculation of Average Sale Price System, National Directory (NMI), World Directory (WMI), Inspection, Mineral Processing, Final Mine Closure Plan, Revision System, Mineral Processing, Notices, Inspection, Return Submission and Mining Plan Approval System.

The maintenance of the MTS is undertaken by NICSI hired manpower. The migration of MTS is being worked out to National Government Cloud in Load Balancer environment to ensure faster and seamless access to miners with minimum downtime.

The Revision petitions to RCOM, COM and CCOM by Miners are managed through MTS Revision System. The calculation of Average Sale Price was a tedious and prone to erroneous results became extremely simplified with help of computerized system. Even mining closing requirements are being processed through Final Mine Closure Module and thus entire mining activities through online system was well taken at every sphere.

The system features online application submission with Aadhaar-based e-sign, role-based dashboards, single sign-on, email and SMS alerts, and a support ticketing system. With over 650 IBM users, additional state government users, and over 24,000 registered industry users. MTS has gained significant recognition for fostering transparency, substantial time savings for stakeholders, and an enhanced ease of doing business.

Satyabhama Portal (https://research.mines.gov.in):- SATYABHAMA Portal is developed to monitor Research in mining section providing end to end solution from research proposal submission to close of research project. To plan, support and coordinate mining, mineral and metal based research in public, startups are promoted to involve in mining based research. A New development portal for Start-ups in mining sector to submit research project is completed and Gone-Live . Development work for Upgradation of Satyabhama Portal, PRISM Component and Information Education

and Communication (IEC) Component is completed and Gone-Live. New Research proposals are accepted for the release of grant by Ministry of Mines.

Revision System (https://ras.nic.in):- The objective of the system is to scrutinize, process, monitor and disposal of the Revision Petition filed by a person to the Central Govt. against the order of his Mining Lease/Prospecting License/Reconnaissance Permit application by the concerned State Govt. Hearing are conducted, notices are generated from the system. Decisions of Revision Authority thereafter are updated in the system. MIS Reports are generated from system for Revision Cell and Revision Authorities

15.10 E-Office

The e-Office is an e-Governance application and has been implemented in the Ministry of Mines since May 2013.

The following modules have been successfully adopted.

- eFile (File Management System) –eFile, an integral part of the e-Office suite, is a system designed for Government Departments, PSUs, and Autonomous Bodies to enable a paperless office by scanning, registering, and routing correspondences along with creation of files, noting, referencing, attachment of correspondences, drafting for approvals, and finally movement and tracking of e-files. The current version of eFile 7.3.15-3, released on 6th June 2025, is in use.
- Document Management and Referencing Enhancements: Improved PDF viewing with accurate page numbering in Recent and TOC sections, enhanced note-to- correspondence referencing with dual display of document and TOC page numbers, and introduction of a loading indicator to address network delays.
- Workflow, User Experience and System Enhancements: Introduction of status monitoring and alerts in the File Review module, facility for transfer and diarization of received letters, addition of secondary mobile number for notifications, improved draft editing guidance, enhancements in Bhashini integration, modifications in application registration for API consumption, improved user search for Inter eOffice and other dispatches with department-level filtering, and modifications in the Dispatch PDF web service.

eSamiksha

15.11 eSamiksha is a real-time on-line system for monitoring of follow-up action on the decisions taken during the presentations made by different Ministries/Departments to the Prime Minister, Centre-State-Coordination issues, observations made by Cabinet, recommendations made by Committee of Secretaries,etc. The follow-up action in respect of all issues concerning other Ministries/ Departments and State Governments is to be updated by the concerned Ministry/ Department/Agency on the eSamiksha portal and replies to the issues raised by the Ministries/ Departments and State Governments are taken up on priority basis and status is uploaded on eSamiksha portal every month. Ministry of Mines has been regularly monitoring the follow-up action in respect of eSamiksha portal.

Skill Development

15.12 The Ministry of Mines (MoM) with cooperation of the Ministry of Skill Development and Entrepreneurship (MSDE) has undertaken steps for skill development for increasing productivity and accelerated, sustainable and inclusive growth in the mining sector. The apprenticeship training initiative undertaken by the CPSEs for the last 4 years is given in **Table 15.1**.

Table 15.1 Apprenticeship Training

Name of CPSE	No. of apprentices engaged in 2022-23	% of total manpower	No. of apprentices engaged in 2023-24	% of total man power	No. of apprentices engaged in 2024-25	% of total manpower	No. of apprentices engaged in 2025-26	% of total man power
NALCO	1394	26.85	1135	23.29	992	20.58	1450 (expected)	30.08
HCL	146*	1.97	137*	1.8	273	3.52	227#	2.54
MECL	47	2.9	45	2.7	48	2.5	50** (expected)	2.5

** Operations at Indian Copper Complex, Ghatsila, Jharkhand and at Taloja Copper Project, Taloja, Maharashtra suspended, hence no apprentice engaged and the same has been informed to respective Regional Directorate of Skill Development & Training (RDAT).*

 # The process of engagement of Trade Apprentices at Khetri Copper Complex, Khetrinagar, Rajasthan is underway for 209 seats of various Trades.

*** Since apprentices were engaged in March 2025, the next apprenticeship engagement cycle is scheduled for Feb-March 2026 where approximately 50 apprentices are to be engaged at 2.5% of total manpower strength (including contractual).*

Geological Survey of India (GSI)

15.13 In order to enhance the competency of the GSI employees, skill development and capacity enhancement being done through various field, laboratory modules with hands-on practices by Geological Survey of India Training Institute (GSITI). Training modules of GSITI focus on Geological, Geophysical and Geochemical Mapping; Mineral exploration and 3D-Statistical Modelling of Mineral Resources; Geo-scientific data analysis and integration; Research methodologies in fundamental and public-good geosciences; and interpretation of advanced data sets such as aero-geophysical and multi-seismic marine survey outputs. Additionally, structured training is offered in emerging technology applications Drone-based surveys, Artificial Intelligence and Machine Learning along with techno-administrative programmes covering finance, human resource management, vigilance, grievance redressal and gender sensitization.

15.14 GSITI have adopted a blended training approach, featuring classroom learning with advanced software tools, field demonstrations at geologically critical sites, laboratory-oriented sessions, and domain-specific basic,

refresher, and advanced courses. Collaborative programmes and networking lectures are also organised with reputed academic and research institutions. GSITI's digital learning ecosystem continues to expand, delivering both synchronous and self-paced modules. At present, 33 asynchronous training courses are hosted on the GSITI learning portal (https://training.gsiti.gsi.gov.in/), while 41 courses (domain, behavioural and functional) have been made available on the iGOT Karmayogi platform.

15.15 Beyond internal capacity building, GSITI imparts essential geoscience skills to a wide range of external stakeholders including State DGMs, public sector exploration agencies and research organizations. The training interventions include Geoscientific investigations; Mineral Exploration Techniques; 3D Resource Modelling; operation of specialized equipment and software; capacity building for effective usage of the National Geoscience Data Repository (NGDR); and imparting basic, refresher and advanced training in a specific domain through lectures, laboratory demonstrations and field sites demonstration. Internationally supported programmes were also conducted under the Indian Technical and Economic Cooperation (ITEC) scheme of the Ministry of External Affairs, the National Natural Resources Management Survey (NNRMS) initiative of ISRO, and through collaborations with PSUs such as Oil India Limited.

15.16 From January to December 2025, GSITI successfully trained 3036 participants, comprising 2303 GSI personnel, 733 participants from stakeholder organisations, and 39 international trainees representing 31 countries. Moreover, as part of outreach activities under the Azadi Ka Amrit Kaal initiative, 898 students from colleges and universities across India gained exposure through short-duration, field-oriented programmes. As part of the Rashtriya Karmayogi Large Scale Jan Seva Program, GSITI have trained 115 Master Trainers who have subsequently imparted 1-day training to 1259 officers and staffs across the various offices of GSI nationwide.

Indian Bureau of Mines (IBM)

15.17 Indian Bureau of Mines (IBM), according to its charter of functions, needs to enhance its skills in various advanced technologies for mine regulation and development.

15.18 The IBM officials are imparted trainings at Headquarter for 2-3 days and at its regional offices as well as at two Skill Development Centres located at Udaipur and Kolkata. Nominations are sought in advance. After approval of the Competent Authority, training programmes are organized through classroom lectures/ presentation by the faculties drawn from IBM as well as Industry.

15.19 In the year 2025-26, IBM conducted trainings, webinar, seminar, workshop in both offline and online mode. IBM officials were also nominated for attending training programmes in GSI, Nagpur. Further training programmes, wherever necessary, will be conducted in association with these organizations / institutions. Further, through bilateral cooperation with other countries, capacity building programme will be taken up.

15.20 IBM imparts training to technical and non-technical officials of IBM, official of Directorate of Geology & Mining (DGM) and also to mineral industry personnel and other agencies in India and abroad. During the year 2025-26, 24 training programmes were conducted, in which a total of 854 IBM

officials, 834 Industry personnel and 65 from the State DGM have participated. IBM makes its presence in the meetings as organized by GSI/ MECL for its active participation, towards synergic approach. Further, IBM officials are participating in various Training Programmes conducted by other Institutes.

15.21 IBM has initiated its efforts to upload its training modules on iGOT platform, YouTube Channel and IBM website. In the year 2025-26, 02 lecture videos on Offshore Mining were published on iGOT portal. So far, 02 lecture videos have been uploaded on YouTube, 08 courses on iGOT portal and 10 lecture videos on IBM website. Further preparation is underway to upload more such videos in various platforms.

Capacity Building Plan of IBM:

The ACBP consists of both training & non-training interventions. Based on competency requirements identified for each cadre training interventions have been recommended across domain, behavioural & functional areas. The Training Centre collects, compile and monitor the ACBP progress on monthly as well as quarterly basis. The total learning hours prescribed in the ACBP 2025-26 as given below in **Table 15.2**:

Level	Total Learning Hrs.
Level 13 and above	52 hrs
Level 10,11 and 12	52 hrs
Level 9 and below	53 hrs
MTS and Others	24 hrs

15.22 Rashtriya Karmayogi Jan Seva

Under the aegis of Capacity Building Commission, Indian Bureau of Mines have conducted multiple batches of Rashtriya Karmayogi Jan Seva Programme in its Headquarters, Zonal Offices and Regional Offices across the country. A total of 666 employees attended the Jan Seva Training Programme held till December 2025.

15.23 Discussion Forum

With the aim of facilitating structured dialogue and inter-departmental exchange of views on the identified subjects, and to foster meaningful dialogue and collaborative learning, Training Centre rollout a monthly discussion forum since June 2025 on the following topics in **Table 15.3**:

S. No.	Month	Topic
1	June	Self-Sustainability in Mineral Resources
2	July	Lowering of Threshold Value of Iron Ore (from 45% Fe)
3	August	Preparation of Feasibility Report
4	September	Hand-holding of IBM with Prominent Educational Institutes and Professional Bodies
5	October	Critical Mineral Resources of India and the Present Scenario
6	November	Geotechnical Assessment of Mining Projects and Ground Truthing with Suitable Case Studies

Mineral Exploration & Consultancy Limited (MECL)

15.24 MECL has been steadfast in empowering its workforce through targeted skill development initiatives, focusing on excelling in mineral exploration. With a

robust training framework, the organization emphasizes technical skill enhancement, leveraging collaborations with leading National Institutions and industry experts. Employees are equipped with cutting-edge knowledge in geological exploration technologies while benefiting from personalized development plans and soft skills training, fostering holistic professional growth. Notably, MECL's dedication to continuous learning is reflected in its 1st position in the National Learning Week for achieving the "Minimum 4-Hours/ Year Learning Goal."

15.25 A total of 57 (37 internal and 20 external) training programs have been completed as on date. MECL successfully conducted 514 man-days of internal training, including induction programs for new executives and non-executives and technical sessions on topics such as Advanced Artificial Intelligence Applications, e-Office and GeM Procurement. Further, monthly & weekly Internal Capacity Building Sessions were also organized to enhance managerial competencies and leadership skills. In addition, 140 man-days were achieved to external training programs through nominations.

15.26 Furthermore, MECL has developed and uploaded six (06) Technical courses on the iGOT platform, which are currently live and have received an average user rating of 4.5 out of 5. Further, 02 courses have also been uploaded (draft) and under final stages of approval from iGOT.

15.27 MECL has signed MoUs with five (05) Government Universities, like Kurukshetra University, Nanded University, Andhra University, RTM Nagpur University and Raipur University for the engagement of Paid Interns in various disciplines such as Geology, Geophysics, Public Relations, Planning, BD & Instrumentation, with 30 paid interns presently engaged under these collaborations.

National Aluminium Company Limited (NALCO)

15.28 In order to enhance the functional and behavioural competency of its employees and to align the individual need with the business objective of the organization towards increasing production and productivity as well as to improve business culture in the organization, there has been an unstinting effort by the Company to impart skill and behavioural training to its employees. In its commitment for corporate social accountability and good corporate governance, the company also imparts skill development training to contract workers, apprentices, students from managerial and technical institutes as well as for local populations.

- Total 11554.5 training man-days provided to regular employees during the year 2025-2026 (Upto 31st December 2025).
- 849 regular employees were given virtual as well as external training on management development programme during the year 2025-26 (Upto 31st December 2025) from reputed National organisations.
- In-house skill development programmes organized for 4,567 Security personnel, contract labours and trainees across the company during the year 2025-26 (Upto 31st December 2025).
- 905 apprentice trainees were engaged during the year FY 2025-26 (Upto 31st December 2025), which is 18.84 % of total regular employees and 4.54 % of

total employees including contractual workers engaged by different contractors.

- 1,281 students from different technical and management institutes across the country had undergone summer internship programme in various functional disciplines during the year 2025-26 (Upto 31st December 2025).
- 34 students have been engaged under Prime Minister Internship Scheme (PMIS) during the year 2025-2026 (Upto 31st December 2025) & 2024-25 across all the units.

Hindustan Copper Limited (HCL)

15.29 Skills for which training required for employees of HCL are Mines Refresher Training, Fire Fighting Training, First Aid Training, Safety Training, Soft Skills Training, Fitters, Mechanics, Riggers, Welders, Mine Surveyor Assistant, Loader & hauling operation, Blasters, Winding engine operators for underground shaft, Mining mate, HEME operators, Drilling machine operators, Ball Mill operations for beneficiations, Pump operators for mine dewatering, etc.

15.30 Method for imparting training: Training by own faculty at the Vocational Training Centers in Khetri Copper Complex (KCC), Malanjkhand Copper Complex (MCP), Indian Copper Complex (ICC). Training imparted In-House through Internal and External Faculties as well as sending employees to various Centre of Excellence.

15.31 Skills for which training required for other stakeholders connected to HCL are Loader & hauling operation, Blasters, Winding engine operators for underground shaft, Electrician, Mechanical, Fitter, Welder, General Technician, Machinist, Crane Operator, Carpenter, Plumber, Draftsman, Turner.

National Institute of Rock Mechanics (NIRM)

15.32 The following advance training programs were conducted by NIRM for the industry:

- Druk Green Employees at Thimphu, Bhutan. HR-2501- NIRM conducted a five-day training program for Druk Green employees (20 officials) on Rocscience Software at Thimphu, Bhutan. The training program was conducted from 23-06-2025 to 27-06-2025. The training program covered Rocscience software, namely RS2, RS3, Dips, Unwedge, Slide 2D and Slide 3D.
- Numerical Modelling Department scientists attended 'Advanced software training program on Itasca codes from 21st July to 31st July 2025 at Itasca Minneapolis office, Minnesota, USA-The training program conducted by Itasca was designed to provide comprehensive coverage of both fundamental and advanced aspects of 3D modeling, equipping the participating Scientists with the expertise to address complex 3D stress analysis problems in rock mechanics and rock engineering using Itasca's 3DEC and FLAC3D codes. The program covered a wide range of software applications in rock mechanics and engineering modelling including IMAT software. The Scientists visited Itasca Denver office related to MINEDW Itasca software and Colorado School of Mines, Denver for discussions and future.

Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), Nagpur

15.33 The skill development initiative of JNARDDC has focused on following:

- 3 months internal induction training for newly recruited employees
- Certified Courses, NPTEL, Training programs & Lecture Series for Scientists/ Technologists / Others
- Advanced awareness training on Lab management system as per ISO/IEC 17025:2017 and ISO-17034:2016
- Specialized Training program for industry personnel
- Vocational training / Internship programs for PG/ B.Tech/ M.Tech students
- 41 PG and Engineering students from PAN India colleges were provided short term internship training program. They included students from IIT-Goa; COEP Technological University, Pune; Dr. Ambedkar College, Nagpur; VNIT, Nagpur; Ramdeobaba University, Nagpur etc.
- iGOT: All JNARDDC employees are registered on iGOT and completed their earmarked courses as per CNA

15.34 JNARDDC along with other academic and scientific institutes organized and participated in the following major events:-

- Workshop on "Discovering the Power of Critical Minerals for the Next Generation" JNARDDC, Nagpur; 25 April 2025
- 3-day Training program on Alumina Making Process, JNARDDC, 28-30 April 2025
- Workshop for nonferrous metal recycling stakeholders, Hyderabad; 31 May 2025
- 2-day AL-MATCH Workshop dedicated to the Aluminium Utensil Manufacturing industry! VNIT & JNARDDC, Nagpur; 21-22 Jun 2025
- 29th International Conference on Non-Ferrous Metals (ICNFM 2025) Kolkata; 11-12 Jul 2025
- Vidarbha Non-Ferrous Metals (NFM) Recycling Stakeholders' Meet at JNARDDC, Nagpur; 28 Jul 2025

Redressal of Public Grievances

15.35 Department of Administrative Reforms & Public Grievances (DAR&PG) has implemented a web based Centralized Public Grievance Redressal and Monitoring System (CPGRAM) vide which grievances pertaining to concerned Ministries / Department are forwarded for redressal. A Section Officer has been designated as the Nodal Officer of Public Grievances. During the period 1st January, 2025 to 31st December, 2025, 1564 Public Grievances were received and 56 pending cases were brought forward from the year 2024. A total of 1519 Public Grievances have been disposed of during the period and the remaining cases have been referred to the concerned Organization / Authority for taking further necessary action in the matter.

15.36 Details of action taken on the public grievances of this Ministry and its attached / subordinate offices during the year 2025 (from 1st January 2025 till 31st December, 2025) are given in **Table 15.4**.

Table 15.4

Organization	No. of public grievances pending as on 31.12.2024	Public grievances received during 01.01.2025 to 31.12.2025	Disposed cases during 01.01.2025 to 31.12.2025	Pending cases as on 31.12.2025
Ministry of Mines	56	1564	1519	101
Geological Survey of India (GSI)	07	263	264	06
Hindustan Copper Limited (HCL)	04	95	86	13
Indian Bureau of Mines (IBM)	04	61	63	02
National Aluminium Company Limited (NALCO)	02	77	69	10
Mineral Exploration & Consultancy Limited (MECL)	00	29	29	00
JNARDDC	00	04	04	00
NIRM	00	04	03	01

Vigilance cases

15.37 During the year 2025-26 (from 01st January, 2025 till 31st December, 2025) details pertaining to Vigilance Division of this Ministry and its attached/subordinate offices are given below in **Table 15.5**:

Ministry of Mines:

Table 15.5

Organization	No. of complaints pending (As on 31.12.2024)	Complaints received during the period from 01.01.2025 to 31.12.2025	Disposed cases during the period from 01.01.2025 to 31.12.2025	Pending cases (As on 31.12.2025)
Ministry of Mines, New Delhi	14	09	22	01
Geological Survey of India (GSI)	01	20	21	Nil
Indian Bureau of Mines (IBM)	01	21	21	01

15.38 The details of disciplinary cases arising from vigilance complaints during the year 2025-26 (from 01st January, 2025 till 31st December, 2025) are given below in **Table 15.6**.

Table 15.6

Organization	No. of Disciplinary cases	Nature of the penalty recommended against officer/ officials.	Status of disciplinary cases (As on 31.12.2025)
Ministry of Mines, New Delhi	02	**Major:** 03 officers.	Pending cases : 02
Geological Survey of India(GSI)	NIL	NIL	NIL
Indian Buerau of Mines (IBM)	NIL	NA	NA

15.39 Vigilance Awareness Week was observed from 27th October, 2025 to 2nd November, 2025 in the Ministry as well as in subordinate/attached offices of the Ministry. During the week, Essay, Quiz and Extempore competitions related to vigilance activities were organized in the Ministry. During three months' campaign of Vigilance Awareness Week-2025, two seminars on "Governance with Integrity: Role of Ethics, Vigilance and Transparency" and "Procurement through GeM" were also organized on 13th & 17th October, 2025 respectively.

Geological Survey of India(GSI)

15.40 A glimpse on Vigilance activities carried out at GSI during 01.01.2025 to 31.12.2025.

a. The main focus of Vigilance Division is to promote a culture of Preventive Vigilance. Accordingly, 08 (eight) chief technical examiner (CTE) type inspections were carried out. Further, a list of potentially sensitive sections were prepared and the said sections were inspected by a committee under the chairmanship of an officer chosen from the various other Divisions/Sections. Total 95 nos. of such Inspections were carried out. Further there were 08 numbers Surprise Inspection carried out in this period. The outcome of the inspections in appropriate cases, was shared with the Competent Authority for system improvement. To promote awareness, various vigilance trainings/ workshops were organised. Guidelines issued by the CVC from time to time have been circulated through online GSI portal for wide dissemination amongst employees.

b. As a prelude to Vigilance Awareness Week – 2025 three months campaign (18/08/2025 to 17/11/25) was undertaken as per direction of Central Vigilance Commission. Vigilance Awareness Week – 2025 was observed from 27.10.2025 to 02.11.2025 on theme **"Vigilance: Our Shared Responsibility"** as advised by Central Vigilance Commission. During the said occasion various seminars/ discussions/ presentations and competitions amongst the employees on pertinent topics were organised, which are briefed below.

- An all India Seminar cum Workshop on 'Procurement and Related Issues' was organised at the GSI, CHQ, Kolkata on 16.09.2025 through hybrid mode. Shri Harsimran Singh, IRSE, CVO of Hindustan Copper Ltd. delivered an insightful lecture on key procurement rules and issues, illustrated with practical case studies. All the Group A and B (Gaz.) officers and officials dealing with procurement related tasks attended the session.
- An interactive seminar on 'Cyber Hygiene' was organised on 08.10.2025 at GSI, CHQ on hybrid mode featuring a perceptive talk by Shri Suraj Kumar Sankari and Shri Suman Debnath from M/s Accenture. They shared valuable guidance on maintaining digital safety and responsible online practices
- An inspiring and through provoking seminar on "Ethics: the way of lifE" by Shri Manoj Kumar Maurya, CVO, GSI, CHQ, Kolkata through hybrid mode conducted on 27.10.2025
- GSITI proudly hosted an enlightening training cum seminar on 12.11.2025, focusing on 'Conduct Rules'. The session was graced by Mr. Kartikeya Verma, Director (P&A), GSI whose insightful lecture offered valuable perspectives on integrity, accountability, and professional conduct within public service.
- Talk on 'Preventive Vigilance' delivered by Shri. Ramesh.P.J (N.O), Vig., OPEC-1, M&CSD, GSI, Kolkata on 30/10/25
- A talk delivered by Shri Snehangsu Biswas, Dy. Supdt. of Police, CBI, ACB, Kolkata on Vigilance Awareness on 31.10.2025.
- A Lecture delivered by Shri Balmiki Pandit, Store manager, GSI, SU: Bihar on 18.09.2025.
- Dr. Hrishikesh Manu, Assitant Professor, at Chanakya National Law University, Patna was present as the Chief Guest (Guest Speaker) amd delivered lecture on topic "Legal Framework for Vigilance and Anti-corruption in India" on 14.11.2025
- A lecture on "Cyber Security" delivered by Shri Mukesh Bele, System Analyst, Koradi Thermal Power Station was organized at Fermor Hall, GSI, CR, Nagpur on 27.10.2025.
- A lecture on Vigilance Awareness delivered by Shri Gaurav Meshram, DD, DRI, Nagpur was organized at Auden Hall, GSI, CR, Nagpur on dated 17.11.2025.
- Online training Course on "Compliance of the legal provisions in Manpower Hiring Services on GeM" conducted on hybrid mode (VC Session) was arranged at the Sh. D.T. Kamble Conference Hall at GSI, SU:Maharashtra, Pune on 08/10/2025

- One day workshop on Preventive Vigilance and use of Hindi in day-to-day official works conducted by SU: Rajasthan.
- lecture on vigilance awareness by Smt. Anita Singh, Director (Geology) & HOO, GSI,SU: CG on 29/10/2025
- Mr. Sujit Kumar Sinha, Stores Officer, organized a workshop on "Vigilance Rules in the Context of Procurement/Acquisition on 29/10/2025
- UCO Bank, DD Nagar, Raipur personnel organized a presentation and workshop on vigilance awareness
- A lecture on "Ethics & Transperancy are the basis of success of an organization" delivered by Shri Samendra Shukla Joint Director on 29.09.2025 at Lucknow.
- A Lecture on "Irregularities in Financial Managements" was delivered by Shri. Suresh Kumar C.B., IRS, Addl. Commissioner of Income Tax, Mangaluru on 28/10/2025
- A talk on "Preventive Vigilance in day-today office atmosphere" was delivered by Shri. Hariharan S., Deputy Director (P&A), OPWC-1, M&CSD, GSI, Mangalore on 31/10/25.
- A talk on Preventive Vigilance was delivered by Shri. Debangshu Banerjee, Director (GP), OPEC-II, M&CSD, GSI, Visakhapatnam on 30/10/25.
- A Lecture on vigilance delivered by Shri Gurjinder Singh, Dy.S.P, CBI, Hyderabad
- Two interactive sessions on PIDPI & Vigilance angle & Vigilance clearance conducted
- Three Workshop & talk on Vigilance: Our Shared responsibility by Dr. V. Ambili, Deputy Director General, GSI, SU: Kerala & Lakshadweep on 28-10-2025, 30-10-2025 & 01-11-2025
- A Workshop on 'Vigilance: Ourshared responsibility' conducted by Dr. Sajikumar B., Inspector of Police,Vigilance & Anti-corruption Bureau, Thiruvananthapuram.
- A lecture on functioning of vigilance for 'Cyber Security' delivered by Shri Pralay Mukherjee, Director on 31.10.2025 in GSI SU: Tamilnadu.

c. Vigilance Awareness Week, 2025 commenced with administering of Integrity Pledge to the officers and staff members followed by the reading of massages received from the Hon'ble President of India Smt. Droupadi Murmu, Hon'ble President of India, Shri Narendra Modi, Hon'ble Prime Minister of India, Hon'ble Vice President C. P. Radha krishnan, Hon'ble Union Minister of Coal and Mines Shri. G. Kishan Reddy and from CVC.

d. A Newsletter "Vigilance वाणी", containing brief of activities during three-month campaign as well as VAW-2025 was published by GSI, CHQ, Kolkata on

this occasion. Various programme like slogan writing competition, essay writing competition, debate competition, quiz competition, poster presentation competition etc. were organised during the Vigilance Awareness Week, among the employees of Geological Survey of India in the offices located throughout India. Banners and posters on three-month campaign along with VAW-2025 were displayed in prime locations of office premises located throughout India. As an outreach activities GSI held various Awareness Gram Sabha in remote villages to percolate the message of vigilance awareness amongst the larger sections of the society. Various competitions were organised in schools and colleges to spread vigilance awareness amongst the college and school students by GSI offices located throughout the country. The brief of few outreach activities are given below in **Table 15.7**.

Table 15.7

1) Outreach activities in Gram Sabha:

Name of State	Name of city / own/ village	Name of Gram Panchayat where "Awareness Gram Sabha" is held	Details of activities conducted (date of activities may also be mentioned)
Maharashtra	Yerkheda, Kamptee, Nagpur	Yerkheda	Organized Gram Sabha at Yerkheda, Grampanchayat, Kamptee, Nagpur on 30.10.2025, regarding Vigilance awareness and importance and use of PIDPI.
Kerala	Thiruvananthapu-ram	Thiruvananthapuram Municipal Corporation, Vattiyoorkavu Zonal office	Workshop & talk on Vigilance: Our Shared responsibility by Dr. V. Ambili, Deputy Director General, SU: Kerala & Lakshadweep on 01-11-2025
Rajasthan	Kishangarh District	Camp Harmada	To spread awareness and sensitized the rural citizens on the ill effects of corruption and enlightened the citizens on the importance to perform all duties with honesty. The participants were made aware about the need of vigilance awareness towards a corruption free environment and make India a developed nation.
Rajasthan	Ajmer District	Camp Ghooghra	
Rajasthan	Hanumangarh district	Camp Hanumangarh	

2) Outreach activities in Schools:

Name of State	Name of city/ town/ village	Name of school	Details of activities conducted (date of activities may also be mentioned)
Karnataka	Mangalore	Kendriya Vidyalaya-2, Yekkur, Mangalore	1. Poster making competitions and 2.Essay writing competition (29.10.2025)
Andhra Pradesh	Visakhapatnam	Shri Mukha School	Poster with Slogan competition
Telengana	Hyderabad	Zilla parishad High School-Kuntloor	Essay Writing- Vigilance: Our shared responsibility
Telengana	Hyderabad	Indu International school-Nagole	Essay Writing- Vigilance: Our shared responsibility
Kerala	Thiruvananthapu-ram	VHSS, Vattiyoorkavu	Workshop & talk on Vigilance: Our Shared responsibility by Dr. V. Ambili, Deputy Director General, SU: Kerala & Lakshadweep on 30-10-2025
Kerala	Thiruvananthapu-ram	VHSS, Vattiyoorkavu	Essay writing competition on 30-10-2025
Kerala	Thiruvananthapu-ram	VHSS, Vattiyoorkavu	Quiz competition on 30-10-2025
Rajasthan	Jaipur	Students of Suryam Academy	Students were sensitized about vigilance at Itawa Bhopji, Teh. Chomu on 1st and 2nd November, 2025.
Rajasthan	Rajpura-Dariba	Senior Secondary School	Students were sensitized about vigilance under the aegis of Swachchata Hee Seva 2025 Program at Gossan Geoheritage Site.
Gujarat	Gandhinagar	Sarita Udyan Mahatama Mandir	Display of posters and Distribution of pamphlets
Gujarat	Rahioli, Mahisagar District	Students visited Dinosaur Fossil Park	Display of posters and Distribution of pamphlets

3) Outreach activities in colleges:

Name of State	Name of city/ own/ village	Name of college	Details of activities conducted (date of activities may also be mentioned)
Kerala	Thiruvananthapuram	University College, Thiruvananthapuram	Workshop & talk on Vigilance: Our Shared responsibility by Dr. V. Ambili, Deputy Director General, SU: Kerala & Lakshadweep on 28-10-2025
Kerala	Thiruvananthapuram	University College, Thiruvananthapuram	Essay writing competition on 28-10-2025
Kerala	Thiruvananthapuram	Kerala University	Interactive session on Preventive Vigilance at RHQ, WR, Museum, Jaipur.
Uttar Pradesh	Aligarh	DS College	Enlightened the students on the importance to perform all duties with honesty at Museum, RHQ, WR, Jaipur.
Delhi NCR	Delhi	Delhi University	2nd year PG batch students were made aware of the vigilance matters at Field Training Centre, Zawar

e. GSI has implemented e-office in all its offices throughout the country. It has digitally recorded the movements of files/documents on real time basis, which may be preserved for future and retrieved if required. In GSI, provision exists to lodge complains by the employees through online mode. Vigilance status of the employees are maintained online and Vigilance Clearance is processed through online mode. Annual Immovable Property Returns are examined on random basis.

f. A total number of about 2120 Vigilance clearance has been given during the period concerned as per requests raised.

g. Necessary steps have been adopted for systematic improvement towards procurement procedures as per CVC guidelines.

h. Relevant circulars, guidelines and manuals are being followed as updated by DoPT and CVC from time to time. The circulars/guidelines/manuals are also updated time to time in the GSI portal for awareness of all employees.

i. The vigilance module is being updated in the newly introduced GSI portal (in lieu of OCBIS) to ensure the smooth functioning of vigilance clearance and lodging of complaint with a user-friendly process.

j. Helps of social media have been taken to (a) communicate the programme details and schedule to the officers and staffs of the office (b) circulate Systemic Improvement Measures (c) publish note of all the workshops/seminars conducted in CHQ.

Photographs of different vigilance activities under three-month campaign and VAW-24



CVO GSI, Shri Manoj Kumar Maurya and CVO HCL Shri Harsimran Singh, exchanging insights during an all India Seminar cum Workshop on 'Procurement and Related Issues' organised at the GSI, CHQ, Kolkata on 16.09.2025 through hybrid mode



An interactive seminar on 'Cyber Hygiene' was organised on 08.10.2025 at GSI, CHQ on hybrid mode featuring a perceptive talk by Shri Suraj Kumar Sankari and Shri Suman Debnath from M/s Accenture



Banners and Posters displayed at GSI, CHQ during the Vigilance Awareness Campaign 2025



An inspiring Seminar on 'Ethics: The Way of Life' by Shri Manoj Kumar Maurya, CVO, GSI, conducted on 27.10.2025



Various interactive competitions like essay writing, slogan writing and debate competitions were organised on 30.10.2025 & 31.10.2025 to ensure more engagement between the officials; winners were also awarded by Shri Asit Saha, DG GSI



Employees of the GSI, ER, Kolkata taking the integrity pledge on 27.10.2025 during Vigilance Awareness Week-2025



A talk delivered by Shri Snehangshu Biswas, Dy. Supdt. of Police, CBI, ACB, Kolkata on the occasion of Valediction of Vigilance Awareness Week-2025



Vigilance Awareness Week, 2025 was inaugurated by the ADG & HoD, GSI, NER on 27.10.2025,



An outreach programme on Preventive Vigilance and corruption was organised for the youth at William Carey University on 10.10.2025 by GSI NER



Shri Dinesh V. Ganvir, Addl. Director General & HOD, GSI, CR, Nagpur administering INTEGRITY PLEDGE to the officers and staff of GSI, CR, Nagpur on the occasion of Vigilance Awareness Week – 2025 on 27/10/2025.



On 29/10/2025, Essay Competition was conducted at Fermor Hall, for the Officers and Officials of GSI, CR, Nagpur.



Lighting of lamp by Shri V.V.Mugal, ADG and HOD, WRofficers and staff of WR Jaipur on the occasion of Vigilance Awareness Week – 2025 on 27/10/2025.



Students of Suryam Academy, Village - Itawa Bhopji, Tehsil - Chomu were sensitised about vigilance matters by Shri Arun Yadav, LDC, Vigilance Section, WR.



Speech by ADG and HOD, GSI, NR



On 23.09.2025 session on 'Conduct Rules' organised and was graced by Mr. Kartikeya Verma, Director (P&A)



Employees of the GSI, SR, Hyderabad taking the integrity pledge on Vigilance Awareness Week-2025 at unity park



As part of VAW Outreach Programme 2025, essay writing competition at Zilla Parishad High School, Mansoorabad was conducted as per school's convenience and prizes were distributed on 01.11.25 at school premises



Shri C.S. Verma, Dy.DG (GP), administering the Integrity Pledge



Students of Kendriya Vidyalaya, Yekkur, Mangaluru participating in Essay writing and poster making competitions as part of VAW 2025

Indian Bureau Mines (IBM)

A. Inspections carried out by CVO, IBM

i. An inspection was done at the Regional Office, Ajmer, and Zonal Office, Udaipur from 15.10.2025 to 17.10.2025. Scrutiny of procurement files and bills were carried out during the inspection. An inspection of mines of Hindustan Zinc at Zawar, Rajasthan was also carried out.

ii. An inspection was done at the Regional Office, Raipur from 10.09.2025 to 12.09.2025. An inspection of mines of Jamul Limestone Mines, Durg, Chhattisgarh was also carried out.

iii. An inspection was done by Vigilance Officer, to the following mines under the jurisdiction of Regional Office of the Indian Bureau of Mines, Bangalore during the period 02.02.2025 to 04.02.2025.

a) Narrain Iron Ore Mine, Chitradurga District, Chitradurga District (Mine owner: M/s Vedanta mining Limited)

b) John Iron Ore Mine, Chitradurga District, (Mines Owner: Shri R Praveen Chandra)

c) Bhomman Iron Ore Mine, Chitradurga District, (Mines Owner: M/s JSW Steel Limited)

B(i) Following Mining Plan / Revised Mining Plan and Procurement related files were scrutinized under CTE Type examination during 01.01.2025 to 30.11.2025

i. A CTE Type examination of the Jamul Limestone Mines, Durg, Chhattisgarh was carried out, with respect to procedure followed and time taken for approval of mining plan. No irregularity was found in the approval of the mining plan and the case is closed.

ii. A CTE type examination for the approval of the mining plan of M/s Vijay II Iron Ore Mines, West Singhbhum, Jharkhand under the jurisdiction of Ranchi Regional Office of the Indian Bureau of Mines was carried out. The case is closed as no irregularity is found in the approval of Mining Plan.

iii. A CTE type inspection of procurement of Field Emission Scanning Electron Microscope with Energy Dispersive Spectrometer for the value of Rs. 2,99,95,600/- was taken for investigation. The case is closed with a systemic improvement.

iv. A CTE type inspection of Purchase of Column Flotation Cell by RMPL, IBM, Bangalore for the value of Rs. 35,50,000/- was taken for investigation. The case is closed as no irregularity has been observed.

v. The investigation of the procurement of five Biometric Attendance System devices, valued at ₹1,13,250/-, installed in the Indian Bureau of Mines was carried out. The case is closed as no irregularity is observed.

vi. The investigation of the procurement of Rotary Sample Divider for RMPL, IBM, Ajmer for the value of ₹6,28,785/,

installed in the Indian Bureau of Mines is under progress.

B(ii) 10 Nos. of Medical bills from Ranchi, Raipur, and Ajmer Regional Offices of IBM were scrutinized during the period. 07 Nos. of bills are closed as no irregularity is observed. Further 03 Nos. of medical bills are still under scrutiny.

C. Capacity Building Programs

Following Capacity Building Programs on preventive vigilance, PIDPI complaints & Punitive Vigilance for New Entrants as well as Mid-Career Training for the officers and staff of IBM were organized during 01.01.2025 to 30.11.2025:

i. An Induction Training Programme for newly recruited employees in IBM was held on 13.02.2025 on the subject "Preventive Vigilance".

ii. An Induction Training Programme for newly recruited employees in IBM was held on on 20.02.2025 on the subject "Preventive Vigilance".

iii. A Mid-Career Training program was organized at Training Centre, MECL Office for IBM employees on 12.03.2025 on the subject "Ethics and Governance.

iv. A Mid-Career Training program was organized for the officers and staff of IBM on 26.06.2025 on the subject "Preventive Vigilance".

v. An Induction Training Programme for Technical officers of IBM was held on 05.08.2025 on the subject "Preventive Vigilance".

vi. A workshop on "Preventive Vigilance" was held at Raipur Regional office of IBM on 11.09.2025.

vii. A workshop on "Preventive Vigilance and ethics and governance" was organized at MECL, Nagpur on 14.10.2025 for the officers of Indian Mines Bureau, Nagpur, and MECL, Seminary Hills, Nagpur. Shri Sarad Kumar Sharma, Director, CVC and Shri Sunil Kr. Singh delivered lectures on Preventive Vigilance and ethics and governance.

viii. A workshop on "Preventive Vigilance" was held at MMPL Ajmer & Regional office, Ajmer on 15.10.2025.

ix. A workshop on "Preventive Vigilance" was held at Zonal office, Udaipur on 17.10.2025.

x. An induction training on "Preventive Vigilance" was held at IBM, Nagpur for the newly appointed officials of IBM on 11.11.2025.

D. During the period Agreed List / ODI list is prepared for the year 2025.

E. 51 Annual Immovable Property Returns filed for the year ending 31.12.2024 in respect of employees of IBM were scrutinized by this office. In one case a Recorded Warning has been issued against an official for failing to comply with prior intimation for acquisition of immovable property as per Rule 18(2) of CCS Rules 1964.

F. 394 Nos. of Vigilance Clearance Certificates were issued by this office during the period.

G. Preventive Vigilance activities were carried out by this office during the period:

a. As per the Central Vigilance Commission's circular, 03 months Vigilance campaign was conducted in Indian Bureau of Mines Headquarter and all the Zonal / Regional and Mineral Processing Laboratories from 18 August to 17 November 2025.

b. During the campaign period five (05) Officers from IBM were trained for Master-Trainer's training program organized by Central Vigilance Commission. Further the Master-Trainers have conducted structured training programs for 84 IBM officials.

c. During the period this office identified Ten (10) relevant courses on the i-GOT platform, with a recommendation that all employees shall complete at least three in which total number of 2199 courses of training program were completed by the employees of IBM during the campaign period.

d. Under Digital Initiative, an online vigilance clearance system has been developed in IBM. The entire processing from Regional Offices to CVO office will be done paperless and will minimize time for processing of Vigilance Clearances. The system will also bring transparency and expedite the vigilance clearance process.

e. A preventive vigilance workshop was held at the Mineral Processing Division, Ajmer on 15 October 2025 and Zonal Office, Udaipur on 17 October 2025.

f. A review of Assets of Indian Bureau of Mines was carried out as a part of 3 months campaign.

H. Vigilance Awareness Week – 2025

The Indian Bureau of Mines (IBM) observed Vigilance Awareness Week – 2025 with the theme "Vigilance: Our Shared Responsibility," combining internal activities with extensive outreach to students, citizens, and rural communities. The campaign aimed to instill values of transparency, accountability, and ethical conduct among employees and across all levels of society.

1. Opening of the Week

The campaign began on **27 October 2025** with taking integrity pledge at IBM Headquarters and all regional, zonal, and processing units. Messages from Hon'ble President, Hon'ble Vice President, Hon'ble Prime Minister and Hon'ble Cabinet members and the Central Vigilance Commission were read, reaffirming the collective responsibility toward integrity.

2. Outreach in Schools

A major focus of the Week was youth engagement. IBM offices conducted awareness programs across multiple states:

- **Odisha (Bhubaneswar):** A vigilance awareness workshop and student debate at Govt. Upper Primary School, Aerodrome Colony, involving **40 students.**
- **Gujarat (Kovaya):** A drawing competition at Aditya Birla Public School with participation of **40 students.**
- **Telangana (Hyderabad):** A creative drawing competition at ZPS School on the theme *"Conceptualizing a Transparent India,"* engaging **30 students.**
- **Jharkhand (Ranchi):** Slogan writing, drawing, and vigilance awareness at

Rajkeyakrut Madhya Vidyalay, Murma, with **75 participants.**

- **Maharashtra (Nagpur):** A large-scale drawing competition at **Bharti Krishna Vidya Vihar** involving **165 students,** followed by a slogan-writing event at **Upper Primary Marathi Shala** for **30 students.**

3. Outreach in Colleges

At PMSHRI Kendriya Vidyalaya, Nagpur, IBM organized a slogan-writing competition involving **17 college-level students,** encouraging critical reflection on vigilance as a civic duty.

4. Outreach in Rural Communities: Awareness Gram Sabhas

IBM reached rural citizens through Gram Sabhas in Gujarat:

- **Vandh Gram Panchayat:** Discussions centered on corruption, preventive measures, and grievance redress mechanisms, with **26 citizens** participating.
- **Bhakodar Gram Panchayat:** A similar session engaged **24 citizens,** empowering them with knowledge about their rights and anti-corruption tools.

These village-level interactions ensured grassroots awareness, aligning with the national push for transparency in local governance.

5. Public-Facing Seminars and Workshops

IBM conducted several seminars open to citizens:

- **Odisha:** Three campaigns across Bhubaneswar, Barbil, and Keonjhar, reaching **70 participants**.
- **Gujarat:** Legal and procedural sensitization sessions in Ranavav, Kovaya, Sidheegram, Khambalia, and Ambujanagar together engaged nearly **200 citizens.**
- **Assam (Guwahati):** A workshop on *"Eradication of Corruption—Promoting Integrity, Transparency & Accountability"* with **13 attendees.**

These seminars enabled IBM to directly communicate vigilance practices and ethical standards to the public.

6. Citizen-Oriented Awareness Activities

Various walkathons, banners, and social-media campaigns amplified outreach:

- Walkathons in Hingna, Hyderabad, and other regions promoted themes like *"Corruption-Free India."*
- Banners and posters were displayed across offices to increase visibility.
- Daily updates of IBM activities were shared on Facebook and Instagram, widening citizen engagement.

7. Closing Ceremony

The Week concluded on **3 November 2025** with award distribution, reflections by senior officers, and renewed emphasis on building a corruption-free, vigilant nation.

Glimpses of special programs organized on Vigilance Awareness Week in IBM



Controller General IBM, administering integrity pledge to the officers & staffs of IBM (HQRS).



Officers & Staffs of IBM (HQRS), taking the integrity pledge



Distribution of the prize by the Vigilance Official to the winner of the slogan writing competition in Upper Primary Marathi Shala, Bharat Nagar, Nagpur.



Outreach activities for instilling the Vigilance related awareness by organizing Gram Sabhas.

Swachh Bharat Abhiyan

Ministry of Mines

15.41 Ministry of Mines and PSUs/attached offices under the Ministry of Mines organized the following Swachhta fortnights/Swachhata Hi Sewa campaign under the Swachh Bharat Abhiyan:

i) 15.09.2015 to 31.09.2015
ii) 12.12.2015 to 27.12.2015
iii) 01.03.2016 to 15.03.2016
iv) 16.06.2016 to 31.06.2016
(v) 16.12.2017 t0 31.12.2017
(vi) 16.10.2018 to 31.10.2018
(vii) 16.11.2019 to 30.11.2019
(viii) 16.11.2020 to 30.11.2020
(viii) 16.11.2021 to 30.11.2021
(ix) 16.11.2022 to 30.11.2022
(x) 16.11.2023 to 30.11.2023
(xi) 14.09.2024 to 01.10.2024
(x) 16.11.2025 to 30.11.2025

Activities under Swachh Bharat Mission

15.42 Ministry of Mines has ensured in its day-to-day activity that toilets, rooms and corridors are kept clean. Waste item bins have been strategically placed to ensure that things are not thrown around. It has also been ensured that people don't spit or smoke in the premises or use gutka and other chewable items. Posters have been placed at various places to bring home this message. Administration carries out inspections to ensure cleanliness.

Removal/Disposal of waste/ condemned items and vehicles

15.43 The Ministry has ensured all those items which were old/ unserviceable to keep specific space marked by CPWD. The Ministry does not have any condemned vehicle in its premises.

Seepage of condensed water of ACs

15.44 Ministry of Mines has ensured that water seeping through ACs are properly drained out without any accumulation.

Proper cabling of cable TV/dish antenna wires

15.45 All the electrical cables/TV cables have been placed inside the conduit pipes and it is ensured that there are no loose wires hanging around. The false ceilings in the corridors have been strengthened.

Fire safety measures

15.46 Instruction has been issued to ensure that all electrical points are switched off after closing of the office.

Daily Sanitization of Premises of Ministry of Mines

15.47 Ministry of Mines has ensured that daily sanitization of corridors, rooms and lift lobby in premises of Ministry of Mines, Shastri Bhawan is conducted.

Right to Information Act, (RTI)

15.48 The Ministry of Mines and its subordinate office, attached office, Autonomous Bodies and Public Sector Undertaking (PSUs) have appointed Central Public information Officers and Appellate Authorities. The List of Nodal Officer, CPIOs and Appellate Authorities in Ministry of Mines is given at **Annexure 15.1**. The Ministry has also set up a 'Public Information Cell' for processing of the requests received from the public under the RTI Act, 2005 and for their monitoring. During the year 2025-26 (1st January, 2025 to 31st December, 2025), the Ministry received 880 RTI applications and 41 First Appeals under RTI Act. The status regarding receipt and disposal of RTI Applications, First Appeals and Second Appeals w.r.t. the Ministry and its field formations is given at **Table 15.8, Table 15.9** and **Table 15.10** respectively.

Table 15.8
RTI Applications / Request Status (w.e.f. 1st January, 2025 to 31st December, 2025)

Organizations		No. of cases				Pendency			
	Previous Pendency	No. of RTI / Requests / Applications received during the period	Disposal	Information denied under section 8 (1), 9, 11, 24 & other of RTI Act	Balance	0-3 Months	4-6 Months	7-9 Months	10-12 Months
Ministry of Mines (Sect.)	37	880	889	--	28	28	0	0	0
GSI	37	705	672	31	39	39	0	0	0
HCL	25	185	173	20	17	17	0	0	0
IBM	47	433	451	6	23	23	0	0	0
JNARDDC	0	16	16	0	0	0	0	0	0
MECL	2	122	110	5	9	9	0	0	0
NALCO	46	394	379	49	12	12	0	0	0
NIRM	0	33	32	0	1	1	0	0	0

Table 15.9
RTI First Appeals Status (w.e.f. 1st January, 2025 to 31st December, 2025)

Organizations	No. of cases					Pendency			
	Previous Pendency	No. of 1st Appeals received during the period	Disposal	No. of Appeals rejected/ information denied under Section	Balance	0-3 Months	4-6 Months	7-9 Months	10-12 Months
Ministry of Mines (Sect.)	3	41	42	-	2	2	0	0	0
NALCO	0	47	41	0	6	6	0	0	0
HCL	0	15	15	0	0	0	0	0	0
MECL	0	12	10	0	2	2	0	0	0
IBM	7	42	47	0	2	2	0	0	0
GSI	15	102	94	0	23	23	0	0	0
NIRM	0	4	4	0	0	0	0	0	0
JNARDDC	0	1	1	0	0	0	0	0	0

Table 15.10
CIC 2nd Appeals Status (w.e.f. 1st January, 2025 to 31st December, 2025)

Organizations	No. of cases				
	Previous Pendency	No. of 2nd Appeals files in CIC	Decided		
			In favour of Appellant	In favour of Organization	Balance
Ministry of Mines (Sect.)	0	16	0	16	0
NALCO	0	0	0	0	0
HCL	0	3	0	3	0
MECL	0	1	1	0	0
IBM	0	6	0	6	0
GSI	0	7	0	7	0
NIRM	0	0	0	0	0
JNARDDC	0	0	0	0	0

Government e-Market (GeM) Portal

15.49 Ministry of Mines has been procuring various items it needs through GeM portal those which are available on GeM. During the period from 01.01.2025 to 31.12.2025. the Ministry procured items worth ₹613.27 crore through GeM. Total 1457 orders were placed on the GeM portal during period from 01.01.2025 to 31.12.2025 by the Ministry of Mines.

*****

ANNEXURES

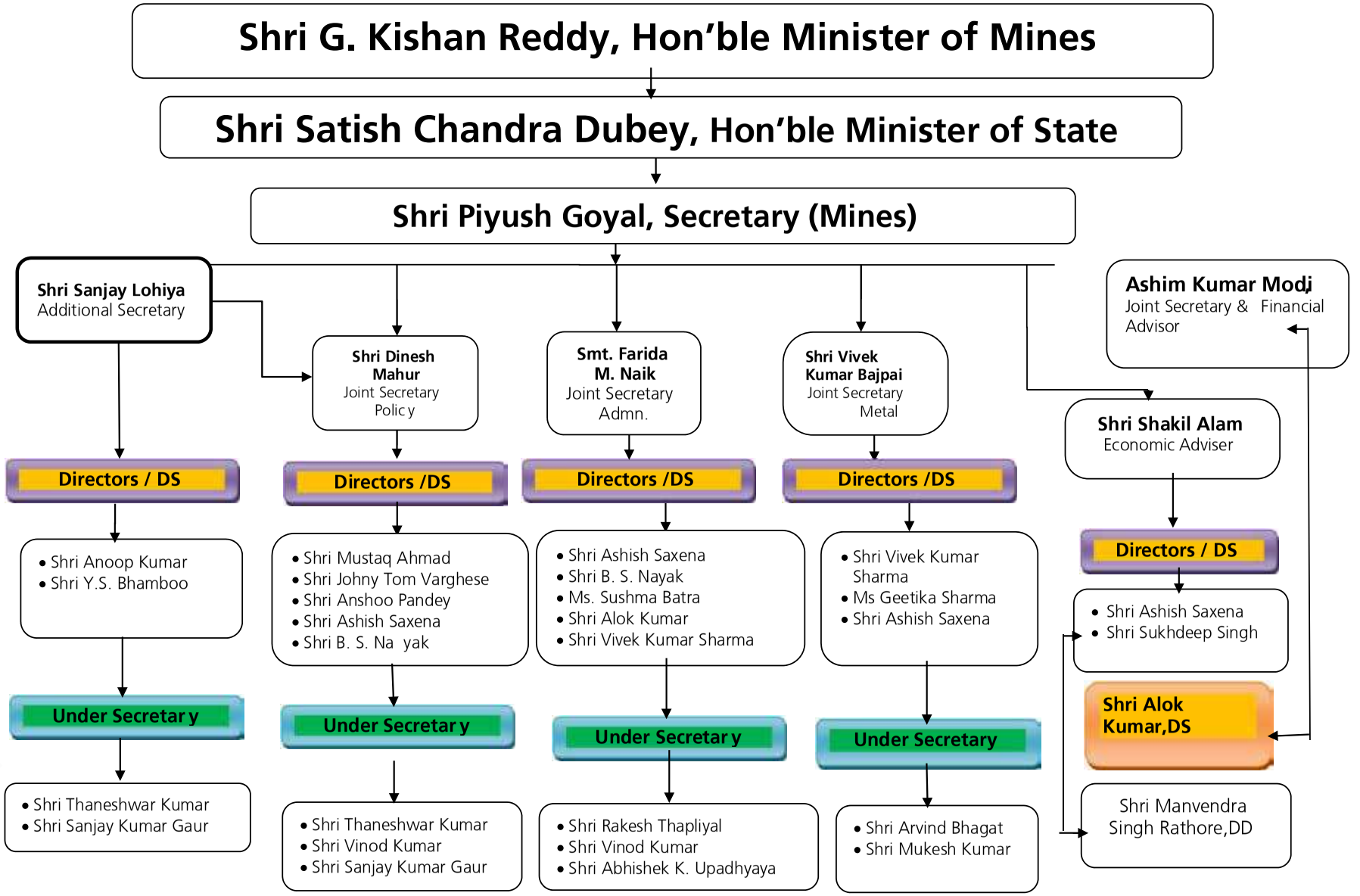


Annexures

- Annexure 1.1: Organizational Structure of Ministry of Mines
- Annexure 2.1: Production of MCDR minerals for last five years (2021-22 to 2025-26 (Estimated)
- Annexure 2.2: Export (including re-export) of minerals from 2020-21 to 2024-25
- Annexure 2.3: Import (including re-import) of minerals from 2020-21 to 2024-25
- Annexure-2.4: National Mineral inventory as on 01.04.2025 (Estimated/Provisional)
- Annexure 2.5: Scenario of Mineral rich states (excluding Atomic, Fuel Minerals & Minor minerals)
- Annexure 7.1: Year-wise / ACTIVITY-WISE Financial Performance of GSI against the approved BUDGET outlay during F.Y. 2025-26 and RE Grant and expenditure UPTO December, 2025 and the last quarter (jan 2026 to March 2026) of F.Y. 2025-26 and Fund Utilisation during calendar year 2025
- Annexure-7.2: Performance related to various regulatory and development functions of IBM during the year 2025-26 (January 2025 to March 2026)
- Annexure 7.3: Mineral Wise Mining Lease (Other than Atomic, Hydro Carbons Energy and Minor Minerals) as on 31/03/2024(P) (All India)
- Annexure- 9.1: Completed and ongoing projects of JNARDDC, Nagpur
- Annexure 12.1: During FS 2024-25, a total of thirteen items of Systematic Thematic Mapping (STM) on 1:25,000 scale have been taken up in NER of which one item was taken up in Arunachal Pradesh, one in Assam, four in Meghalaya, six in Tripura and Mizoram and one in Sikkim. During the period from 01.01.2025 to 31.03.2025, an area of 1,308 sq. km had been covered. FS: 2024-25
- Annexure 12.2: During FS 2025-26, a total of seventeen items of Systematic Thematic Mapping (STM) on 1:25,000 scale have been taken up in NER of which four items are being executed in Arunachal Pradesh, two in Assam, two in Manipur-Nagaland, four in Meghalaya, four in Tripura and one in Mizoram. During the period from 01.04.2025 to 31.12.2025, an area of 3169.5 sq. km has been covered. FS: 2025-26
- Annexure 12.3: Total 4 items of Geochemical Mapping on 1:50,000 scales with collection of samples in grid pattern is being executed during the FS 2024-25 in parts of Assam. An area of 5,292 sq km has been covered during 01.01.2025 to 31.03.2025. FS 2024-25
- Annexure 12.4: Total 3 items of Geochemical Mapping on 1:50,000 scales with collection of samples in grid pattern are being executed during the FS 2025-26 in parts of Assam. An area of 8528 sq km has been covered during 01.04.2025 to 31.12.2025. FS 2025-26
- Annexure12.5: A total of three GPM items have been taken up during FS 2024-25, of which two were in Assam and one was in Meghalaya. During the period from 01.01.2025 to 31.03.2025, a total area of 5,515 sq km had been covered. FS 2024-25
- Annexure12.6: A total of three GPM items have been taken up during FS 2025-26, of which two are in Assam and one is in Mizoram. GPM of two blocks are outsourced covering parts of Assam, Arunachal Pradesh & Nagaland. During the period from 01.04.2025 to 31.12.2025, a total area of 4430 sq km has been covered by in house NGPM and 16009 sq km has been covered by outsourcing. FS 2025-26
- Annexure-12.7: During the FS 2024-25, three items of Photo Geology and Remote Sensing (PGRS) were executed in parts of Arunachal Pradesh, Manipur, Nagaland and Tripura states by using ASTER data. A total area of 21,463 sq km was completed during the period from 01.01.2025 to 31.03.2025. FS 2024-25:
- Annexure-12.8: During the FS 2025-26, two items of Photo Geology and Remote Sensing (PGRS) are being executed in parts of Meghalaya and Assam states by using ASTER data. A total area of 2175 sq km has been completed during the period from 01.04.2025 to 31.12.2025.
- Annexure-12.9: Details of mineral exploration items taken up in NER during FS: 2024-25 and FS 2025-26
- Annexure-12.10: Commodity-wise creation of GIS databases in Mission-III, NER

  During FS 2025–26, four projects on commodity-wise creation of GIS databases are being carried out by SU: Assam, SU: Arunachal Pradesh, SU: Meghalaya, and SU: Manipur & Nagaland. The details are provided below in tabulated form. These projects were initiated in April 2025.
- Annexure 15.1: List of Nodal Officers, CPIOs and Appellate Authorities in Ministry of Mines

Organizational Structure of Ministry of Mines



Annexure 2.1

Annexure 2.1. Production of MCDR minerals for last five years (2021-22 to 2025-26 (Estimated))

Value in Lakh Rs.

Minerals	Unit	2021-22		2022-23		2023-24 (P)		2024-25 (P)		2025-26 (up to Dec-25) (P)		2025-26 (Estimated) (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Metallic Minerals			**12642842**		**11082872**		**12980916**		**13849570**		**11806134**		**15741512**
Bauxite	t	22494049	252842	23844337	273717	23962325	257591	24742103	279243	19332490	244992	25776653	326656
Chromite	t	3785625	479692	3557289	466334	3147954	486142	2971154	445708	2290473	338319	3053964	451092
Copper Conc.	t	115313	110243	112745	102083	125230	129948	105012	180790	79487	98458	105983	131278
Copper Ore	t	3569632		3326337		3782256		3557026		2662078		3549437	
Gold	kg	1407	67610	1433	76547	1583	96543	1627	125510	976	105957	1302	141276
Gold Ore	t	474994		633514		760255		702978		591434		788579	
Iron Ore	000t	254099	10082646	258312	8340017	277332	10113827	293773	10645323	216892	8221759	289189	10962345
Lead & Zinc Ore	t	16338564		16744082		16521320		16332170		12100268		16133691	
Lead Conc.	t	368040	220257	376665	244885	380795	254736	392551	288131	252703	305378	336937	407171
Manganese Ore	t	2692408	220678	2826964	228426	3441764	249809	3804783	290091	2687727	197192	3583636	262922
Silver	kg	647156	421269	713768	438144	745980	535594	691384	593802	456229	551956	608306	735942
Tin Conc.	kg	26301	326	45432	523	22346	183	9265	104	13677	211	18236	281
Zinc Conc.	t	1594085	787278	1670208	912196	1710141	856543	1721521	1000870	1295614	1741911	1727485	2322548
Non-metallic Minerals	**t**		**1099349**		**1248890**		**1372320**		**1393490**		**1053388**		**1404517**
Diamond	crt	266	181	388	615	349	239	4846	3294	6064	7309	8085	9745
Fluorite	t	1237	94	1155	62	6043	61	1869	63	16046	112	21395	150
Garnet	t	8182	247	9859	362	23835	949	52006	1944	46699	2102	62265	2803
Graphite	t	62888	1221	94789	1802	169080	2184	85329	1295	64126	1197	85501	1595
Iolite	t	27	2										
Kyanite	t	9320	173	2765	53	3324	80	2055	54	2079	83	2773	110
Limeshell	t	100	2	250	7	891	26						
Limestone	000t	392034	1020226	405664	1112399	451163	1242826	456686	1252512	346128	959499	461504	1279332
Magnesite	t	113497	5548	107525	5026	132005	6089	115143	4509	56501	2650	75335	3533
Marl	t	1853481	3265	1461668	3168	1606380	3376	2049379	5082	1215428	4263	1620571	5684

Minerals	Unit	2021-22		2022-23		2023-24 (P)		2024-25 (P)		2025-26 (up to Dec-25) (P)		2025-26 (Estimated) (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Moulding Sand	t	17583	53	17260	54	20994	65	13582	45	15546	52	20728	69
Phosphorite	t	1394959	66481	1978450	123546	1557783	114361	1805914	122526	909453	74193	1212604	98925
Salt (rock)	t	286	7	1002	48								
Selenite	t	716	9	327	4	9353	138	10796	143	4649	74	6199	98
Siliceous Earth	t	33898	228	32070	174	58047	334	56191	367	30238	210	40317	279
Sillimanite	t	3432	83	1437	38	771	23	326	11	179	6	239	8
Vermiculite	t	3060	38	2303	16	1129	7	2736	15	3515	22	4687	29
Wollastonite	t	108335	1492	110793	1518	110637	1561	106329	1630	87571	1618	116761	2157

Source: MCDR Returns
t: tonnes, '000t: thousand tonnes, (P): Provisional

Annexure 2.2

Annexure 2.2: Export (including re-export) of minerals from 2020-21 to 2024-25

Value is in '000Rs.

Mineral	Unit	2020-21		2021-22		2022-23		2023-24		2024-25 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Chromite	TON	2872	71979	2625	89710	33881	904154	2117	99434	560	28481
Abrasive (natural)	TON	23411	376713	14106	236450	4689	42219	6791	89537	12927	246686
Alabaster	TON	4	184	++	11	52	1732	23	916	15	312
Alumina	TON	1265941	28280781	1487035	47334417	2014428	64237704	2088162	64431546	2548689	116838926
Andalusite	TON	9	476	18	1233	19	1515	9	894	++	8
Antimony Ores And Conc.	TON	--	--	--	--	--	--	4	2415	40	16190
Arsenic Sulphide (natural)	TON	277	1697	51	505	++	++	--	--	++	39
Asbestos	TON	299	11991	1906	68026	3286	217449	1206	81470	1	154
Ball Clay	TON	170915	410109	266680	664037	993811	3779211	974719	3754998	1065816	3950323
Barytes	TON	1010894	6261470	1874837	11075666	2445691	16613885	2310272	17945276	1825553	12409946
Bauxite	TON	240841	951442	378081	1005256	177535	479019	164177	243541	478523	1279447
Bentonite	TON	1557484	5215656	1585962	5850483	1375350	6607488	1660359	7791069	1541051	7484662
Borax	TON	2996	414601	4725	656472	4151	818305	3190	627776	5428	760058
Building And Monumental Stones Nes	TON	13134116	24200968	13295779	24912268	12276938	20638218	10919664	22191218	9766783	22001772
Calcite	TON	23867	155049	24789	163372	27892	208639	35328	283078	38419	340450
Chalk	TON	1104	6155	1129	7557	1057	7330	857	6374	676	5680
Clay (others)	TON	45346	402787	49635	361745	34138	314150	28156	298809	47872	372062
Coal (Excl. Lignite)	THT	2943	5736794	1314	11233701	1165	15001652	1543	16434833	1916	18339414
Coal:lignite	THT	2	234709	1	203336	1	90369	1	137261	++	17999
Coke	TON	207412	4771075	1299461	41017403	365897	15566657	137166	3827703	139158	3452707
Copper Ores And Conc.	TON	82463	7689376	34827	3964549	26336	2435371	23188	2430311	16425	1968282
Corundum (natural)	TON	62	137	89	241	59	144	++	15	--	--
Diamond		**	1258209200	**	1893641728	**	1837280521	**	1395132973	**	1164144096
Diatomite	TON	3240	69439	1964	58544	1901	62622	2658	69569	4367	124946
Dolomite	TON	95892	349090	113380	391843	77124	307324	66496	292056	57321	229076
Earth Clay	TON	3881	22220	3775	53782	9432	96235	17841	173214	3870	52920

Mineral	Unit	2020-21		2021-22		2022-23		2023-24		2024-25 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Emerald (cut And Uncut)		**	5316603	**	10808861	**	17096852	**	19355783	**	18552479
Felspar (cut And Uncut)		**	198059	**	254062	**	275473	**	321240	**	352014
Felspar (natural)	TON	705280	3931135	763219	4194510	716776	4292153	872814	5129625	960439	5417977
Fire Clay	TON	5324	43606	4473	45578	8654	48207	7686	38043	3664	24934
Flint	TON	406	2953	570	5837	976	8675	688	6274	1058	11756
Fluorspar	TON	474	22436	844	43463	1024	65899	1358	81974	1619	71148
Garnet (Cut And Uncut)		**	280824	**	378455	**	484011	**	555370	**	547626
Garnet (abrasive)	TON	76799	1265586	81270	1433741	103398	1903765	146915	2771501	154336	3073889
Gold Ores And Conc.	KG	++	1	--	--	--	--	--	--	--	--
Granite	TON	7522159	113279766	7572368	126460352	6632215	125512876	6026862	112450691	5636080	109116741
Graphite (natural)	TON	716	42994	764	46963	2239	120029	708	63308	1838	160798
Gypsum And Plaster	TON	213061	723888	220634	765738	191717	574560	97329	356889	124176	447567
Iron Ore	THT	57723	362556021	26494	241480427	21168	144299670	46376	324332446	30013	176239979
Kaolin	TON	287260	1610489	339591	2398327	490071	3440275	595762	4116922	855672	5123965
Kieselguhr	TON	27	917	28	516	41	3329	26	584	26	896
Kyanite	TON	252	9033	1655	15376	297	8631	199	8627	198	6812
Lead Ores And Conc.	TON	9	1076	12	1595	137	7521	58	2867	8	1559
Limestone	TON	3528973	42939083	12160342	4551537	2515714	3124865	1662127	1899997	5043545	5149951
Magnesite	TON	5477	171020	5384	173809	5263	239139	3842	240820	5362	413981
Manganese Ore	TON	82363	974940	113606	588189	1557	21566	271	2204	13181	209628
Marble	TON	295085	10082272	324267	11352007	265229	11941092	289787	14068344	320910	15503221
Mica	TON	144121	5733785	151706	6594832	115898	5557843	118778	6309988	115934	7134351
Molybdenum Ores And Conc.	TON	45	43181	++	120	60	223955	76	185324	102	239505
Natural Gas	TON	17992	658242	3	883	23	93848	836	112182	24947	1748079
Nickel Ores And Conc.	TON	--	--	20	5183	--	--	19	2971	--	--
Niobium Or Tantalum Ores And Conc.	TON	++	217	++	18	105	1007	--	--	--	--
Ochre	TON	21489	1080320	31512	1590819	32701	2259503	60662	2447562	44358	2828884
Other Minerals Nes	TON	18626	629204	27918	1808669	41838	3552794	26117	2533169	28198	1890964
Other Preciuos Metal Ores And Concentrates	KG	187035	5273	26253	1220	70	49	29	13	11	4

Mineral	Unit	2020-21		2021-22		2022-23		2023-24		2024-25 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Precious And Semi-precious Stones (cut And Uncut): total		**	23463605	**	50616826	**	20516238	**	22933748	**	19888290
Quartz And Quartzite	TON	772127	6213690	965159	7559270	1069301	9221459	1485741	23512490	1041490	10320323
Rock Phosphate	TON	825	5602	540	11316	532	19359	534	3171	1622	23502
Rock salt	TON	317376	489122	139164	277009	225595	621445	310132	811417	223514	658170
Salt (Other Than Common Salt & Rock Salt)	TON	7943537	10082621	8724616	13116708	13406235	23673306	13473826	24463925	20309159	34010510
Sand (excl. Metal Bearing)	TON	1178	13630	619	17107	2761	4882	57961	76035	775	5798
Sandstone	TON	794445	11220825	691771	11282294	406815	5822370	415344	5956257	357527	4966676
Silica Sand	TON	43061	63008	825	4928	767	5944	187	2255	173	2242
Sillimanite	TON	4998	94359	3120	64355	2161	73954	3293	115853	567	15229
Silver Ores And Conc.	KG	73140	161	++	45	26000	269	--	--	--	--
Slate	TON	66335	2453970	68569	2733090	50909	2505184	48643	2403474	47993	2420715
Steatite	TON	283303	4364076	324593	5201974	338297	5626721	281381	4643882	300972	4924488
Sulphur (exc. Sublimed Precipited And Colloidal)	TON	802713	4328627	1290620	21010532	1554999	33267617	1185636	10346076	819253	9827145
Tin Ores And Conc.	TON	--	--	--	--	++	17	--	--	--	--
Titanium Ores And Conc.	TON	246534	5348323	215910	6155343	143607	7288953	224756	7915287	212371	5080255
Tripoli Earth	TON	--	--	--	--	10	556	--	--	--	--
Tungsten Ores And Conc.	TON	--	--	13	7139	--	--	--	--	++	12
Vanadium Ores And Conc.	TON	--	--	--	--	--	--	--	--	1	209
Vermiculite	TON	853	11573	1263	21780	989	12888	843	17551	949	24815
Witherite	TON	++	104	++	128	11	762	--	--	4	47
Wollastonite	TON	13716	311809	11705	282266	12847	365656	12285	348673	10228	307670
Zinc Ores And Conc.	TON	399	20716	1762	46757	43877	182437	19902	64126	6	1336
Zirconium Ores And Conc.	TON	++	21	++	180	43	15779	198	50059	4	309
Grand Total		****	**1963932864**	****	**2576402469**	****	**2420095296**	****	**2137405283**	****	**1800811085**

Source: DGCIS Kolkata
(P): Provisional; --: Nil; ++:Negligible;
***: Not additive*

Annexure 2.3: Import (including re-import) of minerals from 2020-21 to 2024-25

Value is in '000Rs.

Mineral	Unit	2020-21		2021-22		2022-23		2023-24		2024-25 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Chromite	TON	156211	2257733	245710	4232459	111291	2969916	172411	4563915	257372	7608048
Abrasive (natural)	TON	3221	55212	3718	78311	1994	65016	1601	51218	3069	98078
Alabaster	TON	826	27872	1572	59681	2388	113198	1729	94617	3136	176917
Alumina	TON	2334786	57491719	2549567	82447635	2407867	89152924	2411907	83475392	2092011	101372790
Andalusite	TON	15217	428831	10419	344730	14168	599795	14454	847210	11887	556300
Antimony Ores And Conc.	TON	5977	1072406	4555	1499919	6460	2708869	4069	1623894	4125	3882838
Arsenic Sulphide (natural)	TON	4	570	18	2119	12	448	5	272	10	1480
Asbestos	TON	308506	11851124	437511	16631390	404154	22940349	465449	23260379	376522	21185302
Ball Clay	TON	65828	765439	93855	1134427	34761	715449	33137	654589	47071	994606
Barytes	TON	11691	313860	16577	523859	14241	476940	16642	503402	21968	685597
Bauxite	TON	3034041	13709540	3009079	18963241	3596098	23423723	4492899	28197412	3140919	25698521
Bentonite	TON	90933	1019395	142010	2131123	119280	1861091	135448	2058648	141073	2513727
Borax	TON	194448	6337254	223368	7973967	198719	10161598	202250	10661154	287551	14165738
Building And Monumental Stones Nes	TON	16327	360034	44482	422105	545687	926601	1990580	1711400	3276389	2263589
Calcite	TON	67643	374975	41688	290721	55362	381332	94848	592070	104524	779196
Chalk	TON	66	2661	64	2197	41	2191	11	975	++	347
Clay (others)	TON	12562	241521	14245	279441	7152	355004	13231	263789	24843	395031
Coal (Excl. Lignite)	THT	215260	1160506410	208636	2288189160	237678	3836139804	264545	3102264457	243644	2495873010
Coal:lignite	THT	1	5746	1	9495	2	19282	1	16920	2	41931
Cobolt Ores And Conc.	TON	++	325	1	6917	++	1766	1	820	258	10223
Coke	TON	2463036	44821773	2501153	81047701	3639296	136398611	3971682	115529531	4988650	129561508
Copper Ores And Conc.	TON	415136	59071579	1018934	223814328	1178921	273744293	1016303	259512343	1175592	325575964
Corundum (natural)	TON	1	79	++	10	++	9	2	399	++	84
Diamond		**	1283511854	**	2056382187	**	2077695939	**	1786607800	**	1370763371

Mineral	Unit	2020-21		2021-22		2022-23		2023-24		2024-25 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Diatomite	TON	7099	212766	1787	94373	3722	243082	2396	166678	4171	292722
Dolomite	TON	3505151	5075300	5510404	9682992	5672340	9944292	5754760	10302045	6190916	11438329
Earth Clay	TON	3	450	2	247	--	--	--	--	7	1862
Emerald (cut And Uncut)		**	7997796	**	16560915	**	32333990	**	34739081	**	33931195
Felspar (cut And Uncut)		**	8094	**	22005	**	43069	**	53818	**	130712
Felspar (natural)	TON	13187	78978	2795	54485	2107	52870	2002	50966	2575	76867
Fire Clay	TON	2326	100595	898	58418	1137	61115	237	16112	100	10706
Flint	TON	9209	85170	8611	83205	7874	82200	9616	72884	6684	48225
Fluorspar	TON	220573	6090596	286224	7792038	310173	11509548	256110	10416654	335154	13057039
Garnet(Cut And Uncut)		**	97335	**	183591	**	303072	**	488685	**	471281
Garnet(abrasive)	TON	345	14712	140	1789	30	929	3086	67440	166	4477
Gold Ores And Conc.	KG	10742	48481	799178	2376524	2464467	7336354	3619767	8675743	5951771	11818399
Granite	TON	37304	1320021	35032	1279464	38427	1660364	36149	1480529	38102	1712514
Graphite(natural)	TON	40153	1808218	54047	2651642	45994	2939533	54784	3203146	60346	3556369
Gypsum And Plaster	TON	4762012	7372934	5632758	11823817	6128694	13798597	7397750	15730513	8271918	17997252
Iron Ore	THT	766	8445221	6683	35389345	1790	15947473	4960	43968382	6403	53604865
Kaolin	TON	237144	4431804	223127	5048415	220124	7423589	176944	5748063	206418	6975302
Kieselguhr	TON	10	1543	++	64	6	520	26	2413	41	1662
Kyanite	TON	1238	42080	1668	53418	1354	63110	1691	81361	1631	84187
Lead Ores And Conc.	TON	5473	325104	5325	255224	5558	294381	4877	363290	6549	455612
Limestone	TON	22797801	32911759	27582767	49014650	29736036	62593636	33809129	66157693	33868074	68166319
Magnesite	TON	364577	7657838	510898	13106490	502837	15431256	479521	14872734	548863	16837158
Manganese Ore	TON	4058590	55242138	6500149	96424799	4641809	82621009	5592880	77503284	6573005	102669427
Marble	TON	645253	12032307	1073654	21110673	1453668	29835923	1372012	28750852	1538594	32377980
Mica	TON	2987	1252020	3338	1319896	4068	1594113	5348	2006895	6194	2327436
Molybdenum Ores And Conc.	TON	9177	8848441	9114	15470962	10436	23316669	13481	34312389	17189	41632019
Natural Gas	TON	25054872	583289424	23417029	1005206968	19852386	1372095889	23996378	1109940174	27012149	1258335050
Nickel Ores And Conc.	TON	37	6404	106	16165	20	369	++	11	8	3054
Niobium Or Tantalum Ores And Conc.	TON	2	489	2	488	1	242	--	--	--	--

Mineral	Unit	2020-21		2021-22		2022-23		2023-24		2024-25 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Ochre	TON	27924	2257650	25314	2502368	25243	2976109	27385	3132508	29009	3347608
Other Minerals Nes	TON	544180	2319944	678353	4311144	1154973	4703439	1701205	5211599	1961282	6100816
Other Preciuos Metal Ores And Concentrates	KG	1	28	++	120	--	--	203	672	125	72742
Petroleum (crude)	THT	188182	4396561618	220034	9139168005	236665	13027071596	231462	11535300059	244441	12091625053
Precious And Semi-precious Stones (cut And Uncut): total		**	47935435	**	128825205	**	229220056	**	25526822	**	26706137
Quartz And Quartzite	TON	1098	50333	7792	211384	5854	306024	47859	467916	185963	943034
Rock Phosphate	TON	7781423	53709109	9659818	104667349	9091591	151370002	8810954	126829600	11951969	163959178
Rock salt	TON	52651	252159	42396	258506	45106	363389	37760	339688	26467	255134
Salt (Other Than Common Salt & Rock Salt)	TON	45391	393335	27153	253890	53880	545064	94868	926054	137871	1565262
Sand (excl. Metal Bearing)	TON	57812	400291	5121	348319	5717	319717	1776	57520	3228	92340
Sandstone	TON	16	480	130	2691	28	1709	222	2860	28	1054
Silica Sand	TON	21356	238740	57095	527973	162087	747250	145715	845219	188422	1533802
Sillimanite	TON	606	11571	801	13972	58	3424	13	3128	29	3113
Silver Ores And Conc.	KG	--	--	--	--	77361	10001	1	++	2	25
Slate	TON	49	3784	109	5741	83	6744	40	4026	475	12482
Steatite	TON	5332	344649	9978	407255	10395	545770	10525	563345	10168	713586
Sulphur (exc. Sublimed Precipited And Colloidal)	TON	1463291	10948268	1895211	35362092	1337789	26766634	1708664	17365951	2195322	27502830
Tin Ores And Conc.	TON	2	899	++	299	++	366	++	242	--	--
Titanium Ores And Conc.	TON	78747	3440562	111653	5292058	68000	4969119	89920	6409133	88825	5866302
Tripoli Earth	TON	--	--	19	1174	++	2	23	987	66	4986
Tungsten Ores And Conc.	TON	121	9104	151	14800	423	142414	74	25679	63	12114
Vanadium Ores And Conc.	TON	999	77967	5869	436744	3661	209238	325	77069	654	148806
Vermiculite	TON	696	17234	1096	25520	2292	73873	627	19588	1576	52164
Witherite	TON	++	10	--	--	--	--	--	--	--	--
Wollastonite	TON	24049	370375	30625	675667	41436	877192	62410	1037583	79678	1596883

Mineral	Unit	2020-21		2021-22		2022-23		2023-24		2024-25 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Zinc Ores And Conc.	TON	804	9530	720	24772	1041	39415	455	10666	--	--
Zirconium Ores And Conc.	TON	68675	6993378	94839	11260337	82831	15163201	82257	13937396	94831	15110460
Grand Total		**	**7915372383**	**	**15516147570**	**	**21638813090**	**	**18629759751**	**	**18529448127**

Source: DGCIS Kolkata
(P): Provisional; --: Nil; ++:Negligible;
***: Not additive*

Annexure-2.4

National Mineral inventory as on 01.04.2025 (Estimated/Provisional)

S. No.	Mineral	Unit	Reserve (Provisional)	Remaining Resources	Total Resources
1	Alexandrite	--	N.E.	N.E.	N.E.
2	Andalusite	1000 Tonnes	-	1,26,050	1,26,050
3	Antimony	Tonne			
	Ore	Tonne	-	18,683	18,683
	Metal		-	254.92	254.92
4	Apatite	Tonne	29,395	210,80,904	211,10,299
5	Asbestos	Tonne	-	229,08,067	229,08,067
6	Bauxite	1000 Tonne	13,65,364	46,90,208	60,55,573
7	Borax	Tonne	-	74,204	74,204
8	Chromite	1000 Tonnes	1,39,512	3,80,802	5,20,314
9	Cobalt (Ore)	Million Tonnes	-	45.61	45.62
10	Copper	1000Tonne			
	Ore	1000Tonne	1,52,436	17,38,794	18,91,229
	Metal		1990	11,928	13,918
11	Diamond	Carats	8,37,257	314,42,632	322,79,889
12	Diatomite	1000 Tonnes	-	2,885	2,885
13	Emerald	Kilogram	-	55,869	55,869
14	Fluorite	Tonne	56,20,834	135,46,720	191,67,554

S. No.	Mineral	Unit	Reserve (Provisional)	Remaining Resources	Total Resources
15	Garnet	Tonne	114,26,467	480,42,562	594,69,029
16	Gold				
	Ore(Primary)	Tonne	283,17,902	5163,94,802	5447,12,704
	Metal(Primary)	Tonne	82	563	645
	Ore (Placer)	Tonne	-	26121000	26121000
	Metal (Placer)	Tonne	-	5.86	5.86
17	Graphite	Tonne	95,77,526	2501,10,732	2596,88,258
18	Iron Ore (Haematite)	1000 Tonnes	77,88,396	197,66,287	275,54,683
19	Iron Ore (Magnetite)	1000 Tonnes	2,35,369	110,86,097	113,21,466
20	Kyanite	Tonne	9,82,186	1028,75,930	1038,58,116
	Lead-Zinc				
	Ore	1000 Tonnes	169742	6,66,085	8,35,827
	Lead Metal	1000 Tonnes	3123	11017	14140
	Zinc Metal	1000 Tonnes	12225	25843	38068
	Lead+Zinc Metal	1000 Tonnes	-	144	144
22	Limestone	1000 Tonnes	290,65,080	2210,13,690	2500,78,770
23	Magnesite	1000 Tonnes	55,181	7,73,663	8,28,844
24	Manganese Ore	1000 Tonnes	106522	4,60,889	5,67,411
25	Marl	Tonne	1120,02,658	822,35,287	1942,37,945
26	Molybdenum				
	Ore	Tonne	-	315,79,598	315,79,598
	Contained MoS2	Tonne	-	18,228	18,228
27	Nickel Ore	Million Tonnes	-	192.33	192.33
28	Perlite	1000 Tonnes	-	2,406	2,406
29	Platinum group of metals (PGM)	Tonnes of Metal Contained	-	21.86	21.86
30	Potash	Million Tonnes	-	24,888	24,888
31	Pyrite	1000 Tonnes	-	16,74,401	16,74,401

S. No.	Mineral	Unit	Reserve (Provisional)	Remaining Resources	Total Resources
32	Rare Earth Elements				
	REE Ore	Tonne	-	589,814,744	589,814,744
	REE		-	2,930,953	2,930,953
33	Rock Phosphate	Tonne	413,39,027	3452,20,549	3865,59,577
34	Rock Salt	1000 Tonnes	3,860	330,15,586	330,19,446
35	Ruby	Kilogram	-	5,349	5,349
36	Sapphire	Kilogram	-	450	450
37	Sillimanite	Tonne	82,62,300	640,05,091	722,67,391
38	Silver				
	Ore	Tonne	2352,90,141	3394,19,013	5747,09,154
	Metal	Tonne	9927	15,827	25,754
39	Sulphur (Native)	1000 Tonnes	-	210	210
40	Tin				
	Ore	Tonne	1960	838,72,435	838,74,395
	Metal	Tonne	948	1,03,696	1,04,644
41	Titanium	Tonne	16,798,556	431,663,952	448,462,508
42	Tungsten				
	Ore	Tonne	-	998,14,464	998,14,464
	Metal	Tonne	-	1,63,249	1,63,249
43	Vanadium				
	Ore	Tonne	-	313,841,732	313,841,732
	Contained V2O5	Tonne	-	671,135	671,135
44	Vermiculite	Tonne	15,90,996	7,65,227	23,56,223
45	Wollastonite	Tonne	30,27,315	213,65,039	243,92,354
46	Zircon	Tonne	702,939	1,758,157	2,461,096

Figures rounded off

Annexure 2.5

Scenario of Mineral rich states (excluding Atomic, Fuel Minerals & Minor minerals)

Sl No.	State	Value of mineral Production on 2024-25 in lakh Rs.	Number of reporting Mines in 2024-25	Share of state in country's production (in %) of MCDR minerals
1	Odisha	6795589	124	Chromite (100), Bauxite (72.58), Iron Ore (55.7), Graphite (39.63), Manganese Ore (16.05), Limestone (1.95), Garnet (0), Iolite (0)
2	Rajasthan	2399359	110	Garnet (100), Lead And Zinc Ore (100), Lead Conc. (100), Selenite (100), Siliceous Earth (100), Wollastonite (100), Zinc Conc. (100), Silver (99.98), Phosphorite (79.78), Fluorite (45.48), Copper Conc. (28.82), Limestone (22.72), Copper Ore (20.19), Iron Ore (0.43), Manganese Ore (0.08), Bauxite (0), Emerald (0), Kyanite (0), Magnesite (0), Vermiculite (0)
3	Chhattisgarh	2080537	115	Moulding Sand (100), Tin (100), Iron Ore (15.09), Limestone (10.72), Bauxite (4.3), Graphite (0)
4	Karnataka	1815413	150	Gold (98.68), Gold Ore (91.37), Manganese Ore (16.03), Iron Ore (15.63), Limestone (8.73), Magnesite (5.29), Silver (0.02), Graphite (0), Kyanite (0), Limeshell (0), Vermiculite (0)
5	Maharashtra	633005	101	Kyanite (100), Sillimanite (100), Fluorite (32.96), Manganese Ore (30.29), Bauxite (4.62), Limestone (4.53), Iron Ore (3.87)
6	Jharkhand	519274	57	Bauxite (7.47), Iron Ore (6.62), Copper Ore (3.19), Gold Ore (1.27), Gold (1.25), Graphite (0.36), Copper Conc. (0), Kyanite (0), Limestone (0), Manganese Ore (0)
7	Madhya Pradesh	492516	360	Diamond (100), Copper Ore (76.61), Copper Conc. (71.18), Manganese Ore (26.08), Phosphorite (20.22), Limestone (15.3), Iron Ore (2.34), Bauxite (2.24)
8	Andhra Pradesh	152758	156	Vermiculite (100), Limestone (12.97), Manganese Ore (11.27), Gold Ore (7.36), Gold (0.07), Iron Ore (0.01), Kyanite (0)
9	Tamil Nadu	87702	154	Graphite (60.01), Magnesite (58.35), Marl (45.98), Limestone (5.47), Garnet (0), Vermiculite (0)
10	Gujarat	86202	280	Marl (54.02), Fluorite (21.56), Bauxite (8.78), Limestone (5.29), Copper Conc. (0), Copper Ore (0)
11	Telangana	54958	39	Limestone (5.36), Manganese Ore (0.2), Iron Ore (0)
12	Meghalaya	52055	22	Limestone (2.48), Sillimanite (0)
13	Himachal Pradesh	31780	32	Limestone (2.91), Rock Salt (0)
14	Goa	19752	5	Iron Ore (0.32), Bauxite (0), Manganese Ore (0)
15	Assam	6157	4	Limestone (0.43)
16	Uttar Pradesh	5711	3	Limestone (0.58)

Sl No.	State	Value of mineral Production on 2024-25 in lakh Rs.	Number of reporting Mines in 2024-25	Share of state in country's production (in %) of MCDR minerals
17	Bihar	3617	1	Limestone (0.21)
18	Jammu And Kashmir	3609	21	Limestone (0.29)
19	Kerala	2610	1	Limestone (0.07)
20	Uttarakhand	458	4	Magnesite (36.36), Limestone (0)
	India	15243060	1739	

Source: MCDR Returns
Note: Figures rounded off.
Data is provisional

Annexure 7.1

Year-wise / ACTIVITY-WISE Financial Performance of GSI against the approved BUDGET outlay during F.Y. 2025-26 and RE Grant and expenditure

UPTO December, 2025 and the last quarter (jan 2026 to March 2026) of F.Y. 2025-26 and Fund Utilisation during calendar year 2025

Rs. In Crore

Activities	F.Y. 2024-25						F.Y. 2025-26					Calendar Year 2025	
	Total BE Grant	Total RE Grant	Expenditure (April, 24 to Dec 24)	Available RE Grant from Jan, 25 to Mar, 2025	Expenditure from Jan, 25 to Mar, 2025	Total Expenditure	Total BE Grant	Total RE Grant	Expenditure (April, 25 to Dec 25- anticipiated)	Anticipated Expenditure from Jan, 26 to Mar, 26)	Anticipated Total Expenditure	Budget from Jan 2025 to Dec., 2025	Expenditure from January 2025 to Dec, 2025
	1	2	3	4 (2-3)	5	6 (3+5)	7	8	9	10 (8-9)	11 (9+10)	12 (4+9)	13 (5+9)
Survey & Mapping (Mission-I)	74.75	171.30	70.80	100.50	100.30	171.10	86.60	95.06	85.44	9.62	95.06	185.94	185.74
Mineral Exploration (Mission-II)	65.75	66.90	52.86	14.04	13.87	66.73	68.25	69.25	56.41	12.84	69.25	70.45	70.28
Information Dissemination (Mission-III)	17.25	30.98	15.56	15.42	15.37	30.93	15.00	14.50	12.32	2.18	14.50	27.74	27.69
Spl. Invest & Other Exploration (Antarctica) (Mission-IV)	3.25	3.21	2.25	0.96	0.87	3.12	6.20	4.05	3.46	0.59	4.05	4.42	4.33
R&D (Mission-IV)	10.95	11.05	8.39	2.66	2.55	10.94	13.00	14.60	11.77	2.83	14.60	14.43	14.32
HRD (Mission-V)	1.80	1.70	1.38	0.32	0.31	1.69	2.00	2.70	1.90	0.80	2.70	2.22	2.21
Schedules Caste Sub Plan (SCSP)	21.36	21.36	10.89	10.47	10.45	21.34	29.55	31.50	30.36	1.14	31.50	40.83	40.81
Tribal Area Sub Plan (TSP)	11.08	12.17	8.86	3.31	3.28	12.14	15.30	16.10	15.11	0.99	16.10	18.42	18.39
Administrative Support Activities (ASA) and OE	91.45	92.58	82.71	9.87	9.64	92.35	125.05	114.67	105.47	9.20	115.67	115.34	115.11

Activities	F.Y. 2024-25						F.Y. 2025-26					Calendar Year 2025	
	Total BE Grant	Total RE Grant	Expenditure (April, 24 to Dec 24)	Available RE Grant from Jan, 25 to Mar, 2025	Expenditure from Jan, 25 to Mar, 2025	Total Expenditure	Total BE Grant	Total RE Grant	Expenditure (April, 25 to Dec 25- anticipiated)	Anticipated Expenditure from Jan, 26 to Mar, 26)	Anticipated Total Expenditure	Budget from Jan 2025 to Dec., 2025	Expenditure from January 2025 to Dec, 2025
	1	2	3	4 (2-3)	5	6 (3+5)	7	8	9	10 (8-9)	11 (9+10)	12 (4+9)	13 (5+9)
Establishment Expenditure	967.60	979.59	804.87	174.72	163.72	968.59	1012.49	1032.95	855.60	177.35	1032.95	1030.32	1019.32
Total Revenue Fund	**1265.24**	**1390.84**	**1058.57**	**332.27**	**320.37**	**1378.93**	**1373.44**	**1395.38**	**1177.84**	**217.54**	**1396.38**	**1510.11**	**1498.20**
Capital (Modernization & Replacement)	34.76	34.76	23.72	11.04	10.98	34.70	74.01	168.86	107.09	61.77	167.86	118.13	118.07
Total GSI Fund (Rev + Capital)	**1300.00**	**1425.60**	**1082.29**	**343.31**	**331.35**	**1413.63**	**1447.45**	**1564.24**	**1284.93**	**279.31**	**1564.24**	**1628.24**	**1616.27**
% of Fund utilized against RE						99.16%							

Annexure-7.2

Performance related to various regulatory and development functions of IBM during the year 2025-26 (January 2025 to March 2026)

Sl. No.	Item	Annual Target	Achievement
1	Inspections (MCDR/MP/RMP/ FMCP)	1660	1922
2	Updating of National Mineral Inventory (NMI) adopting UNFC.	Release of NMI for all the minerals	Quinquennial updation of NMI as on 01.04.2025: The work involving data processing, generation of outputs, and preparation of comparative statements for the finalization of the National Mineral Inventory (NMI) as on 01.04.2025, covering 46 major minerals, is presently underway.
3	Drone Application	Use of Drone Technology.	IBM has developed a Drone Data Management System (DDMS) application for online submission of Digital Aerial (Drone and Satellite) images. During the year 2025-26, 1360 digital images have been received on DDMS portal. Drone images are being utilized for regular MCDR inspection of mine, approval of mining plan etc. During the year 2025-26, one training program was conducted to train 18 government officers, including 03 IBM officers, in processing and analysis of Digital images using GIS software. Cumulatively, 18 training programs over 135 days involving 191 nos. of technical officers of State Governments and Central Governments (IBM) have been provided for effective use of digital images by the officers.
4	MSS	Generation of Triggers, sending to State Govt. for field verification	In phase VI (2024-25), 138 Triggers for Major Minerals have been generated and sent to respective state Governments for field verification.
5	National Geochemical database of Mines and Potential of Critical Minerals from Legacy Dumps, Tailings & Process Wastes	Assessment of Critical Minerals from Legacy Dumps, Tailings, and Process Wastes	Under this initiative, Indian Bureau of Mines undertook a preliminary scoping study covering ten primary commodities consisting of Chromite, Copper, Tin, Lead & Zinc, Bauxite, Fluorite, Manganese, Graphite, Gold and Baryte. A total of 2,383 samples were collected from 311 mines, 32 beneficiation and 27 Smelting and refinery plants across the country and analysed for various radicals. Based on the promising findings of critical minerals from these samples, discussions are in progress with stakeholders to take up further detailed work for the feasibility of recovering the critical minerals available from these mine and process waste tailings. A national seminar on "Critical Minerals' Extraction from Mine Tailings & Waste: Opportunities and Challenges", was also organised as a part of this initiative, jointly by the Indian Bureau of Mines (IBM) and National Mineral Development Corporations Limited in Nagpur on 09 May 2025.
5	OD Investigations	45	45.75
6	Chemical Analysis (No. of radicals)	35000	71244
7	Mineralogical Studies	2875	2749
8	In Plant Studies/ Plant visits	As and when required	03

Sl. No.	Item	Annual Target	Achievement
9	Technical Consultancy & Mining Research Activity	---	In 2025-26, IBM Technical Consultancy and Mining Research Division associated in formulation and notification of the following offshore areas rules : Offshore Areas Mineral Conservation and Development Rules on 31.12.2024. Offshore Areas Atomic Minerals Operating Right Rules on 14.07.2025. Offshore Areas Mineral (Prevention of Illegal Mining, Transportation and Storage) Rules. Yet to be notified (Draft Prepared) For the execution of Mineral Conservation and Development Rules following activities have been completed **Format for Exploration Plan as specified under rule 6(2) of OAMCDR-2024** on 24.02.2025. Notification of Authorized Officer to take action in respect of Offshore Areas Mineral Conservation and Development Rules 2024 (OAMCDR-2024) and the matters relating to rule/rules on 06.11.2025. Notification of Competent Authority to take action in respect of Offshore Areas Mineral Conservation and Development Rules 2024 (OAMCDR, 2024) and the matters relating to rule/rules on 06.11.2025. Notification for non-refundable fee under Rule 8, 9, 17, 18 & 25 for submission of exploration plan, production plan, final mine closure plan, its modification and review on 06.11.2025. Notification regarding jurisdiction under Offshore Areas Mineral Conservation and Development Rules 2024 (OAMCDR-2024) and the matters relating to rule/rules on 06.11.2025.
10	Training programmes by IBM.	16	24 training programmes were conducted, in which a total of 854 IBM officials, 834 Industry personnel and 65 from the State DGM have participated. 02 video lectures of domain modules uploaded on iGoT platform 10 video lectures uploaded on IBM website 02 video lectures uploaded on IBM you tube channel 08 courses uploaded on i-GoT portal
11	Development of various modules of MTS	Development of MTS	As a part of the MTS application all the fourteen modules have been developed, deployed and rolled out in a phased manner since May 2022 to 20.1.2025. Development, testing & rolling out of following modules during 2025-26: Notices/ Reports: - Launched on 20/01/2025 at 3rd National Mining Ministers' Conference 2025, Konark, Odisha Revision - Launched on 20/01/2025 at 3rd National Mining Ministers' Conference 2025, Konark, Odisha Mineral Processing - Launched on 20/01/2025 at 3rd National Mining Ministers' Conference 2025, Konark, Odisha Inspection - Launched on 20/01/2025 at 3rd National Mining Ministers' Conference 2025, Konark, Odisha *Gold Award – Gold award under the category Government Process Re- engineering by use of Technology for Digital Transformation at the National Award for e-Governance (NAeG) 2025, Presented by the Department of Administrative Reforms and Public Grievances (DARPG), Government of India.

Annexure 7.3

Mineral Wise Mining Lease (Other than Atomic, Hydro Carbons Energy and Minor Minerals) as on 31/03/2024 (P)

(All India)

Sl. No.	Minerals	No. of Leases	Lease Area (Ha)
1	Aluminous Laterite	1	90.36
2	Amethyst	2	5.83
3	Apatite	1	13.47
4	Bauxite	310	23524.3631
5	Beryl	2	9.8
6	Borax	1	159
7	Chromite	22	5620.859
8	Copper Ore	9	3916.851
9	Diamond	2	275.963
10	Emerald	2	125.64
11	Epidote	1	4.0515
12	Fluorite	7	416.158
13	Fluorspar	1	63.2
14	Garnet	20	118.7838
15	Gemstone Cats Eye	3	82.357
16	Gold	10	6934.26
17	Graphite	27	1199.0369
18	Iolite	2	16.417
19	Iron Ore	337	56920.61665
20	Kyanite	15	288.982
21	Lead and Zinc Ore	11	6890.4875
22	Limeshell	18	873.958
23	Limestone	1812	168264.605
24	Magnesite	33	2301.721
25	Manganese Ore	215	11482.96
26	Moulding Sand	6	39.232
27	Perlite	1	144.8831
28	Rock Phosphate	7	1534.237
29	Rock Salt	1	8.122
30	Selenite	4	624.3466
31	Semi-Precious Stone	14	164.214
32	Siliceous Earth	17	168.4086

Sl. No.	Minerals	No. of Leases	Lease Area (Ha)
33	Sillimanite	1	4.64
34	Stibnite/Antimony	1	40.468
35	Tin	17	338.183
36	Vermiculite	50	890.9683
37	Wollastonite	12	254.1042
Grand Total		2995	293811.5373

Sources: Information received from respective State Government Departments and Regional Offices of IBM for minerals (excluding atomic minerals, hydrocarbon energy minerals and minor minerals).
P: Provisional
** Details of mining leases for minerals recently reclassified from minor to major minerals—Baryte, Feldspar, Mica, Quartz, —are not included*
*** Details of limestone mining leases reclassified as major minerals under the Ministry of Mines notification dated 13 October 2025 are not included*

Annexure- 9.1

Completed and ongoing projects of JNARDDC, Nagpur

Completed projects: 06

S.N.	Project Title	Outcomes
1.	**S-39:** Development of medium strength Al-Mg-Si (AA6082 based) alloy for high end strategic applications (extruded or drawn tubes) (with IIT Gandhinagar): **S&T (Mines) with IIT Gandhinagar**	A physically robust, corrosion-resistant, weldable, and extrudable alloy system was developed that can replace heavier or more corrosion-prone alloys in strategic tubular applications, thereby enhancing performance, durability, and national self-reliance in critical technologies. Prototype products (extruded and drawn) Optimized alloy composition for high strength modified Al 6082 alloy Process parameters for production and processing of modified Al 6082 alloy Casting and homogenization parameters Extrusion parameters Tempering/ageing parameters
2.	**S-48:** Process for production of ATH with high whiteness using non-metallurgical grade bauxite by following soda sintering process : **S&T(Mines) With Institute of Chemical Technology (ICT) Mumbai Indian Oil Campus Bhubaneswar and Industry Partner : NIKNAM Chemicals PVT. Ltd)**	Developed ATH with high whiteness using non-metallurgical grade bauxite by following soda sintering process leading to value addition. Final report under preparation.
3.	**S-49 :** An optimal approach for the retrieval of value-added substances from secondary aluminium black dross: **S&T(Mines) with Sri Ramakrishna Engineering College, Coimbatore and Phoenix Alloys**	Develop hybrid pyro-hydrometallurgy techniques for the extraction of value-added substances from secondary aluminium black dross. The technique focusses on high-quality alumina and other valuable components for converting the aluminium dross into flux as a degassing/detoxing agent suitable for industrial applications. Draft report under preparation.

S.N.	Project Title	Outcomes
4.	**S-50:** Utilization of aluminium dross in synthetic slag preparation for secondary steel making": **S&T(Mines) with VNIT, Nagpur and Daiki Aluminium Industry India Pvt. Ltd, Sricity**	Developed synthetic slag for deep steel desulphurisation using aluminium dross residues. Prepared the SOP for synthetic slag preparation from aluminium dross an industrial waste. Draft report under preparation.
5.	S-54: Lead contamination in recycled aluminium cookware-Identifying sources and developing strategies for lead removal : S&T(Mines) With Pure Earth Lab, USA	Identified the source and level of contamination of lead in Aluminium cookware specifically manufactured from recycled Aluminium. Developed efficient lead removal techniques from molten aluminium and to assess the effect of anodizing in minimising the leaching of lead from cookware. Enhanced product safety and quality for reduction in health risks and compliance with regulations and standards.
6.	**P-65 :** Recycling Coal Mine Overburden to Reuse as a Value-Added Building Material to Promote a Circular Economy, by Central Mine Planning and Design Institute (CMP&DI), under **S&T Plan of Ministry of Coal, Gov. of India (with Civil Eng. Dept, VNIT, Nagpur, Dept. of Architecture & Planning, BIT Mesra and Civil Eng. Division, CMPDIL, Dhanbad)**	Developed mix designs from coal mine overburden (COM) in homogenized slurry form for making building elements (panels, bricks and concrete) by heat treatment and geopolymer processes for their prospective use in urban and rural housing.

Ongoing projects : 20

SN	Project Title with collaborators
1.	**S-51:** Extraction of Gallium from Titanium and Iron ore Industrial wastes" : S&T(Mines) with CSIT, NIIST and V.V Titanium Pigments Pvt. Ltd., Thoothukudi
2.	**S-52:** Sustainable Manufacturing of automobile engine pistons with 100 percent recycled aluminium alloys with extended Fe-impurity tolerance" : S&T(Mines) with BML Munjan University and Motocast Power Alloys Private Limited, Rajasthan

SN	Project Title with collaborators
3.	**S-53:** Recovery of Nickel from Secondary Steel Industry waste. S&T(Mines) with Hydromet Research and Recovery LLP, Nagpur
4.	**S-55:** Conformal Cooling strategies for minimising Peripheral Coarse Grain growth in High-Strength Aluminium alloy extrudates : S&T(Mines) with Bharat Forge & Yantra India Pvt Ltd.
5.	**S-56:** Triazine Derived g-C3N4 Based Separation of Niobium and Tantalum from the Tin Slag- A Fully Scalable Fluoride-Free Process: S&T(Mines) & Banaras Hindu University, Varanasi
6.	**S-57:** Assessment, mapping, and In-situ sampling of Lateritic Bauxite plateau deposits through integrated Hyperspectral sensor data and AI-powered heterogeneous Robotic systems; S&T(Mines) with National Remote Sensing Centre & IISc Bangalore and Dyau Robotics Pvt Ltd, Bangalore.
7.	**S-58:** Setting up a 1000-liter Bayer liquor processing pilot pant for recovery of Gallium in India. M/o Mines with JSC Titanium Institute, Ukraine.
8.	**S-59:** Recovery of sulphur free nickel from pharmaceutical spent catalyst sludge to achieve zero waste; S&T(Mines) with ABN Metal Recycling Pvt. Ltd and VNIT
9.	**S-60:** Setting up of one tone per day pilot plant for hydro-chemical delamination of flexible multi-layer packaging refuses to recover metallic aluminium and polymers: S&T(Mines) with Alumicopper Private Limited
10.	**S-61:** Setting up of 1 tpd pilot plant for the recovery of salt from waste aluminum dross. S&T(Mines) with Alumicopper Private Limited
11.	**S-62:** Recovery of potash from granitic gneiss (rock dust) S&T(Mines) with CSIR-NIIST and M/s. N.S & Co.

SN	Project Title with collaborators
12.	**S-63:** Development of red mud-based pigment & filler for paint and allied industry; S&T (Mines) with CHEMSPERTS
13.	**S-64:** Setting up a semi-pilot plant for converting aluminium extrusion die sludge into alumina, zeolite and recycled leachate; S&T(Mines) with Balaji Extrusions, New Delhi (Aluminium Extrusion Manufacturers Association of India.
14.	**S-65:** Optimizing Homogenization Practices for 6005 and 6082 Aluminum Alloys - SOP Development for the Recycling Industry; S&T(Mines) with Yashoda Metals & Alloys
15.	**S-66:** Development and indigenization of AA4032 and AA2618 aluminum alloy billets for lightweight automotive applications; S&T(Mines) with Gandhi Institute of Technology and Management, GITAM, Vizag and M/s Abilities India Piston & Rings Limited.
16.	Fiber laser induced break-down spectroscopy for real-time analysis of ores and aluminium; S&T(Mines) with CSIR-CGCRI & HINDALCO.
17.	**P-67:** "Coal mine overburden alkali-activated composites (CMOAAC) for pre-fabricated 3D volumetric construction elements & system thereof (3DVCES); MT-182: Ministry of Coal (JNARDDC with CPMDIL, VNIT & IIT-BHU)
18.	**P-70:** "Beneficiation studies on Gujarat Bauxite (Scale up Laboratory & Pilot Plant) Varun Minerals, Dwarka, Jamnagar, Gujarat
19.	**P-72:** Study on effect of addition of dust suppression chemicals in bauxite processing. Ma'aden Aluminium Company (MAC) Saudi Arabia.
20.	**N-52:** Setting up a Pilot Demonstration Plant for Red Mud Bricks NALCO, Bhubaneshwar with Manishri Refractories & Ceramics Pvt. Ltd. Cuttack (MRCPL)

Annexure 12.1

During FS 2024-25, a total of thirteen items of Systematic Thematic Mapping (STM) on 1:25,000 scale have been taken up in NER of which one item was taken up in Arunachal Pradesh, one in Assam, four in Meghalaya, six in Tripura and Mizoram and one in Sikkim. During the period from 01.01.2025 to 31.03.2025, an area of 1,308 sq. km had been covered.

FS: 2024-25

Sr. No.	Item Type	Title and item no.	State	Target Achieved from 01.01.2025 to 31.03.2025 (in sq.km)
1	STM	Specialized Thematic Mapping to characterize the Ziro Gneisses in and around Ziro Valley, Central Arunachal Himalaya. M1AGS-STM/NC/NER/SU-ARA/2024/50237	Arunachal Pradesh	93
2	STM	Specialized Thematic Mapping in Umpanai-Rong Jangphong-Umsero areas of West Karbi Anglong district, Assam to establish the evolution of the Shillong Group and emplacement history of granitoids along with for possible mineralization. M1AGS-STM/NC/NER/SU-ASM/2024/49627	Assam	105
3	STM	Specialised Thematic Mapping to characterize the deformational pattern of Sumer-Sonidan shear zone, Ri-Bhoi and East Khasi hills district, Meghalaya.M1AGS-STM/NC/NER/SU-MEG/2024/49602	Meghalaya	110
4	STM	Specialized Thematic Mapping in and around Dinganpara - Bikonggiri areas to unravel the tectono-metamorphic evolution in north-western part of AMGC, West Garo Hills district (TS 78K/01), Meghalaya.M1AGS-STM/NC/NER/SU-MEG/2024/49595	Meghalaya	110

5	STM	Specialised Thematic Mapping around Rongrenggiri – Resogiri-Gabil Songma - Bibragiri area to evaluate the deformation –metamorphic evolution in western part of Assam Meghalaya Gneissic Complex (AMGC), East Garo Hills district (TS 78K06, 10), Meghalaya.M1AGS-STM/NC/NER/SU-MEG/2024/49633	Meghalaya	120
6	STM	Systematic thematic Mapping of Mendal-Bajengdoba-Hatigaon villages to unravel the tectono-metamorphic evolution in parts of North & West Garo Hills district, Meghalaya. M1AGS-STM/NC/NER/SU-MEG/2024/49633	Meghalaya	110
7	STM	Specialized Thematic Mapping for delineation and characterization of Gorubathan Formation for occurrences of base metal and associated minerals by mapping in the parts of Namchi, Gangtok and Pakyong districts of Sikkim. M1AGS-STM/NC/NER/SU-SSK/2024/83053	Sikkim	95
8	STM	Specialized Thematic Mapping through facies analyses of the Surma and the Tipam Groups of rocks in and around Khamrang-Kawnpui-Zanlwan area, Kolasib and Mamit districts, Mizoram. M1AGS-STM/NC/NER/SU-TRM/2024/49814	Mizoram	95
9	STM	Specialized thematic mapping in Tripura-Mizoram Fold belt in parts of Khowai District of Tripura to elucidate the depositional history of Dupitila. M1AGS-STM/NC/NER/SU-TRM/2024/49810	Tripura	85

10	STM	Specialized Thematic Mapping of Surma and Barail Groups in parts of Saitual, Khawzawl and Champhai districts of Mizoram for facies characterization and implications for provenance, depositional environment and tectonic setting. M1AGS-STM/NC/NER/SU-TRM/2024/49778	Mizoram	97
11	STM	Specialized Thematic mapping in Gandacharra-Nutanbazar-Rushyabari area, Dhalai district, Tripura: An appraisal on its lithostratigraphy and structure. M1AGS-STM/NC/NER/SU-TRM/2024/49826	Tripura	97
12	STM	Specialised Thematic Mapping in Santir Bazar and Jolaibari area, parts of south Tripura district for reappraisal of lithostratigraphy and sedimentary basin evolution and to identify probable zones suitable for hydrocarbon occurrence. M1AGS-STM/NC/NER/SU-TRM/2024/53223	Tripura	115
13	STM	Specialised Thematic Mapping in Chawmanu area, parts of Dhalai and North Tripura districts for reappraisal of lithostratigraphy and sedimentary basin evolution and to identify probable zones suitable for hydrocarbon occurrence. M1AGS-STM/NC/NER/SU-TRM/2024/53226	Tripura	76

Annexure 12.2

During FS 2025-26, a total of seventeen items of Systematic Thematic Mapping (STM) on 1:25,000 scale have been taken up in NER of which four items are being executed in Arunachal Pradesh, two in Assam, two in Manipur-Nagaland, four in Meghalaya, four in Tripura and one in Mizoram. During the period from 01.04.2025 to 31.12.2025, an area of 3169.5 sq. km has been covered.

FS: 2025-26

Sr. No.	Item Type	Title of the project and item no.	State	Target Achieved from 01.04.2025 to 31.12.2025 (in sq km)
1	STM	Specialized Thematic Mapping on reappraisal of the stratigraphic position of the Dirang Formation vis-ŕ-vis the Bomdila Group in western part of Arunachal Pradesh. M1AGS- STM/NC/NER/SU- ARA/2025/54061	Arunachal Pradesh	200
2	STM	Specialized thematic Mapping to characterize litho-assemblages and establish structural architecture of the Taliha Formation of Sela Group in Sipi - Menga area, Upper Subansiri districts, Arunachal Pradesh. M1AGS-STM/NC/NER/SU-ARA/2025/54082	Arunachal Pradesh	217
3	STM	Specialized Thematic Mapping to characterize the lithological variants of the Bomdila Group and to bring out tectono-metamorphic history of Bameng-Chayangtajo area, East Kameng District, Arunachal Pradesh. M1AGS-STM/NC/NER/SU-ARA/2025/54130	Arunachal Pradesh	185
4	STM	Specialized Thematic Mapping to establish tectonic setting, geochemistry and geochronology of the Khetabari Formation of Bomdila Group and their mineral potentiality, Papum Pare District, Arunachal Pradesh. M1AGS-STM/NC/NER/SU-ARA/2025/54229	Arunachal Pradesh	214.5

5	STM	Specialized Thematic Mapping on the re-evaluation and depositional history of the Tertiary sedimentary rocks of Barak Valley in and around Katlicherra-Kukicherra of Hailakandi and Karimganj district, Assam. M1AGS-STM/NC/NER/SU-ASM/2025/53590	Assam	176
6	STM	Specialized Thematic Mapping in Umpanai-RongJangphong-Umsero areas of West Karbi Anglong district, Assam to establish the evolution of the Shillong Group and emplacement history of granitoids along with for possible mineralization. M1AGS-STM/NC/NER/SU-ASM/2024/81848	Assam	175
7	STM	Specialized Thematic Mapping of Paleogene-Neogene sediments along Maram-Willong-Bendramai section, Senapati District of Manipur and Peren District of Nagaland. M1AGS- STM/NC/NER/SU-MAN/2025/53817	Manipur-Nagaland	205
8	STM	Specialized thematic mapping to characterize litho-facies of Palaeogene-Neogene sedimentary rocks and decipher the basin evolution history around Tuli area, Mokokchung, Nagaland and Sivasagar, Assam. M1AGS-STM/NC/NER/SU-MAN/2025/54070	Assam-Nagaland	180
9	STM	Specialized Thematic Mapping around Rongrenggiri Resogiri - Gabil Songma - Bibragiri area to evaluate the deformation - metamorphic evolution in western part of Assam Meghalaya Gneissic Complex (AMGC), East Garo Hills district (TS 78 K 06, 10), Meghalaya. M1AGS-STM/NC/NER/SU-MEG/2024/53797	Meghalaya	174

10	STM	Specialized Thematic Mapping around Mendal-Bajengdoba-Hatigaon area to unravel the tectono-metamorphic evolution of Assam Meghalaya Gneissic Complex (AMGC) in parts of North & West Garo Hills district (TS 78 K 05, 09), Meghalaya. M1AGS- STM/NC/NER/SU-MEG/2024/53826	Meghalaya	185
11	STM	Specialized Thematic Mapping of Sonidan-Sumer shear zone architecture and study the deformation pattern, Ri- Bhoi and East Khasi hills district, Meghalaya. M1AGS- STM/NC/NER/SU- MEG/2024/53965	Meghalaya	186
12	STM	Specialized Thematic Mapping in parts of the Assam Meghalaya Gneissic Complex (AMGC) around Songsak Dagal - Mendipathar area to establish the tectono-metamorphic evolution and to evaluate the mineral potentiality of the area, North Garo and East Garo Hills District, Meghalaya. M1AGS- STM/NC/NER/SU-MEG/2025/53822	Meghalaya	165
13	STM	Specialised Thematic Mapping in Manu area, parts of Dhalai, North Tripura and Unakoti districts, Tripura for reappraisal of lithostratigraphy and sedimentary basin evolution and to identify probable zones suitable for hydrocarbon occurrence. M1AGS- STM/NC/NER/SU-TRM/2025/54024	Tripura	179
14	STM	Specialized Thematic Mapping in Patichhari and Bagmara area, parts of south Tripura and Gomati districts for reappraisal of lithostratigraphy and sedimentary basin evolution and to identify probable zones suitable for hydrocarbon occurrence. M1AGS- STM/NC/NER/SU- TRM/2025/54050	Tripura	176

15	STM	Specialized Thematic Mapping in and around Laljuri and Nalkata area, North Tripura district, Tripura to delineate the Glauconitic Sandstone horizons within the Tipam and the Surma group. M1AGS- STM/NC/NER/SU- TRM/2025/54171	Tripura	188
16	STM	Specialized Thematic Mapping to decipher the depositional history and structural architecture of Barail Group of rocks in Zote-Champhai-Kelkang area, Khawzawl and Champhai districts, Mizoram. M1AGS-STM/NC/NER/SU-TRM/2025/54249	Mizoram	176
17	STM	Specialized Thematic mapping in Nutanbazar-Rushyabari-Baishabari area, Dhalai, Gomati & South Tripura districts, Tripura: An appraisal on its lithostratigraphy and structure. M1AGS-STM/NC/NER/SU-TRM/2024/129693	Tripura	188

Annexure 12.3

Total 4 items of Geochemical Mapping on 1:50,000 scales with collection of samples in grid pattern is being executed during the FS 2024-25 in parts of Assam. An area of 5,292 sq km has been covered during 01.01.2025 to 31.03.2025.

FS 2024-25:

Sr. No.	Item Type	Title of the project and item no.	State	Target Achieved from 01.01.2025 to 31.03.2025 (in sq km)
1	NGCM	Geochemical mapping in toposheet no. 78N/2, N/3, N/4, N/6, N/7 & N/8 covering parts of Bajali, Baksa, Nalbari. Kamrup and Barpeta districts of Assam. M1AGCS-GCM/NC/NER/SU-ASM/2024/49489	Assam	1090
2	NGCM	Geochemical mapping in toposheet nos. 78N/10, N/11, N/13, N/14 & in parts of and 83B/01 covering parts of Baksa, Tamulpur, Nalbari, Kamrup,Udalguri, Darrang districts of Assam and West Kameng district of Arunachal Pradesh. M1AGCS-GCM/NC/NER/SU-ASM/2024/49510	Arunachal Pradesh	1466
3	NGCM	Geochemical Mapping in toposheet nos. 78J/2, 78J/4, 78J/6, 78J/10, 78J/14 and 78J/15 and in Baksha, Bongoigaon, Barpeta, Chirang, Dhubri, Goalpara, & Kokrajhar districts of Assam. M1AGCS-GCM//NER/SU-ASM/2024/49502	Assam	1622
4	NGCM	Geochemical mapping in Toposheet nos. 83J/01, 83J/02, 83J/05 83J/09and 83F/14 covering Jorhat, Sivasagar, Golaghat and Majuli districts of Assam. M1AGCS-GCM//NER/SU-ASM/2024/49534	Assam	1114

Annexure 12.4

Total 3 items of Geochemical Mapping on 1:50,000 scales with collection of samples in grid pattern are being executed during the FS 2025-26 in parts of Assam. An area of 8528 sq km has been covered during 01.04.2025 to 31.12.2025.

FS 2025-26:

Sr. No.	Item Type	Title of the project and item no.	State	Target Achieved from 01.04.2025 to 31.12.2025 (in sq km)
1	NGCM	Geochemical Mapping in toposheet no. 83M/6, M/7, M/8, M/9, M/10, M/11, M/13, M/14 & M/15 covering parts of Charaideo, Dibrugarh and Tinsukia districts of Assam. M1AGCS-GCM/NC/NER/SU-ASM/2025/53586	Assam	2656
2	NGCM	Geochemical mapping of Toposheet nos.83I/12, 14, 15, 16 and 83M/3 and 4 covering parts of Dhemaji, Lakhimpur, Majuli, Sivasagar, Dibrugarh and Charaideo Districts of Assam and East Siang and Longding Districts of Arunachal Pradesh. M1AGCS-GCM/NC/NER/SU-ASM/2025/53592	Assam	3056
3	NGCM	Geochemical mapping of Toposheet nos. 83I/03, 83I/04, 83I/07, 83I/08, 83I/10 and 83I/11covering parts of Lakhimpur and Dhemaji districts of Assam.	Assam	2816

Annexure 12.5

A total of three GPM items have been taken up during FS 2024-25, of which two were in Assam and one was in Meghalaya. During the period from 01.01.2025 to 31.03.2025, a total area of 5,515 sq km had been covered.

FS 2024-25:

Sr. No.	Item Type	Title of the project and item no.	State	Target Achieved from 01.01.2025 to 31.03.2025
1	GPM	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos. 83C/14, 83C/15, 83G/02 and 83G/05 covering parts of Dima Hasao, Hojai, Karbi Anglong and West Karbi Anglong districts of Assam and East Jaintia Hills district of Meghalaya. M1AGS-GPM/NC/NER//2024/49642	Assam & Meghalaya	2000
2	GPM	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos. 83C/7, 83C/8 (part), 83C/11, 83C12 (part) and 83C16 (part) covering parts of East Jaintia Hills, West Jaintia Hills districts of Meghalaya and Cachar, Dima Hasao districts of Assam. M1AGS-GPM/NC/NER//2024/49650	Assam & Meghalaya	1770
3	GPM	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos. 83F/10, 83/F11, 83F/15 and 83F/16 covering parts of Karbi Anglong, Golaghat, Biswanath districts of Assam. M1AGS-GPM/NC/NER//2024/52075	Assam	1745

Annexure 12.6

A total of three GPM items have been taken up during FS 2025-26, of which two are in Assam and one is in Mizoram. GPM of two blocks are outsourced covering parts of Assam, Arunachal Pradesh & Nagaland. During the period from 01.04.2025 to 31.12.2025, a total area of 4430 sq km has been covered by in house NGPM and 16009 sq km has been covered by outsourcing.

FS 2025-26:

Sr. No.	Item Type	Title of the project and item no.	State	Target Achieved from 01.04.2025 to 31.12.2025
1	GPM	Ground Gravity-Magnetic Survey under National Geophysical mapping Programme in Toposheet Nos. 83D/08, 83D/12 and 83A/09 covering parts of North Tripura District, Tripura; Mamit, Kolkasib, Aizawl districts, Mizoram; and Hailakandi, Assam. M1AGS-GPM/NC/NER//2025/109692	Tripura, Mizoram & Assam	1530
2	GPM	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos. 84A/10; 84A/13, and 84A/14 covering parts of Mamit, Kolasib, Aizawl, Saitual, Serchhip districts, Mizoram. M1AGS-GPM/NC/NER/2025/109711	Mizoram	1500
3	GPM	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos. 83A/07; 83A/08 (Part), 83A/11 and 83A/12 (Part) covering parts of West Kameng, Bichom and Pakke Kessang districts, Arunachal Pradesh; Sonitpur District, Assam. M1AGS-GPM/NC/NER//2025/109728	Arunachal Pradesh & Assam	1400

Block-I	GPM	Ground Gravity and Magnetic Surveys Carried out by M/s. Maheshwari Mining Private Limited, Kolkata in Parts of Degree Sheet Nos. 78F, 78J, 78N, 83B, 83F Falling in the State(s) of Assam and Arunachal Pradesh as Part of National Geophysical Mapping Programme under Technical Supervision and Quality Control by North-Eastern Region of GSI. M1AGS-GPM/NC/NER//2024/143261	Assam and Arunachal Pradesh	1880 (Outsourced)
Block-II	GPM	Ground Gravity and Magnetic Surveys Carried out by Sinome Equipments India Pvt. Ltd., Kolkata in Parts of Degree Sheet Nos. 82P, 83I, 83J, 83K, 83M, 83N, 92A Falling in the State(s) of Assam, Arunachal Pradesh and Nagaland as Part of National Geophysical Mapping Programme under Technical Supervision and Quality Control by North-Eastern Region of GSI. M1AGS-GPM/NC/NER//2025/164342	Assam, Arunachal Pradesh and Nagaland	14129 (Outsourced)

Annexure-12.7

During the FS 2024-25, three items of Photo Geology and Remote Sensing (PGRS) were executed in parts of Arunachal Pradesh, Manipur, Nagaland and Tripura states by using ASTER data. A total area of 21,463 sq km was completed during the period from 01.01.2025 to 31.03.2025.

FS 2024-25:

Sr. No.	Item Type	Title of the project	State	Target Achieved from 01.01.2025 to 31.03.2025
1	PGRS	Spectral Geological/Surface mineral mapping using space borne multispectral ASTER data on 1: 50,000 scale in OGP areas of Siang Group, Siwaliks and Bomdila Gneisses of Arunachal Pradesh.	Arunachal Pradesh	12,586
2	PGRS	Spectral Geological/Surface mineral mapping using space borne multispectral ASTER data on 1: 50,000 scale in OGP areas of Lohit Granitoid Complex, Dibang Group, Roing gneisess of Arunachal Pradesh and Manipur ophiolite complex of Manipur and Nagaland.	Manipur and Nagaland	8477
3	PGRS	Spectral Geological Mapping over Gandhari-Manubazar, Kumarghat Longtharai areas in Tripura using ASTER and Landsat OLI Data for identifying priority areas for hydrocarbons.	Tripura	400

Annexure-12.8

During the FS 2025-26, two items of Photo Geology and Remote Sensing (PGRS) are being executed in parts of Meghalaya and Assam states by using ASTER data. A total area of 2175 sq km has been completed during the period from 01.04.2025 to 31.12.2025.

Sr. No.	Item Type	Title of the project	State	Target Achieved from 01.04.2025 to 31.12.2025
1	PGRS	Remote Sensing study of Numaligarh-Golaghat area along Dhansiri river in response to neo-tectonic activity using Multi Sensor Microwave SAR and Optical data.	Assam	190
2	PGRS	Spectral Geological Mapping over Ampati-Siju areas in Meghalaya using ASTER and Landsat OLI reflectance and thermal emissivity Data for identifying potential areas for hydrocarbons.	Meghalaya	1985

Annexure-12.9

Details of mineral exploration items taken up in NER during FS: 2024-25 and FS 2025-26

FS 2024-25

Sl. No.	State	Title of the Geological Report	Stage	Commodity
1	Arunachal Pradesh	Preliminary exploration for vanadium, graphite and associated minerals around **Deed**, Keyi Panyor district, Arunachal Pradesh (G3)	G3	Vanadium, graphite
2	Arunachal Pradesh	Preliminary exploration for vanadium and graphite in and around **Pith village**, Lower Subansiri District, Arunachal Pradesh (G3)	G3	Vanadium, graphite
3	Arunachal Pradesh	Reconnaissance survey for coal in the Gondwana sequence of rocks of Lower Gondwana Group in **Garu-Rilu-Daring area**, Lower Siang district, Arunachal Pradesh. (G4)	G4	Coal
4	Arunachal Pradesh	Reconnaissance survey for limestone and vanadiferous carbonaceous phyllite in and around **Lumla-Mokhtur areas**, Tawang district, Arunachal Pradesh (G4)	G4	Limestone
5	Arunachal Pradesh	Reconnaissance survey for base-metal and associated mineralization in and around **New Neelam area**, Lower Subansiri District, Arunachal Pradesh. (G4)	G4	Base metal
6	Arunachal Pradesh	Reconnaissance survey for phosphorite mineralisation in the Lower Gondwana rocks in **Gensi-Taramori area**, Lower Siang District, Arunachal Pradesh. (G4)	G4	Phosphorite
7	Arunachal Pradesh	Preliminary exploration for vanadium, graphite, limestone and associated mineralisation in the metasedimentary sequence of Bomdila Group of rocks in **Daba Gamlin block**, West Siang District, Arunachal Pradesh (G3).(Continued from FS 23-24)	G3	Vanadium, graphite, Limestone
8	Arunachal Pradesh	To evaluate the origin and occurrence of vanadium and its economic viability in the carbonaceous phyllite of proterozoic sequence of Arunachal Himalaya, Arunachal Pradesh. (RP)	RP	Vanadium

Sl. No.	State	Title of the Geological Report	Stage	Commodity
9	Assam	Reconnaissance survey for REE and associated mineralisation in and around **Hakomari-Kardeguri** area, Kamrup District, Assam. (G4)	G4	REE
10	Assam	Reconnaissance survey for Rare earth elements and Rare Metals in southern part of **Chakrasila hill**, Kokrajhar District, Assam (G4).	G4	REE & RM
11	Assam	Reconnaissance survey for placer gold in Himalayan foothill sediments of **Ranga, Bagi river** sub-basins of Subansiri basin, Lakhimpur district, Assam. (G4)	G4	Gold
12	Assam	Reconnaissance survey for REE and associated mineralisation in and around **Samchampi-Samteran** alkaline-carbonatite complex, Karbi Anglong District, Assam. (G4)	G4	REE
13	Assam	General exploration for REE and rare metals in **Krogaon North block**, Jashora Ultramafic Alkaline Complex, West KarbiAnglong district, Assam. (G2)	G2	REE
14	Meghalaya	Critical mineral assessment programme in **Mynsain area**, Ri Bhoi district, Meghalaya. (CMAP)	CMAP	Critical mineral
15	Meghalaya	Reconnaissance survey for Bauxite and associated trace elements in and around **Solanggiri and Rongmasogiri**, West Garo Hills district, Meghalaya. (G4)	G4	Bauxite
16	Meghalaya	Reconnaissance survey for limestone in **Narongkolgre, Nengkong & Newaram** areas of South Garo hills district, Meghalaya. (G4)	G4	Limestone
17	Meghalaya	Reconnaissance survey for Titaniferrous Vanadiferous Magnetite and REE in and around **Aradonga area,** West Khasi Hill district, Meghalaya. (G4)	G4	TVM, REE
18	Meghalaya	Reconnaissance survey of REE and associated mineralization in Northeastern parts of South Khasi Batholith near **Nongspung, Wallang area** in South West Khasi Hills district, Meghalaya (G4)	G4	REE
19	Meghalaya	Reconnaissance survey for Copper and associated mineralization around **Mawphlang and Mawkdok** area, East Khasi Hills district, Meghalaya (G4)	G4	Copper

Sl. No.	State	Title of the Geological Report	Stage	Commodity
20	Meghalaya	Reconnaissance survey for **gold** and associated mineralization around northern part of **Mawkynrew area**, East Khasi and West Jaintia Hills Districts, Meghalaya. (G4)	G4	Gold
21	Meghalaya	Reconnaissance survey for **REE** and associated mineralization in **JalukPaham-Umsohpai area**, Ri Bhoi districts, Meghalaya and Kamrup District of Assam. (G4)	G4	REE
22	Meghalaya	Reconnaissance survey for REE, W and associated mineralization in and around **Mawrang area**, Ri-Bhoi district, Meghalaya. (G4)	G4	REE, W
23	Meghalaya	Preliminary Exploration for Limestone in **Um Phyrluh East** Limestone Block, Litang Valley, East Jaintia Hills District, Meghalaya. (G3)	G3	Limestone
24	Sikkim	Reconnaissance Survey for gold and associated minerals in **Makha-Simik- Rumtek area,** Gangtok and Namchi Districts, Sikkim. (G4)	G4	Gold
25	Tripura	Reconnaissance survey for REE and associated mineralization in plastic clay in and around **Kumarghat area** of Tripura (G4)	G4	REE
26	Manipur	Critical Mineral Assessment Programme in and around **Hangkau Village**, Naga Hills Ophiolite Belt, Kamjong district, Manipur (CMAP)	CMAP	Critical mineral
27	Manipur	Critical Mineral Assessment Programme in and around **Nampisha area**, Naga Hills Ophiolite Belt, Kamjong district, Manipur (CMAP)	CMAP	Critical mineral
28	Nagaland	Reconnaissance survey of phosphate potentiality in Disang shale, **Tseminyu-Kontsonyu** area, Tseminyu District, **Nagaland** (G4)	G4	Phosphate

FS 2025-26

Sl. No.	State	Title of the Geological Report	Stage	Commodity
1	Arunachal Pradesh	Reconnaissance survey for Tungsten, tin & associated mineralisation in Dirang area, West Kameng District, Arunachal Pradesh	G4	Tungsten, tin

Sl. No.	State	Title of the Geological Report	Stage	Commodity
2	Arunachal Pradesh	Reconnaissance survey for vanadium, graphite and associated mineralisation in and around Jareng area, Upper Subansiri District, Arunachal Pradesh.	G4	vanadium, graphite
3	Arunachal Pradesh	Reconnaissance survey for Ni-Cr, PGE and associated mineralization in and around Mayudia area, Lower Dibang valley District, Arunachal Pradesh.	G4	Ni-Cr, PGE
4	Arunachal Pradesh	Reconnaissance survey for Tungsten, tin & associated mineralisation in Saleri area, West Kameng District, Arunachal Pradesh.	G4	Tungsten, tin
5	Arunachal Pradesh	Preliminary exploration for Vanadium, Graphite and associated minerals in Khunglo block, Lower Subansiri District, Arunachal Pradesh	G3	vanadium, graphite
6	Arunachal Pradesh	To evaluate the origin and occurrence of vanadium and its economic viability in the carbonaceous phyllite of Proterozoic sequence of Arunachal Himalaya, Arunachal Pradesh.	RP	Vanadium
7	Assam	Reconnaissance survey for REE and associated mineralisation in and around Kamranga area, Kamrup District, Assam and Ri Bhoi District of Meghalaya.	G4	REE
8	Assam	Reconnaissance survey for placer gold in Himalayan foothill sediments of Buroi, Bargang river sub-basins of Brahmaputra basin, Biswanath District, Assam and Papumpare, District, Arunachal Pradesh	G4	Gold
9	Assam	Reconnaissance survey for REE & associated minerals in and around Samelangso area, Karbi Anglong district, Assam.	G4	REE
10	Assam	Preliminary exploration for limestone in Sikilangso West Block, Dima Hasao district, Assam.	G3	Limestone
11	Assam	General exploration for REE and rare metals in Krogaon block, Jashora Ultramafic Alkaline Complex, West Karbi Anglong district, Assam.	G2	REE & RM
12	Assam	Preliminary exploration for REE and associated minerals in Ganjang block, Samchampi Samteran Alkaline Complex, Karbi Anglong district, Assam.	G3	REE
13	Assam	Drone based detailed magnetic survey in Samchampi area, Samchampi-Sametran Alkaline complex (SAC), Karbi Anglong District, Assam.	RP	-

Sl. No.	State	Title of the Geological Report	Stage	Commodity
14	Manipur	Reconnaissance survey for nickel and associated minerals, Aken-Tusom area, Phek District, Nagaland and Ukhrul District, Manipur	G4	Nickel
15	Nagaland	Reconnaissance survey for limestone and associated mineralization around Chipur and Thongsonyu in Noklak and Kiphire Districts, Naga Hills Ophiolite Belt, Nagaland	G4	Limestone
16	Nagaland	Reconnaissance Survey for gold in the Naga Hills Ophiolite of Ziphu-Washello-Thewati area, Phek district, Nagaland	G4	Gold
17	Manipur	Critical Mineral Assessment Programme around Ningchou area, Naga Hills Ophiolite Belt, Kamjong district, Manipur	CMAP	Critical mineral
18	Manipur	Critical Mineral Assessment Programme around Yentem, Naga Hills Ophiolite Belt, Kamjong district, Manipur	CMAP	Critical mineral
19	Nagaland	Critical Mineral Assessment Programme around Sutsu-Laluri area, Naga Hills Ophiolite Belt, Meluri District, Nagaland	CMAP	Critical mineral
20	Meghalaya	Reconnaissance survey for REE and associated mineralization in and around Bajengdoba and Mongrai area, East Garo Hills district, Meghalaya.	G4	REE
21	Meghalaya	Reconnaissance survey of REE and associated mineralization in southern parts of South Khasi Batholith near Jakrem and Mawkyrwat area in West and South West Khasi Hills districts, Meghalaya	G4	REE
22	Meghalaya	Reconnaissance survey of REE and associated mineralization in AMGC and Rongjeng Granite near Jambal and Chima Imphel area in North Garo Hills district, Meghalaya	G4	REE
23	Meghalaya	Reconnaissance survey for Copper and associated mineralization around Mawkajem and Rngain area, East Khasi Hills district, Meghalaya.	G4	Copper
24	Meghalaya	Reconnaissance survey for aluminous laterite and associated trace elements in and around Rebugre, Dabigiri, and Songmaranggiri areas, West Garo Hills district, Meghalaya.	G4	Laterite

Sl. No.	State	Title of the Geological Report	Stage	Commodity
25	Meghalaya	Reconnaissance survey for tungsten, REE and associated mineralization around Umraling Block, Ri Bhoi district of Meghalaya.	G4	REE
26	Meghalaya	Reconnaissance survey of REE and associated mineralization in and around North-western parts of Weiloi area in East Khasi Hills and South West Khasi Hills Districts, Meghalaya	G4	REE
27	Meghalaya	Preliminary Exploration for Limestone in Papa Sonmong block, NE of Chokpot, South Garo Hills District, Meghalaya.	G3	Limestone
28	Meghalaya	Reconnaissance survey for REE, Ge, Li and associated trace elements in Tertiary coal beds, Darangdura Block, South Garo Hills and West Khasi Hills Districts, Meghalaya.	G4	REE, Ge, Li
29	Meghalaya	Reconnaissance survey of REE and associated mineralization of neoproterozoic Granite plutons (Mawdoh Granite), in and around Mawdoh and Mawdong in West Khasi Hills district, Meghalaya	G4	REE
30	Meghalaya	Preliminary Exploration for Limestone in North Umkyrpong Block, Litang Valley, East Jaintia Hills District, Meghalaya.	G3	Limestone
31	Mizoram	Reconnaissance Survey for shelly limestone in West Lungdar-N Lungleng areas, Mamit District, Mizoram	G4	Limestone
32	Tripura	Reconnaissance survey for REE and associated mineralization in clay in and around Bishramganj area of Sephaijala district, Tripura	G4	REE
33	Sikkim	Reconnaissance Survey for Copper and associated minerals in Sajong-Duga-Pedam area, Pakyong District, Sikkim.	G4	Copper

Annexure-12.10

Commodity-wise creation of GIS databases in Mission-III, NER

During FS 2025–26, four projects on commodity-wise creation of GIS databases are being carried out by SU: Assam, SU: Arunachal Pradesh, SU: Meghalaya, and SU: Manipur & Nagaland. The details are provided below in tabulated form. These projects were initiated in April 2025.

Sl. No.	Item Type	Title of the project & FSP ID	State	Achievements till 31st December 2025
1	GIS database	Creation of GIS database in respect of Strategic and Critical group of minerals like REE, Tin, Tungsten, Lithium & Molybdenum; Basemetal like Lead and Zinc; Ferrous metal like Iron; Industrial and Fertilizer minerals like Limestone, Glass sand, Gypsum, Phosphate; Precious metals and minerals like Gold, Placer Gold and Coal pertaining to Assam State M3CSDB/NC/NER/SU-ASM/2025/ 54049	Assam	Data Synthesis Compilation: 53 reports (out of 63)
2	GIS database	Creation of GIS database in respect of strategic minerals, base metals, precious metals, ferrous &nonferrous, REEs, industrial and fertilizer minerals etc pertaining to Arunachal Pradesh. M3CSDB/NER/SU-ARA/2025/54002	Arunachal Pradesh	Data Synthesis Compilation: 52 reports (out of 73)
3	GIS database	Creation of GIS database in respect of strategic minerals, base metals, precious metals, ferrous & non-ferrous, Rare Earth Elements, Rare metals and fertilizer minerals etc. pertaining to Meghalaya. M3CSDB/NC/NER/SU-MEG/2025/59713	Meghalaya	Data Synthesis Compilation: 91 reports (out of 124)
4	GIS database	Creation of GIS database in respect of ferrous & base metals, precious metals, strategic mineral, industrial & fertilizer minerals, natural energy resources like iron ores, Cr, Ni, Cu, Au, PGE, REE, Li, limestone, coal, salt springs pertaining to Nagaland and Manipur state. M3CSDB/NC/NER/SU-MAN/2025/54029	Manipur & Nagaland	Data Synthesis Compilation: 60 reports (out of 90)

Annexure 15.1

List of Nodal Officers, CPIOs and Appellate Authorities in Ministry of Mines

Nodal Officer (RTI)	CPIO (RTI)	ACPIO (RTI)
Smt. Sushma Batra, **Deputy Secretary** Room No 4315 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773617 E-mail: sushma.batra@gov.in	**Sh. Abhishek Kr. Upadhyaya** **Under Secretary** Room No 4308 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773660 E mail- ak.upadhyaya@nic.in	**Sh. Rajesh Kumar Ner** **Section Officer** Room No 4322 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773646 Email: rk.ner@nic.in

SNo.	CPIO	Subject matter dealt (Section)	Appellate Authority
1	**Sh. Abhishek Kr. Upadhyaya** **Under Secretary** Room No 4308 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773660 E mail- ak.upadhyaya@nic.in	Public Grievances & Public Information Cell Parliament Coordination	**Smt. Sushma Batra,** **Deputy Secretary** Room No 4315 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773617 E-mail: sushma.batra@gov.in
2	**Sh. Rakesh Thapliyal** **Under Secretary** Room No 4419 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773624 E mail rakesh.thapliyal83@nic.in	Establishment	**Shri Bhawani Shankar Nayak,** **Deputy Secretary** Room No 4213 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773619 E-mail : bs.nayak@nic.in

		Administration (including Cash, Library & Records, R & I)	**Shri. Ashish Saxena, Director** Room No 4402 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773620 E-mail: ashish.saxena89@gov.in
3	**Sh. Vinod Kumar** **Under Secretary** Room No 4411 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773622 E-mail : vinod.kr71@nic.in	Vigilance	**Shri Bhawani Shankar Nayak,** **Deputy Secretary** Room No 4213 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773619 E-mail : bs.nayak@nic.in
		Mines VI: Act, Legislation & Policy issues, LIMBS (Monitoring and Coordination of all legal case/matter) Offshore Mining, (OAMDR related work and Illegal mining of Beach Sand Minerals) matter related to International Arbitration, Previous approvals cases and interpretations of Act, Policy matters relating to States.	**Shri Mustaq Ahmad, Director** Room No 4415 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773612 E-mail: mustaqahmad.dad@gov.in
		Mines-VI : Auction by Central Government: Work related to Administering Authority under OAMDR Act	**Shri. Ashish Saxena, Director** Room No 4402 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773620 E-mail: ashish.saxena89@gov.in

		Mines-VI : New Legislation	**Shri. Johny Tom Varghese, Deputy Secretary** Room No 4413 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773618 E-mail: varghese.johnytom@gov.in
4	**Sh. Sanjay Kumar Gaur Under Secretary** Room No 4412 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773621 E-mail : gaur.sk@nic.in	Mines IV : Auction	**Shri. Ashish Saxena, Director** Room No 4402 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773620 E-mail: ashish.saxena89@gov.in
		Mines IV: DMF & PMKKKY,	**Shri. Johny Tom Varghese, Deputy Secretary** Room No 4413 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773618 E-mail: varghese.johnytom@gov.in
		Mines I: (Exploration Matters, MECL, GSI), All Technical matters including exploration and Survey, National Geo-science Award, Budget, FSP etc. (including IGC matters)	**Shri Yogendra Singh Bhamboo, Director** Room No 4404, GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773610 E-mail dirtech.mom@nic.in

5	**Sh. Mukesh Kumar** **Under Secretary** Room No 4310 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773621 E-mail : k.mukesh83@gov.in	Metal-I: (Aluminium & Bauxite matters, NALCO etc.)	**Shri Vivek Kumar Sharma, Director** Room No 4302 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773609 E-mail: vksharma.ofb@gov.in
		Metal-II: (Other Metals related matters and BGML, HZL etc.)	
		Metal-III: (HCL matters etc.)	
		IT	
6	**Sh. Thaneshwar Kumar** **Under Secretary** Room No 4406 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773625 E-mail: k.thanshwar@nic.in	Mines II (GSI Establishment matters)	**Shri Anoop Kumar, Director** Room No 4204 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773614 E-mail: k.anoop@gov.in
		Mines III (IBM Estt. & Budget Matters, MTS, MSS, Star Rating)	
		Integrated Finance	**Shri Alok Kumar, Deputy Secretary** Room No 4209 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773615 E-mail: aalok.kumar@nic.in
7	**Sh. Arvind Bhagat** **Under Secretary** Room No 4406 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773625 E-mail: arvind.bhagat69@gov.in	International Cooperation	**Smt. Geetika Sharma, Director** Room No 4313 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773616 E-mail: geetika.sharma@gov.in
		Events & Social Media	

8	**Smt. Bandana M Tirkey** **Deputy Director** Room No 4322 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773648 E-mail: bandana.m@gov.in	Official Language Hindi	**Shri Alok Kumar, Deputy Secretary** Room No 4209 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773615 E-mail: aalok.kumar@nic.in
9	**Sh. Manvendra Singh Rathore** **Deputy Director** Room No 4323 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773649 E-mail: manvendra.sr@gov.in	Economic, Statistical and Planning Data Monitoring (Monthly Summary), State Mining Index, Green Mining (Task Force) Jan Vishwas 2.0, DGQI, NSWS, SGoS3, Ease of Doing Business (EoDB), Mineral/Metal wise vision plan, Metal quality Control Orders, Vision Document, Metal Standards, FDI and Investment Promotion Cell, 16th Finance Commission Cell, NITI Ayog related references, PM Sector review, Matter related to Monitoring Group, reforms in States, PMO related matter, PM announcement, Pragati, Budget announcement, FTA related matters, PPPMII orders, Documentation of good work, Skill Plan, any other work assigned by the Competent Authority. Metal IV: S&T Section, including matters related to Circular Economy	**Shri Sukhdeep Singh, Director** Room No 4208 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773613 E-mail: sukhdeep.singh1@gov.in

10	**Sh. Sandeep Kaistha** **Section Officer** Room No 4401 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773647 E-mail : sandeep.kaistha@nic.in	Revision Cell	**Shri Bhawani Shankar Nayak,** **Deputy Secretary** Room No 4213 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773619 E-mail : bs.nayak@nic.in
11	**Sh. Anil Kumar** **Section Officer** Room No 4422 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773633 E-mail : mines5.mom@nic.in	Mines V: Royalty Study Group, DGFT, Illegal Mining, 5G implementation, Minor Mineral Cell including matters related to Granite & marble Development council	**Shri. Johny Tom Varghese,** **Deputy Secretary** Room No 4413 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773618 E-mail: varghese.johnytom@gov.in
		Minor Mineral Cell	**Shri. Ashish Saxena, Director** **Room No 4402** GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773620 E-mail: ashish.saxena89@gov.in
12	**Sh. Binod Chandra Pant** **Section Officer** Room No 4325 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773652 E-mail : binod.pant68@gov.in	National Critical Mineral Mission	**Shri. Anshoo Pandey, Director** Room No 4304 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773611 E-mail: anshoo.pandey@gov.in

13	**Sh. Jayant Gupta** **Assistant Cost Accounts Officer** Room No 325, F-Wing Udyog Bhawan, New Delhi 110011 Tel No.: 23061763 E-mail: nmet-mines@gov.in	NMET Cell	**Smt. Geetika Sharma, Director** Room No 4313 GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi - 110 023 Tel No.: 26773616 E-mail: geetika.sharma@gov.in
14	**Smt Niti Rastogi,** **Assistant Controller of Accounts** Block-A 2nd Floor, Lok Nayak Bhawan, Khan Market New Delhi 110 003 Tel No.: 24615476 E-mail: pao-mines@nic.in	Pay & Accounts Office	**Shri. Arvind Kumar** **Chief Controller of Accounts** Room No. 299C Udyog Bhawan, New Delhi - 110 011 Tel No.: 23063730 E-mail: arvind.kumar69@nic.in
15	**Sh. Dharmendra Kumar** **Senior Accounts Officer** Pay & Accounts Office, (GSI) SR Complex, Bandlaguda (Nagole) Hyderabad 500 068 Tel No.: 29556476 E-mail: paogsihyd-ap@nic.in	Pay & Accounts Office Geological Survey of India (GSI) Hyderabad	
16	**Sh. Satyendra Singh** **Senior Accounts Officer** Pay & Accounts Office, (GSI) NR, Sector-E, Aliganj, Lucknow 226024 Tel No.: 0522-2972445 E-mail: paogsi@nic.in	Pay & Accounts Office Geological Survey of India (GSI), Lucknow	

17	**Sh. Gautam Kumar** **Senior Accounts Officer** Pay & Accounts Office, (GSI) 5& 6 Esplanade East, Kolkata -700069 Tel No.: 033-22621784 E-mail: caomineskol-wb@nic.in	Pay & Accounts Office Geological Survey of India (GSI), Kolkata	**Shri. Arvind Kumar** **Chief Controller of Accounts** Room No. 299C Udyog Bhawan, New Delhi - 110 011 Tel No.: 23063730 E-mail: arvind.kumar69@nic.in
18	**Sh. Gopal Hingankar** **Senior Accounts Officer** Pay & Accounts Office, (GSI) New Complex, Block- C 3rd Floor, Seminary Hills, Nagpur 440006 Tel No.: 0712-2510099 E-mail: saongp.gsi@gov.in	Pay & Accounts Office Geological Survey of India (GSI), Nagpur	
19	**Sh. Gopal Hingankar** **Senior Accounts Officer** Pay & Accounts Office (IBM), Indira Bhawan, 7th floor, B-Block, Civil Lines, Nagpur 440001 Tel No.: 0712-2549146 E-mail: pao.ngp@ibm.gov.in	Pay & Accounts Office Indian Bureau of Mines (BM), Nagpur	
20	**Smt. K Abhilasha** **Senior Accounts Officer** Pay & Accounts Office, (GSI) Vasudha Bhavan, Kumaraswamy Layout, Bangalore, Karnataka 560111 Tel No.: 080-26662581 E-mail: paogsi-ka@nic.in	Pay & Accounts Office Geological Survey of India (GSI), Bangalore	

21	**Smt. Laxmi Kant Meena** **Senior Accounts Officer** Pay & Accounts Office, (GSI) Jaipur, 15-16, Khanij Bhawan Jhalana Doongri, Jaipur-302004 Tel No.: 01412710857 E-mail: paojpr.gsi@gov.in	Pay & Accounts Office Geological Survey of India (GSI), Jaipur	**Shri. Arvind Kumar** **Chief Controller of Accounts** Room No. 299C Udyog Bhawan, New Delhi - 110 011 Tel No.: 23063730 E-mail: arvind.kumar69@nic.in
22	**Sh. Gopal Hingankar** **Senior Accounts Officer** Pay & Accounts Office, (GSI) Lumbatgnen, Rynjah, Shillong- 793006 Tel No.: 0364-2535407 E-mail: paogsi-meg@nic.in	Pay & Accounts Office Geological Survey of India (GSI), Shillong	







सत्यमेव जयते

Government of India
Ministry of Mines
4th Floor, GPOA-3, Netaji Nagar, Bhikaji Cama Place, New Delhi
https://mines.gov.in