



सत्यमेव जयते  
Government of India

## **Activities of the Ministry of Mines during the year 2023**

### **Ministry of Mines**

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

## Activities of the Ministry of Mines during the year 2023

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## **1. MINISTRY OF MINES: AN OVERVIEW**

### **1.1 Vision & Mission - Ministry's Vision and Mission are as below:**

#### **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) The vision is to double the production of important minerals in next 5 years with resultant reduction in import dependency, by allocating and regulating minerals in a transparent and sustainable manner and to promote exploration and mining of deep-seated minerals to meet country's needs and to effectively implement other policy goals stated in the National Mineral Policy, 2019, thereby enabling the country to progress towards attaining self-sufficiency in major mineral production.

(iii) During last nine 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. The 2021 Amendment in the MMDR Act provided that Notified Private Exploration Agencies can undertake prospecting operation without PL. In 2023 a further amendment introduced new Part D in the First Schedule of the Act for 24 critical and strategic minerals and empowered Central Government to exclusively auction mineral concessions for such minerals; besides introduced exploration license for deep-seated and critical minerals 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.

(iv) The Offshore Area Minerals (Development and Regulations) Amendment Act, 2023 introduced transparent and non-discretionary auction process as methodology for grant of production lease and composite license n offshore areas of the country.

#### **Mission**

- i) To develop geo-scientific partnerships with State Governments, Industry and other stakeholders for management of mineral resources both on land and offshore and development of mineral based industries on scientific and sustainable basis.
- ii) To ensure fairness and transparency in allotment of mineral concessions.
- iii) To establish an e-governance mechanism for accountability of mineral resources from mine to end use/export.
- iv) To ensure that the Geological Survey of India (GSI) and Indian Bureau of Mines (IBM) provide high standards of services to stakeholders.

#### **Main Functions**

**1.2** 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 there under 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 there under.

## List of subjects allocated to the Ministry of Mines:

- 1.3 The following subject are allocated to 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 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 therewith or incidental thereto.
  - (c) All other metals and minerals not specifically allotted to any other Ministry/Department, such as aluminium, zinc, copper, gold, diamond, 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.

## Attached Office / Subordinate Office:

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

## Public Sector Undertakings

- 1.5 There are three Public Sector Undertakings under the Ministry of Mines, namely: -
- National Aluminium Company Limited (NALCO), Bhubaneswar
  - Hindustan Copper Limited (HCL), Kolkata
  - Mineral Exploration & Consultancy Limited (MECL), Nagpur

## Autonomous Bodies

- 1.6 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

- 1.7 The organization structure of the Ministry is at **Annexure- 1.1**.

## Contribution to GVA

- 1.8 The Gross Value Added (GVA) accrued from mining and quarrying sector at 2011-12 prices for the second quarter of 2023-24 is estimated at ₹ 71,229 crore. The quarterly estimates of GVA (at current prices) for the second quarter of 2023-24 is estimated at ₹1,31,352 crore. The mining and quarrying sector contribution (at current price) to GVA accounted for about 2.03 % for the second quarter of 2023-24.

## 1.9 Major Highlights / Achievements of Ministry of Mines:

- Hon'ble Minister of State for Railways, Coal & Mines, Shri Raosaheb Patil Danve led an Indian delegation 'Mining Indaba-2023' to Cape Town, South Africa from 06.02.2023 to 09.02.2023. An Indian pavilion was also set up to showcase the strength of Indian Mining and Mineral Sector.
- The Hon'ble Prime Minister and the visiting Australian Prime Minister jointly announced the creation of India-Australia Minerals Scholar Network Focused on Critical Minerals and Green

Steel. This programme is expected to create a pool of experts in the area of critical minerals, processing and technological development across both the nations.

- The Union Minister of Coal and Mines & Parliamentary Affairs and the Australian Minister for Resources announced 5 target projects (2 Lithium and 3 Cobalt) that have been identified for undertaking due diligence and valuation for investment by KABIL, a Government of India entity.
- The Hon'ble Minister of Mines, Shri Pralhad Joshi inaugurated the 1<sup>st</sup> Mining Start-up Summit in IIT, Bombay on 29.05.2023 in Mumbai. The Summit witnessed the participation of over 50 start-ups, 20 plus leading mining companies and more than 100 budding scientists/entrepreneurs.
- A Non-Disclosure Agreement (**NDA**) has been signed between KABIL and a Chilean Government Company, ENAMI, for KABIL's possible participation in Chilean Lithium sector and on 16.05.2023, the Embassy of India at Santiago has furnished a copy of the signed NDA.
- On the initiative of the Hon'ble Prime Minister, India became the newest member of the Minerals Security Partnership (MSP) during his visit to the USA. India and USA pledged to hasten bilateral collaboration to secure resilient critical minerals supply chains.
- Hon'ble Minister of Parliamentary Affairs, Coal and Mines Shri Pralhad Joshi released the first report on Identification of Critical Minerals for India on 28.06.2023 in an official event at New Delhi. For the first time, a comprehensive list of 30 critical minerals for the country has been prepared after detailed assessment and consultations with experts from academia, industry and stakeholders based on several factors.
- The National Training Conclave 2023 was inaugurated by the Hon'ble Prime Minister of India, Shri Narendra Modi, on 11.06.2023, at Convention Centre, ITPO, Pragati Maidan, New Delhi. During the conclave, the Geological Survey of India Training Institute (**GSITI**) has been accorded an accreditation certificate (**NABET**).
- The Hon'ble President of India, conferred the prestigious National Geoscience Awards for the year 2022 on 24.07.2023 at Rashtrapati Bhavan. Ten National Geoscience Awards to 22 Geoscientists under different categories, which includes one National Geoscience Award for Lifetime Achievement, eight National Geoscience Awards under different fields and one National Young Geoscientist Award were conferred.
- During the month of August 2023, two important Acts under the ambit of Ministry of Mines, namely the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957 and the Offshore Areas Mineral (Development & Regulation) (OAMDR) Act, 2002, have been amended by the Parliament and notified.

The key points of MMDR Amendment Act, 2023

- New part D introduced in First Schedule of the Act for 24 critical and strategic minerals.
  - Empowered Central Government to exclusively auction mineral concession for critical and strategic minerals.
  - Introduced exploration license for deep-seated and critical minerals The key point of OAMDR Amendment Act, 2023
  - Introduced transparent and non-discretionary auction process as methodology for grant of production lease and composite license in Offshore areas of the country.
- Ministry of Mines has notified three Quality Control Orders (QCOs) for seven items on 31.08.2023, following the due process of notification of Technical Regulations. These QCOs mark the first technical regulations from Ministry of Mines under the BIS Act
  - Secretary (Mines) led Swachhata Pakhwada culminating into Swachhata Hi Seva (SHS) 2023, with 40 mega events. 1<sup>st</sup> October, 2023 was observed by the Ministry & its Field Organizations by roping in public participation through shramdan. During the fortnight

preceding 1<sup>st</sup> October, 2023, a total of 233 activities were completed with participation from 11191 people leading to 45570 man hours of shramdan.

- The Ministry of Mines along with its Attached / Subordinate offices, CPSEs and autonomous bodies, has successfully concluded the "Special Campaign 3.0," during October, 2023, a drive aimed at enhancing record management, disposal of references received from MP /PMO /IMC references/ State Government references/ Public Grievances and scrap disposal. Maintaining last year's consistency, the Ministry of Mines once again achieved 100% target completion rate. Under Special Campaign 3.0, 382 campaigns have been conducted across various locations throughout the country. Through dedicated efforts, the Ministry of Mines managed to free up an impressive 89482 square feet space, which has been converted into volleyball ground, badminton court etc. for the benefit of the employees. The revenue earned from scrap disposal has been to the tune of Rs. 10.9 crore. Despite being a smaller Ministry, Ministry of Mines was positioned among top 10 Ministries in terms of Revenue earned from scrap disposal by DARPG.
- Shri Raosaheb Patil Danve, Hon'ble Minister of State for Mines, Coal & Railways led an Indian delegation to 'International Mining and Resources Conference (IMARC) - 2023' at Sydney, Australia during 31.10.2023 to 02.11.2023.
- Ministry of Mines actively participated in India Mobile Congress (IMC) (2023) during 27.10.2023 to 29.10.2023 at Pragati Maidan , New Delhi. The Ministry of Mines set up a dedicated 5G stall at IMC 2023, showcasing the innovative 5G use cases aimed at revolutionizing mining operations.
- The Ministry of Mines took part in the Meri Maati Mera Desh campaign of Ministry of Culture and contributed soil from 75 mines in 18 States/ UTs covering 12 minerals to showcase the importance of sustainable mining and mineral development in the nation's economic progress.
- The month of November has been a significant one since Hon'ble Minister for Parliamentary Affairs, Coal and Mines launched the first tranche of e-auction of critical and strategic minerals comprising of twenty blocks The launch was part of the Outreach Programme on "Role of Government & Industry in Driving the Global Action on Critical Minerals" in Bharat Mandapam, New Delhi on 29.11.2023 which was attended by Ambassadors/Mission Heads of G20 countries as well as representatives of B20 and Ministries/Departments of Government of India.
- For the first time Ministry of Mines put up the Mining Pavilion with the theme "Connecting Beyond Mining" in the (42<sup>nd</sup>) Indian International Trade Fair (IITF) 2023 held from 14.11.2023 to 27.11.2023 at Pragati Maidan, New Delhi and was conferred with Silver Award under Most Popular Pavilion category. It was a collaborative effort with the public (all PSUs, Autonomous bodies' attached and subordinate offices of this Ministry) and private sector mining companies to showcase achievements of the Government in the fields to mining and mineral production through policy reforms leading to Ease of Doing Business. The Mining Pavilion attracted about seventy thousand visitors during the fair. More than 2000 students enthusiastically participated in the workshops on recycling of metals which were organized in mining pavilion. They showed keen interest in the significance of mining industry and minerals in our daily lives and also took digital pledge for not using single use plastic. The visitors were sensitized about the work done for ensuring inclusiveness of mining affected people under the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY). Various Self Help Groups from Keonjhar (Odisha), Bhilwara (Rajasthan) and Sonbhadra (Uttar Pradesh) displayed handicrafts and weaves made by them as beneficiaries of PMKKKY. The VR Zone offered an altogether new experience of underground mining and metallurgy for the visitors.
- During the period from July, 2022 to December, 2023, as part of the recruitment drive launched by Gol, wherein all the Ministries/ Departments were mandated to fill all their vacancies at the commencement of said drive total 1129 vacancies were filled. The appointment letters to candidates recruited directly were given to them on the occasion of Rozgar Mela held monthly/ bimonthly basis. During this drive.

- As a major fillip to facilitate the coverage of exploration in the country Shri Pralhad Joshi, Hon'ble Minister of Parliamentary Affairs, Coal and Mines launched the National Geoscience Data Repository (NGDR) Portal on 19.12.2023 in a ceremony in New Delhi in the august presence of Shri Raosaheb Patil Danve, Hon'ble Minister of State for Coal, Mines and Railways. NGDR hosts all baseline and exploration-related geo-scientific data in a single GIS platform.
- In step with the launch of the first tranche of auction for twenty blocks of critical & strategic minerals done last November, we organized the first Roadshow for the potential bidders in New Delhi on 19.12.2023; pre-bid meeting followed on 22.12.2023 and information regarding the timeline of auction has been published on MSTC Portal.
- Since the amendment of MMDR Act, 1957 in 2015, a total of 336 mineral blocks have been auctioned till 31.12.2023 across 11 States. Further, 4 mineral blocks (Gold-02, Iron ore-01 and Iron ore & Gold-01) were successfully auctioned in the month of December, 2023. Government of Uttar Pradesh conducted 3 successful auctions during the month of November, 2023 which were reported in December, 2023. Further, 23 NITs for Manganese, Iron ore, Limestone and Limestone & Marl Block were issued in Andhra Pradesh, Assam and Gujarat in December, 2023.
- Since the introduction of auction regime in 2015, 336 mines have been auctioned in the country. During the Year 2023, 113 mineral blocks have been successfully auctioned till 31.12.2023. Out of these, 50 mineral blocks were auctioned for Mining Lease (ML) and the remaining 63 were auctioned as Composite Licence (CL).

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## 2. MINERALS AND METALS IN THE COUNTRY

### National Mineral Scenario

**2.1** 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, 23 non-metallic, 3 atomic and 55 minor minerals (including building and other materials).

### Mineral Production

**2.2** 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 2022-23 is estimated to be 119.9 as compared to 113.3 of previous year showing a positive growth of 5.83%. 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.

**Figure 2.1**  
**Index of mineral production**  
**(Base 2011-12 = 100)**

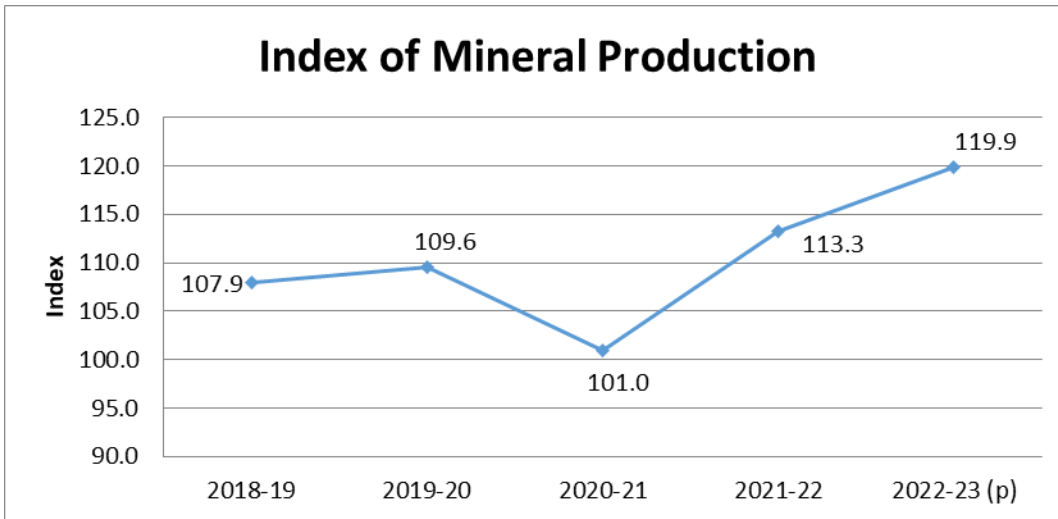


Figure 2.2

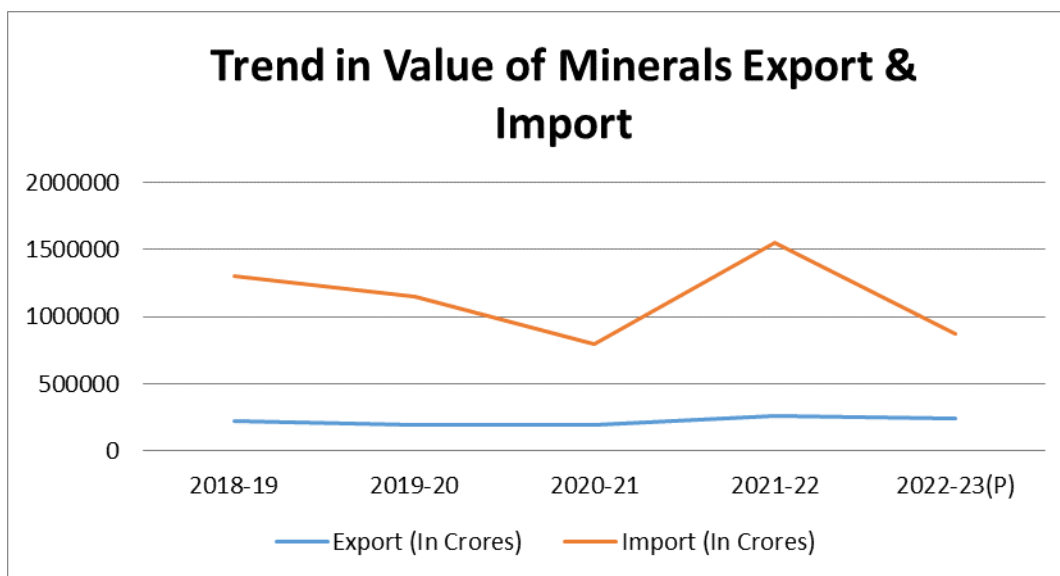
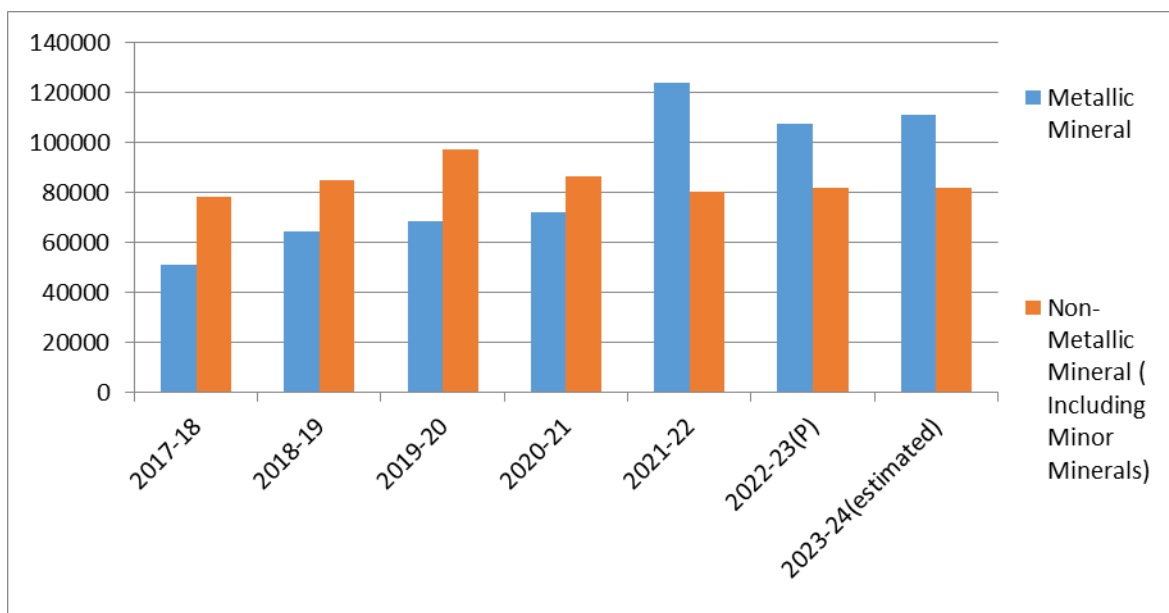


Figure 2.3

### Value of Mineral Production (Excluding Fuel Minerals)



**2.3** The total value of mineral production (excluding atomic and fuel minerals) during 2023-24 has been estimated at ₹1,92,734 crore, which shows an increase of about 2.03% over that of the previous year. During 2023-24, estimated value for metallic minerals is ₹1,10,785 crore or 57.5% of the total value and non-metallic minerals including minor minerals is ₹81,949 crore or 42.5% of the total value.

### Price Trend

**2.4 Presently the base year for Wholesale Price Index covering minerals is 2011-12.** The WPI for minerals (base 2011-12=100) stood at 219.9 in November 2023 and the corresponding index was 198.5 for November 2022.

**2.5** 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 202.7 in November, 2023 as compared to 183.4 in November, 2022 and that of other minerals was 279.8 in November, 2023 as compared to 251.5 in November, 2022.

### Gross Value Added from Mining & Quarrying Sector

**2.6** The Gross Value Added (GVA) accrued from mining and quarrying sector at 2011-12 prices for the second quarter of 2023-24 is estimated at ₹ 71,229 crore, indicated an increase of about 10 % over that in the same period of previous year. Similarly, the quarterly estimates of GVA (at current prices) for the second quarter of 2023-24 is estimated at ₹1,31,352 crore. The mining and quarrying sector contribution (at current price) to GVA accounted for about 2.03 % for the second quarter of 2023-24.

### Mining

**2.7** The number of mines which reported mineral production (excluding Minor Minerals and Fuel Minerals in India) was 2082 in 2023-24 as against 1940 in the previous year. Out of 2082 reporting mines, 404 were located in Madhya Pradesh followed by Gujarat (297), Karnataka (186), Odisha (177), Andhra Pradesh (181), Tamil Nadu (234), Chhattisgarh (140), Rajasthan (120), Maharashtra (105) and Jharkhand (68) etc. The numbers of reporting mines 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**

	2022-23(P)	2023-24(e)
Metallic Mineral	802	838
Non-Metallic Mineral	1138	1244
Total	1940	2082

Data excluding Minor Minerals and Fuel Minerals  
(P): Provisional(e): Estimated Data Source: MCDR Returns

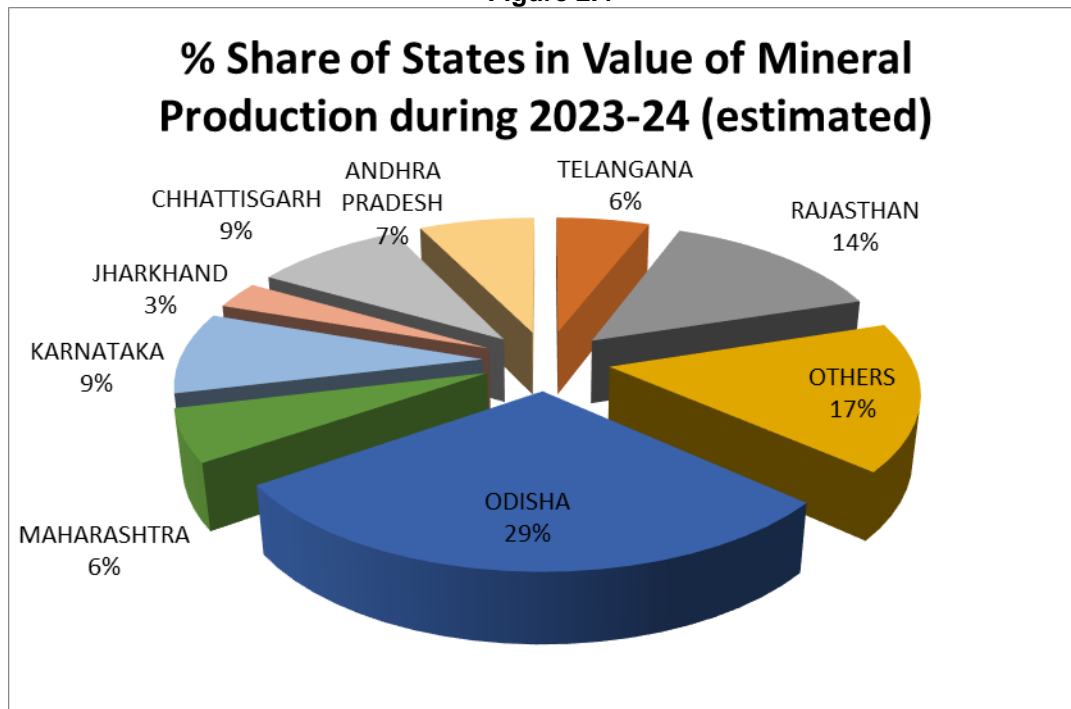
**Table 2.2**  
**Area Wise Status of Lease (Frequency in Hect.)**  
**(Other than Atomic, Hydro Carbons Energy & Minor Minerals)**  
**As on 31/03/2022(P) (All India)**

Frequency (Hect.)	Noof Leases	Leasearea (Hect.)
0to 2	378	488.02
>2 to5	859	3329.00
>5 to10	365	2689.51
>10to20	332	4857.11
>20to50	397	12978.39
>50to100	233	16819.70
> 100to200	180	25805.24
> 200to500	196	64065.23
Above500	155	146976.74
<b>Total</b>	<b>3095</b>	<b>278008.94</b>

**Sources:** Respective State Governments (DGMs/DMGs etc) and list of mines maintained by IBM. Note: Data received from respective Regional offices of IBM have also been taken in account wherever necessary. (P):Provisional

2.8 The contribution of States in the value of mineral production during 2023-24 estimated is given in Fig. 2.4

Figure 2.4



### 3. LEGISLATIVE FRAMEWORK, MINERAL POLICY AND IMPLEMENTATION

#### 3.1 The Mines and Minerals (Development and Regulation) (MMDR) (Amendment) Act, 2015

Policy Initiatives: Amendment to Act and Rules

##### (1) Amendment to Acts:-

**MMDR Act:-** The Mines and Minerals (Development and Regulation) Act, 1957 has been amended through Mines and Minerals (Development and Regulation) Amendment Act, 2023. The Amendment Act inter -alia, provides the following: - Omission of 6 minerals from the list of 12 atomic minerals specified in Part-B of the First Schedule of the Act, namely, Lithium bearing minerals, Titanium bearing minerals and ores, Beryl and other beryllium bearing minerals, Niobium and Tantalum bearing minerals and Zirconium-bearing minerals. Empowering Central Government to exclusively auction mineral concessions for certain critical minerals. Revenue from these auctions will accrue to concerned State Government. Introducing exploration licence for deep-seated and critical minerals.

In exercise of the powers conferred by Sub-Section (3) of Section 9 of the Mines and Minerals (Development and Regulation) Act, 1957, the Second Schedule of the MMDR Act, 1957 has been amended vide G.S.R. 736 (E) dated 12.10.2023 for specifying rate of royalty in respect of Lithium, Niobium and Rare Earth Elements (REEs).

**OAMDR Act:-**The Offshore Areas Mineral (Development & Regulation) Act, 2002 has been amended through OAMDR Amendment Act, 2023 w.e.f. 17.08.2023 . The Amendment Act inter -alia, provides the following: -

- Two types of operating rights to be granted under the Act to private sector only through auction by competitive bidding, viz. production lease and composite licence.
- Composite licence will be introduced the Act, which is a two stage operating right granted for the purpose of undertaking exploration followed by production operation.
- Operating rights to be granted to PSUs in the mineral bearing areas reserved by the Central Government.
- Provision has been made for grant of operating rights only to PSUs in case of atomic minerals.
- Provision for renewal of production leases has been removed and its period is fixed as 50 years on lines similar to the MMDR Act.
- Provision has been made for setting up of a non-lapsable Offshore Areas Mineral Trust which will maintain a fund under the Public Account of India.
- To promote ease of doing business, a provision has been made for easy transfer of composite licence or production lease.

##### (2) Amendment to Rules:-

(1) The Mineral (Auction) Rules, 2015 has been amended through the Mineral (Auction) Amendment Rules, 2023 notified on 01.09.2023 for enabling auction of critical mineral blocks by the Central Government.

(2) The Mineral (Auction) Rules, 2015 has been amended through the Mineral (Auction) Amendment Rules, 2023 to empowers the Central Government to conduct auction for grant of

mining lease or composite licence in respect of minerals specified in Part D of the First Schedule to the Act vide G.S.R No. 648(E) dated 01.09.2023.

(3) Minerals (Other than Atomic and Hydro Carbons Energy Mineral) Concession Rules, 2016 has been amended through the Minerals (Other than Atomic and Hydro Carbons Energy Mineral) Concession (Amendment) Rules, 2023 for specifying methodology for calculation of Average Sale Price (ASP)/ Value of Estimated Resources (VER) for Rare Earth Elements (REEs) and Lithium vide G.S.R. 737 (E) dated 12.10.2023.

(4) The Atomic Minerals Concession Rules, 2016 has been amended through the Atomic Minerals Concession (Amendment) Rules, 2023 to decriminalize 27 rules as a part of reduction of compliance burden vide G.S.R No. 682 (E) dated 22.09.2023.

#### Other Reforms

- Ministry of Mines vide Order dated 01.06.2023 issued directions under section 20A of the Mines and Minerals (Development & Regulation) Act 1957 to all State Governments, to dispose the minerals (except the minerals prescribed under Part A and Part B of the First Schedule of the Act) obtained in any public work, such as road, canals, pond digging or any other government infrastructure development projects carried out by any Government Agency authorized to do so by the Central or State Government.
- Ministry of Mines vide order dated 21.04.2023 issued directions under Section 20A of the Mines and Minerals (Development and Regulation) Act, 1957 to all State Governments/Union Territories to initiate the process for auction of lapsed mining leases granted under erstwhile Rule 58 of the Mineral Concession Rules, 1960 (MCR, 1960).
- Based on the recommendations of the Committee constituted to examine the issue of misclassification of different grades of iron ore and other minerals, Ministry of Mines, vide letter dated 03.10.2023, issued guidelines to minerals rich State Governments for prevention of misclassification of different grades of iron ore and other minerals.
- Sixteen (16) accredited private exploration agencies were notified by this Ministry under the second proviso to sub-section (1) of section 4 of the MMDR Act, 1957 for the purpose of carrying prospecting operation without a prospecting licence.
- In exercise of the powers conferred by sub-section (1) of Section 8 of the Offshore Areas Mineral (Development and Regulation) Act, 2002, an area to the extent of 10277.10 hectares in the Arabian Sea off the coast of Daman has been reserved vide Notification No. S.O.5411 (E) dated 21.12.2023 for the purposes of the Central Government for grant of composite licence by the administering authority to the Jawaharlal Nehru Port Authority under sub-section(3) of section 8 of the said act for exploration and production of sand for reclamation for the proposed development of greenfield port at Vadhavan in the District Palghar, Maharashtra.

### 3.2 Mining Surveillance System (MSS)

Mining Surveillance System (MSS) has been developed by Ministry of Mines through IBM in collaboration with Ministry of Electronics and Information Technology (MeitY) and Bhaskaracharya Institute for Space Applications and Geo-informatics (BISAG) Gandhinagar under “Digital India’ programme. MSS aims at developing a system for detection of incidence of illegal mining by use of space technology and surveillance of area up to 500m outside the lease boundary to check incidences of illegal mining.

Summary of Phase wise triggers generated is given below:

Phase	Triggers Generated	Triggers Verified	Unauthorized Mining confirmed
Phase-I (Major) (2016-17)	296	286	47
Phase-II (Major) (2018-19)	52	45	5
Phase-II (Minor) (2018-19)	130	106	11

Phase-III (Major) (2021-22)	177	81	12
Phase-IV(Major) (2022-23)	138	40	07

**MSS is a venture of IBM & Ministry of Mines, in its proactive role to curb illegal mining and efficient use of natural resources by plugging the leakages**

### 3.3 Mineral Auctions

Since the introduction of auction regime in 2015, 336 mines have been auctioned in the country. During the Year 2023, 113 mineral blocks have been successfully auctioned till 31.12.2023. Out of these, 50 mineral blocks were auctioned for Mining Lease (**ML**) and the remaining 63 were auctioned as Composite Licence (**CL**). Out of the 336 blocks auctioned since 2015, 59 are operational and 43 are in production. During the year 2023, Madhya Pradesh and Rajasthan have successfully auctioned the maximum number of blocks, i.e. 36 and 17 blocks respectively. In the year 2022 a total number of 28 Iron Ore Mineral were auctioned which was the highest mineral auctioned in the year 2022, similarly this year also a highest number of 32 Iron Ore mineral were auctioned followed by 27 Nos of Limestone Mineral.

### New National Mineral Policy (NMP) 2019

**3.4** As per direction from the Supreme Court vide its judgment dated 02.08.2017 in W.P. (Civil) No. 114/2014 entitled Common Cause v/s UOI, the Government has approved and published the National Mineral Policy 2019 with an aim 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.

NMP 2019 Introduces the concept of Inter-Generational Equity, proposes to grant status of industry to mining activity to boost financing of mining for private sector, proposes to make efforts to harmonize taxes, levies & royalty with world benchmarks, focus on make in India initiative and Gender sensitivity in terms of the vision, provides for Transfer of mining leases and creation of dedicated mineral corridors. NMP 2019 also provides for further transparency, better regulation and enforcement, balanced social and economic growth (inclusive growth) as well as sustainable mining practices, along with the concept of inter-generational equity and boost private sector mining areas.

The Government published National Non-Ferrous Metal Scrap Recycling Framework, 2020.

### 3.5 District Mineral Foundation / PMKKKY

Section 9B of MMDR Act empowers State Governments to establish District Mineral Foundation (DMF) to work for welfare and benefit of persons, and areas affected by mining related operations and make rules for composition and functions of the DMFs in the State.

Under Section 20A of the MMDR Act, Union Government circulated Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) guidelines on 16.09.2015 with directions to State Governments to incorporate the same into the DMF rules framed by them. The DMF is funded by statutory contributions from holders of mining lease. Funds under DMF are accrued at the concerned districts and are utilised by the DMF as per the guidelines for implementation of projects under PMKKKY. Accordingly, DMF has been constituted in 644 districts in 23 States.

Till October 2023, a total of Rs.84884.12 Cr. has been collected under DMF out of which Rs.79426.00 Cr have been allocated for various projects under PMKKKY and Rs.46770.96 Cr has been utilized. Total 315225 projects have been sanctioned under the scheme and a total 169576 projects have been completed so far.

### Sustainable Development Framework (SDF)

**3.6** Sustainable Development Framework (SDF) for mining sector was rolled out at Sukinda Chromite Mine of TISCO in Odisha and Donimalai Iron Ore Mine of M/s NMDC at Bangalore in 2016. For effective implementation of SDF, IBM had launched system of star rating of Mines, the first one of its kind in the world, to initiate a self-driven mechanism of compliance of all statutory

provisions and incorporating best practices leading to eco-friendly mining, thus adding another step towards its various “good governance” initiatives.

IBM organized pan-Indian sensitization workshops for implementation of Star Rating System. Templates for star rating of mines under SDF were notified on 23.05.2016.

Based on evaluation of the performance of lease operators on the various parameters encompassed by the Principals of the Sustainable Development Framework (SDF) approved by Ministry of Mines, validation of self-assessed templates was carried out by IBM and accordingly rating was given as 0 to 5. The year wise 5 Star Rated mines are given below:-

<b>Assessment year</b>	<b>No. of Mines with 5 Star Rating</b>	<b>Felicitation of 5 Star rated Mines at NCMM</b>
2014-15	10	Mining Conclave held at Raipur on 4-5 July, 2016.
2015-16	32	Mining Conclave held at New Delhi on 15 <sup>th</sup> February, 2017.
2016-17	57	Mining Conclave held at New Delhi on 20 <sup>th</sup> March, 2018.
2017-18	57	Mining Conclave held at New Delhi on 11 November, 2021.
2018-19	52	
2019-20	40	
2020-21	40	Mining Conclave held at New Delhi on 12 <sup>th</sup> July, 2022.
2021-22	76	Felicitated at the hands of Hon’ble Union Minister of Parliamentary Affairs, Coal & Mines, Shri Pralhad Joshi, during the 75 <sup>th</sup> Foundation Day ceremony of IBM on 1.3.2023.

#### 4. REVENUE FROM MINERAL RESOURCES

Royalty accrual for minerals (other than coal, lignite & sand for stowing, atomic and minor mineral) by the various State Governments for the year 2020-21 to 2022-23(P) are given at **Table 4.1**.

**Table 4.1**  
**State wise Royalty Accrual of Minerals (Other than Coal, Lignite, Sand for Stowing, Atomic and Minor Minerals) from 2020-21 to 2022-23(P)**

*(Unit: Lakhs Rupees)*

State	2020-21	2021-22	2022-23 (P)
Andhra Pradesh	34016.499	41246.73	43143.96
Assam	1180.58	1476.45	1393.25
Bihar	1079.85	710.39	NA
Chhattisgarh	232022.26	883872.12	NA
Goa	7344.22	9755.24	95.5
Gujarat	24646.037	25165.114	NA
Haryana	NA	NA	NA
Himachal Pradesh	NA	NA	NA
Jammu & Kashmir	NA	NA	NA
Jharkhand	108284.79	279140.34	NA
Karnataka	197466	409280	337486
Kerala	818.104	1060.736	NA
Madhya Pradesh	48175	58112	56393
Maharashtra	16583.50	30453.66	55869.10
Meghalaya	10032.442	12433.485	NA
Odisha	703461	1795922	1082312
Rajasthan	288627.78	367596.65	392193.55
Tamil Nadu	18008.243	17936.39	NA
Telangana	19595.89	22674.06	21076.92
Uttar Pradesh	3804.1	2452.322	NA
Uttarakhand	10.61212	41.15	NA

Source: State Government/DGM offices

P: Provisional;  
Government)

NA: Not Available (Data not received from concerned State

## **5. INTERNATIONAL COOPERATION:**

### **5.1. Joint Working Group (JWG) Meetings:**

- i. The 3<sup>rd</sup> Joint Working Group (JWG) Meeting between India and Peru under the Memorandum of Understanding (MoU) in the field of Geology and Mineral Resources was held on 15th March 2023 through virtual mode.
- ii. 4<sup>th</sup> Meeting of the Joint Working Group (JWG) of India and Mozambique under the Memorandum of Understanding (MoU) for cooperation in the field of Mineral Resources was held on 06th June, 2023 in Ministry of Mines, New Delhi.
- iii. The 2<sup>nd</sup> Joint Working Group meeting between India and Bolivia under the Memorandum of Understanding for cooperation in the field of Geology and Mineral Resources was held on 9<sup>th</sup> June, 2023 through VC.

### **5.2. Bilateral/ Multilateral Meetings with Foreign Countries:**

- i. Honorable Minister for Parliamentary Affairs, Coal and Mines, Shri Pralhad Joshi had bilateral talks with Hon'ble Minister for Resources and Northern Australia Madeleine King on 10.03.2023 to strengthen the critical mineral supply chain.
- ii. A Bilateral meeting between Shri Vivek Bhardwaj, Secretary (Mines) with delegation of Mongolia led by H.E. Ganbold Dambajav, Ambassador of Mongolia in India was held on 09.05.2023 in Ministry of Mines, Shastri Bhawan on draft MoU on cooperation in the fields of Geology and Mineral Resources between India and Mongolia.
- iii. A Bilateral meeting between Shri Vivek Bhardwaj, Secretary (Mines) with delegation of United Kingdom led by Ms. Christina Scott, Acting High Commissioner of United Kingdom was held on 21.06.2023 in Ministry of Mines, Shastri Bhawan to strengthen co-operation between both our countries in the areas of Critical Minerals exploration, extraction, supply chain resilience and circularity.
- iv. A Bilateral meeting between Shri Vivek Bhardwaj, Secretary (Mines) with Mr. Barry O'Farrell AO, High Commissioner of Australia was held on 23.06.2023 in Ministry of Mines, Shastri Bhawan to discuss critical and strategic mineral asset acquisition in Australia.
- v. A Bilateral meeting between Dr. Veena Kumari Dermal, Joint Secretary (Mines) with the delegation of the European Union held on 31.07.2023 in Ministry of Mines, Shastri Bhawan to discuss the proposal of India joining Critical Raw Material Club to be established by the EU.
- vi. A bilateral meeting between Shri Vivek Bhardwaj, the then Secretary (Mines) and Chilean delegation led by Mr. Sebastian Gomez, Commerce Secretary, Chile held on 08.08.2023 to discuss issues of mutual interest, such as opportunities open up in mining and lithium cooperation between Chile and India.
- vii. A Bilateral VC meeting under the Chairmanship of Dr. Veena Kumari Dermal, Joint Secretary, Ministry of Mines with Ambassador of Chile to discuss ways to explore future collaboration, held on 05.09.2023 in Ministry of Mines, Shastri Bhawan.
- viii. A Bilateral meeting between Shri V.L. Kantha Rao, Secretary (Mines) with German delegation led by State Secretary, Federal Ministry for Economic Cooperation and Development (BMZ), Mr Jochen Flasbarth was held on 30.10.2023 in Ministry of Mines, Shastri Bhawan. Discussion was held on converting the abandoned mines into heritage sites to showcase the role such mines played in the economic development of the country.
- ix. A Bilateral meeting between Dr. Veena Kumari Dermal, Joint Secretary, Ministry of Mines with Delegation of the European Union to India led by Mrs. Renita Bhaskar, Minister Counsellor held on 02.11.2023 at Ministry of Mines, Shastri Bhawan regarding proposal on establishing a Critical Raw Materials (CRMs) Club.
- x. A Bilateral meeting between Dr. Veena Kumari Dermal, Joint Secretary, Ministry of Mines with delegation of Australian High Commission led by Mr. Sanjiva de Silva, Counsellor held on 03.11.2023 at Ministry of Mines, Shastri Bhawan regarding discussion on Australia India Critical Minerals Investment Partnership.
- xi. A Critical Raw Materials Club bilateral meeting with delegation of European Union under the chairmanship of Sh. V. L. Kantha Rao, Secretary, Ministry of Mines was held on

- 23.11.2023 through Hybrid Mode at Ministry of Mines, Shastri Bhawan. Representatives from NSCS, Doc and MEA participated in the meeting.
- xii. A Bilateral meeting between Sh. V.L. Kantha Rao, Secretary (Mines) with Australian High Commissioner, H.E. Philip Green held on 12.12.2023 in Ministry of Mines, New Delhi to discuss the bilateral relationship between India and Australia in the areas of Mining, Resources and Critical Minerals, and the broader priorities of both the Governments.

### **5.3. Participation in the International Mining events to showcase India's capabilities, interest and opportunities in mining sector:**

- i. An Indian delegation led by Hon'ble Minister of States for Railway, Coal & Mines, Sh. Raosaheb Patil Danve participated in 'Mining Indaba- 2023' Cape Town, South Africa during February, 2023. An Indian pavilion was also setup at Mining Indaba- 2023 to showcase strength of Indian Mining and Mineral sector.
- ii. Dr. Veena Kumari Dermal, Joint Secretary, Ministry of Mines, participated in I2U2 Business Forum, Abu Dhabi, UAE on 22.02.2023. The I2U2 emerged as a key platform for private and public sector stakeholders from India, Israel, the United States, and the United Arab Emirates to explore potential synergies and to deepen constructive partnerships.
- iii. An Indian delegation led by Shri Vivek Bhardwaj, Secretary, Ministry of Mines participated in 'PDAC- 2023' Toronto, Canada during 5th to 8th March 2023. An Indian pavilion was also setup at 'PDAC- 2023'.
- iv. An Indian delegation led by Shri Shakil Alam, Economic Adviser, Ministry of Mines participated in the CRU's World Copper Conference- 2023 at Santiago, Chile from 17<sup>th</sup> to 19<sup>th</sup> April 2023.
- v. Dr. Veena Kumari Dermal, Joint Secretary, Ministry of Mines participated in the International Lead and Zinc Study Group (ILZSG) and the International Copper Study Group (ICSG) meetings held in Lisbon, Portugal during 26<sup>th</sup> to 28<sup>th</sup> April, 2023.
- vi. An Indian delegation led by Dr. Veena Kumari Dermal, Joint Secretary (Mines) attended the 'DRC Mining Week Expo & Conference' held at Lubumbashi, Congo during 14<sup>th</sup> to 16<sup>th</sup> June, 2023.
- vii. An Indian delegation led by Shri V.L. Kantha Rao, Secretary (Mines) participated in High Level Meeting of International Energy Agency (IEA) on Securing Critical Minerals for a Clean Energy Future held in Paris, France on 28.09.2023.
- viii. An Indian delegation led by Shri Shakil Alam participated in the International Oil and Mining Expo 2023 held at Ulaanbaatar, Mongolia from 3.10.2023 to 5.10.2023. An Indian Pavilion was also set up during the exhibition.
- ix. An Indian delegation led by Shri V.L. Kantha Rao, Secretary (Mines) participated in "London Metal Week" Annual gathering and the session on 'responsible investment into critical mineral sector in London, UK from 9.10.2023 to 10.10.2023. During the event the Indian delegation also participated in Fourth Minerals Security Partnership Principals' Meeting on 10.10.2023.
- x. An Indian delegation led by Shri Raosaheb Patil Danve, Hon'ble Minister of State for Mines, Coal & Railways participated in 'International Mining and Resources Conference (IMARC)- 2023' at Sydney, Australia during 31.10.2023 to 02.11.2023.
- xi. An Indian delegation led by Ms. Nirupama Kotru, Joint Secretary & Financial Advisor, Ministry of Mines has participated in 'Mining Show-2023' held in Dubai, UAE from 21.11.2023 to 22.11.2023.

### **5.4. Interactive consultation held with other Ministries/ Govt. organizations and industries:**

- i. The First meeting of "Inter-Ministerial Group 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 25.09.2023 in Khanij Kaksh, Shastri Bhawan under the chairmanship of Shri V.L Kantha Rao, Secretary, Ministry of Mines.
- ii. An interactive consultation was held on 26.09.2023 at Khanij Kakhsh, Shastri Bhawan under the chairmanship of Secretary (Mines) with the Industry representatives to discuss various issues related to Critical Mineral under the consideration of Govt. of India- (a) Mineral Security Partnership (MSP) projects (b) Critical Mineral Chapter under India-

- Australia CECA negotiation (c) Energy and Raw Materials (ERM) chapter under India-EU negotiations (d) Critical Raw Material Club (CRM) proposed by EU.
- iii. An interactive consultation session with Industry stakeholders was held on 18.10.2023 in Khanij Kaksh, Ministry of Mines under the chairmanship of Shri V. L. Kantha Rao, Secretary(Mines) for seeking insights and feedback on cooperation in mining sector with Zambia, Bolivia, and Saudi Arabia.

#### **5.5. G20 India's G20 presidency was held from December 1st, 2022 to November 30th, 2023.**

- i. Within the G20, the Energy Transition Working Group (ETWG) was constituted to share and collaborate in accelerating clean, sustainable, affordable and inclusive energy transitions. Total four meetings of Energy Transitions Working Group were held under India's G20 Presidency starting from 5th February, 2023 to 21st July, 2023 in Bengaluru, Gandhinagar, Mumbai and Goa.
- ii. Ministry of Mines in coordination with Council on Energy, Environment and Water (CEEW) organized virtual session on "Decoding G20 consensus on critical minerals for energy transition on 31st October, 2023.
- iii. New Delhi leaders declaration of G20 has acknowledged the role of critical minerals in energy Transition and is included in the declaration. Further the New Delhi Leaders Declaration also take note of the High Level Voluntary Principles for collaboration on Critical Mineral for Energy Transition proposed by Government of India.
- iv. Ministry of Mines organized an Outreach Programme on Role of Government and Industry in Driving the Global Action on Critical Minerals and Launch of the First Tranche of Auction of Critical Mineral Blocks on 29th November, 2023 involving Ambassadors/Mission Heads of various countries as well as representatives of businesses in India and other stakeholders.

#### **5.6. Bilateral/ Multilateral partnerships:**

**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 (14<sup>th</sup> 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 19 MSP projects has been shared for consultation and India's participation in MSP projects. India has shown its interest in three MSP projects.

**India- Australia Comprehensive Economic Cooperation Agreement (CECA):** The Comprehensive Economic Cooperation Agreement (CECA) between Australia and India was signed on 2nd April 2022 and came into force from December 2022. The agreement offers an opportunity for the two Parties to enhance cooperation and collaboration in the area of exploration, mining, extraction and processing technologies of critical minerals. Total Five rounds of India – Australia CECA Negotiations have been held on the " Critical Mineral track".

**5.7. Khanij Bidesh India Limited (KABIL):** Khanij Bidesh India Limited (KABIL), the JV Company set up by Ministry of Mines, Govt. of India in August, 2019, with equity participation of NALCO, HCL and MECL is currently focusing on saucing of Lithium and Cobalt for the domestic market and engaging with few companies / projects in Australia, Argentina and Chile.

- i. Under the MOU signed between KABIL and Critical Mineral Office (CMO), Department of Industry, Science and Resources (DISR), Govt. of Australia, in March, 2022, for carrying out joint due diligence and further joint investment in Lithium and Cobalt mineral assets of Australia.
- ii. The due diligence activity for selection of suitable project for Investment was started by appointing a consultant, PwC Australia in January 2023.
- iii. Shortlisting of 5 projects (2-Lithium projects and 3-Cobalt projects) has been completed in March 2023 and detail due diligence of these projects has been started subsequently. Both the sides are actively pursuing for expediting the due diligence process through regular engagement at various level.
- iv. In Argentina with reference to the MoU signed with CAMYEN, a state-owned enterprises of Catamarca province, Argentina on December 2020 to establish institutional co-

- operation for joint development of lithium mining projects, KABIL decided for exploration and development of 5 Lithium blocks of CAMYEN in Catamarca Province, Argentina, in February 2023, by signing an exploration and Development Agreement with CAMYEN.
- v. KABIL Board approved “Draft Exploration and Development Agreement” with CAMYEN and Proposal for opening of Branch Office in Catamarca in June 2023. Ministry of Mines has given necessary approval to KABIL for entering in to the Agreement.
  - vi. Non-Disclosure Agreement (NDA) has been signed with ENAMI, a State-owned mining company of Chile in May, 2023 to evaluate possible business opportunities concerning the exploration, extraction, processing, and commercialization of lithium.

## 6. ATTACHED/ SUBORDINATE OFFICES

### Geological Survey of India (GSI)

**6.1:** Founded in 1851, the Geological Survey of India (GSI) started its voyage to search for and assess coal and mineral resources of the country with regional level exploration. In later years, GSI diversified into various geoscientific activities, and have made contributions in geosciences and resultantly, in the economic growth of India. It is an Attached Office under the Ministry.

The key functions of GSI are creation and updation of national geoscientific information and assessment of mineral resources. GSI takes up ground, air-borne and marine surveys, mineral exploration, multi-disciplinary geoscientific, geo-technical, geo-environmental and natural hazard studies, glaciology, seismotectonic, and fundamental research.

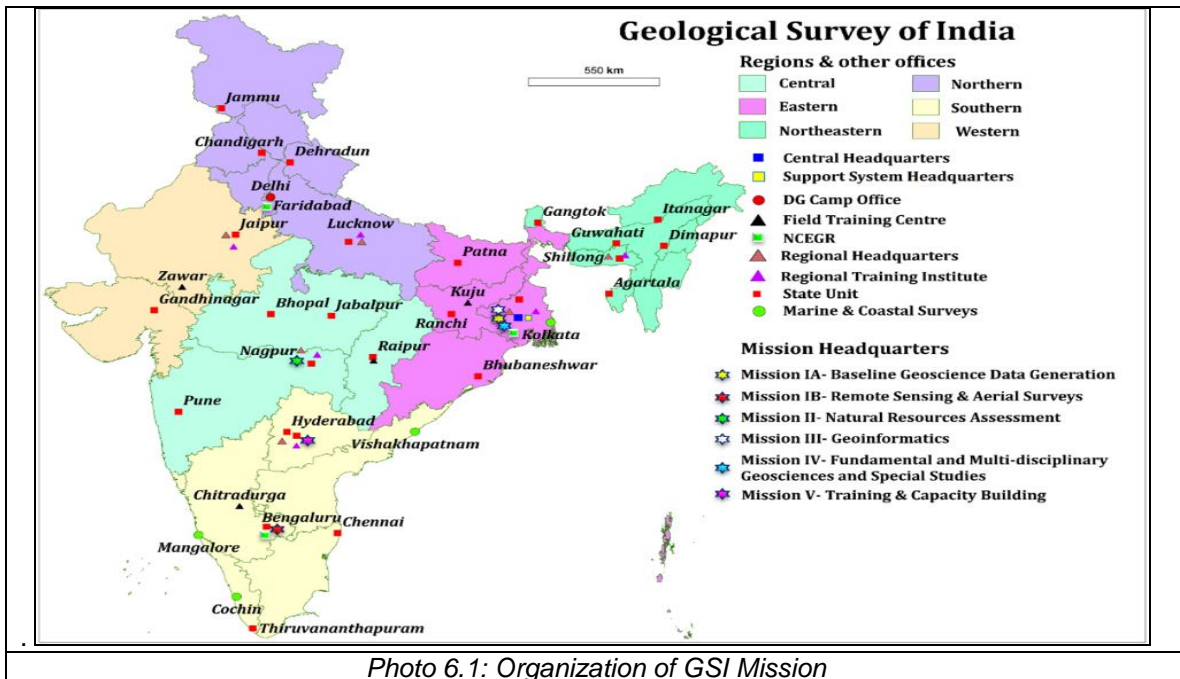


Photo 6.1: Organization of GSI Mission

### 6.2 Organisational Structure

GSI formerly a subordinate office of the Ministry of Mines till 17<sup>th</sup> June 2009, thereafter, considering its exclusive dedication towards scientific nature of work, it was declared an attached office to the Ministry of Mines. Accordingly, the organizational structure of GSI has been re-oriented into Mission – Region Hybrid Matrix.

As per the recommendations of the High Powered Committee (HPC) set up by the Ministry of Mines, the activities of GSI are being executed through its geoscientific activities under five Missions since FS 2009-10. To ensure smooth planning, implementation and evaluation of programmes, there are three Support Systems to provide the requisite support to the Missions and cross-cutting co-ordination.

Under “Mission-Region” structure, Director General (DG) is the operational head of GSI and has the overall responsibility of planning and execution of geoscientific activities. The DG, GSI is supported by 5 Mission Heads, 3 Support System Heads and 6 Regional Heads headed by Additional Director General (HAG Level) officers. The Regional Heads are supported by the Deputy Director General heading the State Unit offices located in all States/UTs of the country.

The Missions are responsible for planning activities, defining targets to the Regions and State units, coordinating, resource augmentation, performance monitoring and finalizing scientific and technical reports. The support systems are responsible for internal management, execution of activities, reporting and analysis.

The policy functions of the earlier specialized wings are merged into the Missions and the execution part into the Regions. This facilitates smooth functioning through better streamlining and coordination of decision making at all levels. Regions are functionally semi-autonomous once

their programme for the year is cleared in the Central Geological Programming Board (CGPB) and the funds provided. Thus, more and more administrative and financial powers are delegated to the Missions and Regions and financial and administrative support at Regional level are being strengthened for the purpose.

To ensure smooth planning, implementation and evaluation of programmes, the DG, GSI is supported at the Central Headquarters (CHQ) by HAG/ SAG level officers, Policy Support System (PSS), Administrative Support System (Ad.SS), Scientific & Technical Support System (STSS), Finance, Personnel, Mission Heads of I, II, III, IV & V (**Fig.6.2**).

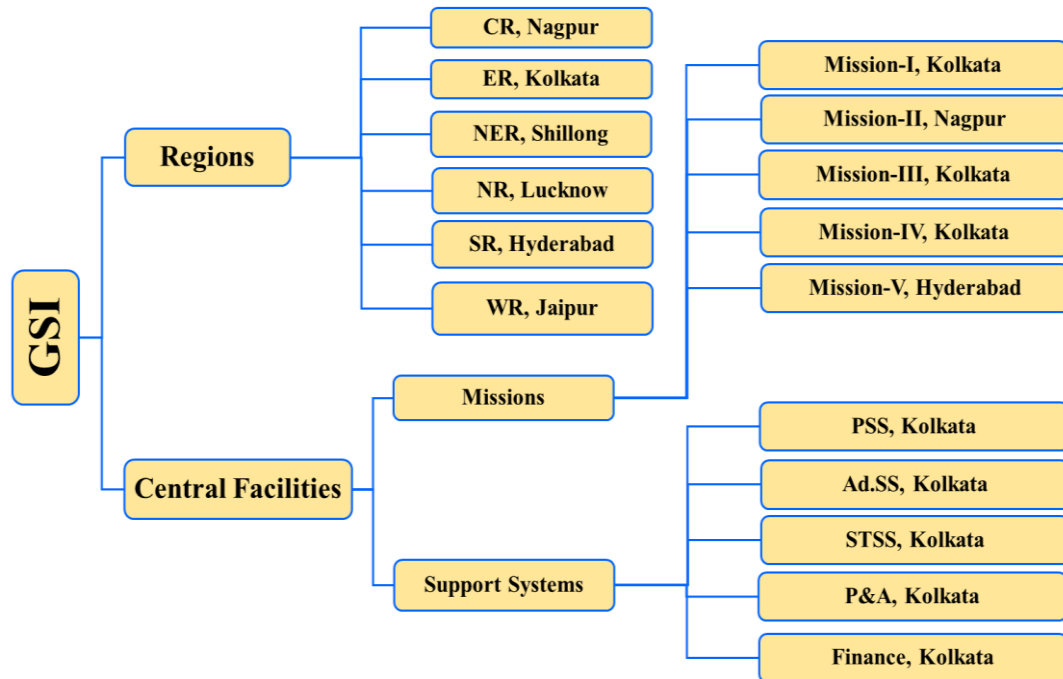


Fig.6.2. GSI's Mission –Region-Support Systems

### 6.3 Performance of GSI during 2023-24

The summarized performance of GSI in terms of physical target vis-à-vis achievement in last five years (since 2018-19 to 2022-23) and current year Annual Programme 2023-24 (upto November, 2023) is given at **Annexure 6.1**.

### 6.4 Geological Survey of India (GSI) major achievement during the year

- GSI has completed 8306 sq. km Specialized Thematic Mapping (on 1:25,000 scale) out of 23000 sq. km target during Annual Programme 2023-24 till the end of November 2023.
- GSI has completed 59343 sq. km National Geochemical Mapping (on 1:50,000 scale) out of 120,000 sq. km target during Annual Programme 2023-24 till the end of November 2023.
- GSI has completed 33942 sq. km National Geophysical Mapping (on 1:50,000 scale) out of 1,00,000 sq. km target during Annual Programme 2023-24 till the end of November 2023.
- GSI has completed 6702 sq. km Large Scale Mapping (on 1:10,000/12,500 scale) out of 16,000 sq. km target during Annual Programme 2023-24 till the end of November 2023.
- National Aero-Geophysical Mapping Programme (NAGMP), a flagship program of GSI to acquire uniform aero-geophysical data over the pre-identified Obvious Geological Potential area. During, Annual Programme of GSI 2023-24 till the end of November, 2023, around 55890 sq.km has been covered through NAGMP for identifying potential areas for further exploration.

- GSI has taken up about 358 mineral exploration projects during 2023-24.
- To give impetus on exploration for strategic, critical and fertilizer minerals, GSI taken 127 projects on critical and strategic minerals like REE, Li, Mo, potash, tungsten, graphite etc. during FS 2023-24.
- In the calendar year 2023, GSI has reported augmentation of natural mineral resources to National Mineral Inventory (NMI of Indian Bureau of Mines) for commodities such as copper ore (26 MT), iron ore (363 MT), REE ore (23 MT), niobium ore (51 MT), potash ore (47 MT), limestone (1465 MT), molybdenum ore (1.7 MT), manganese ore (2 MT) etc.
- In February 2023, a total of three [03] G2 stage investigation reports [01 report of Zinc and 02 reports of copper] were handed over by GSI to the State Governments for auction. A total of twelve [12] G3 stage investigation reports [03 reports each of Potash and Vanadium; 01 report each of Bauxite, Copper, Limestone, Lithium, Manganese and Molybdenum] were handed over to the respective State Governments, in the month of February 2023. Simultaneously, GSI also handed over a total of thirty-five [35] G4 stage Geological Reports/Geological Memorandums to the different State Governments for auction as Composite Licence. The G4 stage Geological Reports/Geological Memorandums pertains to Bauxite [04 nos.], Base metal [06 nos.], Gold [05 nos.], Graphite [03 nos.], Iron Ore [04 nos.], Manganese [03 nos.], Limestone [04 nos.], and one each of Lithium, Manganese, Ni-PGE-Au, Phosphorite, Tin and Tungsten. In the month of November 2023, GSI handed over 11 reports of critical minerals to Ministry of Mines for 1<sup>st</sup> tranche of auction of critical mineral blocks by the Central Government of India. The 11 reports comprised of four [04] G2 stage, three [03] G3 Stage and four [04] G4 stage reports on critical minerals.
- GSI has implemented Online Core Business Integrated System (OCBIS) portal to fulfil the responsibility to disseminate multi-thematic geoscientific information freely for the use of all concerned stakeholders through “Bhukosh”, the flagship Geospatial portal of GSI, following extant policies and guidelines. This data can be utilised by anyone for mineral prognostication as well as to generate new knowledge through research. During 2023 (January to November, 2022), 33962 external users downloaded the geospatial data and 833 external users downloaded the geophysical datasets and 51043 login hit made by external users in “Bhukosh” geospatial portal of GSI.
- GSI web Portal went Live from Cloud Infrastructure, a major milestone in the digital transformation journey of GSI. Shri Janardan Prasad, Director General inaugurated the Cloud Portal from CHQ, Kolkata.
- During Annual Programme 2023-24, under Mission-III (Geoinformatics), GSI has taken up the projects on Map, Data Integration, Publication, Data repository and management, IT infrastructure, etc.). The major activity under Mission-III includes i) Creation of National Geoscience Data Repository (NGDR) in GSI, ii) Synthesis and collation of All India National Geochemical Map data (NGCM) and National Geophysical Map data (NGPM) on 1:50K scale for uploading in BhuKosh GeoPortal of OCBIS, iii) Updation and preparation of Metallogenic Map of India (1:2M) on Geospatial Platform, iv) Compilation Of Geological District Resource Maps, vi) Creation of GIS database in respect of Base metals, precious metals, PGE and Diamond etc., vii) Compilation and preparation of Geological and Mineral Resource map of different states etc. viii) Special Publication on Coal fields of Central India; ix) Gold mineralization in Jharkhand, x) Special Publication on North Singhbhum Mobile Belt (NSMB), xi) Special Publication on Geology of the Cuddapah Basin, India and xii) Geology and Mineral Resources of the States of Uttar Pradesh, Miscellaneous Publications No. 30, Pt.XIII, the third revised edition (a 2020 publication in Hindi), xiii) creation of Legacy Borehole Data Repository (LBDR).
- **National Geoscience Data Repository (NGDR):** NGDR is a flagship initiative conceptualised by Ministry of Mines as a part of National Mineral Exploration Policy (NMEP), 2016 for hosting all exploration related geoscientific data for dissemination to all

- the stakeholders so as to expedite, enhance and facilitate the exploration coverage of the country. GSI is the nodal agency for the implementation of NGDR project. NGDR project is being implemented by engaging Bhaskaracharya National Institute for Space Applications and Geo-Informatics (BISAG-N), Gujarat, an autonomous scientific society under Ministry of Electronics and Information Technology (MeitY), Government of India as a system Integrator of NGDR project. The project is being funded by NMET.
- Union Minister of Coal, Mines and Parliamentary Affairs Shri Pralhad Joshi in the presence of Shri Raosaheb Patil Danve, Minister of State for Coal, Mines and Railways has launched the NGDR Portal on 19.12.2023 at an event at New Delhi to foster innovation in exploration.
  - GSI has long been involved in systematic execution of numerous public-good geoscientific programs. During Annual Programme FS 2023-24, GSI has taken up 24 research projects on Geotechnical studies, 42 projects on landslide studies and 16 on seismo-tectonic studies.
  - GSI being the Nodal organization for Landslide study in the country, is developing the prototype Rainfall induced Landslide Early Warning System (LEWS) in collaboration with British Geological Survey (BGS) under the project LANDSLIP. The forecast model is being validated in Darjeeling and Kalimpong districts of West Bengal, Nilgiri district of Tamil Nadu and Rudraprayag district of Uttarakhand during Annual Programme FS 2023-24. Similar LEWS experimentation in 11 landslide prone States will be carried out up to 2025. During 2023-24, project work is continuing in Himachal Pradesh, Kerala, Karnataka, Sikkim, Assam, Nagaland, Meghalaya and Mizoram.
  - An incidence of ground subsidence had taken place at Joshimath town in Chamoli district of Uttarakhand, resulting in development of ground fissures and cracks on the civil structures, including residential buildings, roads, hotels etc. Incident of accelerated ground subsidence ensued in the wee hours of 02.01.2023, following a sudden gush of water from the free face of the terraced slope located at Marwari, the lowest portion of Joshimath agglomeration. A team of geologists was deputed urgently to carry out preliminary investigation on land subsidence and a note on the current hazard scenario was submitted to CBRI/ NDMA. Further, on request from Uttarakhand State Government, GSI took up detailed mapping in the affected area.
  - GSI has been carrying out real-time recording, monitoring and scientific study of earthquakes through its seismic observatories established in different parts of the country. GSI also has installed 35 permanent DGPS stations, across the country for real time ground deformation studies and research. The Seismo-Geodetic Data Receiving and Processing Centre (SGDRPC) analyses the data thus generated and carries out important research.
  - A request was received from Disaster Management cell, Andaman & Nicobar administration for a Geo-Scientific Investigation of Narcondam Island on reported incidences of a series of tremors, felt by local officials at the Island in the months of March and April, 2023. A report on the findings of the study and necessary recommendations were submitted to the concerned authority.
  - GSI is particularly fortunate to play its role in this collective endeavour 'Team India' for successfully rescuing the 41 brave hearts trapped inside the Silkyara tunnel in Uttarakhand and salutes the team for the relentless and profound efforts.
  - As part of Mission-IV activities, fundamental research is being carried out in a host of diverse geo-scientific domains viz., Petrology, Palaeontology, Planetary Geoscience, Polar and Glacial Geology, as well as Geochronology & Isotope Geology. The projects of Petrology are dominantly designed to understand the controls, pathways and processes of mineralization in different mineral prospects. Some of the important researches undertaken in FS 2023-24 include characterisation and genesis of REE & Rare metals in Mangluru Schist Belt of Karnataka, Dhani Granite of Rajasthan, Metallogenic Evaluation of Gold & base metal mineralization in Ladakh Batholith, Central India and Gorubathan Formation of Darjeeling, Mineralogical and Geochemical Characterization of the

Laterites, Lateritic Bauxite and Bauxite of Kutch Gujarat, East & West Khasi Hills of Meghalaya etc. A total of 22 items are presently being carried out on these lines.

- Shri Raosaheb Patil Danve, Hon'ble MoS for Railways, Coal and Mines inaugurated the Geo-heritage Camp through lighting of ceremonial Lamp at Ajanta in Sambhajinagar District of Maharashtra, as part of #AzadiKaAmritMahotsav celebrations organized by GSI on 07.07.2023.
- Hon'ble President Smt. Droupadi Murmu presented the National Geoscience Awards-2022 to GSI officers and other awardees at a ceremony held at Rashtrapati Bhavan Cultural Centre.

## **6.5 Central Geological Programming Board (CGPB)**

The Central Geological Programming Board (CGPB) is the apex body at the national level under the chairmanship of Secretary, Mines, to coordinate the activities on geological mapping, mineral prospecting and exploration in the country. Similarly, the State Geological Programming Boards (SGPB) in every State to coordinate the geoscientific activities in the States, complementing the CGPB and to interface with CGPB and GSI.

GSI is the Nodal Department (Member Secretary) and the State Geology and Mining Departments, Central Government Agencies, PSUs, Other Ministries and Industry Representatives are the participating members.

The 62nd meeting of the Central Geological Programming Board (CGPB) was held on 09th February 2023 at, Pusa, New Delhi under the Chairmanship of Shri Vivek Bharadwaj, IAS, Secretary, Ministry of Mines.

The Secretary, Mines & Chairman, CGPB handed over fifteen (15) mineral exploration reports (G2 & G3 stage) to representatives from 10 State Governments, i.e., Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu. Apart from this, 17 reports on Coal and Lignite were also handed over to Ministry of Coal. An exhibition showcasing adoption of Green Mining Technologies by Indian Companies, Advancement in Exploration of Deep seated /Concealed Deposits, New Technology in Marine/Off-shore Exploration, Aero-Geophysical Survey for Mineral Targeting and promotion of Geoheritage Sites in India, was also inaugurated by the Secretary, Mines & Chairman, CGPB.

A total number of 46 new agenda items were obtained from various stakeholders including State Governments, Central Agencies, PSUs, Private Sectors and GSI for discussion in the 62<sup>nd</sup> CGPB meeting.

During April to November, 2023, a total of 20 States/UT conducted their SGPB meetings.

## **6.6 Internal Resource Generation**

In the year 2023, total Rs. 2,46,57,333 (Rupees two crore forty-six lakh fifty-seven thousand three hundred thirty-three) only has been generated as Internal Resource and Rs. 23,02,069 (Rupees twenty-three lakh two thousand sixty-nine) 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.

## **6.7 International Cooperation:**

During 2023-24, GSI participated and interacted in Bilateral meetings with (i) India-Brazil (CPRM, Brazil) to discuss about the collaboration proposal on Marine Geology, especially EIA for mining in seabed, (ii) India-Australia (Geoscience Australia-GA) to discuss about Uncover Transects (Northern and Southern) and other modalities for Geochronology Secondment as well as guidance for National Geological Data Repository (NGDR) project of GSI from GA, (iii) India-Mozambique on cooperation in the field of Mineral Resources in the Ministry of Mines, New Delhi.

The details of various training plans by GSI that can be imparted to Mozambique geoscientists were discussed during the meeting, (iv) India-Bolivia wherein details of trainings imparted by GSI were discussed and Bolivian side was requested to convey their requirements, so that GSI can provide customized trainings, (v) India-Finland (Geological Survey of Finland -GTK, Finland) on cooperation in field of Geology and Mineral Resources with an aim to discuss on mineral potential and mineral intelligence. Finland side agreed to share necessary information on artificial intelligence and modelling, (vi) India-US wherein discussion on the ongoing collaboration between GSI with USA institute between GSI and USA was held. Another meeting with US delegation represented by Department of Energy (DoE), USA with Indian team led by the Member (Energy), NITI Aayog was attended by one officer from GSI, (vii) India-Nepal related to draft DPR of Pancheshwar Multipurpose Project towards finalization of DPR. A review meeting on geo-technical investigation works for drilling and drifting of Sapta Kosi Multipurpose Projects (SKMP) and Sun Kosi Kamla Diversion Multipurpose Projects (SKDMP), Nepal. One officer attended the 5th Meeting of Team of Experts/officials (ToE/O) in Kathmandu, Nepal and 17th Meeting of Joint Team of Experts (JTE) at Biratnagar, Nepal, (viii) India-Bhutan on issues related to India-Bhutan Cooperation on flood management, progress made and strategy for resolving them. GSI officer attended 7th meeting of reconstituted Joint Technical Team between the Royal Govt. of Bhutan (RGoB) and Govt. of India (GoI) at Phuentsholing, Bhutan, (ix) GSI- AMD, Govt. of India to discuss about the ideas, protocols and modalities for the formulation of collaborative programme for capacity building in the field of exploration of critical minerals under the aegis of Sub-Group on Mining of the Working Group on Modernization and Industrial Cooperation under the Intergovernmental Russian-Indian Commission of Trade, Economic, Scientific, Technical and Cultural cooperation.

GSI has been rendering geotechnical consultancy services for various hydroelectric projects of Nepal and Bhutan.

#### **6.8 Collaborative Projects with other Organisations:**

During the year 2023, GSI has taken up twelve (12) collaborative projects with different organizations and institutes like Meghalaya Basin Development Management Authorities (MBMA), Indian Register of Shipping, CGWB, OMC, Directorate of Mines-Odisha, Oil India Ltd., IIT Kanpur, IIT Bombay, Savitribai Phule Pune University, Space Application Centre-ISRO, SBICAPS etc.

#### **6.9 Project Uncover:**

Project “Uncover (India)” is being executed by GSI to probe for deep seated/concealed mineral deposits in the following Southern and Eastern Transect:

- (i) Southern Transect: Deep Crustal Mapping across Western and Eastern Dharwar Cratons for searching concealed and deep-seated mineral deposits, in parts of Andhra Pradesh and Karnataka (PHASE-II) has focused mainly on the integration of geology, geophysics, and high-end lab data in order to search deep-seated mineralization across the Southern Transect. The detailed geophysical studies carried out at the Tumbiganur, Ramasagaram and Thimasamudram blocks in the south of the Sandur schist belt and in Shirunj & Doni block in Gadag schist belt to know sub-surface signature. On the basis of Phase-I work a deep scout borehole up to 686.5m at Bhadrampalli in the Penakacherla schist belt has been drilled to know deep-seated signature of data integration of geology and geophysics. This borehole intersected the sulphide zones at different depths, mainly 163-169m, 399-406m and 680-684m. Moreover, Au values up to 0.91 ppm (by MIBK-AAS) with Au grains up to 10 microns have been reported by EPMA in a few samples (n=5) from the 163-169m zone. Further, work is in progress.
- (ii) Eastern Transect: Mapping of deep crustal architecture across Singhbhum Craton and North Singhbhum Mobile Belt covering parts of West Bengal, Jharkhand and Odisha for study of mineral system and to target deep-seated mineralizing environments spans across the three geological terranes of eastern Indian shield viz. Singhbhum Craton (SC), North Singhbhum Mobile Belt (NSMB), and Chhotonagpur Granite and Gneissic Complex (CGGC). The work has clearly brought to light presence of two major splays of Singhbhum Shear Zone within the interior part Neoproterozoic-Palaeoproterozoic Dhanjori Basin which holds immense potential for epigenetic copper, uranium and thorium

mineralisation. The Palaeoarchaeon komatiite of Iron Ore Group of rocks in Singhbhum Craton has been targeted for nickel mineralisation and ongoing scout boreholes indicate significant sulphide concentration in the cumulate phases. This has opened up a new potential mineral system for further probing but sustained exploration. In the northern part of the Transect, focus was made on REE mineralisation associated with Proterozoic granitoids and magnetite-apatite rich rocks. Based on synthesis of geochemical data two promising areas have been identified for further probing.

#### **6.10 Financial Performance:**

The Year-wise, Activity-wise financial performance of GSI against the approved budget outlay during the last two financial years (2021-22 & 2022-23) and BE & BE (Available)/RE (Tentative) Grants along with expenditure for current financial year (2023-24) till 26th December, 2023 is presented in **Annexure 6.2**.

#### **Subordinate Office:**

##### **Indian Bureau of Mines (IBM)**

**6.11** The 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 rule framed there under namely Mineral Conservation and Development Rules, 2017 and Minerals (Other than Atomic and Hydro-Carbons Energy Minerals) Concession Rules 2016 and Environmental (Protection) Act, 1986 and Rules made thereunder.

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

##### **Vision for IBM**

**6.13** The National Mineral Policy, 2008 (NMP) has envisioned diverse mineral development programmes and has formulated policy framework and strategies for providing a roadmap to achieve sustainable mineral development in the country. Therefore, the vision statement for IBM necessarily reflects the character of NMP, 2018. 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".

##### **6.14 Mission**

1) To ensure effective regulation of Indian Mineral Sector which promotes long term benefits for its sustainable growth. 2) To provide capacity building to State regulatory agencies and also to provide quality technical assistance to the mineral industry, and 3) To work as data bank on mines and minerals and to disseminate mineral information for policy formulations.

##### **6.15 Objectives**

- i. To work as National Technical Regulator operating at national-level designing systems, processes and guidelines for regulation of the mining sector;
- ii. 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;

iii. 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.

iv. 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.

v. 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

vi. 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.

### **Organizational set up of IBM**

**6.16** IBM has its headquarters at Nagpur, 4 Zonal Offices at Bengaluru Nagpur, Udaipur and Kolkata, and 13 Regional Offices at Ajmer, Bengaluru, Bhubaneswar, Chennai, Gandhinagar, Goa, Dehradun, Guwahati, Hyderabad, Jabalpur, Nagpur, Ranchi and Raipur. During the year 2017, IBM opened two new skill development centres for sustainable mining practices at Udaipur and Kolkata.

**6.17** IBM has well-equipped ore dressing laboratories and pilot plants at Ajmer, Bengaluru and Nagpur.

### **Performance of IBM**

**6.18** 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 sub-grade ores and analysis of environmental samples;
Scheme No. 3,	Technological Upgradation and modernization, and
Scheme No. 4.	Collection, processing, dissemination of data on mines and minerals through various publications
Scheme No. 5	Mining Tenements System (under implementation)

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

- I. Minerals Development & Regulation Division (MORD) erstwhile Mines Control & Conservation of Minerals Division (MCCM);
- II. Mineral Processing Division (MPD) erstwhile Ore Dressing Division (OD);
- III. Technical Consultancy, Mining Research and Publication Division;
- IV. Mineral Economics Division;
- V. Mining and Mineral Statistics Division and
- VI. Planning and Coordination Division.

**6.20** Performance relating to various activities of IBM during the year 2023 (from 1-1-2023 to 31-12-2023) is given hereinafter.

## Inspection of Mines

**6.21** During the year 2023 (from 1-1-2023 to 31-12-2023) as given in **Table 6.2**, 1422 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, 1019 violations were pointed out as against 1379 violations in 2022.

**6.22** A list of principal violations observed during inspection of mines for the 2023 (from 1-1-2023 to 31-12-2023) is given at **Table 6.1**

**Table 6.1**

Principal Violations of MCDR, 2017 detected by IBM during the year 2023 (from 1-1-2023 to 31-12-2023) (up to December, 2023)

Rule No	No. of Violations Pointed out 2022(Jan. to Dec. 2022)	No. of Violations Pointed out 2023, (Jan. to Dec. 2023)	Rule description
11(1)	368	366	Rule 11 (1) - Mining operations in accordance with mining plans
11(3)	00	01	Rule 11 (3) - Submission of Review of Mining Plan / Scheme of mining
20	00	00	Rule 20 - Notice of opening of mine
23	00	00	Rule 23 - Submission of progressive mine closure plan
26 (2)	83	42	Rule 26 (2) - Responsibility of the holder of mining lease to submit yearly report
27(2)	76	20	Rule 27(2) - Submission of Financial assurance
28(1)	8	4	Rule 28 (1) - Notice of temporary discontinuance of mining operations
31(4)	24	35	Rule 31(4) - Maintenance of plans and sections
33	50	46	Rule 33 - Copies of plans and sections to
35, 36, 37, 38, 39, 40, 41, 42, 43, 44	49	115	Protection of environment : Rule 35, 36, 37, 38, 39, 40, 41, 42, 43, 44 - Sustainable mining, removal and utilization of topsoil, 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)	75	1	Rule 45 (5) (b) - Submission of Monthly Return
45(5)(b)	75	44	Rule 45 (5) (b) - Submission of Monthly Return
45(5)(c)	27	9	Rule 45 (5)(c) - Submission of Annual Return
55(1)(c)(i)	15	6	Rule 55(1)(c)(i) - Employment of Whole time Mining Engineer/Geologist
55(1)(c)(ii)	11	3	Rule 55(1)(c)(ii) - Employment of Part time Mining

			Engineer/Geologist
<b>Others</b>	508	327	
<b>Total</b>	<b>1379</b>	<b>1019</b>	

**Table 6.2**

Inspection of Mines carried out by IBM during 2023 (from 1-1-2023 to 31-12-2023)

S. No	State	No. of inspection
1	Andhra Pradesh	119
2	Assam	01
3	Bihar	0
4	Chhattisgarh	122
5	Goa	19
6	Gujarat	149
7	Haryana	0
8	Himachal Pradesh	27
9	J&K	09
10	Jharkhand	64
11	Karnataka	135
12	Kerala	01
13	Madhya Pradesh	231
14	Maharashtra	76
15	Manipur	0
16	Meghalaya	28
17	Odisha	148
18	Punjab	0
19	Rajasthan	100
20	Sikkim	0
21	TamilNadu	127
22	Telangana	43
23	Uttaranchal	04
24	Uttar Pradesh	19
25	West bengal	0
	<b>TOTAL</b>	<b>1422</b>

### **Mining Plan, Review of Mining and Mine Closure Plan**

**6.23** The Mineral (Other than Atomic and Hydrocarbons 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 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 mining schemes 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 and rehabilitation of land and control or ground vibration, surface subsidence and restoration of flora

**6.24** As on 01.01.2023, Financial Bank Guarantees for a value of Rs. 35,60,37,80,481/- i.e. 3560 Crores Rupees (As per revised per hectare rate of Rule 27(1) of MCDR, 2017) have been collected and certificates under Rule 29A of MCR 1960 / 21(4) of MCDR, 2017 have been issued for 12 cases (excluding 31 minor minerals) of partial or full surrender of lease.

**6.25** During the year 2023 (from 1-1-2023 to 31-12-2023), 66 Mining Plans were approved and 03 not approved, 428 Review of Mining Plan were approved and 105 not approved and 10 Final Mine Closure Plans approved and 01 was not approved. State-wise break-up is given at **Table 6.3** .

**Table 6.3**

**State-wise Mining Plans Review of Mining Plans / Schemes of Mining / Final Mine Closure Plans approved by IBM during 2023 (from 1-1-2023 to 31-12-2023)**

S. No	State	Mining Plans		Review of Mining Plan		FMCP	
		Approved	Not Approved	Approved	Not Approved	Approved	Not Approved
1	AP	03	00	47	11	00	00
2	Assam	00	00	01	00	00	00
3	Chhattisgarh	06	00	25	25	00	00
4	Goa	05	00	01	01	00	00
5	Gujarat	07	00	45	11	04	00
6	Himachal Pradesh	00	00	05	01	00	00
7	J&K	00	00	04	00	00	00
8	Jharkhand	00	00	19	00	00	00
9	Karnataka	06	00	48	13	00	00
10	Madhya Pradesh	11	03	73	30	02	00
11	Maharashtra	01	00	21	03	00	00
12	Meghalaya	05	00	02	03	00	00
13	Odisha	10	00	35	04	02	00
14	Rajasthan	11	00	37	00	00	00
15	Tamil Nadu	00	00	48	00	02	01
16	Telengana	01	00	17	03	00	00
		66	03	428	105	10	01

**6.26 Updation of National Mineral Inventory (NMI) as on 1.4.2020** :The NMI is based on UNFC system which is being used for making various decisions for planning, development and judicious management of the country's mineral resources. IBM in consonance with the contemporary demands in the Mineral & Mining Sector and in accordance with its mandate and functioning role as National Mineral Information Repository updates NMI every five years. Compilation of NMI as on 01.04.2020 is completed in all respects and the publications "NMI at a Glance" as on 01.04.2020 and "NMI an Overview as on 01.04.2020", have been uploaded on IBM Website. For Updation of NMI adopting UNFC in respect of 9 minor minerals namely barytes,

calcite, corundum, diaspore, dolomite, gypsum, laterite, ochre and pyrophyllite as on 01.04.2023, Collection of data is in progress.

**6.27** IBM has brought out important publications during the year 2023 (from 1-1-2023 to 31-12-2023) including Indian Minerals Year Book 2021 (Vol. I to III), NMI –At a Glance as on 01.04.2020 and NMI – An Overview as on 01.04.2020, Half Yearly Bulletin on mineral Information for the period April 2022 to September, 2022 & Oct.22 to Mar.23 issues, Bulletin on Mining Lease and Prospecting Licenses 2022 issue and Monthly Statistics of Mineral Production (MSMP) up to December, 2022 issue to disseminate the technical data for interest of all stakeholders.

**6.28** As part of the capacity building of human resources, during the year 2023 (January 2023 to December, 2023), 08 Training programs have been conducted in which a total of 168 IBM Personnel and 262 Industry Officials participated. Total revenue of Rs. 29,65,500/- was generated from training programme held.

### **Mining Tenement System (MTS)**

**6.29** A digital platform for automating the entire mineral concession life-cycle and effective management of mineral concession regime to ensure transparency in mining operations is under implementation by Government through IBM as nodal Agency.

Returns and Registration modules of MTS have successfully put on live from 1<sup>st</sup> May, 2022, Registration, Returns and Mining Plan Modules were launched in 6<sup>th</sup> Mining Conclave on 12.7.2022. IBM registration portal has been successfully integrated with NSWS portal on 1.5.2023. **Registration Module:** During the FY 23-24 till December, 2023, a total of 504 Nos. of registration for different business domains has been carried out in the portal. Cumulatively Up to November, 2023, 8089 Miners, 5445 End Users, 10397 Traders, 2942 Stockiest, 1613 Exporters have registered online. **Returns Module:** Up to December, 2023, 1859 miners and 756 End Users have submitted Annual Returns for 2022-23. **Mining Plan Module:** During 2023-24, up to December, 2023, 550 Mining Plans have been submitted online in IBM-MPAS. DPR in respect of the other modules is in progress and they will become operational in phased manner.

### **Mining Surveillance System (MSS): New Regime of Responsive Mineral Administration through automatic remote sensing detection technology**

**6.30** The Ministry of Mines, through IBM, has developed the Mining Surveillance System (MSS), in collaboration with Ministry of Electronics and Information Technology (MEITY) and Bhaskaracharya Institute for Space Applications and Geoinformatics (BISAG), Gandhinagar, to use space technology for facilitating State Governments in curbing illegal mining activities in the country. The Mining Surveillance System has been launched on 15.10.2016.

**6.31** MSS is a transparent & bias-free system, having a quick response time and capability of effective follow-up. A user-friendly mobile app developed for MSS is used by inspecting officials of the State Governments to submit their geo-tagged inspection reports. Using this mobile app the citizens can also report unusual mining activity which is likely to be illegal mining, thus making it a participative & citizen centric monitoring system.

**6.32** The latest satellite image of mining in each lease is juxtaposed on geo-referenced mining lease maps to check any illegal mining beyond the lease area. Details of Triggers generated are given below:

	<b>Triggers Generated</b>	<b>Triggers Verified by state Governments</b>	<b>Unauthorized Mining detected</b>
Phase-I (Major) (2016-17)	296	286	47
Phase-II (Major) (2018-19)	52	45	5
Phase-II (Minor) (2018-19)	130	104	9
Phase-III (Major)	177	97	12

(2021-2022)			
Phase-IV (Major) (2022-2023)	138	40	7

**Use of Drone Survey: Automation, Accurate measurements coupled with accelerated data management**

**6.33** Government of India, Ministry of Mines has amended Mineral Conservation and Development Rules, 2017 in the year 2021 requiring submission of digital aerial images (Drone/Satellite) by the mineral concession holders/preferred bidders to Indian Bureau of Mines (IBM). Every lessee shall submit digital aerial image to IBM on or before 1st day of July every year. Further, all mine plans are required to be submitted along with the digital aerial images. The Standard Operating Procedure for submission of digital aerial images to IBM by lessee has been laid down by IBM in April 2022 and made available on IBM website which was modified based on the inputs received from the stake holders and placed on IBM website in April 2023.

Vide Gazette Notification No. S.O. 719(E) dated 14th Feb 2023, the mineral concession holders have been directed to submit a copy of the Digital Aerial Images under Rule 34A of MCDR 2017 to the State Government while submitting Digital Aerial Images to Indian Bureau of Mines.

A Drone Data Management System (DDMS) application has been developed in-house by IBM under Mining Tenement System project for online submission of Digital Aerial Images under Rule 34A of MCDR 2017 and was commissioned since 01.06.2023. Since then, all the images have been received online in the server installed at IBM HQ and the data can be used by all the stake holders.

Hardware and software required for processing of drone survey data has been provided to all regional offices of IBM and GIS labs at Nagpur & Hyderabad. IBM at its Headquarters has recently commissioned its largest Data Centers with capacity of 131 Terabytes. Up **December, 2023**, 1390 mines have submitted online Drone data on Drone Data Management System portal. So far up to **December, 2023**, total validated data as per the SOP is 287 of which 279 validated data has been uploaded on DDMS Portal.

**Capacity building programme to process Digital Aerial Data on GIS:**

**6.34** 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. Till December 2023, thirteen training programs over 112 days involving 124 nos. of technical officers have been provided for effective use of digital images by the officers.

**Workshop on “Digital Aerial Data Submission”:**

**6.35** IBM successfully organized a Workshop-cum-Training Programme on “Digital Aerial Data Submission” on 13.01.2023 at its Headquarters in Nagpur. Workshop received overwhelming response from the Mining Industry and about 203 participants from across the country participated. IBM officers in their exhaustive presentations explained the various shortcomings observed in the data being submitted to IBM so as to ensure better compliance in future.

**Sustainable Development Framework (SDF) & ‘Star Rating’ system for Mines:**

**6.36** A ‘Star Rating’ system has been instituted by the Ministry of Mines through IBM vide notification dated 23rd May, 2016; in which one to five star rating is awarded to the mines for their efforts and initiatives taken for implementation of the Sustainable Development Framework (SDF). A web portal has been developed for online filing of the evaluation template for Star

Rating of Mines. Seventy-Six mines secured five Star rating for the reporting year 2021-22 and were felicitated by the Hon'ble Minister of Mines during the IBM Foundation Day Celebration held at Nagpur on 01.03.2023. The year wise 5 Star Rated mines since inception of Star Rating System are given below:

Year	5 Star Rating	Felicitation at NCMM
2014-15	10	Mining Conclave held at Raipur on 4-5 July, 2016.
2015-16	32	Mining Conclave held at New Delhi on 15 <sup>th</sup> February, 2017.
2016-17	57	Mining Conclave held at New Delhi on 20 <sup>th</sup> March, 2018.
2017-18	57	Mining Conclave held at New Delhi on 11 November, 2021.
2018-19	52	
2019-20	40	
2020-21	40	Mining Conclave held at New Delhi on 12 <sup>th</sup> July, 2022.
2021-22	76	Felicitated at the hands of Hon'ble Union Minister of Parliamentary Affairs, Coal & Mines, Shri Pralhad Joshi, during the 75 <sup>th</sup> Foundation Day ceremony of IBM on 1.3.2023.

### Average Sale Price (ASP)

**6.37** After amendment in the MMDR Act in 2015, the concept of Average Sale Price (ASP) of major minerals has been incorporated in Mineral Auction Rules, 2015 and Mineral (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 [M(OAHCEM)CR, 2016], for calculation of Royalty as well as estimation of mineral resource value for Auctioning of mineral blocks. ASP is the determining factor for calculation of Royalty & assessing the value of resources for auctioning purpose. In order to maintain continuous revenue flow to state governments, IBM timely analysed the data and published average sale price (ASP) of various minerals and metals on monthly basis.

During the current year up to December, 2023, Average Sale Price (ASP) for Minerals up to October, 2023 and of Metals up to November, 2023 & Strategic Metals up to August, 2023 has been hosted on IBM website. ASP of Strategic metals released for the first time.

### Revenue Generation

**6.38** IBM generates revenue through consultancy, training, and sale of publications & data etc. Revenue generated during 2023 (from 1-1-2023 to 31-12-2023) is ₹1,79,53,454 comprising ₹ 1,49,87,954/- lakh from mineral processing assignments and ₹. 29,65,500/- from training programmes.

### Green Energy initiative -Transition to a low-carbon economy by promoting green & clean energy

**6.39 Installation of roof-top solar power plant:** As per Governments mission for Green energy foot printing for better environment, solar power plant has been installed at IBM HQ, Nagpur and some of the Regional Offices of IBM. Details are as follows:

S. No.	Name of Office	Status
1	IBM (HQs), Nagpur	Installation completed. 54.9 Kwp capacity.
2.	M P Division, Nagpur	Installation completed. 78 Kwp capacity.

3.	IBM, Jabalpur	Installation completed. 18.2 Kwp capacity.
4.	IBM, Ajmer	Installation completed. 50 Kwp capacity.
5.	IBM, Bangalore	Installation completed. 52 Kwp capacity.
6.	IBM, Goa	Installation completed. 31 Kwp capacity.
7.	IBM, Udaipur	MoU signed between REIL (Jaipur) and IBM, Udaipur. Till date no progress from REIL.
8.	IBM, Bhubaneswar	The Power Purchase Agreement received from the implementing agency is returned for modification of purchaser's liability. The PPA is yet to be received for signing after which the erection of plant would start.
9.	IBM, Kolkata	MoU signed between REIL (Jaipur) and IBM, Kolkata. Till date no progress from REIL.

### **IBM Foundation Day on 1st March 2023**

**6.40** In commemoration of its 75 years of dedicated service to the Nation in the field of Mineral Conservation, Development & Regulation, IBM celebrated its Foundation Day on 1st March 2023 in a grand scale. Hon'ble Union Minister of Parliamentary Affairs, Coal & Mines, Shri Pralhad Joshi, was the Chief Guest and Shri Vivek Bharadwaj, Secretary, Ministry of Mines was the Special Guest of the function. Additional Secretary & Controller General (I/C), IBM, Shri Sanjay Lohiya

, State Departments & Public Sectors and Mining Industry joined IBM on this event which included Award ceremony of 76 five Star-Rated mines. In this occasion, a commemorative Postal "My Stamp" & Souvenir have been released.

## 7. CENTRAL PUBLIC SECTOR UNDERTAKINGS (CPSUs)

### National Aluminium Company Limited (NALCO)

#### Introduction

**7.1** National Aluminium Company Limited (NALCO) is a Schedule 'A' Navratna CPSE established on 7th January, 1981 having its registered office at Bhubaneswar. It is one of the largest integrated Bauxite-Alumina-Aluminium- Power Complex in the Country. 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 & Coal Mine at Angul. At present, Government of India holds 51.28% of paid up equity capital. In FY 2022-23 the Company achieved highest ever revenue from operation of Rs.14,255 Crore. For the 2nd consecutive year, NALCO achieved Full capacity Aluminium production of 4.6 lakh tonne in FY 2022-23, with all 960 POTs in operation at its Aluminium Smelter.

#### 7.2 Performance of NALCO

Physical performance, financial performance and sales performance are presented at **Table 7.1**, **Table 7.2** and **Table 7.3**.

**Table 7.1**  
**Physical Performance of NALCO**

Product	Unit	2019-20 Actual	2020-21 Actual	2021-22 Actual	2022-23 Actual	2023-24 (Provisional Target)	2023-24 (Actual up to Dec'2023)	2023-24 Projected (Dec'23-Mar'24)	2023-24 Expected
<b>Bauxite</b>	Lakh tonne	73.02	73.65	75.11	74.57	75.25	52.22	23.03	75.25
<b>Alumina Hydrate</b>	Lakh tonne	21.61	20.86	21.22	21.23	21.50	15.06	6.44	21.50
<b>Aluminium Metal</b>	Lakh tonne	4.18	4.19	4.60	4.60	4.60	3.45	1.15	4.60

**Table 7.2**  
**Financial Performance of NALCO**

Sl. No.	Particulars	2019-20 Actual	2020-21 Actual	2021-22 Actual	2022-23 Actual	2023-24 Actual upto Dec'2023	2023-24 Expected achievement
1.	Income *	8,744	9,102	14,478	14,490	Being a listed CPSE, the information can be submitted after the financial results are	
2.	Operating Cost**	7,983	7,173	9,664	11,806		

3.	Interest & Transaction Loss	6	7	23	13	published.
4.	Depreciation & Amortization	530	606	837	716	
5.	Profit before Income tax and Dividend	226	1,316	3,955	1,955	

(inRs. crore)

\* Income and expenditure are net of excise duty on sales.

\*\* Operating cost includes exceptional items

**Table 7.3**  
**Sales Performance of NALCO**

Sales	Unit	2019-20 Actual	2020-21 Actual	2021-22 Actual	2022-23 Actual	2023-24 Provisional Target	2023-24 (Actual up to Dec'2023)	2023-24 Projected (Dec'23 - Mar'24)	2023-24 Expected achievement
<b>Total Alumina/ Hydrate Sale</b>	Lakh Tonne	13.04	12.28	12.33	12.47	12.57	7.94	4.12	12.06
<b>Aluminium Export</b>	Lakh Tonne	0.57	1.92	1.33	0.25	0.8	0.39	0.11	0.50
<b>Domestic Aluminium Sale</b>	Lakh Tonne	3.39	2.31	3.24	4.39	3.80	3.10	1.00	4.10
<b>Total Aluminium Sale</b>	Lakh Tonne	3.96	4.23	4.57	4.64	4.60	3.49	1.11	4.60

### 7.3 Corporate Plan

The Corporate Plan envisages 3 years action plan, 7 years strategy and 15 years vision to improve both bottom line and top line of the Company. It has identified functional and business initiatives to give the Company a competitive edge in order to overcome the impact of commodity cycle in the long run.

The new business initiative includes growth through expansion in core business, forward integration through value addition, downstream facilities, selective diversification and backward integration for raw material security. The identified functional and business initiatives are under various stages of implementation.

NALCO is currently undertaking brownfield expansion of its Alumina Refinery, which will increase its capacity by 1 million tonne per annum. In Aluminium segment, NALCO is planning for a 0.5 million tonne brownfield expansion of the Smelter plant.

For raw material security, the Company has already started operations at the Utkal-D coal mine and is in the process of opening the Pottangi Bauxite Mines. The Company has set up a Caustic Soda plant at Dahej, Gujarat in JV with GACL. This venture is securing the requirement of the critical raw material.

**7.4 MoU rating of NALCO during the last five financial years is tabulated at Table 7.4**

**Table 7.4**

Year	Composite Score	Grade
2017-18	91.88%	Excellent
2018-19	96.04	Excellent
2019-20	44.70	Fair*
2020-21	90.75	Excellent
2021-22	95.03	Excellent

\* Due to abnormally low LME Aluminium Price during the year and impact of COVID-19 pandemic during last quarter of FY 2019-20 affected the financial performance of the Company.

**7.5 The total domestic production of Aluminium metal by Aluminium producers in the year 2020-21 to 2023-24 (till December, 2023) is given at Table 7.5**

**Table 7.5**  
**Production of Aluminium in India**  
(Figs. in Tons)

SI No.	Producer	2020-21	2021-22	2022-23	2023-24 (up to Dec'2023)
1	NALCO	4,18,522	4,60,000	4,60,000	3,45,086
2	HINDALCO	12,40,917	13,03,517	13,49,862	10,27,943
3	VEDANTA GROUP	19,70,477	22,69,083	22,87,689	17,64,205
	<b>TOTAL</b>	<b>36,29,916</b>	<b>40,32,600</b>	<b>40,97,551</b>	<b>31,37,234</b>

(Note: Production figures pertaining to other primary producers are based on available market data)

**7.6 The sales figure of Aluminium (Domestic Sales of Aluminium & Export Sales of Aluminium in India are given at Table 7.6 and Table 7.7**

**Table 7.6**  
**Domestic Sales of Aluminium**  
(Figs. in Tons)

SI No.	Producer	2020-21	2021-22	2022-23	2023-24 (up to Dec'2023)
1	NALCO	2,30,643	3,23,809	4,38,876	3,10,460
2	HINDALCO	4,80,279	6,38,702	6,84,421	5,94,954
3	VEDANTA GROUP	6,36,378	6,05,510	7,75,198	6,98,850
	<b>Total</b>	<b>13,47,300</b>	<b>15,68,021</b>	<b>18,98,495</b>	<b>16,04,264</b>

(Note: Domestic sales figures pertaining to other primary producers are based on available market data)

**Table 7.7**  
**Export Sales of Aluminium**

(Figs. in Tons)

SI No.	Producer	2020-21	2021-22	2022-23	2023-24 (up to Dec' 2023)
1	NALCO	1,92,174	1,33,085	25,214	38,959
2	HINDALCO	7,80,206	6,67,233	6,63,188	4,24,428
3	VEDANTA GROUP	13,56,740	16,64,724	15,10,452	10,55,309
<b>Total</b>		<b>23,29,120</b>	<b>24,65,042</b>	<b>21,98,854</b>	<b>15,18,696</b>

(Note: Export sales figures pertaining to other primary producers are based on available market data)

### Mineral Exploration & Consultancy Limited (MECL)

**7.7** Mineral Exploration & Consultancy Limited (MECL), a Miniratna Category-I CPSE under Ministry of Mines is the premier notified exploration agency in the country mandated to carry out detailed exploration of all the minerals. MECL undertakes detailed exploration on behalf of mineral rich States for various minerals through National Mineral Exploration Trust (NMET) fund as well as contractual basis for other agencies including Public Sector, Private Sector and State Government(s) on mutually agreed terms and conditions. It has added 200.32 billion tonnes of mineral resources to National Mineral Inventory up to December '2023.

**7.8** During the year 2023-24 (Till Dec-23), MECL has submitted 23 nos. of Geological Reports of different minerals commodities e.g. Lignite, Copper, Iron ore, Manganese, Graphite, Potash, etc. and added 2816.797 million tonnes of resources to National Mineral Inventory out of which 21 Geological Reports have been submitted to NMET.

### Physico- Financial Performance 2021-22, 2022-23 and 2023-24 (Anticipated)

**7.9** The physical performance in drilling and geological reports for 2021-22, 2022-23 and 2023-24 (Anticipated) is given in **Table-7.8** and the financial performance is given in **Table-7.9**

**Table – 7.8**  
**Physical Performance of MECL**

Items	2021-22	2022-23	2023-24		
	Actual	Actual	Annual Target	Actual ( Up to December, 2023)	Anticipated Up to March'2024 (2023-24)
Drilling (Mtrs)	2,62,277	2,35,844	3,59,800	2,30,462	1,29,338

**Table No. 7.9**  
**Financial Performance of MECL**

*(Rs.in crore)*

Details	2020-22	2022-23	2023-24		
	Actual	Actual	Annual Target	Actual ( Up to December, 2023)	Anticipated Up to March'2024 (2023-24)
Total Revenue #	237.62	230.30	310.00	202.56	310.00
Operating Cost*	196.49	196.87	214.81	155.59	214.81
Depreciation and DRE	12.64	12.58	14.00	9.00	14.00
Net profit After Taxes	20.21	13.94	60.17	28.41	60.17

# Including other income

\*Excluding Depreciation and DRE

### Dividend Paid

**7.10** MECL will be paying a dividend of Rs. 4.18 crore to Government of India for the year 2022-23.

### Business Development Activity

**7.11** Business Development & Commercial Division is persistently making rigorous efforts to generate/obtain more contractual work from both private and public sector Companies/ Agencies through competitive Techno-commercial offers, collaboration through MoU route as well as bilateral negotiations. As a result, during the Financial Year 2023-24(Upto Dec-23), the total value of work available stood provisionally at Rs.425.80 Cr. as on 31.12.2023. This includes work of various clients such as GSI, HCL, NALCO, RSMML, NMDC, FAGMIL, NTPC etc., NMET funded work, promotional coal exploration work on behalf of Ministry of Coal (MoC) and exploration work of NON-CIL coal blocks through MoU between CMPDIL & MECL.

**7.12** Efforts were made to reach out to all prospective clients viz. Government, PSU and private sector for securing business for the company for sustainable growth. The efforts are ongoing and perpetual.

**7.13** MECL signed MoU:

1. MECL has signed an Extension of MoU with GSI and MECL on Supplementing GSI in exploration drilling in Coal and Lignite on 02.06.2023.
2. MECL entered in a Memorandum of Agreement (MoA) with Geological Survey of India (GSI), Eastern Region for NGPM Survey. The agreement was signed by CMD, MECL Shri Ghanshyam Sharma in the presence of HOD(Geological Services) Shri G.S. Dhami and HOD (Business Development) Shri R. Karthik from MECL and officers from GSI on 18.07.2023 at GSI, ER, Kolkata. As per the agreement MECL will carry out Ground Gravity and Magnetic Survey is to acquire high precision Gravity, Magnetic (TF) and evaluation data using DGPS.

3. MECL has signed an MoU with HCL for taking up Geological investigations / Exploration in various mines and Leasehold areas of HCL in the states of Jharkhand, Madhya Pradesh and Rajasthan for a period of 3 years.

The MoU was signed on 25<sup>th</sup> August, 2023 by Shri I.D. Narayan, CMD MECL and Shri Ghanshyam Sharma, CMD /Director (Finance), HCL at Tamra Bhawan, HCL Headquarters at Kolkata in the presence senior officers of HCL and MECL.

4. MECL entered in a Memorandum of Agreement (MoA) with Geological Survey of India (GSI), Northern Region for NGPM Survey in Western Part of India. The agreement was signed by CMD, MECL Shri I.D. Narayan in the presence of HOD (Geological Services) Shri G.S. Dhami and HOD (Business Development) Shri R. Karthik from MECL and officers from GSI on 31.08.2023 at Lucknow (UP). As per the agreement MECL will carry out Ground Gravity and Magnetic Survey, Data Processing & Interpretation and Submission of Technical Report in the states of Gujarat and Rajasthan.

## Hindustan Copper Limited (HCL)

### 7.14 Introduction

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 9<sup>th</sup> 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 converting of refined copper metal into continuous cast rod (CCR) as downstream product. HCL have five units - one each in the states of Rajasthan, Jharkhand, Madhya Pradesh, Gujarat and Maharashtra. HCL is a listed company on BSE and NSE, with 66.14 % equity owned by the Government of India.

### 7.15 The capital structure of the Company as on 31st December, 2023 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
		<u>TOTAL: - ₹ 1100 crore</u>

#### b) Issued, Subscribed And Paid-Up Capital

i) 96,70,24,020 equity shares of ₹ 5/- each	-	₹ 483,51,20,000/-
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### 7.16 Present capacities of HCL's Mines, Smelters and Wire Rod plant are given in Table 1, Table 2 and Table 3.

Table 1

#### Ore Milling Capacity of HCL

Location of Mines	Ore milling Capacity (million tonnes per annum)
Khetri Copper Complex (KCC), Rajasthan	1.8
Malanjkhand Copper Project (MCP), M.P.	2.5
Indian Copper Complex (ICC), Jharkhand	0.4

<b>Total</b>	<b>4.7</b>
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**Table 2**

**Refined Copper Production Capacity of HCL**

<b>Location of Smelters</b>	<b>Refined Metal Capacity (Tonnes per annum)</b>
Indian Copper Complex (ICC), Jharkhand	18,500*
Gujarat Copper Project (GCP), Jhagadia	50,000*
<b>Total</b>	<b>68,500</b>

\* Production under temporary Suspension.

**Table 3**

**Production Capacity of Wire Rod Plant of HCL**

<b>Location of Plant</b>	<b>Capacity (Tonnes per annum)</b>
Taloja Copper Project (TCP), Maharashtra	60,000
<b>Total</b>	<b>60,000</b>

**7.17 Physical performance:** Physical performance details of HCL are as under:

**Table 4**

**Physical Performance of HCL**

Product	Actual for the previous two years		Target for FY 2023-24	Actual from 1 <sup>st</sup> Apr'23 to 31 <sup>st</sup> Dec'23	Projection for the period Jan'24-Mar'24
	FY 2021-22	FY 2022-23			
Ore Production ('000 Tonnes)	3570	3346	3900	2783	1117
*Metal in Concentrate (MIC) (Tonnes)	24741	24760	34500	19242	15258
Refined Copper (Cathode) (Tonnes)	621	7	-	-	-
**Wire rod (Tonnes) (Tolling)	1241	6558	6000	20858	-

\* 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 3<sup>rd</sup> Party cathodes.

**7.18** Financial performance: Financial performance details of HCL are as under:

**Table 5**

**Financial Performance of HCL**

(₹ in crore)

Sl No	Details	Actual for the previous two years		Target for FY 2023-24	For the Period Apr'23 to Sept'23 (Limited Review)	For the Period Oct'23 to Mar'24 (Estimated)
		FY 2021-22	FY 2022-23			
1.	Turnover	1812.21	1660.63	(*)	737.88	(*)
2.	Net Profit/(Loss) before Tax (PBT)	381.72	395.68	(*)	144.96	(*)
3.	Net Profit/(Loss) after tax (PAT)	373.78	295.31	(*)	108.10	(*)

(\*) HCL being a listed Company, price sensitive data may not be disclosed unless the audited result is published.

**7.19 SALES PERFORMANCE:** Sales performance details of HCL are as under

**Table 6**

**Sales Performance of HCL**

Product	Actual for the previous two years		Target for FY 2023-24	Actual from 1 <sup>st</sup> Apr'23 to 31 <sup>st</sup> Dec 23'	Projection for the period Jan'24-Mar'24
	FY 2021-22	FY 2022-23			
Total Copper Sales (MT)	25807	24727	34500	17691	7590

**7.20 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 in phase –I (under implementation) and from 12.2 million tons per annum to 20.2 million tons per annum in phase-II through expansion of

existing mines, re-opening of closed mines and opening of new mines. During financial year 2022-23, HCL has achieved an ore production of 3.34 million tonnes.

HCL carried out surface exploration drilling in FY 2022-23 to the tune of 17249 meters and 12660 meters of underground definition drilling completed. New work for surface drilling at Kendadih & Khetri Mines awarded in FY 2023-24.

Details of depth drilling of HCL for financial year 2023-24 is as under:

Sr. No.	Particulars (In Meters)	FY 2023-24	
		Target (In Meters)	Achieved (In Meters) For the Period Apr'23 to Nov'23
1.	Surface Drilling	26251	15256
2.	Underground Definition Drilling	23350	13648

Above exploration work was funded by HCL through its own resources.

### 7.21 Bharat Gold Mines Limited (BGML)

Bharat Gold Mines Limited (BGML), a Public Sector Undertaking that is closed since 01.03.2001. The Cabinet had taken a decision in 2006 to dispose off the assets and liabilities of the Company through an open global tender, with First Right of Refusal (FRoF) in favour of the Co-operative Society formed by the ex-employees of the Company. However, the Cabinet decision could not be implemented due to litigation. Finally, the Hon'ble Supreme Court in 2013 allowed the Government to go ahead with the tender.

Meanwhile, MMDR Act was amended during 2015 and many changes had taken place. As per the amended Act lease which was acquired through auction can only be transferred, hence, the Cabinet decision of 2006 could not be implemented. Hence, it was decided in the Ministry to explore the possibilities of revival of BGML.

Ministry of Mines constituted a Monitoring Committee in 2019 to suggest a way forward for BGML. The Monitoring Committee hired a Management Consultant in 2021 to do legal status review, valuation of assets, financial diligence based on the Techno-Economic Feasibility Report (TEFR), examination of various options including Special Purpose Vehicle (SPV) route, auction of dumps and to recommend a way forward and action plan.

Based on the report of the Management Consultant, Monitoring Committee has recommended that considering the fact that the mines were closed due to unviable and uneconomic mining of gold, it is considered prudent not to pursue the mining activities by BGML, which is closed since long and more so as presently BGML has no active mining leases since State Government has not issued orders for extension of mining leases. The Monitoring Committee has suggested for monetization of the assets of BGML. Ministry is accordingly taking necessary steps in this regard and other pending issues of BGML.

### 7.22 Main Brief Activities in respect of BGML (01.01.2023 to 31.12.2023)

Secretary, Mines visited Bharat Gold Mines Limited (BGML) closed PSU since 01.03.2001) on 21.11.2023 and taken there a review meeting of BGML with MD, BGML, DC, Kolar, BGML Officers and officers of State Revenue & Land Record Departments, GoK. Subsequent to that following progress achieved:

Mutation and RTC completed for 10307.70 acres out of BGML's 12109.70 acres of land at KGF. In respect of mutation and RTC of remaining 1802 acres land, classification & land use details of 768 acres are received and survey and demarcation of 1034 acres is in progress.

On expiry/ termination of 03 mining leases of BGML (Bisanatham, Ramagiri & Chigragunta) in the State of Andhra Pradesh, permission was obtained from the State Government for extension of time line for removal of infrastructure lying in these mining areas. Thereafter, on seeking permission of Hon'ble Court of Karnataka, mining infrastructures of these 03 erstwhile mining areas were auctioned through MSTC and work order was issued to the successful bidders. The work for removal of mining infrastructures has been completed in Bisanatham, Chigragunta mines and the same will be completed soon in Ramagiri mines.

MSTC has been requested to float tender to identify valuer for BGML infrastructure at mills, workshops, shafts and other locations in KGF.

Survey and mapping has been done in the KGF area for preparation of Possession Certificates for more than 2800 houses/hutments, to be handed over to the beneficiaries (ex-employees of BGML) under Special Terminal Benefit Package (STBP). (Certificates are expected to be issued in January, 2024).

## **8. SCIENCE & TECHNOLOGY PROGRAMME AND AUTONOMOUS BODIES**

### **Introduction**

**8.1** 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**

**8.2** 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/>.

**8.3** 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.

**8.4** During the Financial Year 2023-24 till 31.12.2023, 15 project proposals have been recommended by PERC for approval of SSAG. Out of these, 14 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](https://research.mines.gov.in).

### **Science & Technology Programme- Information Education and Communication (IEC) Component**

**8.5** 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. During 2023-24, a grant of Rs. 2 lakhs was given to Central University of Himachal Pradesh for organizing 3 days National Workshop on "Geodynamics in Himalaya & Disaster Management (Geo-Him 2023)", 06-08 Nov 2023.

**8.6** 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**

**8.7** 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.

**8.8** 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).

**8.9** 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.

**8.10** 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 will be given to Startups/MSMEs of North East Region and women led enterprises.

### **“Grants for Creation of Capital Assets” Component for up-gradation of R&D facilities**

**8.11** 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 2023-24 (till 31.12.2023), grant to the tune of Rs. 6.92 crore has been released to JNARDDC and Rs. 2.92 crore has been released to NIRM for up-gradation of R&D facilities under “Grants for Creation of Capital Assets” Component.

**8.12** Grants for Creation of Capital Assets and Grant-in-aid-Salaries provided to the two autonomous institutions under Ministry of Mines till 31.12.2023 is given in **Table 8.1 and Table 8.2** respectively.

**Table 8.1**  
**Grants for Creation of Capital Assets**

Institute	Amount (Rs.in crore)
<b>JNARDDC</b>	6.92
<b>NIRM</b>	2.92

**Table 8.2**  
**Grant-in-aid-Salaries**

Institute	Amount (Rs.in crore)
<b>JNARDDC</b>	3.05

## **Circular Economy and National Non-ferrous Metal Scrap Recycling Framework, 2020**

**8.13** 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.

**8.14** 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.

**8.15** 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.

**8.16** 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. The framework can be accessed at <https://mines.gov.in/writereaddata/UploadFile/NFMScrapRecyclingFramework3.pdf>.

### **The Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), Nagpur**

**8.17** During the year 2023 upto Dec 2023, JNARDDC completed three project and nineteen R&D projects are in progress for various government and non-government organization.

#### **Designated Sector Expert**

JNARDDC is the designated aluminium sector expert for the following key authorities: -

- **NITI Aayog** -
  - REE (Rare earth element) from red mud and coal fly ash
  - Strategy paper on Resource efficiency in the aluminium sector
- **Bureau of Energy Efficiency (BEE)**, Ministry of Power –
  - Sector expert for “National Mission for Enhanced Energy Efficiency”-PAT 2/3/4 cycle
- **BIS**, Bureau of Indian Standards for standards-
  - Guidelines for Al-scrap
  - The standard for aluminium alloys
- **MoM (Ministry of Mines)** –
  - Zero waste policy for the non-ferrous primary and secondary sector
  - Metal Recycling Authority (MRA) - to carry out the functions earmarked for MRA as stipulated in the “National Non-Ferrous Metal Scrap Recycling Framework 2020.”
- **Referee Lab for Coal**

- JNARDDC is nominated referee lab for coal sample analysis of third party sampling of coal by CSIR-CIMFR, Dhanbad.

### 8.18 Technical Testing & Consultancy work:-

- Third party referee sample analysis of around 20,000 coal samples provided by CIMFR, Dhanbad and QCI, New Delhi.
- Characterization of around 5,000 samples for trace element analysis in soil and sediments for GSI Jaipur and other regions
- Characterization of bauxite, graphite, iron ore and rare earth elements of around 2000 samples for OMECL, Bhubaneshwar.
- Characterization of around 5,000 iron ore samples under process for M/s Lloyd Metals and Energy Ltd of Surjagarh Iron mine, Gadchiruli, Maharashtra.
- Characterization of around 1,000 different mineral samples for MECL, Nagpur.

### 8.19 Seminars and Conferences

27<sup>th</sup> International Conference on Non-ferrous Metals (ICNFM-2023), Ranchi 07-08 July, 2023 Ranchi, India

Meet on “Geo-technological Evaluation of Bauxite deposits” at JNARDDC on 18<sup>th</sup> August, 2023

Brainstorming session on “Quality and quantity assessment of plateau top lateritic bauxite using advance remote sensing technology” with NRSC-ISRO, Hyderabad; 27-Oct 2023, JNARDDC, Nagpur

41st International Conference and Exhibition (ICSOPA -2023); 05-08 Nov ,2023 at Dubai UAE

75 AKAM Awareness programs – PAN India (which included 84 Waste Utilisation & Scrap Recycling Drives (Al, Cu, Pb, Zn & Steel) including industry visit and awareness conference in 5 colleges and 22 ZP schools of 11 districts of Vidarbha region (April – Aug 2023)

11th International IBAAS-2023 Conference & Exhibition; International Bauxite, Alumina and Aluminium Society, Nagpur 04-06 Dec, 2023

### 8.20 IEBR

JNARDDC has already surpassed the internal revenue target of ₹ 16 crores for 2023-24 with an IEBR of ₹17.25 crores till now.

### 8.21 Patents

Six patents were granted for various innovative process developed by JNARDDC in 2023

SN	Details of the granted patent
1.	A Process for selective reduction of Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> , Na <sub>2</sub> O and CaO in reed mud for enrichment of Fe <sub>2</sub> O <sub>3</sub> Granted vide no. 421167 on 10/02/2023
2.	A Process For Selective Enrichment And Separation Of Alumina And Silica Granted vide no. 427093 on 27.03.2023
3.	Partially Lateritised Khondalite-based ceramic proppant and its preparation Granted vide no. 427235 on 28.03.2023
4.	A process for delamination of a multi-layered packaging material and selective recovery of aluminium metal values Granted vide no. 427584 on 29.03.2023
5.	A process for preparation of aluminium hydroxide with low soda content. Granted vide no. 455707 on 29.09.2023

SN	Details of the granted patent
6.	"Development of process for revitalization of high alumina castables from residual Aluminium dross vide no. 471016 on 21.11.2023

## **8.22 Inauguration of new facilities / labs**

Shri V L Kantha Rao, IAS, Secretary to the Government of India, Ministry of Mines reviewed the activities of JNARDDC on 21.10.23. He inaugurated 3 new lab facilities (Fire Assay Lab for precious metals, Microscope & Microhardness tester of Downstream Lab).

### **National Institute of Rock Mechanics (NIRM)**

8.23 National Institute of Rock Mechanics (NIRM-HO) is located at Eshwar Nagar, Outer Ring Road, Banashankari 2nd Stage Bengaluru-560 070 Karnataka, India and NIRM-RO is located at Kolar Gold Fields, Karnataka 563117. The HO encompasses eight specialised areas of applied research providing scientific consultancy services to mining, civil and other critical infrastructure sectors. The RO caters to the material testing requirements of the industry with its Centre for Testing Services (CTS).

### **8.24 NIRM Performance in Brief**

From 01 January 2023 till 30 December 2023 NIRM completed 54 projects worth 21.73 crores. Further upto 31 March 2024, NIRM likely to add 20 more projects in the field of mining, civil and critical infrastructure sectors till March 31, 2024 in its endeavour to deliver rock mechanics and rock engineering solutions to various challenges being faced by these industries. The flow of work at NIRM is strongly dependent on industry requirements and projects running at national and state level which is always variable

In the economic sphere, we were able to achieve significant growth and generated salary and administrative expenditure during the year. Additionally, NIRM augmented scientific instrumentation and upgraded facilities to keep up with the changing global needs and advancements partly through internal resources. NIRM strives to work towards higher technical and financial sustainability, the requirements for sustaining its high-quality services require strong support in terms of capital upgradation, skilled human resources and financial support to the tune of ₹8 to ₹10 crores annually.

It is anticipated that with the collaboration of mining, power, nuclear and infrastructure sector organizations both public and private, NIRM shall gear up to reach new horizons towards a coherent future with a stable strategy to face the future global competitions.

### **8.25 NIRM scientific services**

NIRM has been in the service of the nation over more than three decades, NIRM combines industry specific applied research activities in providing scientific and engineering solutions through rock engineering and rock mechanics studies at various projects in the country. NIRM is recognised as a Centre of Excellence by the mining and civil industries. NIRM scientific solutions ensure that the magnitude of investments is protected in terms of valuable scientific and engineering inputs, and pave way for sound economics of operations of the structures.

Key area of NIRM activities are :

1. **Site Characterisation**—based on engineering geological, seismotectonic, engineering geophysical, engineering seismological and in-situ geotechnical.
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 monitoring
4. **Testing Services** - laboratory testing of rock samples & wire ropes and in-situ testing of various mining accessories using NDT technique

## 8.26 Glimpses of work done and Achievements

**Highway Tunneling Project:** Twin Tunnel site in Andhra Pradesh was investigated for rock properties and geological analysis. The rock mass of underground structures, structural stability underground structures, concrete lined portions, rock support arrangements were recommended based on site geological conditions. All the discontinuities in the rock mass of foundations with the zone of influence of the foundations were identified mapped, and assessment of rock mass rating was done and suitable engineering measures for the treatment of foundations were recommended.

**Underground Mines:** Hindustan Zinc Limited (HZL) of the Vedanta Group is the leading mining company with zinc mines operating from various locations like Zawar, Rampura Augcha and Rajpura-Dariba. HZL has been one of the oldest metal mines in Asian continent and with expansion stage the annual production of is set to reach 3.3 MT. As the mining has reached up to 500-800 m below surface at different locations and planned to develop stope blocks at lower levels below the mined-out area various in-situ parameters are required for designing of the stopes. To fulfil the requirement of production, the new blocks/stopes need to be designed at greater depths and determination of in-situ stress, modulus of deformation and elastic modulus of rock mass are some of the important engineering parameters required for designing the stopes for safety and stability for meeting the production targets from the underground mines.

**Pumped Storage Projects:** Gandikota Pumped Storage Project with installed capacity of 1000 MW is proposed in YSR Kadapa district of Andhra Pradesh state, India. The project envisages to utilize the available head between proposed upper dam and existing Gandikota reservoir as lower pond. An Underground Powerhouse (UGPH) will be located in between two reservoirs. Both the reservoirs will be interconnected through water conductor system and the generator and turbines installed at the powerhouse. In-situ stress is one of the important input parameters for the design of UGPH, as the stability of the structure gets enhanced if the long axis of cavern is oriented parallel or sub-parallel to that of maximum principal stress direction. Accordingly, in-situ stress measurements were carried out by HTPF method in borehole no. DH-07 at the powerhouse site. The stress ratio (K) value is 0.2 and the major horizontal principal stress direction at the powerhouse site is N 90°.

Sillahalla Pumped Storage Hydro-Electric Project Stage-I (1000 MW) is proposed in the Nilgiris district of the southern Indian state of Tamil Nadu. The upper dam is envisaged across the Sillahalla stream which is a tributary of Kundah River and the lower dam is planned across Kundah River in Kundah Taluk of the Nilgiris district. The modulus of deformation of rock mass is one of the important engineering parameters required for the stability analysis and design of the rock structures. Goodman jack tests are conducted at the vicinity of the proposed upper dam of Sillahalla Pumped storage project HEP- stage-I, Nilgiris district, Tamil Nadu locations (Borehole no: UDH-01 & UDH-02). The results of the investigations as the Modulus of Deformability ( $E_m$ ) and Modulus of Elasticity ( $E_e$ ) of rock mass at different locations viz. UDH-01 & UDH-02 falls under good to very good category.

**Structure Monitoring:** Site grading of about 16 acres land was carried out Constructing high raise residential/commercial buildings at Film Nagar, Hyderabad. The estimated rock of about 11 lakhs cubic meter was removed by drilling and blasting in a controlled manner restricting ground vibration, air overpressure and fly rock within permissible limits. Similarly, vibration monitoring at RAPP COF building of RAPP, Rawatbhata, Rajasthan was carried out. These two typical examples of urban setting and critical structure monitoring. The vibration records analysis, and recommendations for permissible limits were periodically informed for corrective measures to ensure the vibration within the permissible limits.

The quarry proposed the Bandehallivillage is located at about 500m from the trial blast locations and 300m from the nearest quarry boundary. A public road was also located at 100 to

200m from the quarry lease area. During the field investigation period, blast vibration and air overpressure were monitored for twelve blasts. The ground vibration data generated were used for regression analysis and a predictor equation at 95% confidence level was derived. The frequency of the ground vibration and air overpressure were determined for the site and it was found that the dominant frequency was higher than 25 Hz. A public sensitisation was done before safe blasting that was completed successfully.

**Geodetic Monitoring:** The Sardar Sarovar Narmada Nigam Dam is as the second largest in the world with an aggregate volume of 6.82 million cu. m. and has a spillway discharging capacity of 85,000 cumecs (30 lakh Cusecs), which ranks third in the world. NIRM monitors the dam and had checked the structural deformations of the dam by establishing permanent points with DGPS survey on selected blocks of main dam, for keeping track of change in dimension as a result of stresses that the dam body experiences over the period of operation. The monitoring was useful in timely identification of anomalies in horizontal and vertical displacements on the object points on the dam crest. The vital inputs to the dam authorities based on the analysis aids timely measures for maintaining structural integrity of the dam and ensures efficient operation through various seasons.

**Stability Monitoring:** Hindustan Zinc Ltd. (HZL) commenced development of underground Rampura Agucha Mines (RAM) in the year 2010 for production of lead and zinc ore. Presently underground mining operation is in progress and decline is developed in safe zone and the production levels have reached up to -405 mRL. NIRM is associated with HZL in joint monitoring, analysis and guidance for monitoring stability of mines during continuous operations for safety and productivity. Regular field visits to underground mines, daily online monitoring to ascertain the network health, data quality, processing, analysis and interpretation to assess changes in dynamic mining induced seismic parameters. Accumulation of higher stress and the differential stress regime in the rock masses lead to bulging or heaving or at the extreme stage as breakage in the rock mass. Based on vital seismic source parameters the seismic hazard of each zone is evaluated. NIRM Microseismic monitoring analysis and guidance have led to demarcation of seismic hazard zones and enabled suitable measures for support system. Microseismic Monitoring is helping mine management to minimise gaps in production activities after a major seismic event.

The construction of the Ram Temple at Ayodhya is in progress and in order to ensure quality of stone blocks to be used for the construction of the temple, NIRM expertise in stone quality testing was sought by Shri Ram Janmabhoomi Teerth Kshetra Trust (Ayodhya). Tata Consulting Engineers (TCE) and Larsen & Toubro (L&T) are the project management consultants for the design and construction of the temple. Following a MoU between NIRM and L&T for the quality inspection of stone blocks, NIRM carried out testing of quality of stones like white Marble (Makrana) at the quarry and the processing site. Few random cracks, fractures, impurities with uneven color lines, thin grey and olive-green veins, yellow streaks, tight intact joints and spots with fine to coarse grains as in any natural stone. Various onsite and laboratory tests were carried out and the contractors were advised to follow all safety measures while mining marble blocks and to ensure safe hoisting of men and material.

### **8.27 Rockmass and Sinkholes investigation:**

A circular shaped low velocity pocket was seen at 8-12 m depth between BH1 and BH2 and another low velocity section between BH3 and BH1 (very close to BH3 and inclined upwards in the direction of BH1). This low velocity zone between 10-12 m depth near BH3 is correlated to the SW-NE trending incline. A couple of weak zones appeared around the depth of 28 m at boreholes BH1 and BH2. Similar investigative analyses were made for all the eight locations. In addition to these field investigations, rock samples were collected from the study area to determine the physico-mechanical properties in the laboratory. The sandstone samples from some of the sites showed UCS value of 1.5-3.0 MPa indicating very poor rock mass condition which might be prone to subsidence/ sinkhole formation. A comprehensive report with conclusive remarks was submitted to SECL indicating prospective subsidence prone areas.

**8.28 NIRM Scientific Publications:** During this period, the Institute has to its credit 26 technical research papers, published in National and International Journals, and conference.

### 8.29 NIRM – Academia Interaction:

As part of the information dissemination and skill development exercise, NIRM provided internship training for 17 students from different educational institutions: fourteen engineering students from Dr. TT Institute of Technology, KGF Anna University, Chennai, Calicut University, Kerala, Mangalore university, Karnataka, as a part of knowledge dissemination and skill development

**8.30 AKAM:** As part of Azadi Ka Amrit Mahotsava (AKAM), NIRM organized a lecture series (workshop) on the topic, “**Role of Rock Engineering in Nation Building**” under the theme "Atmanirbhar Bharat" to were conducted for students in 75 different engineering/ science colleges/ institutes. Lectures were conducted in physical mode, in the premises of the college/ institute. Scientists from NIRM has to deliver the lecture in rotation in different colleges. **Day-long lecture program (workshop)** in one college/ premise (host) and the host college to bring on board students of civil/ allied engineering disciplines from minimum six to seven colleges through online in each session.

**8.31 Updating of Skills:** The scientists and scientific staff of the institute remain abreast with the trends in the industries for providing solutions that demand continuous updating of skills in both the field-based instrumentation and software tools.

**8.32 NIRM-Industry interaction for skilling and awareness:** As part of the AKAM lecture series the advanced services of NIRM have been disseminated through lectures, demonstrations, training programmes and workshops for making the ever-evolving industry with the latest techniques available for troubleshooting various problems in the geological, geotechnical and rock engineering arena. NIRM scientists have been members of Expert Committees for BIS, ISRM, ISEG, MEAI, KSDC, KSDMA, IGS, IGU, ISET, and ISRMTT.

### National Mineral Exploration Trust (NMET)

**8.33**The National Mineral Exploration Trust (NMET) was established by the Government of India vide Gazette Notification G.S.R.633(E) of 14th August 2015, in pursuance of subsection (1) of Section 9C of the Mines and Minerals (Development and Regulation) Act, 1957, with the objective to boost the regional and detailed mineral exploration activities.

### 8.34 Brief Activities from 01.01.2023 to 31.12.2023

- NMET has approved 116 mineral exploration/ financial assistance and procurements projects with the cost of ₹ 656.73 Cr as follow:
  - 40 projects of critical minerals with the cost of ₹. 98.25 Cr
  - 17 mineral exploration projects of Notified Private Exploration Agencies with the cost of ₹ 15.88 Cr. Out of 17 projects, 11 are of critical minerals.
  - Financial assistance to 20 states, 02 Union Territories and 02 Central Agencies for 28 projects amounting to ₹ 147.08 Cr. for procurements of machinery equipments. This includes, 11 projects of all 08 North Eastern states amounting to ₹ 21.62 Cr.
  - 01 Project of Baseline Geoscience Data Generation “Deep Seismic Reflection Survey (DSRS) & Magnetotelluric (MT) Survey along Churu, Rajasthan to Tikamgarh, M.P, - Northern Transect under the project UNCOVER India” to be executed by Geological Survey of India amounting to Rs 99.77 Cr.
  - 01 project for National Aero-Geophysical Mapping Program (NAGMP) in 07 Obvious Geological Potential (OGP) blocks during the Year.

- NMET has disbursed ₹ 263.35 Cr for exploration / financial assistance and procurements of machinery equipments, projects of baseline data generation, incentive to state governments for successful auction of mineral blocks and advance for newly sanctioned 116 projects.
- NMET has announced an Exploration Incentive (EI) of 25% of the approved cost of the project for G4 items in Greenfield areas for gold, base metals, other precious minerals, strategic/critical minerals and fertilizer minerals. Exploration Incentives will be paid if the block is successfully auctioned or upgraded from G4 to G3 Stage.
- NMET has unveiled a transformative scheme leveraging Notified Private Exploration Agencies (NPEAs) for the exploration of critical mineral and strategic minerals mentioned in Part D of First Schedule and in Seventh Schedule of MMDR Act, 1957, directly through National Mineral Exploration Trust (NMET).

NMET has also carried out field inspection visits in 4 states for the 11 Nos of projects being executed by NPEAs

## 9. CORPORATE SOCIAL RESPONSIBILITY (CSR)

### NALCO-

#### 9.1 Periphery Development & CSR Initiatives

- CSR policy of NALCO is compliant 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.
- Accordingly, for FY 2023-24, mandated CSR of NALCO is Rs. 48.15 crore.

#### 9.2 Highlights on CSR activities for the financial year 2023-24 are furnished below

##### 1. Health Care Initiatives

- Mobile Health Unit (MHU) Services: Basic healthcare facility was delivered at the door step, in around 250 periphery villages, in operational districts of Angul and Koraput by 8 Mobile Health Units (MHUs). Annual reach of the program is around 1 lakh patients.
- OPD center with specialized services and free medicines operating at Angul, addressing the health needs of people in the periphery.
- Financial Support for Battery Operated Ambulance for transportation of patients in SCB Medical College & Hospital, Cuttack

##### 2. Education Initiatives

- **Indradhanush Scheme:** NALCO sponsored 1,190 tribal children of Maoist infested Damanjodi sector and provided education to them in 3 reputed residential schools in Odisha.
- **Nalco Ki Ladli Scheme:** 816 Meritorious girl students of BPL families at Angul and Damanjodi sector have been adopted with financial support by the Company under 'Nalco ki Ladli' scheme in line with Govt's 'Beti Bachao, Beti Padhao' Mission.

##### 3. Safe Drinking water facility

- Piped water system established in supply of drinking water through tanker to identified 17 water scarce peripheral villages of Angul during summer.
- Provision of drinking water through RO purifier provided at Jagannath Ballava Matha, Puri.

##### 4. Livelihood Promotion:

- Promotion of alternative livelihood through Jackfruit Value addition/ Jackfruit chips making in selected priority and peripheral villages of NALCO, Damajodi

##### 5. Iconic City Projects:

- NALCO has taken the responsibility of Shri Jagannath Temple, Puri & its surrounding under PM's Iconic Shrine Development Programme to upgrade the infrastructure & maintain cleanliness.
- The Company has given special emphasis on Renovation and beautification of Gandhi Park as a tourist spot, temple illumination, beautification of Puri town with thematic painting based on Jagannatha culture, RO based water posts at different locations, operation of Battery-Operated Vehicle from Jagannath Ballava Math to Shree Jagannath Temple & in the Railway Station, for differently-abled passengers, senior citizens, sick people.

##### 6. Promotion of Art & Culture

- Financial Assistance towards organization of 26th State Level Tribal Festival (PARAB), Koraput.
- Financial Assistance for organization of Zila Mahostav, Angul.

## Hindustan Copper Limited (HCL)

### 9.3 CSR expenditure during last two financial years and current financial year (₹ in lakhs)

Financial Years	Required Spent (2 % of average net profit (PBT) of last three FYs)	Spent	Remarks
2021-22	*	77.18	
2022-23	*	118.3	
2023-24	576.19#	89.18	(till Dec'23)

**Note:** \* HCL was not mandated to spend any amount on CSR as per Companies Act, 2023 as its average net profit was negative in FY 2021-22 & FY 2022-23. However, HCL incurred expenditure on important ongoing projects at its Mining Units.

# Rs. 254.60 Lakhs was set-off from CSR budget FY 2023-24 for the excess expenditure made during FY 2020-21, FY 2021-22 & FY 2022-23. The total budget for FY 2023-24 after set-off is Rs. 377.64 Lakhs (inclusive of Carried forward amount of Rs. 53.52 Lakhs of FY 2022-23).

Major projects planned are as under.

1. Drinking Water
2. Health Camps and Nutrition
3. Livelihoods
4. Plantation and Sports
5. Conservation of Environment
6. Rural Development Projects

The projects are being implemented in the target communities with the help of State government, NGO and other agencies.

### Mineral Exploration & Consultancy Limited (MECL):-

9.4 MECL has drawn a long term Corporate Social Responsibility (CSR) Policy.

9.5 During the period (January to December 2023)- (FY 2023-24), an amount of Rs. 136.69 Lakhs have been spent under CSR fund towards grand success of women & weaker section, old aged people, community welfare, relief measures, etc. and Education for improving the health and living condition of needy people of the society of all category i.e., General / SC / ST / OBC. MECL will spent Rs. 38.31 Lakhs for the period from 01.01.2024 to 31.03.2024. The CSR activities for this period are as follows :

#### 1. Promoting Healthcare

- a. Providing medical equipment for Government PHC/Hospitals situated in i) Ghatshilda, Jemshedpur, Jharkhand, ii) Raigarh, Chhattisgarh, c) Namchi Sikkim.
- b. Providing Anesthesia Workstation to Shree Astha Foundation, Indore, Madhya Pradesh.
- c. Procurement of 01 No. School Van, Equipment for Health Care and Setup of Smart Class for PwDs for Pahal Institute for Social change, Indore, Madhya Pradesh.

#### 2. Promoting Environment Sustainability:

- a. Procurement of 50 Nos. of Solar Street Light for Hazaribagh, Jharkhand.
- b. Providing solar grid tied system with 10 KVA at varies villages in Hazaribagh, Jharkhand.

#### 3. Citizen's Charter

Dr. Ch. Sreerama Murthy, General Manager (HR) has been nominated as Nodal Officer w.e.f. 01.06.2014 and the same has been intimated to the Ministry along with the required details.

## **10. PROGRESSIVE USE OF HINDI IN OFFICIAL WORK.**

### **Introduction**

**10.1** The Ministry of Mines continues to take steps to ensure compliance of the Official Language Policy of the Government of India in the Ministry of Mines as well as in its attached / subordinate offices and PSUs. The compliance of Section 3(3) of the Official Languages Act, 1963 is ensured. As per rule 5 of Official Languages Rules, 1976, during the year out of the 787 letters received (upto Sep. 2023) in Hindi, 278 letters were for information only and replies thereof were not required and the remaining 509 letters were replied to in Hindi.

### **Hindi Advisory Committee**

**10.2** Hindi Advisory Committee was reconstituted on 13.04.2022. The meeting of Hindi Advisory Committee of Ministry of Mines was held on 13.12.2023 in Parliament Annexe, New Delhi.

### **Official Language Implementation Committee (OLIC)**

**10.3** The last meeting of Official Language Implementation Committee (OLIC) was held on 22.09.2023 under the chairmanship of Economic Advisor. The progressive use Hindi in official work in various sections was reviewed and officers representing different divisions/sections were asked to increase correspondence in Hindi with offices located in region 'A' and region 'B' and to achieve other targets set by the Department of Official Language in the Annual Programme for the year 2023-24.

### **Official Language Inspection**

**10.4** According to the Annual Program for the year 2023-24 of the Department of Official Language, Ministry of Home Affairs, inspection of GSI & MECL was done on 10.07.2023 and JNARDDC, Nagpur on 11.07.2023. During these inspections, the status of progressive use of Official Language Hindi in three above offices was reviewed and suitable suggestions were given in the context of achieving the target set in the Annual Programme 2023-24.

### **Inspection by the Committee of Parliament on Official Language**

**10.5** Parliamentary Committee on Official Language inspected GSI, operation west coast II, Marine and Coastal Survey Division, Kochi on 04.01.2023, GSI, SU, Kerala & Lakshadweep, Trivandrum on 05.01.2023, GSI, S.U., M.P. Bhopal on 17.01.2023, IBM, RCOM, Raipur on 23.05.2023, GSI, SU, Raipur on 24.05.202, GSI, NR, Lucknow on 17.06.2023, IBM, RCOM, Ranchi on 13.07.2023. HCL, Indian Copper Complex, East Singhbhum, GSI, SU, Jharkhand on 14.07.2023, GSI, SU, Bihar, Patna on 14.07.2023, GSI, Pune on 12.09.2023, IBM Ajmer on 03.10.2023, DGCO, GSI on 06.10.2023. While appreciating the status of correspondence in Hindi in these organizations, the Committee suggested some measures to improve the usage of Hindi in other areas of official work. Necessary actions on assurances given to the Committee were taken by the offices concerned.

### **Organizing Official Language Fortnight/Month**

**10.6** In the Ministry of Mines from 14.09.2023 to 29.09.2023 Hindi Fortnight was organized. 60 Winners of the various competitions held during this period were awarded cash prizes. Also on the occasion of Hindi Divas messages of Hon'ble Minister of Home Affairs, Shri Amit Shah, Hon'ble Minister of Mines Shri Pralhad Joshi and Cabinet Secretary were also circulated with the aim to increase and promote Hindi in the official work.

## **Geological Survey of India (GSI)**

### **Official language inspection of subordinate offices**

**10.7** In order to assess the progress made in the use of Hindi in various offices of the Geological Survey of India, Official Language Inspection of five (05) subordinate Offices and ten (10) division/sections has been done by GSI, CHQ, Kolkata during this period. Besides, Official Language Inspection of their subordinate State Units and division/sections has been done by Regional Headquarters.

### **Inspection of GSI office by Parliamentary Committee on Official Language**

**10.8** During the said period, official language inspection of the following nine offices of the Geological Survey of India was completed successfully by the Honorable Parliamentary Committee on Official Language:

1. Marine and Coastal Survey Division, Kochi on 04.01.2023
2. State Unit: Kerala, Thiruvananthapuram on 05.01.2023
3. State Unit: Madhya Pradesh, Bhopal on 17.01.2023
4. State Unit: Chattisgarh, Raipur on 24.05.2023
5. Northern Region, Lucknow on 17.06.2023
6. State Unit: Bihar, Patna on 14.07.2023
7. State Unit: Jharkhand, Ranchi on 14.07.2023
8. State Unit: Maharashtra, Pune on 12.09.2023
9. DGCO, New Delhi on 06.10.2023

The Committee expressed satisfaction regarding the implementation of the official language in the above offices and also appreciated the official language work and achievements being done by the Geological Survey of India.

### **Training, Workshops and Seminar**

**10.9** The offices of Geological Survey of India are organizing Hindi Workshop on regular basis as per the directives of Government of India, Ministry of Home Affairs, Department of Official Language. In this order, Hindi Workshops at CHQ, Kolkata were organized as per the following detail:

- On 28.06.2023, a workshop was organized on the subject of work in official language in E-office.
- On 22.09.2023, a workshop was organized on the subject How to fill QPR in Hindi.

**10.10** To provide Hindi training to all personnel of GSI within the time-limit prescribed by the Department of Official Language, Ministry of Home Affairs, officials are being nominated for Prabodh, Praveen, Pragya and Parangat classes under Hindi Teaching Scheme. These classes are held twice a year i.e. January-May and July-November. In addition, intensive training classes for Hindi language training are also being organized. Typists and stenographers are being nominated in a phased manner for Hindi typing and stenography training.

**10.11** Under the aegis of Geological Survey of India, Central Headquarters and in the chairmanship of Dr. S. Raju, Director General, Geological Survey of India, a two-day All India Scientific and Technical Official Language Seminar-cum-Hindi Workshop (year 2022-2023) was organized on March 23 and 24, 2023 at GSI, State Unit: Kerala and Lakshadweep, Thiruvananthapuram. A total of 31 research articles were presented by officials from various offices of the Geological Survey of India.

Regional Geology Technical Official Language Seminar was organized by the Southern Regional Headquarters in September 2023 in which 12 technical research papers were presented by the officials of the Geological Survey of India, Southern Region, Hyderabad and its state units.

Scientific and Technical Official Language Seminar cum Workshop was organized by State Unit: Rajasthan, Jaipur in June 2023 in which 14 technical research papers were presented.

## **In-House Hindi magazines and other publications**

**10.12** In-house Hindi magazines namely 'Bhugaurav' edition-21 of Western Region, Jaipur, 'Bhusandesh' edition-10 of Northern Region, Lucknow, 'Narmada' edition-12 of Central Region, Nagpur, 'Akanksha' edition-6 of Southern Region, Hyderabad, 'Indradhanush' edition-6 of North-Eastern Region, Shillong, 'Chetna' edition-23 of Training Institute, Hyderabad, 'Vihang' edition-13 of Remote Sensing and Aerial Survey, Bangaluru, 'Sabarmati' edition-6 of State Unit: Gujarat, Gandhinagar, 'Maruvani' edition-2 of State Unit: Rajasthan, Jaipur, 'Dhauri' edition-17 of State Unit: Odisha, Bhubaneswar, 'Markandeya' edition 4 of State Unit: Punjab, Haryana and Himachal Pradesh, Chandigarh, 'Tawi' edition-3 of State Unit: Jammu and Kashmir, Jammu, 'Kanchenjunga' edition-3 and 4 of State Unit: Sikkim, Gangtok, 'Lichchavi' edition-7 (b) of State Unit: Bihar, Patna, 'Advika' edition-4 of State Unit: Andhra Pradesh, Hyderabad, 'Bhauma Kairali' edition-2 of State Unit: Kerala, Thiruvananthapuram, 'Vasudha' edition-2 of State Unit: Karnataka and Goa, Bangaluru, 'Pranhita' edition-1 of state unit Telangana, Hyderabad, 'Sahyadri' edition-2 of state unit Maharashtra, Pune were published. E-Varta (News magazine) edition-1 and 2 were published by Southern Region, Hyderabad. Apart from this, monthly e-news in Hindi is being published

## **Implementation of Hindi Incentive Schemes in Geological Survey of India (GSI)**

**10.13** To promote the use of Hindi in the Official work the following Incentive schemes are being implemented in Geological Survey of India.

- Cash award and personal Pay to the Officers/ Employees for passing the Prabodh, Praveen, Pragya, Hindi Typing, and Stenography Examinations under the Hindi Teaching Scheme of Government of India, Ministry of Home affairs.
- Cash award to the Officers/Employees for noting and drafting in Hindi.
- Officers and employees who have made outstanding contributions for the propagation of Official Language Hindi are honoured on Hindi Day.

## **Portal of GSI in Bilingual Form**

**10.14** According to the policy of the Government of India, the work of Bilingual of the portal of Geological Survey of India is going on continuously. Currently GSI portal is opening in Hindi by default. Most of the content in the portal is available in Bilingual form and the work of Bilingual of the remaining content is being done in a phased manner on priority basis. A sub-folder is available in the department to display the works and activities related to Hindi.

## **Review of Quarterly Progressive Report (QPR) of Regions**

**10.15** The review of Quarterly Progressive Report (QPR) of all regions and Missions is carried out regularly and feedback is given for necessary action. In addition to that the QPRs of subordinate Offices are being reviewed by the concerned Regional Offices.

## **All India Annual Official Language Review Meeting**

**10.16** All India Annual Official Language Review Meeting at the Central Headquarters level is proposed in January 2024..

## **Indian Bureau of Mines (IBM)**

**10.17** Indian Bureau of Mines is implementing the policy of official language of the Govt. of India in the headquarters as well as all Subordinate offices of IBM very effectively. IBM has its headquarters at Nagpur, Maharashtra which falls in 'B' region. Six subordinate offices of IBM fall in 'A', one subordinate office falls in 'B' region and the rest of the 07 Subordinate offices fall in 'C' region. All the subordinate offices of IBM have achieved all the targets mentioned in Annual Programme of the Department of Official language. During 2023-24, the details of the progress and achievement related to Hindi implementation are as follows :-

**10.18 Meetings of the Departmental Official Language Implementation Committee-:** The 124<sup>th</sup>, 125<sup>th</sup>, 126<sup>th</sup> and the 127<sup>th</sup> meetings of the Departmental Official Language Implementation Committee were held on 05/01/2023, 12/04/2023, 07/07/2023 and & 16/10/2023, respectively . In all regional offices, the meetings of the Departmental Official Language Implementation Committee are regularly held and reports are sent to the headquarters.

#### **10.19 National Aluminium Company Limited (NALCO)**

- Progressive use of Hindi is being implemented as per provision of Official Language Act, 1963 and Official Language rules 1976.
- NALCO also holds the Chairmanship position of TOLIC, Bhubaneswar and Angul. Scheduled meetings have been organized at both the locations involving all local PSUs Offices. In this regard, Company's efforts have been appreciated in the meetings by the representatives of RIO, Government of India.
- On the occasion of World Hindi Day on 10.01.2023 Inhouse magazine 'Akshar' was released & a Travel Memoir Competition was organized for the members of TOLIC(U), Bhubaneswar under the banner of TOLIC(U).
- Hindi workshops were organised on 26.04.2023 with faculty support of Sh. Nirmal Kumar Dubey, Office In-charge of Regional Implementation Office (East), MHA, Kolkata.
- A Technical Workshop and quiz competition were organised for the members of TOLIC(U), Bhubaneswar under the banner of TOLIC(U) on 15<sup>th</sup> March 2023.
- The website of the company is being regularly updated in bilingual; Hindi and English.
- In order to encourage the member offices for implementation of the official language, while ensuring the participation of the member offices; review of Hindi Training was done by the support of Deputy Director (East) – Training.
- Visit of Draft and Evidence Sub Committee of Parliamentary Committee on Official Language conducted with satisfactory remarks.
- Faculty assistance on Unicode and tools and techniques of Hindi computing was provided to the member offices of TOLIC, Bhubaneswar.

#### **10.20 Mineral Exploration & Consultancy Limited-**

- **Official Language Implementation Committee :**

Corporation Official Language Implementation Committee's meetings were held on time, chaired by the Chairman-cum-Managing Director himself and he reviewed the status of Hindi activities and issued necessary orders and guidelines from time to time.

- **Official Language Inspections:**

For Hindi progress in MECL, Hindi Inspection Committee has been constituted by the Chairman with two members, who on the basis of the data received every quarter, inspect Hindi works in each office/Division and directed all necessary orders/suggestions/ Issuing guidelines for progress and submits the inspection report directly to the Chairman-cum-Managing Director. Hindi Cell visit various divisions to take stock of Hindi progress and provide all necessary assistance.

- **Measures for Implementation of Official Language Policy :**

- **Training, Workshops and Seminars**

A one-day Hindi workshop was organized in the Corporation from time to time in which technical and non-technical personnel of various divisions were given training in Hindi on the policy and knowledge pertaining to the official language Hindi.

- **Organization of Rajbhasha Fortnight /Month**

Hindi Diwas is celebrated every year on 14th September and thereafter a fortnight is organized successfully. During this period, the employees are encouraged to promote and spread the official language Hindi and at the same time, the family members of the

employees are also invited to participate in the competitions organized by the Corporation. The winning personnel were awarded by the Chairman-cum-Managing Director on the concluding day of Hindi Pakhwada.

• **In-house Magazine :**

An internal magazine Make Samachar now "KHANIJ PRAVAH" is published half-yearly, completely in Hindi, in which apart from company news, employees are invited to publish self-written essay and various articles and it includes rules and provisions pertaining to the official language. Unveiled during Consultative Committee meeting held on 13.12.2023 at Parliament Annex, New Delhi.

• **Special initiatives taken by PSUs for promoting use of Hindi in Official work :**

1. A special cash reward scheme is implemented in the corporation for working in prescribed quantity in Hindi, in which cash reward is given to the employees who submit claims every month.
2. As per the instructions of the Ministry of Mine, In the memory of Late Shri Shankar Dayal Singh, since 2012, an annual cash prize scheme i.e. first, second, third and a consolation prize is being implemented as an incentive to the employees who use Hindi the most in official work every year. Occasions of closing day of Hindi Fortnight, its winning employees were also rewarded by the Chairman-cum-Managing Director.
3. To promote Hindi, a Hindi competition is successfully organized by MECL every year at Nagpur city level under the aegis of NARAKAS (Ka-1).
4. A booklet containing a collection of standard Hindi notes, a list of internal telephone numbers, a list of common words/phrases used in Hindi have been printed on the main and back cover of the file covers. Routine types of letters and proforma used in different divisions have been made in Hindi. This increases the Hindi knowledge of the personnel and they use these words in Hindi correspondence.
5. Letters are issued on the last Monday of every month to do most of their official work in Hindi only.
6. Apart from this, Hindi books are purchased every year. Thus books of Hindi literature are available in abundance for the promotion of Hindi.

**Hindustan Copper Limited (HCL)**

**10.21** During the year 2023-24, from 14<sup>th</sup> to 28<sup>th</sup> September, 2023 Hindi Diwas / Week/ Fortnight was organized in all the Units / Offices including the Corporate Office of HCL. During this period, various programs were organized to promote the propagation of the Official Language. In HCL, on this occasion, Hindi Competitions on various subject, like Hindi Essay Writing, Translation and Hindi Noting-drafting Competition were organized for non-Hindi speaking and Hindi speaking employees separately and Passage Reading Competition only for Non-Hindi speaking employees. A Hindi typing competition on computer was also organized. The winning participants of all the competitions were encouraged by giving prizes and certificates in the closing ceremony.

**10.22** Hindustan Copper Limited has been awarded the **Fourth Prize** by Town Official Language Implementation Committee (Undertaking), Kolkata in the category of Corporate Office for the best performance in the field of Official Language during the year 2023-24.

**10.23** The meeting of the Official Language Implementation Committee is held regularly in HCL. In addition, Hindi workshop is also organized. Nomination of participants from Hindustan Copper Limited as ensured for various competitions organized by various CPSEs for promotion of Official Language under the aegis of Town Official Language Implementation Committee.

In order to enhance the knowledge and arouse the interest in the official language Hindi of the officers/employees of the company, a Hindi word and its sentence is prepared every day in bilingual form and displayed on the notice board for everyone to read and follow.

**10.24** The progressive use of Hindi is being reviewed regularly at the Board meetings of Company. The Company's in-house journal "**Tamralipi**" is published in Hindi and English and distributed among employees regularly. The recruitment advertisement is also published bilingual. At the time of superannuation, all the employees are given Service Certificate in Hindi. The Hindi translation of Annual Report, MoU, Outcome Budget and various other jobs of the Company were done in year 2023-24.

## 11. EXPLORATION ACTIVITIES IN THE NORTH-EASTERN REGION

### GEOLOGICAL SURVEY OF INDIA (GSI)

#### Introduction

**11.1** Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura and Sikkim are the eight states located in the North Eastern part of the country. The geomorphological and geological setup of North Eastern Region (NER) is entirely different from other parts of country. Geologically, North-East India represents a stratigraphic sequence which ranges from pre-Cambrian to Quaternary sequence. The oldest geological rock sequence of the region is represented by pre-cambrian gneissic complex of Meghalaya plateau and the Karbi-Anglong plateau. The Himalayas, occupying the northern border of the region consist of varied rock types ranging in age from Proterozoic to early Palaeozoic in age whereas foot hills of the Himalayas comprise of Tertiary rocks. The other part of the region is covered by Cretaceous -Tertiary rocks belonging to age from Eocene to Pliocene whereas the Brahmaputra valley forms the extensive Assam plains tectonically surrounded from all sides between Eastern Himalayas in the north, Indo-Myanmar Range in the west and south west and Gneissic Complex of Shillong Plateau towards south.

#### Work done by Geological Survey of India (GSI) in North Eastern Region

**11.2** Major activities of Geological Survey of India (GSI), North Eastern Region (NER), include baseline data generation through geological, geochemical & geophysical mapping, mineral exploration, compilation and generation of different types of maps and publications, fundamental researches & public good geosciences like landslide/ geotechnical/ earthquake studies. GSI is continually striving for the development of NER states through augmentation of above activities and helping the states of NER by virtue of training, capacity building by providing various training courses to a number of officers of State DGMs of NER. GSI, NER is perpetually extending technical and scientific supports by providing chemical analyses and petrological studies of representative samples of the different state DGMs, as per their requests.

#### Geological Mapping on 1:25,000 scale

**11.3** During FS 2022-23, a total of six Systematic Thematic Mapping (STM) programme on 1:25,000 scale, including one RP item have been taken up in NER of which two items were taken up in Arunachal Pradesh, one in Assam, two in Meghalaya and one in Sikkim. During the period from 1st January 2023 to 31st March, 2023, an area of 577 sq km had been covered (**Annexure - 11.1**).

**11.4** During FS 2023-24, a total of seven Systematic Thematic Mapping (STM) programme on 1:25,000 scale have been taken up in NER of which two items are being executed in Arunachal Pradesh, one in Assam, two in Meghalaya, one in Nagaland and one in Sikkim. During the period from 1st April 2023 to 31st December, 2023, an area of 566.5 sq km has been covered (**Annexure - 11.2**).

#### Geochemical Mapping (GCM)

**11.5** Geochemical Mapping (GCM) is being carried out by GSI in different parts of NER to generate the baseline regional geochemical data with elemental distribution pattern. This is being done with the objective of identifying the targeting areas for search of mineral deposits.

**11.6** A total of 30 items of Geochemical Mapping on 1:50,000 scale with collection of samples in grid pattern had been taken up during the FS 2022-23 in parts of Arunachal Pradesh, Assam, Meghalaya, Tripura & Mizoram and Manipur-Nagaland. An area of 9345 sq km has been covered during the period from 1st January 2023 to 31st March 2023 (**Annexure - 11.3**).

**11.7** Total 48 items of Geochemical Mapping on 1:50,000 scale with collection of samples in grid pattern is being executed during the FS 2023-24 in parts of Arunachal Pradesh, Assam, Manipur-Nagaland and Tripura & Mizoram. An area of 12173 sq km has been covered during 1st April 2023 to 31st December 2023 (**Annexure - 11.4**).

### **Geophysical Mapping (GPM)**

**11.8** Geophysical Mapping (GPM) has been taken up with an objective to prepare gravity-magnetic anomaly maps so as to delineate sub surface geological structures. These studies along with the geological and geochemical maps help in postulating conceptual models to focus on potential/probable target areas of interest for mineral exploration in deep as well as shallow levels.

**11.9** As a part of FS 2022-23 two GPM Items had been executed by GSI, NER. During the period 1st January 2023 to 31st March 2023 a total area of 2016 sq km had been covered (**Annexure - 11.5**).

**11.10** Two GPM items in South-East Hills districts, Meghalaya and East Khasi and East Jaintia Hills districts, Meghalaya is being executed during FS 2023-24 and an area of 800 sq km have been covered during the period from 1st April 2023 to 31st December, 2023 (**Annexure - 11.6**).

### **Photo Geology and Remote Sensing (PGRS)**

**11.11** Two items of Photo Geology and Remote Sensing (PGRS) had been taken up on 1:50,000 Scale during FS 2022-23 to carry out the alteration zone mapping in West Garo Hills, North Garo Hills, East Garo Hills and South Garo Hills district of Meghalaya using ASTER data for residual deposits. The total target of 3650 sq km had been completed during the period from 1st January 2023 to 31st March 2023(**Annexure - 11.7**).

**11.12** During the FS 2023- 24, two items of Photo Geology and Remote Sensing (PGRS) is being executed on 1:50,000 Scale in parts of Meghalaya, Assam and Sikkim states by using ASTER data. A total area of 16560 sq km has been completed during the period from 1st April 2023 to 31st December 2023 (**Annexure - 11.8**).

### **Mineral Exploration in NER**

**11.13** The major mineral resources in NER that are partially explored include coal, limestone, dolomite, graphite, lateritic bauxite, clay, quartzite, sillimanite etc. Besides, occurrence of low-grade iron ore, base metal sulphides and minor incidences of nickel, cobalt, lithium, vanadium, molybdenum, gallium, gold, tin, tungsten, Platinum Group of Elements (PGE) and Rare Earth Elements (REE) are reported.

GSI has given special thrust on the mineral exploration and development activities in North Eastern Region through resource appraisal of various mineral commodities including minerals 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 in order to generate concurrent synthesis of database to help in delineating areas for prognosticated mineral search. During recent time impetus has been given on critical and strategic commodities like Vanadium, graphite, REE, Molybdenum and lithium to meet the demand of industry for green energy.

The Geological Survey of India has in addition to the accredited programmes in exploration work, also accorded priority for creation of multi-thematic database for data dissemination to invite and attract private investments in mineral sector.

During FS 2022-23, a total of twenty-two items (5 G3 and 17 G4 Item) has been taken up in the states of Arunachal Pradesh, Assam, Meghalaya, Manipur and Nagaland while, in FS 2023-24, a total of twenty-five items (7 G3, 17 G4 and 1 RP Item) have been taken up in the states of Arunachal Pradesh, Assam, Meghalaya, Manipur and Nagaland and Sikkim of North East India. The commodity-wise and stage - wise details of the projects are given in (**Annexure - 11.9**). During the period from 1st January, 2023 to 30th November, 2023, an area of 801.4 sq km

of LSM, 12.36 sq km of DM and 2794.16 m of Drilling has been carried out. The anticipated data from 1st December, 2023 to 31st March, 2024 is: LSM - 455.4 sq km, DM- 3.61 sq km and drilling - 2777.34 m.

### **Publications by GSI, NER**

**11.14 (A)** During FS 2023-24, the following items on Publications and Maps have been taken up:

- i. Publication of Records of GSI, Vol. 157, Pt. 4 (Extended Abstract for F.S. 2022-23 of North Eastern India). Publication of Bulletin Series-B: Seismic Hazard Assessment of selective towns of North East India.
- ii. Compilation and updation of District Resource Maps (DRM's) of East Jaintia Hills, West Jaintia Hills, East Khasi Hills, West Khasi Hills, South West Khasi Hill, Eastern West Khasi Hills, East Garo Hills, North Garo Hills, West Garo Hills, South Garo Hills, South West Garo Hills and Ri Bhoi Districts of Meghalaya on 1:250,000 scale in GIS Platform.
- iii. Compilation & updation of District Resource Maps of West Karbi Anglong, Kamrup (M), Dima Hasao, Hojai, Majuli, Charaideo, Chirang, South Salmara Mankachar, Udalguri & Bajali Districts of Assam on 1: 250,000 scale in GIS Platform
- iv. Compilation and updation of District Resource Map (DRM's) of Kamjong, Kangpokpi, Jiribam, Kakching and Noney Districts of Manipur on 1:250,000 scale in GIS platform
- v. Compilation and preparation of District Resource Maps (DRM's) of Siang, East Siang, West Siang, Leparada, Lower Siang, Kamle Districts of Arunachal Pradesh on 1:250,000 scale in GIS Platform
- vi. Creation of Legacy Borehole Data Repository (LBDR) in FSPMIS, NER.

**(B)** Details publications and maps were released during FS 2023-24 as a part of Public Goods Geoscience:

- i. Publication of Bulletin Series-B: Geotechnical Investigation of Hydel projects in Arunachal Pradesh.
- ii. Limestone deposit of Litang Valley, Jaintia Hills District, Meghalaya, Vol-I (2nd edition): Bulletin Series –A, No-63
- iii. Publication of Miscellaneous Publication No. 30 Pt IV, Vol. 2 (II) (Geology and Mineral Resources of Meghalaya, 3rd edition)
- iv. Publication of Records of GSI, Vol. 153, Pt. 4 (Extended Abstract for F.S. 2018-19) of NER).
- v. Publication of GSI Records, Vol. 154, Part 4, Extended Abstracts of Progress Reports for FS: 2019-20 of North Eastern India.
- vi. Geotourism sites of North EastIndia. (E-Coffee table book)

### **Mineral Exploration & Consultancy Limited (MECL)**

#### **11.15 Work Carried out by MECL in North Eastern Region**

MECL has been associated with mineral exploration activities and geo-technical studies for the development of mineral industry in the North Eastern Region since 1977. During the current year 2023-24 (Upto Dec-23) MECL has carrying out exploration for coal in Makum, Bishnupur block, Tinsukia district Assam. It has completed exploration for coal in 15 blocks in the states of Assam, Arunachal Pradesh, Nagaland and Meghalaya on behalf of Ministry of Coal, North Eastern Council and CMPDIL. Under its promotional programme funded by Ministry of Mines, it has completed twelve projects which include Copper, Sillimanite, Glass sand, shell Limestone and ferro-silicon grade quartzite in the states of Assam, Meghalaya, Nagaland, Mizoram, Sikkim and Arunachal Pradesh. In addition, it has carried out geo-technical studies on behalf of Brahmaputra Flood Control Board in the State of Assam and Arunachal Pradesh and consultancy work for remote sensing studies at Tripura on behalf of Ministry of Mines. Exploration services were also rendered to Atomic Minerals Division involving survey, drilling & mining in Umarangaon/ Domiaset block, West Khasi Hill district.

**11.16** On behalf of Directorate General of Hydrocarbon, Government of India, MECL with BRGM France has completed studies for resource estimation in respect of oil shale deposit in an area of 254 sq. km. of Assam & Arunachal Pradesh. A total of 932 million tonnes of Oil Shale deposit have been established in the study area.

**11.17** MECL is keen for development of North Eastern States. Hence with focus on North Eastern Region to augment exploration, MECL has signed MoU with Government of Assam and taken exploration for Coal in Khotarda block, Mikir hills district is under progress.

## 12. WELFARE ACTIVITIES FOR SC<sub>2</sub>/ST<sub>2</sub>s, WOMEN, MINORITIES & PERSONS WITH DISABILITIES.

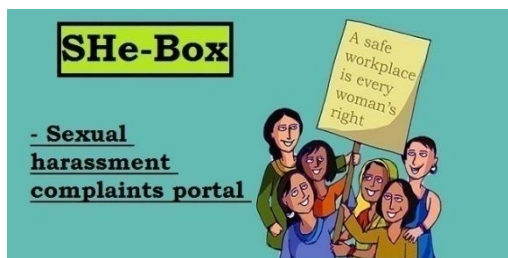
**12.1** The Ministry of Mines, with its attached office, subordinate office and the Public Sector Undertakings under its administrative control follow the Government guidelines with regard to welfare of weaker sections of the society, in letter and spirit. For upliftment of weaker sections of society, PSUs identify and implement a number of programmes in the peripheral area of their units/locations.

**12.2** 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 were undertaken by the PSUs for upliftment of the community in and around their townships as part of their social responsibility.

**12.3** For the welfare of SC/STs, OBCs and PWDs, Liaison Officers have been appointed.

**12.4** A complaint committee has been constituted to look into cases of sexual harassment of women at work place.

**12.5** Ministry of Women & Child Development has developed an online complaint Management System titled Sexual Harassment electronic –Box (SHe-Box) ([www.shebox.nic.in](http://www.shebox.nic.in)) to receive complaints related to Sexual Harassment at workplace. Once a complaint is submitted to the She-Box, it will directly go to the ICC of the concerned Ministry which has the jurisdiction to inquire into the complaint. The Chairperson of Internal Complaints Committee of this Ministry monitors the progress of inquiry conducted by ICC on the Sexual Harassment complaints received from women employees of this Ministry.



*SHe-Box Online complaint management system Women's Welfare*

### 12.6 National Aluminium Company Limited (NALCO)

- 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.
- 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-imbursment of travelling expenses for attending both written test and interviews.
  - (d) Relaxation of experience up to one year.
  - (e) Relaxation in qualifying marks for eligibility.
  - (f) 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 is 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.

## 12.7 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. Advertisement to fill up the vacancy position is notified in regional languages in order to encourage the minority candidates about recruitment especially in Group- 'C' & 'D' posts.

## 12.8 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 19<sup>th</sup> Apr' 17 onwards, 4% of vacancies are being reserved for persons with disabilities as provided in the Act. As on 31st December, 2023, there are 91 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.

## 12.9 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, 2023 has 322 nos. of women employees at different levels and categories.

### MANPOWER STRENGTH:

**12.10 National Aluminium Company Limited (NALCO):** Employment of SC/ST/Ex-SM/PWD/LDP/Minorities in the Company as on 31<sup>st</sup> December, 2023

**Table 12.1**

Group	Total No Of Employees	SC	ST	EX-SM	PWD	LDP	Minority
<b>Executives</b>	1614	244	144	0	31	24	62
<b>Non-executives</b>	3337	517	806	7	60	1351	114
<b>Total</b>	<b>4951</b>	<b>761</b>	<b>950</b>	<b>7</b>	<b>91</b>	<b>1375</b>	<b>176</b>

*It may be seen from above that every third employee of the organization belongs to SC or ST Community.*

## 12.11 Hindustan Copper Limited (HCL)-

### ❖ Employees Participation in Management

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.

❖ Perspective Plan for Women Welfare

Internal Committees have been constituted and amended from time to time in all the Units/Offices of the company for the prevention of sexual harassment of women in work place, the details of the Committees and their members are available in the employee section of HCLs website. A provision in this regard has also been incorporated in the Conduct, Discipline and Appeal Rules of HCL.

❖ Representation of SC/ST and OBC

The representation of SC, ST and OBC employees out of the total manpower of 1320 as on 31.12.2023 is 19.01%, 10.22% and 20.07% respectively.

❖ Other Welfare Measures

- Contributory Post-Retirement Medical Scheme (CPRMS) is in vogue and is a Medi-claim Scheme for Retired Employees, Spouse of Retired Employees & Spouse of deceased retired employees of Hindustan Copper Limited. The Scheme is renewed annually.
- The retired employees of the Company and their spouses are extended medical treatment at the Company's Hospitals at the Projects.
- The Company also extends support to 'Mahila Samity' and other institutions / NGOs in their endeavor to run 'Health Camps' for the local population under CSR programme.
- 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.
- The Company maintains Cultural Clubs for the employee at all the production Units.

**12.12 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 31.12.2023 is as under: -

**Table 12.2**

<b>Group</b>	<b>Number of Persons with Disabilities (PwDs)</b>
A	14
B	0
C	4
D	7
Total	25

**Mineral Exploration & Consultancy Limited (MECL)**

**12.13 Welfare of SC/ST, Women and Weaker section-** The category wise employment position including General /SC /ST /OBC /Minorities /Women (As on 31.12.2023) in the company is given in **Table-12.3**

**Table – 12.3**

**Employment of Personnel as on 31.12.2023**

<b>Group</b>	<b>Total No. of employees</b>	<b>General</b>	<b>SC</b>	<b>ST</b>	<b>O.B.C</b>	<b>EWS</b>	<b>Minorities</b>	<b>Women</b>
A	242*	123	34	12	70	03	12	23
B	28	09	05	02	12	00	00	00
C	546	182	97	31	231	05	19	29
D	-	-	-	-	-	00	-	-
<b>Total</b>	<b>816*</b>	<b>314</b>	<b>136</b>	<b>45</b>	<b>313</b>	<b>08</b>	<b>31</b>	<b>52</b>

\* Excluding Directors.

**12.14** MECL is an equal opportunity employer for women employees where the service rules are uniformly applicable to both male and female employees. The company is successfully running its crèche facility. The women employees in the Company are provided Maternity benefits as per rules.

**12.15** The company has in place an Anti-Sexual Harassment policy in line with the requirements of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013. Internal Complaints Committee (ICC) has been set up to redress complaints received regarding sexual harassment. All employees (permanent, contractual, temporary, trainees) are covered under this policy. Number of complaints received is nil and number of complaints disposed off is nil as on 31.12.2023.

**12.16** In line with the Rights of Persons with Disability Act, 2016, MECL has implemented Equal opportunity Policy as per directive of Ministry of Social Justice & Empowerment.

### **Geological Survey of India (GSI)**

#### **12.17 Welfare Activities for SCs/STs & other weaker sections**

The Geological Survey of India, an attached office of the Ministry of Mines, has undertaken a number of activity for welfare of the SCs/STs/OBCs/PWDs & other weaker sections and is following the rules and regulations as issued by the DoP&T time to time so far the employment through SSC and UPSC is concerned.

Liaison Officers at each Regional office of the Department including CHQ being the Nodal Authority and the SC/ST Cells under their direct control are ensuring that representation of personnel belonging to the weaker sections are being properly disposed of. The difficulties faced by them in service matters are being addressed and adequate welfare measures are being taken. LO SC/ST Meetings are also being held in regular periodicity in different offices of the department. Special emphasis is also given by each and every Cadre Controlling Authority towards proper maintenance of the Reservation Rosters as well as yearly inspection of rosters 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.

### 12.18 Women's Welfare

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 at workplace.

**12.19** The total strength of employees in the GSI and the representation of SC/ST/OBC and other weaker sections during the year 2023 is given in **Table 12.4**.

**Table  
12.4**

Statement Showing category-wise details of existing staff of GSI as on 30/11/2023								
Class	Revised sanctioned strength as proposed by the Ministry	Men in position	SC	ST	OBC	No. of Women	PH	Total (SC, ST, OBC, Women, PH)
Group-A	3441	2890	457	222	829	799	31	<b>2338</b>
Group-B (Gaz.)	912	527	119	66	106	84	11	<b>386</b>
Group-B (NG) (Min.)	661	650	80	59	64	132	10	<b>345</b>
Group-B (NG) (Tech.)	890	307	39	21	37	19	7	<b>123</b>
Group-C (Min.)	520	410	57	29	74	59	7	<b>226</b>
Group-C (Tech.)	1232	580	74	59	118	22	11	<b>284</b>
MTS (Erstwhile Gr-D)	1022	724	169	106	130	123	26	<b>554</b>
<b>TOTAL</b>	<b>8678*</b>	<b>6088</b>	<b>995</b>	<b>562</b>	<b>1358</b>	<b>1238</b>	<b>103</b>	<b>4256</b>

(\*)- Out of 8678, 28 posts are yet to be created.

### Indian Bureau of Mines (IBM)

#### Reservation of Vacancies for persons with Disabilities

**12.20** 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. As on 31st December 2023, 19 physically handicapped persons were under employment in IBM.

#### Welfare activities for SC/ST, Women, Minorities and PWD's

**12.21** Women employees constitute about 12 percent. Training is imparted to women employees in the field of technical as well as administrative matters.

**12.22** 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. Prevention of Sexual Harassment at Work Place Week 2023 was organized in the month of December, 2023 wherein various programmes as Essay Competition, Poster Competition and guest lecture on the provisions of the Prevention of Sexual Harassment (PoSH) Act were conducted.

### Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC)

#### Welfare for Persons with Disabilities (PWD), Women, SC& ST.

**12.23** The Centre is following the various government guidelines w.r.t PWD, SC& ST reservation. Recruitment of one OH category persons was completed.

### 13. BUDGET AND AUDIT PARAS

#### Budget

#### Budget allocation for the year 2023-24 and 2024-25, Ministry of Mines

13.1 The Budget Estimates (BE) 2023-24, Revised Estimates (RE) 2023-24 and Budget Estimates (BE) 2024-25 in respect of Demand No.69 – Ministry of Mines including Organization wise breakup of the allocation are as under: -

Sl. No.	Organizations	2023-24		2024-25
		BE	RE	BE
1.	Sectt. (Proper) (Including PAO)	45.00	46.20	70.48
2.	GSI	1308.60	1345.58	1300.00
3.	IBM	122.48	113.84	135.00
4.	BGML	6.70	5.58	8.00
5.	NMA	0.70	0.70	0.70
6..	INT Cooperation	0.37	0.37	0.38
7.	NIRM	6.38	6.38	3.50
8.	JNARDDC	11.37	11.37	11.00
9.	Other Research Programmes	10.00	10.00	12.00
10.	NMET	400.00	1296.50	400.00
	<b>Total</b>	<b>1911.60</b>	<b>2836.52</b>	<b>1941.06</b>

#### Audit

13.2 Hon'ble Minister of Mines reviewed the pendency of Audit Paras on 10.10.2023. Secretary, Mines held three review meetings on [20.09.2023](#), [19.10.2023](#) and 01.12.2023 under his Chairmanship in which the CMDs of CPSEs and Heads of all organizations participated. **The latest position on Audit Paras is as follows:**

#### **CAG AUDIT PARA:**

Sl. No.	Organization	Position as on 01.04.2023	Current Position	Status/ Remarks
1	GSI	1	1	ATN Vetted by Audit on 17.10.2023. Still under process for final settlement.
2	NMET	1	2	Partly Settled and revised ATN has been uploaded. One fresh para received on 8.11.2023(Reply sent to CAG on 04.12.2023 )
3	NALCO	56	16	After various Audit Committee Meeting held by NALCO with CAG 40 Paras have been settled.
4	HCL	5	5	CAG has replied on <a href="#">9th October, 2023</a> to HCL that all the 5 Paras will be deleted from the respective inspection report once the Performance Audit Report is tabled in the Parliament.
5	JNARDDC	5	1	Still pending. Para is related to IT refund and is pending with Income Tax Office.
6	MECL	7	20	In MECL initial 7 Paras were settled and 20 fresh CAG Paras were received subsequently. Out of 20, replies for 19 paras have already been sent. Reply for remaining 1 will be sent soon.
<b>TOTAL</b>		<b>75</b>	<b>45</b>	

## 14. Miscellaneous

### National Informatics Centre (NIC)

#### IT Support by NIC at Ministry of Mines

**14.1** National Informatics Centre (NIC) of the Ministry of Electronics and Information Technology is providing network backbone and e-Governance support to the Ministry of Mines. The following are the IT Services that NIC is providing to Ministry of Mines.

#### Management Information Systems for the Ministry

**14.2** Ministry of Mines with the help of NIC is implementing various decision support system required for better planning, monitoring and decision making . The key advantage for the MIS websites / applications is to reduce the Ministry's workload and increase overall transparency in its function. 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 . A dashboard depicting production, performance and other relevant information of Ministry and its offices is developed. NIC in the Ministry has Re-engineered Ministry's website (<https://mines.gov.in>) using latest state of art CMS driven technology in open source. The following MIS operational:

- a) Satyabhama - a Web Portal for Science and Technology Schemes (<https://research.mines.gov.in>) to promote research in mining sector.
- b) Dashboard of Ministry of Mines ( <http://dashboard.mines.gov.in> )
- c) Revision Application System ( RAS ) ( <https://ras.nic.in> )
- d) Registration under Rule 45 of MCDR Rules 2017 ( <https://ibmreg.nic.in> )
- e) Intra-mines Web portal (Covers e-Indent of various stationary items and cleaning material, online booking of Conference Rooms, Service Request and 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.
- f) Non - Ferrous Metal Import Monitoring System (NFMIMS )
- g) IBM Registration System under Rule 45 of MCDR Rules 2017 based on Form "K".

#### Support for e - Governance Applications

**14.3** The following e-Governance applications have been implemented and supported by NIC in the Ministry:

- Public Financial Management System
- e-Office and SPARROW
- eVisitor System
- ACC Vacancy Monitoring

#### Local Area Network (LAN)

**14.4** LAN has been established in the Ministry, which interconnects various officers/staff in the Ministry. There are approximately two hundred users connected to the LAN. 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 ShastriBhawan Network Centre. EDR/EPP is installed on clients for advance protection from virus, malware etc as per Govt. of India Standards.

#### Wi-fi Support

**14.5** Ministry of Mines has been made wi-fi enabled by NIC-Mines team. Form processing for wi-fi connection and device configuration is done by NIC Mines Team. As on date, 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**

**14.6** 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 to 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.

## **Email/VPN Cloud Support**

**14.7** Email requests of the Ministry Officials are processed by NIC Mines Team as and when required. 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**

**14.8** 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) – for Registration System and for conducting video conferencing sessions with the Ministry.
- 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.

## **Website of Ministry**

**14.9** Website of Ministry has been redesigned using latest state-of –the-Art technology. It is a CMS driven system with ease in operation and management. The site is security audited and also got STQC clearance as per required for all Government website. NIC Website provides on various comprehensive information subjects like Acts & Rules and working of the Ministry, Right to Information Act, National Mineral Policy and information about the Indian Mineral Sectors, current status of the Revision Applications and Mineral Concession Cases, Annual Report of the Ministry and provides links to its PSUs and offices. The website is bilingual. Website of the Ministry (<https://mines.gov.in>) is “Guidelines for Indian Government Websites”(GIGW) 3.0compliant.

## **Redressal of public grievances:-**

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. An Economic Advisor has been designated as the Nodal Officer of Public Grievances. During the period 1st January, 2023 to 31st December, 2023, 995 Public Grievances were received and 35 pending cases were brought forward from the year 2022. A total of 986 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.

Details of action taken on the public grievances of this Ministry and its attached / subordinate offices /PSUs during the year 2023 (from 01st January 2023 till 31st December, 2023) are given in Table 1.

Table 1

Organization	No. of public grievances pending as on 31.12.2022	Public grievances received during 01.01.2023 to 31.12.2023	Disposed cases during 01.01.2023 to 31.12.2023	Pending cases as on 31.12.2023
Ministry of Mines	35	995	986	44

Geological Survey of India (GSI)	3	172	168	07
Hindustan Copper Limited (HCL)	6	125	117	14
Indian Bureau of Mines (IBM)	6	44	50	0
National Aluminium Company Limited (NALCO)	0	42	41	1
Mineral Exploration & Conculancy Limited (MECL)	1	15	15	1
JNARDDC	0	0	0	0
NIRM	0	2	2	0

## Vigilance cases

### Ministry of Mines

**14.10** During the year 2023 (upto 31st December, 2023), 20 complaints were received. From the previous calendar year, 10 complaints were pending. Out of these total 30 complaints, 20 were brought to their logical conclusion and 10 complaints are pending as on 31.12.2023. Vigilance Awareness Week was observed from 30<sup>th</sup> October, 2023 to 05<sup>th</sup> November, 2023 in the Ministry as well as in Subordinate/Attached Offices of the Ministry. During the week, Debate, Essay Writing and Quiz Competition related to vigilance activities were organised in the Ministry.

### Right to Information Act (RTI)

**14.11** Ministry of Mines, Attached Office, Subordinate Office and Public Sector Undertakings (PSUs) under the charge of the Ministry have appointed Central Public Information Officers (CPIO) and Appellate Authorities. The Ministry has also set up a Facilitation Counter for applicants and constituted a 'Public Information Cell' for processing of the requests and their monitoring in the Ministry. The Ministry along with its Attached Office, Subordinate Office and PSUs received various requests under RTI Act, which were properly and timely responded to. During the year 2023 (1<sup>st</sup> January, 2023 to 31<sup>st</sup> Dec, 2023), the Ministry received 790 applications under the RTI Act, which were timely responded to. 43 Appeals received against the decisions of the CPIOs were disposed of by the concerned Appellate Authorities within the stipulated time frame.

The status regarding receipt and disposal of RTI Applications, First Appeals and Second Appeals w.r.t. the Ministry and its offices is given at **Table 2, Table 3 and Table 4** respectively.

**Table 2**  
**RTI Applications / Request Status (w.e.f. 1<sup>st</sup> January, 2023 to 31<sup>st</sup> December, 2023)**

Organization s	Previous Pendency as on 01/01/2023	No. of cases				Pendency			
		No. of RTI / Requests / Applications received during the period	Disposal	Information denied under section 8 (1), 9, 11, 24 & other of RTI Act	Balanc e	0-3 Month s	4-6 Month s	7-9 Month s	10-12 Month s
Ministry of Mines (Sect.)	0	790	764	6	20	20	Nil	Nil	Nil

GSI	11	1063	1013	25	36	36	Nil	Nil	Nil
HCL	3	273	214	41	21	21	Nil	Nil	Nil
IBM	8	554	529	14	19	19	Nil	Nil	Nil
JNARDDC	0	15	15	0	0	0	Nil	Nil	Nil
MECL	1	91	83	0	9	9	Nil	Nil	Nil
NALCO	15	306	188	119	14	14	Nil	Nil	Nil
NIRM	0	6	6	0	0	0	Nil	Nil	Nil

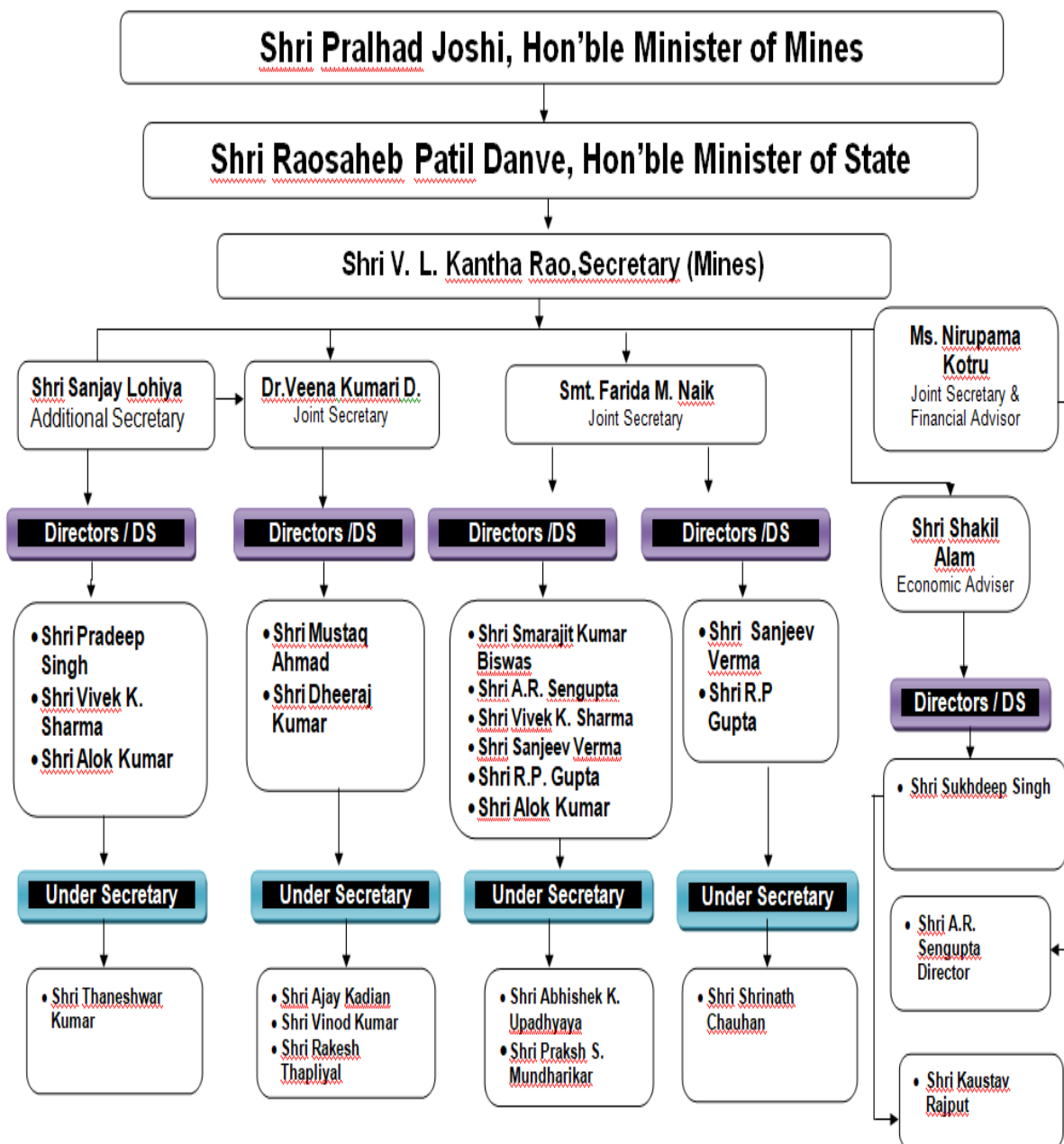
**Table 3**  
**RTI Appeals Status (w.e.f. 1<sup>st</sup> January, 2023 to 31<sup>st</sup> December, 2023)**

Organization s	No. of cases					Pendency			
	Previous Pendency	No. of 1 <sup>st</sup> 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.)	0	43	42	0	1	1	Nil	Nil	Nil
NALCO	3	68	68	0	3	3	Nil	Nil	Nil
HCL	0	43	29	7	7	6	1	Nil	Nil
MECL	0	6	6	0	0	0	Nil	Nil	Nil
IBM	0	36	33	0	3	3	Nil	Nil	Nil
GSI	3	135	125	0	13	13	Nil	Nil	Nil
NIRM	0	1	1	0	0	0	Nil	Nil	Nil
JNARDDC	0	0	0	0	0	0	Nil	Nil	Nil

**Table 4**  
**CIC 2<sup>nd</sup> Appeals Status (w.e.f. 1<sup>st</sup> January, 2023 to 31<sup>st</sup> December, 2023)**

Organizations	No. of cases				
	Previous Pendency	No. of 2 <sup>nd</sup> Appeals files in CIC	Decided		
			In favour of Appellant	In favour of Organization	Balance
Ministry of Mines (Sect.)	0	4	0	4	0
NALCO	0	3	0	3	0
HCL	0	4	1	3	0
MECL	0	1	0	1	0
IBM	0	2	0	2	0
GSI	0	0	0	0	0
NIRM	0	0	0	0	0
JNARDDC	0	0	0	0	0

## ORGANIZATIONAL STRUCTURE OF MINISTRY OF MINES



**Annexure 6.1**

**Activity-wise physical performance of GSI in last five years (2018-19 to 2022-23) and current Annual Programme 2023-24 (upto November, 2023)**

Name of the Activity/Project	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
<b>MISSION-I : BASELINE GEOSCIENCE DATA</b>												
a) <b>Ground Survey</b> Systematic Geological Mapping (sq.km.)	-	-	-	-	4097	4097	-	-	-	-	-	-
b) Spl. Thematic Mapping (sq.km.)	20000	23320.5	12000	18157.5	2000	311101	2000	25843	19000	20,019.4	23000	8306.5
c) Geochemical Mapping (sq.km.)	145000	175686	40000	66649.6	15000	184201.59	240000	264542.79	250000	287436.88	120000	59343
d) Geophysical Mapping (sq.km.)	110000	119068	50000	58161	10000	102136	100000	113609	100000	130680*	100000	33941.6
e) Aerial Survey: Multisensor Surveys using GSI's Twin Otter Aircraft	43221	10822.3	42410	42993	-	-	-	-	-	-	-	-
f) Heliborne Surveys	-	-	-	-	-	-	-	-	-	-	-	-
g) <b>Marine Survey:</b> Systematic coverage TW and EEZ (in sq km) [Activities include Bathymetry, Magnetic survey, Shallow Seismic Survey and Sampling]	1400	1400	1400	1500	11000	14414	20000	23911	1400	1400	1400	1507
<b>MISSION-II : NATURAL RESOURCE ASSESSMENT</b>												
a) Large Scale Mapping (LSM) (sq. km.)	6000	9330.6	10000	17299.5	5000	7911.75	10000	12393.1	10200	15995.55	16000	6702.75
b) Detailed mapping (DM) (sq. km.)	125	166.8	200	269.35	90	98.57	120	200.11	125	186.71	150	95.207
c) Drilling (meter)	120000	115697	160000	132805.7 <sup>#</sup>	120000	138016	130000	154957.30	135000	180934.14	135000	56448.72

d) Preliminary mineral investigation within EEZ (sq.km)	24000	25634	25500	24444	21500	28557	4000	4500	12000	16,828	12000	14049
e) Close grid mineral investigation in EEZ (sq.km)	3500	3834	2500	2667	700	308	450	450	650	662	550	48
<b>MISSION-III : GEOINFORMATICS</b>												
a) Map & Publication projects (in nos)	40	43	40	52	40	54	40	49	45	62	50	63
<b>MISSION-IV: FUNDAMENTAL AND MULTIDISCIPLINARY GEOSCIENCE</b>												
a) <b>Multidisciplinary Geosciences</b> Geotechnical, Earthquake Geology & Seismology, Geo-environment, Glaciology, Geothermal etc. (in nos.)	66	108	80	129	80	113	85	113	95	119	100	115
b) <b>Research &amp; Development</b> Research project (in nos)	50	68	50	56	50	51	50	52	40	43	40	42
<b>MISSION-V: TRAINING AND CAPACITY BUILDING</b>												
Training courses in GSITI (in nos)	90	165	108	188	120	184	125	289	130	147	150	117

#includes 783m drilling pertaining to Mission-I and 2498.6m drilling pertaining to Mission-IV

\*includes GPM of 22,230 sq km done by outsourcing utilising NMET fund.

**Annexure 6.2**

**Table-I: Year-wise and activity-wise financial performance of GSI during FS 2021-22, 2022-23 and current FS 2023-24 upto 26<sup>th</sup> December, 2023**

Activity (Mission)	2021-22			2022-23			(in crore) 2023-24		
	BE Grant	RE Grant	Actual Expend.	BE Grant	RE Grant	Actual Expend.	BE Grant	Available Fund in BE/ Tentative RE	Actual Expend. (Up to 26 <sup>th</sup> Dec, 23)
Survey and Mapping (M-I)	131.40	95.00	94.93	108.92	115.75	115.54	135.00	125.00	117.70
Mineral Exploration (M-II)	51.00	54.60	54.47	52.70	63.00	62.93	63.00	63.00	50.23
Information Dissemination (M-III)	56.60	50.20	48.68	45.50	35.00	34.99	23.60	17.60	10.22
Special Investigation & Antarctica (M-IV)	2.40	3.05	2.97	3.48	3.08	2.99	3.50	3.50	1.80
Research & Development (R&D) (M-IV)	12.60	10.55	10.38	15.50	16.37	16.03	16.50	16.50	12.80
Human Resource Development (HRD) (M-V)	2.00	8.30	8.30	2.00	2.00	2.00	2.10	2.10	1.38
TSP	14.40	17.50	17.48	20.00	20.70 #	20.64	17.50	18.40@	17.48
SCSP	27.60	31.56	31.55	31.10	32.45 #	32.43	33.50	35.24@	24.13
Administrative Support Activity+ Minor Works (ASA)	94.97	88.61	87.54	99.86	91.16	89.95	105.30	105.30	95.20
Establishment Expenditure (EE)	722.71	759.71	759.28	768.61	821.85	821.40	836.50	887.42 @	702.38
<b>Total Revenue</b>	<b>1115.68</b>	<b>1119.08</b>	<b>1115.58</b>	<b>1147.67</b>	<b>1201.36</b>	<b>1198.90</b>	<b>1236.50</b>	<b>1274.06</b>	1033.32
Capital (Modernization & Replacement)	<b>65.90</b>	<b>51.30</b>	<b>50.96</b>	<b>57.50</b>	<b>57.50</b>	<b>55.86</b>	<b>72.10</b>	<b>71.52@</b>	38.18

Total (Rev. + Capital)	1181.58	1170.38	1166.54	1205.17	1258.86	1254.76	1308.60	1345.58	1071.50
% of Fund Utilisation against RE in GSI			99.67%			99.67			79.63
Rev. Fund re-appropriated by MOM from RE grant	-	4.40*				-			-
Total (Rev + Capital)	1181.58	1174.78	1166.54	1205.17	1258.86	1254.76	1308.60	1345.58	1071.50

\*An amount of Rs.3.00 crore under IT (OE) and Rs.1.40 crore under Mission-II- Other Charges Head was re-appropriated by the Ministry vide re-appropriation Order dated 18.01.2022 from RE-2021-22 (Rs.1174.78 crore)

# Total RE grant received Rs. 1251.91 for FY 2022-23. An additional amount of Rs. 2.05 crore (SCSP- Rs. 1.35 crore and TSP- Rs. 0.70 crore) has been provided to GSI vide IFD re-appropriation dated 16.12.2022 over BE/RE 2022-23.

@An amount of RS. 0.58 Crore under ME head has been re-appropriated by the Ministry vide IFD, MoM re-appropriation order dated 21.04.2023 from BE 2023-24; \$ An additional amount of Rs.37.56 crore (Rs. 1.74 crore under SCSP; Rs. 0.90 crore under TSP and Rs.34.92 crore under Allowance Head) has been provided by Ministry from IBM; NMET and Secretariat Proper vide re-appropriation order dated 12.07.2023 & 26.12.2023.

### Annexure 11.1

During FS 2022-23, a total of six items of Systematic Thematic Mapping (STM) on 1:25,000 scale, including one RP items have been taken up in NER of which two items were taken up in Arunachal Pradesh, one in Assam, two in Meghalaya and one in Sikkim. During the period from 1st January 2023 to 31st March, 2023, an area of 577 sq. km had been covered respectively.

#### FS: 2022-23

Sr. No.	Item Type	Title of the Item	State	Target Achieved from 1st January, 2023 to 31st March, 2023 (in sq km)
1	STM	Specialised Thematic Mapping in Koloriang-Sarli-Sakehugu-Damin areas to establish tectonic setting, geochemistry and geochronology of Se La and Bomdila groups and to precisely constrain the age of metamorphism of both the Groups in KurungKumey District, Arunachal Pradesh and to assess the economic potentiality of the study area	Arunachal Pradesh	108
2	STM	Specialised Thematic Mapping to establish tectonic setting, geochemistry and geochronology of Lumla Formation with respect to Se La and Bomdila groups and assess economic potentiality in Tawang-Lumlaareas, Tawang District, Arunachal Pradesh	Arunachal Pradesh	5
3	STM	Specialized Thematic Mapping in Belughat-Samelangso areas of KarbiAnglong district, Assam to delineate different litho units of AMGC, Shillong Group and to establish structural implication of Kaliyani shear zone for possible mineralization.	Assam	90
4	STM	Specialised Thematic Mapping around Phutamati-Jangrapara-Dandarigiri area to unravel the tectono-metamorphic evolution in northwestern part of AMGC, West Garo Hills district, Meghalaya.	Meghalaya	125
5	RP	Specialised Thematic Mapping to establish the lithofacies variation and depositional settings of Mahadek Formation around Ranikor, Lawbah, Mustoh and Dawki areas in South West and East Khasi Hills, East and West Jaintia Hills Districts of Meghalaya.	Meghalaya	156
6	STM	Specialized Thematic Mapping for delineation and characterization of Main Central Thrust (MCT) by mapping in parts of West & South Districts, Sikkim	Sikkim	93

## Annexure 11.2

During FS 2023-24, a total of seven items of Systematic Thematic Mapping (STM) on 1:25,000 scale have been taken up in NER of which two items are being executed in Arunachal Pradesh, one in Assam, two in Meghalaya, one in Manipur Nagaland and one in Sikkim. During the period from 1st April 2023 to 31<sup>st</sup> December, 2023, an area of 566.5 sq km has been covered (Annexure – 11.2).

### FS: 2023-24

Sr. No.	Item Type	Title of the Item	State	Target Achieved from 1st April, 2023 to 31st December, 2023 (in sq km)
1	STM	Specialized Thematic Mapping to establish lithostratigraphy, tectonic setting, geochemistry and geochronology of Pari Mountain Gneiss, Bomdila Group and Dibang Group of rocks and assess economic potentiality in Lalpani-Tidding-Wakro areas, Lohit district Arunachal Pradesh	Arunachal Pradesh	95
2	STM	Specialised Thematic Mapping to establish tectonic setting, geochemistry and geochronology of Lumla Formation with respect to Se La and Bomdila groups and assess economic potentiality in Tawang-Lumla areas, Tawang District, Arunachal Pradesh	Arunachal Pradesh	95
3	STM	Specialized Thematic Mapping in Kaphitali-Daboka-Parokhuwa areas of Karbi Anglong district, Assam to establish igneous complex and to bring out the structural implication of Kaliyani shear zone for possible mineralization.	Assam	100
4	STM	Specialized Thematic Mapping around Phutamati – Jangrapara -Dandarigiri area to unravel the tectono-metamorphic evolution in western part of AMGC, North and West Garo Hills district, Meghalaya.	Meghalaya	88
5	STM	Specialized Thematic Mapping in parts of the Palaeogene Sediments of Jaintia and Garo Groups, in parts of South West Khasi Hills and South Garo Hills districts.	Meghalaya	22
6	STM	Specialised thematic mapping around Kohima-Viswema-Kezoma area, Nagaland to resolve the conundrum of Disang-Barail contact	Manipur-Nagaland	92.5
7	STM	Specialized Thematic Mapping of Rangit Window and to demarcate the geometry & kinematics of associated duplex system vis a vis characterization of the alkaline ultra-potassic syenite/Lamprophyres patches in the area of South and West Districts (Namchi, Gyalshing and Soreng Districts) of Sikkim.	Sikkim	74

### Annexure 11.3

A total of 30 items of Geochemical Mapping on 1:50,000 scale with collection of samples in grid pattern had been taken up during the FS 2022-23 in parts of Arunachal Pradesh, Assam, Meghalaya, Tripura & Mizoram and Manipur-Nagaland. An area of 9345 sq km has been covered during the period from 1st January 2023 to 31st March 2023.

#### FS: 2022-23

Sr. No.	Item Type	Title of the Item	State	Target Achieved from 1st January, 2023 to 31st March, 2023 (in sq km)
1	NGCM	Geochemical mapping in toposheet nos. 83E/5 & 83E/9 covering parts of Lower Subansiri districts of Arunachal Pradesh	Arunachal Pradesh	268
2	NGCM	Geochemical mapping in toposheet no.82P/16 covering parts of Lower Dibang Valley district, Arunachal Pradesh.	Arunachal Pradesh	239
3	NGCM	Geochemical mapping in toposheet no. 78M/14 covering parts of Tawang district of Arunachal Pradesh.	Arunachal Pradesh	16
4	NGCM	Geochemical mapping in toposheet no. 92A/01 covering parts of Lohit district of Arunachal Pradesh	Arunachal Pradesh	356
5	NGCM	Geochemical mapping in toposheet nos. 83I/1 and 83I/ 5 covering parts of Kamle and Upper Subansiri districts of Arunachal Pradesh	Arunachal Pradesh	296
6	NGCM	Geochemical mapping in Toposheet No. 83D/13 covering parts of Cachar District, Assam	Assam	248
7	NGCM	Geochemical mapping in toposheet no. 83B/13 and 83B/14 covering parts of Sonitpur and Nagaon Districts of Assam and East Kameng District of Arunachal Pradesh.	Assam	508
8	NGCM	Geochemical mapping in toposheet no. 83F/16 covering parts of Golaghat&KarbiAnglong districts of Assam and Wokha district of Nagaland	Assam	272
9	NGCM	Geochemical mapping in toposheet nos.83B/9 and 83B/10covering parts of Sonitpur and Nagaon Districts of Assam and West Kameng district of Arunachal Pradesh.	Assam	388
10	NGCM	Geochemical Mapping in parts of toposheet no. 78G/14 & 78 G/15 in West Garo Hills District, Meghalaya.	Meghalaya	525
11	NGCM	Geochemical mapping in parts of Toposheet No. 78K/04, 8, 12, 16 & 78O/04 covering West Garo Hills, South Garo Hills & South West Khasi Hills districts, Meghalaya.	Meghalaya	331
12	NGCM	Geochemical mapping in Toposheet No. 78K/3 covering parts of West Garo Hills districts, Meghalaya	Meghalaya	398
13	NGCM	Geochemical mapping in Toposheet no. 83G/15 in parts of Tamenglong, Senapati districts of Manipur and Peren District of	Manipur-Nagaland	222

		Nagaland		
14	NGCM	Geochemical mapping in Toposheet no. 83G/16 in parts of Senapati and Kangpokpi districts, Manipur	Manipur-Nagaland	271
15	NGCM	Geochemical mapping in toposheet no. 83L/4 in parts of Tengnoupal and Chandel districts of Manipur.	Manipur-Nagaland	282
16	NGCM	Geochemical mapping in T.S. No. 83H/15 in parts of Bishnupur, Kakching and Churachandpur districts of Manipur	Manipur-Nagaland	260
17	NGCM	Geochemical mapping in Toposheet no. 83H/16 in parts of Churachandpur and Chandel districts of Manipur.	Manipur-Nagaland	300
18	NGCM	Geochemical mapping in Toposheet no. 83J/04 in parts of Wokha and Kohima districts of Nagaland and Golaghat District of Assam	Manipur-Nagaland	237
19	NGCM	Geochemical mapping in Toposheet no. 83J/08 in parts of Kohima, Mokokchung, Zunheboto, and Wokha Districts of Nagaland	Manipur-Nagaland	295
20	NGCM	Geochemical mapping in Toposheet no. 83J/12 in parts of Mokokchung, Tuensang, and Zunheboto districts, Nagaland	Manipur-Nagaland	185
21	NGCM	Geochemical mapping in Toposheet No. 83J/11 in parts of Mokokchung, Tuensang, and Longleng districts, Nagaland	Manipur-Nagaland	206
22	NGCM	Geochemical Mapping in toposheet no 83D/12, covering parts of Kolasib&Mamit Districts of Mizoram; Hailakandi district of Assam.	Tripura-Mizoram	348
23	NGCM	Geochemical Mapping in toposheet no 83D/16, covering parts of Aizawl, Kolasib&Saitual Districts of Mizoram; Pherzawl district of Manipur.	Tripura-Mizoram	451
24	NGCM	Geochemical Mapping in toposheet no. 84A/15, covering parts of Aizawl &Serchhip districts, Mizoram.	Tripura - Mizoram	339
25	NGCM	Geochemical Mapping in toposheet no.84A/11, covering parts of Aizawl, Mamit&Lunglei districts, Mizoram.	Tripura-Mizoram	316
26	NGCM	Geochemical Mapping in toposheet no.84A/13, covering parts of Aizawl and Saitual districts, Mizoram.	Tripura-Mizoram	422
27	NGCM	Geochemical Mapping in toposheet no.84A/14, covering parts of Aizawl, Saitual&Serchhip districts, Mizoram.	Tripura-Mizoram	434
28	NGCM	Geochemical mapping in toposheet no. 83D/08 covering parts of North Tripura district of Tripura, Karimganj and Hailakandi districts of Assam and Mamit district of Mizoram.	Tripura-Mizoram	284
29	NGCM	Geochemical mapping in toposheet no. 83D/04 covering parts of North Tripura and Unakoti districts of Tripura.	Tripura-Mizoram	305
30	NGCM	Geochemical mapping in toposheet no. 84A/01 & parts of 84A/02 covering parts of North Tripura, Dhalai and Unakoti districts of Tripura.	Tripura-Mizoram	343

#### Annexure 11.4

Total 48 items of Geochemical Mapping on 1:50,000 scales with collection of samples in grid pattern is being executed during the FS 2023-24 in parts of Arunachal Pradesh, Assam, Manipur-Nagaland and Tripura & Mizoram. An area of 12173 sq km has been covered during 1st April 2023 to 31st December 2023.

#### FS: 2023-24

Sr. No.	Item Type	Title of the Item	State	Target Achieved from 1st April, 2023 to 31st December, 2023 (in sq km)
1	NGCM	Geochemical mapping in toposheet nos. 83N/5 & 83N/9 covering parts of Longding, Tirap and Changlang districts of Arunachal Pradesh	Arunachal Pradesh	220 sq km
2	NGCM	Geochemical mapping in Toposheet No. 83G/06 covering parts of KarbiAnglong East and Dima Hasao Districts, Assam & Peren District, Nagaland.	Assam	108
3	NGCM	Geochemical mapping in Toposheet No. 83G/07 covering parts of Dima Hasao District, Assam and Peren District, Nagaland & Tamenglong district, Manipur.	Assam	208
4	NGCM	Geochemical mapping in Toposheet No. 83J/03 covering parts of Jorhat & Golaghat Districts, Assam and Wokha District, Nagaland	Assam	328
5	NGCM	Geochemical mapping in Toposheet No. 83J/06 covering parts of Jorhat District, Assam and Mokochung District, Nagaland.	Assam	308
6	NGCM	Geochemical mapping in Toposheet No. 83D/11 covering parts of Hailakandi and Aizwal districts, Assam and Mizoram.	Assam	240
7	NGCM	Geochemical mapping in Toposheet No. 83D/10 covering parts of Cachar, Hailakandi and Karimganj districts, Assam.	Assam	300
8	NGCM	Geochemical mapping in Toposheet no. 83F/01 and 83F/05 covering parts of Biswanath District of Assam and Pekka Kessang and Papum Pare Districts of Arunachal Pradesh.	Assam	430
9	NGCM	Geochemical mapping in toposheet No. 83H/01 covering parts of Cachar, DimaHasao districts of Assam and Jiribam, Noney & Tamenglong districts of Manipur.	Assam	192
10	NGCM	Geochemical mapping in toposheet no. 83D/14 covering parts of Cachar and Hailakandi district of Assam	Assam	321
11	NGCM	Geochemical mapping in Toposheet No. 83D/9 & part of toposheet no 83D/5 covering parts of Cachar, Hailakandi and Karimganj districts, Assam.	Assam	300
12	NGCM	Geochemical mapping in toposheet no. 83F/9 covering parts of Sonitpur, Lakhimpur, and Sibsagar districts of Assam and East Kameng district of Arunachal Pradesh	Assam	272

13	NGCM	Geochemical mapping in parts of Toposheet No. 83D/05 & 06 covering parts of Cachar, Karimganj and Hailakandi Districts, Assam	Assam	316
14	NGCM	Geochemical mapping in Toposheet No. 83D/07 covering parts Karimganj and Hailakandi districts of Assam and North Tripura District of Tripura	Assam	292
15	NGCM	Geochemical mapping in Toposheet No. 83G/13 covering parts of Golaghat district of Assam and Dimapur, Kohima and Wokha districts of Nagaland	Assam	260
16	NGCM	Geochemical mapping in T.S. No. 83G/11 in parts of Peren District, Nagaland and Tamenglong District, Manipur	Manipur-Nagaland	308
17	NGCM	Geochemical mapping in Toposheet No. 83G/8 in parts of Tamenglong District, Manipur and Cachar District, Assam	Manipur-Nagaland	312
18	NGCM	Geochemical mapping in Toposheet No. 83G/10 in parts of Peren and Chumukedima districts, Nagaland and Karbi Anglong district, Assam	Manipur-Nagaland	382
19	NGCM	Geochemical mapping in Toposheet no. 83G/12 in parts of Peren district, Nagaland and Tamenglong district, Manipur	Manipur-Nagaland	280
20	NGCM	Geochemical mapping in toposheet no. 83G/14 in parts of Kohima, Chumukedima and Peren districts of Nagaland and Senapati district of Manipur	Manipur-Nagaland	340
21	NGCM	Geochemical mapping in Toposheet no. 83H/12 and 83E/09 in parts of Churachandpur district of Manipur	Manipur-Nagaland	304
22	NGCM	Geochemical mapping in parts of Imphal West, Imphal East and Kangpokpi districts of Manipur in T.S. No. 83H/13.	Manipur-Nagaland	288
23	NGCM	Geochemical mapping in parts of Imphal West, Imphal East, Thoubal, Bishnupur, Kakching and Senapati districts of Manipur in T.S. No. 83H/14	Manipur-Nagaland	308
24	NGCM	Geochemical mapping in Toposheet no. 83J/07 in parts of Mokokchung, Wokha districts of Nagaland and Sibsagar District of Assam	Manipur-Nagaland	292
25	NGCM	Geochemical mapping in Toposheet No. 83J/10 in parts of Mokokchung, and Longleng districts of Nagaland and Sibsagar district of Assam	Manipur-Nagaland	328
26	NGCM	Geochemical mapping in T.S. No. 83L/6 in parts of Kamjong & Tengnoupal districts of Manipur.	Manipur-Nagaland	264
27	NGCM	Geochemical mapping in toposheet no. Parts of 84E/05 & 84E/06 covering parts of Champhai & Khawzawl districts of Mizoram.	Tripura-Mizoram	284
28	NGCM	Geochemical mapping in parts of toposheet no. 84A/7, 84A/8 and 84B/5 covering parts of Lunglei and Mamit districts of Mizoram.	Tripura-Mizoram	156
29	NGCM	Geochemical mapping in toposheet no. parts of 84E/07 & 84E/08 covering parts of Champhai & Khawzawl districts of Mizoram.	Tripura-Mizoram	248
30	NGCM	Geochemical mapping in toposheet no. 84A/12 covering parts of Lunglei, and Serchhip districts of Mizoram.	Tripura-Mizoram	272
31	NGCM	Geochemical Mapping in Toposheet no. 84A/05, covering parts of North Tripura district, Tripura & Mamit district, Mizoram.	Tripura-Mizoram	216
32	NGCM	Geochemical mapping in toposheet no. 84A/16 covering parts of Lunglei, Serchhip and Hnahthial districts of Mizoram	Tripura-Mizoram	268

33	NGCM	Geochemical Mapping in parts of Toposheet no. 84A/06& 84A/07, covering parts of Mamit district, Mizoram.	Tripura-Mizoram	104
34	NGCM	Geochemical mapping in toposheet no. 84B/09 covering parts of Lunglei, district of Mizoram.	Tripura-Mizoram	132
35	NGCM	Geochemical Mapping in toposheet no.78P/15 and 83D/03, covering parts of Unnakoti, North Tripura district, Tripura & Karimganj district, Assam.	Tripura-Mizoram	232
36	NGCM	Geochemical Mapping in toposheet no 84B/12 and 84B/16, covering parts of Saiha and Lawngtlai Districts of Mizoram.	Tripura-Mizoram	220
37	NGCM	Geochemical mapping in toposheet no. 84E/3 covering parts of Serchhip, Khawzawl and Champhai districts of Mizoram	Tripura-Mizoram	260
38	NGCM	Geochemical Mapping in toposheet no 84E/01, covering parts of Saithul, Khawzawl and Champai districts of Mizoram	Tripura-Mizoram	268
39	NGCM	Geochemical Mapping in toposheet no 84F/03 and 84F/04, covering parts of Saiha Districts of Mizoram.	Tripura-Mizoram	148
40	NGCM	Geochemical Mapping in toposheet 84B/11 & B/12, covering parts of Lawngtlai district of Mizoram	Tripura-Mizoram	156
41	NGCM	Geochemical mapping in toposheet no. 84E/4 covering parts of Hnahthial, Serchhip, Khawzawl and Champhai districts of Mizoram.	Tripura-Mizoram	260
42	NGCM	Geochemical Mapping in toposheet no. 84B/15, covering parts of Lawngtlai & Saiha Districts of Mizoram.	Tripura-Mizoram	140
43	NGCM	Geochemical Mapping in toposheet 84F/01 & 02, covering parts of Hnahthial, Lawngtlai & Saiha Districts of Mizoram	Tripura-Mizoram	128
44	NGCM	Geochemical mapping in toposheet no. 83D/15 covering parts of Aizawl and Kolasib districts of Mizoram and Cachar district of Assam	Tripura-Mizoram	228
45	NGCM	Geochemical mapping in toposheet no. 84B/10 covering the parts of Lunglei and Lawngtlai districts of Mizoram.	Tripura-Mizoram	224
46	NGCM	Geochemical mapping in toposheet no. 84B/13 covering parts of Lunglei and Saiha districts of Mizoram.	Tripura-Mizoram	204
47	NGCM	Geochemical mapping in toposheet no. 84B/14 covering parts of Lunglei, Saiha and Lawngtlai districts of Mizoram.	Tripura-Mizoram	256
48	NGCM	Geochemical mapping in toposheet no. 84E/2 covering parts of Saitual, Khawzawl and Champhai districts of Mizoram.	Tripura-Mizoram	268

### Annexure 11.5

As a part of FS 2022-23 two GPM Items had been executed by GSI, NER. During the period 1st January 2023 to 31st March 2023 a total area of 2016 sq km had been covered.

#### FS: 2022-23

Sr. No.	Item Type	Title of the Item	State	Target Achieved from 1st January, 2023 to 31 <sup>st</sup> March, 2023
1.	GPM	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos. 78K/ 1 & 2 covering parts of North, West and Southwest Garo Hills	RHQ	1026
2.	GPM	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos. 78K/ 3 & 7 covering parts of West, South and Southwest Garo Hills districts, Meghalaya.	RHQ	990

**Annexure 11.6**

Two GPM items in South-East Hills districts, Meghalaya and East Khasi and East Jaintia Hills districts, Meghalaya is being executed during FS 2023-24 and an area of 800 sq km have been covered during the period from 1<sup>st</sup> April 2023 to 31<sup>st</sup> December, 2023.

**FS. 2023-24**

Sr. No.	Item Type	Title of the Item	State	Target Achieved from 1st April, 2023 to 31 <sup>st</sup> December, 2023 (in sq km)
1	PGRS	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos.78K/11 (Part), 78K/12, 78G/14,78G/15 covering parts of South, East Garo Hills districts, Meghalaya, Dhubri District, Assam	RHQ	400
2	PGRS	Ground Gravity-Magnetic Survey under National Geophysical Mapping Programme in Toposheet Nos.78O/4,78O/12,83C/6 covering parts of East Khasi Hills, East Jaintia hills districts of Meghalaya, KarbiAnglong district of Assam	RHQ	400

### Annexure 11.7

Two items of Photo Geology and Remote Sensing (PGRS) had been taken up on 1:50,000 Scale during FS 2022-23 to carry out the alteration zone mapping in West Garo Hills, North Garo Hills, East Garo Hills and South Garo Hills district of Meghalaya using ASTER data. The total target of 3650 sq km had been completed during the period from 1st January 2023 to 31st March 2023.

#### FS: 2022-23

Sr. No.	Item Type	Title of the Item	State	Target Achieved from 1st January, 2023 to 31 <sup>st</sup> March, 2023 (in sq km)
1	PGRS	Alteration zone mapping in West Garo Hills, East Garo Hills, North Garo Hills districts, Meghalaya using ASTER data falling in toposheets no. 78K/1, 78K/2, 78K/5, 78K/6, 78K/7, 78K/9, 78K/10, 78K/11	RHQ	1700
2	PGRS	Alteration zone mapping in East Garo Hills, South Garo Hills & West Khasi Hills districts, Meghalaya using ASTER data falling in toposheets no. 78K/5, 78K/6, 78K/7, 78K/9, 78K/10, 78K/11, 78K/13, 78K/14, 78K/15	RHQ	1950

**Annexure-11.8**

During the FS 2023- 24, two items of Photo Geology and Remote Sensing (PGRS) is being executed on 1:50,000 Scale in parts of Meghalaya, Assam and Sikkim states by using ASTER data. A total area of 16560 sq. km has been completed during the period from 1st April 2023 to 31st December 2023.

**FS: 2023-24**

<b>Sr. No.</b>	<b>Item Type</b>	<b>Title of the Item</b>	<b>State</b>	<b>Target Achieved from 1st April, 2023 to 31st December, 2023 (in sq km)</b>
1	PGRS	Spectral Geological/Surface mineral mapping using space borne multispectral ASTER data on 1:50,000 scale in OGP areas of Assam Meghalaya Gneissic Complex, Shillong Group, Alkaline Complexes	RHQ	8700
2	PGRS	Spectral Geological/Surface mineral mapping using space borne multispectral ASTER data on 1:50,000 scale in OGP areas of Sikkim Himalayan belt, Assam Meghalaya Gneissic Complex, Sylhet traps.	RHQ	7860

## Annexure-11.9

## Details of mineral exploration items taken up in NER during FS 2022-23 and 2023-24.

## FS: 2022-23

SI.No.	Title	Stage	Commodity
1	Preliminary exploration for limestone in Sikilangso block, Dima Hasao district, Assam	G3	Limestone
2	Preliminary investigation for placer gold in Geruamukh block, Dhemaji District, Assam	G3	Placer Gold
3	Preliminary exploration for REE and associated minerals in Krawgaon block, Jashora Alkaline Complex, West KarbiAnglong district, Assam.	G3	REE
4	Reconnaissance survey for Mo, REE and associated mineralisation in and around Magursila area, Kamrup(Metro) district, Assam.	G4	Mo, REE
5	Reconnaissance survey for REE and associated minerals in Anjakpani-Rionpahar area of Diju valley, Nogaon and KarbiAnglong districts, Assam.	G4	REE
6	Reconnaissance survey for REE and associated minerals in and around Paschim Nagaon and Sonaikuchi areas, Kamrup (Metro) and Morigaon Districts, Assam.	G4	REE
7	Reconnaissance Survey for Cr, Ni, PGE and associated minerals around Kamjong-Pihang-Bhungpa villages, Manipur Ophiolite Belt, Kamjong District, Manipur	G4	Cr, Ni, PGE
8	Reconnaissance survey for lithium bearing brine waters in and around Hutsu and Phor areas, Phek District, Nagaland	G4	Lithium
9	Reconnaissance survey for REE in Girujan Clay around Jharnapani, Dimapur District, Nagaland.	G4	REE
10	Reconnaissance survey of coal around Satsukba and Sahaphumi area of Mokokchung District, Nagaland	G4	Coal
11	Reconnaissance survey for limestone in Khongjiri and Khongka area, Kiphire District, Nagaland	G4	Limestone
12	Reconnaissance survey for Polymetallic - molybdenum, tungsten, REE, lithium, and associated mineralization around Myllem and Lailynkhwir area, East Khasi Hills district, Meghalaya.	G4	Polymetallic
13	Reconnaissance survey for REE and associated elements in parts of Seinduli Pluton in West Khasi Hills District, Meghalaya	G4	REE
14	Reconnaissance survey for Lithium and associated mineralization in and around Williamnagar-Nengkhra area East Garo Hills District, Meghalaya	G4	Lithium
15	Reconnaissance survey of Tungsten and associated mineralization in Rongjeng-Darugri-Nongchram Block, East Garo Hills, District, Meghalaya.	G4	Tungsten
16	Reconnaissance survey for REE, lithium and associated mineralization around Amjong, Umtrai and Umlaber area, Ri-Bhoi district, Meghalaya	G4	REE, Lithium
17	Reconnaissance survey for reappraisal for sillimanite, lithium and associated mineralization in Mangsang- Niangbrakithim Block, East Garo hill District, Meghalaya	G4	Sillimanite, lithium
18	Preliminary Exploration for Vanadium, graphite and associated minerals around Sito-Sikhe areas, Lower Subansiri District, Arunachal Pradesh	G3	Vanadium, graphite
19	Preliminary Exploration for Vanadium, Graphite and associated	G3	Vanadium,

	minerals around Pakro block, PakkeKessang district, Arunachal Pradesh		graphite
20	Reconnaissance survey for phosphorite mineralisation in meta-sedimentary sequence of Bomdila Group in Menga area, Upper Subansiri District, Arunachal Pradesh.	G4	Phosphorite
21	Reconnaissance survey for Lithium from deep seated brine pools in and around Pullung, Paniduriya, Borduria and Kaimoi area of Tirap district, Arunachal Pradesh.	G4	Lithium
22	Reconnaissance survey for vanadium and graphite mineralisation in the metasedimentary sequence of Bomdila Group of rocks in and around SikuAngu and Lipu, West Siang District, Arunachal Pradesh	G4	Vanadium, graphite

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SI.No.	Title	Stage	Commodity
1	Preliminary exploration for vanadium, graphite and associated minerals around Kugitago - Miya areas, Lower Subansiri district, Arunachal Pradesh	G3	Vanadium, graphite
2	Reconnaissance survey for REE in Techipu area, KurungKumey District, Arunachal Pradesh.	G4	REE
3	Reconnaissance survey for limestone of Chilliepam Formation of Bomdila Group in and around Hugu and Sakehugu area KurungKumey district, Arunachal Pradesh	G4	Limestone
4	Reconnaissance survey for limestone in and around Puding-Paling-Janbo - Likor areas, Upper Siang district, Arunachal Pradesh.	G4	Limestone
5	Reconnaissance survey for phosphorite mineralisation in Lower Gondwana rocks in Garu - Gensi area, Lower Siang District, Arunachal Pradesh.	G4	Phosphorite
6	Preliminary exploration for vanadium, graphite and basemetal mineralisation in the metasedimentary sequence of Bomdila Group of rocks in and around DabaGamlin and Moia areas, West Siang District, Arunachal Pradesh.	G3	Vanadium, graphite
7	Preliminary exploration for REE and associated minerals in Krawgaon block, Jashora Alkaline Complex, West KarbiAnglong district, Assam.	G3	REE
8	Preliminary exploration for limestone in Krungming Block, Dima Hasao district, Assam	G3	Limestone
9	Reconnaissance survey for REE and associated mineralisation in Chelear - Rongpham area, West KarbiAnglong District, Assam.	G4	REE
10	Reconnaissance survey for placer gold in and around Dikrang River basin, Lakhimpur and Sonitpur districts, Assam.	G4	Placer Gold
11	Reconnaissance survey for REE and associated minerals in coal and associated clay beds in and around Lido-Tikok - Tipangpani area, Tinsukia District, Assam.	G4	REE
12	Reconnaissance survey for re-appraisal for base metal in the Shillong group of rocks around Mawlongblock, East Khasi Hills District, Meghalaya.	G4	Basemetal
13	Reconnaissance survey of REE, Li and associated mineralisation in central parts of South Khasi Batholith near Pariong, Sohma areas in South West Khasi Hills district, Meghalaya	G4	REE, Li
14	Reconnaissance survey of REE, Sn, Li and associated mineralization around Mawphir area of South Khasi Batholith in East Khasi Hills district, Meghalaya.	G4	REE, Sn, Li
15	Reconnaissance survey for REE, lithium and associated mineralization around Kyllang, Nongthymmai and Mawjasksaw, Eastern West Khasi Hills district, Meghalaya.	G4	REE, lithium
16	Reconnaissance survey for REE and associated mineralization in and around Purduwa area, Ri-Bhoi district, Meghalaya.	G4	REE
17	Reconnaissance Survey for limestone to the west of Siju Area, South Garo Hills District, Meghalaya.	G4	Limestone

18	Reconnaissance survey of limestone around Chokpot Area, South Garo Hills District, Meghalaya.	G4	Limestone
19	Preliminary Exploration for Limestone in Khunti Block, Litang Valley, East Jaintia Hills District, Meghalaya.	G3	Limestone
20	Reconnaissance survey for lithium and associated mineralisation in Darang area, South Garo Hills and East Garo Hills District, Meghalaya.	G4	Lithium
21	Petrogenesis of gold bearing mafic-ultramafic rocks of Naga Hills Ophiolite (NHO) around Sutsu - Washello, Phek District, Nagaland: Constrain from mineral chemistry, geochemistry and isotopic studies.	RP	Gold
22	Preliminary investigation of iron ore around Purr-Sutsu, Phek District, Nagaland.	G3	Iron
23	Preliminary exploration for nickeliferous laterite in Naga Hills Ophiolite near Mollen, Phek, Nagaland.	G3	Nickel
24	Reconnaissance survey for coal around Lakhuti, Akuk and Mekola, Wokha District, Nagaland.	G4	Coal
25	Reconnaissance survey for gold and associated minerals in between Lingdum and Tumin area, Gangtok district Sikkim.	G4	Gold

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