

आम सूचना

सर्व साधारण को सूचित किया जाता है कि शासन द्वारा नई खनिज नीति जारी की जानी है इस हेतु नवीन खनिज नीति, 2024 का प्रारूप सर्वसाधारण के अवलोकनार्थ वेबसाईट पर अपलोड किया गया है।

जो भी आमजन नवीन खनिज नीति, 2024 के संबंध में कोई भी सुझाव देना चाहते हैं उनके सुझाव आमंत्रित हैं। वो अपना सुझाव लिखित/ विभागीय ई-मेल आईडी sme.minor@rajasthan.gov.in पर दिनांक 22-09-2024 तक प्रेषित कर सकते हैं।

आज्ञा से

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RAJASTHAN MINERAL POLICY, 2024

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1 Preamble

As per the power conferred upon the State under entry 23 of the State List (List II) of the Seventh Schedule of the Constitution of India for the management of mineral resources in the State, the State of Rajasthan is introducing a new mineral policy.

This policy is designed to ensure that the mining activities within the State are conducted in an environmentally sustainable manner, with equitable benefit-sharing for communities affected by mining while maintaining a high level of trust among all stakeholders. The primary objectives of the mineral policy are to:

Maximize Economic Benefits: The policy seeks to harness the full potential of Rajasthan's mineral resources for the economic well-being of the State and its people. This includes strengthening fair market practices by curbing illegal mining activities, optimizing revenue generation, attracting investments, promoting job creation, and fostering industrial growth by facilitating the efficient extraction and processing of minerals.

Ensure Sustainable Mining Practices: The policy prioritizes environmental protection and the welfare of local communities. This involves minimizing environmental impact through effective waste management, site reclamation, and the protection of ecosystems and natural resources, while ensuring equitable distribution of benefits.

Embrace Evolving Technology Landscape: The policy emphasizes on strategic adoption and integration of cutting-edge technologies to expedite exploration, facilitate sustainable exploitation, and upgrade resource management in the State.

Enhance Ease of Doing Business: The policy is committed to streamline regulatory processes, eliminate human interference in clearances, and foster a transparent, investor-friendly environment. This will attract domestic and foreign investments, spur innovation and drive economic growth.

Strengthen Mineral Governance: The policy aims to establish a robust and transparent regulatory framework that ensures accountability, efficiency, and fairness.

This policy lays the groundwork for sustainable and responsible mineral development, ensuring that Rajasthan's mineral resources are managed to benefit both the State and its people thereby contributing to the vision of a "Viksit Rajasthan" by 2047.

2 Background

The mining sector is a critical pillar of India's industrial foundation, contributing significantly to the nation's economic growth. India is endowed with abundant mineral resources, with over 95 different minerals currently being extracted across the country. The mining sector contributes approximately 2% to India's GDP and provides essential raw materials to various industries. In FY2023-24, the total value of mineral production, excluding atomic and fuel minerals, was **INR 1,92,734** crores.¹ Rajasthan holds the third position in the country in terms of the value of mineral production, excluding atomic, fuel, and minor minerals.

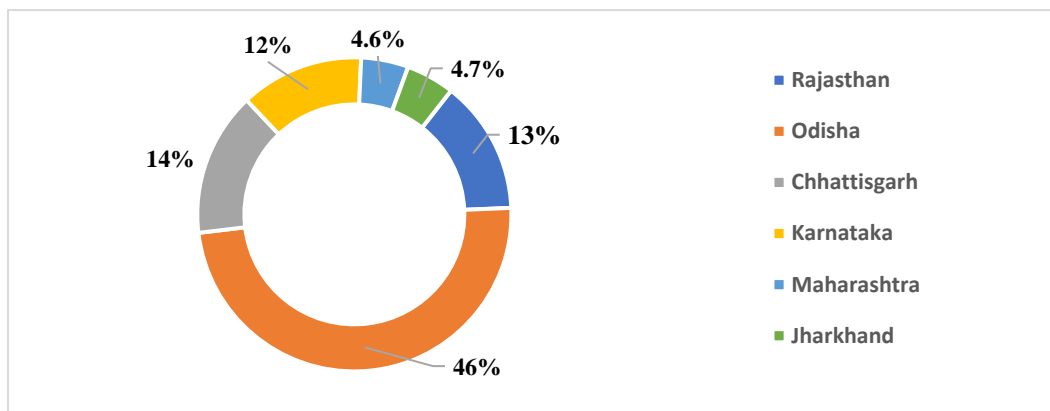


Figure 1 – Share of States in the Value of Mineral Production (FY2021-22)²

Rajasthan is one of India's most mineral-rich States, boasting a diverse range of mineral deposits. The State produces a wide array of minerals, including Limestone, Marble, Gypsum, Lignite, Zinc, and Lead, with reserves running into billions of tons. In total, 22 major minerals and 36 minor minerals are produced in the State. Although area under mining activities occupy only about 0.68% of Rajasthan's geographical area, the State plays a dominant role in India's mining industry. Rajasthan is the country's sole producer of Lead, Zinc, Wollastonite, Selenite, Calcite, and Gypsum.

¹ Ministry of Mines, Annual Report 2023-24

² Ministry of Mines, Annual Report 2023-24

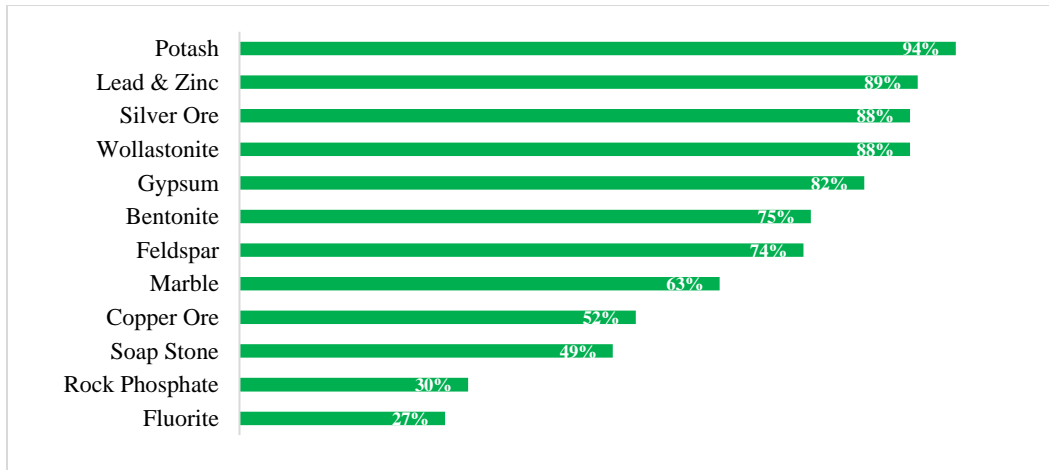


Figure 2 – Share of resources (% of India's) of different minerals³

The State of Rajasthan is home to 148 mining leases for major minerals, 16,817 mining leases for minor minerals, and 17,454 quarry licenses. In FY2023-24, the mining sector contributed 3.4% to the State's GDP. This sector not only supports the State's economy but also plays a crucial role in generating and sustaining livelihoods for millions of people.

2.1 Prospecting & Exploration

Total area of the State of Rajasthan is 3,42,239 sq. Kms, out of which about 218000 sq. kms area has been covered under Regional Mineral Survey, 25600 sq. km. under Regional Geological Mapping (RGM), 5150 sq.km. under Detailed Geological Mapping (DGM) and about 562000 meterage of drilling since the year 1967 from when Department of Mines and Geology (DMG) initiated systematic Mineral Survey and prospecting activities.

³ IBM Mineral Yearbook

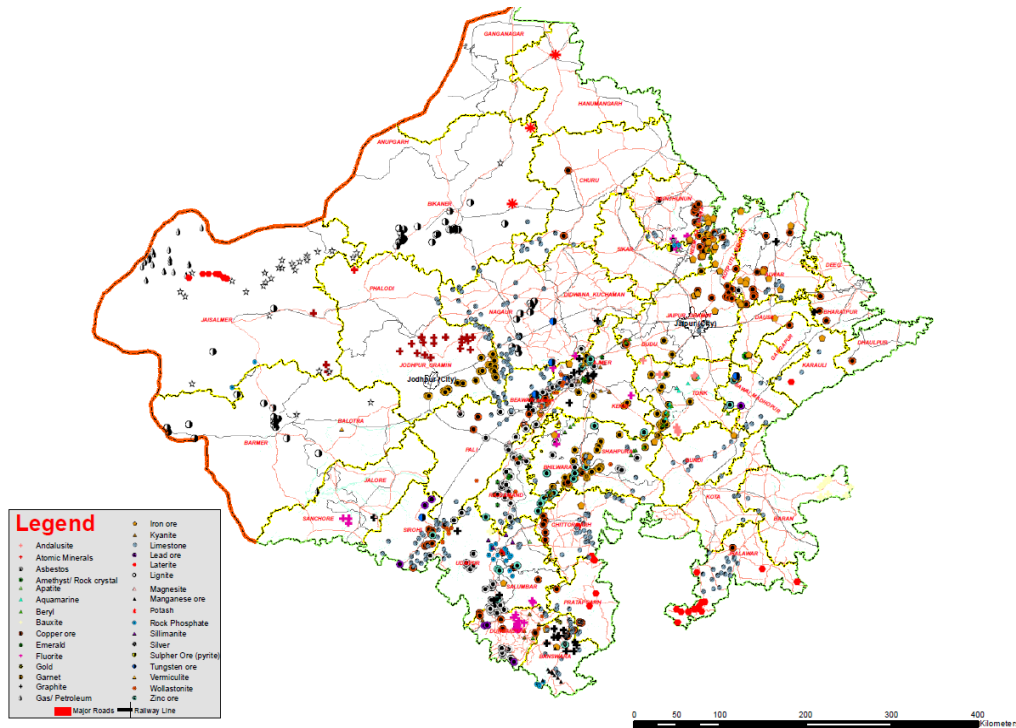


Figure 3 – Major Mineral Map of Rajasthan⁴

The State in the year 2020 came up with the Rajasthan State Mineral Exploration Trust Rules. Rajasthan State Mineral Exploration Trust (RSMET) was established to enhance the exploration and development of Rajasthan's mineral resources through the application of advanced technologies. It also aims to promote sustainable mining practices and facilitate investment in the state's mineral-based industries.

By leveraging its mineral reserves, promoting sustainable practices, attracting investments, and fostering technological innovation, Rajasthan's mining and mineral sector is poised to play a pivotal role in India's mining landscape and contribute significantly to the country's economic growth and development.

2.2 Major Mineral in Rajasthan

In FY2023-24, the total revenue from minerals in Rajasthan to the State was estimated at INR 7460.4 Crores.

⁴ DMG Rajasthan

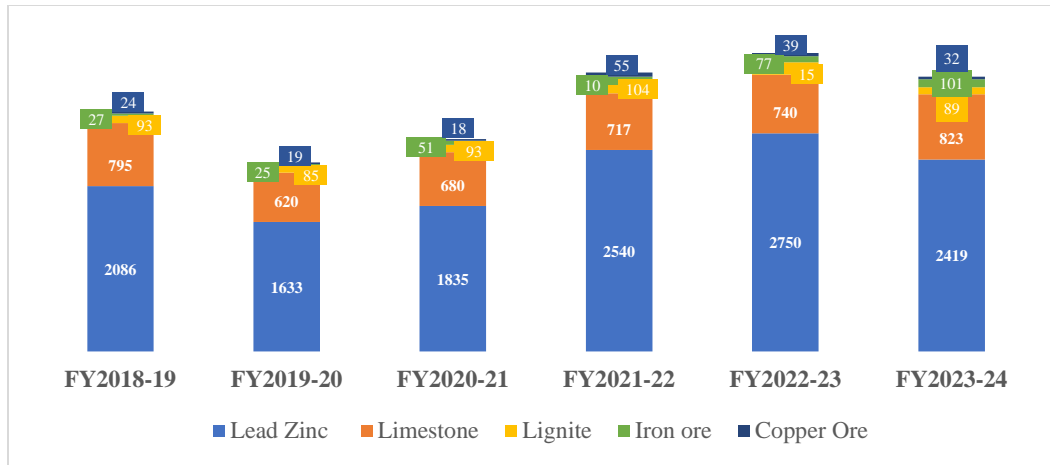
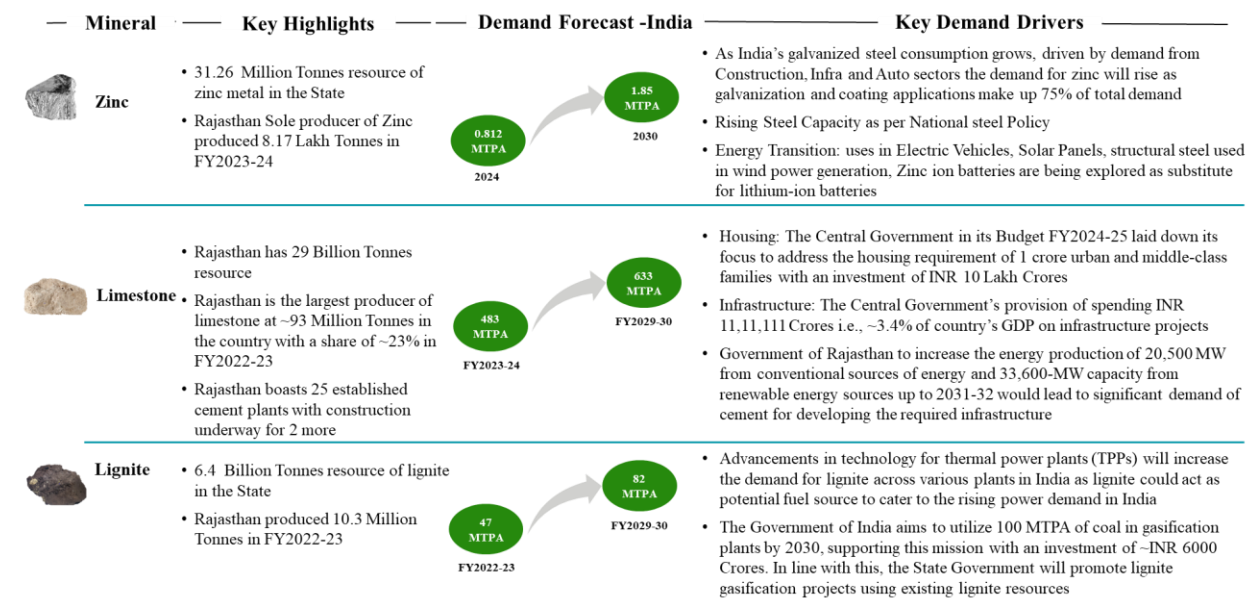
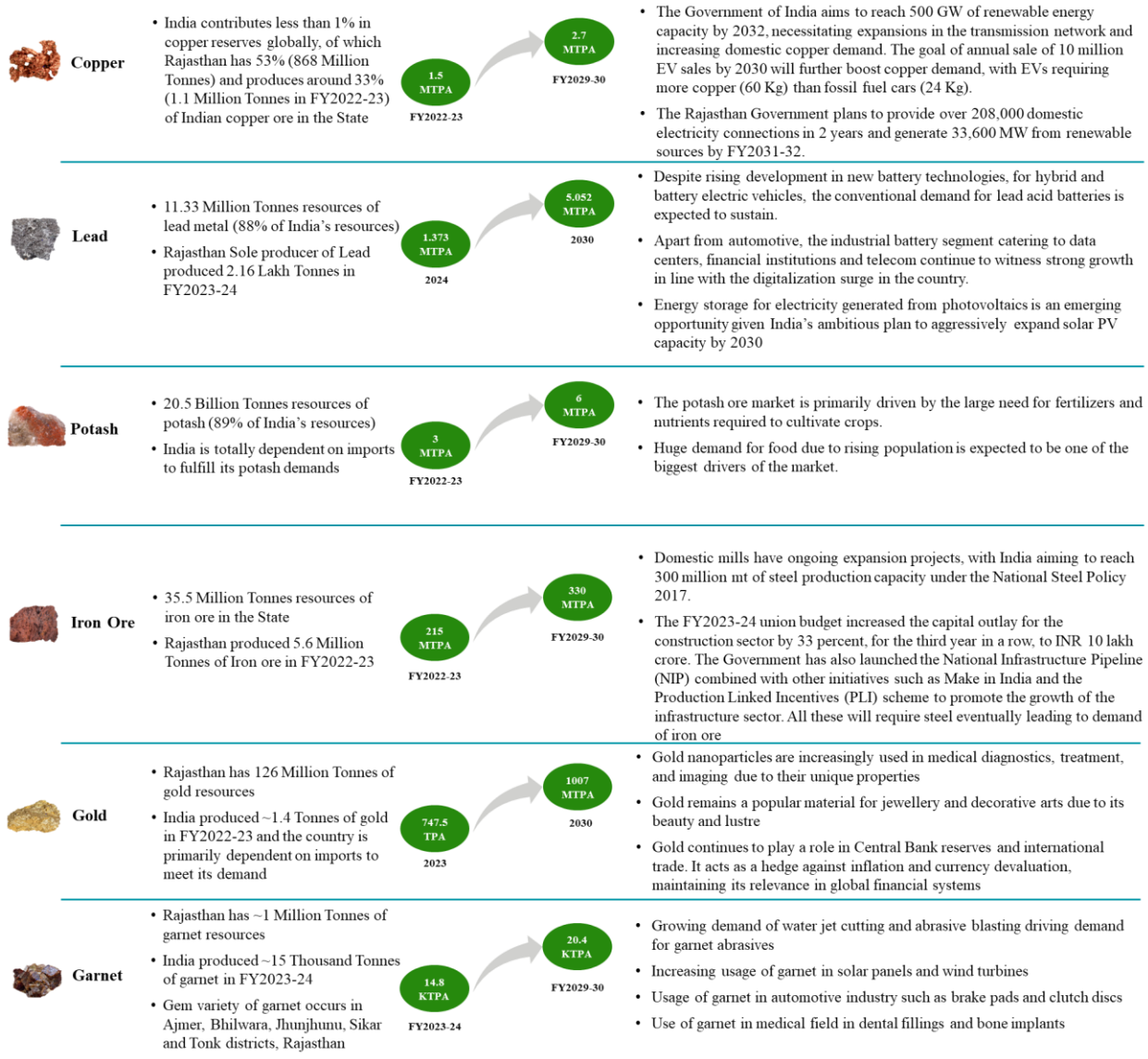


Figure 4 – Revenue to State from top-6 major minerals in Rajasthan (INR Cr.)

Key major minerals in Rajasthan⁵:



⁵ IBM Mineral Yearbook, Ministry of Mines, MoSPI, Wood Mackenzie, DMG Rajasthan, Union Budget 2024-25, Rajasthan State Budget 2024-25, International Copper Association India (ICAI), National Steel Policy, World Gold Council



2.3 Minor Mineral in Rajasthan

Rajasthan produces minor minerals i.e., Granite, Marble, Sandstone, Masonry Stone, Bajri, Limestone (burning), Limestone (dimnl.), Gypsum, Ball Clay, Felspar, Silica Sand, Quartz, Soapstone, China Clay, Ochres, Dolomite, etc. Minerals from Stone industry such as Masonry Stone, Granite, Marble, and Sandstone contribute the largest share in revenue from minor minerals in the State.

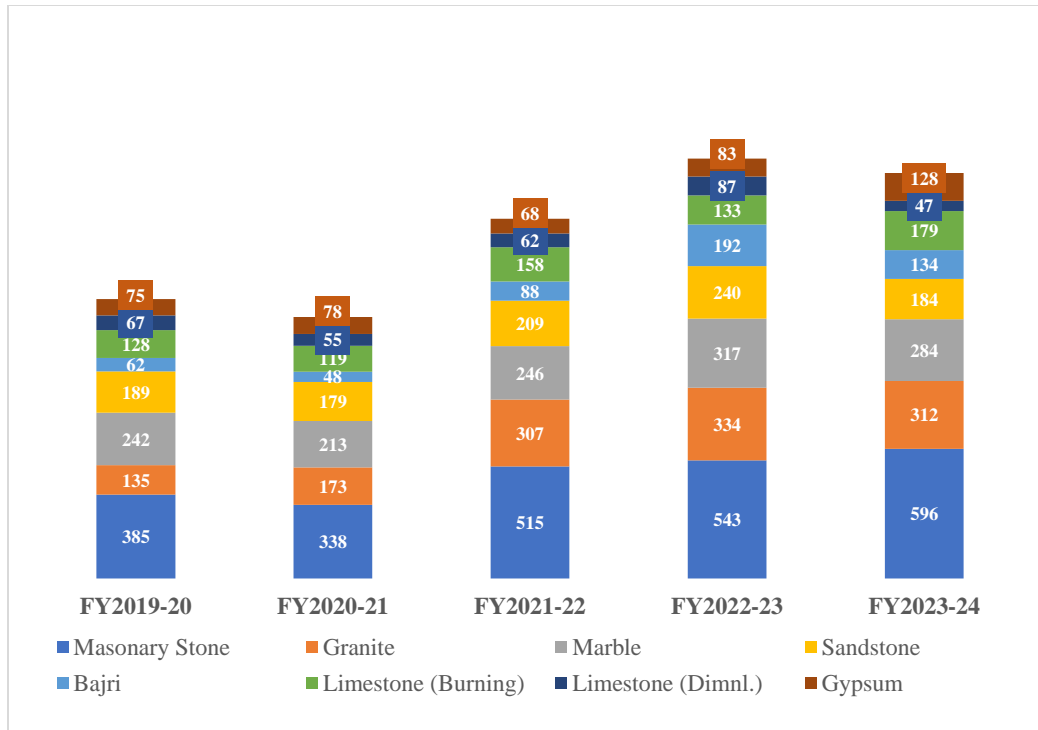





Figure 5 – Revenue to State from minor minerals in Rajasthan (INR Cr.)

Key minor minerals in Rajasthan⁶:

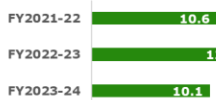
Mineral	Key Highlights	Production in Rajasthan (Million tonnes)	Key Demand Drivers						
 Granite	<ul style="list-style-type: none"> Total resources in Rajasthan are 9,191 million cubic meters Karnataka & Rajasthan share about 20% each of the resources which are followed by Jharkhand (19%), Gujarat (18%), Andhra Pradesh (5%) and Madhya Pradesh & Odisha (4% each) 	<table border="1"> <tr> <td>FY2021-22</td> <td>8.8</td> </tr> <tr> <td>FY2022-23</td> <td>9.3</td> </tr> <tr> <td>FY2023-24</td> <td>10.4</td> </tr> </table>	FY2021-22	8.8	FY2022-23	9.3	FY2023-24	10.4	<ul style="list-style-type: none"> Indian granite is in high demand worldwide due to its unique color, pattern, and quality Demand for granite is on the rise as the residential consumption and private spending on home are increasing Residential remodeling activity is expected to rise as homeowners continue to opt for larger kitchens and multiple bathroom, expending the space devoted to countertops
FY2021-22	8.8								
FY2022-23	9.3								
FY2023-24	10.4								
 Sandstone	<ul style="list-style-type: none"> Rajasthan's sandstone deposits, primarily associated with the Vindhyan and Trans Aravalli Formations, cover approximately 35,000 sq. km Splitable sandstone is found over an area of 16,000 sq. km 	<table border="1"> <tr> <td>FY2021-22</td> <td>12.6</td> </tr> <tr> <td>FY2022-23</td> <td>10.4</td> </tr> <tr> <td>FY2023-24</td> <td>2.6</td> </tr> </table>	FY2021-22	12.6	FY2022-23	10.4	FY2023-24	2.6	<ul style="list-style-type: none"> Demand driven by infrastructural development and urban beautification projects, the demand for sandstone in paving, cladding, and landscaping projects is expected to rise Rising adoption in Temples, houses, artistic creation. Sandstone market is being shaped by adopting sustainable practices and environmental concern, as sandstone is recyclable and reusable
FY2021-22	12.6								
FY2022-23	10.4								
FY2023-24	2.6								
 Dimensional Limestone (Kota Stone)	<ul style="list-style-type: none"> Important deposits of dimensional limestone are in Kota, Jhalawar, Chittorgarh and Jaisalmer districts in Rajasthan 	<table border="1"> <tr> <td>FY2021-22</td> <td>3.9</td> </tr> <tr> <td>FY2022-23</td> <td>4.4</td> </tr> <tr> <td>FY2023-24</td> <td>1.8</td> </tr> </table>	FY2021-22	3.9	FY2022-23	4.4	FY2023-24	1.8	<ul style="list-style-type: none"> The greenish-grey 'Kota' limestone has gained tremendous popularity and is widely used for flooring and cladding purposes The increasing focus on sustainability has led to higher demand for limestone in environmental applications, such as flue gas desulfurization in power plants to reduce sulfur dioxide emissions
FY2021-22	3.9								
FY2022-23	4.4								
FY2023-24	1.8								

⁶ IBM Mineral Yearbook, DMG Rajasthan, Secondary Research



Marble

- 12314.3 Million Tonnes resources of marble in the State
- Rajasthan produced 10.1 Million Tonnes of Marble in FY2023-24

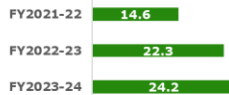


- The marble market is expected to be driven by the rising demand from applications including building & construction, statues & monuments.
- The increasing population and housing needs, especially in semi-urban and rural areas to drive demand



Bajri

- Rajasthan produced 24.2 Million Tonnes of bajri in FY2023-24

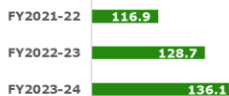


- Rapid Industrialization & Urbanization leading to increased construction
- Various Government initiatives such as "Pradhan Mantri Awas Yojana", "Smart Cities Mission," projects under National Infrastructure Pipeline expected to drive demand



Masonry Stone

- Masonry stone is highest revenue generating minor mineral in Rajasthan i.e. ~23% in FY2023-24



- The ongoing and upcoming development of infrastructure projects such as highways, bridges, railways and airports will drive demand
- Rapid urbanization and the expansion of residential and commercial real estate sectors



Quartz

- About 332.46 Million Tonnes of Quartz-Silica Sand resources has been assessed in the State.

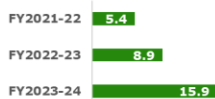


- The quartz market is expected to be driven by the rising demand from semiconductor sector due to its unique physical and chemical properties including its high thermal stability and excellent electrical insulating capabilities
- Increasing demand of quartz countertops as an alternative to traditional materials like granite and marble from the construction sector
- High-silica quartz is crucial for quality glass production, with rising demand driven by construction sector.



Felspar

- The State has around 88 Million Tonnes of Felspar resources



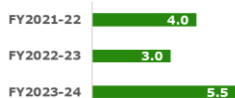
- The rising demand for felspar in construction materials like tiles, sanitaryware, and glass fibers is driven by urbanization, infrastructure expansion, and population growth
- Demand of felspar from ceramic and glass industry where It acts as a fluxing agent, reducing the melting point of materials and facilitating the formation of glass or ceramic bodies.



China Clay

(Kaolin)

- The State has around 432.51 Million Tonnes of China Clay resources



- The surge in e-commerce has boosted demand for durable packaging, where kaolin is essential for enhancing print quality and strength in paper-based materials.
- The growth of urbanization and real eState in India drives demand for construction materials, where kaolin is favored for its properties in paints, coatings, and adhesives.
- Rising demand from ceramic industry

3 Look back to Mineral Policy 2015

3.1 Key Highlights of Rajasthan Mineral Policy 2015

The Rajasthan Mineral Policy 2015 focused on sustainable growth in the State's mineral sector by enhancing transparency, simplifying procedures, and adopting e-governance. The primary aim of the policy was to boost the contribution of mineral and hydrocarbon sectors, explore mineral bearing areas and increase the variety of mined minerals. Additionally, the policy also emphasized skill development for employment and fostering investment through improved infrastructure and a supportive business environment.

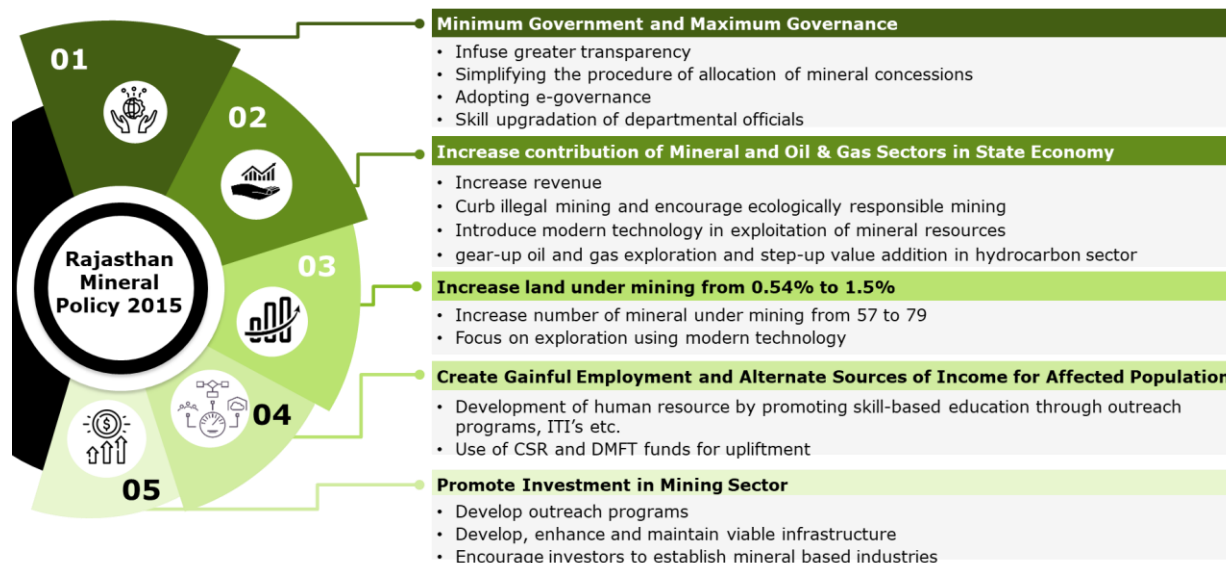


Figure 6 – Rajasthan Mineral Policy 2015 highlights

3.2 Status of mining sector between 2014-15 and 2023-24

Between FY2014-15 and FY2023-24, Rajasthan's mining sector underwent significant transformation. During this period, mining revenue more than doubled, While the area dedicated to mining increased, and employment opportunities saw notable growth, reflecting the sector's expansion.

The State also implemented various digitalization initiatives to enhance transparency and streamline operations. In line with the national mineral sector reforms, Rajasthan undertook several regulatory changes, including notification of new Minor Mineral Concession Rules in 2017, introducing auction procedure for granting of minor mineral concession, and the establishment of the Rajasthan State Mineral Exploration Trust (RSMET) to support exploration activities. These efforts were aimed at strengthening, rationalizing, and modernizing the existing mining framework to align with national policies.

	Parameter	Status in 2014-15	Status in 2023-24	
01	Revenue from Mining Sector <i>INR Crores</i>	INR 3,635 Crores	INR 7,491 Crores	↑
02	Contribution of Mining Sector to State's GDP %	4.4%	3.4%	↓
03	Area Under Mining Lease (Out of total geographical area of State) %	0.54%	0.68%	↑
04	Number of Major and Minor Mineral Leases	15,678	16,965	↑
05	Number of Quarry Licenses	18,249	17,454	↓
06	Number of Exploration Projects (by State DMG and GSI)	76	92	↑

Figure 7 – State of mining sector in Rajasthan in FY2014-15 vis-à-vis FY2023-24⁷

3.3 Need for New Policy 2024

The 2015 and subsequent amendments to the MMDR Act, along with the introduction of National Mineral Policy in 2019, have significantly transformed the regulatory framework for mining in India. These changes have ushered in new opportunities in the sector and brought forth transformational challenges that necessitate a comprehensive response. To effectively address these evolving dynamics and align with the broader national reforms, Rajasthan requires a new mineral policy that can guide sustainable development, promote responsible mining practices, and ensure the State remains competitive in the rapidly changing mineral landscape.

Economic Contribution: To boost the mining sector's contribution to Rajasthan's GDP from 3.4% to 5% by FY2029-30 and 6-8% by FY2046-47, a new mineral policy is crucial. India is expected to grow at 6.5-7% annually, becoming the 3rd largest economy by 2030. This growth, along with initiatives like "Make in India," rising population, and the export potential of finished goods, will drive higher demand for raw materials. To keep pace with this demand and support the expansion of domestic industries, Rajasthan needs a policy that promotes sectoral growth and ensures a reliable supply of minerals.

Technological Integration: The Rajasthan Mineral Policy 2015 made important strides in adopting technology, but the constantly evolving technology landscape mandates a new policy to keep up with the latest advancements. This will help to improve efficiency and transparency, reduce human interference, and in better management of mineral concessions.

⁷ Government of Rajasthan, Economic Review 2023-24, Rajasthan Mineral Policy 2015, DMG Rajasthan

Exploration and Data Deficiency: Since amendment in MMDR Act in 2015, no new Reconnaissance Permit /Prospecting Licence were granted to applicant companies in the State. Exploration activities in Rajasthan have been slow due to reliance on Central/State Agencies/ Undertakings, which have limited resources. The new policy would focus on developing the capacity of the State Agency/ Undertaking, expanding private sector involvement in exploration for both major and minor minerals and aligning exploration efforts of the state with the Central Government's Exploration Licence regime.

Employment and Safety: To expand mining areas in Rajasthan, there will be a significant need for skilled manpower. As the industry evolves, new skill sets will be required. A new policy is essential to prioritize skill development, ensuring that the workforce is adequately trained to meet future demands. Additionally, as the sector grows, the focus on health and safety standards must be enhanced to provide a safer working environment, underscoring the need for a new policy.

Environmental, Social, and Governance (ESG) and Sustainable Alternatives: Growing awareness about ESG parameters and the need for sustainable mining practices have become crucial to responsible resource management. The National Mineral Policy 2019, along with recent judicial guidelines and increasing awareness in downstream industries, underscores the importance of integrating robust ESG and sustainable mining standards into the sector and the same will be reflected in the new policy of the state.

Critical and Strategic Minerals: A new mineral policy is also essential to align Rajasthan with the Central Government's recent initiatives, including the introduction of a list of critical minerals in 2023 and amendments to the MMDR Act to prioritize production of these resources. Central Government's announcement of the Critical Mineral Mission, focused on domestic production and recycling, underscores the importance of these minerals for modern industries.

Minor Minerals: Although Rajasthan has led the way by implementing an auction regime for minor minerals prior to its introduction for major mineral under MMDR Amendment Act of 2015, a new mineral policy will further address the challenges associated with minor minerals, which contribute around 36% of the total revenue from the mining sector in the State. Additionally, the new policy will focus on encouraging legal mining and preventing illegal mining activities, thereby promoting fair market practices, and enhancing State revenue.

The evolving regulatory landscape, technological advancements, and the need for sustainable practices highlight the urgency for a new mineral policy in Rajasthan. This policy will ensure that the State remains competitive, supports economic growth, and promotes responsible mining practices, aligning with both national priorities and emerging global standards.

4 Policy Reforms

4.1 Mineral Management

The policy aims to foster a highly transparent, efficient, and sustainable mining environment through comprehensive reforms. These reforms are designed to accelerate mineral exploration, streamline auction processes, simplify procedures, enhance investment, and strengthen departmental structures, ensuring that the interests of all stakeholders are effectively addressed and promoting the long-term growth and sustainable development of the mineral sector in Rajasthan.

4.1.1 Accelerating Mineral Prospecting and Exploration

In recent years, mineral prospecting and exploration in India have been dominated by Central Public Sector Undertakings (PSUs) and State Departments of Mines and Geology (DMGs). Private sector participation has remained limited, primarily due to regulatory challenges, misaligned incentives, and uncertain returns on investment. To address these bottlenecks, facilitate detailed mineral exploration and encourage greater private sector involvement in exploration, the Government of India established the National Mineral Exploration Trust (NMET) in 2015. Aligning with this national initiative, the State of Rajasthan also took proactive steps by establishing the Rajasthan State Mineral Exploration Trust (RSMET) to accelerate mineral prospecting and exploration activities within the State. The Government of India has also introduced the Exploration Licence for 29 deep-seated and critical minerals amending the MMDR Act in 2023.

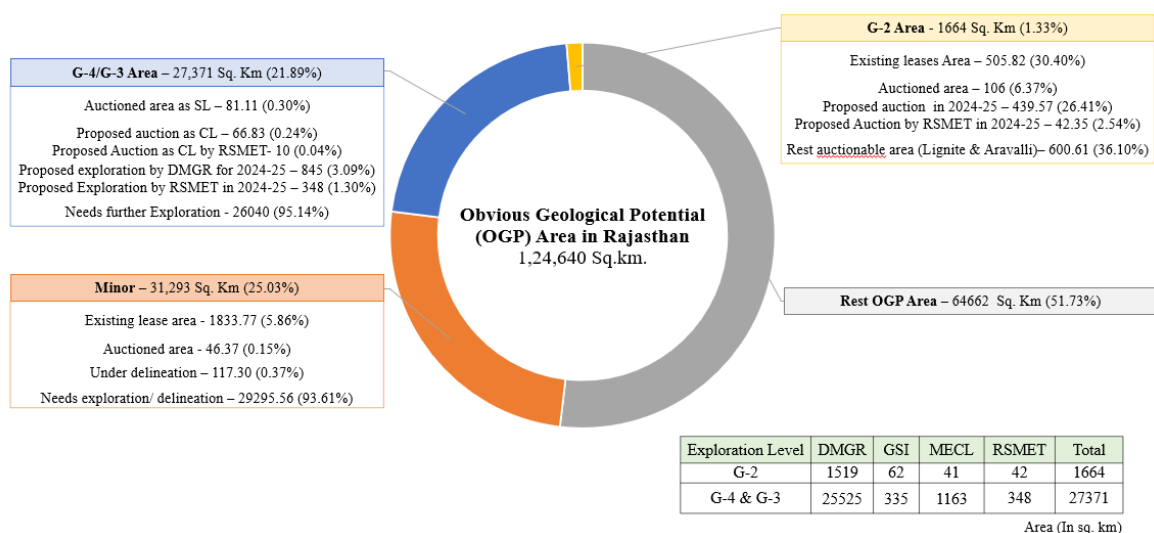


Figure 6 – Utilization of OGP area in Rajasthan⁸

⁸ DMG Rajasthan

Vision:

To advance the frontiers of mineral exploration and expand the area under mining concession by additional 1% of the existing concession area every year by investing in research and development works, leveraging cutting-edge technologies, and fostering international collaborations.

Challenges:

- i. Slow rate of adoption of new technologies such as directional drilling for mineral prospecting and exploration in the State.
- ii. Collaboration between research institutions and the mining industry, which is crucial for advancing exploration efforts.
- iii. Departmental capacity, in terms of manpower, resources, and skills to support more effective exploration activities.
- iv. Utilization of available RSMET funds.

Way Forward:

- i. Effectively implement the Exploration Licence regime by creating awareness and promoting private sector participation in mineral exploration, in line with the Central Government's policy for major minerals.
- ii. Promote the participation of junior exploration companies with strong technological and financial capabilities to explore deep-seated minerals.
- iii. Develop the capacity of the Department of Mines and Geology to effectively utilize NMET and RSMET funds such that area explored area in the state doubles every year.
- iv. Undertake G2-G3 level exploration by utilizing NMET and RSMET funds based on market demand to increase the number of successfully auctioned blocks.
- v. Maximize auctioning of explored areas by reconfiguring non-auctionable blocks from Geological Survey of India (GSI) and Mineral Exploration and Consultancy Limited (MECL) through re-carving or further exploration, particularly in base metal blocks
- vi. Secure funding from NMET and RSMET to procure necessary machinery, laboratory equipment, instruments, hardware, software, and infrastructure to enhance exploration activities and strengthen the Department of Mines and Geology (DMG).
- vii. Restructure and restaff mineral processing labs to improve efficiency and reduce turnaround time for sample analysis.
- viii. Conduct the operations of the State Geological Programming Board (SGPB) on the lines of Central Geological Programming Board (CGPB), ensuring collaboration among various exploration agencies and industry personnel on proposals utilizing the latest technologies in exploration, extraction, and refining of minerals and ores.

- ix. Regularly update and publish the State Mineral Directory on the State Portal to attract investment, promote industrial development near mineral resources, and generate direct and indirect employment in the region.
- x. Standardize all 2650 exploration report using National Geoscience Data Repository (NGDR) platform for comprehensive geo-scientific data accessibility to support data driven decisions for sustainable mineral exploration.
- xi. Work with the Revenue Department to earmark mineral-bearing areas as “Mining Land” or “Mineral Potential Land” in State land records.
- xii. Promote collaborations between research institutions, industry, and international organizations through seminars, industry visits, joint ventures, research support, and field research scholarships to drive innovation and expedite the adoption of new technologies.

4.1.2 Enhancing Investment in Mining: Streamlining Regulations and Promoting Growth

The mining sector in Rajasthan is currently undergoing a transition marked by regulatory reforms and increased investment. To foster a thriving investment environment, it is essential to address the regulatory and infrastructural challenges. The State's rich mineral wealth presents substantial opportunities for investment in mineral-based industries, supported by well-developed infrastructure for transport, communication, and power. Now with a significant shift in resource outlook, there is now a strong emphasis on conservation through augmentation of the reserve/resource base, rather than mere preservation, which open up investment opportunities in an unprecedented way. Encouraging zero-waste mining, collaborative efforts in large mineral belts, enhance resource recovery and value addition through various incentives will attract investment and ensure sustainable mining practices.

Vision:

Create a conducive investment climate that attracts significant domestic and foreign investments, fosters joint ventures, and enhances the overall growth and development of the mining sector.

Challenges:

- i. Tuning regulatory framework to current mining eco-system.
- ii. Rationalising timelines for various approvals and activities.
- iii. Refining grant and regulation of Bajri mining concession.

Way Forward:

Grant of Mineral Concession:

- i. Establish go-zones and progress towards a system of auctioning blocks with pre-embedded clearances to expedite the commencement of mining operations.
- ii. Unlock such mineral bearing areas and open them up for new investors, which are currently unused/unutilized due to administrative and judicial challenges.
- iii. Encourage greater participation of local communities for grass-root entrepreneurship by rationalization of bid security in notified scheduled tribal areas.
- iv. Streamline provisions for minor mineral for premium amount payment system and validity period of Letter of Intent (LoI) in minor mineral rules to ensure timely and efficient mineral production.
- v. Provisions to be made for grant of mineral concession in Government land, having an area of less than one hectare, surrounded by/or adjoining to Khatedari land, to Khatedar/holder of registered consent of Khatedar, to ensure maximum utilization of mineral resources left out in such small pockets.
- vi. Enhance a centralised data repository by integrating the DMG-OMS portal with the Indian Bureau of Mines' Mining Tenement System, combining comprehensive data on major and minor minerals in the State to provide public access to critical information.

Grant and Regulation of Bajri (River Sand) Mining Concession:

- i. Simplify processes and procedures for grant of Bajri mining leases to ensure uninterrupted availability of legal leases.
- ii. Attempt to move towards pre-embedded clearance for grant of mining concessions of Bajri.
- iii. Review of post auction execution of concession deeds with respect to environment clearance requirements.
- iv. Create a Bajri portal to connect producer and the end user to transfer the direct benefit of sale price of Bajri and to curb illegal Bajri mining.

Regulation of Mineral Concession:

- i. Standardize the amount of performance security for concessions granted prior to, on and after 20th June 2017.
- ii. Rationalize the payment of dead rent in case of part surrender of mining concessions.
- iii. Introduce provisions in RMMCR to address the lapse of mining concessions or quarry licenses for minor minerals, aligning them with major minerals.
- iv. Liberalize existing regulations regarding the termination of mining concessions for breaches other than payment dues.
- v. Introduce provisions to resolve demarcation discrepancies, such as closing errors and overlaps/shifting of mineral concession areas towards hassle free mining operations by concessionaries.
- vi. Introduce provisions to enable the amalgamation of mining concessions held by different concessionaires to the extent possible, promoting scientific and safe mining practices.

- vii. Clarify the status of mining operations and mineral dispatch after the declaration of a mineral concession as null and void, to avoid legal disputes.
- viii. Simplify regulatory processes by introducing auto mutation of new concessions in revenue records.
- ix. Introduce provisions for quick resolution of disputes using Alternate Dispute Resolution (ADR) Mechanism.
- x. Amend existing provisions to facilitate production/dispatch of minor and major minerals simultaneously to maximize mineral utilization and mineral conservation.
- xi. Eliminate existing system of registration of contractors (Royalty Collection Contracts) with the State to ensure maximum participation and ease of doing.

Regulation of Permits:

- i. Introduce provisions for grant of short-term permit (STP) of murram to facilitate private construction works.
- ii. Introduce provisions for granting permits of other surficial minerals in line with Gypsum permits.
- iii. Simplify recovery of royalty procedure on ordinary earth used for construction of State/ National Highways and railway embankments, based on G-schedule and consumption certificate.
- iv. Simplify scheme of permit fee payment for grant of STP.
- v. Exempt royalty on brick earth for commercial use to encourage potters engaged in making of bricks by Awa-Kajawa process.
- vi. Review the existing Transit Pass (TP) system in light of introduction of e-weigh bills and GST for uniform and streamlined mineral transportation monitoring.

4.1.3 Mineral e-Auctioning

The mineral concession scenario changed in India from “First come – First serve” to “Auction” with the Mines and Minerals (Development and Regulation) Amendment Act, 2015 to ensure free, fair, and non-discriminating allotment of natural resource with greater transparency. Rajasthan was a pioneer state, which introduced a partial e-auction of minor mineral in 2011, subsequently in 2017 the State moved from partial to complete e-auctioning of minor minerals with few auctions like reservation in TSP areas, Khatedari leases, and permit system for Gypsum, brick earth, Government works, etc.

Vision:

To establish a highly transparent and efficient auction system to fast track the auction process and maximize the number of mineral concession auctions in the State.

Challenges:

- i. Selection and demarcation of mineral blocks as per market demand.
- ii. Capacity of auction cell for handling large number of mineral block auctions.

Way Forward:

- i. Select Exploration Licence, Composite Licence and Mining Licence blocks for auctioning based on market demand for healthy competition.
- ii. Focus on gap areas and illegal mining prone areas, which can be potential avenue for revenue generation.
- iii. Aim to bring the underutilized areas of mineral resources restricted by various regulatory authorities such as Local Bodies, Development Authorities, Devasthan, etc. under auction regime.
- iv. Strengthen auction cell for major and minor minerals by increasing specialized manpower and inducting new technologies.
- v. Provide essential trainings for the auction cell personnel.

4.1.4 Post Auction Facilitation

Effective post-auction support is crucial for the timely commencement of mining operations. The average time for the operationalization of major minerals is 3-4 years, while for minor minerals, it is around 1-2 years.⁹ Currently, the concession holder engages different stakeholders for clearances to operationalize a mine. Enhancing efficiency and transparency in this process is in the State's best interest, as it will contribute to the overall economic growth of the region. Looking at the importance, the department has setup a pilot post-auction cell.

Vision:

To scale up and establish a highly transparent and efficient post-auction facilitation mechanism that aids in the early operationalization of mines and ensures that all stakeholder interests are promptly addressed.

Challenges:

- i. Involvement of DMG in assisting LoI holders for post auction compliances

⁹ DMG Rajasthan

- ii. Common platform for addressing stakeholder concerns with respect to multiple statutory procedures and clearances.
- iii. Delayed operationalization of mines, leading to delay in revenue realization to the State exchequer.

Way Forward:

- i. Develop and strengthen the nascent post-auction cell to support successful/preferred bidders and other stakeholders with all regulatory clearance required.
- ii. Integrate DMGOMS portal with all other portals dealing with statutory clearances across State and Central Government.
- iii. Create a formal structural mechanism at district level through new or existing District Level Committee headed by District Collector to assist Letter of Intent (LoI) holders through regular monitoring of concerned departments for necessary activities like conducting public hearing, land acquisition, removal of impediments, etc.
- iv. Effectively employ the State level Inter Departmental Task Force headed by the Chief Secretary, to resolve issues across departments with respect to operationalization of auctioned blocks.
- v. Prescribe strict time limits for all processes under the rules, such as issuing no dues certificates, surrender of mineral areas, demarcation, etc. aligned with the Citizen’s Charter and implement a system of auto approvals to ensure that the time limits are adhered to.
- vi. Demarcate areas for “Land Banks” to assist applicants/concessionaire with forest land diversion and plantation activities, ensuring timely operationalization of mineral concessions and environmental conservation.

4.1.5 Mitigating Illegal Mining

Vision:

Foster a sustainable, transparent, and economically beneficial mining sector by promoting and safeguarding legal mining operations through stringent enforcement, active community engagement, and the adoption of innovative technologies. Ensure that all mining activities align with legal, ethical, environmental, and social standards.

Challenges:

- i. Visibility and control over the mining operations of more than 33,000 mines and quarries in the State.
- ii. Use of advance technology (satellite imagery data, drone survey etc.).

Way Forward:

- i. Adopt AI, GPS-based vehicle tracking, Geo-fencing and RFID at Check post for tracking mineral movement.
- ii. Implement a unified real-time monitoring platform integrated with the DMG-OMS portal for weighbridges across the State.
- iii. Develop a centralized control room and deploy geo-fencing technology for effective monitoring of mining concessions and areas prone to illegal mining.
- iv. Implement the Mine Surveillance System (MSS) for minor minerals by incorporating geospatial information, remote sensing through satellite imagery, and GIS-based drone surveys.
- v. Introduce provisions for concessionaires to submit drone survey analysis of volumetric measurement reports of their mining concession area along with the annual return.
- vi. Link royalty assessment with electricity consumption for more accurate assessment to ensure more accurate royalty collection by correlating energy usage with production output, providing a scientifically grounded and transparent method for calculating dues.
- vii. Utilize data analytics tools on data generated through various departmental portals to identify and predict illegal mining activities.
- viii. Introduce provisions for online receipts of royalty and other applicable payments from vehicles transporting the minerals, minimizing cash transactions.
- ix. Form a centralized vigilance team at DMG for independent and surprise inspections of mining areas, equipped with the latest technology.
- x. Enhance departmental capacity to combat illegal mining by increasing the number of field technical staff.
- xi. Implement e-rawanna system for removal or dispatch of seized Bajri to enhance monitoring, prevent illegal transportation, and ensure transparency in compliance.
- xii. Engage third-party auditors to study departmental data and reports, highlighting discrepancies and plugging any gaps in the system.

4.1.6 Decentralization, Restructuring & Strengthening of Department**Vision:**

To establish an agile, efficient, and transparent administration adept at utilizing the latest technological advancements while ensuring strict regulatory compliance and effectively mitigating illegal mining activities, the Directorate of Mining and Geology will be strengthened with adequate workforce, modern equipment, and state-of-the-art skill sets.

Challenges:

- i. Disproportionate induction of manpower and technological resources relative to the growth of mineral concession area and revenue collection, affecting overall mineral concession management.
- ii. Utilization of newer technologies in monitoring and management of mining activities.
- iii. Continuous and comprehensive training of personnel to operate and manage advanced technologies and systems effectively.

Way Forward:

- i. Restructure the departmental cadre by creating posts and positions, proportionate to current and projected concessions and illegal mining menace.
- ii. Merge the vigilance wing into division mining wing to form a consolidated unit with compact jurisdiction for better control over mining operations and enhanced monitoring of revenue collection and illegal mining activities.
- iii. Empower regional offices with greater autonomy and decision-making capabilities to ensure swift and localized responses to mining-related issues.
- iv. Equip Department of Mining and Geology with DGPS, GNSS, Drones, and other advanced instruments
- v. Leverage iGOT (integrated Government online training) portal and introduce scholarship schemes to pursue higher education in premier technical and management institutions for capacity building of departmental personnel.
- vi. Create training calendars for departmental personnel in collaboration with GSI, IBM, and other relevant institutions.
- vii. Develop training modules, for newly inducted personnel in the department, from regulatory provisions to advanced technology used for mineral concession management.

4.2 Technological Advancement

The policy aims to harness technological advancements to enhance the mineral value chain, move towards faceless governance, promote digitalization and automation, and mitigate illegal mining.

4.2.1 Enhancing the Mineral Value Chain

Vision:

To leverage cutting-edge technologies and innovative practices in the mineral value chain, ensuring efficient exploration, sustainable mining, and advanced processing techniques for optimal resource utilization and economic growth.

Challenges:

- i. Adoption of advanced technologies in exploration, mining, and processing
- ii. Traditional mining methods leading to resource wastage.
- iii. Environmental concerns related to traditional mining practices.

Way Forward:

- i. Encourage adoption of scientific technologies for mine surveying, planning, and designing to enhance operational efficiency by concessionaires.
- ii. Promote deployment of advanced technologies like Dust Control Systems, Process Ventilation Systems and Pollution Control Systems to deal with pollution levels in concession area.
- iii. Promote the adoption of advanced technologies to detect and prevent the misclassification of ore grades, ensuring more accurate and efficient mineral extraction.
- iv. Encourage and support entrepreneurial ventures within the mining sector with the support of State Start-up Policy to develop innovative solutions that integrate Industry 4.0 technologies with current mining practices.
- v. Incentivize the activities that add value to minerals before changing its chemical composition through Rajasthan Investment Promotion Scheme (RIPS).
- vi. Promote adoption of technologies to extract minerals and metals from mill tailings to create a more sustainable and prosperous mining sector in the State.
- vii. Incentivize the setting up of mineral processing plants in the State by providing capital incentives via Rajasthan Investment Promotion Scheme (RIPS).

4.2.2 Moving towards Faceless Governance**Vision:**

To establish a comprehensive and integrated single-window online portal for managing mining data, ensuring transparency and accessibility across Rajasthan. This will also enable the State to provide end-to-end accounting of minerals/ ores in the supply chain with the use of IT enabled systems.

Challenges:

- i. End-to-end digitization from mineral concession application/auction to commencement of mining operations.
- ii. Areas of human interface still exists where processes can be digitized to bring in greater efficiencies.

- iii. Centralized access to track documents, records, permits and historic data.

Way Forward:

- i. Improve the DMG-OMS (Department of Mines and Geology Online Monitoring System) platform to make services more user-friendly, provide timely approvals and ensure ease of access to information, thereby enhancing the overall user experience and reducing the need for physical visits to the DMG office.
- ii. Redesign the DMG-OMS modules to minimize or eliminate the need for human intervention in back-end thereby reducing chances of clerical errors and delays.
- iii. Expand the range of departmental information such as TPs, rawannas, annual capacities, EC details, mineral production etc. made available in the Jan Soochna portal to increase transparency and accessibility.
- iv. Introduce ticket-based grievance system that allows issues to be directly escalated to the concerned department for prompt resolution.
- v. Maintain digital maps of mining and quarry concessions on the DMG-OMS portal, with plans to expand this portal by interlinking it with databases of other departments such as Forest and Revenue.
- vii. Create a dashboard within DMG-OMS for monitoring and selecting mines for inspection based on defined parameters.
- viii. Digitalization of the process of royalty assessment of returns filed by concessionaires to ensure fairness by random allocation, data analytics and standardizing procedures.

4.3 ESG and Sustainable Mining

Recognizing the importance of conducting mining activities in a sustainable and environmentally responsible manner, the Government of Rajasthan is committed to protecting both the environment and local communities. The integration of Environmental, Social, and Governance (ESG) principles is essential to ensuring the sustainable development of the mining sector. In alignment with the National Mineral Policy 2019 and the Viksit Rajasthan 2047 initiative, the state is dedicated to embedding environmental and social considerations into all mineral development programmes. This approach aims to balance the conservation of natural resources with the socio-economic development of the region.

4.3.1 Zero-Waste Mining

Vision:

Implement zero-waste mining as a strategic goal by leveraging advanced technologies for optimal resource extraction and utilization. Promote the adoption of net-zero operations, and sustainable supply chains, ensuring that every aspect of mining contributes to environmental sustainability and economic growth.

Challenges:

- i. Developing and promoting zero-waste mining technologies demands substantial capital investment, creating obstacles for achieving long-term economic sustainability.

Way Forward:

- i. Include appropriate provisions on zero-waste mining practices in mine plans, including the requirement for comprehensive waste management plans as part of mining concessions.
- ii. Offer incentives such as grants and subsidies to companies that adopt zero-waste mining technologies and practices, which increase resource recovery.
- iii. Establish innovation hubs and centers of excellence dedicated to developing and promoting zero-waste mining as well as disseminating relevant technologies and production methodologies among the mining communities.

4.3.2 Waste to Wealth Initiative

Vision:

Foster innovative waste management practices by transforming tailings and waste rock into valuable resources, promoting the circular economy.

Challenges:

- i. The low cost of virgin raw materials and logistical difficulties associated with the remote locations of mine waste affect the competitiveness of products derived from mine waste.
- ii. Implementing a circular economy model in mining is complex and requires collaborative efforts due to a range of interconnected challenges.

Way Forward:

- i. Promote the adoption of advanced sustainable technologies, such as geopolymer and ore sorting, to maximize the value extracted from mining waste and enhance overall resource efficiency.

- ii. Offer incentives for tailing recovery and other sustainable methods for key minerals, focusing on the effective utilization of existing overburden in working mines.
- iii. Conduct e-auction of overburden dumps which can be used in various industries accumulated in government land to be carried out.
- iv. Appropriate provisions to be made for disposal of such overburden dumps/ overburden accumulated in private land.
- v. Publish notifications and mandates for use of mining overburden in infrastructure projects to ensure its effective application and integration into broader development efforts.
- vi. Enable private landowners or mineral concession holders to clear overburden dumps on their properties through a streamlined and simplified application process.
- vii. Formulate and implement a new M-Sand Policy to enhance the production of manufactured sand (M-sand) and reduce reliance on river sand, promoting sustainable resource management.
- viii. Promote innovations to in utilizing mining wastes created and continuously adopt newer mining technologies which aim at minimal environmental impact.

4.3.3 Benchmarking ESG and Sustainable Standards

Vision:

To establish Rajasthan as a leader in sustainable mining by integrating Environmental, Social, and Governance (ESG) principles, prioritizing environmental conservation, social responsibility, and governance excellence, while promoting eco-friendly practices.

Challenges:

- i. Limited awareness and understanding of ESG and sustainability principles among stakeholders can impede progress.
- ii. High capital investment required for sustainable practices can be a deterrent, especially for smaller mining operations.

Way Forward:

- i. Identify and protect ecologically fragile and biologically rich areas in line with the National Mineral Policy 2019 by declaring them as 'no-go' zones for mining operations.
- ii. Establish a STAR Rating framework for minor mineral mines in the State, benchmarking with ESG parameters, and in line with the existing STAR rating framework by IBM, with categories for operating mines and mine closures

- iii. Promote sustainable mining practices by implementing and incentivizing comprehensive mine reclamation projects, such as installing solar panels or wind turbines over excavated areas to reduce pollution and carbon footprint.
- iv. Implement measures to protect local biodiversity, including the conservation of flora, fauna, and natural habitats affected by mining activities. Introduce vegetation of reclaimed areas with plant species that have high economic value and can thrive in various habitats.
- v. Bring out schemes to incentivize tourism, agriculture, horticulture, pisciculture, or other reclamation activities that generate employment in reclaimed mining areas.
- vi. Conduct awareness campaigns, workshops, and training programmes to educate stakeholders about the importance of sustainable mining practices and the benefits of ESG compliance.

4.4 Skill Upgradation and Community Engagement

4.4.1 Skill Enhancement and Employment Generation

The mining sector in Rajasthan aspires to expand mining concession areas by three times to over 7,000 sq km, provide employment to more than 10 million people directly and indirectly, and increase Government revenue threefold to INR 25,000 crore.¹⁰

Vision:

To generate sustainable and dignified employment opportunities for the people of Rajasthan, leveraging the growth of the mining sector and fostering inclusive economic development and to enhance the skills of the workforce in the mining sector through continuous education, vocational training, and collaborations with industry and educational institutions, ensuring that the State remains competitive and innovative.

Challenges:

- i. Availability of eminent educational institutes for making youths skilled and employable as per mineral and mining industry standards.
- ii. Collaborations of educational institutes with mineral industries at national, international, or industry levels to increase exposure and knowledge.
- iii. Gap between the skillsets of employees and required skills in the industry.
- iv. Periodic reskilling and upskilling programmes to align the workforce with the evolving demands of the mining industry.

Way Forward:

- i. Promote collaboration between industry and educational institutions by leveraging CSR and DMFT fund to develop specialized certification courses/ programmes and vocational training modules to address skill gaps in existing workforce and for training future workforce.
- ii. Establish/upgrade ITIs near high-potential mining districts to offer training in trades such as Operator, Fitter, Blaster, and related professions and develop industry-specific curricula, courses, and certification programmes meeting industry needs.
- iii. Conduct mining and exploration related skill development courses in ITIs, Polytechnique Schools.
- iv. Offer scholarships and incentives for students of mining affected areas pursuing courses, certifications, and research in earth sciences in premier institutions in India and abroad.
- v. Technological exposure of mine owners and workers by integrating field visits to well developed mines, using cutting-edge advanced processes and equipments.

4.4.2 Mine Workers' Welfare, Health & Safety

Socio-economic indicators among marginalized groups in Rajasthan often show disparities in education, income levels, and access to basic amenities compared to the general population.

Vision:

To ensure the welfare, health, and safety of mine workers and their families, with a focus on uplifting weaker sections of society through proactive policies and holistic initiatives.

Challenges:

- i. Access to quality healthcare in remote mining areas, leads to higher incidences of occupational and general health issues among mine workers and their families.
- ii. Weaker sections of society, including mine workers, often face socio-economic disparities such as lower income levels, limited access to education, skill development opportunities, and inadequate housing and sanitation facilities.

Way Forward:

- i. Encourage lease holders to establish programmes in high-risk areas to educate workers on silicosis prevention.
- ii. Increase employment opportunities for locals by promoting mineral based industries, artisanal and craft industries and SHGs to provide direct and indirect employment opportunities in villages.

- iii. Organize regular medical camps in collaboration with medical professionals and hospitals for regular check-ups and to increase awareness about occupational disease among communities.
- iv. Develop industry-wise safety management plans/standards for minor minerals and monitor their compliance and take corrective actions on reported deviations from set standards.

4.5 Support Strategic Projects

4.5.1 Strategic & Critical Minerals

The rising demand for clean energy has translated into an increased demand for critical minerals with an expected four-fold increase by 2040. Globally, by 2040 the demand for copper is expected to rise 50%, double for nickel, cobalt and rare earth elements, quadruple for graphite and eightfold for lithium, which is crucial for batteries.¹¹ The development of sustainable supply chains for such minerals is, therefore, need of the hour. Rajasthan, being blessed with reserves for some of such critical minerals, can be the driver for meeting the demands in the future.

Vision:

To establish Rajasthan as a key player in the global supply chain for strategic and critical minerals by adopting a strategic approach to exploration, auctioning, and value addition. This vision aims to bolster economic growth, ensure supply chain resilience, and support the transition to a low-carbon economy.

Challenges:

- i. The major challenges associated with development and operationalization of critical mineral blocks are:
 - a. Exploration of deep-seated reserves.
 - b. Availability of processing technology to recover mineral from low grade ores.
 - c. Non-availability of mining ecosystem in areas where such resources are present.

Way Forward:

- i. Assist Central Government in their endeavor to actively auction more numbers of strategic and critical minerals blocks by accelerating the identification and development of potential sites.

¹¹ Outlook for key minerals – International Energy Agency

- ii. Introduce scheme to incentivize processes and technology used in processing of this class of minerals through RIPS ensuring that the State remains at the forefront of mineral innovation.
- iii. Establish Centers of Excellence including mineral processing laboratories and pilot plants to demonstrate and implement indigenously developed technologies for production of commercially viable mineral processing and developing a skilled workforce proficient in utilizing these advanced methods.
- iv. Support the growth of ceramic and rare earth industries through Center of Excellence.

4.5.2 State Mining Companies

State mining companies of Rajasthan have rich history of leading the way into sunrise sectors of time, be it in rock phosphate, lignite mining or solar and wind power generation. They continue to work towards signalling the priority and vision of the Government to the companies in mining sector.

Vision:

To elevate State-run PSUs to global standard of excellence, driving economic development through innovation, enhanced operational efficiency, and sustainable practices. This vision emphasizes transparency, robust governance, and community impact.

Challenges:

- i. Skilled technical personnel to ensure efficient oversight of operations.
- ii. Diversification into new business areas in line with the changing landscape of market requirements

Way Forward:

- i. Encourage State PSUs to pursue underground coal gasification to pave the way for utilization of deep-seated lignite reserves.
- ii. Actively engage in the exploration, mining, mineral processing, and R&D of strategic and critical minerals, thereby fostering innovation and enhancing self-reliance.
- iii. Promote State PSU to establish a new unit, with a focus on mineral exploration and auxiliary activities.
- iv. Adoption of latest mining technologies and equipment to boost operational efficiency, competitiveness, safety, and environmentally friendly mining.
- v. Enter into JV/Collaboration with other Central/State Government PSU's/companies to bring their skills and expertise.
- vi. Promote Rajasthan State Mines & Minerals Limited to explore business opportunities abroad with strategic business tie ups with private enterprises.

- vii. Adopt innovative plans & schemes for backward as well as forward integration aiming for value addition of the minerals produced.
- viii. Invest in Research & Development for exploitation of otherwise un-economical mineral reserves.

5 Implementation and Review

The State is committed to successful and time-bound implementation of this Policy. To ensure that all key aspects are successfully implemented, the State will form a 'Project Management Unit' (PMU) to identify key initiatives and create outcome matrix to track the progress of policy. initiatives implementation through periodic reviews. A state level committee will carry-out regular engagement and consultation with stakeholders and conduct quarterly reviews and take necessary actions towards interdepartmental coordination, legislative changes, and any other course corrections. The progress of implementation of this policy will be reflected in the annual progress report of Department of Mines and Geology, which is tabled in the State Legislative Assembly.