

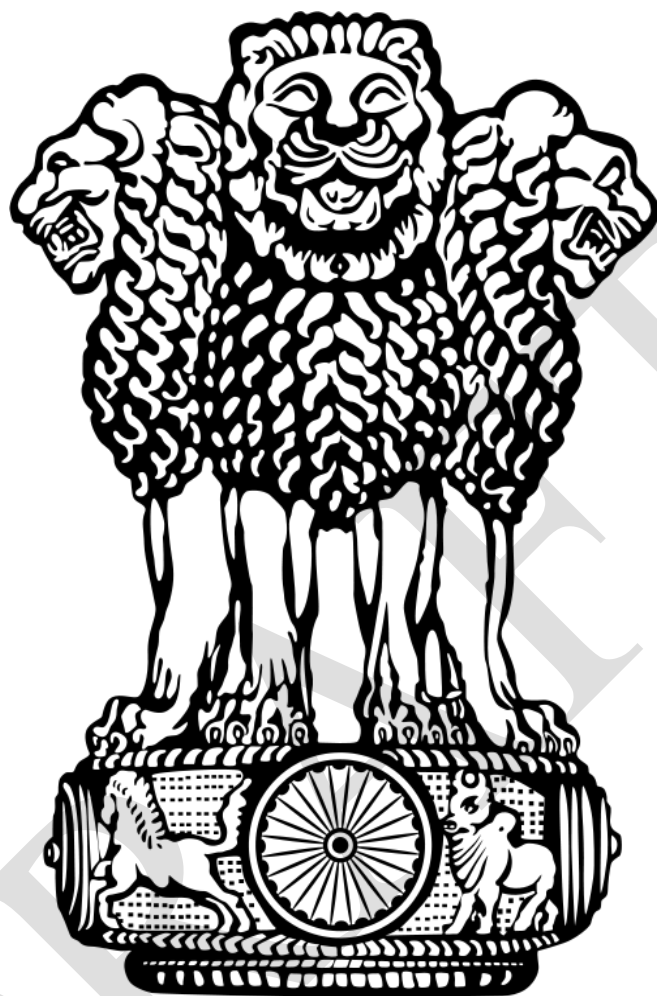
Dear Sir,

Department of Mines and geology, Govt. of Rajasthan is in the process of preparing new Mineral Policy, 2015. The draft is available on Department's web site (with the title Draft of Mineral Policy, 2015 and cover page & contents of Draft of Mineral Policy, 2015). You are requested to go through the draft and send your valuable comments / suggestions with reasonable justifications up to 31.12.2014 by e-mail to smeminor@dmg-raj.org / minor.cell@dmg-raj.org. You may also send hard copy of your comments / suggestions in Directorate's Minor cell.

Thanking you.

**Additional Director (Mines) Hq.
Directorate, UDAIPUR**

Mineral Policy 2015



सत्यमेव जयते

Government of Rajasthan

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PART I

1. BACKGROUND

The Rajasthan State is located in the north western part of India. It is the largest State in the country with an area of 3,42,239 sq. km., encompassing about 11% of the total geographical area of the country. The State is bounded between Latitude $23^{\circ}03'$ - $30^{\circ}12'$ N and Longitude $69^{\circ}29'$ - $78^{\circ}17'$ E. It shares its north western and western boundary with the Indo-Pakistan international border that extends about 1,070 km. In the north and north east it is bounded by Punjab, Haryana and Uttar Pradesh States and in the south, south east and south west by Madhya Pradesh and Gujarat States respectively. There are 33 districts in the State.

Rajasthan's geographical area is marked with diversity of land type and is characterized by sand dunes, fertile plains, rocky undulating land and some forested regions. The Aravalli hill range, considered as the oldest in the world, bisects the State almost diagonally. Almost two third State is enveloped by the Thar Desert having arid and semi arid climatic conditions. Only 9.36% of the State is under forest cover. The Population of Rajasthan is 72,307,157.

Every facet of Rajasthan is unique and fascinating so as its geology. Its rocks range in age from one of the oldest feature (more than 3,500 million years age) to recent, displaying a wide range of rocks and mineral deposits. Mining and smelting of its base metal deposits are also one of the oldest in world dating back to more than 2,500 years before present (500 B.C.) Rajasthan is considered as a museum of minerals both metallic and non metallic including renowned building stones and is also resources of Radioactive minerals, Lignite, Petroleum and Natural Gas.



An executive inspecting an ancient mining site of Lead-Zinc at Zawar, district Udaipur.



The ancient (about 500 B.C.) Zinc Smelting Furnace at Zawar, district Udaipur.

2. MINERAL POTENTIAL

Rajasthan is the richest State in terms of availability and variety of minerals in the country. The State is fortunate to have 79 varieties of minerals, out of which 57 are being produced. Its share is 9% in the country's total mineral production. A list of its minerals is given below:

Minerals Occurring and produced in Rajasthan			
S. No.	Name of Mineral	Available Mineral	Mineral produced
A.	Metallic Minerals		
1.	Cadmium	✓	✓
2.	Copper Ore	✓	✓
3.	Gold	✓	✓
4.	Iron Ore	✓	✓
5.	Lead Ore	✓	✓
6.	Manganese Ore	✓	✓
7.	Silver	✓	✓
8.	Zinc Ore	✓	✓
9.	Bauxite	✓	✗
10.	Bismuth	✓	✗
11.	Cobalt	✓	✗
12.	Molybdenum	✓	✗
13.	Nickel	✓	✗
14.	Platinum	✓	✗
15.	Pyrite	✓	✗
16.	Tin	✓	✗

17.	Tungsten Ore	✓	×
18.	Uranium Ore	✓	×
	Sub Total	18	8
B.	Fuel Minerals		
19.	Lignite	✓	✓
20.	Natural Gas	✓	✓
21.	Petroleum (Crude Oil)	✓	✓
	Sub Total	3	3
C.	Non-Metallic Minerals		
i.	Major Mineral		
22.	Asbestos	✓	×
23.	Ball Clay	✓	✓
24.	Barytes	✓	✓
25.	Calcite	✓	✓
26.	China Clay/White Clay	✓	✓
27.	Dolomite	✓	✓
28.	Feldspar	✓	✓
29.	Fire Clay	✓	✓
30.	Fluorspar	✓	✓
31.	Garnet (Abrasive & Gem)	✓	✓
32.	Graphite	✓	✓
33.	Gypsum	✓	✓
34.	Jasper	✓	✓
35.	Kyanite	✓	✓
36.	Laterite	✓	✓
37.	Limestone (SMS & Cement Grade)	✓	✓
38.	Magnesite	✓	✓
39.	Mica	✓	✓
40.	Ochers (red&yellow)	✓	✓
41.	Pyrophyllite	✓	✓
42.	Quartz	✓	✓
43.	Quartzite (Refractory)	✓	✓
44.	Rock Phosphate	✓	✓
45.	Selenite	✓	✓
46.	Silica Sand	✓	✓
47.	Siliceous Earth	✓	✓
48.	Soapstone	✓	✓
49.	Vermiculite	✓	✓
50.	Wollastonite	✓	✓
51.	Topaz	✓	×
52.	Tourmaline	✓	×
53.	Agate/Amethyst	✓	×
54.	Apatite	✓	×
55.	Aquamarine	✓	×
56.	Beryl	✓	×
57.	Corundum	✓	×
58.	Emerald Crude	✓	×
59.	Epidote	✓	×
60.	Nepheline Syenite	✓	×
61.	Sillimanite	✓	×
	Sub Total	40	28
ii.	Minor Mineral		
62.	Bajari/Kankar	✓	✓
63.	Bentonite	✓	✓
64.	Brick Earth	✓	✓
65.	Chert	✓	✓

66.	Dolomite (Chips)	✓	✓
67.	Fuller's Earth	✓	✓
68.	Granite	✓	✓
69.	Limestone (Building & Burning)	✓	✓
70.	Marble	✓	✓
71.	MillStone	✓	✓
72.	Murram	✓	✓
73.	Quartzite	✓	✓
74.	Rhyolite	✓	✓
75.	Sandstone	✓	✓
76.	Saltpetre	✓	✓
77.	Serpentine (Green Marble)	✓	✓
78.	Shale/Phyllite/Schist (Patti Katla)	✓	✓
79.	Slatestone	✓	✓
	Sub Total	18	18
	Grand Total	79	57

The State is a leading producer of Lead, Zinc, Gypsum, Soapstone, Ball Clay, Calcite, Rock Phosphate, Feldspar, Kaolin, Copper, Jasper, Garnet, Wollastonite, Emerald, Silver, etc. It is renowned world over for its deposits of Marble, Sand Stone and other decorative stones.

Total 34,991 Leases/Quarry licenses have been allotted so far in the State. Of these,

3,403 leases are of Major Minerals,

11,861 leases of Minor Minerals, and

18,249 Quarry Licenses.

There are 74 PL and 1 RP.

The revenue from Minerals contributed Rs. 3,088.66 crores during 2013-14 to the State exchequer which was Rs. 2,838.59 crores during 2012-13. This sector provides direct employment to about 4 lakh persons and indirect being about 20 lakh persons.

Crude Oil has emerged as an outstanding resource in recent years. Its drilling operations are confined in Barmer-Sanchor basin and Jaisalmer basin. It contributed about Rs. 5,953 crores revenue to the State during 2013-14.

Reserves/Resources of important Minerals in Rajasthan (Source : IBM, DMGR)

S. No.	Name of Mineral	Estimated reserves/resources (in Mil.T.)
1	SMS Grade	1,750
2	All Grade Limestone	21,659
3	Lignite	5,720.10
4	Calcite	10.39
5	Ball Clay	31.81
6	Dolomite	460.17

7	Barytes	2.99
8	Rock phosphate	95.927
9	Gypsum	1,055.55
10	Potash	2,476.58
11	Copper Ore	777.17
12	Marble All	1,231.429
13	Gold Ore	105.81 (0.50 g/t cut off)
14	Manganese	5.81
15	Petroleum (Crude Oil)	480 MMTS
16	Soapstone	132.16
17	Ochre	117.31
18	Silica sand with Quartz	332.468
19	Wollastonite	14.57
20	Silver Ore	405.92 (with metal content 27006.2 tonnes)
21	Siliceous Earth	2.07
22	Feldspar	87.95
23	Bentonite	422.51
24	China Clay	432.51
25	Fire Clay	66.42
26	Fluorite	5.24
27	Fuller's Earth	190
28	Garnet	0.198
29	Granite	9190.665 m. ³
30	Iron Ore	557.39
31	Natural Gas Utilized	25-30 Billion cubic meter
32	Lead & Zinc Ore	607.532
33	Laterite	123.35

Metallic Minerals

Copper:

The State's copper deposits are located in the districts of Jhunjhunu, Sikar, Sirohi, Udaipur, Bhilwara, Ajmer, Alwar, Bharatpur, Chittorgarh, Rajsamand and Dungarpur. The largest resources of copper ore to a tune of 777.17 million tonnes (49.86%) are located in the Rajasthan State and the State produces about 32% of the total country's production.



Amjhara, district Dungarpur,
Copper Ore, old working



Naldeshwar, District Alwar
Copper Ore, old Working

Lead, Zinc and Silver:

Rajasthan is endowed with the largest Lead-Zinc ore deposit amounting to 607.53 million tonnes. Among the lead-zinc-silver deposits, Rampura-Agucha deposit is the largest and the best, followed by those at Zawar and Rajpura-Dariba-Sindesar Kalan and Khurd. The important lead-zinc-silver deposits in the State are located at Zawar (Udaipur) Rajpura-Dariba-Bethumi (Rajsamand), Rampura-Agucha and Pur-Banera (Bhilwara), Dehri (Sirohi) and Kayer – Ghugra, Sawar (Ajmer). The Country enjoys self-sufficiency in respect of Zinc. Production of Zinc is more than its consumption. However, there is shortage of Lead in Country.



Rajpura-Dariba, District Rajsamand,
Lead-Zinc Ore, old working



Kayar Ghugra, District Ajmer
Lead-Zinc Ore, old working

Manganese:

In Rajasthan Manganese deposits mainly occur in the districts of Banswara where it is confined to a belt extending from Guraria to Rathimuri for distance of 22 Km. The main deposits are located at Sivania, Kala-Khunta, Ghatia, Lilwani, Itala, Tambesra, and Kheria. Small deposits of Manganese are also located near Negadia (Rajsamand), and Choti-Sar, Badi-Sar (Udaipur). A total of 5.81 Million Tonne resources of Manganese have been estimated in the State.

Iron-Ore:

The Iron-Ore deposits are located in the districts of Jaipur, Udaipur, Jhunjhunu, Sikar, Bhilwara, Alwar, Bharatpur, Dausa and Banswara. About 557.39 million tonnes resources of Iron-Ore (both Hematite and Magnetite) are estimated in the State. The important localities of Iron-Ore are Morija-Neemal (Jaipur), Lalsot (Dausa), Rampura, Dabla (Sikar), Taonda (Jhunjhunu), Pur-Banera, Bigod (Bhilwara), Nathara ki Pal, Thur (Udaipur), Indergarh, Mohanpura (Bundi), Dedrauli, Liloti, Todupura, and Khora (Karauli).



Dedrauli, District Karauli,
Iron Ore, old working



Dedrauli, District Karauli,
Iron Ore, old working

Gold:

A total of 105.81 million tonnes Gold resources were estimated in Bhukhia-Jagpura-Delwara belt (Banswara) with 0.50gm/t cut-off grade. Gold was also proved along with Copper in Dhani-Baseri area of Dausa district, Khera-Mundiawas area of Alwar district and Dokan area of Sikar district. Beside, gold is also extracted as a byproduct in Khetri Copper-Belt (district Jhunjhunu).



Bhukiya, District Banswara,
Gold Ore, old working



Bhukiya, District Banswara,
Gold Ore, old working

Tungsten:

Tungsten is a metal of strategic importance. The chief source of Tungsten are Wolframite $[(\text{Fe}, \text{Mn})\text{WO}_4]$, and Scheelite (CaWO_4) . The State has about 23.92 million tonnes resources of tungsten ore which is about 17% of total country's resources. Important deposits occur near Degana, district Nagaur, and near Balda and Udwaria, district Sirohi. Degana and Balda were the only operative mines producing meager quantities of concentrate. However, owing to economic non viability they have been closed down.

Fertilizer Minerals

Rock Phosphate:

Rock Phosphate deposits are mainly located at Jhamar-kotra, Matoon, Kanpur, Dholki Pati, Dakan-kotra, Kharbaryon ka Gura in Udaipur district, Ram Kamunna, Sallopat area in Banswara district, Bismania and Fatehgarh in Jaisalmer district, Achrol in Jaipur district and Aduka-andawari in Alwar district.

The Jhamar-kotra rock-phosphate deposit is the largest deposit in the country.

Gypsum:

Rajasthan alone accounts for 82% resources of gypsum in the country having total resources of 1,055.55 million tonnes. The State continues to be the leading producer, contributing 99% of total output. The entire production of Selenite is from Rajasthan State by three operating mines in Barmer and Bikaner districts. Gypsum is found in the districts of Bikaner, Nagaur, Barmer, Hanumangarh, Jaisalmer, Sriganganagar, and Jalore.

Potash:

In Rajasthan occurrences of sub-surface halite bearing evaporites are found over an area of 30,000 sq.km., covering parts of Sriganganagar, Hanumangarh, Bikaner, Churu and Nagaur districts. Eight sub-basins/depocentres or potash mineralization containing 2% K have been identified around Bikaner, Hansera, Arjunsar, Gharsisar, Jaitpur, Satipura, Bharusari and Lakhasar. Out of these, the last four depocentres are considered to be prospective for potash mineralization. The reserves estimated in Satipura, Bharusari and Lakhasar sub-basins at cut-off grade of 3% K are estimated around 2,476.58 million tones. There is ample scope for establishing fertilizer industries in the State, based on Gypsum, Rock-phosphate and Potash.

Oil and Fuel Minerals

Oil and Fuel Minerals:

Rajasthan has significant resource potential of hydrocarbons under four Petroliferous basin. These four basins fall in the 15 districts of the State, namely Barmer, Jaisalmer, Bikaner, Sriganganagar, Hanumangarh, Jalore, Jodhpur, Kota, Jhalawar, Baran, Bundi, Chittorgarh and Sawai-Madhopur spread over an area of 1,50,000 sq. km.

A total of 480 million tonnes of crude oil and 3-6 billion cubic metre of natural gas were proved in Barmer-Sanchore basin and 25-30 billion cubic metre natural gas was proved in Jaisalmer basin.

Cairn India has discovered 25 oil fields in Barmer-Sanchore basin. Nearly 6.5 billion barrels of oil in place have been proved alone in Barmer-Sanchore basin. The commercial production of crude oil from Rajasthan has commenced from 29 August 2009. The State is second highest producer of crude oil after Bombay-High and is the first in on-shore. It has contributed about 25% of crude oil production. Present production is 9 million tonnes per annum.

Lignite:

In Rajasthan, large deposits of Lignite occur in tertiary formation of middle Eocene age spread over 70,000 sq.km. area in the Barmer-Sachore, Jaisalmer and Nagaur basins which fall in Barmer, Jaisalmer, Bikaner, Nagaur and Jalore districts. A total of about 5,720 million tonnes reserves of Lignite have been estimated in 78 localities in Barmer, Bikaner, Nagaur, Jaisalmer and Jalore districts of western and north- western parts of the State. Lignite is being exploited at Giral (district Barmer), Kapurdi-Jalipa (district Barmer), Palana-Barsinghsar (district Bikaner) and Mata Sukh-Kasnau-Igiyar (district Nagaur) for Lignite based power plants and captive use. Lignite based power plants are operating at Kapurdi-Jalipa (district Barmer), Giral (district Barmer), Palana-Barsinghsar (district Bikaner) and Gurha (district Bikaner).



Giral Lignite mining site in Barmer district, modernization being initiated to sustain resources.

Geological Resources of Lignite in Rajasthan
(As on 8.12.2014)

S. No.	Area/Block	Depth (m.)	(Resource in million tonnes)				
			Proved	Indicated	Inferred	Total	Grand Total
A.	BIKANER:						
1	Ambasar-Gigasar	0-150	0.00	12.33	0.000	12.33	12.33
2	Badhnu	0-150	0.00	0.00	1.870	1.87	1.87
3	Bangarsar-Jaimalsar	0-150	-	-	13.740	13.74	19.11
		150-300	-	-	5.370	5.37	
4	Bania	0-150	0.00	0.49	0.000	0.49	0.49
5	Bapeau	0-150	0.00	0.00	35.580	35.58	35.58
6	Barsinghsar	0-150	77.83	0.00	0.000	77.83	77.83
7	Bholsar	0-150	0.00	0.00	3.900	3.90	3.90
8	Bigga-Abhaysingpura	0-150	0.00	0.00	25.260	25.26	44.64
		150-300	0.00	0.00	19.380	19.38	
9	Bithnok East Ext.	0-300	0.00	39.44	0.000	39.44	39.44
10	Bithnok Main	0-150	43.28	0.00	0.000	43.28	99.12
		150-300	55.84	0.00	0.000	55.84	
11	Borana	0-150	0.00	0.10	0.410	0.51	0.51
12	Chak-Vijaysinghpura	0-150	2.80	0.00	0.000	2.80	2.80
13	Deshnok-Ramsar-Sinthali	0-150	0.00	0.00	52.850	52.85	53.77
		150-300	0.00	0.00	0.920	0.92	
14	Diyatra	0-150	0.00	57.53	0.000	57.53	124.87
		150-300	0.00	67.34	0.000	67.34	
15	East of Riri	0-150	0.00	0.00	1.760	1.76	1.76
16	Gadiyala	0-300	0.00	0.00	36.980	36.98	36.98
17	Gigasar-Kesardesar	0-150	0.00	0.65	0.000	0.65	0.65
18	Giriajsar	0-300	0.00	26.48	8.990	35.47	35.47
19	Giriajsarextn.	150-300	0.00	0.00	24.810	24.81	24.81
20	Gurha East	0-150	33.81	0.00	0.000	33.81	38.11
		150-300	4.30	0.00	0.000	4.30	
21	Gurha West	0-150	40.65	0.00	0.000	40.65	41.65
		150-300	1.00	0.00	0.000	1.00	
22	Hadda	150-300	-	0.22	-	0.22	0.22
23	Hadda North &	0-150	0.00	2.819	7.349	10.17	13.67

	West	150-300	0.00	1.055	2.442	3.50	
24	Hadla	0-150	59.30	0.00	0.000	59.30	59.30
25	Hira Ki Dhani	0-150	0.00	0.00	0.660	0.66	0.66
26	Kuchore (Napasar)	0-150	0.00	0.00	1.000	1.00	1.00
27	Kuchaur-Athuni	0-150	0.00	0.18	0.000	0.18	0.18
28	LalamdesarBada	0-150	0.00	2.00	0.000	2.00	2.00
29	MandalCharnan	0-150	0.00	17.70	0.000	17.70	17.70
30	Palana	0-150	23.57	0.00	0.000	23.57	23.57
31	Palana East	0-150	0.00	1.46	0.000	1.46	1.46
32	Pyau	0-150	0.00	0.00	45.560	45.56	62.18
		150-300	0.00	0.00	16.620	16.62	
33	Raneri	0-150	33.92	0.00	0.000	33.92	33.92
34	Riri	0-150	159.68	0.00	0.000	159.68	182.43
		>150	22.75	0.00	0.000	22.75	
35	Sarupdesar- Palana west	0-150	0.00	0.67	0.000	0.67	0.67
36	Kenya-Ki- Basti& S of Bhane-Ka-Gaon	0-150	0.00	0.96	0.000	0.96	1.02
		150-300	0.00	0.060	0.000	0.00	
B	BARMER:						
37	Bharka	0-150	0.00	8.45	0.000	8.45	9.45
		150-300	0.00	1.00	0.000	1.00	
38	Bothia- BharkaGunga	0-300	0.00	9.35	0.000	9.35	9.35
39	Bothia (Jalipa N Ext.)	0-300	0.00	151.67	0.000	151.67	151.67
40	Chokla North	0-300	0.00	0.00	234.770	234.77	234.77
41	Giral	0-150	20.00	81.90	0.000	101.90	101.90
42	Hodu	0-300	0.00	78.17	80.550	158.72	165.57
		> 300	0.00	0.00	6.850	6.85	
43	Jalipa	0-150	224.28	0.00	0.000	224.28	324.83
		150-300	100.55	0.00	0.000	100.55	
44	Jogeshwartala	0-150	0.00	31.52	0.000	31.52	34.52
		150-300	0.00	3.00	0.000	3.00	
45	Kawas Gravity Block	150-300	0.00	0.00	53.030	53.03	53.03
46	Kapurdi	0-150	150.4	0.00	0.000	150.40	150.40
47	Kurla	0-150	0.00	0.00	68.670	68.67	68.67
48	Mahabar- Shivkar	0-150	0.00	9.22	24.300	33.52	44.06
		150-300	0.00	2.93	7.610	10.54	
49	Mithra	0-150	0.00	0.09	0.390	0.48	2.46
		150-300	0.00	0.45	1.530	1.98	
50	Munabao	150-300	0.00	0.00	9.850	9.85	9.85

51	Nagurda	0-150	0.00	103.68	0.000	103.68	232.25
		150-300	0.00	127.87	0.000	127.87	
		> 300	0.00	0.70	0.000	0.70	
52	Nagurda (East)	0-150	0.00	18.46	0.000	18.46	21.69
		150-300	0.00	3.23	0.000	3.23	
53	Nimbalkot	0-100	0.00	0.00	8.97	8.97	109.60
		100-300	0.00	0.00	85.490	85.49	
		> 300	0.00	0.00	15.14	15.14	
54	Nimbalkot North	0-100	0.00	0.00	1.930	1.93	27.72
		100-300	0.00	0.00	22.340	22.34	
		> 300	0.00	0.00	3.450	3.45	
55	Sachha-Sauda	0-300	0.00	28.70	0.000	28.70	28.70
56	Sindhari East	> 150	0.00	262.65	0.000	262.65	262.65
57	Sindhari West	> 150	0.00	894.93	339.250	1234.18	1234.18
58	Sonari	0-300	0.00	43.59	0.000	43.59	43.59
59	South of Nimbla	0-150	0.00	0.00	96.390	96.39	109.60
		150-300	0.00	0.00	13.210	13.21	
60	Magne Ki Dhani	0-150	0.00	0.00	8.780	8.78	12.73
		150-300	0.00	0.00	3.912	3.91	
		> 300	0.00	0.00	0.044	0.04	
61	Kurla East (covering Kurla East North and South sub blocks)	0-150	0.00	11.47	0.000	11.47	768.51
		150-300	0.00	48.47	0.000	48.47	
		> 300	0.00	458.44	250.129	708.57	
C.	JAISLAMER AND BARMER:						
62	Khuri	0-300	0.00	0.00	13.800	13.800	13.80
63	Ramgarh	0-150	0.00	0.00	40.960	40.960	45.26
		150-300	0.00	0.00	4.300	4.300	
64	Khuiyala	0-150	0.00	0.00	22.516	22.516	22.52
65	Bhanda	0-150	0.00	0.00	2.656	2.656	2.66
D.	JALORE:						
66	Sewara	150-300	0.00	0.00	33.43	33.43	76.08
		> 300	0.00	0.00	42.648	42.65	
E.	NAGAU AND PALI:						
67	Indwar	0-150	12.00	0.00	0.000	12.000	12.00
68	Kapriion Ki Dhani	0-150	17.00	0.00	0.000	17.000	17.00
69	Kasnau-Igiar	0-150	64.90	0.00	0.000	64.900	64.90
70	Kuchera	0-150	0.00	0.00	1.000	1.000	1.00
71	Lunsara	0-300	0.00	7.17	0.000	7.170	7.17

72	Matasukh	0-150	10.10	0.00	0.000	10.100	10.10
73	Metra Road &Meeranagar	0-150	0.00	23.90	59.350	83.250	83.25
74	Mokala	0-150	0.00	29.00	0.000	29.000	29.00
75	Nimbri-Chandawatan	0-150	9.00	0.00	0.000	9.000	9.00
76	Phalki	0-150	-	0.18	-	0.180	0.50
		150-300	-	0.32	-	0.320	
77	Phalki North	0-150	0.00	0.00	1.980	1.980	13.04
		150-300	0.00	0.00	11.060	11.060	
78	Phalodi	0-150	0.00	0.00	0.953	0.953	0.95
		150-300	0.00	0.00	4.699	4.699	4.70
	Total		1,167.02	2,671.93	1881.388		5,720.35

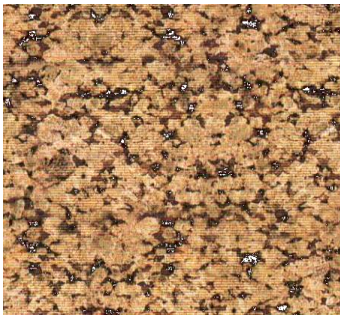
Source: Inventory of Geological Resources of India by GSI

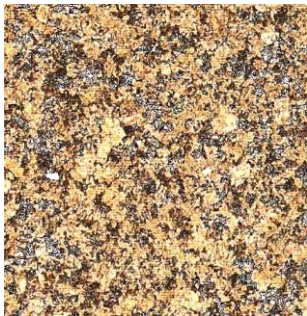
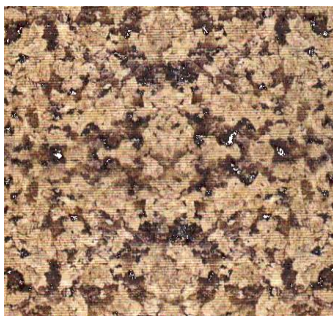
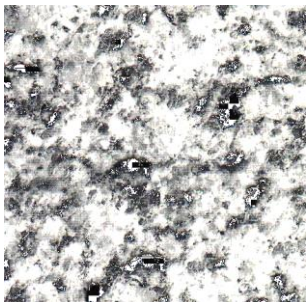
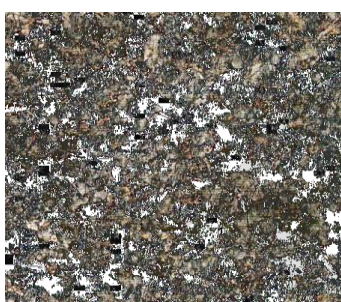
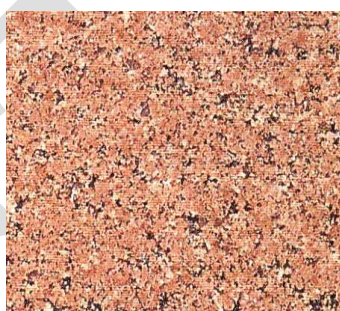
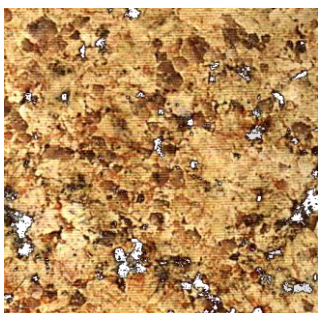
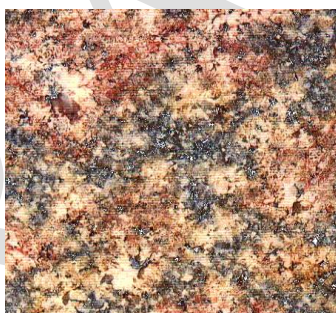
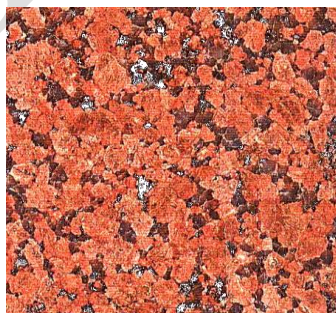
Dimensional & Decorative Stones

Rajasthan has enormous reserves of a large variety of dimensional and decorative stones and has a lion's share in the national production of these stones. The stone mining and processing industries are growing at a rate of 12% per annum. The State is leading producer of Marble, Sandstone and Flaggy Limestone (Kota stone) while the Granite production in the State is steadily increasing. The State enjoys distinction over other States for having the best resources of the finest quality of Marble.

Granite:

Rajasthan is richly endowed with large reserves of Granite and allied rocks mostly confined to southwestern, western and north eastern part of the State. Granite occurs in wide range of colours, texture and appearance. Granite deposits are located in 23 out of 33 district of Rajasthan. Important Granite deposits are located at Sankra, Lakha (Jaisalmer); Rakhi, Phulan, Mokalsar, Mungeria, Meli (Barmer); Kawla, Khambi, Bhuti, Keshwana, Kotkasta, Tabab, Maylawas, Nabi (Jalore); Sanpur, Siyankara, Idarla, Jirawal (Sirohi); Gyangarh, Katar, Kidimal, (Bhilwara); Makhar, Rijani, Rasoda (Jhunjhunu); Dang Gelpur, Ramaliya, Bhinai (Ajmer); Khejadla, Chokri-Khurd, Chokri-Kalan (Jodhpur); Ajeetgarh (Sikar) and Malkot (Rajsamand). Granite processing units are located at Jalore, Kishangarh, Abu-Road, Shahpura (Jaipur), Chittorgarh, Udaipur, Rajsamand, etc.

		
China Pink (Jalore)	Copper Silk (Jalore)	Golden Pearl (Jalore)

		
Marry Gold (Badmer)	Royal Cream (Badmer)	Rakhi Green (Badmer)
		
Pearl White (Pali)	Nageena Green (Barmer)	Royal Touch (Jalore)
		
Sunrise Yellow (Jalore)	Ball Flower (Jalore)	Imperial Pink (Jalore)

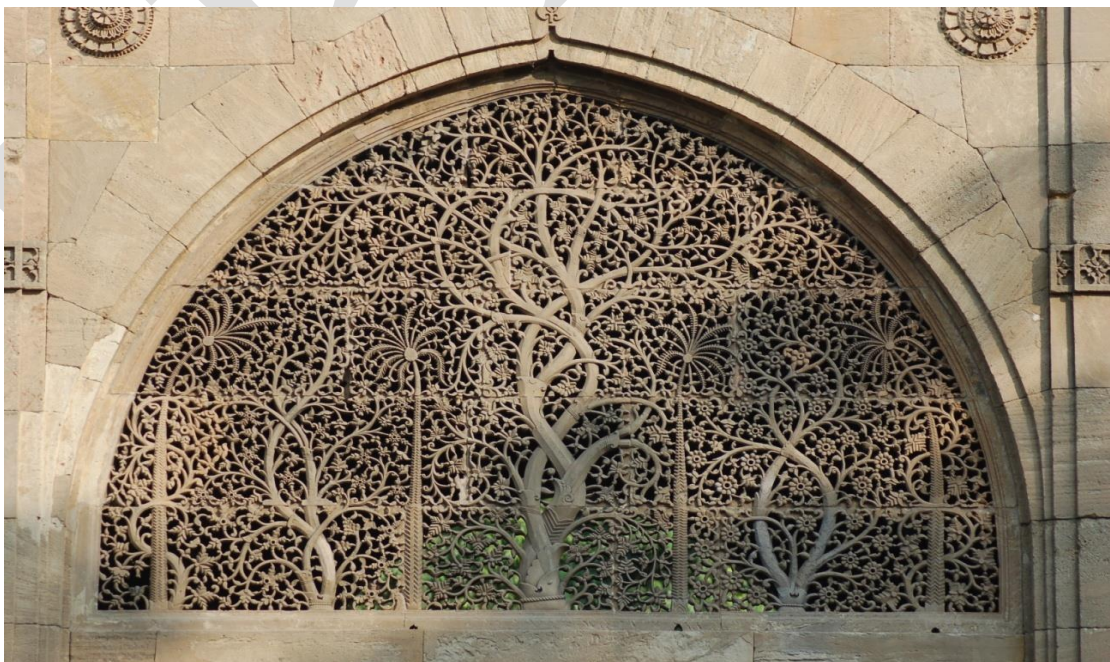
Marble:

The Marble deposits of Rajasthan occur in various colours and shades viz., white Marble of Makrana, Off-white and greyish-white Marble of Rajsamand, Green Marble of Rishabhdev-Kesariaji, Pink Marble of Babarmal, Off White Marble of Banswara, Black Marble of Bhaislana, Yellow Marble of Jaisalmer, etc. Rajasthan possesses 1,100.00 million tonnes reserves of superior quality Marble in 20 out of 33 districts of the State, which are the largest in the country. Rajasthan has about 95% processing capacity in the country. There are number of gang saws and many automatic tiling plants, in operation in the State. Important processing centers in the State are Makrana, Jaipur, Alwar, Ajmer, Udaipur, Nathdwara, Rajsamand, Abu Road and Kishangarh. The important calcitic and dolomitic Marble deposits are located at Makrana (Nagaur); Serwa-Perwa (Sirohi); Tripura-Sundari, Oda-Bassi (Banswara); Rajnagar, Kelwa, Agaria,

Parbati, Nijharna, Morwad, Talai etc., (Rajsamand); Andhi, Sankotra, Rajsala, Bhainslana (Jaipur); Jaspura, Manderia, Babarmal (Udaipur); Moolsagar, Jethwai (Jaisalmer); Sawar, Kayar (Ajmer); Jhiri, Rajgarh (Alwar) and Umar-Pagara (Bundi). Serpentine Marble (Green Marble) is found at Rishabhdev, Undithal, Bhutala (Udaipur), Bidasar (Churu) and Mal-Surata, Dewal, Rohanwara, Dachki, Manpur, Methali (Dungarpur). Marble industry has reasons to gear up to meet the increasing demand for exports as well as for domestic consumption in future.



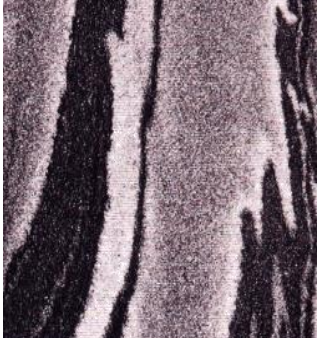
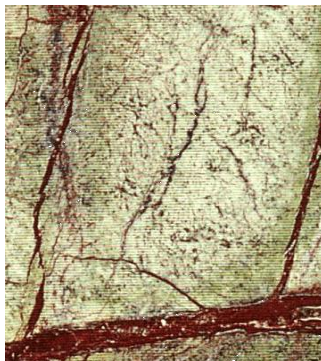
Chisel-work in marble to create screens, an art the Mughals introduced.



The famed 'jali' at Ahmedabad, made of marble from Rajasthan



Deshnok Temple in Bikaner district, an example in excellence in marble

 Andhi Indo (Andhi)	 Andhi Morden Art (Andhi)	 Bhaislana Black (Bhaislana)
 Fancy Brown (Churu)	 Fancy Green (Churu)	 Jaisalmer Yellow (Jaisalmer)

		
Jhiri Onyx (Jhiri)	Kesriyaji Green (Rishabhdeo)	Keshriyaji Olive (Rishabhdeo)
		
Makrana Albata (Makrana)	Makrana Dungri (Makrana)	Phalodi Pink (Phalodi)

Sandstone:

Huge deposits of Sandstone in Rajasthan are associated with Vindhyan and Trans-Aravalli formations, exposed over an area of 35,000 sq.km. Splittable Sandstone deposits are confined to an area of 16,000 sq.km., out of which 10,000 sq.km. lie in eastern and south-eastern Rajasthan and 6,000 sq.km. in western Rajasthan. The State is the largest producer of Sandstone in India (90%). It is being quarried in 13 districts namely Bharatpur, Dholpur, Jodhpur, Karauli, Bundi, Sawai Madhopur, Jhalawar, Kota, Baran, Bhilwara, Chittaurgarh, Nagaur and Bikaner.



The Dholpur Palace at Dholpur, a region that supplied sand stone for some celebrated buildings in New Delhi and elsewhere.



The desert beauty in sand stone and Jodhpur's Mehrangarh Fort made out of them.



Agra Red
(Karauli)



Agra Red
(Karauli)



Agra Red
(Karauli)



Bansi Pink
(Bharatpur)



Bansi Pink
(Bharatpur)



Bansi Pink
(Bharatpur)



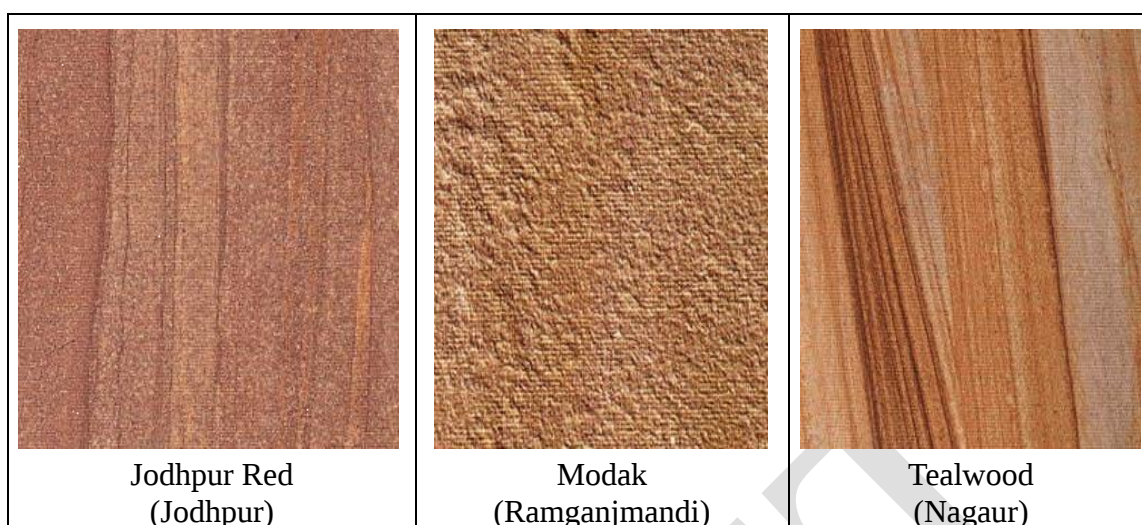
Dholpur Beige
(Karauli)



Rainbow
(Nagaur)



Jodhpur Pink
(Jodhpur)



Flaggy Limestone:

Huge deposits of Splittable (flaggy) Limestone of light bluish, yellowish, grayish, greenish and brownish shades occur in Kota, Jhalawar and Chittaurgarh districts and are used mainly for flooring and wall claddings. Main localities of Splittable Limestone are Ramganjmandi, Dara, Chechat, Suket, Manpura, Kukra-Hira-Kheri, Jingsi, Teliyakheri, Zalampura, Julmi (Kota); Sawa, Binota, Khodip, Lasarawan, Kheri, Nimbaheda, Senth, Manpura (Chittaurgarh) and Aroliya, Paroliya, Kishanpura, Khanpuria, Salriya (Jhalawar). The yellow Limestone of Jaisalmer is of Jurassic age and is found at Jaisalmer, Bada Bag, Moolsagar, Amarsagar, Jethwai and Kanod villages. This stone has a bright future and its demand can be increased manifold by adopting proper mining, processing and marketing techniques.

Industrial and other NonMetallic Minerals

Barytes:

So far, 2.99 million tones reserves have been assessed in the State. Important deposits of Barytes occur in districts of Alwar and Udaipur. In Alwar it occurs in the area of Sainpuri, Zahir ka Kera, Ramsinghpura, Bhankhera, Karoli, Jamroli, Umrain, Girara, Dholera and one reserve of 75,000 tonnes contains 95% BaSO_4 . In Udaipur district it is found near village Relpatliya where about 1 million tones reserves contain 80-95% BaSO_4 . In Rajsamand district Barytes occurs in Delwara-Kesuli-Nathdwara belt, about 41,000 tonnes containing 60-95% BaSO_4 . Similarly Bhilwara district has a reserve of 1,600 tonnes contains 80-90% BaSO_4 .

Calcite:

A total of 12.02 million tones of Calcite resources have been estimated in the State. They are in Belkapahar, Khila in Sirohi district, and Khera Tarla, Dinkali

Gayphal and Rabach in Udaipur District, Teja ka Was, Daulatgarh, Amalda, Gharta and Jetpura in Bhilwara district.

Clay:

Ball Clay, Fire Clay and China Clay have their known reserves in the State of the order of 31.8 million tones, 66.42 million tones and 432.51 million tonnes respectively. The important locations of clay deposits are: Bikaner district (Nal, Kolayat, Kotri, Barsinghsar, Motawta, Indo ka Bala, Maukha, Mudh, Gura, Chani, etc.), Pali district (Lithriya, Khardiya, etc.), Jaisalmer district (Devikot, Mandai, Narai, etc.), Nagaur district (Mundwa, Khajwana, Rol, Indawar, Luniyas, Badgaon, Basni, etc.), Barmer district (Gunja, Kapurdi, Jalipa, etc.), Bhilwara district (Mangrup, Kotri, Jahajpur, etc.), Chittorgarh district (Eral, Sawa, Kanthariya, Banesti, Sahahva, etc.), Jaipur district (Torda, Buchara, Fatehpur, etc.), Bundi district (Devakhera), Karauli district (Sapotra, Toda Bheem), Sawai Madhopur district (Basu, Raesena, etc.), Sikar district (Mahawa, Maonda, etc.), Ajmer district (Maliya, Lughiya, etc.), and Jodhpur district (Jewasiya, Ramasani-Rampura, Kheradiya, etc.).



The worker and the product, Rajasthan's pride in clay.

Dolomite:

A total of 460.17 million tones resources of Dolomite are estimated in the State. The important Dolomite deposits are at Bajla-Kabra (Ajmer), Mandal, Koshithal (Bhilwara), Chittoriya-Gorela-Chanda Kheri (Chittorgarh), Kotputli, Manwa Ramgarh, Bhaislana (Jaipur), Chacha, Odania (Jaisalmer), Indo-ki-dhani, Indolai-ka-talab, Rathoro-ka-dhora (Jodhpur), Kalora (Udaipur), Seemal, Haldi Ghati, Achhibaori, Odan-lal-madri, Ghodach, Nerach Karoli-Kasoli (Rajsamand).

Limestone:

The State is endowed with vast reserves of Limestone of the order of 21,660 million tones of all grades SMS grade Limestone, mainly confined to Sam-Khuiyala-sanu-Khiniya-khinsar-rata-mandha Limestone belt of Jaisalmer district.

Cement grade Limestone is found in 25 districts out of 33 districts of the State. The important districts well known for cement grade Limestone are Chittorgarh, Nagaur, Jaisalmer, Pali, Jhunjhunu, Sirohi, Ajmer, Banswara and Udaipur. At present 21 major cement plants and 2 medium sized cement plants exist in the State with annual installed capacity of 55 million tones. There is scope of establishing more than 40 major cement plants in the district of Jaisalmer, Chittorgarh, Nagaur and Jhunjhunu. The State ranks first in the production of cement in the country.



Sanu limestone mine in Jaisalmer.



Sanu limestone reserves, processing at pace in Jaisalmer district.

DRAFT

19 Blocks De-Reserved for Cement Grade Limestone for setting up

Major Cement Plants

S. No.	Name of Block	District	Area (sq.km.)	Reserve s (MT)	Notification
1	Lasrawan, Javda	Chittaurgarh	9.8950	220.00	F.5(77)Khan/Gr.2/2007 dated 15.11.2010
2	Karuda, Payari, Dhanora, Malyakheri	Chittaurgarh	7.9144	171.86	F.5(209)Khan/Gr.2/2006 dated 01.7.2010/14.10.2010
3	Rasulpura, Baroli-Madhosingh Peerkhera Block-A	Chittaurgarh	9.9700	179.70	F.3(45)Khan/Gr.2/2011 dated 15.02.2013
4	Sindwari-Ramakhera, Satkhanda Block-B	Chittaurgarh	4.1970	174.45	F.3(45)Khan/Gr.2/2011 dated 15.02.2013
5	Sindwari-Ramakhera-Satkhanda Block-A	Chittaurgarh	11.5770	224.04	F.3(45)Khan/Gr.2/2011 dated 15.02.2013
6	Deh-Sarsani Block-B	Nagaur	9.8500	216.60	F.4(184)Khan/Gr.2/85 dated 8.06.2007
7	Tadas Block 4 G-II	Nagaur	9.9400	260.61	F.4(184)Khan/Gr.2/85 dated 12.10.2011
8	Tadas Block 4 G-I	Nagaur	9.7700	194.47	F.4(184)Khan/Gr.2/85 dated 12.10.2011
9	Bher-Dingsara-4H	Nagaur	7.6000	99.42	F.4(184)Khan/Gr.2/85 dated 2.07.2010
10	Dehru	Nagaur	7.6600	58.00	F.3(45)Khan/Gr.2/2011 dated 15.02.2013
11	Madpura-4 A (1)	Nagaur	9.9998	57.00	F.3(45)Khan/Gr.2/2011 dated 15.02.2013
12	Harima-Pithasar(3D)	Nagaur	7.9110	199.22	F.3(45)Khan/Gr.2/2011 dated 15.02.2013
13	Deh-Harima (3 C)	Nagaur	9.6600	176.32	F.3(45)Khan/Gr.2/2011 dated 15.02.2013
14	Parewar-SN-II	Jaisalmer	8.3200	231.00	F.3(175)Khan/Gr.2/2007 dated 14.10.2010
15	Parewar-SN-III	Jaisalmer	10.4000	119.00	F.3(175)Khan/Gr.2/2007 dated 14.10.2010
16	Parewar-SN-V	Jaisalmer	9.1200	204.00	F.3(175)Khan/Gr.2/2007 dated 14.10.2010
17	Khiyan-II	Jaisalmer	7.0000	180.00	F.3(175)Khan/Gr.2/2007 dated 14.10.2010
18	Khinsar-IV	Jaisalmer	7.0000	127.00	F.3(175)Khan/Gr.2/2007 dated 14.10.2010
19	Mandha-I	Jaisalmer	9.4000	230.00	F.3(175)Khan/Gr.2/2007 dated 14.10.2010

Limestone Block explored

S. No.	Name of Block	District	Area of block (sq.km.)	Reserves (million tonnes)	
				Cement grade	SMS grade
1	Hema-I	Jaisalmer	8.400	67.35	33.40
2	Hema-II	Jaisalmer	8.040	52.91	36.51
3	Hema-III	Jaisalmer	9.950	131.00	11.49
4	Hingola-I	Jaisalmer	9.790	121.94	36.14
5	Hingola-II	Jaisalmer	9.885	142.55	10.98
6	Hingola-III	Jaisalmer	9.770	124.80	22.33
7	Unario-I	Jaisalmer	9.980	108.69	81.26
8	Unario-II	Jaisalmer	9.980	254.81	79.03
9	Khuiala-I	Jaisalmer	9.440	170.25	61.82
10	Khuiala-II	Jaisalmer	8.320	114.43	45.30
11	Khuiala-III	Jaisalmer	8.800	186.40	59.16
12	Khuiala-IV	Jaisalmer	9.280	305.18	61.57
13	Miyon Ki Dhani	Jaisalmer	7.680	355.00	74.00
14	Tulsi Ram Ki Dhani-I	Jaisalmer	7.250	210.00	51.00
15	Tulsi Ram Ki Dhani-II	Jaisalmer	5.250	141.00	14.00
16	Khinya-I	Jaisalmer	7.000	165.00	12.00
17	Khinsar-III	Jaisalmer	7.000	219.00	37.00
18	Kabir Basti-I	Jaisalmer	9.540	192.00	23.00
19	Kabir Basti-II	Jaisalmer	9.465	208.00	27.00
20	Mandha-II	Jaisalmer	8.020	249.00	26.00
21	Mandha-III	Jaisalmer	9.720	216.00	16.00
22	Parewar SN-I	Jaisalmer	10.400	176.00	21.00
23	Parewar SN-IV	Jaisalmer	9.280	122.00	16.00
24	Parewar	Jaisalmer	7.200	134.00	25.00

Emerald:

Emerald deposit found in the 221 km. long belt stretching from Gam Gurha in Rajsamand district to Bubani and Muhami in Ajmer district. Important localities are Rajgarh, Tikhi, Kala guman (Rajsamand). The occurrences are highly sporadic and variable.

Feldspar:

The State is a major producer of Feldspar in the country, having about 88 million tones reserves. Ajmer district is the leading producer of Feldspar in the State. Other important producer are Bhilwara, Rajsamand, Pali, Tonk, and Sikar

districts. Minor productions come from Dungarpur, Sirohi, Udaipur, Chittorgarh and Jaipur districts.

Fluorite:

The important deposits of Fluorite in Rajasthan are Mando ki pal, and Kahila in Dungarpur district where 0.7 million tones and 0.25 million tones reserves with 17% and 20% CaF₂ content respectively have been proved. In Karara, Jalore district 0.07 million tones reserves with 20-80% CaF₂ in Chowkri-Chapoli, Sikar district 0.35 million tones reserves with 8-15% CaF₂, have been estimated.

Garnet:

The State is the principle producer of Gem and abrasive variety of Garnet. Garnet deposits are located in Udaipur, Ajmer, Bhilwara, Rajsamand and Tonk districts covering a strike length of 250 kms. Most important gem variety is found in Tonk district in an 11 km. long belt running from Kalyanpur to Rajmahal. Abrasive variety is found in Bhilwara and Rajsamand district.

3. INVESTMENT POTENTIAL IN MENERAL SECTOR

Rajasthan is endowed with mineral wealth in ample quantity. A total of 79 minerals are available in the State out of which 57 minerals are being commercially produced. The State ranks 1st in mining of major minerals. It also has a place of pride in the mining of minor minerals and about 30% of the total value of country's minor minerals are produced in the State. Mining thus, is the mainstay of the economy of the Rajasthan. It is therefore imperative that these assets should be meticulously worked out.

The Aravalli hills running across in the South-West to North-West direction divide the State into two natural divisions – The North-West division and South-East division. The North-West division comprising the districts of Shri Ganaganagar, Hanumangarh, Bikaner, Churu, Nagaur, Jodhpur, Pali, Jalore, Barmer and Jaisalmer, have rich deposits of lignite, gypsum, steel/cement/chemical grade limestone, fuller's earth, bentonite, bally clay and fire clay, potash, tungsten, sandstone, marble and granite. It also has immense potential for oil and natural gas. The Aravalli hill region has large deposits of base metals (lead, zinc and copper), rock phosphate, industrial minerals like limestone, quartz, feldspar, asbestos, soapstone, wollastonite, silica-sand, decorative and dimensional stones like sandstone, slate, marble and granite. It also has the potential for gold and other metallic minerals and precious and semi-precious stones. South-east division has vast deposits of sandstone, limestone, clays and silica sand.

Looking to the availability of metallic, non-metallic and fuel minerals, there is a huge potential of mineral based industries in the State. The State offers an investor friendly environment and welcomes national and multi-national investment in mineral based industries.

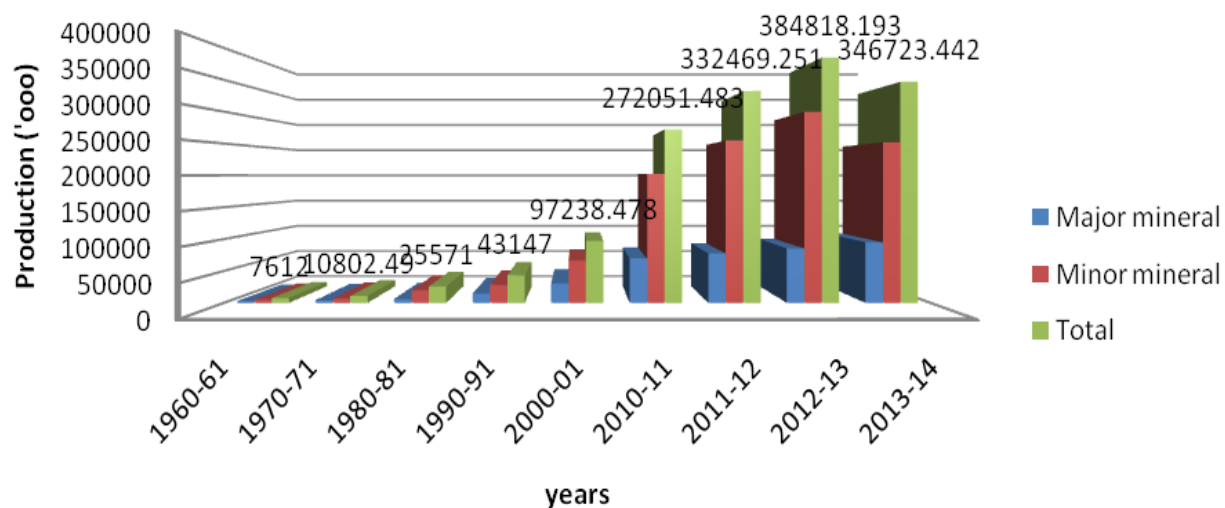
(A) Existing Mineral Based Industries:

S. No	Industries	Numbers	Approximate investment in Crore Rs.
1.	Cement plants (Major)	23	34,500
2.	Copper smelter	01	6,000
3.	Fertilizer (single super phosphate/urea)	08	4,000
4.	Glazed tiles and ceramic	04	20
5.	Insulator (L.T. & H.T.)	01	100
6.	Lead, Zinc beneficiation plants	03	1,500
7.	Ceramic sanitary ware	06	24
8.	Sulphuric acid	03	50
9.	Super Zinc smelter	01	6,000
10.	Lead-Zinc smelter	01	600
11.	Zinc smelter	01	600
12.	Quartz, Feldspar grinding & pulverizing units	300	60
13.	Iron pelletization plant	01	1,250
14.	Petroleum product	02	8
15.	Lignite/coal power plants	13	13,000
16.	Marble & Granite Gang saw	2300	9,200
17.	Marble & Granite Tiling units	7000	350
18.	Marble & Granite Automatic Tiling Plant	4	200
	Total		77,462

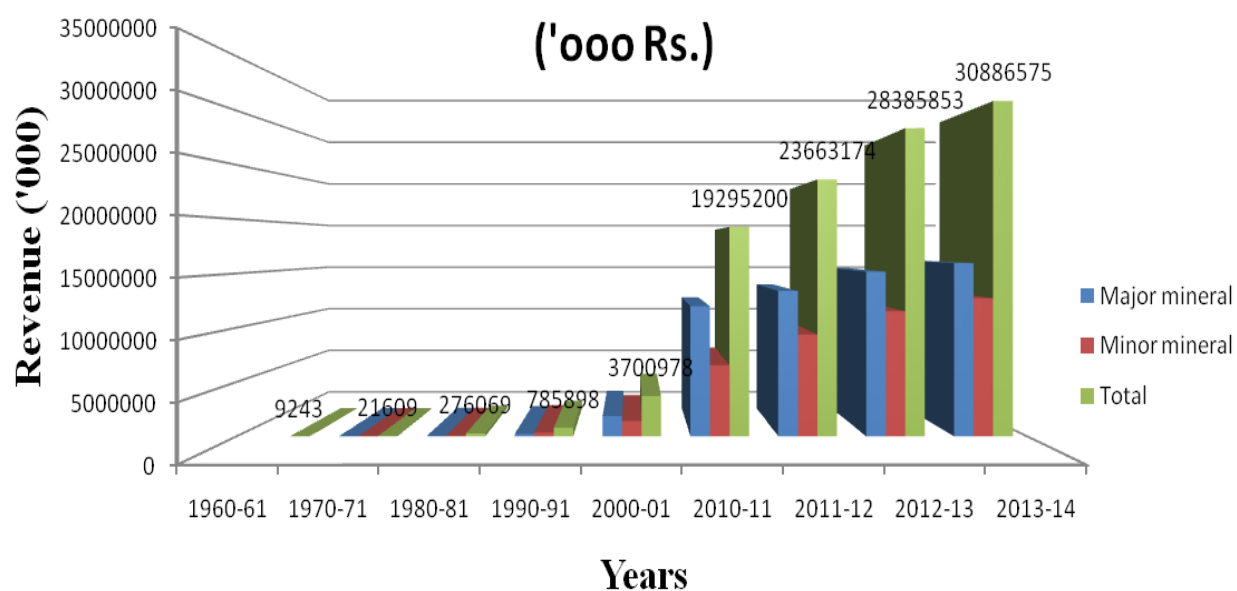
(B)Prospects for New Mineral Based Industries:

S. No.	Industries
1.	Lead & Zinc smelters
2.	Major cement plants
3.	Fertilizer Industries
4.	Glass Industries
5.	Ceramic Industries
6.	Chemical Industries
7.	Insecticides, Pesticides, Cosmetics, Micronising units
8.	Lignite based power plants
9.	Gas based power plants
10.	Petroleum refinery
11.	Petroleum products
12.	Granite/ polishing units
13.	Marble/ polishing units
14.	Sandstone/ polishing units

MINERAL PRODUCTION Since 1960 ('000 Tons)



MINERAL REVENUE Since 1960 ('000 Rs.)



Hydrocarbon sector

- Rajasthan has emerged on World Oil Map due to the significant discovery of Crude Oil and Natural Gas. Till now 36 oil and gas fields in Barmer-Sanchore Basin have been discovered.
- Petroliferous Basins of Rajasthan have been upgraded into category-I i.e., equivalent to Bombay High, Assam and Gujarat.
- In Rajasthan, maximum on-land crude oil is being produced to the order of 9.5-10 MMTPA, which is about 25% of country's domestic production.
- Crude Oil production from Barmer-Sanchore Basin commenced from 29th August, 2009. Mangla Oil Field of Barmer-Sanchore Basin has been rated as one of the biggest on-land discovery of the country in last two decades.
- The commercial production of natural gas to the order of 3 lac cubic meter per day has also been commenced from Rageshwari field.
- Petroleum Exploration Licenses for 21 blocks (covering 60,000 sq. km) and 11 Petroleum Mining Leases (covering an area of 4,000 sq. km) have been allotted till now.



Crude Oil in Barmer region has provided new teeth to Rajasthan's economy.



Labyrinthine pipe-lines of Crude Oil in Barmer region, a new economic scenario in Rajasthan.



An incredible sight in the Thar Desert, after Barmer district, it s now Jaisalmer taking a cue.

• **Hydrocarbon Production and Anticipated Revenue:**

Year	Production		Revenue			
	Crude Oil (in million barrels)	Natural Gas (in mmscm)	Royalty on Crude Oil (in crores)	Royalty on Natural Gas (in crores)	Dead Rent, PEL fee, etc. (in crores)	Total (in crores)
2012-13	62.03	269.38	5,041.46	10.03	18.39	5069.88
2013-14	65.61	449.12	5,905.29	31.49	16.31	5953.11
2014-15 (Till Nov., 14)	36.75	410.91	3,724.54	31.74	8.27	3764.55

Employment through Mineral and Hydrocarbon Sector:

Direct: 5 Lakh persons (approx.)

Indirect: 30 Lakh persons (approx.), secondary and tertiary sectors.

4. INSTITUTIONAL FRAMEWORK

The Department of Mines and Geology (DMG) of Rajasthan State, with headquarters at Udaipur, has a reputation for being among the best organized DMGs in the country. It comprises a core team of 119 Geo-scientists, 146 Mining Engineers, 13 Scientists in the Chemical Laboratory and 15 Engineers in the Drilling Wing. This extensive technical prowess is combined with State-of-the-art equipment and techniques for mineral exploration. They include Remote Sensing and Geophysical surveys while also providing Chemical, Ceramic and Ore Dressing laboratories.

The latest venture of the Department is the Vision 2020 Strategy for Sustainable Mineral Development. It is a lucid projection of the directions and priorities of the Department in the first twenty years of this century.

DMG has two fold functions:

- Search, prospecting and systematic development of mineral deposits
- Mineral administration including grant of leases, collection of revenue, dead rent

The DMG, during past 50 years, has contributed significantly in the discovery and exploration of a number of mineral deposits in the State, important ones are:

- Lead zinc deposit of Rampura-Agucha, Bhilwara district, with 58.8 million tones of reserves containing 1.9 % Pb and 13.4% Zn. This is country's richest and largest single deposit of lead, zinc and silver and amenable to open cast mining.
- Base metal deposit of Deri, Sirohi district, having 1 million tones reserves containing 1.98% Cu, 5.4% Pb and 7.52% Zn.

- Base metal deposit of Basantgarh, Goliya, Sirohi district, with 3.5 million tones of reserves containing 1.22-2.6 % Cu and 3.6 Zn.
- Base metal deposit of Pipela, Sirohi district, with 1.2 million tones reserves containing 1.2-2.2 % Cu and 1.3-2.3 Zn.
- Copper deposit of Anjani, Udaipur district, with 1.0 million tones reserves containing 1.19 % Cu.
- Iron ore deposit of Chomu, Moriya Jaipur district, with 54.2 million tones reserves containing 60%Fe.
- Iron ore deposit of Nathara-Ki-Pal, Udaipur district, with 14.2 million tones reserves containing 50%Fe.
- Barytes deposit of Jagat-Relpatliya, Udaipur district, with 0.10 million tones reserves.
- Fluorite deposit of Chowkri-Chapoli, Sikar district, with 70 million tonnes reserves containing 15% CaF₂.
- Fluorite deposit of Kahila, Dungarpur district, with 0.3 million tones reserves containing 15.20% CaF₂.
- Magnesite deposit of Sarupa-Gafa, Ajmer district, with 0.15 million tones reserves.
- Rock phosphate deposits of Jhamarkotra, Udaipur district, with 74 million tones of reserves having 16 to 38% P₂O₅.
- SMS grade Limestone deposits in Jaisalmer district, have been proved having reserves of more than 1000 million tones.
- Cement grade Limestone deposits in Jaisalmer, Nagaur, Pali, Banswara, Bundi, Bhilwara, Jhalwar, Udaipur, Chittorgarh districts etc., have been established.
- Lignite deposits in Bikaner (Palana, Barsinghsar, Guda); Nagaur (Merta Road, Kasnau, Igiyar, Matasukh); Barmer (Giral, Kapurdi and Jalipa) districts. Geological Survey of India and Mineral Exploration Corporation Ltd. have also contributed significantly in lignite exploration in Rajasthan.

Aerial Prospecting:

In case of aerial prospecting/survey/reconnaissance, which do not include pitting, trenching or sub-surface excavation involving disturbance to earth and also for conducting test, drilling over the anomalous areas for identification of the minerals with a grid not exceeding five bore hole per 100 Sq. kms., no prior site clearance including public hearing is required under the EIA notification. Site clearance, however is required before undertaking detailed prospecting and exploration work on the ground. For obtaining site clearance/environment clearance, public hearing is an essential requirement.

Process of Sanction of Mineral Concession:

At the time of processing of the application for prospecting license/mining leases following points are generally examined by the Department in each and every case in accordance with the prevailing Acts & Rules:

- Applied area, if in Charagah (grass), land, consent for mining activities in said area, from the competent Revenue Authority will be essential before issuing of grant.
- A letter showing clear status of the applied land is required from the Forest Department confirming that the area does not fall inside in any forest land.
- The applicant has to obtain Site clearance from Ministry of Environment & Forest, Government of India, New Delhi, on recommendation made by State Pollution Control Board after necessary public hearing, if subjected applied area for PL is 500 hectares or above.
- Under Environment Protection Act & Rules made thereunder, environment clearance is also required for prospecting and mining operations of major minerals. Such an application, to get Environment Clearance, shall be accompanied by Environment Impact Assessment Report and the Environment Management Plan.
- Before site clearance (S.C.)/environment clearance (E.C.) is issued, public hearing by State Pollution Control Board has been made essential part as per Environment Impact Assessment (EIA) Notification issued on 10.07.1997.
- Approved Mining Plan prepared by the recognized person.
- Affidavit regarding registered consent of private land holder/khatedar if applied area falls in private/khatedari land.
- Revenue record of applied area.

Existing Acts and Rules:

The following Acts & Rules are in operation to regulate mining activities in the State:

1. Mines & Mineral (Development and Regulation), Act 1957
2. Mineral Concession Rules, 1960
3. Mineral Conservation & Development Rules, 1988
4. The Mines Act, 1952, Mines Rules, 1955 and the Indian Metalliferous Mines Regulation, 1961
5. Coal Mines Regulation, 1957
6. Rajasthan Minor Minerals Concession, Rules 1986, Marble Conservation Development Rules, 2002, and Granite Conservation and Development Rules, 1999
7. The Rajasthan Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2007

8. The oil & Gas Sector is being regulated through Oil Field (Regulation & Development) Act, 1948, of Ministry of Petroleum and Natural Gas
9. Petroleum & Natural Gas Rules, 1959, of Ministry of Petroleum and Natural Gas, NELP (New Exploration Licensing Policy)

Other allied Acts and Rules, notifications, circulars issued from time to time by Government of India and Government of Rajasthan are applicable to regulate the activities of the Mining field.

5. IN RETROSPECT

The Government of Rajasthan had formulated its first Industrial and Mineral Policy in 1979 since both the sectors were administered under single authority and a separate agency served to enhance both: The Rajasthan State Industrial & Mineral Development Corporation Ltd (RIMDC).

In order to accord greater priority to minerals, a separate agency was created in 1980: The Rajasthan State Mineral Development Corporation Ltd. The second Mineral Policy was formulated in 1994.

The next Mineral Policy was created in 2011. In 2012 the State Government formulated the River/Stream Bed Mining Rules and cluster mining approach for mining leases of minor mineral with an objective to ensure scientific and systematic mining and laid down the safeguards to be taken during mining for protection of public and private property. The new Policy applied a new concept of preparation of Environment Management Plan for minor minerals. In addition, the Government of India issued National Mineral Policy-2008 for guidance and regulation of minerals in the country.

Need of New Mineral policy for the State of Rajasthan:

Significant changes have taken place since the National Mineral policy-2008 was initiated. The State's Mineral Policy 2011 revealed certain limitations, particularly in case of minor minerals where provisions of granting mining lease in Government land (including forest land) after delineation, proved to be a big hindrance for new grants and for mineral development. The Policy had also been silent regarding allotment of minor mineral concession in the tribal areas and for the upliftment of tribes.

In case of major minerals, the Policy seemed to have a narrow perspective regarding restricting grant of certain minerals like Gypsum, Rock Phosphate, Potash, SMS Grade Dolomite, SMS Grade Lime Stone to Public Undertakings like Rajasthan State Mines & Minerals Ltd., FCI and Aravali Gypsum and Minerals India Limited. This reduced the public participation. Provisions made for allotment of major mineral RP/PL/ML by joint venture through RSMML in tribal area also proved to be insufficient and no leases could be allotted in past year. This adversely affected the mineral exploitation in tribal areas. The State

had also to sacrifice probable revenue it could earn. It also affected employment opportunities.

Due to restrictions on grant as above, illegal mining emerged as a big threat, which needed to be curbed. Many other provisions made in the policy could not be implemented till now as they were not found to be feasible.

In the last few years the construction industry has developed in leaps and bounds. More over mineral based industries including cement have assumed bigger dimensions. Looking to bright prospects of mineral based industries in coming years, it was essential for the State to devise a new Policy with a holistic approach to attract new investment in the industrial-mineral sector in the State.



Such an unorganized sector in mineral exploitation deserves greater attention.

Review:

Mineral wealth is finite and non-renewable. It has major resources for development. The management of this precious resource and its optimal and economic use are matters of national importance. Management of mineral resources is the responsibility of the Central Government and over all mineral policy is determined by the Central Government. The Mines and Minerals (Development Regulation) Act, 1957, lays down the legal framework for the regulation of the mines and development of all minerals other than petroleum and natural gas. The Central Government has framed the Mineral Concession Rules, 1960, for regulating grant of reconnaissance permit for aerial survey, prospecting licences and mining leases in respect of all minerals other than atomic mineral and minor minerals. The State Government grants the reconnaissance permit, prospecting licences and mining leases. In case of major minerals listed in Schedule-I, appended with the MMDR Act, the mineral concessions are granted by the State Governments only after the prior approval of the Central Government. Following the economic liberalisation initiated by the Central Government in 1991, the reserved sectors like Power Generation,

Mining and Metallurgical Industries were opened for private investment, both foreign and domestic. The Government of India devised to frame a new policy to place the mining sector at par with other countries. This was to enable to regulatory and fiscal frame work of the mining sector in India to meet international standards and competitiveness. With the basic structural reforms, the National Mineral Policy (NMP) was announced in March, 1993, and 13 minerals like Iron Ore, Manganese Ore, Chrome Ore, Sulphur, Gold, Diamond, Copper, Lead, Zinc, Nickel, etc., which were reserved exclusively for public sector exploitation, were thrown open for exploitation by private sector. Thus the entire mining sector was opened for private investment including foreign direct investment. The objectives of NMP are to streamline existing legislation, simplify procedure, ease restriction, decentralise power, attract foreign investment, etc. This National Policy also stipulates induction of foreign technology and foreign participation in exploration and mining for high value and scarce minerals.

In 1994, the earlier restriction of 40% on foreign equity was removed permitting even 100% foreign equity. The only requirement was that the company should be registered in India under India's corporate laws.

- In January, 1997 an "automatic route" for foreign equity participation up to 50% was introduced for companies mining certain minerals like Iron-ore, manganese ore, chromite, bauxite, copper ore, lead, zinc etc. whereby the investors have to only go through the Reserve Bank of India, and not to seek any Government approvals. This facility is not available in the case of gold, silver, diamonds and precious stones.
- For gold, silver, diamond etc., approval of Foreign Investment Promotion Board (FIPB) is required, based on parameters like size, funds, track record, technology, financial stability and equity of Indian partner in JV etc.
- Higher equity participation up to 74% is allowed through the "automatic route" in services related to mining such as drilling, shafting etc.
- 74% foreign equity through automatic route also allowed in base metals and alloy industries.
- Beyond 50/74% and up to 100% equity, is also allowed subject to FIPB clearance.

PART II

THE NEW MINERAL POLICY 2015

6. OBJECTIVES

A mineral is a naturally occurring, inorganic substance with a definite chemical composition and a crystalline structure. All people use minerals to make household articles such as utensils, reading glasses, and even precious jewelry, including materials for constructing buildings.

Most of the mineral production is extracted by surface mining, which includes open-pit mining, strip mining, and quarrying. For ore bodies that lie a considerable distance below the surface, underground mining is considered. In both techniques, excavating and extracting mineral substances involve costly combinations of drilling, blasting, hoisting, and hauling, as well as measures for health and safety and reduction of environmental impact. The term mining industry commonly includes such functions as exploration, mineral separation, electrolytic reduction, and refining, even though these are not actually mining operations.

Rajasthan is the largest State in India. It boasts of three natural heritage facets: the Aravalli hill range, the Thar Desert and the Minerals. The State is a virtual treasure trove of minerals of indescribable qualities and potential – 79 varieties of minerals are established, of which 57 are being produced. The State enjoys 9% of the country's mineral production. So far, 34,991 Leases have been allotted, of these 3,403 are of Major Minerals and 11,861 of Minor Minerals, including 39 PL and 1 RP. The revenue from minerals during 2013 – 14 was Rs 3,088.66 crores. The Crude Oil alone contributed Rs 5,953 crores during 2013 - 14. Nearly four lakh direct and about 20 lakh indirect jobs are provided.

The State now recognizes minerals as the economic-power-house. The New Mineral Policy 2015 views that the mineral resources are finite. Therefore, the emphasis should now be on introducing cutting-edge technology in exploration, exploitation, minimizing wastage; the waste be re-cycled, widespread job-creation, especially to workers drawn from scheduled castes and backward communities, and greater revenue to the Government. The private sector is the fulcrum of this sector. Therefore, the Policy aims at:

- (i) the development of economically sound and stable mining, minerals, metal and mineral reclamation industries,
- (ii) the orderly and economic development of mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security and environmental needs,
- (iii) the study and development of methods for the disposal, control, and reclamation of mineral waste products, and the reclamation of mined land, so as to lessen any adverse impact of mineral extraction and processing upon the physical environment that may result from mining or mineral activities.

Since mineral procedures are risk prone, face uncertain financial-technical challenges, involve massive capital cost with longer pay back span, the Policy shall emphasize

enhanced participation of private sector to share responsibilities and try and complete the multi-pronged assignments that the Government alone would not be able to render fully. The MOU route is to be adopted possibly even in geological, geophysical and geochemical data to be amassed, which Rajasthan now awaits handling through private investors. Potential for base metals, rare earths, copper, potash, etc., is awaiting a major push. Therefore, quick access will be accorded to the private groups to undertake green field exploration to tap the potential with detailed aero-geophysics. The salient features of the Policy are:

1. To infuse transparency and enhance efficiency in grant of mineral concessions by simplifying the procedure and adopting e-governance
2. To adopt modern exploration techniques with the help of in-house facilities available and out sourcing other modern techniques to private parties or multinational companies
3. To develop scientific mining with due safety, productivity, conservation, cost-effectiveness, environmental and social sustainability and encourage private sector participation including multinationals
4. To develop, enhance and maintain viable infrastructure
5. Encourage entrepreneurs to establish industries in the State
6. To gear-up oil and gas exploration and usher in related production activities in the State, step up value addition in hydrocarbon sector
7. To provide conducive frame work of procedural, regulatory, fiscal and legal aspects in the investment regime
8. To develop human resource and employment opportunities.
9. To promote research and development in association with private companies
10. To introduce a path for incentive recognition, awards and rewards
11. To prevent and control illegal mining effectively in the State.

7. SIMPLIFICATION OF PROCEDURE OF GRANT OF MINERAL CONCESSIONS AND RCCs / ERCCs:

- Disposal of mineral concessions/RCCs/ERCCs within prescribed time frame.
- For the quick disposal the power of disposal will be delegated to zone /circle level offices.
- Transparent system of notifying the promising areas for grant of mineral concessions, as per equitable and just criteria published in the notification.

- Oil, Gas & CBM (Coal Bed Methane) Blocks are being awarded by Central Government through NELP & CBM Bidding respectively and State Government grants the License/Lease. State shall expeditiously grant these License/Lease.
- In minor mineral procedure of surrender will be simplified.
- Guide lines will be incorporated in rules for the preparation of mining plan/scheme
- References will be made to Central Government for :
 1. Modification of MoEF notification dated 09.09.13 making EC compulsory for minor mineral Concession below 5.00 hectare.
 2. Speedy environmental clearance.
 3. Expediting the diversion of forest land.
- E-Tendering of RCC/ERCC contracts valuing more than 1.00 crore/annum.
- Status report will not be required for fresh grant and renewal of mining lease falling outside 100 meters from forest boundary.
- Time period of 60 days for seeking NOC from District Collector and Divisional Commissioner shall be reduced to 30 days i.e., NOC from District Collector only within 30 days will be allowed.
- **Requirement of No Dues Certificate:**

No dues certificate will be required at the time of applying for a quarry license/prospecting license/mining lease. The fresh certificate will be required only at the time of execution of lease deed in case the previous one has expired. No dues certificate will be valid up to a period for 6 months from the date of the issue.
- **Execution of Lease Agreements – time limit prescribed for ‘No Objection’ from the District Collector**

At present a copy of the order sanctioning the lease is sent to the District Collector requesting him to intimate within a period of 30 days, if there is any objection, to the mining operations in the sanctioned area, In several cases, the reply is unduly delayed. Although, the District Collectors contend that until clearance is received from them, agreement should not be executed, yet the clearance is not received for a long time. In order to facilitate timely action, it has been decided that the Collector would communicate his final decision within the stipulated period 30 days. If the final decision is not communicated within this period, then the Collector will cease to have the powers in this regard and so clearance would be deemed to have been given.
- **Approach Roads to Mines and Quarries**

Looking to the importance of approach roads in mineral movement for increasing productivity in mines, it has been decided that:

 1. Wherever feasible, construction of approach roads to mines shall be taken up under MNAREGA Scheme or PPP mode with 75% contribution of Government and 25% of leasees. A master plan for such roads will be prepared by the Department.

2. To link mining areas, toll roads can also be constructed through the aegis of PWD or other Works Department of State Government or PSU. The money spent on the construction of the road would, however, be recovered through the levy of a toll.

- **Inspection of Lease/Licence by Officers only:**

No coercive action against lessee or licensee shall be taken on the inspection report of subordinate technical staff until it is verified by AME or ME concerned on site.

8. COMPUTERISATION TO BRING TRANSPARENCY IN ALLOTMENT OF MINERAL CONCESSION:

Following steps will be taken to facilitate lease holders.

- 1) On-line submission and processing of mineral concession applications shall be introduced. i.e., applying for mining leases, scrutinizing, submitting documents.
 - ❖ For online scrutiny of leases the latest G.I.S. software will be procured.
 - ❖ For the purpose of background display high resolution satellite imageries will be procured and base map will be prepared.
 - ❖ The concerned persons will not be required to contact the Office again and again.
 - ❖ It will provide Online Status of New Lease/licence Application.
 - ❖ Application Updation through email.
 - ❖ SMS alerts on updation.
- 2) Departmental's website will be integrated with "e-grass", so that amount deposition will be done electronically (on line).
 - ❖ Money Transfer through Online Internet Banking Procedure through one's own bank to appropriate budget code
 - ❖ Confirmation through Internet
 - ❖ Accurate MIS will be generated for all the Transactions
- 3) In order to ease and give relief to the lessee procedure of e-rawanna will be introduced.
 - ❖ All Time issuance of Rawanna from their lease site
 - ❖ Optimization of cost and time saving
 - ❖ Effective report mechanism for rawanna issued
- 4) Integration with Weigh Bridge of big lessees/stockist for quantity verification

- ❖ Each e-Rawanna indicating the Weigh bridge to be used by lease holder
 - ❖ Auto deduction of excess royalty through online system for each e-Rawanna
 - ❖ Auto generated reconciliation MIS report for excess royalty difference deducted Rawanna wise
- 5) Provision of online E-Return by lessee as per RMMCR and MCDR will be introduced
- ❖ It will Integrate with demand register
 - ❖ It will help in statistical report generation/automatic royalty assessment.
- 6) Provision of E-Demand register will be introduced
- ❖ It will automatic fetch Royalty/rent paid
 - ❖ Mineral production/dispatch information on demand from e-return
 - ❖ Easy to calculate overdue amount, interest calculation etc
- 7) Forest department is digitising their forest boundaries on G.T. Sheets. As such endeavour will be to get these sheets and simplify the process of getting forest status report.

9. MINERAL EXPLORATION

Mineral Sector

- Mineral exploration to embrace modern technologies, invite and facilitate the national and international organizations as well as entrepreneurs.
- Induction of latest technology by procuring modern equipments like Portable XRF, DGPS, UV Lamp, Core splitter, Bore hole camera, Bore hole Scanner, Analyser and Logger, Satellite Imageries, Camp Equipments, etc. to expedite the exploration and reducing the cost.
- Renovation of the chemical laboratory and equipped, obtaining sophisticated and advanced analysing instruments such as XRF (4 KW), Bomb Calori Meter, Digital Reflectance Meter, etc.
- For deep seated mineral deposits like base metal, noble metal, lignite and Potash, appropriate technology to be adopted for underground mining protocols.

Hydrocarbon Sector

- The Petroleum Exploration License (PEL) was granted by the State Government to Shell India & ONGC in 1995. Shell India carried out exploration but in 2001 Cairn became its shareholder in place of Shell India, of this Block. Cairn India carried out exhaustive exploration and discovered oil.
- In march, 2010, the resource potential from 3.7 - 4.1 billion barrels (i.e. 480-500 million tonnes) were revised to 5 billion barrels (i.e. 690 million tonnes) of oil equivalent Oil in-place have been proved alone in Barmer-Sanchore Basin.

Subsequently, in March, 2012, these reserves were again revised to 6.5-7.2 billion barrels. (i.e. 900-1000 million tonnes) of oil equivalent in-place.

- About 30 billion cubic meter of rich and lean gas reserves have been discovered in Jaisalmer Basin in the gas fields namely Manhera tibia (1994), Tanot, Dandewala area (1996) and SGL Field (Shahgarh) (2009-10). Natural gas is being produced to the tune of 9.5 cubic meter per day from Jaisalmer basin. It is being supplied presently to Ramgarh Power Plant (110MW+160 MW).
- Oil India Limited has undertaken trial production (2009) of heavy oil in Baghewala, Jaisalmer area, for the exploitation of proved in-place heavy oil reserves of 25.00 million tonnes and bitumen reserves of 53.00 million tonnes and has produced about 64 metric tonne of heavy oil.
- The State will regularly monitor exploration and development activities in these blocks as envisaged under Minimum Work Programme (MWP) of Production Sharing Contract (PSC) signed with GOI.
- Exploration is underway in four petroliferous basins like Jaisalmer Basin, Barmer-Sanchore Basin, Bikaner-Nagaur Basin and Vindhyan Basin covering 15 districts such as Barmer, Jaisalmer, Bikaner, Sriganganagar, Hanumangarh, Jalore, Kota, Jodhpur, Jhalawar, Baran, Bundi, parts of Chittorgarh and Sawai Madhopur.

A Fulfillment of Requirement of Ground Geophysical Check up:

- So far, the base metal and noble metal exploration in the State has been carried out up to shallow depth. Since the inception of concept of RP, 45 RP's have been granted and Air-borne surveys have been carried out by multinational companies and joint venture companies. 810 airborne anomalies have been identified which will be explored in details through multi-national and joint venture companies.
- Based on such data, new base metal, noble metal anomalies and subsequently mineral deposits at deeper horizons will be located, thereby attracting direct foreign investment.

B Reservation of Mineral Bearing Land:

- The State of Rajasthan Covers an area of 3,42,239 sq kms., and forest area covers 32512.7 sq. Km.(i.e. 9.5% of total land covers of the State), while sanctioned mining lease area is approximately 1,846.00 sq km which is only 0.54 % of total land covers of the State.
- Hence the State intends to reserve 1.5% of mineral bearing land irrespective of the location, so that it can plan for the mineral extraction activities to generate revenue
- Mineral bearing areas will be marked in the revenue records. A system will be introduced to ensure that potential mineral areas are not transferred for any purpose other than mining.

- The mineral bearing areas shall not be notified for other uses in future without obtaining consent from the Department of Mines and Geology.

C A Mineral Directory and Data Bank:

- The State Mineral directory will be updated periodically regarding the minerals available in Rajasthan, locations of deposits, their reserves and grades, etc.
- It will include exploration data received from various agencies involved in the exploration in the State and Central Government agencies.
- Help from government agencies, Universities and experts from private sector will be taken.
- A Mineral Atlas will be prepared with the help of latest technology.

D Geo-Informatics:

- The State Directorate will display and constantly update on website information regarding mineral resources in digitized form by uploading all the available exploration data in coordination with GSI and IBM.
- Resource inventory with the latest version of the United Nations Frame work of Classification (UNFC) system.
- State policies, legislation and executive instructions to prospective investors and the mining community.
- Geological and geophysical data in spatial as well as non-spatial formats including data gathered during reconnaissance and prospecting.

10 SCIENTIFIC AND SYSTEMATIC MINING

- For proper implementation of proposals made in the mining plan and to ensure scientific mining, the leaseholder will appoint technical person with requisite experience. One such person may work for a maximum of fifteen leases or fifty quarry licences where mining is done manually and all such mines quarries are located within a radius of hundred kilometres.
- Joint efforts will be made with IBM and DGMS to fulfil the objectives of scientific and zero waste mining, and entrepreneurs will be allowed to use waste lying in several mines on nominal charge.
- Invite global and in-house expertise for meaningful new uses of the overburden and waste generated by mineral exploitation, involve leaseholders so that the negative impact on neighbouring agro-economy or others is minimized.
- Endeavour to develop standard process for each operation incorporating safety features
- Committees of expert technical personnels associating private mining engineers will be made to ensure spreading up of scientific mining.

Rationalizing Small-Scale Mining

The small scale mining sub-sector has positive contribution to the economy which includes mineral production, creation of employment and improving incomes in the rural communities.

In view of this, the Government is committed to supporting the small scale mining sub-sector by facilitating the transformation of the present mining activities into more organized and modernized small-scale mining units. Encouraging/motivating to:

- (i) Transformation and upgrading of small mining into organized and modernized mining;
- (ii) Promoting amalgamation of adjoining small leases/licences;
- (iii) Preparing, disseminating and enforcing a code of conduct in mining and mineral processing; and
- (iv) Promoting marketing arrangements which are responsive to the requirements of the small-scale mining sub-sector.

Priorities for Mineral Based Industries

- (A) Mining leases shall be continued to be mortgaged in favour of financial institutions for procurement of term loans.
- (B) The priority with regard to the applications for new or intending mineral based industries for areas notified for prospecting or mining leases may be determined with weightage for all or any of the following criteria:
 - State/Central PSU's
 - Financial strength of the applicant
 - Quantum of Investment
 - Experience
 - Pioneering nature of the industry in the district
 - Induction of high end and sophisticated technology
 - Use of advanced equipment and successfully proved novel mining technologies
 - Beneficiation or value addition at ore-stage and better utilization of the run-off mine
- (C) Grant of major mineral leases to later applicant shall be considered in accordance with Section 11(5) of MMDR Act, 1957, for the applicants who are interested in installation of value addition units in the following order.
 - State/Central PSU's
 - Value addition
 - Exhaustion of captive capacity
 - Special technology
 - Ownership of the land of the recommended area
 - Scientific and systematic mining

The above criteria will be applicable only in cases where applications are considered under section 11(5) of MMDR Act of the corresponding section of the new Act. In other cases pertaining to value addition, priority will be determined on the basis of criteria given in section 11(3) of MMDR Act and/or those given as above.

- (D) For export promotion of mineral based industries, regular mineral fairs, exhibitions and seminars shall be organized by department in association with concerned mineral associations at different locations having mineral exposures.

11. VALUE ADDITION OF MINERALS AND SETTING UP MINERAL BASED INDUSTRY

Rajasthan has in abundance, mineral resources but lacks in their end-use industry. As such the value addition or processing of the above mineral is done outside the State. The State is, therefore, deprived of the value addition in minerals as well as employment avenues to rural and backward classes. The State shall now make efforts to attract mineral based industry into the State to add value and increase economic activity.

A Ceramic Hub:

The State Government will provide infrastructure facility and give financial support to mineral-entrepreneurs so that Ceramic Hubs are established. Bikaner, Nagaur and Udaipur regions have potential claim to become ultimate Ceramic Hubs. Minerals used for Glass and Ceramic Industries are Quartz-Feldspar, Silica Sand, Clay, Wollastonite, etc.

B Cosmetic and Paper Industries:

Soapstone: The State is major producer of soapstone/talc/steatite in the country. The Soapstone produced in the State is utilized in cosmetics, paper, textile, insecticides, as a filler, rubber, paint industries. Due to lack of user industry in the State, it is transported to other States. Government will help in establishing cosmetics, pulp, and paper industries in the State.

C Fertilizer Industry:

Rock Phosphate: About 94% of rock phosphate is produced in Rajasthan. It is used in single/triple super phosphate, chemical manufacture of phosphoric acid. The rock phosphate produced in the State is being utilized by fertilizer industries based in other States.

It is indented to help lessees who want to put up industry in the State by way of giving preference in granting lease of this mineral after reviewing the present restriction to reserve this mineral for State government companies

Gypsum: About 74% of gypsum is produced in Rajasthan. It is utilized in manufacturing of cement, fertilizer, plaster of paris and conditioning of alkaline soil.

Though a number of cement plants and POP units have been established in the State and are consuming indigenous gypsum, there is scope of establishment of fertilizer industries and new POP units. Therefore, the

government may give preference to such lessees who want to put up these industries after considering the present constraint.

D Lignite Based Thermal Plants:

Rajasthan has more than 5,720 million tonnes reserves of lignite. The State share 13% of countries resources and stand second after Tamil Nadu. Being a power deficient State, there is a need of power generation for the overall development of the State.

Efforts will be made for setting up lignite based Thermal Power Plants in the State. At present 13 units of lignite based power plants are under operation (1,715 MW) and 3 more units are expected to be established. More lignite blocks will be identified for power generation.

E Cement Industries:

Rajasthan possesses vast deposits of Limestone spread over in 25 districts. Based on this, 23 major cement plants, having an installed capacity of 55 million tonnes, are in production.

The Department has notified 19 blocks of cement grade Limestone. Based on these, 19 more major cement plants will come up in near future in the State.

F Base metal:

- It will be intent of the Department to ensure that base metal industry like Hindustan Zinc Limited and Hindustan Copper Limited expedite their mining activities in accordance with number of leases sanctioned to them.
- Khetri Copper Mines has huge and rich copper deposits at depth which are not being planned for exploitation. The Department will peruse the matter with greater urgency.
- Copper mining in Mundiawas, district Alwar, will be initiated.
- Similarly it is expected from base metal lessees to take out all economical minerals which are being let out as waste at present.
- It is objective of the Department to ensure that more base metal and noble metal areas are leased out and it will make plan accordingly

G Underground Coal Gasification:

Underground Coal Gasification (UCG) in Nagurda Lignite block jointly with Neyveli Lignite (NLC) will be set up.

CNG stations along National Highways Ahmedabad-Udaipur and Palanpur-Sirohi route will be set up.

H Separate Cell for Mineral Development and Value Addition:

At Directorate level a separate cell will be created for mineral development, and related value addition, for enhancing the net worth of mineral wealth along with conservation and environmental management.

I Integrating Mining into the National Economy:

In order to maximize the developmental impact of mining, the Government will aim to foster economic inter-dependencies between mining and other sectors and ensure that the benefits of mining development accrue to the rest of the economy especially through value added maximization. The Strategies for Integrating Mining into the Economy will be:

- Developing the State's ability to provide essential inputs to the mining sector;
- Offering incentive schemes to promote mineral beneficiation investments;
- Promoting forward linkages through development of value adding activities;
- Encouraging the acquisition of modern cost-effective technologies to produce high quality mineral products for world markets;
- Directing special efforts in promoting development and exploitation of industrial minerals which are abundantly available throughout Rajasthan.

12 FISCAL, LEGAL AND REGULATORY FRAME WORK CONDUCTIVE TO INVESTMENT REGIME

The Government will formulate and implement mining taxation regime which is conducive to investment in exploration and mining development, attract and sustain foreign and indigenous investment and harmonize small-scale and large-scale mining operations, on the basis of first come, first served basis.

The following amendment will be made in the existing policy/rules:

A In case of Major minerals, the following amendments will be made:

(a) Ban on Grant of mining leases of certain Major minerals to general public will be reviewed:

Keeping in view of mineral development and increasing demand in market and for value addition of minerals in the State, the present Policy of the State to reserve some major minerals and areas for State/Central undertakings will be reviewed and leases of minerals like Rock Phosphate, Dolomite (SMS Grade), Limestone (SMS Grade), Gold, Manganese, Potash etc., will be opened in favour of all. Similarly, reservation provided to Rajasthan State Mines & Minerals Ltd. in tribal areas will also be reviewed.

(b) Conversion of mining leases from one category to other:

Minerals like Limestone, Quartzite, Dolomite etc., are used as major as well as minor minerals. Conversion of mining leases from one category to another i.e., from major to minor and vice versa will be allowed.

(c) Restriction of Lock in period for initial transfer will be reviewed:

Presently there is a 5 years lock in period for transfer of mining lease. Transfer policy/rule will be reviewed and restriction will be removed or reduced.

(d) Allotment of Limestone (Cement Grade) to Khatedaar:

Where the deposit of limestone (cement grade) is not enough to establish a new cement plant, mining lease of limestone (cement grade) less than 50 hectare in khatedari land may be allotted to khatedar or with the consent of khatedar for sell to cement plant

(e) Base Metal

A number of small base metal pocket deposits occur in Udaipur, Sirohi, Bhilwara, Chittorgarh and Jhunjhunu districts in the State which may now be made available for grant of mining leases to private entrepreneurs

(f) Precious and semi precious stones

Rajasthan is a store house of many precious and semi precious stones. The most important are Emerald, Aquamarine, Epidote, Topaz, Tourmaline, Emethyst, Crystal Quartz, Garnet, green and blue Quartzite. Keeping in view the requirement of huge investment, the companies which possess super-specialty in exploring and locating new deposits will be encouraged.

B In case of Minor minerals, the following amendments will be made:

(a) Allotment of Mining Leases:

Present provision for grant of mining lease proves to be not in public interest. Hence, it has been decided that mining leases in Government land will be granted by both way i.e., through application on first come first serve basis and through delineation depending on availability of area for grant.

(b) Area of Mining Leases for Bajri will be reviewed:

Presently mining leases of bajri in river bed are allotted according to tehsil wise/stretch wise. To reduce the monopoly this policy will be

reviewed and mining leases of bajri will be allotted on the basis of availability of area and mineral deposits.

(c) Provision of Mining Leases for Bajri in Khatedari land will be introduced:

To curb illegal mining and to balance the demand and supply of bajri and to restore agriculture land provisions of mining leases, permit for Bajri extraction in Khatedari land will be made.

(d) Redefining Mining of brick earth ordinary earth/ordinary sand:-

As digging or extraction of brick earth/ordinary earth/ordinary sand used for making bricks, pottery or used for filling/leveling embankment/roads/railways up to a depth of 2 meter does not cause adverse impact on environment. So, provision will be made in rules not to treat it as mining operations.

(e) Restriction of Lock in period for initial transfer will be removed:

Presently there is a 2 years lock in period for transfer of mining lease and 1 year lock in period for transfer of quarry license. Transfer policy/rule will be reviewed and restriction will be removed.

(f) Reduction of size of Sand Stone leases in Khatedari land:

Presently prescribed size for grant of mining leases in Khatedari land is minimum 4.00 ha., and maximum 5.00 ha. To provide opportunity to small tenants, holding land less than 4.00 ha. and also with an intention to eliminate chances of illegal mining in small gap areas, it has been decided to reduce the minimum prescribed size for Sandstone to 1.00 ha.

(g) Provisions to be made regarding khatedari land and khatedari rights:

In the interest of mineral development and to resolve the disputes of khatedar and lessee, provisions will be made regarding not obtaining registered consent again in case of lease transfer or change of khatedari rights, where the original lessee has obtained registered consent or the original khatedar has given registered consent as the case may be.

(h) Enhancing the size of leases:

To reduce the changes of illegal mining and to encourage systematic and scientific mining adjoining Government land, gap areas in Government land and khatedari land will be added in existing leases / licences.

(i) No new Quarry License will be granted in fresh/new area:

No new quarry boundary shall be delineated and no Quarry licenses shall be granted in new Government and khatedari land. Existing quarry license holder will be insisted/motivated to amalgamate their quarry licenses with adjoining quarry license to increase the size for safe and scientific mining. The title of such amalgamated licenses may be permitted in the favour of Association of Persons (AOP).

(j) Increasing the period of Quarry License:

Presently there is a provision of granting quarry license for a period of 5 to 15 years and the period of subsequent renewals is 10 years. For facilitating small minors the period of new quarry license in existing boundaries and the renewal period will be increased to 30 years.

(k) Provision will be made in rules regarding Grant of Brick Earth Permit:

Presently royalty is charged on brick earth from permit holder. To relieve brick kiln holders from such financial burden during temporary closure of kiln, it is decided that royalty will be charged on bricks at the time of dispatch through RCC holders or at the Departmental Naka from vehicle carrying bricks.

(l) Provision will be made in rules regarding special permit for Murram:

Presently there are no mining leases of mineral Murram. A large quantity of murram is required in Government works for embankment, leveling, filling etc. Murram is produced during extraction / mining of mineral masonry stone, Marble, Granite, Sandstone, etc. Hence provision will be made in rules regarding permit for murram.

(m) Procedure for the issue of Transit Pass to Dealer:

Provision will be made in rules regarding issue of transit pass on re-dispatch of royalty paid mineral.

(n) Relaxation of Rules:

Provision will be made through which Government may relax any provision of these rules in the public interest and for mineral conservation and development.

(o) Provision will be made regarding Mutation:

Presently there is no provision prescribed in RMMCR, 1986, for mutation of lease/ license/ contract/permit etc. in case of death of original holder. For the sake of clarity and easy disposal of cases a uniform procedure will be laid down in the rules.

(p) Relaxation regarding NOC from local bodies in case of gap areas:-

The provision of N.O.C. from local bodies will be relaxed for allotment of gap areas lying between existing mining leases or Quarry license.

(q) Redefining of illegal mining:

As per Mineral Concession Rules, 1960, the term illegal mining will be redefined in Rajasthan Minor Mineral Concession Rules, 1986, so that the breach of any lease condition/violation of any rules within the

boundary of valid mineral concession/permit or any other permission granted under these rules is not interpreted as illegal mining;

(r) Provision to give preference in employment to local tribals in schedule areas:

Provision will be made in the schedule area, for employment of the local tribals and to the persons who become displaced because of the taking up of mining operations.

(s) Storage of Explosive and magazine:

It is fact that during mining some quantity of explosive is required for blasting. In most of the small mining areas there is demand of some legal magazines and legal provisions for getting explosive. In absence of any legal provisions there are chances of illegal use of explosives. Hence provisions will be made in this regard with cluster mining approach.

(t) Simplification of Assessment of Royalty:

Self Assessment: Presently many assessments are pending due to varied reasons. Hence provisions of self assessment will be made for leases which are covered under excess royalty collection contract.

Time Barring the assessment: Provision will be made for time barring the assessment if assessment which includes assessment by way of best of judgment is not done by the assessing authority within one years

(u) Lime stone (Dimensional Stone) and Slate Stone

Lime stone (Dimensional Stone) commonly known as Kota Stone is used as flooring stone in domestic and international market. Deposits of this mineral occur in Kota (Ramganj Mandi), Jhalawar and Chittorgarh districts. Although mining of Kota stone has been going on for a long time, there has been a considerable wastage of this mineral due to the indiscriminate blasting of unsplitable layers during extraction of splittable limestone.

New leases for this mineral will be granted to such entrepreneurs who are prepared to adopt mechanised mining and resort to block mining of unsplitable layer of the stone. This will reduce wastage of the mineral. Similar policy would be followed in the case of Slate Stone

(v) Mining Lease over Lands belonging to Devasthan Department

Mining Lease in the Devasthan Department's land will be granted to the applicant who obtains NOC from the Devasthan Department

(w) Mining Lease over Lands belonging to Forest Department

Mining Lease in the forest land will be granted to the applicant who process the diversion process from the forest Department

(x) Regularisation of Bapi Rights

Bapi Rights in Makrana, Nagaur, Sojat and some other areas, which are long outstanding issues, will be resolved, regularizing such rights with certain conditions and suitable amendments shall be made in RMMCR, 1986, to regularize Bapi rights.

(y) Allotment of Akhali (Stockyard) Area

Stock yards of Sandstone in mining areas have a local name akhali. There are lots of disputes pending in various courts with regard to the allotment of akhali. To resolve the issue of allotment of akhalies, transparent guide lines shall be issued. The mined out land where pit has been filled and levelled, these leases/quarry licences may be used for Mineral Processing Plant/ Mineral Stock. For this purpose the Dead Rent/Licence fee have to paid as earlier and these type of Lease/License shall not be treated as non-working.

(z) Amalgamation of Mining Lease/Quarry Licenses

Existing leases/quarry licenses of a single lease/license holder shall be allowed to amalgamate for safe and scientific working in the area. One or more leasee/Licensee having two or more than two lease/licenses may be allowed to amalgamate in to one lease/license to the association of member/ partnership firm of all lessee/licensee. This will not be treated as transfer.

(aa) Allotment of mining lease of minor mineral in existing major mineral lease

In order to conserve and develop Minor Minerals, in Major Mineral lease, the whole and part of the area may be granted to existing major mineral lessee or consent holder of major mineral lessee, irrespective of size and no of lease.

13 ENVIRONMENT AND SOCIAL SUSTAINABILITY OF MINING

To ensure sustainability in mining, there is a need to integrate environmental and social concerns into mineral development programmes, balancing the protection of the flora and fauna and the natural environment with the need for social and economic development. The Government will initiate actions to:

- (a) reduce or eliminate the adverse environmental effect of mining;
- (b) improve health and safety conditions in mining areas; and
- (c) address social issues affecting women, children and the local community.

A Safeguard of stakeholder:

Mining by its very nature creates many stakeholders including (i) Labour in mining operations, (ii) Downstream industries, (iii) Transportation services and (iv) Construction industry, etc. Mining activities in the State shall be carried out in a way that minimizes adverse impact particularly to vulnerable sections including tribal, poor, women and children.

Mining Plans and Mine Closure plans shall be approved after adequate scrutiny in terms of stakeholder's impact.

- Mines covered under Companies Act will be asked to put in place CSR Schemes. Small miners/mines of clusters will be encouraged to form coordination with the Environment Committee, District Administration, Panchayats and local habitant for implementation of local area development.
- In the mining areas land shall be earmarked by District Collector and annual plantation program shall be undertaken to restore green belt.
- The reclamation of old working pits devoid of mineral shall be undertaken through expert agencies.
- Addressing issues of long-term impacts of loss of incomes due to mining activities and measures to recompense the loss in a sustainable way.
- RSPCB is accumulating huge amount from mining industry which will be requested to prepare plan to restore water regime, biotic and impact on environment due to mining in its surrounding field and ensure investment.

B Environmental Management for Small Scale Mining:

The environmental problems associated with small-scale mines tend to be severe and geographically dispersed, and call for attention. Special effort will be made to raise environmental awareness and to promote environmental-friendly behaviour among small-scale miners.

- (i) The small mines will be insisted to amalgamate the small Quarry Licence/Mining Leases and to adopt environmentally sound technologies as well as mining methods;
- (ii) Building partnership with Non Government Organizations (NGOs), private companies and individuals to ensure better environmental awareness and management and empowering mining officers to conduct regular monitoring;

C Environmental and Forest Related Issues:

- The State Government shall ensure expeditious processing of cases involving forest land and Environment Clearance (EC) Certificate. Senior officer of State department will be nominated in SEIAA/MOEF committees to expedite the process of getting EC.
- The State Government shall ensure adequate coordination between the State Directorate and the State Pollution Control Board for the conduct of the Environmental Impact Assessment in a quick, transparent and professional manner and ensure facilitation of preparation, approval and monitoring of the Environmental Management Plan.
- Zero waste mining technique i.e., maximum extraction with minimum excavation will be introduced to put an end to pollution. Special permission will be given to leases for removing overburden from these

leases instead of S.T.P. For such special permission there will no need of Environment Clearance.

D Reclamation and Restoration:

The State will ensure that the mines owner in their Mining Closure Plans make adequate provision for reclamation and/or restoration of the land to the best possible potential in collaboration with local communities, and for their use. Land after mine closure may be handed over to the local Panchayat for management preferably as a Common Property Resource, particularly for the benefit of the rural poor. Reclamation/restoration efforts shall specifically address issues of

- Bringing land into productive use;
- Reducing soil erosion through vegetative means i.e. construction of check dams, retaining walls, drainage channels etc.;
- Dealing with chemical pollutants of soil and water (such as in lignite mining);
- Improving the water regime and recharge potential; and
- Mitigating the adverse visual impact.
- Mine closure including progressive mine closure plan will be closely monitored and it will be ensured that stakeholders are taken into confidence at all stages through a transparent process facilitated by the State Government. Old and disused mines dating to prior to regulated Mine Closure shall be restored or rehabilitated using funds generated from EMF so as to enable local communities to regain the use of such lands.

E Use of Environment Management Fund (EMF) for Environmental Development Work:

Presently there is a provision of preparing common Environment Management Plan (EMP) by minor mineral concession holders with area less than 5 ha., falling in cluster and approved by District Level Environment Committee (DLEC). Every lessee/licensee/short term permit holder is making contribution to environment management fund (EMF) to meet out the financial requirement of association/agency for carrying out environmental protection work as per the environment management plan.

It will be ensured that EMF will be used for environment development work through District level Environment Committee (DLEC) for the following works in phased manner :

1. Plantation in mining areas: Efforts will be made to earmark the land for plantation with the help of revenue authorities/ Gram Panchayats.

2. Reclamation of old mines/pits devoid of minerals to the possible extent,
3. Mine waste disposal,
4. Restoration of drainage if damaged by mining activity.
5. Establishment of water, air and noise testing laboratories in PPP mode in concentrated mining areas and
6. Introducing mobile environment parameter measuring vans through in-house resources or through private entrepreneurs so as to generate scientific environmental data at all the time in and around group of mines so that appropriate authorities are apprised with the facts.
7. Dumping of over burden at notified places will be ensured and in future plantation on over burden dumps will be done.

F Utilisation of Cess amount for the implementation of environment & Health Projects:

- Government of Rajasthan has imposed Cess by “Rajasthan Finance bill 2008 (bill no 6 of 2008) under Section 16 of the “Finance Act 2008” (Chapter VII). The cess is collected from certain major minerals like lead, zinc, copper, cement and SMS grade Limestone, Wollestoneite, rock phosphate, etc.
- This fund will be utilized for the implementation of environmental and health projects in mining areas of the various parts of the State. Rs 335.44 crore have been collected under this Cess so far (Nov 2014). Rs 44.59 cr has been used out of 112.96 sanctioned for health and compensation for mine labourers
- Government of Rajasthan constituted an administrative board called Rajasthan Environmental Health Administration Board (REHAB), for overseeing environmental and health aspects in mining areas.
- Rajasthan is one of the States having a unique model to compensate mine workers afflicted with silicosis and other life threatening diseases. A multi-level system of diagnosis and compensation under the National Human Right Commission's directives was set up. Regular health check-ups are held in mining areas for which funds for mobile medical units are sanctioned by the board.
- The REHAB will be recommended to invest Cess amount in:
 1. The medical check-up and treatment of the mine workers specially in the sand stone areas. The activities may include free treatment, free diagnostic test including deploying mobile X-ray machines.
 2. In the silicosis prone area dust mask and wet drilling equipment shall be provided by the State Government.
 3. Providing medical aid and financial assistance to workers affected by silicosis or pneumonocosis diseases in sand stone mining areas. Strengthening PHCs, CHCs by providing treatment and

investigation facilities in mining areas. For this till Rs. 3.38 crore have been provided to 312 labourers afflicted

4. Regular health check up camps and welfare of the mine labourers shall be done through Committee headed by the District Collector i.e., District Health Society.
5. Organising awareness programmes of mining diseases specially silicosis and pneumonocosis through Media publicity programme through T.V., Posters and Nukkad Natak among people working and residing adjacent to the mining areas.
6. Financial help to the dependents of the deceased mine workers.
7. Preparation of schemes for technical strengthening of mining methods to overcome an adverse effect of mining on the environment and health
8. Preparation of schemes for reclamation and restoration of old asbestos mines working pits.
9. Construction of approach roads in mining areas.

G Ensuring Human Health and Safety in Mining:

Environmental problems in mining areas are compounded by health and safety hazards. In the small-scale mining sub-sector which continues to be plagued by avoidable accidents often arising from unsafe mining and processing practices and lax safety procedures. The Government policy is to ensure the protection of human health and safety in mineral development. For this,

1. Efforts will be made to strengthen and enforce health and safety regulations in all stages of mineral development;
2. For the safety of mining workers a new system will be developed in which a complete record will be maintained about them and working conditions will be made fully safe.
3. Improving health and safety education and encouraging investment in health care facilities, e.g. dispensaries, clinic, laboratories in mining areas.
4. Encouraging mining communities to take initiatives for development of essential social infrastructure and services on PPP mode basis;
5. Incorporating the provision of social infrastructure and hygiene enhancing facilities such as water supply and sewage systems in the community development plans of highly concentrated mining areas;
6. Empowering government health and safety inspection to be carry out regular and random inspection in mining areas;

7. Seeking NGOs, miners' associations and local government's involvement in enforcing health and safety standards.

H Investment under Corporate Social Responsibility (CSR)

The Ministry of Corporate Affairs, Government of India, vide notification dated 27th February, 2014, framed “The Companies (CSR Policy) Rules, 2014. As per the provisions of these rules, it is essential for every company to spent 2% of their earning in CSR activities. The State Government will insist mining companies to pool their CSR funds separately and utilize the amount in such a way so that it will raise the quality of life and social well-being of stake-holder-communities around their location of operations The State Government will insist companies to invest in following CSR activities:

- Education Centre (School, College, and technical Institution)
- Hospital, Health and Hygiene
- Water conservation and waste water treatment plants
- Availability of potable water to local people
- Funding assistance to local ITI
- Funding Mid Day meal to nearby schools
- Afforestation around areas of own mining
- Adopting sustainable ethics and creating green mining as a new idiom, etc.

Education

- (i) **To develop basic infrastructure facilities:** Construction of additional classrooms, boundary walls, toilets, school furniture, construction of play ground, development of sports facility, water facility, maintenance of school building, plantation in and around school premises etc.
- (ii) **Adult education center:** India has largest illiterate population in the world and two third of this illiterate is women. Despite of several government programmes and schemes, literacy rate in rural areas is still lacking. To improve literacy in rural women, the State Government will insist to open adult education centre in rural areas on priority basis.
- (iii) **Aanganwadi center:** With the objective of holistic development of children (o to 6 years age group) enrolled at the aanganwadi centers, the Government will insist these companies to support aanganwadi centers situated nearby mining areas.
- (iv) **Mid-day meal programme:** To improve the nutritional value, hygiene and teachers focus on academics, to improve overall attendance, the State Government is running mid-day meal programme in Government rural schools. Presently Hindustan Zinc Limited (HZL) is actively participating in this programme. The State Government will

insist other companies to support this programme so that the enrollment in rural area is improved.

- (v) **Computer education programme:** To give basic knowledge of computer to students of rural government school through teachers so that they are able to impart computer knowledge to student.
- (vi) **Meritorious scholarship:** To promote healthy competition among students, scholarship to meritorious students will be given.
- (vii) **Interschool sports competition:** To promote healthy competition among the school children and develop the interest in the school, interschool sports competition from time to time will be organised.
- (viii) **Sponsorship for higher education:** To promote higher education among girls, Government will insist companies to sponsor talented girls coming from economically poor households specially for higher education i.e., graduation /post graduation.
- (ix) **Support to Bal Badhir School:** To provided skill based teaching to blind and deaf students in Bal Badhir school, Government will insist companies to support such school on priority basis.

Health and Hygiene

- (i) **Primary Health Center:** to construct primary health center in remote areas where primary medical facility is not available.
- (ii) **Mobile Medical camps:** to organise Mobile Medical Camps in collaboration with health department specially in remote villages where there is lack of accessibility of government medical services in surrounding villages of operational areas.
- (iii) **Ambulance:** to provide ambulance in remote villages where there is lack of transport facility.
- (iv) **Eye care camps:** regular eye check-up camps
- (v) **Homeopathic Center:** Homeopathic Center in rural areas and free of cost medicine.
- (vi) **Model hospital project:** to construct special medical unit/provide funds for special facilities in various government hospitals.
- (vii) **Supply of potable water:** to supply potable water around operational areas specially in summer season. Presently RSMML is supplying potable water to Udaipur city.
- (viii) **Sanitation Project:** to construct toilets in rural areas under **Swacch Bharat Abhiyan.**

Sustainable Livelihood

- (i) **Skill development center:** to open vocational training center/ITI center in operational areas for skill development and to give technical training to youth on various trade so that they can be placed in the job market.
- (ii) **Self help group:** To bring sustainable change in the quality of life and well being of rural families in villages, the Government will insist companies to focus on women empowerment through self help group development. Presently HZL has done very good work in self help group by forming 30 such groups linked with savings and income generation activities.

Agriculture Programme

- (i) **Drip irrigation system:** to promote drip irrigation in barren and other farming land around operational areas it can help to solve serious problems associated with water use.
- (ii) **Sprinkler system:** to promote sprinkler system of farming around operational areas.
- (iii) **Promotion of organic farming (Vermi-compost):** to promote organic farming by imparting training on vermin-compost to the farmers and establishment of vermin-compost unit.
- (iv) **Farmers training:** to conduct farmer raining programmes and to inform them about best agriculture practices by using demonstration. Motivating the farmers of the operational areas and trained in soil and water management to improve the productivity of their land.
- (v) **Distribution of seeds and agriculture equipments:** to distribute best quality agriculture seeds and latest equipment available for agriculture in operational areas this will increase the income level and to improve the quality of farmers life.
- (vi) **Exposure visit:** to organized farmer exposure visit in other area or in other State to learn about various modern farming practices/techniques.

Animal Husbandry

- (i) **Mass vaccination camp:** to organized vaccination camps with animal husbandry department in nearby villages.
- (ii) **Artificial insemination and insurance:** to help in providing facility of the local breed into hybrid which give yield high milk and will increase the income of farmers.
- (iii) **Fodder distribution programme:** to organized fodder distribution programme in nearby areas specially in summer season.

Social mobilization

To sponsor and organize rural sports activities in collaboration with district administration and school in order to create awareness among school going children as well their parents. Apart from these companies will also be

insisted to actively participate/sponsor various cultural programmes e.g. festival, mela etc. organized by respective district administration.

Infrastructure Development

To undertake infrastructure development on top priority basis as well as management of the same Infrastructure development is the backbone of any village development, the operational villages of the mining area are deprived of basic infrastructural facilities such as road, electricity, drinking water, drainage etc.

Plantation Work

To undertake plantation or to develop green belt in nearby barren land, school premises, other Government buildings, approach road side or any other land provided by respective gram panchayat to protect environment around operational areas.

14 CREATING AND MAINTAINING VIABLE INFRASTRUCTURE

- The State is well connected with rest of the country through broad gauge lines, Railway lines and road network like Golden quadrilateral, East-West corridor, Mega Highways and other district/sub divisional/village links. Many important petroleum and gas pipe lines passes through the State of Rajasthan. Still there is ample scope for improvement of existing infrastructure in the mineral-bearing regions.
- Development of roads within the mining areas and connecting roads to railway stations would be given top most priority as mining activities are generally located in remote areas. Well developed and reliable economic and social infrastructural facilities, such as transport; water supply; power supply; communication; education and health services; and recreation are vital for the mining sector's development.
- Government of India will support States in developing infrastructure in and around mining areas as per National Mineral Policy 2008. Government of India will be requested to come out with a plan programme for infrastructure and other developments in mining area.
- Whenever a big company take up mining work they will develop transportation network and carry out other development of the area to facilitate their workings. They will be given plan of development work to be carried out under CSR investment
- Mining companies are required to invest under CSR scheme and they will be given systematic program for such investment for developing facilities like school, dispensaries, drinking water facilities, toilets in schools, rest shelters etc in systematic way.

- Coordination arm will be developed between central and local government under different schemes like health, education, road, rail and industries based on minerals and waste being worked there for the development of several other facilities for small scale mining areas.
- Coordination with Rail and Central Government to upgrade, expand and develop rail lines in the State to export minerals and value added products.

15. HUMAN RESOURCE DEVELOPMENT AND EMPLOYMENT TO LOCAL PEOPLE

- Strategies for human resources development aim to reflect the need to train and continuously upgrade skills and competence in personnel to meet the challenges of the sector and attain and maintain competitiveness.
- To enhance the skills of miners, labourers, technicians working in the mines, training programmes for mine safety improvement, maintenance of ecological equilibrium and prevention of mine wastage will be conducted in collaboration with Mines Safety Department and IBM.
- The Department will organize National/International level training programmes by renowned institutions to increase skill & awareness levels of miners, workers, technocrats and managers.
- Workshop/seminar and group discussion events will be organized for mining, mineral processing, value addition and technical skill up gradation in consultation with National and International technocrats/institutes.
- A three year Diploma Course in mining will be started in Chittorgarh.
- In existing ITIs and Polytechnic colleges, new 6 months course will be started for Dumper operators, Dozer operators, Backhoe and Excavator operators, so that people will get jobs and skill persons get their rights.
- Short course structured by the Department will be promoted through ITI and other training institutions to improve the skill of existing persons working in mines for the benefit of the Industries.
- Local people will be given preference for jobs.
- Organize seminars, exhibition, literatures and magazines.
- Organize exhibitions of new mining machinery, tools and equipments products demonstration to achieve more productivity and profitability.

16 RESEARCH AND DEVELOPMENT:

A Research & Development Laboratory:

The Rajasthan State will institute a new Research & Development Laboratory/Centre to initiate scientific standards and characterization for the user community and encourage private entrepreneurs to set up R&D centers aiming to develop better exploration technologies, and develop extraction methods which allow maximum extraction of minerals with minimum excavation, develop processes which minimize mining waste

production and develop up-gradation technique for sub-grade minerals and in finding new uses for minerals and waste generated there

B Environment parameter measuring vans:

It will be encouraged to develop mobile environment parameter measuring vans through in-house resources or through private entrepreneurs so as to generate scientific environmental data at all levels in and around group of mines so that appropriate authorities are apprised with the facts.

C Geochemical Mapping (RGMP PROJECT):

- In India, the GSI has launched an ambitious National Geochemical Mapping programme (NGCM) covering the entire country with the objective to create geochemical data base of the country and mapping is being carried out topo sheet wise by collection of stream sediment samples from one sq.km. grid and analysis for 68 elements.
- It will lead to identification of new mineral prospects/deposits, which have not yet been discovered/located. On the basis of analysis of 68 elements, anomalous zones of particular element will be demarcated and based on these anomalous zones further detailed prospecting/exploration would be carried out to prove the grade and reserves of the deposit.
- For the speedy coverage of the entire country an MOU was signed between the Mines and Geology, Rajasthan (DMGR), Geological Survey of India (GSI,WR), Jaipur, and Rajasthan State Mines and Minerals Ltd. (RSMML), Udaipur. The purpose of MoU is to cover Chittorgarh, Rajsamand, Udaipur, Banswara, Dungarpur, Sirohi, Pali and Pratapgarh districts.
- GSI will provide all technical help and guidance and training for personnel engaged in RGMP project.
- DMGR will provide technical manpower recruited on contractual basis or from their own resources, infrastructural facilities and analytical facilities through their own laboratory or by outsourcing.
- RSMML will bear the project cost, which includes all capital items for execution, data processing, recording and storage for undertaking the project. As per the project plan of action, DMGR shall establish a new laboratory at Directorate, Udaipur. The data, reports, products etc. can be transferred to prospecting investors on payment basis, as this will be a property of RSMML.

D R & D on Clays:

- Vast deposits of different types of clays are found in the districts of Bikaner, Jaisalmer, Barmer and Nagaur. The Department is carrying

out exploration for lignite in Bikaner, Jaisalmer and Barmer districts. During drilling, besides lignite/lignitic shale/shally lignite, a thick column of variegated clays, china clay, ball clay, fire clay, bentonite, fuller's earth have also been intersected in each borehole. There is an ample scope of exploitation of these clays too, besides lignite. In depth R & D work is called for the proper utilisation of these clays. For this purpose, a Ceramic Laboratory already exists in the Directorate, which can do R & D works for these clays intersected during drilling which can be utilised in the market after proper beneficiation and up gradation.

E Quality evaluation of decorative stones for Export:

- Rajasthan is the treasure house of beautiful decorative stones of various varieties. Still the export figures are not very much encouraging. In modern times, the key to growth is through exports. International buyers always insist on test reports and quality certification. Such certification is mandatory in the European countries and the United State of America.
- The State will encourage private and Government organisations involved in R & D for standardization and testing of stones as per international standards having mechanical tests and environmental tests at nominal rates. The State DMG has these test facilities. Proper marketing will be done for providing these facilities.

F Waste Utilization:

Most of the waste generated in mines and processing units of minerals can be gainfully utilized and for this a special task force will be constituted containing of the Departmental persons and expert from field. Such elimination of waste can be allowed to be utilized under scheme of elimination of the impact of solid waste generated to improve environment status in mines and surrounding area. An inventory will be made of all the instances where such uses are being made in the State and the country. If some inputs are required through R & D it will be provided.

17. PREVENTION AND CONTROL OF ILLEGAL MINING:

1. The last few years have highlighted the issue of illegal mining in several parts of the State. Illegal mining besides being a loss to the State revenue has widespread negative impact including environmental damage, alienation of local population, corruption, crime and lawlessness, etc. In order to act as a strong deterrent to such illegal mining, present provision of imprisonment for 2 years will be increased to 5 years and a fine of maximum 25,000/- will be increased to Rs. 5 lakh. The minimum compounding fee will also be increased from 5000 to 25000 and cost of mineral will be 15 times of the royalty.
2. Steps should be taken to streamline procedures to minimize delays in grant and renewal of leases. Central Government will be requested for speedy clearances of mineral concession cases pending with Ministry of

Environment and Forests to reduce delay in disposal of mining lease application and renewal applications.

3. Steps will be taken to improve the regulatory supervision of areas of potential mineralization and shall involve the local population in the process.
4. Introduce a computerization system for collection of royalty, issue of transit pass on similar basis as the online rawana with security features incorporated, will be introduced in a time bound manner.
5. Putting in place in motion weigh-bridges and modernization of check gates for transportation of minerals in vehicle and to cross verification of Rawanna and Transit Pass at anytime and at any spot, an application will be developed.
6. Registration of loading contractors and transporters.
7. High resolution satellite data will be used for detecting encroachments and illegal mining.
8. Henceforth to ensure the accuracy of location of mining area, grid-based maps will be made mandatory for grant/renewal of mining leases.
9. Set up special camp at sites and deployment of Boarder Home Guards in the areas where there have been complaints about illegal mining.

18. PROMOTING EFFECIENCY OF DEPARTMENT

It is important to promote the working of the department and improve its efficiency. For this, following strategies will be adopted.

- Large circulation of department's magazine at no cost no profit basis
- Circulation of monthly technical bulletin/News letters
- Organising seminar/symposium/workshop regularly and zone wise
- Participation of the Department at National and International Seminars/ Meets.
- Training key officers abroad.

19. REVIEW OF POLICY

It is of utmost importance that all aspects/plans covered under this Policy are implemented. For the development of mineral sector, time bound and effective implementation is as necessary as creation of a structure of clarification at each point. The Mineral Advisory Committee will periodically review the implementation of Mineral Policy. Timely and level-based co-ordination among various Government Departments is essential on related aspects like mineral exploration, development, regulation, administration, mining, mineral based industry, etc. To attain this objective, a Mineral Advisory Council will be constituted.