

## CHAPTER 17

### MINERAL DEVELOPMENT

17.1 Rajasthan is one of the important mineral producing state in the country. It has a wide variety of minerals. It produces as many as 67 minerals including lignite and gas. It is a leading and important producer of lead, zine, copper and tungsten ores from which are also recovered gold, silver and cadmium. Among the non-metallic industrial minerals, the state is a leading producer of rock phosphate, gypsum, steel grade and cement grade limestone, asbestos, felspar, quartz, silica sand, soapstone, clays, orches and wollastonite. The state is also the most important producers of dimensional and decorative stones like marble, kota stone and sand stone in the country and has high potential for granite.

17.2 Several important deposits which are vital for the state's economy have been located and explored in the past by the State Department of Mines & Geology, Geological Survey of India and Mineral Exploration Corporation of India which are the primary agencies for this job. As the out-cropping or near surface deposits have already been located, efforts will have to be made by these agencies to locate the deeper ones with the latest available exploration techniques.

17.3 A Mineral Policy was declared by the State Government in June, 1994. Which provides guidelines and strategies in regard to mineral exploration, leasing policy of important minerals, setting up of mineral based industries in the State, systematic and scientific mining, keeping in view the conservation of minerals and protection of ecology and the measures for simplification and demystification of procedures etc. Marble and Granite Policies were also announced in October, 1994 and January, 1995 respectively. The objectives of the Mineral Policy and the strategic action frame work are as under:

#### **Objectives of the Mineral Policy**

- To explore mineral wealth of the state expeditiously by adopting modern exploration techniques.
- To exploit mineral deposits by promoting adoption of mechanised and scientific mining with due regard to conservation of mineral mines safety and environmental aspects.
- Value addition through promotion of processing units and mineral based industries in the state.
- To encourage export of minerals having export potential.
- To promote development of human resources to meet the requirement of mining and mineral based industries
- To de-mustify procedures and achieve greater transparency in decision making.
- To increase employment opportunities in the mining sector particularly, for persons belonging to Scheduled Cast, Scheduled Tribes and other weaker sections.
- Provide thrust on exploration of essential minerals like hydrocarborns, base metal and noble metal so as to curtail their import.

## **Strategic Action Frame work**

- To conduct developmental studies in the field of mineral exploration and mineral based industries including beneficiation of low grade minerals.
- To take effective measures for checking unauthorised mining and leakages of revenue.
- To simplify and adequately modify Minor Mineral Concession Rules to help achieve the objective of the Mineral Policy.
- To ensure better mineral administration and adequate delegation of power to the State Government, reference would be made to the Government of India.

## **Achievements of Ninth Plan**

17.4 During the Ninth Plan emphasis was given on the exploration of cement and sms grade, limestone, cement grade limestone, lignite, basemetals, noble metals, development of hydrocarbons, rock phosphote, delination of areas for dimensional & decorative stones, industrial minirals like barytes; bentonite clays gypsum etc.. The important achievements were as follows :

- Cement grade limestone reserves have been proved in Tankla area of Nagaur, Jaisalmer and Jhunjhnu districts.
- The SMS grade limestone have been proved in Jaisalmer and Udaipur district.
- Geological reserves of lignite have been proved in Nagaur and Bikaner districts.
- Potential areas of granite and marble were delineated and notified for leasing in different districts.
- The production of mineral and the number of mining leases have increased manifold during the last four decades with consequent increase in the revenue year by year.
- Vision 2020 (strategy for sustainable miniral development) of the department was prepared and launched on 15<sup>th</sup> August 1999.
- For speedy exploration of the basemetals and noble metals, large areas were granted to 11 multinational and domestic companies.

## **Tenth Five Year Plan**

### **Objectives of Tenth Plan**

- Accelerate the pace of mineral exploration by strengthening the department, adopting modern techniques of mineral exploration and achieving better coordination with other agencies like GSI, MECL, ONGC and OIL engaged in the investigation of minerals.
- Earn high revenue for the state through higher production of minerals with scientific development of mines and by removing the impediments in the mineral development.
- Promote development of human resources to meet the requirements of mining and the mines department.
- Promote Research and Development in he fields of identification, analysis, exploration and beneficiation of minerals, particularly for mineral conservation, reduction of mineral waste during mining, utilisation of waste wherever possible.
- Promote measures for protection of environment in mines.

- Promote necessary infrastructural facilities, particularly approach roads to mines and quarries.
- Increase the efficiency of the Department through reorganisation, computerisation of offices and providing other required facilities and training of officers.\
- Identify technological gaps in mineral exploration and take relevant steps in filling those gaps through foreign direct investment and technology transfer.

17.5 A sum of Rs. 81347.43 lakhs (including internal resources generation of Rs. 77200.00 lakhs in the ceiling of RSMM) has been proposed for the Tenth Plan for development and exploitation of minerals. Similarly Rs. 24399.54 Lakhs has been kept for annual plan 2002-03 including Rs. 24000.00 Lakhs as internal resources of RSMM. The department wise break up of the proposed outlay is as under :

	(Rs. in lakhs)	
	Tenth Plan (2002-07)	Annual Plan (2002-03)
Directorate of Mines & Geology	1372.42	249.53
Upgradation of Directorate of Mines & Geology (EAP)	2500.00	100.00
RSMM(IR)	77200.00	24000.00
RSMDC	0.01	0.01
Petroleum Department.	275.00	50.00
<b>Total</b>	<b>81347.43</b>	<b>24399.54</b>

### **Directorate of Mines & Geology**

17.6 The Directorate of Mines and Geology is responsible for intensive prospecting and mineral survey, detailed exploration, organisation of mineral administration by granting mineral concessions, providing technical guidance to leases, collection of revenue, checking of unauthorised mining and evasion of royalty. Scheme wise details are as under :

#### **Intensive Prospecting & Mineral Survey and Reorganisation & Expansion of the Mines & Geology Department**

17.7 This is the fundamental scheme of the department under which mineral survey and prospecting in the state are Carried out for discovery and systematic exploration of new mineral deposits, which can generate additional revenue to the State exchequer. A sum of Rs. 687.63 lakhs has been allotted for this scheme for Tenth Five Year Plan and Rs. 126.75 lakhs for Annual Plan 2002-03. The amount is mainly kept for replacement and purchase of drilling machine with its accessories, jeeps, survey, equipment, reagents used in laboratories, core boxes, geophysical accessories etc.

#### **Construction of approach road, Quarries and departmental Buildings**

17.8 The Department has been constructing approach roads in the cluster of mines and quarries to connect them with main roads to ease transportation of minerals.

17.9 A sum of Rs. 575.42 lakhs has been kept for Tenth Five Year Plan and Rs 93.28 Lakhs for Annual Plan 2002-03.

### **Research, Development & Training**

17.10 A sum of Rs. 40.00 lakhs has been kept for these activities in the Tenth Five Year Plan & Rs. 14.50 Lakhs for Annual Plan 2002-03. Under the scheme the Department proposes to take up following activities.

- Deposit-wise or area wise study to assess quality and reserves of various minerals available in the state to ascertain their suitability for specific industrial purposes.
- Beneficiation studies to upgrade minerals for value addition.
- Studies to make the unusable low grade minerals usable.
- Studies to utilise mineral waste from mines and the processing industries.
- Studies to suggest improvement in mining techniques so as to reduce the waste.
- Collection, computation, publication and dissemination of information related to mineral sector.
- Specialized analytical work and studies on minerals through the various laboratories within the country and abroad.

### **Environment Restoration Scheme**

17.11 The mining and processing activity causes the environmental damages to land, environment, water environment and air environment. Therefore a provision of Rs. 50.00 Lakhs has been kept for this scheme during Tenth Plan & Rs. 5.00 Lakhs during Annual Plan 2002-03.

### **Mines Safety Education & Training**

17.12 The department purpose to take the work of ensuring safety of mines & mine workers. Therefore for this purpose an amount of Rs. 20.00 Lakhs has been kept in Tenth Plan & Rs. 10.00 Lakhs during Annual Plan 2002-03.

### **Upgradation of Directorate of Mines and Geology (EAP)**

17.13 In this project a sum of Rs. 2500.00 lakhs has been proposed for Tenth Five Year Plan and Rs. 100.00 lakhs for Annual Plan 2002-03.

### **Rajasthan State Mineral Development Corporation**

17.14 Rajasthan State Mineral Development Corporation was incorporated in 1979 to give boost to the mining activities in the State. The corporation is actively engaged in exploration and exploitation of various minerals like Rockphosphate, Gypsum, Limestone, Fluorspar, Graphite, Bentonite and Lignite etc. in areas spread over 14 districts of the State. However, 95% of the turnover and most of the profit is generated from mining of 4 minerals namely Gypsum, Lignite, Limestone and Rockphosphate.

17.15 For Tenth Plan period and Annual Plan 2002-03, a token provision of Rs. 0.01 Lakhs has been kept for RSMDC.

### **Rajasthan State Mines & Minerals Ltd.**

17.16 Rajasthan State Mines & Minerals Ltd. is engaged in mining of Rockphosphate and its beneficiation at Jhamar Kotra in district Udaipur, Gypsum

in Bikaner Division, Steel grade Limestone at Sanu in district Jaisalmer and Green marble at Kesariajee in district Udaipur.

17.17 Rajasthan State Mines & Minerals is generating substantial revenue to the State exchequer by way of paying compensation, Royalty, development charges, sales tax etc.

17.18 An amount of Rs. 77200.00 Lakh as internal resources generation has been kept for Tenth Plan and Rs. 24000.00 Lakhs for Annual Plan 2002-03.

### **Petroleum Department**

17.19 During Ninth Five Year Plan, Rajasthan has emerged on the "Oil Map of India" owing to discovery of oil by private sector in Guda Malani area in district Barmer and Nanuwala area in district Hanumangarh. Additionally, large deposits of deep-seated lignite have been also located in Rajasthan leading to identification of Coal Bed Methane and syngas from Underground Gasification of lignite / coal. It is estimated that 3500 MW of power can be generated from CBM of Barmer area alone. Additionally, gas produced from the underground gasification of lignite would enable generation to power of the extent of thousands of MW. Large deposits of heavy oil and bitumen have been identified which are attracting private sector to invest in the State.

17.20 A small Directorate of Petroleum was established during Ninth Plan and it has begun contributing revenues to the State Government. It is expected that revenues shall increase significantly with the production of oil. Natural gas production has been started by Oil India Ltd. to supply to a 35 MW power plant at Ramgarh in district Jaisalmer and more discoveries of natural gas are likely by ONGC. A stage has been also set for the involvement of State sector corporations as well as the private sector in the development of indigenous hydrocarbon resources for generation of cheap power as well as in the transmission of petroleum products through pipeline for the overall development in the State. All these are likely to contribute significant revenues to the State Exchequer.

17.21 For Tenth Plan a provision of Rs.275.00 lakhs has been proposed while for Annual Plan a provision of Rs.50.00 lakhs has been proposed for Petroleum Department.

17.22 Recently, oil has been discovered at two places namely Koslu in District Barmer by Cairn Energy and Nanuwala in district Ganganagar by Essar oil. This oil is of good quality i.e. light oil. Oil Reserves have been estimated about 20-40 million barrels in Koslu area at the production capacity of 2075 barrels per day. The grade of this oil is 41 degree / 42 degree API) which can be used in aviation purposes. Reserves in Nanuwala area couldn't be established so far. The Grade of this oil is 34 API. Two more exploratory well near Nagar, District Barmer and near Bijbayla, district Ganganagar shall be drilled during 2002-03. If these are successful, commercial production shall be started from these areas. Significant revenue may be accrued to the State.

17.23 Oil India has signed an agreement with Venezuelan company (PDVSA) for the development and exploitation of heavy oil in Baghewala area, District Jaisalmer discovered in 1991. The Directorate of Petroleum is also associated in this to develop heavy oil resources of Rajasthan.

17.24 With the efforts of the Directorate of Petroleum, capacity of 35 MW Ramgarh Gas based Power Plant shall be enhanced to 105 MW depending on the additional supply of the gas by the Oil India & ONGC.

17.25 The Directorate of Petroleum is actively undertaking underground coal gasification & coal based methane Projects to meet out the power shortage in the State.

17.26 Looking to these avenues, a Rajasthan State Petroleum Corporation may be established. A detailed evaluation & feasibility Report shall be prepared by the Directorate of Petroleum.