

MINERAL RESOURCES

27.1 INTRODUCTION

During the Eighth Development Plan, the mineral resources sector achieved remarkable growth, driven by high demand for mining licenses, to support development of various sectors of the national economy, as well as due to the significant improvement of the investment climate and business environment, and the consequent increase in the flow of investment into the mineral resources and associated sectors. Issuance of the Mining Investment Code, at the start of the Eighth Development Plan, was the most important incentivising factor for such investment. Indeed, the Code strengthened the competitive position of the national mineral sector, both regionally and internationally.

The Ninth Development Plan aims to support and enhance growth in this sector, diversify the production base and development of mining, and promote integration of mining with other economic activities; thereby ensuring greater added value from exploitation of national mineral resources. The Plan also aims to continue efforts to identify and protect all mining areas, and provide the required infrastructure for investment. It also underlines preservation of the environment in mining areas, as well as rehabilitation of mining sites after exploitation.

This chapter presents the current conditions of the mineral-resources sector and the developments that took place during the Eighth Development Plan. It also reviews key issues and challenges that need to be addressed under the Ninth Development Plan, assesses projected demand, and presents the future vision, objectives, policies and targets set for the sector under the Ninth Development Plan.

27.2 CURRENT CONDITIONS

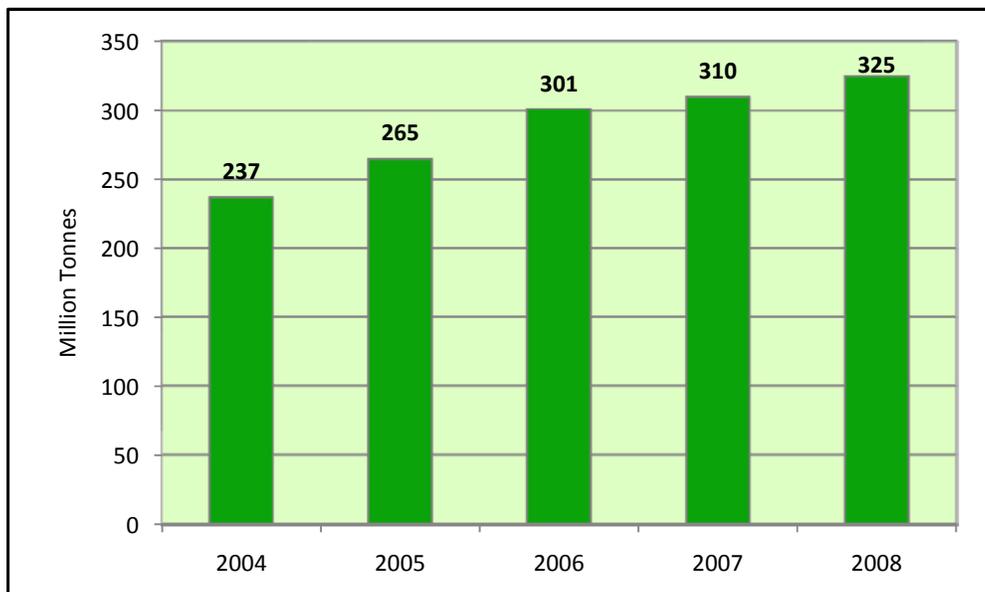
27.2.1 Improvement of Indicators of Production and Activities of the Sector

During the Eighth Development Plan, the mineral-resources sector was able to raise its capabilities for extraction and exploitation of raw materials, as well as for the production of related manufactured and semi-manufactured products. Extraction of raw materials increased from 237 million tonnes in 2004 to 325 million tonnes in 2008, reflecting an average annual growth rate of 8.2% (Figure 27.1). Good growth of the national economy and improvement of the investment environment, consequent upon issuance of the Mining Investment Code in 2004, contributed to the high demand for exploitation of mineral resources and enhanced investment opportunities in the sector.

The rising number of mining licenses reflects the level of activity and interest given to the sector, with the number of licenses increased from 1,179 licenses at the end of 2004 to 1,408 licenses by the end of 2008, an average annual growth rate of 4.5 % (Table 27.1).

Page
530

Figure 27.1
Development of Raw Materials Production
Eighth Development Plan*



* Up to the end of the fourth year of the Eighth Development Plan.

Source: Ministry of Petroleum and Mineral Resources.

Table 27.1
Mining Activities Indicators
Eighth Development Plan*

Mining Activity	2004	2008	Average Annual Rate (%)
Reconnaissance licences	43	84	18.2
Exploration licences	28	61	21.5
Small-mine licences	31	58	17.0
Quarry permits (Building Materials)	1045	1148	2.4
Precious and Base Metals and Iron licenses	7	7	0.0
Phosphate and bauxite licences	0	5	0.0
Raw cement materials licences	13	22	14.1
Other industrial minerals and ornamental stones licences	9	21	23.6
Total Licenses in force	1179	1408	4.5
Sites allocated for mining	165	254	11.4
Area reserved for mining activities (1000 km ²)	11	53	48.2
Area under exploration Licences (1000 km ²)	123	140	3.3
Operating private companies	640	750	4.0
Volume of exploited raw material (million tonne)	237	325	8.2

* Up to the end of the fourth year of the Eighth Development Plan.

Source: Ministry of Petroleum and Mineral Resources.

Resulting from the significant growth in exploration and mining activities, the number of sites dedicated to mining has risen from 165 sites in 2004 to 254 in 2008, and the areas allocated for mining multiplied almost five-fold during this period, that is from 11 thousand square kilometres to 53 thousand square kilometres, accompanied by an increase of site areas that are subject to exploration licenses, from 123 thousand square kilometres to 140 thousand square kilometres distributed over all regions.

27.2.2 Private Sector Participation in Mining Activities

The number of specialized mining companies increased from 640 in 2004 to 750 in 2008. Among the most important achievements in privatization was that of the Saudi Arabian Mining Company (Ma'aden), which was listed for trading on the Saudi Stock Exchange (Tadawul).

To enhance the role of the private sector in mining, measures and policies designed to attract national and foreign investments to the mineral-resources sector were developed. These included: providing information bases of investment opportunities on the website of the Deputy Ministry of Mineral Resources (DMMR), and organizing exhibitions and conferences within and outside the Kingdom. In addition, efforts to deepen and expand the scope of mining information continued, along with improving the quality and transparency of this information. Moreover, in an effort to improve the investment environment in this sector, procedures and mechanisms for completion of transactions were facilitated and efforts aimed at preserving and safeguarding mining sites with investment potential were consolidated.

27.2.3 Diversity in Mining Activities

During the Eighth Development Plan, raw mineral products were developed and diversified. In 2008, the estimated quantity of exploited raw materials was 325 million tonnes, including several non-metallic ores, industrial minerals, and precious metals and semi-precious stones to meet domestic needs. Estimated at 273 million tonnes, industrial minerals for construction, such as sand and gravel, form the bulk of extracted raw materials; followed by raw materials used in the manufacture of cement, such as limestone, clay and ferruginous sand (42.1 million tonnes); ornamental stones (1.2 million tonnes); gypsum (2.3 million tonnes); clay (5 million tonnes); and other industrial minerals, including feldspar, marble (crush), and pozzolan. Metallic minerals were concentrated mainly in copper products (1.5 thousand tonnes), zinc (3.6 thousand tonnes), lead has also been produced (347 tonnes), and precious metals (gold, 4 tonnes; silver, 9 tonnes) Table (27.2).

The Eighth Development Plan sought to diversify mining activity, by starting to exploit other mineral deposits, such as phosphates, bauxite and other raw materials. To this end, facilities and services necessary for the exploitation of 'Al-Jalamid phosphate mine', located in the north, were established; including the construction of a railway to connect the mine with manufacturing locations and export outlets on

the east coast. For its part, the Ma'aden Company started implementation of the aluminium project to exploit bauxite in Zubairah in the north-central part of the country for producing aluminium for local consumption and export. The project includes the design and development of two integrated sites; one in Zubairah that includes a bauxite-mining site and facilities for handling raw materials, and the second in Ras Al-Zour on the Arabian Gulf coast that includes an alumina refinery and a smelter to produce up to 650 thousand tonnes of aluminium annually.

Table 27.2
Mineral Resources Production Sector
Eighth Development Plan*

Types of Mineral	2004	2005	2006	2007	2008	Average Annual Growth Rate (%)
Precious Metals						
Gold - raw (million tonnes)	5.4	4.7	4.4	4.2	4.0	-7.2
Gold - metal (tonnes)	7.5	7.5	5.2	4.4	4.0	-14.5
Silver (tonnes)	4.9	13.2	9.1	9.0	9.0	16.4
Metallic Minerals						
Lead (tonnes)	50.0	0.0	0.0	123.0	347	62.3
Copper (thousand tonnes)	0.7	0.5	0.7	0.7	1.5	21.0
Zinc (thousand tonnes)	0.5	0.5	1.0	1.7	3.6	63.8
Industrial Minerals						
Building materials (million tonnes)	200.0	218.0	253.0	260.0	273.0	8.1
Cement raw materials (million tonnes)	33.0	35.4	36.8	39.5	42.1	6.3
Cement (million tonnes)	23.8	26.0	27.0	30.4	31.8	7.5
Clay (million tonnes)	5.6	4.3	3.8	3.9	5.0	-2.8
Gypsum (million tonnes)	2.1	2.1	2.1	2.2	2.3	2.3
Salt (million tonnes)	1.7	1.7	1.8	1.5	1.6	-1.5
Ornamental stones (million tonnes)	1.2	0.9	1.0	1.1	1.2	0.0
Other industrial materials (million tonnes)	2.5	1.4	1.5	1.5	1.6	-10.6
Raw materials exploited						
Quantity (million tonnes)	242.0	265.0	301.0	310.0	325.0	7.7

* Up to the end of the fourth year of the Eighth Development Plan.

Source: Ministry of Petroleum and Mineral Resources.

27.2.4 Manufacturing Industries

Under the Eighth Development Plan, mining capacity and outputs increased, as methods and techniques of raw materials processing developed, leading to expansion in the production of manufactured and semi-manufactured materials. The cement industry is at the forefront of the promising industries in this sector, due to its impact on meeting the requirements of the local market, in addition to exporting the surplus. Over the past years, intensive efforts were made to diversify the capabilities and capacities of various materials production, to meet local demand for building materials and other manufactured articles; thereby substituting imports and increasing exports. Private companies played an active role in developing these activities.

Page
534

With 22 mining licences held by 13 companies operating throughout the Kingdom, the cement industry is, after the sand and gravel industry, the second largest user of mineral raw materials (limestone, clay, and gypsum) and ferruginous sand. With the pace of economic growth achieved under the Eighth Plan, the volume of produced cement was 31.8 million tonnes in 2008, covering the needs of the national market, in addition to about 3 million tonnes exported to foreign markets.

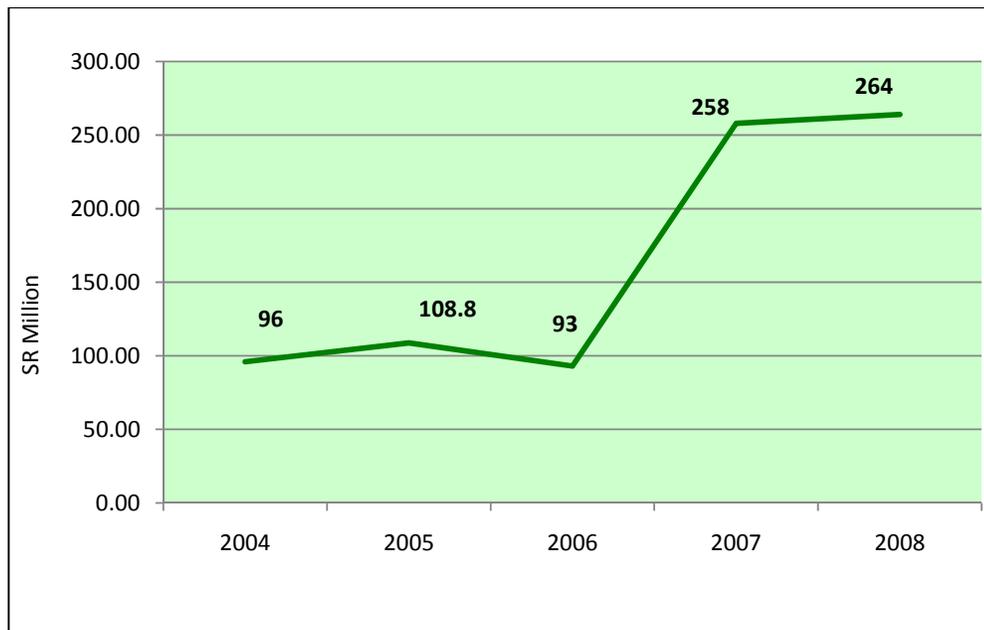
At about 5 million tonnes in 2008, the brick production industry, through use of clay as raw material, came in third among industries that use raw minerals.

With a programme aimed at substituting imported raw materials by local minerals, the Ministry of Petroleum and Mineral Resources is seeking to achieve major development of effective utilization of the mineral wealth of the nation, by increasing the added value of local production and enhancing integration of raw material producers with local industries. The programme includes: conducting statistical and field studies on the quantities of minerals required by both existing and envisaged local industries; conducting marketing studies of local and global markets; and organizing seminars and exhibitions in the country and abroad to identify promising investment opportunities.

27.2.5 Investment Returns and Mining Activity

At the end of 2008, revenues of investors in industries based on exploitation of local mineral wealth were estimated at about SR14.5 billion and their profits at about SR5.4 billion, on total investments amounting to about SR50 billion, in addition to the indirect revenues from mining sector development. Moreover, the direct state returns and revenues from mining investment and activities achieved significant growth under the Eighth Development Plan, with the financial revenues of the Mineral Resources Agency of the Ministry of Petroleum and Mineral Resources collecting fees and charges amounting to SR264 million in 2008 (Figure 27.2).

Figure 27.2
Government Revenues from Mining Activities
Eighth Development Plan*



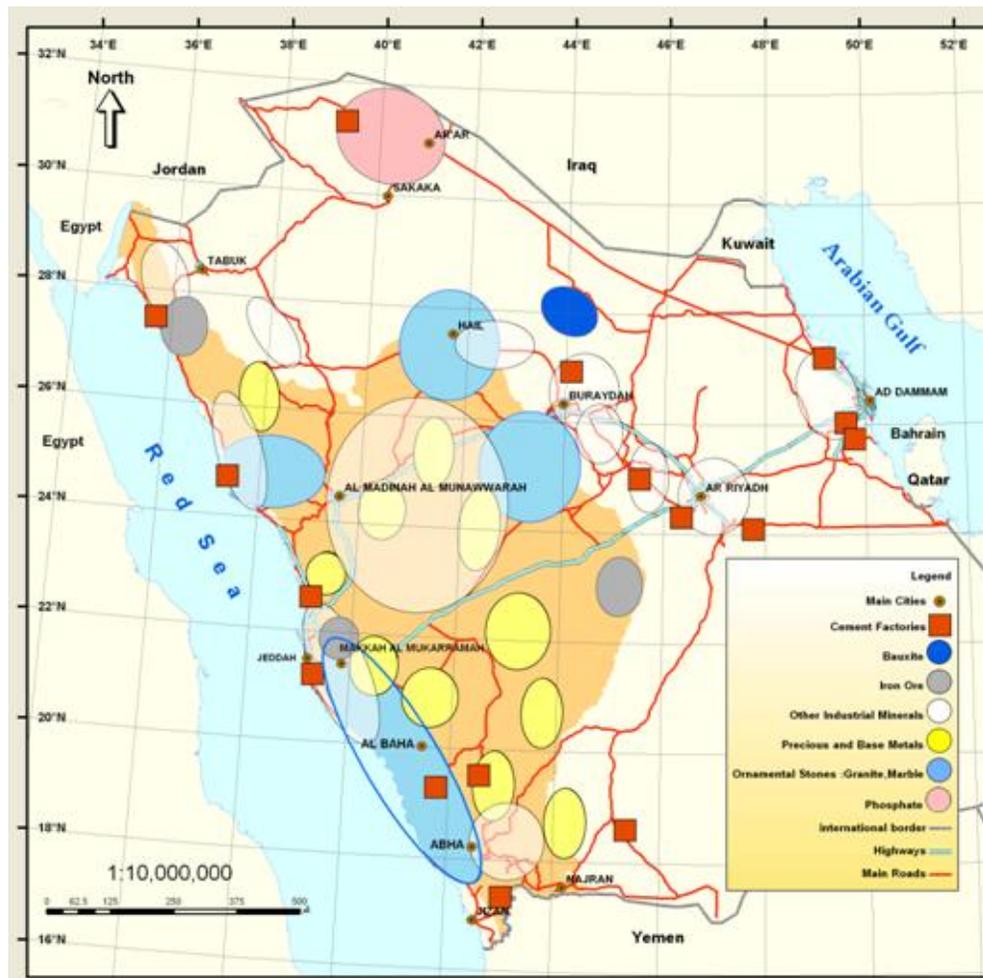
* Up to the end of the fourth year of the Eighth Development Plan.

Source: Ministry of Petroleum and Mineral Resources.

27.2.6 Mineral Resources Sector and Balanced Development

Given the direct link between mining activities and raw mineral sites and the size and type variation of these sites, the goal is to achieve a comprehensive and regionally balanced development of mineral resources, by giving priority to the less developed regions in the various activities of mining, exploration, and preliminary feasibility studies, as well as by providing the infrastructure essential to development of mineral raw materials (Figure 27.3).

Figure 27.3
Distribution of Mineral Sites in the Kingdom



Source: Ministry of Petroleum and Mineral Resources.

27.2.7 Institutional and Organizational Development

Since the early stages of the Eighth Development Plan, measures have been taken to develop the administrative structures of the mineral resources sector. The Saudi Geological Survey (SGS) was established in 1999 by Council of Ministers Resolution No. 115, as an independent body linked to the Ministry of Petroleum and Mineral Resources. The Survey is responsible for conducting geological research and geochemical, geophysical, hydrogeological surveys, in addition to reconnaissance and exploration of mineral resources, and provision of information, data and services to all public and private institutions.

Mining activities are subject to monitoring and inspection by the Mineral Resources Deputy Ministry of the Ministry of Petroleum and Mineral Resources (DMMR), which is a government agency responsible for enforcement of the Mining Investment Code. The Deputy Ministry incorporates an independent administration responsible for granting licenses and registration of all mining activity. A specialist centre was established by the Deputy Ministry to provide information to investor, as was a website providing e-services.

27.3 ISSUES AND CHALLENGES

27.3.1 Diversification of the Mineral Resources Production Base

In spite of fundamental achievements, the mining sector continues to have great untapped potential. This calls for intensification of efforts to maximize exploitation of discovered mineral deposits and promote appropriate regulatory frameworks in order to attract investment into this promising sector, thereby increasing its contribution to GDP.

Enhancing mining managerial capacities and skills would effectively contribute to achieving optimal investment in the potential of the sector. The geographical expanse of the Kingdom and the diversity of its geological structures gave it the advantage of having numerous minerals. Utilizing this potential and advantages requires raising

awareness of mining investment opportunities by both the public and the private sectors. Investment in this sector could play a significant role in diversifying the domestic production base, substituting imported with local minerals, and enhancing the position of the Kingdom in the mining products export market.

27.3.2 Land Use Conflicts

Geographical location is an important factor of mining activity, since mining activities are closely linked to sites of mineral deposits. However, mineral deposit sites may also be utilised by conflicting activities, such as agriculture, tourism or construction. Hence, efforts need to be intensified to set and enforce provisions, procedures and rules governing optimal use of sites.

27.3.3 Infrastructure at Sites of Mineral Formations

Page
538

Lack and low standards of essential infrastructure such as transport and electricity and water, have been major constraints on investment in remote and pristine promising mining sites. Hence, it is imperative to enhance coordination among relevant agencies, such as the Deputy Ministry for Mineral Resources of the Ministry of Petroleum and Mineral Resources, the Saudi Geological Survey, the Ministry of Water and Electricity, the Ministry of Transport, and others.

27.3.4 Environmental and Social Aspects of Mining Investment

It is very important that regulations and procedures take into account environmental and social impacts of mining activities and rehabilitation of the environment in and surrounding mining sites after termination of activities. Existing regulations ought to be in line with International standards and practices. This calls for intensifying environmental measurement and inspection and field monitoring of mining sites; with emphasis on controlling and treating pollutants resulting from activities, and encouraging the use of environmentally friendly technologies during exploration, production and manufacturing.

27.3.5 Integration between Production Sectors and Mineral Resources Sector

Production of final or intermediate goods needed by local and international markets relies on mining products, in the form of both raw and processed materials. During the early stages of the development process, the efforts of the Kingdom were focussed on substitution of raw-material imports with local products. However, the long-term goal is to achieve integration between mining processes and the various activities of national industry, in order to produce high value-added goods and products. Despite the progress made, diversification of the production base, which is one of the most important priorities of development plans, require further efforts to increase and deepen integration between various production sectors and the promising mining sector.

Accomplishing this objective requires an inventory of imported mining products and examining opportunities for and constraints on replacing them with national substitutes, using available geological studies and surveys. This would provide rewarding investment opportunities and stimulate private-sector investment. There is also a need for conducting studies for transfer of appropriate mineral processing techniques to the Kingdom, as well as for equipping the laboratories necessary for industrial applications.

27.4 DEMAND FORECASTS

World prices of mining products fell sharply since the beginning of the second half of 2008, as a result of the negative impact on global demand of the global financial and economic crisis. Despite the vigorous efforts made internationally to contain the crisis, the economic outlook points to a slower global GDP growth rate of only about 0.8% in 2009. The crisis and its repercussions have led major global mining companies to move towards reducing capital investments, while some were forced to declare bankruptcy or merge with more powerful players.

In the short and medium terms, this may lead to a gap in global production of mining products that will persist until the capacity surplus generated by investments made in the previous period is absorbed. Given that the period of adjustment may range between five and ten years, international prices of mining products are expected to be volatile over the short and medium terms, but will then bounce back with the recovery of the global economy.

Locally, the mining industry still relies heavily on domestic investment. Hence, the negative effects of the global crisis on the domestic demand for mineral resources are expected to be very limited, especially since 97% of total local mining products go into local building and construction activities, while specialised industrial minerals linked with building and construction sectors both locally and internationally account for only 2%, and the remaining 1% is linked to precious metals industries, such as gold and silver, in local and global markets.

Page
540

All in all, since the mining industry relies on domestic demand, based primarily on the requirements of projects underway, as well as new projects that will be implemented under the Ninth Development Plan, it is not, at this stage, directly affected by most of the negative fluctuations on the world stage. It is certain that the domestic market will experience strong demand for local raw mineral products, which are expected to grow under the Ninth Development Plan at an average annual rate of 5.7%, that is from 344 million tonnes in 2009 to 453 million tonnes in 2014 (Table 27.3).

Exploitation of bauxite raw material in Zubairah for the production of Aluminium, and the exploitation of phosphate in Al Jalamid for the manufacturing of Aluminium Biphosphate, the most common phosphate fertilizer in the world, is envisaged during the Ninth Development Plan, while the average annual growth rate of precious metals production is expected to be 9.9%.

Table 27.3
Demand for Mining Products
Ninth Development Plan

Description	2009	2010	2011	2012	2013	2014	Average Annual Growth Rate under Plan (%)
Iron and Iron Ore Minerals							
Quantity (million tonnes)	0.0	0.0	0.0	1.0	2.0	2.0	-
Precious Metals							
Gold - raw (million tonnes)	5.0	5.0	6.0	7.0	7.5	8.0	9.9
Gold - metal (tonnes)	5.0	5.0	6.0	7.0	7.5	8.0	9.9
Silver (tonnes)	10.0	10.0	12.0	14.0	15.0	16.0	9.9
Metallic Minerals							
Lead (tonnes)	150.0	150.0	200.0	200.0	200.0	200.0	5.9
Zinc (thousand tonnes)	1.7	1.7	1.7	1.7	1.7	1.7	0.0
Industrial Minerals							
Building materials (million tonnes)	287.0	301.0	316.0	332.0	348.0	366.0	5.0
Cement raw materials (million tonnes)	44.7	48.6	52.5	53.9	55.5	57.1	5.0
Cement (million tonnes)	34.4	37.4	40.4	41.4	42.7	44.0	5.0
Clay (million tonnes)	4.3	4.5	4.7	5.0	5.2	5.5	5.0
Gypsum (million tonnes)	2.4	2.5	2.7	2.8	2.9	3.1	5.3
Salt (million tonnes)	1.7	1.7	1.8	1.9	2.0	2.1	4.3
Ornamental stones (million tonnes)	1.2	1.3	1.3	1.4	1.5	1.5	4.6
Other industrial minerals (million tonnes)	1.7	1.7	1.8	1.9	2.0	2.1	4.3
Phosphate -raw (million tonnes)	0.0	2.3	5.5	11.2	11.2	12.3	-
Aluminium Biphosphate (million tonnes)	0.0	0.9	2.2	4.5	4.5	4.9	-
Raw materials utilized							
Quantity (million tonnes)	344.0	362.0	385.0	407.0	433.0	453.0	5.7

Source: Ministry of Petroleum and Mineral Resources.

27.5 DEVELOPMENT STRATEGY

27.5.1 Future Vision

An active, advanced mining sector that uses the latest technologies in exploitation of mineral resources; provides a secure and attractive

environment for local and foreign investors; is efficient and transparent; has the ability to integrate with national industries to cover domestic demand and export the surplus, thereby increasing the value added of the wealth of the Kingdom; diversifies the economic base, substituting local for imported raw minerals and complementary products; and create job opportunities for citizens.

27.5.2 Objectives

- Developing plans and projects and exploiting mineral resources.
- Diversifying mining activities and expanding their base.
- Enhancing the value added of local mining products.

27.5.3 Policies

- Increasing investment opportunities in exploring and manufacturing mineral wealth and providing all possible incentives and support for such activities.
- Providing a safe, attractive, efficient and transparent investment environment.
- Developing the capacity of national manpower, to play a positive role in mining activities and take advantage of the opportunities offered by them.
- Preparing and providing geological and economic studies and databases, and making them available to all concerned in both the public and the private sectors.
- Providing protection to the most promising mining areas, and monitoring them regularly.
- Incentivising national and foreign investors to set up mining projects, especially those closely related to existing projects in other productive sectors.
- Substituting imported raw materials and complementary mining products with local alternatives.
- Raising standards and quality of performance in governmental agencies concerned with the development of the sector.

- Developing databases and technical information related to investment in mineral resources.
- Supporting scientific research activities associated with mineral resources, in cooperation and coordination with the concerned authorities, and urging investors to use modern mining techniques in processing and manufacturing, especially techniques that meet environmental standards.

27.5.4 Targets

- The mineral resources sector achieving an average annual growth rate of 9.2%.
- Raising the revenue of the sector to about four times the current revenue.
- Establishing four regional offices for licensing and control and for serving investors.
- Delineating licenses' sites, mining complexes, and existing and targeted mineral-reserve areas at a rate of one site per year.
- Completing the railway lines for transport of key mineral ores.
- Allocating sites for mineral manufacturing industries in the cities of Jubail and Yanbu, King Abdullah Economic City, and other major industrial and economic cities.

27.6 FINANCIAL REQUIREMENTS

Under the Ninth Development Plan, the financial allocations for government agencies in the mining sector (DMMR and SGS) amount to SR1.48 billion.

Page
544