THE MINERAL INDUSTRY OF

MAURITANIA

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Iron ore mining and beneficiation dominated the mineral industry in Mauritania and accounted for more than 11% of the gross national product and about 40% of export revenues. Cement, gypsum, plaster, and salt also were produced. The nation's sole petroleum refinery, operating on imported crude oil, supplied most of the country's petroleum product requirements. Exploration programs accelerated during 1998. Principal activities focused on diamond exploration in the north; gold exploration in the Tassiast, Tijirit, and Inchiri regions, as well as along the Mali border in the south; and offshore oil exploration.

The Direction des Mines et de la Geologie implements Government policies for developing the mining sector, as well as supervises the semipublic mining companies. Government equity participation in these companies ranges from 40% to 77%.

Mining interests are protected under the Investments Code (1989), the Mining Code of 1977 (updated in 1988 and 1998), and the Petroleum Code (1988). The legal framework is largely based on French law and regulations. The investment and mining codes were updated in 1998, creating favorable incentives for foreign investments throughout all stages of project development. Incentives included custom duty and tax exemption on the import of minerals (including fuel), equipment, and goods to be used in mining and exploration.

Production of the nation's foremost mineral commodity, iron ore, was, for the most part, derived from the M'Haoudat Mine, which provided direct shipping ores averaging 65% iron content. (See table 1.) Salt was recovered from coastal areas near Nouakchott. Production, however, did not meet the heavy requirements of the fish-processing industry.

In 1998, Mauritania exported 11.4 million metric tons (Mt) of iron ore. Nearly one-third of the total was delivered to Italy and a slightly lesser amount to France. The remainder was delivered to Belgium, Germany, and the United Kingdom. Mineral imports include about 7 million barrels of crude oil from Algeria, and from diverse sources, about 125,000 metric tons per year (t/yr) of aluminum and copper semimanufactures, 3,000 t/yr of sulfuric acid, 2,000 t/yr of phosphate fertilizer, and about 12,000 t/yr of salt.

General Gold Resources N.L. of Australia, in partnership with Société Arab des Mines de l'Inchiri, have formed the Guelb Moghrein Mines d'Akjout to develop the Guelb Moghrein gold- cobalt-copper deposit with a minable reserve of 21.7 Mt averaging 1.81% copper, 1.44 grams per ton (g/t) gold, and 0.016% cobalt at a copper equivalent cut-off grade of 1.16%. Reserves should support a 14-year mine life at a planned processing rate of 1.5 million metric tons per year (Mt/yr) of sulfide ore and 242,000 t/yr of oxide ore according to Kilborn SNC-Lavalin of Canada (General Gold Resources N.L., 1997). Investors are being sought for the $181 million development program.

Iron ore mining operations were conducted by Société Nationale Industrielle et Minière (SNIM) in the Tiris province in northern Mauritania. More than one-half of the nation's iron ore production is derived from the M'Haoudat deposit, 60 kilometers (km) northeast of Zouirat. In 1998, SNIM invested $72 million on expansion, nearly double the previous year's investment level. Expansion plans include the construction of an iron ore pelletizing plant to satisfy demands of direct-reduction plants in North Africa. The plant's capacity was planned at 4 Mt/yr of iron ore pellets upgraded to a 68% iron content from an average of 36% iron content. The project involves mining and beneficiation at Ayouj, 30 km north of F'Derik and 650 km from the port of Nouadhibou. The Alexandria National Iron & Steel Co. and the Holding Co. for Metallurgical Industries, both of Egypt, along with Enterprise Nationale de Siderurgie and Enterprise Nationale de Fer et de Phosphates, both of Algeria, have joined SNIM as partners in the project.

The Rex Diamond Mining Corp. of Canada is prominent in the nation's diamond exploration with three permits covering a total of 71,700 square kilometers in the core of the Archaean Reguibat craton. Sampling began in late 1997 and was expected to be completed by April 1999. The first group of pyrope-rich depressions were underlain by an alluvial gravel layer that was 1 meter (m) thick, 1 km wide, and about 8 km long. During 1998, Rex mobilized a jig plant for testing the diamond content of the alluvial gravel (Mining Journal, 1999).

Mauritania's only petroleum refinery, Nouadhibou, was owned by the Société Mauritanienne d'Industrie de Raffinage and was operated under the technical management of Algeria's Nafta. The 20,000-barrel-per-day-capacity refinery, dependant upon imported crude oil, supplied most of Mauritania's petroleum product requirements.

Mauritania's proven iron ore reserves are 155 Mt of hematite ore ranging from 60% to 68% iron and 531 Mt of magnetite ore ranging from 36% to 40% iron. In addition to these proven reserves, probable iron ore reserves in the western Guelb amount to 980 Mt of low-grade ores. Reserves at the Guelb Moghrein copper mine from surface to 110-m depth are oxide, 1.7 Mt averaging 1.94% copper, 2.40 g/t gold, and 0.031%

[1]Deceased.

cobalt, and sulfide, 13.7 Mt averaging 1.81% copper, 1.62 g/t gold, and 0.025% cobalt. Indicated sulfide resources from 110 to 220 m depth at Guelb Moghrein are 10.7 Mt averaging 1.63% copper and 0.93 g/t gold; indicated oxide resources are 0.9 Mt averaging 0.82% copper, 1.54 g/t gold, and 0.016% cobalt (General Gold Resources N.L., 1997).

The nation's limited infrastructure, which renders all but the largest deposits uneconomic, remained a major barrier. There were four paved roads in Mauritania—from the port of Nouakchott to the copper deposits at Akjoujt in the north, from Nouakchott to Nema in the east, from Nouakchott to Rosso in the south, and from Boghe to Kaedi on the southern border. The sole railroad in Mauritania was owned and operated by SNIM for the transport of iron ore from the northern mines to the export terminal. The 1.425-m-standard-gauge railroad extends for 704 km from M'Haoudat to the port at Nouadhibou.

Until recently, most of the nation's known mineral occurrences have not been subjected to serious exploration. However, this situation is changing as a number of exploration permits—particularly for copper, diamonds, gold, and petroleum—have been granted during the past 2 years. The existing and planned mining operations suggest an improved outlook for the nation's economy; it is, however, largely dependent upon world copper, gold, and iron ore prices.

References Cited

General Gold Resources N.L., 1997, Quarterly report for the period ending 31 March 1997: West Perth, Western Australia, General Gold Resources N.L., 20 p.

Mining Journal, 1999, Mauritania: Mining Journal, v. 332, no. 8515, January 22, p. 79.

Major Sources of Information

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TABLE 1
MAURITANIA: PRODUCTION OF MINERAL COMMODITIES 1/

Commodity 2/		1994	1995	1996	1997	1998 e/
Cement e/	metric tons	374,000 3/	120,000	100,000 r/	80,000 r/	50,000
Gold	kilograms	1,738	1,196	189	--	--
Gypsum	metric tons	4,230	5,810	12,500	80,000 r/	100,000
Iron ore:						
Gross weight	thousand metric tons	11,400	11,610	11,360	11,700	11,400
Iron content e/	do.	7,000	7,000	7,000	7,000	7,000
Petroleum refinery products: e/						
Liquefied petroleum gas	thousand 42-gallon barrels	415	439	440	440	440
Gasoline	do.	1,925	1,962	1,925	1,925	1,925
Kerosene	do.	470	479	470	470	470
Distillate fuel oil	do.	1,100	1,100	1,100	1,100	1,100
Residual fuel oil	do.	2,355	2,458	2,450	2,450	2,450
Other	do.	640	700	700	700	700
Total	do.	6,905	7,138	7,085	7,085	7,085
Salt e/	tons	5,500	5,500	5,500	5,500	5,500

e/ Estimated. r/ Revised.

1/ Table includes data available through December 1, 1999.

2/ In addition to the commodities listed, modest quantities of crude construction materials (clays, sand and gravel, and stone) presumably were produced, but output was not reported quantitatively and available information was inadequate to make reliable estimates of output levels.

3/ Reported figure.