

## MAURITANIA

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**G**eologically, Mauritania includes four districts: the Regueibat Shield extending from northeast to southwest (Tasiast, Amsaga) is made of Archaean and Birrimian metamorphic formations and hosts the iron ore deposits, mined by Société Nationale Industrielle et Minière (SNIM); the Mauritanides Ridge, thoroughly folded and overthrust during the Hercynian orogeny, forms an arc running from north to south, immediately southwest of the Regueibat Shield; the Taoudeni Basin overlays the whole of the eastern part of the country and includes formations ranging from Infracambrian to Carboniferous; and the Atlantic Sedimentary Basin in the west, ranging from Mesozoic to Quaternary in age.

### **Iron ore investments**

As a mineral exporter, Mauritania is best known for the activities of its iron-ore producer SNIM. The company produces direct shipping ores from orebodies located in Kédia d'Idjil and in the M'Haoudat ridge, and iron concentrates from the Guelbs magnetite-bearing quartzites, which are upgraded by dry, low-intensity magnetic separation.

SNIM has been a well known participant within the global iron-ore trade circles for the past forty years. It is the main mining enterprise in Mauritania and the country's second-largest employer. Its production capacity is 12 Mt/y. In 2001 SNIM produced 10.1 Mt and exports went to France (31%), Italy (22%), Belgium (18%), Germany (11%), Spain (6%), UK (4%), Finland (2.6%), Pakistan (2.5%), Sweden (1.4%), Algeria and Tunisia (1.5%). The exports were down by 9% on 2000 as a result of poor market condition, especially during the second half year.

SNIM invests heavily each year to improve its production facilities and productivity: US\$60 million was committed in 2000 and US\$80

million in 2001. This year, SNIM's investments will amount to US\$90 million. The company will purchase 150 railway wagons, 800 bogies, eight locomotives, two large mining shovels (24 and 36 yd<sup>3</sup>), and 12 dumpers (200 t) by the end of year 2002. In addition to this, and as part of its programme to update its production equipment, SNIM is planning to build a spiral plant to upgrade the Guelbs oxide concentrates, install an ore handling and crushing plant for the TO 14 mine and modify the port crushing and screening plant.

The installations relating to the TO 14 mine and the port plants are to take place during the third quarter of 2002, and those for the Guelbs project by the end of 2003. These various projects at Zouerate as well as at the port of Nouadhibou are being financed by SNIM, the European Union (under Sysmin 2), the European Investment Bank, and the African Development Bank. They should enable SNIM to increase its production and sales capacity to over 13.5 Mt/y.

Between now and 2005, SNIM also plans to build a second ship-loading facility at Nouadhibou able to accommodate 180,000 dwt ore carriers. This new facility is expected to cost close to US\$50 million, and should be financed by the European Union (under Sysmin 3).

For several years now, SNIM has endeavoured to diversify its interests by the creation of affiliates with activities not directly related to iron-ore mining. The SNIM group now includes the following companies: ATTM (drainage, civil engineering, transport and maintenance); GMM (production and sale of dimension stone); COMECA (mechanical construction); SAFA Iron and Steel Co; SAMIA (gypsum and plaster producer); SAMMA (port handling and lighterage); and SOMASERT (services and tourism).

The only other development on the metals mining front concerns a new company GEMAK. This has been formed with a view to start producing in the near future at the Guelb Moghreïn copper-cobalt-gold deposit (Akjoujt), the upper part of which was mined during the 1970s. The required investment for this project is estimated at US\$180 million, and new investors are now sought.

### Exploration initiatives

Mauritania is a large country, with a favourable geological setting for economic minerals and the government has recently launched a programme to help promote mining foreign investments in Mauritania. This programme is sponsored by the World Bank (PRISM project), and by the European Union (Fed project: gold exploration in Northern Mauritania).

PRISM (Projet de Renforcement Institutionnel du Secteur Minier en Mauritanie) includes the geological mapping of northern Mauritania, at a scale of 1:500,000, and 1:200,000 for the most promising areas. Following an airborne magnetic and spectrometric survey, carried out in 2000 within the frame of the same project, BRGM of France was awarded the mapping programme. The South African Council for Geoscience was awarded the coordination of this project. The latter's cost is US\$16.5 million. The results are being made available to the public as soon as they are ready. At present, the geophysical data covering northern Mauritania are available in the form of a CD Rom, in the Geosoft format for each 1:200,000 sheet.

The Fed project, financed by the European Union, within the framework of the # 8 Fed ACP Au 005, concerns gold exploration in Ouassat and Sfariat, in northern Mauritania. The Office Mauritanien de Recherche Géologique (OMRG), with the assistance of International Mining Consultants and the British Geological Survey, is in charge of this project. The field work started in November, 2001.

For the past three years, the number of mining leases and exploration licences that

have been issued in Mauritania has risen dramatically to more than 90, and exploration investment has exceeded US\$40 million. Last year, the mining and exploration titles included: two mining concessions granted to SNIM (iron ore) and SAMIN/GGI (copper ore); three mining leases granted to SNIM (iron ore), SOMISEL (rock salt) and SIPIA (phosphate rock); 62 exploration licences for gold and base metals, granted to SNIM, SAMIN, GGI, Normandy la Source, BHP Minerals, General Gold, Lonart Pty Ltd, Brick Capital, Rex Mining, Luchosol, Emirates Wadi El Rawda Investments, and Groupement de Recherche de l'Inchiri (including OMRG, General Gold and Normandy La Source); 37 licences for diamond exploration granted to SNIM, De Beers, Ashton (Rio Tinto), Franjuan, Rex Diamond, Brick Capital, and Dia Met Minerals; three exploration licences for iron ore, granted to BHP Minerals and Burns Trading Co. Ltd of Australia; and one promotional zone for gold granted to OMRG.

Many gold occurrences have been located within the Regueibat Shield and the Mauritanides ridge. The most promising find is the Haouewa in Tasiast where Normandy La Source carried out an exploration programme in 1999-2000, which led to the discovery of a deposit with potential reserves of 1 Moz of gold.

Several international companies, along with SNIM, are now actively exploring for diamonds within the Regueibat Shield, and the Taoudeni Basin. Many indicator minerals, and even kimberlites, have been located.

Encouraging results for oil and gas exploration were reported last year by the Australian company, Woodside, which drilled two offshore exploration boreholes, one of which (Chinguetti 1) intersected a thick, high-quality oil pass. Other drill holes are scheduled. Also, the UK company Dana Petroleum plc, has carried out a 2-D and 3-D seismic survey that has identified several targets within its No.7 and No.8 offshore blocks.

Other known mineral resources of interest include: a phosphate rock deposit containing 130 Mt at an average grade of 20%  $P_2O_5$ , upgraded to 32%  $P_2O_5$ , located within the Eocene formations of the Atlantic Basin, near the Senegal river (Kaedi); many uranium occurrences located within superficial limestone formations and granitic

Regueibat formations; rare earth occurrences within the Bou Naga alkaline complex (exposed in a basement inlier in the Mauritanides); heavy mineral sands (ilmenite) occurrences along the Atlantic coast; and large reserves of salt in sabkhas near Nouakchott where there is small-scale artisanal production.