

ALGERIA

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Algeria is the second largest country in Africa with a surface area of 2.4 million km². The country has a population of 30 million people, most of whom occupy the very northern coastal region, the southern 85% of the country being covered by the Sahara Desert.

Since multi-party elections in 1999, the country has enjoyed a greater semblance of stability, accompanied by a lessening of internal strife in the more remote areas. An executive Presidency is underpinned by a bicameral legislature comprising the National People's Assembly and the (upper) Council of the Nation elected on universal franchise through a system of full proportional representation.

The country boasts one of the highest GDPs in Africa, based primarily on the production and export of petroleum and natural gas. However, during 2001 the GDP advanced by a below-forecast 2%. This was attributed by the country's Conseil National Economique et Social to a drop in world oil prices and a fall in production.

The downstream oil industry is well developed, with five refineries and a burgeoning petrochemicals industry centred primarily on Skikda, Arzew and Annaba. Algeria also has the world's largest known reserves of natural gas, estimated to be 3.200 billion m³. MEDGAZ, a project for a gas pipeline between Algeria and Spain, has been listed as a priority programme by the European Union.

In terms of non-fuel minerals, Algeria produces substantial quantities of iron ore, phosphate, pozzolana, other industrial minerals and marble, as well as mercury and minor base metals.

Since the 1999 elections, Algeria has made substantial efforts to attract inward investment for exploration and mining activities, and for

the establishment of support infrastructure for the extractive industries. The primary objective of the Ministry of Energy and Mines is to increase the importance of the role played by the mining sector within the national economy. As a key feature of this strategy, the Ministry incorporated two general principles that it considered central to the success of its plans. First, mobilisation of significant resources to conduct mineral exploration, particularly in partnership with foreign mining companies. Second, working with partners to exploit mineral resources that have been partially mined or left undeveloped. The Ministry signalled its intention to revise existing mining legislation and provide a more favourable foreign environment for investment in the mining and hydrocarbons industries.

As a sign of its more direct support for mineral (and hydrocarbon) exploration, in the past three years Algeria has achieved a total coverage of its territory in terms of aeromagnetic, geophysical, aerial photographic (1:50 000), topographic and cartographic surveys, as well as an inventory of the minerals. In addition, some US\$1 billion has been spent on exploration and development in recent years. Substantial reserves have been identified for a number of minerals, including iron ore (3,500 Mt), phosphate (1,600 Mt), lead/zinc (1.6 Mt of metal), mercury (37 000 t metal), gold (110 t metal), wolfram (2.4 Mt), barite (9.5 Mt), celestite (6 Mt) and marble (24 million m³). Many of these deposits are being promoted by the Ministry of Energy & Mines in the search for investment.

Late in 2001, the Algerian Government succeeded in securing an US\$18 million loan from the International Bank for Reconstruction and Development to help develop its mining industry. Algeria's new mining legislation, the French-language version of which was issued

in late November on the Mines Ministry's website, is reported to provide a wide range of tax sweeteners but international response has yet to be assessed.

The oil and gas sectors have dominated Algeria's natural resource industry. However, the government is making renewed efforts to attract investment in the poorly developed mining sector. Currently, all mining and exploration activities are controlled by the Holding of Public Mines which manages 32 mines, 26 quarries and eight processing plants, as well as several suppliers of goods and services to the mining industry.

Algeria's proximity to Europe, its low labour costs, excellent but untapped geological potential and its government's willingness to develop the mining industry, make the country a prospective target for the international mining community. The Algerian Resource agency, Office National de la Recherche Géologique et Minière (ORGM), has been made responsible for enhancing foreign investment in Algerian mining.

Algeria's major mineral deposits include the 3 Moz Tirek Amesmesa gold mine; the 2,400 Mt Djebel Onk phosphate mine; the 5,000 Mt Quenza and Bou Khrada iron-ore mines; plus several industrial mineral mines producing salt, bentonite and barite. There is limited diamond potential in the Reggane area, which has known alluvial deposits.

Production

Base metal production is not a major factor in Algeria's mineral production. In late 1999, Glencore International AG commenced negotiations with Metanof, Algeria's state-owned metals and mining company, with a view to securing involvement in the Ghazaouet zinc mine and processing plant in the far northwest of Algeria. Glencore sought an unspecified stake in the complex in return for upgrading the equipment. The complex is 25 years old, and its original 40,000 t/y capacity has been reduced in recent years to 31,000 t/y as a result of poor maintenance and

the unavailability of spare parts. The agreement reportedly has now been signed.

The Oued Amizour lead-zinc deposit in the northwest of Algeria has estimated inferred resources of 30.2 Mt at 1.4% Pb and 5.5% Zn. The deposit is located 10 km from the port city of Bejaia on the Mediterranean coast east of the capital city of Algiers. The Algerian Government has issued a fresh international tender for the development of the property, relinquished by Breakwater Resources Ltd during the early part of the year. Bids were to be accepted until January 30, 2002, and the contract is scheduled to be awarded on June 12, 2002. Breakwater withdrew because its management considered that changes to Algeria's mining law this year rendered the project uneconomic.

An increase in phosphate production at the Djebel Onk phosphate mine from 2.5 Mt/y to 4.5 Mt/y and the production of 1 Mt/y of phosphoric acid, together with ammonia, were the subject of feasibility studies initiated early

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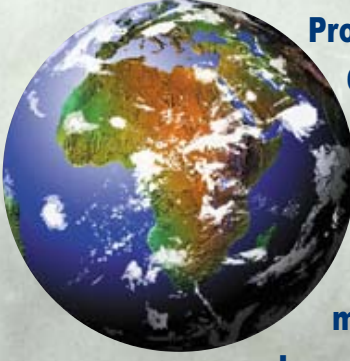
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in 1999 as part of a proposed joint venture between the Algerian Government and Spanish fertiliser producer Fertiberia SL. Reserves at Djebel Onk are in the order of 2 400 Mt averaging 24% P_2O_5 and the infrastructure is reportedly good. The mine is located 300 km south of Annaba.

In addition to existing salt production, investment in three further projects in the north of the country is being sought: El Meghaier, El Outaya and Arbal, contain reserves of 1,500 Mt and potential of 2,000 Mt. Partners are sought to extend the capacity up to 1 Mt/y.

The bulk of the country's iron-ore is extracted from the Ouenza and Bou Khadra mines near the Mediterranean coast of northern Algeria. The main haematite-rich orebody at Ouenza is reported to be 2 km long and 500 m wide. Production of hot briquetted iron is foreseen at Ouenza and Bou Khadra, and also at Gara Djebilet and Mecheri Abdelaziz in the west. Reserves in these two areas already total some 3,500 Mt. Ouenza and Bou Khadra have been estimated to contain about 5,000 Mt of high-grade haematite.

Exploration

A number of gold prospects have been identified in the Hoggar region of southern Algeria by ORGM (National Bureau of Mining and Geological Research) and the parastatal company Enterprise D'Exploitation des Mines D'or (ENOR). They are now the focus of attention by foreign companies. Mostly hosted by major northerly trending structures in the Pan-African terrane of Hoggar, these deposits appear to have significant potential.

The main focus is on the development of the Tirek and Amessmessa gold deposits located close to the border with Mali in southwest Algeria. At Amessmessa, gold resources have been estimated at 70 t gold averaging 14 g/t Au. The Algerian Government is actively seeking partners to develop a mine that is expected to produce close on 100,000 oz/y by 2004. The mine was the subject of a feasibility study during the year.

At Tirek, 20 t of gold have been identified at an average grade of 17 g/t Au. The Tirek mine is owned by ENOR. Mining of the deposit (consisting of a series of high-grade quartz veins) officially commenced in January 2002 using open-pit methods. Development costs were US\$9 million, with the plant being designed and constructed by the South African company MDM. Early production was about 65 kg gold per month.

At the Tiririne-Harane gold project, located near the Niger border 500 km south-east of the town of Tamanrasset, probable and possible resources are estimated at 8.2 t gold at a grade of 17.0 g/t Au. The various deposits comprise vein swarms hosted by metasediments. Also located in the Hoggar area, and some 300 km southwest of Tiririne, is the In Abegui goldfield, where stockworks and quartz-vein mineralisation occupy ten discrete zones. The project covers 20 km², and exploration has consisted of 7,800 m of drilling, some 220 m of pitting, about 6,300 m³ of trenching and 570 m of underground development. The probable and possible resources at In Abegui total 566,000 t averaging 6.02 g/t Au.

The relatively minor base metals production in Algeria does not reflect the potential for future mining. The Oued Amizour lead-zinc deposit comprises brecciated, stockwork, and minor massive sulphides in felsic volcanic rocks of mid-Miocene age. The total resource is 30 Mt averaging 5.74% Zn and 1.39% Pb over an average thickness of 98 m and a central core zone is estimated at 10.89% Zn and 3.04% Pb over an average thickness of 50 m.

Elsewhere in the country the authorities have indicated potential for the discovery of manganese and copper (Ougarta district), copper, molybdenum and gold in the Reguibat district, and also tin, tungsten, uranium and diamonds. At the end of 1999, De Beers reportedly expressed interest in the potential for diamondiferous kimberlites in the Saharan region of the country.