

# TUNISIA

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Production and processing of crude oil, mining of phosphate rock, and the manufacturing of phosphate-based fertilizer products were significant segments of the Tunisian minerals industry.

The minerals sector accounted for about 4% of the gross domestic product (GDP) of the country's diversified economy. In 2001, the Tunisian minerals industry was adversely affected by the downturn in the international prices of crude oil, petroleum products, phosphate rock, and zinc and the resumption of the decline (which had originally begun in 1993) in the local production of crude oil.

The nominal GDP of this North African nation was estimated to have been more than \$20 billion<sup>1</sup> in 2001 compared with \$19.6 billion in 2000. Hydrocarbon production and processing accounted for about 2.9% of the GDP compared with 3% in 2000, and mining declined to about 0.8% compared with 0.9% in 2000 (Central Bank of Tunisia, 2002, p. 43, 58).

In 2001, the value of total Tunisian exports jumped to about \$6.6 billion compared with \$5.9 billion in 2000. Most of the increase was associated with textiles (\$621 million). The value of exports of cement, phosphate-based fertilizers, phosphate rock, zinc, and other minerals was estimated to be about \$595 million. For 2001, the total value of imports was estimated to be \$9.6 billion. Imports of minerals and mineral-based products were valued at about \$379 million. For the second year in a row, Tunisia was a net importer of crude oil and petroleum products. Crude oil and petroleum products exports were valued at about \$613 million in 2001, and imports of mineral fuels, at about \$890 million (Central Bank of Tunisia, 2002, p. 111, 114, 118, 121).

## Commodity Review

### Metals

**Iron and Steel.**—Iron ore production rebounded in 2001. Société du Djebel Djerissa produced about 70% of its iron ore output from the underground Djerissa Mine and about 30% from the open pit Tamera-Douaria operation.

A five-stand continuous finishing mill was commissioned at the Intermetal S.A. steel bar and section mill in Tunis. Danieli Morgårdshammar S.A. continued with its upgrade of the Intermetal works and began the acquisition and installation of a new continuous roughing/intermediate mill. The renovation of Intermetal's 300,000-metric-ton-per-year (t/yr)-capacity facility was scheduled to be completed in early 2002 (Danieli Morgårdshammar S.A., 2001).

<sup>1</sup>Where necessary, values have been converted from Tunisian dinars (TD) to U.S. dollars (US\$) at an average rate of TD1.43=US\$1.00 for 2001 and of TD1.36=US\$1.00 for 2000.

**Lead and Zinc.**—Breakwater Tunisia S.A. operated the underground Bougrine lead-zinc mine and a 1,200-metric-ton-per-day (t/d)-capacity mill (Breakwater Resources Ltd., 2002b, p. 41). Additional lead-zinc ore was mined at the Boujabeur Mine (at the rate of about 150 t/d) operated by Société Minière du Nord-Ouest and the Fej Lahdoum Mine at Nar d'Hal (at about 100 t/d) (Consolidated Global Minerals Ltd., 2001a, p. 16). In October, Consolidated Global Minerals Ltd. of Canada announced that it had acquired an option from the Government to operate the Boujabeur and the Fej Lahdoum Mines for 3 years (Consolidated Global Minerals Ltd., 2001b).

During 2001, Breakwater milled 411,052 metric tons (t) of ore to produce 69,724 t of zinc concentrates that contained 37,832 t of zinc and 9,869 t of lead concentrates that contained 6,424 t of lead (Breakwater Resources Ltd., 2002a, p. 11). Breakwater continued exploration in the vicinity of the mine. Its Kebbouch-Sud exploration permit was renewed until February 2004. As of November 2001, Bougrine had proven and probable reserves of 1.68 million metric tons (Mt) of ore at a grade of 10.94% zinc and 2.1% lead (Breakwater Resources Ltd., 2002b, p. 38-44). Continuing to mine at the rate of at least 400,000 t/yr of ore would exhaust the mine's proven and probable reserves by 2005.

In 2001, Aurora Metals Ltd. of the British Virgin Islands mapped, ran geochemical evaluations of, and began a drilling program on the Hammala, the Koudiat ed Diss, and the Koudiat Sidi Amor permits. Consolidated Global Minerals began geologic studies of the Djebba prospect, the four exploration permits of the Fej Lahdoum-Ain Jemmala zinc-lead project, the Koudiat El Louatia property, and the Ouled Moussa permit. International Bravo Resource Corp. of Canada withdrew from a joint venture on the Djebba property with Consolidated Global Minerals, citing low zinc prices.

### Industrial Minerals

**Cement.**—Société des Ciments d'Enfida (a subsidiary of Corporación Uniland, S.A., of Spain) proposed a two-phase, 26-month program that would double its capacity to 2 million metric tons per year. Polysius S.A. (a subsidiary of ThyssenKrupp AG) was awarded the \$57 million contract for the expansion program (Middle East Economic Digest, 2001).

**Phosphate.**—In 2001, open pit mining accounted for about 91% of the 11.5 Mt of crude phosphate rock that Compagnie des Phosphates de Gafsa (CPG) mined primarily from the Kef Eschfair Mine (which accounted for 31% of total ore volume), the Kef Eddour Mine (29%), and the Jallabia Mine (18%). The slight increase in export and local demand was met by the company's production of about 8.1 Mt of washed phosphate rock. CPG's stockpile of marketable phosphates remained at

about 2.7 Mt (Central Bank of Tunisia, 2002, p. 59-60).

### **Mineral Fuels**

The Hydrocarbon Code (law No. 99-93 of August 17, 1999) regulated oil and gas exploration and production in Tunisia. In 2001, production of natural gas, which was primarily from the offshore Miskar Field, was reported to have increased to 2,254 million cubic meters (Central Bank of Tunisia, 2002, p. 63). British Gas Tunisia Ltd., which operated the Miskar Field, acquired a three-dimensional seismic survey on the Amilcar permit and proposed to drill three more development wells in the Miskar Field and an additional exploration well on the offshore Hasdrubal prospect. British Gas planned to begin production from Hasdrubal in 2006.

Crude oil production from the major Tunisian oilfields continued to decline. Production from the El Borma Field dropped by 8.1% compared with that of 2000, and that from the offshore Ashtart Field, by 7.9%. In 2001, four exploration wells were drilled including the Douz No. 1 on the Bazma permit of Pioneer Natural Resources Corp. and Eurogas Corp. No new discoveries were made.

In 2001, Pioneer acquired 30% interest in the Anaguid permit from the bankrupt Coho Anaguid, Inc. Coho Energy, Inc.'s other Tunisian subsidiary (Coho International Ltd.) divested its interest in the Fejaj permit to the other partners on the permit. Fejaj Joint Venture Group proposed to deepen the Chott Fejaj No. 2 exploration well in 2002. Eurogas and Pioneer acquired seismic surveys on the El Hamra and the Jorf permits and proposed to drill an exploration well on the Jorf permit in 2002. Anschutz Overseas Corp. acquired a reconnaissance permit on the Chobane block.

Centurion Energy International Inc.'s local subsidiary's unsuccessful horizontal sidetrack of the Al Manzah No. 3 well was converted to a water-injection well to maintain reservoir pressure in the Bou Dabbous Formation. Centurion's Al Manzah No. 2 oilwell in the Bou Dabbous had been shut down earlier in 2001 because the increasing gas to oil ratio indicated that it was beginning to produce the structure's gas cap. Société

d'Electricité d'El Bibane (a joint venture of Centurion and Caterpillar Power Ventures International Inc.) was building a 27-megawatt powerplant at Zarzis. Natural gas from the El Biban and the Ezzaouia Fields that previously had been flared will fuel the powerplant (Oil & Gas Journal, 2002).

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### **Major Sources of Information**

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TABLE 1  
TUNISIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity 2/	1997	1998	1999	2000	2001 p/
METALS					
Iron and steel:					
Iron ore:					
Direct shipping ore and concentrate, gross weight	252	220	219	182	204
Fe content	137	119	119	98	109 e/
Metal:					
Pig iron	152	123	180	196	192
Steel, crude	195	171	229	237	239
Lead, mine output, Pb content metric tons	1,424	4,272	6,589	6,602	6,820 e/
Silver metal, primary e/ kilograms	300	2,500	4,000	3,700	3,650
Zinc:					
Concentrate, gross weight metric tons	5,389	57,036	89,213	74,996	73,000
Zn content do.	2,967	31,368	49,066	41,247	40,000 e/
INDUSTRIAL MINERALS					
Barite do.	12,841	8,011	530	3,702	4,000
Cement, hydraulic 3/	4,424	4,588	4,864	5,657 r/	5,721
Clays, for construction and clay products	3,280	3,478	3,670	3,870	4,260
Fertilizers:					
Triple-superphosphate	748	767	812	805	783
Phosphoric acid	984	1,184	1,208	1,043	1,144
Diammonium-phosphate	745	919	1,048	1,113	1,124
Ammonium nitrate	165	156	172	182	170
Fluorspar, acid grade metric tons	1,426	1,190	520	--	--
Gypsum e/ 4/	100	100	110 r/	125 r/	125
Lime	466	482	475	517 r/	467
Phosphate rock, washed:					
Gross weight	6,941	7,901	8,006	8,339	8,144
P <sub>2</sub> O <sub>5</sub> content e/	2,140	2,370	2,400	2,500	2,440
Salt, marine	393	473	447	620 r/	654
MINERAL FUELS AND RELATED MATERIALS					
Gas, natural:					
Gross million cubic meters	1,866	1,899	1,819	1,985 r/	2,254
Dry e/ do.	1,500	1,500	1,450	1,600 r/	1,800
Petroleum:					
Crude thousand 42-gallon barrels	26,841	30,570	30,960	28,207	26,300
Refinery products:					
Liquefied petroleum gas do.	1,353	1,473	1,288	1,279	1,180
Gasoline do.	3,179	2,951	3,096	3,301	3,460
Kerosene do.	827	978	1,194	1,216	1,560
Distillate fuel oil do.	4,842	4,178	3,812	4,010	3,480
Residual fuel oil do.	3,956	4,202	4,149	4,346	3,910
Other e/ do.	2,000	800	1,420	940	980
Total e/ do.	16,200	14,600	15,000	15,100	14,600

e/ Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. p/ Preliminary. r/ Revised. -- Zero.

1/ Data available as of September 12, 2002.

2/ In addition to the commodities listed, a variety of crude construction materials (sand and gravel and stone) was produced, but output was not reported, and available information was inadequate to make estimates of output.

3/ Includes white cement production, in thousand metric tons: 1997--155; 1998--167; 1999--192; 2000--250; and 2001--247.

4/ Does not include phosphatic gypsum (waste product) generated during fertilizer production.