

# CYPRUS

By Philip M. Mobbs

In 2000, the mineral industry of Cyprus<sup>1</sup> was dominated by the production of bentonite, cement, copper, and refined petroleum products. About 250 quarries produced aggregates, clay, gypsum, sand, and stone for local use and bentonite, gypsum, ocher, and umber for export. In 2000, copper exports were valued at about \$9.2 million<sup>2</sup> of total domestic exports of \$387 million. Fuel imports were about \$435 million of Cyprus' \$3.8 billion total imports. In 1999 (the last year for which national account data were available) Cyprus' gross domestic product was estimated to be \$9.2 billion, and the population was 666,800. The Turkish Cypriot population was estimated to be about 88,000 (Statistical Service of Cyprus, October 26, 2000, Population, accessed May 27, 2001, at URL [http://kypros.org/DSR/key\\_figures/population/index.htm](http://kypros.org/DSR/key_figures/population/index.htm); Statistical Service of Cyprus, February 13, 2001, National accounts, accessed May 27, 2001, at URL [http://kypros.org/DSR/key\\_figures/national/index.htm](http://kypros.org/DSR/key_figures/national/index.htm); Statistical Service of Cyprus, April 20, 2001, Foreign trade, accessed May 27, 2001, at URL [http://kypros.org/DSR/key\\_figures/foreign\\_trade/index.htm](http://kypros.org/DSR/key_figures/foreign_trade/index.htm)).

In antiquity, Cyprus was famous for its copper production; in the Middle Ages, the island was noted for its salt exports (Luke and Jardine, 1920, p. 126, 220, 230). In the early 20th century, chrysotile asbestos was the major mineral export (Bear, 1963, p. 127-130). Commercial asbestos mining ceased in 1988, although some production reportedly continued until 1995 (King, 1992, p. 10-11; Fide, 1997, p. 211). Copper exports from Cyprus resumed in the 20th century when Cyprus Mines Corp. of the United States initiated copper production operations at Mavrovouni in 1919 and at Skouriotissa in 1922 (Luke and Jardine, 1920, p. 220-223; Fide, 1997, p. 211). Except for a hiatus during World War II, copper was produced by several companies from a number of mines until 1974 when armed confrontation between Greek and Turkish Cypriot military forces suspended mining operations. Cyprus Mines, which was the major copper miner, terminated operations when its facilities and mines were bisected by the cease-fire demarcation line between Greek and Turkish forces (Shekarchi, 1977, p. 277). Other companies resumed copper production until 1979, when low copper prices resulted in the suspension of the last copper mining operation (Morse and Stevens, 1981, p. 287; Shekarchi, 1982, p. 276). Hellenic Mining Co. of Cyprus recovered copper cement from leached mine wastes at Skouriotissa from 1981 until 1993. Copper mining resumed at Skouriotissa in 1996 (Michalski, 1998). Other notable mineral production on Cyprus included chromite (1924-1982), gold and silver (1934-1944), and gypsum, mineral pigments (ocher, terra verte, and umber), and stone (through the ages).

<sup>1</sup>Unless specifically stated, all data in this chapter are for the Republic of Cyprus in southern Cyprus because data related to the Turkish-controlled areas of northern Cyprus are sparse or unavailable.

<sup>2</sup>Where necessary, values have been converted from Cypriot pounds to U.S. dollars at the rate of Cy£0.62=US\$1.00.

## Government Policies and Programs

The Mines Service of the Ministry of Agriculture, Natural Resources, and Environment administered mineral operations under the Mines and Quarries (Regulation) Law, chapter 270, 1959; the Mines and Quarries Regulations, 1958-79; and the Cyprus Standard and Control of Quality Law, 1975. Royalties on extracted mineral commodities ranged from 1% to 5%. The Ministry's Geological Survey Department was responsible for mineral exploration programs and the evaluation of the country's resources. The Environmental Service was responsible for coordinating the environmental efforts of the Government departments.

In preparation for the nation's anticipated joining the European Union (EU), the Government raised the value-added tax (VAT) to 10% in July 2000. By January 2003, the VAT was scheduled to reach 15% (Noah Haglund, Cyprus Mail, July 1, 2000, VAT goes up today, accessed May 27, 2001, at URL <http://www.cyprus-mail.com/July/1/news070101.htm>). To conform with EU Directive 68/414/EEC, the Government needed to site, build, and fill tanks with an additional 1.5 million barrels of crude oil (Office of the Chief Cyprus—European Union Negotiator, [undated], Overview of alignment with the Acquis Communautaire, accessed May 29, 2001, at URL [http://www.cyprus-eu.org.cy/eng/09\\_position\\_papers/chapter\\_14.htm](http://www.cyprus-eu.org.cy/eng/09_position_papers/chapter_14.htm)).

To conform with EU regulations and standards, the Government proposed a \$40 million program to upgrade the Cyprus Petroleum Refinery, Ltd., at Larnaca, which would increase the production of low-sulfur diesel fuel and unleaded gasoline (Anthony Miller, August 26, 2000, Larnaca protest plans in anger over refinery, accessed May 28, 2001, at URL <http://www.cyprus-mail.com/August/26/news08606.htm>). About 63% of gasoline sold in Cyprus was leaded (Menelaos Hadjicostis, April 20, 2001, Children in lead protest at ministry, accessed May 29, 2001, at URL <http://www.cyprusweekly.com.cy/archives/20Apr2001.htm>). National particulate emissions limits were reduced to 50 milligrams per cubic meter of discharged air effective January 1, 2001. Additionally, the Government anticipated limiting the Electricity Authority of Cyprus (EAC) to 66.6% of the electricity distribution market (Cyprus Mail, February 21, 2001, EAC to lose power monopoly by 2003, accessed May 28, 2001, at URL <http://www.cyprus-mail.com/February/28/news11.htm>).

## Commodity Review

**Copper and Gold.**—Hellenic Copper Mines Ltd. [a consortium whose members included Hellenic Mining, Mytilineos Holdings S.A. of Greece, and Oxiana Europe Ltd. of the Channel Islands (a subsidiary of Oxiana Resources NL of Australia)] operated the Skouriotissa copper mine. Development of the Phoenix pit at Skouriotissa continued. In 2000, the company mined 963,092 metric tons (t) of high-grade

copper ore (0.73% Cu) and 1.3 million metric tons of low-grade ore (0.33% Cu). Additional heap leach pads were added to the operation and the treatment plant was expanded. Copper cathode production increased to 5,197 t in 2000 compared with 5,004 t in 1999. Hellenic Copper Mines evaluated the Apliki, the Three Hills, and the West Apliki deposits and increased its estimate of low-grade resources in the Phoenix pit (Oxiana Resources NL, 2001, p. 8).

In 2000, Eastern Mediterranean Minerals (Cyprus) Ltd. (EMM) [a joint venture of the Hellenic Mining (50%) and Oxiana Europe (50%)] continued exploration for volcanogenic massive sulfide base metals and gold deposits on the Troodos Ophiolite Complex with drilling on the Alestos and the Red Hills Prospects. EMM proposed to evaluate the Klirou prospect and the Shia-New Shia-Mathiatist trend in 2001.

**Lead.**—Tests of school children living near the Marios & Andreas Foundry in Ergates near Nicosia resulted in finding abnormally high levels of lead and cadmium in their blood (Anthony Miller, Cyprus Mail, November 11, 2000, UK experts deliver damning report on foundry pollution, accessed May 28, 2001, at URL <http://www.cyprus-mail.com/November/11/index.htm>). The foundry was temporarily closed. Complaints lodged by the residents of Omonia about smells and smoke from the Nemitsas Foundry near Limassol resulted in the Government agreeing to similar testing of the residents of Omonia and Zakaki and the area around the foundry for heavy-metal contaminants. In 2000, Nemitsas completed a \$160,000 upgrade of its smokestack bag-house and filter system to conform with the 2001 particulate matter emissions standards.

**Natural Gas and Petroleum.**—In December, the Government began discussions with Egypt concerning the possibility of Egyptian natural gas reservoirs extending into the 200-nautical-mile Cypriot exclusive economic zone and the extension of the proposed Egypt-Lebanon natural gas export pipeline to Cyprus (Phillippos Stylianou, Cyprus Weekly, January 26, 2001, Local news—Cyprus braces for oil bonanza, accessed May 29, 2001, at URL <http://www.cyprusweekly.com.cy/archives/26Jan2001.htm>).

High crude oil prices resulted in the Government introducing an automatic price adjustment formula to replace the former system of the House of Representatives setting retail fuel prices. The Ministry of Commerce, Industry, and Tourism proposed to move the 28,500-barrel-per-day-capacity oil refinery at Larnaca to the former Vassiliko Chemical Industries site, about 15 kilometers east of Limassol (Athena Karsera, Cyprus Mail, December 8, 2000, Refinery deal could free Larnaca seafront by 2013, accessed May 28, 2001, at URL <http://www.cyprus-mail.com/December/8/news9.htm>).

**Salt.**—Commercial salt production was not expected to resume. Sections of the Larnaca salt lake had been converted into an unofficial long-term parking lot for the Larnaca International Airport (George Psyllides, August 24, 2000, Airport authorities ponder salt lake parking eyesore, accessed

May 28, 2001 at URL <http://www.cyprus-mail.com/August/news082404.htm>).

## Infrastructure

Mineral exports and imports transited through the ports of Larnaca, Limassol, and Vassiliko or the petroleum products terminals at Dhekelia, Larnaca, and Moni.

The EAC had an installed electricity generating capacity of 987.5 megawatts (MW). This included the 360-MW Dhekelia “B” generating station, which was powered by fuel oil; the 330-MW Moni powerplant, which burned diesel and fuel oils; and a 37.5-MW unit at Vassiliko. In December 2000, EAC added fuel-oil-fired units with an electricity generating capacity of 260-MW to the Vassiliko powerplant (Elias Hazou, Cyprus Mail, December 2, 2000, Greens protest new power station, accessed May 28, 2001, at URL <http://www.cyprus-mail.com/December/2/news5.htm>; Electricity Authority of Cyprus, [undated], Generation system, accessed May 11, 2001, at URL [http://www.eac.com.cy/English\\_Version/Generation\\_system\\_ENG.html](http://www.eac.com.cy/English_Version/Generation_system_ENG.html)).

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- , 1982, Cyprus, *in* Area reports—International: U.S. Bureau of Mines Minerals Yearbook 1980, v. III, p. 275-281.

## Major Sources of Information

### Statistical Service of Cyprus

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### Mines Service

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TABLE 1  
CYPRUS: PRODUCTION OF MINERAL COMMODITIES 1/ 2/ 3/

(Thousand metric tons unless otherwise specified)

Commodity	1996	1997	1998	1999	2000
Cement, hydraulic	1,021 r/	910	1,207 r/	1,157 r/	1,398
Clays:					
Bentonite metric tons	70,927	98,700 r/	121,850 r/	138,853 r/	126,313
Other: e/					
For brick and tile manufacture	400	350	380	350 r/ 4/	350
For cement manufacture	350	340	370	360 r/ 4/	400
Total	750	690	750	710	750
Copper, refined metric tons	1,499	4,435	4,936 r/	5,004	5,197
Gypsum, crude 5/ do.	94,050 r/	234,300 r/	296,800 r/	181,546 r/	138,076
Lime, hydrated e/ do.	6,000	6,000	5,500	6,000 r/ 4/	6,800 4/
Petroleum refinery products:					
Liquefied petroleum gases 42-gallon barrels	306,159	367,047	344,068	392,776	345,286
Gasoline do.	807,433	1,199,327	1,207,575	1,262,901	1,288,584
Kerosene and jet fuel do.	157,298	195,368	211,817	237,744	285,090
Distillate fuel oil do.	2,773,270	3,579,420	3,648,425	3,982,872	4,048,893
Residual fuel oil do.	1,240,412	1,949,289	2,128,956	2,379,045	2,252,312
Bitumen do.	166,226	207,046	208,355	205,622	207,082
Other do.	22,359	2,092	20,116	21,796	16,032
Total do.	5,473,157 r/	7,499,589 r/	7,769,312 r/	8,482,756 r/	8,443,279
Stone, sand, gravel:					
Marble	21 r/	25 r/	7 r/	2 r/	2
Marl, for cement production e/	1,600	1,500	1,900	1,600 r/ 4/	1,800 4/
Sand and gravel 6/	7,290 r/	6,990 r/	8,400 r/	9,150 r/	9,570
Building stone	77 r/	28 r/	40 r/	63 r/	92
Umber metric tons	4,604	7,120 r/	6,056 r/	9,169 r/	12,258

e/ Estimated. r/ Revised.

1/ Table includes data available through May 31, 2001.

2/ Small quantities of the mineral pigments ocher and terra verte are mined intermittently. Mineral production data from the northern Turkish-occupied section of the country and production of secondary metals from scrap are not included in this table because available information is inadequate to make estimates of output.

3/ Sources: Statistical Service of Cyprus, Mines Service, company annual reports.

4/ Reported figure.

5/ About 4,000 metric tons per year of gypsum was calcined.

6/ Includes crushed aggregate and crushed limestone (Havara).