

## THE MINERAL INDUSTRY OF

# GREECE

By Staff<sup>1</sup>

The metals sector of Greek industry is a small but important part of the national economy. Bauxite is the most important of Greek metal deposits, but there are also some deposits of chromium, gold, iron, lead, nickel, and zinc. Aluminum is the only refined metal produced, other than steel, and therefore is of greatest importance in the domestically integrated metals sector since the steel is produced from mostly imported scrap. Most of the companies in Greece that deal in metals production, fabrication, or processing are fairly well established and weathered the recent global recession that affected so many companies in other nations.

The Greek industrial minerals sector is far more prominent in the national economy than is the metals sector. Products which are, or can be competitive internationally again, include asbestos, bentonite, common clays, magnesite, marble, perlite, and pumice, while bentonite, magnesite, perlite, and pumice also are very important export products.

### Government Policies and Programs

The Socialist Party that was returned to power in the elections of late 1993 had not proceeded with privatization plans formulated by the former Government. Rather, the party was expressing increasing opposition to the plans at yearend 1994, and there was growing political tension within the governing party. Some members of the governing Panhellenic Socialist Party were adamant on maintaining government control over industry. Even before the change in Government, privatization plans were in jeopardy because of legal obstacles, opposition by the labor unions, and a general fear and distrust of foreign investment.

### Production

Production of mineral commodities in Greece is closely tied to the export market. During 1994, low prices on the international market, increased availability of some materials from the former centrally controlled countries of eastern Europe, and high domestic energy costs had a dampening effect on many of the commodities produced in Greece. However, the easing of the global recession in 1994, coupled with increased demand for some raw materials in eastern Europe, such as bauxite, helped reverse some of the lower production seen during 1993.

### Trade

The U.S. Bureau of Mines has not received any detailed trade data for Greece in the recent past, but general information indicates that the other members of the European Union (EU) have continued to strengthen their positions as the principal destinations and sources of Greek mineral exports and imports. Typically, Greece exports slightly more than one-half of its steel production, about one-half of that going to other EU countries and the remainder going to the rest of the world. With regard to the semimanufacture sector of the steel industry, typically about 90% of crude steel imports by Greece originate in other members of the EU. Exports of semimanufactures to nonmembers of the EU are typically to the United States (about 45% of the non-EU total), other Europe (about 3%), and other countries (about 52%). Trade is an important aspect for survival of the Greek steel industry, as it is for other sectors of the minerals industry. There are only four steel producers in Greece, and their survival depends on the domestic construction industry and exports.

In 1994, the domestic construction industry remained in a slump owing to continued generally poor economic conditions, and exports of construction materials remained at about the same level as in recent years. However, extreme pressure was put on the industry because of cheaper steel materials entering the Greek market from the central and eastern European countries that have recently lost their steel-consuming markets. Even with the continuing plans for the restructuring of the EU steel industry, Greece, being on the periphery of the EU steel market, is thus far more vulnerable to a loss of export markets than other countries. Perlite is another example. The majority of Greek output of perlite is shipped to expanding plants in other EU member states, with some material going to the Middle East and North America. If those plants lose customers, then Greek perlite production will necessarily be curtailed.

### Environmental Issues

Environmental concerns are under the supervision of the Minister of Environment, Town Planning, and Public Works. Much of the environmental protection comes under the policies of the individual industrial concerns. For example, Silver & Barite Ores Mining Co. only mines kaolin at its operations on Milos Island during the winter to keep dust

levels down. The Government decision to import natural gas from Russia, and possibly Algeria, was based, in part, on the fact that it is so much cleaner to burn than the traditional lignite.

### Structure of the Mineral Industry

The major companies with major equity owners are shown in table 2.

### Commodity Review

#### *Metals*

**Alumina, Aluminum, and Bauxite.**—The construction of an alumina plant to be built northwest of Athens lagged far behind schedule in 1994 and no projected completion date has been given. Majority investment in the plant is to come from Russia, which also would hold 51% interest in the company, Hellenic Alumina Industry (Elva). Plans are for the plant to produce 700,000 metric tons per year (mt/a), all of which would be shipped to Russia.

**Gold.**—There was a great deal of interest in gold in Greece during 1994. One of the projects was a joint venture between Barytes Ores Mining Company SA of Greece and Renison Goldfields Consolidated Ltd. of Australia on the island of Milos. Systematic sampling of the Midas project has shown a multiple vein system covering an area of 600 meters (m) by 400 m with typical vein widths of 1 to 5 m.

Another joint project was between Greenwich Resources PLC of the United Kingdom and Newcrest Mining Ltd. of Australia at the Sappes, Vipe, and St. Demetrios prospects, near Alexandroupolis in northern Greece. Most of the exploration drilling has been at the St. Demetrios prospect, where mineralization is at or near the surface and has potential for open pit mining.

The third major gold interest during the year was at the Cassandra lead-zinc mines in northern Greece, near Thessaloniki. Late in the year, the Government decided to put the mines, which were then owned jointly by the National Bank and the Hellenic Industrial Development Bank S.A. (ETBA), up for sale. The assets had been uneconomical in recent years because of a lack of modernization and the inability of the owners to raise capital. The project has produced lead, zinc, and silver for more than 30 years, but the gold mineralization had not been tapped. The sale would entail the modernization of the existing mines, as well as construction of a metallurgical facility and the exploitation of the gold mineralization in the ground along with the gold contained in the stockpiled ore and the tailings from past operations. It was estimated that the operation could produce about 5 mt/a of gold initially, rising to 10 mt/a in the near future. Lead, zinc, and silver would continue to be produced at the mine, probably at current levels.

### *Industrial Minerals*

**Asbestos.**—After a period of being closed, the Zidani asbestos mine was reopened in 1993 under a 5-year lease (with an option for an additional 5 years) by Hellenic Mineral Mining Corp. Ltd., which subcontracted the mining operation to Arkoumanis. The product of the Zidani Mine is exported to other European countries, the Far East, the Middle East, Southeast Asia, and Brazil and has a steady market because its fibers are suitable for mixed applications, such as asbestos cement pipes and roofing applications, among others.

**Marble.**—The Greek marble industry continued to expand in 1994. Greece's marble industry plays a leading role in the international dimension stone market as a result of the marble's wide range of colors and suitability for a wide range of uses. Although restrictions have been placed on the siting of quarries with regard to populated areas, the industry has a large number of participants, consisting of large, well-staffed concerns to small family businesses that supply crude material to processing facilities. The facilities of the industry have evolved into three areas: the quarrying of marble blocks, the cutting of marble blocks, and the sales of the blocks and resulting products. Prior to a few years ago, all exports of marble from Greece were in the form of raw or unfinished products, but the industry has evolved into one that exports only about 20% in rough slab and block form, the remainder being sold as finished products fashioned to the customers' specifications. Greek marble is available in a variety of colors—white, semiwhite, graywhite, gray, ash, black, beige, brown, pink, red, green, and multicolored—and is produced in almost all areas of the country, from the north at the border with Bulgaria to the island of Crete.

### *Mineral Fuels*

Construction of a natural gas pipeline by Russians to bring gas from Russia through Bulgaria to Greece continued during 1994, but work on it was slow and the project fell further behind schedule. Initially, the gas supply was to begin in 1992 but, during 1994, was pushed back to at least the second half of 1996. The plan calls for two powerplants in Athens to be refitted to use the gas and two new gas-fired powerplants, one to be built in the suburbs of Athens and the other in the north of the country. Also planned are special gas storage facilities and an industrial infrastructure that would distribute gas to concerns using lignite. Plans now call for the supply of about 650 million cubic meters (Mcm<sup>3</sup>) in 1996 and at least double that amount in 1997 with eventual annual receipts of 4,000 Mcm<sup>3</sup>. The cost of the project has been given at \$1.5 billion, with the EU having agreed to fund 70% of the project. The Greek construction firm Copelouzos and Russia's Gazprom formed a joint venture named Prometheus Gas, which will construct the distribution system for the gas in Greece and will be the only importer of foreign gas other than the Government-owned Public Natural Gas Corporation

(DEPA).

Another joint Greek-Russian project announced late in 1994 was the construction of a 350-kilometer (km) pipeline to transport about 30 million mt/a of crude petroleum from the Bulgarian port of Burgas on the Black Sea to Alexandroupolis in northeastern Greece. Enthusiastic approval of the project was given by the Bulgarian Government. The project calls for a chain of tankers to ship the crude petroleum from the Russian port of Novorossysk on the Black Sea to Burgas for offloading at storage facilities. The oil would then be shipped by the pipeline to a tank farm with a capacity of 700,000 mt at Alexandroupolis. From there it is to be shipped via an undersea pipeline to a distribution facility moored several kilometers offshore. The pipeline would provide an alternate to the current route through the Bosphorus Straits for Russian oil entering the international market. The cost of the project has been estimated at about \$700 million and the EU was expected to provide major financing.

### **Reserves**

Mineral reserves in Greece are shown in table 3.

### **Outlook**

The outlook for the mining and minerals industry in Greece remained very uncertain at the end of 1994. The new Government initially indicated that all privatization plans would be canceled, but later said that some would be continued, although not specifying which ones. Many of the state-owned concerns remained deeply in debt and were being run in an outdated and inefficient manner. The privatization plans were apparently one of the principal reasons for the change in Government because a large majority of the public did not agree with the plans and feared takeovers by foreigners. The Government was still to decide if it would be willing and able to continue to support these inefficient operations, and if so, where to get the finances to continue to do so.

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<sup>1</sup>Text prepared Jun. 1995.

### **Major Sources of Information**

The Institute of Geology and Mineral Exploration (IGME)  
70 Messoghion Street  
608 Athens, Greece

Hellenic Export Promotion Organization (HEPO)

86-88 Marinou Antipa and Ag. Nikolaou  
163 46 Elioupoli-Athens, Greece  
Telephone: 9961900  
Fax: 9915655

Hellenic Industrial and Mining Investment Co. (HIMIC)

3 Korai Street  
105 64 Athens, Greece

Hellenic Industrial Development

Bank S.A. (ETBA)  
18 El Venizelou Street  
196 72 Athens, Greece

National Industrial Development  
Bank

14 Amalias Avenue  
192 36 Athens, Greece

Public Power Corp.

30 Halkopcondyli  
104 32 Athens, Greece

Bauxite Parnasse Mining Co.

21a Amerikis Street  
106 72 Athens, Greece  
Telephone: 3690111  
Fax: 3601169

Aluminium de Grece S.A.

1-3 Sekeri  
106 71 Athens, Greece  
Telephone: 3693000  
Fax: 3693115

Organization for Economic Cooperation and Development

2 rue André-Pascal  
75775 Paris, France  
Telephone: 45248200  
Fax: 45248176

### **Major Publications**

Hellenic Marble Directory.

Mineral Wealth, various issues, 1994.

The Financial Times, London, United Kingdom

Mining Journal, London, United Kingdom

Petroleum Economist, London, United Kingdom

Oil and Gas Journal, Tulsa, Oklahoma

Mining Magazine, London, United Kingdom

The New York Times, New York, New York

The Wall Street Journal, New York, New York

TABLE 1  
GREECE: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/ METALS	1990	1991	1992	1993	1994
<b>Aluminum:</b>					
Bauxite	2,500,000	2,130,000	2,040,000	2,020,000 t/	2,170,000
Alumina, Al <sub>2</sub> O <sub>3</sub> equivalent	587,000	625,000	612,000	510,000 t/	525,000 e/
<b>Metal:</b>					
Primary	150,000	152,000	153,000	148,000	138,000
Secondary	2,880	3,000 e/	3,000 e/	3,000 e/	3,000 e/
<b>Chromite:</b>					
Run-of-mine	177,000	113,000	5,000 t/ e/	3,500 t/ e/	5,000 e/
<b>Marketable products:</b>					
Direct-shipping ore	13,000	5,500	--	--	--
Concentrate	22,400	31,700	4,000 t/ e/	3,000 t/ e/	4,000 e/
<b>Iron and steel:</b>					
<b>Iron ore and concentrate, nickeliferous:</b>					
Fe content 4/	861,000	815,000	610,000 e/	575,000 e/	810,000 e/
<b>Metal:</b>					
<b>Ferrous:</b>					
Ferromanganese	30,300	10,500 e/	--	--	--
Ferronickel	60,500	64,000	65,000 t/ e/	45,000 e/	63,000 e/
Steel, crude	999,000	980,000	923,000	980,000 t/	848,000
<b>Lead: Mine output, Pb content by analysis</b>	26,200	31,700	28,300	26,400	22,800
<b>Manganese:</b>					
<b>Ore, crude:</b>					
Gross weight	14,000	13,500	11,000 e/	10,000 e/	10,000 e/
Mn content	4,500 e/	4,480 e/	3,500 e/	3,000 e/	3,000 e/
<b>Concentrate:</b>					
Gross weight	5,400	3,840	3,000 e/	2,500 e/	2,500 e/
Mn content	2,500 e/	1,880	1,450 e/	1,200 e/	1,200 e/
<b>Nickel:</b>					
<b>Ore:</b>					
Gross weight	2,110,000	2,020,000	1,500,000 t/ e/	1,570,000	2,000,000 e/
Ni content of nickeliferous iron ore	18,500	19,300	17,000 t/	12,900 t/	19,000 e/
Metal: Ni content of ferronickel	15,700	16,000	15,400	10,900	16,000 e/
<b>Silver: Mine output, Ag content</b>	60	70	62	59	55 e/
<b>Tin: Metal, secondary</b>	700	200	200	200 e/	150 e/
<b>Zinc: Mine output, Zn content by analysis</b>	26,700	39,000	26,200	22,000	20,000 e/
<b>INDUSTRIAL MINERALS</b>					
<b>Abrasives, natural: Emery</b>	7,000 e/	7,860	7,500 e/	7,000 e/	6,500 e/
<b>Asbestos:</b>					
Ore	4,320,000	400,000	--	50,000 e/	50,000 e/
Processed	66,000	4,730	--	--	--
<b>Barite:</b>					
Ore, crude	1,620	1,310	1,000 e/	1,000 e/	1,000 e/
Concentrate	1,220	763	500 e/	500 e/	500 e/
<b>Cement, hydraulic</b>	13,600,000	11,800,000	10,700,000	12,600,000	--
<b>Clays:</b>					
<b>Bentonite:</b>					
Crude	593,000	600,000	600,000 e/	600,000 e/	500,000 e/
Processed	500,000 e/	475,000	450,000 e/	450,000 e/	350,000 e/
<b>Kaolin:</b>					
Crude	170,000	189,000	100,000 e/	100,000 e/	100,000 e/
Processed	4,200	20,000 e/	10,000 e/	10,000 e/	10,000 e/
<b>Feldspar</b>	17,600	11,800	15,000 e/	15,000 e/	15,000 e/
<b>Gypsum and anhydrite</b>	450,000	450,000 e/	400,000 e/	400,000 e/	400,000 e/
<b>Magnesite:</b>					
Crude	697,000	590,000	250,000 e/	250,000 e/	200,000 e/
Dead-burned	150,000	119,000	50,000 e/	50,000 e/	45,000 e/
Caustic-calcined	119,000	131,000	55,000 e/	55,000 e/	50,000 e/
<b>Nitrogen: N content of ammonia</b>	257,000 e/	210,000	140,000	57,400	55,000 e/
<b>Perlite:</b>					
Crude	360,000 e/	369,000	325,000 e/	325,000 e/	300,000 e/
Screened	240,000 e/	286,000	250,000 e/	250,000 e/	200,000 e/
<b>Pozzolan (Santorin earth)</b>	795,000	536,000	500,000 e/	500,000 e/	500,000 e/
<b>Pumice</b>	665,000	445,000	700,000 e/	500,000 e/	500,000 e/
<b>Pyrites, gross weight</b>	100,000 e/	60,000 e/	55,000 e/	50,000 e/	50,000 e/
<b>Salt, all types</b>	150,000	150,000 e/	125,000 e/	100,000 e/	100,000 e/
<b>Silica sand</b>	93,600	10,000 e/	10,000 e/	10,000 e/	10,000 e/
Carbonate	900 e/	900 e/	750 e/	750 e/	750 e/
Sulfate	6,000 e/	6,000 e/	6,000 e/	6,000 e/	6,000 e/
<b>Stone: Marble</b>	370,000 e/	375,000 e/	385,000 e/	400,000 e/	400,000 e/

See footnotes at end of table.

TABLE 1--Continued  
GREECE: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1990	1991	1992	1993	1994
<b>INDUSTRIAL MINERALS--Continued</b>					
<b>Sulfur:</b>					
S content of pyrites	41,300 r/	35,300	25,000 e/	20,000 e/	20,000 e/
<b>Byproduct:</b>					
Natural gas	135,000 e/	125,000 e/	120,000 e/	120,000 e/	120,000 e/
Petroleum	5,000 e/	6,000 e/	5,000 e/	5,000 e/	5,000 e/
Total	200,000 e/	166,000 e/	150,000 e/	145,000 e/	145,000 e/
Talc and steatite	1,110	790	700 e/	700 e/	500 e/
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
<b>Coal:</b>					
Lignite	49,900,000	52,700,000 r/	55,100,000	55,400,000 r/	48,500,000
Lignite briquets	160,000	160,000 r/	122,000 r/	62,000 r/	55,000 e/
Coke: Gashouse	16,000 e/	16,000 e/	15,000 e/	15,000 e/	13,000 e/
<b>Gas:</b>					
Manufactured, gasworks million cubic meters	18 e/	18 e/	18 e/	18 e/	15 e/
Natural do.	191	180	107 r/	82 r/	35
Natural gas plant liquids thousand 42-gallon barrels	--	--	--	290 r/	360
<b>Petroleum:</b>					
<b>Crude:</b>					
As reported thousand metric tons	836 r/	849 r/	659 r/	537 r/	500
Converted thousand 42-gallon barrels	-- r/	-- r/	-- r/	-- r/	--
<b>Refinery products:</b>					
Liquefied petroleum gas do.	--	--	4,930 r/	4,650 r/	5,450
Gasoline do.	28,700	--	31,700 r/	29,500 r/	30,300
Naphtha do.	--	--	3,430	1,230 r/	4,670
Mineral jelly and wax do.	--	24	15 e/	15 e/	15 e/
Jet fuel do.	13,400	11,300	10,600	10,100 r/	12,700
Kerosine do.	--	39	101	78 r/	194
Distillate fuel oil do.	--	24,300	28,200	24,300 r/	27,800
Refinery gas do.	--	--	2,100 e/	2,100 e/	2,100 e/
Lubricants do.	1,300	1,100	800 e/	800 e/	1,000 e/
Residual fuel oil do.	--	36,000	35,200	29,400 r/	35,400
Bitumen do.	--	0	1,500 e/	1,500 e/	1,500 e/
Petroleum coke do.	--	726	525 e/	525 e/	525 e/
Other do.	640	--	400 e/	400 e/	400 e/
Refinery fuel and losses do.	5,560	4,400	9,210 r/	5,970 r/	5,660
Total do.	49,600	77,900	132,000 r/ e/	111,000 r/ e/	128,000 e/

e/ Estimated. r/ Revised.

1/ Table includes data available through May 1995.

2/ Previously published and 1994 data have been rounded by the U.S. Bureau of Mines to three significant digits.

3/ In addition to the commodities listed, other crude construction materials are produced, but no basis exists for estimation of production.

4/ This is the iron content of the nickeliferous ore mined for its nickel content. There is no indication that this iron is recovered except as the iron content of ferronickel.

TABLE 2  
GREECE: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Aluminium de Grèce S.A. (Pechiney of France, 60%)	Distomon, in Boeotia area	640
Aluminum	do.	do.	160
Asbestos	Asbestos Mines of Northern Greece S.A. (MAVE) (Hellenic Industrial Development Bank-Government, 95%; International Finance Corp., 5%)	Mines at Zidani, near Kozani	110
Barite	Silver and Baryte Ores Mining Co. S.A. (Eliopoulos-Kyriacopoulos Group)	Milos Island	10
Bauxite	Bauxites Parnasse Mining Co. S.A. (Eliopoulos-Kyriacopoulos Group)	Mines in Parnasse-Ghion area and Pasha, Euboea Island	2,000
Do.	Eleusis Bauxites Mines, S.A. (ELBAUMIN) (National Bank of Greece)	Plant in Drama and Eleusis; mines near Drama, Itea, Kimi, and Mandra	700
Do.	Delphi-Distomon S.A.; Hellenic Bauxites of Distomin S.A.; (Aluminium de Grèce S.A.) Delphi Bauxites S.A.	Opencast mines at Delphi-Distomon area	500
Do.	Am. E. Barlos-Bauxite Hellas Mining S.A.	Mines at Distomon (Elixon), Beotia; Processing plant at Distomon, Beotia	300 200
<b>Bentonite:</b>			
Crude	Mediterranean Bentonite Co. S.A. (Industria Chimica Mineraria S.p.A., Italy)	Surface mines on Milos Island	20
Do.	Mykobar Mining Co. S.A. (MI Drilling Fluids)	Mines at Adamas, Milos Island Plants at Adamas, Milos Island	180 150
Do.	Silver and Baryte Ores Mining Co.	Mines at Adamas, Milos Island	500
Processed	do.	Plant at Vouidia Bay, Milos Island	400
Cement	Halkis Cement Co. S.A.	Micro-Vathi plant, west-central Euboea	3,000
Do.	Halyps Cement S.A. (Ciments Français, France)	Paralia Aspropyrgos plant, Athens	800
Do.	Heracles General Cement Co. S.A. (Industrial Reconstruction Organization [IRO], 69.8%)	Plant at Milaki Plant at Volos	1,900 4,600
Do.	Titan Cement Co. S.A.	Elefsis plant, Athens area Kamari plant, Boeotia Patras plant, northern Peloponnesus Salonica plant, Salonica	400 2,600 1,900 1,650
Chromite	Financial Mining-Industrial and Shipping Corp. (FIMISCO) (IRO)	Tsingeli mines and plant near Volos	25
<b>Ferroalloys:</b>			
Ferronickel, Ni content	General Mining & Metallurgical Co. SA (LARCO) (IRO)	Larymna Metallurgical Plant	25
Lead: Mine: Pb in concentrate	Hellenic Chemical Products and Fertilizer S.A. (Bodossakis Group)	Kassandra mines (Olympias; Stratoni), northeast Chalkidiki	31
Lignite	Public Power Corp. (DEH) (Government)	Aliveri mine, Euboea Island Megalopolis mine, central Peloponnesus Ptolemais mine, near Kozani	420 7,000 28,000
Magnesite, concentrate	Financial-Mining-Industrial and Shipping Corp. (FIMISCO) (Government owned - IRO)	Mines at Gerorema, Kakavos, and Paraskevorema at Mantoudhi, northern Euboea Island	350
Do.	Grecian Magnesite S.A. (operations suspended in 1992)	Mines at Yerakini and Kastri in Chalkidiki	400
Do.	Magnomin-General Mining Co. S.A. (A subsidiary of Radex Eraclit Industrie Beteiligungs GmbH, Austria)	Mines at Vavdos, Chalkidiki Processing plant at Vavdos	68 60
Manganese (battery-grade MnO <sub>2</sub> concentrate)	Eleusis Bauxite Mines Mining, Industrial and Shipping S.A. (National Bank of Greece [OAE])	Nevrokopi, Drama	4
Natural gas	million cubic meters per day Public Petroleum Corp. (DEP) (Government)	Prinos offshore gasfield and oilfield, east of Thasos Island	125
Nickel, ore	General Mining & Metallurgical	Agios Ioannis mines near Mines at Euboea	2,500

TABLE 2--Continued  
GREECE: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Perlite		Silver and Baryte Ores Mining Co. S.A.	Kos and Milos Islands Plant at Pireaus	250 300
Do.		Otavi Minen Hellas S.A. (Otavi Minen AG, Germany)	Milos Island	120
Do.		Peletico Hellas S.A. (Peletico Ltd. of Cyprus)	do.	20
Do.		N. Bournas & Co.	Kos Island	75
Petroleum, refined	42-gallon barrels per day	Hellenic Aspropyrgos Refinery S.A.	Aspropyrgos	95,000
Do.	do.	Motor Oil (Hellas) Corinth Refineries S.A.	Aghii Theodori, Corinth	140,000
Do.	do.	Petrola Hellas S.A.	Eleusis	100,000
Do.	do.	Thessaloniki Refining Co. A.E.	Thessaloniki	76,000
Pozzolan (Santorin earth)		Lava Mining & Quarrying Co. Ltd. (Heracles General Cement Co. S.A.)	Quarries on Ghyali Island	800
Steel, crude		Halyourgia Thessalias S.A. (A subsidiary of Manassis Bros. and Voyatzis S.A. (65%); the balance, 35%, owned by state-owned National Investment Bank for Industrial Development - NIBID)	Steelworks at Volos (operates two 35-ton electric arc furnaces)	1,500 300 200
Do.		Halyourgiki, Inc.	Steelworks at Eleusis (three 100-ton electric arc furnaces)	1,200
Do.		Helleniki Halivourgia S.A.	Steelworks at Aspropyrgos (two 55-ton electric furnaces)	400
Do.		Sidenor S.A. (also known as Halivorgia Voviou Ellados S.A.)	Steelworks at Nea Maguisia, near Thessaloniki (two 55-ton and two 30-ton electric arc furnaces)	350
Zinc: Mine: Zn in concentrate		Hellenic Chemical Products and Fertilizer Co. (Bodossakis Group)	Kassandra mines (Olympias, Stratoni), northeast Chalkidiki	25

TABLE 3  
GREECE: RESERVES OF SELECTED MINERAL COMMODITIES 1/  
FOR 1994

(Million metric tons unless otherwise specified)

Commodity	Reserves
Asbestos	4
Barite	4
Bauxite	750
Chromite	16
Gas, natural	8 billion cubic meters
Iron	70
Lead, content of ore	.7
Lignite	3,570
Magnesite	50
Manganese, content of ore	2
Nickel, content of ore	3
Petroleum, crude	41,000 thousand barrels
Perlite	200
Pyrite	6
Zinc, content of ore	1.3

1/ Measured and inferred reserves.