THE MINERAL INDUSTRY OF

ITALY

By Harold Newman

Italy has been a significant processor of imported raw materials as well as a significant consumer and exporter of mineral and metal semimanufactured and finished products. The country was Western Europe's second largest cement producer after Germany, and its manufacturing of steel products was of world significance. Although Italy was an important producer of dimension stone, feldspar, and marble, and produced almost one-half of the world's pumice, the minerals sector experienced a further decline.

Most traditional mining either has stopped because of reserve depletion or has been suspended for environmental reasons. Production of potash and some rock salt has been suspended temporarily for environmental reasons.

The aggregated growth in the extractive industries was minimal. Among the metallic ores, lead and manganese were mined, although production was declining. Because of depleting reserves or uneconomical deposits, metallic mining was expected to cease by 1996.

Industrial mineral production remained the most important sector with overall output remaining more or less constant. However, domestic production of natural gas and petroleum continued to increase. Italy's most notable contribution to global mineral commodity supplies continued to be its production of processed materials based on imported raw materials. *(See table 1.)*

Italy increasingly has become dependent on its trade with other European Union (EU) countries. It has been estimated that Italy's share of total exports going to EU partners has increased from 48% in 1981 to more than 60% in 1994. *(See table 2.)*

Private and public companies own facilities for the mining and processing of minerals and mineral products. Some state-owned enterprises often are retained for economic reasons and to maintain employment. The Government bank allocates credit to state-owned corporations to avoid the social impact of closure of uneconomic ventures. *(See table 3.)*

Alumina in Italy was produced only by Eurallumina S.p.A., at Portoscuso in Sardinia. The company was owned jointly by Alumix S.p.A. (52.1%) and by Australian interests. Almost all alumina in Italy was produced from imported bauxite, most of which was obtained from Australia and Guinea. Bauxite no longer was mined in any significant amount in Italy.

Alumix S.p.A., part of the state holding company Eute Fiere Italiane Atacchine, was the only primary aluminum producer in Italy. Alumix operated five smelters: one at Bolzano, one at Porto Marghera, and two at Fusina, all of which are near Venice; and one at Portoscuso in Sardinia.

More than 80% of aluminum production was used domestically. Italy imported almost 50% of its total aluminum requirements. Details on output and/or capacity were not readily available on Italy's several secondary aluminum producers.

Italian refined copper production has remained fairly consistent. Enirisorse S.p.A., formerly Nuova Samim S.p.A., was the largest producer of refined copper, lead, and zinc metal in Italy. Enirisorse produced about 55% of Italian copper metal. Virtually all of the country's output was derived from scrap, ashes, slag, and other residues.

Enirisorse also produced antimony metal, bismuth, gold, and silver. All sources of Enirisorse's scrap, from copper and aluminum cables to batteries, were handled by two subsidiaries, Nonfermet S.p.A. and Eurobatex S.p.A.

Secondary copper was produced by Enirisorse at Paderno Dugnano, near Milan, using alloy scrap and low-grade copper scrap as raw materials. Plant capacity for secondary copper was 50,000 t/yr. Copper scrap from European sources was refined by Enirisorse at its Porto Marghera copper-zinc plant, near Venice. Copper cathode capacity at the plant reportedly was increased to 60,000 t/yr in 1995.

In 1995 Italy imported most of its supplies of lead and zinc concentrates, with Canada being the largest single source for these commodities. Within Italy, most lead and zinc concentrate production came from Enirisorse's mines in Sardinia. This production has virtually stopped because reserves have been depleted. There is a small quantity of byproduct lead concentrate produced from fluorite operations. Enirisorse's lead and zinc smelters were also in Sardinia, and the zinc electrolytic plant was near Venice. The Porto Vesme smelter in Sardinia produced primary lead and zinc metal and cadmium, while the San Gavino complex, near Porto Vesme, produced refined lead and byproducts, such as bismuth, gold, and silver.

Secondary lead, including soft lead and alloys, was produced by Enirisorse at the Paderno Dugnano and Marcianise plants, whose capacities were 50,000 t/yr and 35,000 t/yr, respectively. Enirisorse operated four zinc plants with a total capacity of 349,000 t/yr. The company also produced cadmium and germanium.

Italy was the second largest producer of crude steel in the EU, after Germany. About 40% of steel in Italy was produced by basic oxygen furnaces and 60% was produced by electric arc furnaces. In Italy, about one-half of the steel was produced by private companies, with the rest by Government-owned enterprises. All iron ore was imported in 1995, of which about 40% came from Australia and 35% from Brazil. The country's steel industry imports about 3.5 Mt/yr of scrap, mostly from France and Germany.

Ilva was in the process of privatization and divesting itself of assets. The EC approved the sale of Ilva Laminati Piani (Ilp), the flat products unit at Taranto, to Riva SpA. The Ilp mill has a raw steel capacity of 10 Mt/yr. Under the reported deal, Riva paid $1.47 billion for the operation and assumed about $800 million of Ilp's debt. This deal moved Riva into second position in European steel capacity behind Usinor Sacilor of France.

There were three major operating companies in Italy producing barite: Mineraria Baritina S.p.A., with mines at Trentino, Monte Elto, and Primaluna, east of Milan; Samatec S.p.A. with one mine at Mastricarro in Calabri and one mine at Schilipario in the Alps; the Sardinian regional government's holding company Ente Mineraria Sarda, with mines at Barega, Iglesias Province, Mont 'Ega, Narcao Province, and Monte Tamara Province in Sardinia.

Most of the mines produced a 91% to 92% $BaSO_4$ granulated barite that was used by the well-drilling industry. The Mont 'Ega Mine produced a relatively high-grade 97% barite material that was used by the chemical industry.

Italy was a major EU producer of cement, ranking seventh in the world. Italcementi S.p.A. was the largest of Italy's 50 cement producers, with about 40% of the Italian market.

Most of Italy's bentonite mining took place on the island of Sardinia, with processing plants on the mainland. More than one-half of the country's bentonite production comes from Industria Chimica Carlo Laviosa S.p.A. The company's main mining activity was in the Pedra de Fogu and Puntenuova areas of Sardinia. Production from these areas fed the processing plants at Oristano in Sardinia and at Livorno, south of Pisa. Montmorillonite clay (white bentonite) was quarried at S`Aliderru in northwestern Sardinia. Caffaro S.p.A., operating in Sardinia, was Italy's only producer of acid-activated montmorillonite. The clay was shipped to the company's plant at Porto Marghera near Venice. Several small bentonite producers operated on the mainland, at Foggia in the district of Puglia and at Pietracuta di S. Leo in the Pesaro District.

Italy was the world's leading producer of feldspar and feldspathic minerals. These materials were important constituents of ceramic tile. Italy accounted for 30% of world tile output and more than 50% of the total tile produced in the EU. There were more than 350 small companies producing tiles, employing about 30,000 workers. Clay was imported from France, Germany, and the United Kingdom.

The largest producer of albite was Maffei S.p.A., which operated a surface mine at Pinzolo in the Trentin District. Miniera di Fragne S.p.A. also produced albite from its Mud di Mezzo surface mine and processed the material at its processing plant at Aladna Valsesia in Vercelli.

Marble and travertine production from the world famous quarries at Massa and Carrara has increased slightly in the past 2 years. Italian marble occurred in many localities, from the Alps to Sicily, and was quarried at hundreds of operations. The most important geographic area for producing white marble was in the Apuan Alps in Tuscany, particularly near the town of Carrara. The Lazio region, Lombardy, the Po Valley, Puglia, the Island of Sicily, and Venice were important colored marble-producing areas.

About one-half of production was in block form, and 45% of total production was exported. Annual output of the Carrara District is about 700,000 t, or almost 35% of the country's total white marble production.

Other major marble-producing areas included the Valle di Susa, near Turin in the northwestern Italian Alps; the valley of the Po River in Lombardy; the Verona-Vicenza area of Venice; and the vicinity of Benevento, northeast of Naples in southern Italy. Reserves are considered to be unlimited.

The production of potash continued to be suspended. The main reasons were the result of a severe drought that has restricted the availability of process water to the plants and the inability to remove waste material and mine water owing to environmental and ecological concerns. The three underground mines that were previously operating in Sicily, at Pasquasia, Racalmuto, and Realmonte, continued on standby.

Italy was the world's leading producer of pumice and pozzolan. The Mediterranean Island of Lipari, 40 km off the northern coast of Sicily, was the center of the Italian pumice industry.

Two companies quarried pumice for world markets, Pumex S.p.A and Italpomice S.p.A. Pumex, with about a 650,000 t/yr capacity, was Italy's largest pumice producer. The company quarried the Mount Pelato deposit on Lipari. Most pumice was exported to the United Kingdom. W. R. Luscombe Ltd., formerly an equity partner, became a wholly owned subsidiary of Pumex. Italpomice produced pumice at Acqualcalda on Lipari, with an output of about 70,000 t/yr.

Solmine S.p.A.'s Campiano pyrite mine in Tuscany became uneconomical to work because of mineral reserve depletion and associated problems. Pyrite production was stopped and the mine was closed in 1995.

Talco e Grafite Val Chisone S.p.A. operated two underground mines at Pinerolo near Turin. The white talc, mined from metamorphic rocks, has been of very high quality. Talco owned a 10% interest in an open pit mine at Orani, in Sardinia, with the other 90% belonging to the Sardinian Mining Board. Talco Sarda S.p.A. also operated a mine at Orani. Talco e Grafite Val Chisone S.p.A. operated an underground mine at Fontane, and Industria Mineraria Italiana S.p.A. (IMI) operated mines at Largone and

Predaccia in Val Malenco, northern Italy. About 35% of IMI's production reportedly was exported to France, Germany, and the Netherlands.

Italy was heavily dependent on imported coal, mostly from the United States and South Africa.

Geothermal energy was produced in the Larderello, Monte Amiata, and Travale areas in Tuscany. Geologic, geostructural, and seismic exploration has been actively pursued in these areas along with research for power stations exploiting geothermal energy.

There were more than 100 natural gas fields in operation, of which 70% was located offshore. Natural gas supplied almost 25% of Italy's total energy needs. About 35% was produced domestically. More than 25% was imported from Algeria through a 1,070-km-long natural gas pipeline from Algeria to Mazzara del Vallo in Sicily. The former Soviet Union (FSU) continued to supply 25% of the country's natural gas through a pipeline across Austria and the Czech Republic.

With an annual consumption of almost 95 Mt of petroleum, Italy was the EU's second largest petroleum consumer after Germany. Italy was almost totally dependent on imported petroleum. With no large coal or gas industries, petroleum accounted for 75% of the country's energy needs.

A total of 20,085 km of railroad track was operational in 1995. Highways totaled 294,410 km. Superhighways totaled 5,900 km, and 7,010 km of Italy's roads were unpaved, mostly in the southern half of the country. There were 1,203 km of crude oil pipelines in service, 2,143 km of refined product pipelines, and 13,740 km of gas pipelines.

Public and private spending on environmental controls is expected to grow, particularly in the areas of water-treatment, transportation equipment and services, urban and industrial waste disposal, remediation of soil contamination, and control of emissions.

Mining of metallic ores, for all practical purposes, was expected to cease. The metals-processing industry, based primarily on imported stocks, is expected to continue to play an important role in Italy's economy. Italy is expected to remain a large producer of secondary aluminum and crude steel in the EU.

The industrial minerals quarrying industry and preparation plants are expected to remain significant, especially in the production of barite, cement, clays, fluorspar, marble, and talc. Italy was expected to continue to be the world's leading producer of feldspar, feldspathic minerals, and pumice. The ceramics sector is expected to be important, particularly regarding exports.

Domestic output of natural gas, crude petroleum, and petroleum refinery products is expected to grow, while Italy will continue to depend on imported coal, gas, and petroleum.

TABLE 1
ITALY: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity		1991	1992	1993	1994	1995 e/
METALS						
Aluminum:						
Bauxite, gross weight		8,600	97,500 r/	90,100	23,400	--
Alumina, calcined basis		805,000	762,000 r/	840,000	825,000	825,000
Metal:						
Primary		205,636	202,871	129,732	175,631	177,900 2/
Secondary		343,000	353,100	346,100	318,900	325,500 2/
Antimony, oxides, gross weight 3/		861	1,170	942	900	900
Bismuth metal		45	20 r/	15	5	5
Cadmium metal, smelter		658	742	517	475	308 2/
Copper, metal, refined, all kinds		82,500	76,000	90,300	84,000	93,000
Iron and steel, metal:						
Pig iron	thousand tons	10,856	10,462	11,066	11,157	11,684 2/
Ferroalloys:						
Blast furnace, silicon pig iron e/		600	500	500	500	500
Electric furnace:						
Ferrochromium		47,192	60,315	53,504	22,650	25,000
Ferromanganese		14,145	17,079	17,000	16,000	16,000
Ferrosilicon		12,648	12,000	3,350	--	--
Silicomanganese e/		55,000	50,000	50,000	50,000	50,000
Silicon metal		6,200	10,000	--	--	--
Other e/		14,500	12,000	12,000	10,000	10,000
Grand total e/		150,285	161,894	136,354	99,150	101,500
Steel, crude	thousands tons	25,046	24,904	25,701	26,114	27,770
Semimanufactures	do.	23,817	23,331	21,760	22,775	22,000
Lead:						
Mine output, Pb content		14,199	21,596	8,011	7,400	6,000
Metal, refined:						
Primary		111,696	102,000	89,900	91,700	90,000
Secondary		96,500	84,300	92,900	114,200	115,000
Total		208,196	186,300	182,800	205,900	205,000
Magnesium:						
Mine output, Mg content		3,910	--	--	--	--
Metal, primary		3,920 r/	1,210 r/	--	--	--
Manganese, mine output:						
Gross weight		8,340	8,346 r/	8,300	8,000	8,000
Mn content		2,102	2,087 r/	2,075	1,868	2,000
Silver metal	kilograms	176,475	128,716 r/	92,635	80,000	80,000
Zinc:						
Mine output, Zn content		37,124	35,032 r/	7,100	22,900	20,000
Metal, primary		264,000	253,000	254,000	242,000	250,000
INDUSTRIAL MINERALS						
Asbestos		15,000	--	--	--	--
Barite		88,486	74,900 r/	52,697	57,856	50,000
Bromine e/		400	300	300	300	300
Cement, hydraulic	thousand tons	40,800 r/	41,300 r/	42,000	33,192	35,000
Clays, crude:						
Bentonite	do.	385	150 r/	327	386	402
Refractory excluding kaolinitic earth	do.	462	400 e/	434 r/	619 r/	730
Fuller's earth	do.	23	28 r/	20 r/	24 r/	37 2/
Kaolin	do.	53	33 r/	76 r/	74 r/	88 2/
Kaolinitic earth	do.	16	15	15	7 r/	10
Diatomite e/		23,000	26,000	25,000	25,000	25,000
Feldspar		1,304,203	1,387,968 r/	1,534,210	1,806,935	1,800,000
Fluorspar:						
Acid-grade		60,650	55,000	35,000	52,630 r/	25,000
Metallurgical-grade		37,868	25,000	25,000	15,312 r/	10,000
Total		98,518	80,000	60,000	67,942	35,000
Gypsum	thousand tons	764	835	1,200	1,361	1,200
Lime, hydrated, hydraulic and quicklime e/	do.	3,800	3,600	3,600	3,500	3,500
Nitrogen, N content of ammonia	do.	1,150	1,100	729	504	500
Perlite e/		70,000	65,000	65,000	65,000	60,000
Pigments, mineral, iron oxides, natural e/		800	700	700	600	600

See footnotes at end of table.

TABLE 1--Continued
ITALY: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity		1991	1992	1993	1994	1995 e/
INDUSTRIAL MINERALS--Continued						
Potash, crude salts:						
Gross weight	thousand tons	429	940	200	--	--
K_2O equivalent	do.	63	126	24	--	--
Marketable product, K_2O equivalent	do.	31	86	20	--	--
Pumice and related materials: e/						
Pumice and pumiceous lapilli	do.	700	600	700	700	700
Pozzolan	do.	4,500	4,500	4,500	4,500	4,500
Pyrite, all types, gross weight	do.	553	441	402	400	400
Salt:						
Marine, crude e/ 4/	do.	450	610	580	600	600
Rock and brine	do.	3,504	3,210 r/	3,150	3,300	2,800
Sand and gravel: e/						
Volcanic sand	do.	100	100	100	100	100
Silica sand	thousand tons	4,200	4,000	4,000	4,000	4,000
Other sand and gravel		125,000	125,000	125,000	125,000	125,000
Sodium compounds: e/						
Soda ash	thousand tons	600	600	500	500	500
Sodium sulfate	do.	125	125	125	125	125
Stone: e/						
Dimension: 5/						
Calcareous:						
Alabaster	do.	20	20	20	25	25
Marble in blocks:						
White	do.	1,600	2,700	3,600	3,600	3,600
Colored	do.	1,900	2,000	2,900	3,000	3,000
Travertine	do.	1,100	1,000	1,000	1,000	1,000
Other:						
Granite	do.	2,500	1,500	1,000	1,000	1,000
Sandstone	do.	1,800	1,800	1,800	1,800	1,800
Slate	do.	120	120	120	120	120
Crushed and broken:						
Dolomite	do.	800	700 r/	700	700	700
Limestone	do.	120,000	125,000	120,000	120,000	120,000
Marl for cement	do.	13,123	14,100	14,000	12,000	14,000
Serpentine	do.	1,500	1,500	1,500	1,500	1,400
Quartz and quartzite	do.	250	250	250	250	250
Sulfur, recovered as elemental and in compounds:						
S content of pyrite	do.	214	174	145	150	130
Byproduct, oil refining and other sources e/		280	280	300	300	300
Total e/	do.	494	454	445	450	430
Talc and related materials		161,000	183,530 r/	142,000	139,000	130,000
MINERAL FUELS AND RELATED MATERIALS						
Asphalt and bituminous rock, natural		39,300	36,000	38,000	36,000	360,000
Carbon black e/		150,000	140,000	130,000	130,000	125,000
Coal:						
Lignite	thousand tons	1,550	1,140 r/	1,050	56	60
Subbituminous (Sulcis coal)		172,000	109,000 r/	7,600	--	--
Coke, metallurgical	thousand tons	5,771	5,350	5,000	5,000	5,000
Gas, natural	million cubic meters	17,398	18,150	19,427	20,506	20,500
Natural gas liquids e/	thousand 42-gallon barrels	400	400	400	400	400
Petroleum:						
Crude	thousand 42-gallon barrels	29,344	30,000	31,320	31,680	32,000
Refinery products:						
Liquefied petroleum gas	do.	24,580	29,963	25,543	26,622	26,000
Gasoline	do.	151,513	163,531	161,823	160,251	160,000
Naphtha	do.	15,782	16,000	16,000	16,000	16,000
Jet fuel e/	do.	18,000	22,214	22,206	23,007	24,000
Kerosene e/	do.	30,000	34,092	34,038	34,929	35,000
Distillate fuel oil	do.	221,569	220,000	218,000	220,000	220,000
Residual fuel oil	do.	148,278	157,043	154,112	138,781	140,000
Other	do.	32,165	35,000	35,000	35,000	35,000
Refinery fuel and losses e/	do.	40,000	38,000	39,000	38,000	38,000
Total e/	do.	681,887	715,843	705,722	692,590	694,000

See footnotes at end of table.

TABLE 1--Continued
ITALY: PRODUCTION OF MINERAL COMMODITIES 1/

e/ Estimated. r/ Revised.
1/ Table includes data available through Mar. 1996.
2/ Reported figure.
3/ Antimony content is 83% of gross weight.
4/ Does not include production from Sardinia and Sicily estimated at 200,000 tons annually.
5/ Output of limestone and serpentine for dimension stone is included with "Stone: Crushed and broken." In addition to the commodities listed, a variety of other dimension stone was produced and previously listed, but available general information was inadequate for continued reliable estimation of output levels.

TABLE 2
ITALY: 1994 BALANCE OF PAYMENTS, SELECTED MINERAL COMMODITIES 1/

(Thousand dollars)

Mineral commodity	Exports to EU	Imports from EU	Net gain or (loss)	Exports to the world	Imports from the world	Net gain or (loss)
Crude industrial minerals:						
Feldspar	1,462	2,296	(843)	3,419	19,464	(16,045)
Magnesite	425	1,017	(592)	1,242	5,384	(4,142)
Slate	124	752	(628)	1,641	1,171	470
Other	148,586	435,686	(287,100)	394,638	1,003,247	(608,609)
Total	150,597	439,751	(289,154)	400,940	1,029,266	(628,326)
Metalliferous ores:						
Copper	233	74	159	405	142	263
Lead	2	4,694	(4,692)	900	22,042	(21,142)
Tin	232	179	53	249	179	70
Zinc	47	34,185	(34,138)	47	132,748	(132,701)
Other (including waste and scrap)	68,111	1,169,733	(1,101,622)	166,712	2,256,349	(2,089,637)
Total	68,625	1,208,865	(1,140,240)	168,313	2,411,460	(2,243,147)
Nonmetallic mineral manufactures	757,016	254,578	502,438	1,912,622	413,019	1,499,603
Metals:						
Iron and steel	3,543,303	3,787,434	(244,131)	6,517,518	6,079,981	437,537
Mercury	72	35	37	73	57	16
Other nonferrous metals	1,267,132	2,292,211	(1,025,079)	1,928,262	4,304,242	(2,375,980)
Total	4,810,507	6,079,680	(1,269,173)	8,445,853	10,384,280	(1,938,427)
Mineral fuels	580,022	1,564,583	(984,561)	3,001,618	13,636,473	(10,634,855)

1/ Table prepared by Harold Willis, International Data Unit.

TABLE 3
ITALY: STRUCTURE OF THE MINERAL INDUSTRY FOR 1995
(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Eurallumina S.p.A. (Alumix S.p.A 52.1%, and Comalco 26.9%, Clarendon 21%,- both Australian companies)	Plants at Portoscuso, Sardinia, and Porto Marghera, near Venice	720
Aluminum	Alumix S.p.A.	Smelters at Portoscuso, Sardinia; Porto Marghera and Fusina near Venice	255
Asbestos	Amiantifera di Balangero S.p.A.	Mine at Balangero, near Turin	100
Barite	Bariosarda S.p.A (Ente Mineraria Sarda)	Mines at Barega, and Mont 'Ega, in Sardinia	100
Do.	Edem S.p.A. (Government)	Mines at Val di Castello, in Lucca	20
Do.	Edemsarda S.p.A. (Soc. Imprese Industriali)	Mines at Su Benatzu, Sto Stefano, and Peppixeddu, in Sardinia	20
Do.	Mineraria Baritina S.p.A	Mines at Marigolek, Monte Elto, and Primaluna, near Milan	20
Bauxite	Sardabauxiti S.p.A. (Government)	Mine at Olmedo, Sardinia	350
Cement	52 companies, of which the largest are:		
Do.	Italcement-Fabbriche Riunite Cemento S.p.A.	19 plants, of which the largest are Calusco, Monselice, and Collefero	(6,003)
Do.	Cementerie del Tirreno S.p.A (Cementir)	Plants at Arquasta Scivia, Livorno, Maddaloni, Napoi, Spoleto, and Taranto	(6,250)
Do.	Unicem S.p.A.	Plants at Guidonia, Lugagnano, Morano, Piacenza, S'Arcangelo di Romagna, and Settimello	(4,630)
Copper, refined	Enirisorse (Government)	Refineries at Porto Marghera, and Pieve Vergonte	46
Do.	Europa Metalli - LMI S.p.A.	Refineries at Campo Tizzoro,, Fornaci di Barga, and Villa Carcina	26
Do.	Chimet S.p.A.	Refinery at Arezzo	13
Feldspar	At least 5 companies, of which the largest are:		1,500
Do.	Maffei S.p.A.	Surface mines at Pinzolo, Sondalo, and Campiglia Marittima; underground mine at Vipiteno	(200) (300)
Do.	Miniera di Fragne S.p.A.	Surface mine at Alagna Valsesia	(60)
Do.	Sabbie Silicee Fossanova S.P.A. (Sasifo)	Surface mine at Fossanova	(30)
Lead-Zinc, ore	Enirisorse (Government)	Mines at Masua, Monteponi and Sardinia	60
Lead, metal	do.	Refinery at San Gavino, Sardinia	80
	do.	Kivcet smelter and Imperial Smelter at Porto Vesme, in Sardinia	114
Lignite	Ente Nazional per L'Energia Electtrica (ENEL)	Surface mines at Pietrafitta ,in Umbria, and Santa Barbara, Tuscany	1,500
Magnesium, metal	Societa Italiana Magnesio S.p.A. (INDEL)	Plant at Bolzano	8
Marble	A number of companies including:	Quarries mostly at Carrara and Massa	2,000
	Mineraria Marittima Srl	Quarries in the Carrara and Massa areas	(500)
	Industria dei Marmi Vicentini S.p.A.	Quarries in the Carrara area	(300)
	Figaia S.p.A.	Quarries in the Carrara area	(100)
Petroleum, crude	Ente Nazional/Idrocarburi (ENI) Government	Oilfields: Offshore Sicily and in the Adriatic Sea; onshore in Po River Valley	90
Petroleum, refined	do.	About 30 refineries	2,000
Potash ore	Industria Sali Otassici e Affini per Aziono S.p.A.	Underground mines at Corvillo, Pasquasia, Racalmuto, and San Cataldo, in Sicily	1,300
Do.	Sta Italiana Sali Alcalini S.p.A. - (Italkali)	Underground mines at Casteltermini and Pasquasia, in Sicily	700
Pumice	Pumex S.p.A.	Quarries on the Lipari Island, north of Sicily	600
Do.	Sta Siciliana per I'Industria ed il Commercio della Pomice di Lipari S.p.A. (Italpomice)	do.	200
Pyrite	Nuova Solmine S.p.A.	Underground mines at Campiano and Niccioleta	900
Salt, rock	Sta Italiana Sali Alcalini S.p.A. (Italkahi)	Underground mines at: Petralia, Racalmuto, and Realmonte, in Scility	4000
Do.	Solvay S.p.A.	Underground mines at Buriano, Pontteginori, and Querceto in Tuscany	2,000
Steel	Ilva S.p.A. (Government)	34 steel plants, the largest of which: Taranto	13,000 (8,000)
Do.	Riva S.p.A	About 5 plants	5,000
Do.	Others	Various locations	10,000
Talc	Talco e Grafite Val Chisone S.p.A.	Mines at Pinerolo, near Turin, and at Orani, Sardinia	120
Do.	Industria Mineraria Italiana S.p.A.	Mine at Largone Predaccia	20
Do.	Talco Sarda S.p.A.	Mine at Orani, Sardinia	20
Zinc, metal	Enirisorse (Government)	Plants at Crotone and Porto Vesme, in Sardinia, and Porto Marghera	349

1/ Thousand 42-gallon barrels per day.