THE MINERAL INDUSTRY OF

FRANCE

By Harold R. Newman

France is a major European mineral producer. The traditional mineral industries have been in a state of transition during the past few years. In the past, the heavy economic and political involvement of the state was one of the main elements of the national mineral policy. The reduction of Government subsidies supporting uneconomic mineral operations and the depletion of mineral reserves have had a significant impact on a number of extractive operations in the mineral industry. Efforts have been made to promote the private sector and to reduce the dependence of state-owned companies on subsidies.

In an effort to encourage exploration within the country, the French mining code was modified in July 1995 by a law that established clearer expedited rules to allocate surveying and mining licenses. The Government proceeded with a privatization program involving large state-controlled companies. Included among those privatized were Péchiney Group, Rhône-Poulenc S.A., Société Nationale Elf Aquitaine (SNEA), and Usinor-Sacilor.

Mineral and metal industries generally maintained their production and other activities at about the same or slightly decreased rate as that of 1995. Several industries, such as bauxite, coal, iron ore, and uranium, have steadily undergone changes during the past few years. As of 1996, bauxite was no longer mined in France.

The coal and iron ore industries, as well as other mineral producers, were affected by cheaper foreign sources, high operating costs, and the depletion of domestic resources. Coal mining was directed by Charbonnages de France (CdF), a state-owned company. As a result of the high cost of underground production in comparison with cheaper imported coal, CdF was maintaining its policy of investing in high-productivity mines and closing uneconomic operations.

The uranium industry reduced its operations by closing a number of mines and processing plants owing to low market prices and depletion of certain deposits. Other factors in the drop of uranium demand were the reduced cost for petroleum and the increased accessibility of natural gas from the North Sea and the former Soviet Union. Lower petroleum prices meant that fewer new nuclear plants were considered for construction, some older plants were being closed, and the export market for uranium decreased. (*See table 1.*)

The Government maintained efforts to refocus the country's trading patterns toward the Organization for Economic Co-Operation and Development countries. Strong commercial relations continued between France and the United States, while Germany remained France's largest export destination. In 1996, France was the 10th largest trading partner of the United States worldwide and the 3d largest in Europe after the United Kingdom and Germany (Bureau of Economic and Business Affairs, 1997).

Table 2 shows the relation of selected classes of mineral commodities on France's balance of payments position in relation to the European Union (EU) and the world.

Tables 3 and 4 show exports, including reexports, and imports of selected mineral commodities by France in 1996 with comparable totals for 1995.

Government and private companies produced minerals and mineral products, conducted research, and explored domestically and internationally for new mineral resources. Adjustments to the single European market resulted in numerous mergers, closures of operations, and cooperative ventures as companies sought ways to obtain competitive advantages.(*See table 5.*)

Privatization of Péchiney was completed. Transfers involved a 21% share in the Carbone Lorraine Group going to Paribas SA of Brazil, The metal package company in the United States going to Silgan Corp. of the United States, The glass package company in the United States going to the Saint Gobain Group of France, and the Howmet Group going to Carlyle and Thiokol Corp. of the United States.

La Source Companie Minière, the main mining affiliate of Bureau de Recherches Geologiques et Minières and a subsidiary of the Normandy Group of Australia, was proceeding with exploration and development of the Chessy copper deposit near Lyon. Production of copper ore was scheduled to begin in 1997; the underground mine operation was expected to last an estimated 14 years (BRGM Group, 1996).

Gold mining in France was mostly concentrated in Société des Mines du Bourneix's open-pit and underground operations in the Saint-Yrieix la Perche District south of Limoges and Mines d'Or de Salsigne's underground Salsigne Mine near Carcassonne. Each company produces more than 2 metric tons per year (t/yr) of gold.

Eltin Co. was continuing its efforts to sell its 51% interest in the Salsigne Mine. Eltin stated that it had written down the value of its net investment in the operation from $22 million to $11 million. The company said that an independent review of the operation had made a number of recommendations to improve the operations performance and that the implementation of these recommendations was expected to increase production and to make the operation more attractive to investors (Mining Journal, 1996).

The famous iron ore basin of northern France stretched from Lorraine, France, northward into Belgium. For many years, the

high phosphorus and low iron content of the ore limited its desirability and production has been declining for several years. The Terres Rouges Mine of Acieries Reunies de Burbach-Eich-Dudelang (ARBED) was the only working mine left but was expected to close at yearend 1997.

Usinor-Sacilor ranked fourth in the world as a producer of steel in terms of crude steel production and second in terms of sales from steelmaking activities, after Nippon Steel of Japan. Usinor had completed its privatization procedures by yearend 1995. The Usinor-Sacilor Group was organized into three branches; Ugine (stainless steel) which composed Imphy and Ugine of France and Jones & Laughlin Co. of the United States branch; Sollac (steel flats); Aster (special steels). The Aster branch composed the following companies, Unimétal, Ascotmétal, Allevard, and IMS. Arus, the iron and steel products marketing subsidiary, was taken over by the Klockner Group (Usinor-Sacilor Group 1997,).

Mining of lead and zinc has completely ceased in France. Two companies operated primary zinc plants in France. Société des Mines et Fonderies de Zinc de la Vieille Montagne (VM) of Belgium operated a zinc refinery at Auby-les-Douai with an annual capacity of 115,000 t/yr of zinc. VM's electrolytic plant was one of the most modern in Europe and was built at a cost of $70 million in 1987. Métaleurop Nord S.A.S., operated a 110,000 t/yr primary smelter and a 40,000 t/yr secondary smelter at Noyelles-Godualt.

Compagnie Générale des Matières Nucléaires (COGEMA), the state-owned uranium mining company, was the major producer of uranium in France. A leading mine operator in the world uranium market, COGEMA accounted for about 20% of the world production. Thirty seven percent of sales were in markets outside of France. However, in recent years, the pace of exploration has decreased and projected future ore requirements have leveled off. Most projects worldwide have been halted or canceled and several mines in France were closed. The La Crouzille Mine, near Limoges, was closed in 1996 (COGEMA, 1996).

France has 59 nuclear reactors, including 1 fast breeder reactor, representing an installed capacity of 60,000 megawatts of electricity. In 1996, electricity output of nuclear origin was 374.8 billion kilowatt hours. Nuclear power reactors provided almost 77% of electricity generated in France (Electricité de France, 1997).

Denain-Anzin Minéraux Refractaire Ceramique (DAMREC), a subsidiary of the Imetal Group, was the only producer of andalusite in Europe. DAMREC's mining operation is at Glomel, Brittany, and produces about 75,000 t/yr. This placed France second only to South Africa in world output. The company produced three grades of andalusite that were distinguished by different alumina and iron oxide contents. These products were sold to the refractory and ceramic industries (Tournis, 1997).

The primary barite area is at Chaillac near Limoges. Barytine de Chaillac, a subsidiary of Solvay Barium Strontium GmbH of Germany, was the major producer with an open-pit mine and plant at Chaillac. Barytine produced about 90,000 t/yr of flotation-grade barite averaging 98% barium sulfate, suitable for chemicals production.

Lafarge SA and Société Des Ciments Français were the two largest producers of cement in France. During the past several years, these two companies have been acquiring a number of companies domestically as well as internationally. Each company has gained control of approximately one-third of the domestic market, leaving fewer than eight other companies holding the remaining one-third.

Société Générale de Recherches et d'Exploitations Minières (SOGEREM) was the main producer of fluospar with three open pit mines in the south of France accounting for more than 60% of fluorspar production. The fluorspar vein deposits were found in Hercynian massifs, the Massif Central, the Vosges, the axial zone of the Pyrénées, and the outer Alps. SOGEREM's mining operations supply Comifluor S.A. which operated a plant at Bastîde-a-Olette. This plant produces acid-grade fluorspar, 97% calcium fluoride, and electrical-grade fluorspar. Total production of both grades is about 45,000 t/yr. The Escardo Mine, owned by Denain-Anzin Minéraux, also ships about 90,000 t/yr from its surface mining operation to the Olette plant (Marketing Dept, GMH, 1997).

France was one of Europe's largest producers of gypsum. Two-thirds of the production was from the Paris Basin. Four companies produced about 95% of the output. S.A. de Materiel de Construction, the largest company, accounts for almost one-half of the total gypsum produced.

Kaolin deposits derived from the granite massifs in Brittany were the most actively mined deposits in France. The largest mine, operated by La Source Compagnie Minière, was in the Kaolin d'Arvor deposit near Quessoy. The mine has a capacity of 300,000 t/yr. Plemet was another deposit in the northern area of Brittany. Société des Kaolins du Finistère's 30,000 t/yr operation at Berrien was bought by Kaolins de Moribihan of Groupe Minéral Harwanne. The kaolin was used mostly in the paper and the ceramic industries. Ball and refractory clays were mined in the Charante Basin to the southwest, which has been producing more than 1 million metric tons per year (Marketing Dept, GMH, 1997).

Mines de Potasse d'Alsace S.A. (MDPA) was the principal producer of potash with two underground mines, Marie-Louise and Amélie, located near Mulhouse, Alsace. MDPA was the world's fifth- largest supplier of potash salts. The main products were potash ore, which was concentrated to 62% potassium oxide material, bromine, rock salt for snow clearing, and other industrial products, About 90% of the potash production was used by the agriculture industry for fertilizer and 10% was purified and treated for use in other industries.

Although the deposit had estimated reserves to last into the early part of the next century, future development would be constrained to the east, west, and south by the boundaries of the tilted potash beds and to the north by the depth of the deposit.

Morton International of the United States was planning to move into the European market with the purchase of Cie. Des Salins du Midi et des Salines de l'Est. Morton was expected to pay about $290 million for the French company. This acquisition would be the company's first international move. Morton is the leading salt producer in Canada and the United

States (Mining Engineer, 1997).

Talc de Luzenac S.A. was significant not only to the domestic market, but also to the European market. The company has acquired several talc-mining interests worldwide. Borax Français S.A., a subsidiary of Rio Tinto Corp., subsequently purchased 92% of Talc de Luzenac. As a result of mergers and acquisitions over the last 6 years, the Luzenac Group was formed as a subsidiary of Rio Tinto. Luzenac operated 16 deposits and 20 processing plants in Europe and North America and was the leading talc producer in the world.

Talc de Luzenac's open pit Trimouns Mine, located in the French Pyrenees 130 kilometers (km) south of Toulouse where the company has been mining since 1905, was the largest working talc deposit in the world. Production was more than 300,000 t/yr of ore, from which more than 40 different grades of talc are derived. Because of the altitude of 1,700 meters (m), with a mountain-top climate, Trimouns can only be worked from May to October. In terms of estimated reserves, the deposit could possibly support the current output for another 100 years (Jones and Vinandy, 1997).

All underground coal mines were closed in the Midi-Pyrénées region in southern France and in the Nord Pas-de-Calais Basin. CdF was proceeding with further rationalizations, resulting in reduced production. The mines at La Mure in the Alps and at Carmaux in the Massif Central were expected to close in 1997. The rest of the mines, except in Lorraine region, were expected to close between 1997 and 2000. The mines in Lorraine were expected to close after 2000. CdF envisioned the final stoppage of all coal mining in France by 2005.

In 1996, onshore petroleum production was mainly from the Paris and the Aquitaine Basins. Because production had started to decline in these areas, the Government was planning to initiate a program to encourage exploration for new deposits in other areas thought to have potential; the Jura Basin was one area under consideration.

Elf signed a production sharing contract with Azerbaijan's national oil company, Socar, covering the Lenkoran-Talysh-Deniz permit in the Caspian Sea, about 300 km south of Baku. The exploration program calls for three-dimensional seismic surveys and the drilling of two wells over a 3 year period.

Elf will act as operator and hold a 65% stake; Socar will hold 25% and Total, another French company, 10%. Also in 1996, Elf signed a production sharing contract for a 10% interest in the British Petroleum Co. operated Shah Deniz permit in Azerbaijan's Caspian Sea area (Knott, 1996).

Five companies were operating refineries in France: Elf, Total, Royal Dutch/Shell Group, British Petroleum Co. PLC, and Mobil Corp. The structure of the industry was geared to gasoline production. Refining was mainly focused on high-octane unleaded gasoline used by a majority of the vehicles in France.

No refining units have been capable of processing heavy fuels, nor were there any hydrocracked feedstocks available for the production of gas oil, thus leaving the process stream short on middle distillates and naphtha. France is a net importer of petroleum products.

France has a very modern and well-developed infrastructure. The French National Railways operated 34,568 km of 1.435-m standard gauge, of which 11,674 km was electrified. The system incorporates the use of high-speed trains on selected tracks. Similarly, its highways are extensive, modern and used to transport goods and services. The inland waterways, which have always been significant avenues of commerce, are being used increasingly to transport goods; 6,969 km of the 14,932-km-long waterways are used heavily. The major seaports are Bordeaux, Boulogne, Brest, Cherbourg, Dunkerque, Fos-sur-Mer, Le Havre, Marseille, Nantes, Rouen, Sete, and Toulon.

One of the most significant infrastructure developments in recent years has been the Channel Tunnel Project. The tunnel, constructed underneath the English Channel, connected Coquelles, near Calais, France, and Folkestone, England. Transportation, not only in France, but also in the whole of Europe, has changed significantly from the operation of the Channel Tunnel. From these terminals, people drive their vehicles onto trains transporting them 49 km to the other side in about one-half hour. Trains are also used to transport freight. The Channel Tunnel connecting the two countries was expected to be a vital infrastructure component within the EU.

Having one of the world's most-developed economies, France was an advocate for the EU and the European single-market concept. The country has had to make considerable changes in the structure of its industries, particularly those mineral industries controlled by the state. Several state-owned companies have taken the initiative to become leaders in their respective industries. Others have been forced to make additional adjustments under rationalization schemes proposed by the EU or the French Government. The depletion of natural resources and/or the cessation of subsidies for uneconomic operations has had impacts on local communities and their economies. France will have the advantage of plentiful electrical power to attract industrial facilities requiring skilled work forces and will have better access to markets in Europe.

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Major Sources of Information

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TABLE 1
FRANCE: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/		1992	1993	1994	1995	1996 e/
METALS						
Aluminum:						
Bauxite, gross weight	thousand tons	104	151	128	75	81 3/
Alumina:						
Crude	do.	508	476	438	519	430
Calcined	do.	391	367	344	425	352 3/
Metal:						
Primary	do.	418	426	438	372	386 3/
Secondary	do.	227	222	228	231	227 3/
Antimony metal, including regulus		1,425	848	750	680	520 3/
Arsenic, white e/		2,000	--	--	--	--
Cadmium metal		252	137	6	--	--
Cobalt metal:						
Powder		226	222	310	330	580 3/
Chloride		150	150	146	130	174 3/
Copper:						
Mine output, Cu content		149	72	174	172	170
Metal:						
Blister, secondary e/		6,100	5,900	4,400	2,580	3,100
Refined:						
Primary		27,700	21,100 r/	16,600	4,200	--
Secondary e/		29,000	23,300 r/	25,200	38,240	39,100
Total		56,700	44,400 r/	41,800	42,440 3/	39,100 3/
Gold, mine output, Au content	kilograms	2,910	2,155	4,009	4,615	4,590 3/
Iron and steel:						
Iron ore and concentrates:						
Gross weight	thousand tons	5,707	3,518	2,420	1,496	1,464 3/
Fe content	do.	1,697	1,055 r/	706	432	430 3/
Metal:						
Pig iron	do.	13,051	12,679 r/	13,293	12,860	11,544 3/
Ferroalloys:						
Blast furnace, spiegeleisen and ferromanganese		280	300	294	304	281
Electric furnace:						
Ferrochrome	thousand tons	7	--	--	--	--
Ferromanganese	do.	60	57	66	100	--
Ferrosilicon	do.	98	39	112	108	130 3/
Silicon metal	do.	66	59	66	71	74 3/
Other (Si, Ca, Mg)	do.	32	29	20	124	114 3/
Total		543	484	558	707	599 3/
Steel ingots and castings	do.	17,961	17,179	18,028	18,096	17,630 3/
Semimanufactures	do.	16,172	14,767	16,205	16,164	16,260 3/
Lead:						
Smelter:						
Primary		130,000	112,281	--	--	--
Secondary e/		25,000	25,000	185,000	247,700 3/	241,100 3/
Total e/		155,000	137,281	185,000	247,700 3/	241,100 3/
Refined:						
Primary, soft lead		160,500	112,300	105,250	133,580	140,750 3/
Secondary:						
Soft lead		49,400	67,800	76,200	69,500	66,800 3/
Pb content of antimonial lead		74,160	78,600	78,500	86,970	86,300 3/
Total		284,060	258,700	259,950	290,050	293,850 3/
Magnesium metal, including secondary		13,660	10,982	12,280	14,450	14,000
Nickel metal 4/		6,750	9,120 r/	10,041	8,280	9,066 3/
Silver: e/						
Mine output, Ag content:		--	--	--	1,167	1,550 3/
Lead and zinc concentrates	kilograms	10,440	9,000	--	--	--
Mixed copper, gold, silver concentrate	do.	3,000	1,100	640	--	--
Total	do.	13,440	10,100	640	1,167	1,550 3/
Metal, Ag content of final smelter products e/	do.	14,100	12,000	921	666	650
Tin, secondary, smelter output of solder and other alloys e/		2,000	3,439	2,700	3,020	4,410 3/
Uranium:						
Mine output, U content		2,119	1,774	1,315	857	841 3/
Chemical concentrate, U3O8 equivalent		2,080	1,539	1,245	728	713 3/

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity 2/		1992	1993	1994	1995	1996 e/
METALS--Continued						
Zinc:						
Mine output, Zn content		16,539	13,834	1,000	--	--
Metal including secondary:						
Slab		318,700	309,800	306,000	300,400	336,200 3/
Dust e/		8,000	9,000	10,000	28,000	26,800 3/
INDUSTRIAL MINERALS						
Barite		96,200	67,200	72,100	75,450	76,000
Bromine, elemental e/		3,200	2,290	2,190	2,260	2,020 3/
Cement, hydraulic	thousand tons	21,165	19,320	21,296	19,692	18,340 3/
Clays:						
Bentonite e/ 5/		6,000	6,000	5,000	--	--
Kaolin and kaolinitic clay (marketable	thousand tons	334	295	327	345	326 3/
Refractory clay, unspecified	do.	8	7	8	15	14
Diamonds, synthetic, industrial e/	thousand carats	3,500	3,500	3,600	3,800	3,500
Diatomite e/	thousand tons	85	85	90	80	80
Feldspar, crude e/	do.	282	274	390	632	546 3/
Fluorspar:						
Crude	do.	296	185	351	352	295 3/
Marketable:						
Acid and ceramic-grade	do.	118	96	105	102	78 3/
Metallurgical-grade	do.	15	20	26	28	33 3/
Total	do.	133	116	131	130	111 3/
Gypsum and anhydrite, crude	do.	5,160	5,000	5,200	4,800	4,550
Kyanite, andalusite, related materials e/	do.	50	50	60	80	80
Lime, quicklime, hydrated lime, dead-burned dolomite e/	do.	3,000	3,000	3,015	2,940	2,714 3/
Mica e/		12,000	8,000	10,000	10,000	10,000
Nitrogen, N content of ammonia	thousand tons	1,848	1,871	1,480	1,470	1,850
Pigments, mineral, natural: Iron oxide e/		12,000	1,000	1,000	1,000	800
Phosphates, Thomas slag	thousand tons	356	300	154	140	77 3/
Potash:						
Gross weight (run-of-mine)	do.	8,570	8,200	6,380	6,157	6,160
K2O equivalent (run-of-mine) e/	do.	1,400	1,100	936	869	812 3/
K2O equivalent (marketable)	do.	1,141	890	870	799	760
Pozzolan and lapilli e/	do.	404	526	490	427	400
Salt:						
Rock salt e/	do.	103	116	143	165	370 3/
Brine salt (refined)	do.	1,651	1,310	1,658	1,491	1,460 3/
Marine salt	do.	1,156	1,200	1,123	1,473	970 3/
Salt in solution	do.	3,206	4,355	4,612	4,410	4,273 3/
Total e/	do.	6,116	6,981	7,536	7,539	7,073 3/
Sodium compounds: e/						
Soda ash	do.	1,100	1,222	1,123	1,120	1,106 3/
Sodium sulfate	do.	77	62	104	117	124 3/
Stone, sand and gravel:						
Limestone, agricultural and industrial	do.	6,400	5,800	6,410	9,780	9,200
Slate, roof e/	do.	45	26	25	27	26
Sand and and gravel: e/						
Industrial sands, total	do.	6,300	5,400	7,240	6,100	6,550
Other sand, gravel and aggregates	do.	362,600 r/	333,200 r/	353,600	174,900	158,650
Sulfur, byproduct:						
Of natural gas	do.	770	829	865 r/	825	755 3/
Of petroleum	do.	230	278	219	240	235
Of unspecified sources e/	do.	150	150	100	106	99 3/
Total e/	do.	1,150	1,257	1,184 r/	1,171	1,089
Talc:						
Crude		350,500	299,900	306,300	322,300	349,270 3/
Powder e/		260,000	225,000	277,800	297,300	320,970 3/
MINERAL FUELS AND RELATED MATERIALS						
Asphaltic material e/		39,400	40,100	38,400	32,300	28,500
Carbon black e/		200,000	204,900	200,000	259,000	246,500 3/

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity 2/		1992	1993	1994	1995	1996 e/
MINERAL FUELS AND RELATED MATERIALS--Continued						
Coal, including briquets:						
Anthracite and bituminous	thousand tons	9,478	8,676	8,040	7,014	7,312 3/
Lignite	do.	1,578	1,670	1,500	1,402	798 3/
Total	do.	11,056	10,346	9,540	8,416	8,110
Briquets e/	do.	500	500	336	276	250
Coke, metallurgical	do.	5,362	4,752	4,504	5,447	3,850
Gas, natural:						
Gross	million cubic meters	3,300	3,300	3,500	3,300	2,800
Marketed	do.	2,280	2,520	3,610	3,830	4,115
Petroleum:						
Crude	thousand 42-gallon barrels	21,913	20,039	20,384	18,284	15,339 3/
Refinery products:						
Liquefied petroleum gas	do.	29,348 r/	31,262 r/	28,861	30,000	30,000
Gasoline, all kinds	do.	150,416 r/	149,438 r/	146,947	148,000	150,000
Jet fuel e/	do.	41,340 r/	43,672 r/	46,965 r/	45,000	45,000
Kerosene	do.	500	500	500	500	500
Distillate fuel oil	do.	200,000	200,000	200,000	200,000	200,000
Heavy fuel oil	do.	76,000	76,000	79,322 r/	78,000	78,000
Other products	do.	40,000	40,000	40,000	40,000	40,000
Refinery fuel and losses	do.	20,000	20,000	20,000	20,000	20,000
Total e/	do.	557,604 r/	560,872 r/	562,595 r/	561,500	563,500

e/ Estimated. r/ Revised.

1/ Table includes data available through Mar. 1997.

2/ In addition to the commodities listed, France also produces germanium from domestic ores and has been described as the world's leading producer of this commodity in French resources. Unfortunately, actual output is not regularly reported. In addition France produces large amounts of stone, but statistics on output are not available.

3/ Reported number.

4/ Excludes secondary production from nickel/cadmium batteries.

5/ Includes smectic clay.

TABLE 2
FRANCE: 1996 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	$7,835	$2,454	$5,381	$8,625	$7,229	$1,396
Magnesite	42	545	(503)	99	599	(500)
Slate	3,277	8,991	(5,714)	3,601	9,030	(5,429)
Other	510,059	457,962	52,097	681,559	744,664	(63,105)
Total	521,213	469,952	51,261	693,884	761,522	(67,638)
Metalliferous ores:						
Copper	409	1,855	(1,446)	421	1,928	(1,507)
Lead	6	30,111	(30,105)	7	70,261	(70,254)
Tin	--	386	(386)	2	386	(384)
Zinc	2,363	63,646	(61,283)	2,366	167,472	(165,106)
Other (including waste and scrap)	998,111	517,906	480,205	1,134,702	1,449,594	(314,892)
Total	1,000,889	613,904	386,985	1,137,498	1,689,641	(552,143)
Metals:						
Iron and steel 2/	6,752,495	6,956,614	(204,119)	9,818,638	7,765,056	2,053,582
Mercury	132	237	(105)	233	328	(95)
Other nonferrous metals	3,455,899	3,402,764	53,135	4,621,906	5,762,179	(1,140,273)
Total	10,208,526	10,359,615	(151,089)	14,440,777	13,527,563	913,214
Mineral fuels	4,491,741	6,099,409	(1,607,668)	7,229,996	22,762,218	(15,532,222)
Nonmetallic mineral manufactures:						
Abrasives, n.e.s.: Grinding and polishing wheels and stones	37,791	108,138	(70,347)	54,491	131,712	(77,221)
Cement	124,558	101,749	22,809	205,980	140,761	65,219
Diamond: Natural: Gem, not set or strung	13,208	134,572	(121,364)	107,107	238,381	(131,274)
Dimension stone: Worked	82,239	188,848	(106,609)	126,216	197,472	(71,256)
Lime	43,426	19,777	23,649	47,704	19,853	27,851
Mica: Worked including agglomerated splittings	4,986	3,544	1,442	11,597	7,521	4,076
Precious and semiprecious stones other than diamond:						
Natural	2,026	5,832	(3,806)	40,130	83,676	(43,546)
Synthetic	7,927	1,138	6,789	42,777	15,311	27,466
Total	316,161	563,598	(247,437)	636,002	834,687	(198,685)

1/ Table prepared by Glenn J. Wallace, International Data Unit.
2/ Excludes ferrous waste and scrap.

Source: United Nations Statistical Office (microfiche).

TABLE 3
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Destinations: United States	Destinations: Other (principal)
METALS				
Akali and akaline-earth metals:				
Alkali metals		42	(2/)	Poland 36; Algeria 1; Belgium-Luxembourg 1.
Alkaline-earth metals		185	9	Germany 146; Algeria 12; Russia 7.
Aluminum:				
Ore and concentrate		11,744	1	United Kingdom 11,695; Belgium-Luxembourg 12; South Africa 12.
Oxides and hydroxides		210,378	10,087	Italy 76,603; Germany 20,230; United Kingdom 17,453.
Metal including alloys:				
Scrap		113,072	4,139	Italy 46,186; Germany 15,275; Netherlands 13,993.
Unwrought		282,490	917	Italy 97,953; Germany 46,697; Switzerland 35,088.
Semimanufactures		419,261	9,757	Germany 92,409; United Kingdom 76,376; Italy 42,959.
Antimony: Metal including alloys, all forms		390	--	Belgium-Luxembourg 312; Netherlands 68; Morocco 7.
Beryllium: Metal including alloys, all forms	value, thousands	$161	$41	Brazil $57; United Arab Emirates $25; India $16.
Bismuth: Metal including alloys, all forms		78	--	Republic of Korea 37; United Kingdom 20; Belgium-Luxembourg 17.
Cadmium: Metal including alloys, all forms		925	--	Belgium-Luxembourg 520; Netherlands 280; Germany 89.
Chromium:				
Ore and concentrate		807	--	Italy 297; Spain 131; Saudi Arabia 100.
Oxides and hydroxides		477	--	United Kingdom 321; Belgium-Luxembourg 45; Spain 25.
Metal including alloys, all forms		3,264	1,678	Germany 489; United Kingdom 351; Japan 168.

See footnotes at end of table.

TABLE 3--Continued
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Destinations	
			United States	Other (principal)
METALS--Continued				
Cobalt:				
Ore and concentrate	value, thousands	$17	--	Switzerland $13; Australia $3; Morocco $1.
Oxides and hydroxides		19	7	Belgium-Luxembourg 3; Italy 3; Germany 2.
Metal including alloys, all forms		469	77	Italy 89; United Kingdom 79; Germany 58.
Columbium and tantalum:				
Ore and concentrate 3/		24	--	Thailand 21; Iran 2; Germany 1.
Tantalum metal including alloys, all forms		80	25	Israel 53; United Kingdom 1.
Copper:				
Ore and concentrate		1,426	(2/)	Germany 842; Belgium-Luxembourg 584.
Matte and speiss including cement copper		226	--	Spain 210; Italy 15; Morocco 1.
Metal including alloys:				
Scrap		125,784	209	Italy 45,427; Germany 30,549; Belgium-Luxembourg 26,938.
Unwrought		26,166	2	Spain 9,496; Belgium-Luxembourg 5,489; United Kingdom 3,609.
Semimanufactures		435,946	14,639	Germany 121,145; Italy 74,457; Spain 41,993.
Germanium: Metal including alloys, all forms		124	3	Germany 65; Italy 28; Belgium-Luxembourg 27.
Gold:				
Waste and sweepings	value, thousands	$18,456	--	United Kingdom $12,342; Switzerland $3,742; Canada $1,754.
Metal including alloys, unwrought and partly wrought	kilograms	50,749	42	United Kingdom 39,039; Switzerland 5,679; Italy 2,013.
Iron and steel:				
Iron ore and concentrate:				
Excluding roasted pyrite	thousand tons	1,294	--	Belgium-Luxembourg 1,277; Italy 15; Netherlands 1.
Pyrite, roasted		1,267	--	Ghana 1,103; Peru 109; Singapore 55.
Metal:				
Scrap	thousand tons	3,746	(2/)	Spain 1,407; Belgium-Luxembourg 928; Italy 890.
Pig iron, cast iron, related materials		574,296	161,814	Germany 81,003; Italy 78,429; Belgium-Luxembourg 32,679.
Ferroalloys:				
Ferrochromium		951	8	Spain 555; Belgium-Luxembourg 263; Netherlands 64.
Ferromanganese		35,648	9,523	Germany 10,158; United Kingdom 4,429; Italy 3,364.
Ferronickel		25,408	(2/)	Italy 25,371; Belgium-Luxembourg 23; Switzerland 4.
Ferrosilicomanganese		41,465	7,492	Germany 7,838; Spain 4,796; Norway 3,900.
Ferrosilicon		30,550	421	Germany 13,838; Italy 9,671; Spain 1,460.
Silicon metal 4/		55	(2/)	Belgium-Luxembourg 37; Japan 12; French Polynesia 4.
Unspecified		40,023	4,779	Germany 9,409; Spain 4,084; Italy 3,965.
Steel, primary forms	value, thousands	$612,824	$46,274	Belgium-Luxembourg $430,231; Germany $45,350; Italy $33,184.
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	thousand tons	4,487	652	Italy 1,162; Spain 884; Germany 480.
Clad, plated, coated	do.	2,232	47	Germany 542; Italy 313; United Kingdom 281.
Of alloy steel		778,058	59,370	Germany 160,275; Italy 157,616; Spain 48,456.
Bars, rods, angles, shapes, sections	thousand tons	2,824	117	Germany 1,056; Belgium-Luxembourg 413; Italy 269.
Rails and accessories		130,636	10,501	Belgium-Luxembourg 37,818; Brazil 14,698; Switzerland 9,027.
Wire		181,808	33,674	Germany 50,135; Belgium-Luxembourg 12,843; Spain 11,159.
Tubes, pipes, fittings	thousand tons	1,452	63	Germany 175; United Kingdom 113; Italy 85.
Lead:				
Ore and concentrate		3	--	Spain 2; Switzerland 1.
Oxides		14,378	3	Germany 7,558; Belgium-Luxembourg 3,177; Japan 1,843.
Metal including alloys:				
Scrap		12,339	--	Germany 4,058; Belgium-Luxembourg 1,982; Ireland 1,974.
Unwrought		105,801	--	Germany 49,039; Italy 22,502; Belgium-Luxembourg 14,051.
Semimanufactures		6,378	28	Belgium-Luxembourg 1,530; Germany 1,325; Netherlands 1,199.
Magnesium, metal including alloys:				
Scrap		526	3	Netherlands 206; United Kingdom 111; Norway 109.
Semimanufactures		28	1	Germany 20; Morocco 6; Belgium-Luxembourg 1.
Manganese:				
Ore and concentrate, metallurgical-grade		160,711	--	Norway 62,870; Italy 42,238; Poland 27,048.
Oxides and hydroxides		424	(2/)	Finland 98; Spain 96; Belgium-Luxembourg 57.
Metal including alloys, all forms		778	51	Germany 350; Italy 226; Belgium-Luxembourg 75.
Mercury	value, thousands	$233	$27	Belgium-Luxembourg $44; Netherlands $41; Italy $32.
Molybdenum:				
Ore and concentrate:				
Roasted		1	--	All to Spain.
Unroasted		50	--	India 49; Netherlands 1.

See footnotes at end of table.

TABLE 3--Continued
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Destinations	
			United States	Other (principal)
METALS--Continued				
Molybdenum--Continued				
Metal including alloys:				
Unwrought including waste and scrap		5	--	Malaysia 3; United Kingdom 1.
Semimanufactures		103	9	Austria 37; Belgium-Luxembourg 34; Italy 5.
Nickel:				
Ore and concentrate		5	--	Belgium-Luxembourg 3; United Kingdom 1.
Matte and speiss		23	--	Netherlands 9; Germany 5; United Kingdom 4.
Metal including alloys:				
Scrap		4,519	936	Germany 2,069; United Kingdom 725; Belgium-Luxembourg 494.
Unwrought		7,470	1,513	Germany 2,300; Italy 611; Sweden 582.
Semimanufactures		7,553	1,032	Germany 3,967; United Kingdom 649; Italy 370.
Platinum-group metals:				
Waste and sweepings	value, thousands	$20,733	$642	United Kingdom $17,143; Germany $1,273; Norway $915.
Metal including alloys, unwrought and partly wrought	do.	$155,563	$1,698	United Kingdom $81,422; Japan $28,905; Spain $10,178.
Silver:				
Ore and concentrate	do.	$3	--	All to Germany.
Metal including alloys, unwrought and partly wrought	do.	$183,456	$34	Spain $64,905; Germany $32,210; Switzerland $24,792.
Tin:				
Ore and concentrate		2	--	All to Morocco.
Metal including alloys:				
Scrap		1,375	--	Belgium-Luxembourg 1,182; Spain 103; Netherlands 67.
Unwrought		720	--	Spain 238; Belgium-Luxembourg 219; Germany 57.
Semimanufactures		1,210	34	Italy 584; Spain 186; Germany 152.
Titanium:				
Ore and concentrate		2,931	3	Netherlands 1,614; United Kingdom 1,246; Spain 54.
Oxides		19,343	5,639	Germany 3,232; Egypt 1,530; Italy 1,214.
Metal including alloys:				
Unwrought including waste and scrap		982	809	United Kingdom 151; Germany 17; Switzerland 2.
Semimanufactures		1,351	279	Germany 339; United Kingdom 303; Lebanon 83.
Tungsten:				
Ore and concentrate		20	--	Brazil 10; Spain 9; Morocco 1.
Metal including alloys:				
Unwrought including waste and scrap		332	29	Germany 124; Switzerland 52; United Kingdom 47.
Semimanufactures		73	8	United Kingdom 23; Germany 21; Mexico 3.
Uranium and thorium: Metal including alloys, all forms:				
Uranium	value, thousands	$56,894	--	Japan $38,109; Germany $8,880; Sweden $7,772.
Thorium	do.	$4,375	$24	Russia $1,821; Germany $1,125; Belgium-Luxembourg $849.
Zinc:				
Ore and concentrate		10,146	--	Belgium-Luxembourg 6,270; Germany 3,022; Spain 852.
Oxides		20,344	(2/)	Spain 10,230; Belgium-Luxembourg 3,160; Italy 2,102.
Metal including alloys:				
Scrap		28,044	602	China 7,081; Italy 5,686; Belgium-Luxembourg 3,637.
Unwrought		232,120	--	Belgium-Luxembourg 140,199; Germany 39,674; Italy 17,022.
Semimanufactures 5/		58,002	277	Unspecified 51,518; United Kingdom 1,600; Italy 1,568.
Zirconium:				
Ore and concentrate		856	--	Italy 341; Germany 180; Spain 55.
Metal including alloys: Unwrought including waste and scrap		7,060	558	Germany 2,558; Italy 665; United Kingdom 492.
Other:				
Ores and concentrates		130	--	Ghana 99; Switzerland 28; Germany 3.
Oxides and hydroxides		14,901	1,888	Germany 4,624; Italy 2,186; United Kingdom 1,356.
Ashes and residues		156,623	1,041	Belgium-Luxembourg 79,300; Norway 31,745; Italy 13,928.
Base metals including alloys, all forms		1,464	99	Italy 830; Finland 103; Russia 97.
Metalloids 6/	value, thousands	$292	$41	Germany $69; Italy $47; Japan $37.
Precious metals, n.e.s.:				
Ores and concentrates	do.	$942	--	United Kingdom $901; Germany $39; Morocco $2.
Waste and sweepings	do.	$46,941	$3,906	United Kingdom $28,514; Switzerland $7,183; Belgium-Luxembourg $3,788.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc.		6,726	26	Algeria 3,402; Germany 1,464; Czech Republic 528.
Artificial corundum		30,175	779	Germany 6,143; Spain 4,361; Italy 4,254.
Dust and powder of precious and semiprecious stones including diamonds	value, thousands	$352	$83	Germany $69; Italy $47; Japan $37.
Grinding and polishing wheels and stones		6,106	101	Netherlands 1,344; Italy 974; Spain 860.

See footnotes at end of table.

TABLE 3--Continued
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Destinations	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Asbestos, crude		14,054	32	Colombia 3,391; Belgium-Luxembourg 3,343; Portugal 2,941.
Barite and witherite	thousand tons	1575.33	(2/)	Belgium-Luxembourg 1,385; Switzerland 91; Germany 72.
Boron: Crude natural borates		1,258	--	Belgium-Luxembourg 1,159; Germany 77; Tunisia 10.
Bromine, fluorine, iodine		96	--	Germany 30; United Kingdom 23; United Arab Emirates 17.
Cement	thousand tons	1,921	60	Germany 438; Cote d' Ivoire 408; Italy 148.
Chalk		497,832	916	Germany 177,241; Belgium-Luxembourg 109,437; Netherlands 44,810.
Clays, crude:				
Bentonite		22,555	2	Spain 9,741; Portugal 3,953; Germany 2,799.
Kaolin		260,312	20	Italy 84,338; Spain 47,892; Germany 34,528.
Unspecified		468,494	401	Italy 279,405; Germany 56,855; United Kingdom 54,108.
Cryolite and chiolite		609	--	All to Switzerland.
Diamond, natural:				
Gem, not set or strung	value, thousands	$107,107	$31,536	Switzerland $54,229; Belgium-Luxembourg $9,680; Israel $3,214.
Industrial stones	do.	$385	--	Belgium-Luxembourg $331; Switzerland $49; Andorra $2.
Diatomite and other infusorial earth		34,684	23	Italy 8,410; Germany 5,409; United Kingdom 2,881.
Feldspar		92,887	--	Spain 47,272; Belgium-Luxembourg 18,169; Germany 13,627.
Fertilizer materials:				
Crude, n.e.s.		29,014	84	Switzerland 6,896; United Kingdom 3,866; Spain 3,499.
Manufactured:				
Ammonia		109,138	--	Spain 60,522; United Kingdom 19,965; Netherlands 10,024.
Nitrogenous		774,809	23,785	Germany 162,580; Netherlands 149,400; Spain 110,638.
Phosphatic		27,561	--	Spain 20,496; Belgium-Luxembourg 3,444; Italy 1,430.
Potassic		288,744	--	Belgium-Luxembourg 116,354; Italy 47,752; Netherlands 37,959.
Unspecified and mixed		482,607	100	Ireland 93,955; Spain 74,151; Germany 55,957.
Fluorspar		31,017	36	Tunisia 10,277; Italy 9,998; Turkey 3,626.
Graphite, natural		985	46	Belgium-Luxembourg 545; China 140; Spain 79.
Gypsum and plaster		847,816	--	Germany 391,072; Belgium-Luxembourg 363,145; Netherlands 19,778.
Lime		636,843	--	Germany 427,448; Finland 89,734; Belgium-Luxembourg 47,023.
Magnesium compounds:				
Magnesite, crude		80	--	Switzerland 21; Germany 18; Belgium-Luxembourg 16.
Oxides and hydroxides		22,288	49	Belgium-Luxembourg 7,810; Poland 4,252; United Kingdom 3,125.
Mica:				
Crude including splittings and waste		9,383	3	Germany 5,276; United Kingdom 1,357; Belgium-Luxembourg 584.
Worked including agglomerated splittings		1,210	51	Switzerland 635; Austria 145; United Kingdom 143.
Nitrates, crude		2	--	All to Belgium-Luxembourg.
Phosphates, crude		7,286	92	Spain 4,173; United Kingdom 1,796; Belgium-Luxembourg 522.
Pigments, mineral: Iron oxides and hydroxides, processed		11,814	6	Italy 3,628; Germany 2,294; Spain 1,213.
Potassium salts, crude		1	--	All to Morocco.
Precious and semiprecious stones other than diamond:				
Natural	value, thousands	$40,130	$636	Switzerland $32,160; Japan $1,763; Vietnam $1,508.
Synthetic	do.	$37,545	$1,618	Switzerland $19,024; Hong Kong $4,189; Thailand $2,231.
Pyrite, unroasted		94	--	Italy 71; Belgium-Luxembourg 23.
Quartz crystal, piezoelectric	value, thousands	$5,232	$36	Finland $2,964; United Kingdom $1,678; Germany $256.
Salt and brine		795,531	717	Italy 344,241; Germany 166,996; Belgium-Luxembourg 126,945.
Sodium compounds, n.e.s.: Sulfate, manufactured		17,050	3	Italy 7,397; Belgium-Luxembourg 5,522; Germany 1,198.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked		146,389	1,583	Belgium-Luxembourg 36,805; Germany 35,466; United Kingdom 23,525.
Worked		101,667	9,016	Belgium-Luxembourg 27,257; Germany 23,496; Switzerland 10,064.
Dolomite, chiefly refractory-grade		74,810	--	Belgium-Luxembourg 48,120; Netherlands 8,120; Germany 6,166.
Gravel and crushed rock	thousand tons	9,109	13	Germany 3,334; Switzerland 2,827; Belgium-Luxembourg 1,258.
Limestone other than dimension		264,031	--	Germany 186,949; Norway 57,930; Belgium-Luxembourg 17,957.
Quartz and quartzite		474	--	Spain 249; Germany 77; Belgium-Luxembourg 47.
Sand other than metal-bearing	thousand tons	4,373	2	Germany 2,225; Italy 693; Switzerland 638.
Sulfur:				
Elemental:				
Crude including native and byproduct		653,403	1,004	Morocco 174,150; Tunisia 146,661; United Kingdom 90,925.
Colloidal, precipitated, sublimed		813	38	Germany 327; Belgium-Luxembourg 136; Canada 102.
Dioxide		4,884	--	Netherlands 3,487; Germany 909; United Kingdom 194.
Sulfuric acid		297,351	--	Belgium-Luxembourg 232,234; United Kingdom 41,234; Netherlands 10,218.

See footnotes at end of table.

TABLE 3--Continued
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Destinations	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Talc, steatite, soapstone, pyrophyllite		176,798	638	Germany 47,556; Spain 31,366; Italy 25,959.
Vermiculite, perlite, chlorite		1,881	5	Germany 685; Italy 339; Spain 226.
Other:				
Crude		27,482	130	Belgium-Luxembourg 10,469; Spain 8,887; Italy 1,989.
Slag and dross, not metal-bearing	thousand tons	1,654	61	Belgium-Luxembourg 879; Israel 283; Germany 191.
MINERAL FUELS AND RELATED MATERIALS				
Carbon, black		114,758	1	Germany 37,074; Spain 25,827; Italy 14,421.
Coal:				
Anthracite		27,368	--	Belgium-Luxembourg 13,323; Germany 11,482; Netherlands 1,490.
Bituminous		2,665	--	Norway 2,522; Belgium-Luxembourg 139; Germany 3.
Briquets of anthracite and bituminous coal		23,230	--	Belgium-Luxembourg 7,281; Germany 6,146; Netherlands 4,420.
Lignite including briquets		8,844	--	Netherlands 7,980; Germany 550; Belgium-Luxembourg 183.
Unspecified		259,759	--	Germany 220,833; Norway 22,710; Italy 11,817.
Coke and semicoke		341,548	--	Germany 86,520; Italy 62,839; Belgium-Luxembourg 61,387.
Gas, natural:				
Gaseous		472,014	--	Switzerland 220,298; Spain 146,462; Belgium-Luxembourg 105,240.
Liquefied		49,227	--	All to Spain.
Peat including briquets and litter		29,580	--	Belgium-Luxembourg 15,232; Germany 6,555; Italy 3,097.
Petroleum:				
Crude		24,874	--	Germany 24,417; Austria 446; Morocco 5.
Refinery products:				
Liquefied petroleum gas	thousand tons	1,059	39	Italy 232; Morocco 231; United Kingdom 120.
Gasoline	do.	5,111	637	Germany 1,292; Italy 705; United Kingdom 347.
Mineral jelly and wax		137,121	1,379	Germany 45,989; Netherlands 33,765; Belgium-Luxembourg 15,545.
Kerosene and jet fuel	thousand tons	1,281	--	Switzerland 586; Germany 217; Belgium-Luxembourg 166.
Distillate fuel oil		2,533	--	Netherlands 2,370; Italy 90; Germany 61.
Lubricants	thousand tons	1,341	(2/)	Belgium-Luxembourg 247; Germany 144; United Kingdom 133.
Residual fuel oil	do.	6,276	408	Italy 869; United Kingdom 807; Germany 643.
Bitumen and other residues		525,187	--	Spain 101,830; United Kingdom 98,030; Portugal 70,573.
Bituminous mixtures		42,530	742	Germany 18,294; Algeria 4,846; Switzerland 3,954.
Petroleum coke		51,339	835	Belgium-Luxembourg 19,808; Netherlands 12,897; Denmark 7,399.

1/ Table prepared by Glenn J. Wallace.
2/ Less than 1/2 unit.
3/ May include vanadium.
4/ May include high-purity silicon.
5/ Includes zinc dust, flakes, and powders.
6/ Reported under SITC item number as "selenium, tellurium, phosphorus, arsenic, etc."

Source: United Nations Statistical Office (microfiche).

TABLE 4
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Sources: United States	Sources: Other (principal)
METALS				
Akali and akaline-earth metals:				
Alkali metals		3,072	74	Germany 1,655; United Kingdom 1,164; Italy 130.
Alkaline-earth metals		2,005	33	Russia 920; China 345; Belgium-Luxembourg 327.
Aluminum:				
Ore and concentrate	thousand tons	1,696	(2/)	Guinea 1,379; Greece 171; China 100.
Oxides and hydroxides		567,692	1,931	Jamaica 407,005; Greece 80,988; Germany 37,314.
Metal including alloys:				
Scrap		131,166	651	Germany 57,886; Belgium-Luxembourg 16,284; Netherlands 13,776.
Unwrought		491,124	95	Norway 95,151; Netherlands 86,474; Cameroon 62,079.
Semimanufactures		413,389	10,299	Germany 111,697; Belgium-Luxembourg 59,832; Italy 39,075.
Antimony: Metal including alloys, all forms		5,705	6	China 4,941; Krgyzstan 570; Belgium-Luxembourg 89.
Beryllium: Metal including alloys, all forms	value, thousands	$612	$458	United Kingdom $50; Germany $39; Russia $35.
Bismuth: Metal including alloys, all forms		310	25	Belgium-Luxembourg 136; United Kingdom 88; Peru 57.
Cadmium: Metal including alloys, all forms		823	7	Belgium-Luxembourg 616; Finland 100; United Kingdom 40.
Chromium:				
Ore and concentrate		29,513	--	South Africa 11,244; Belgium-Luxembourg 7,240; Albania 5,446.
Oxides and hydroxides		8,288	16	United Kingdom 5,563; Germany 1,592; Russia 628.
Metal including alloys, all forms		922	8	Russia 600; United Kingdom 172; Germany 79.
Cobalt:				
Ore and concentrate		30	(2/)	Belgium-Luxembourg 25; Netherlands 5.
Oxides and hydroxides		529	48	United Kingdom 196; Finland 161; Belgium-Luxembourg 59.
Metal including alloys, all forms		1,241	178	United Kingdom 205; Zambia 194; Germany 162.
Columbium and tantalum:				
Ore and concentrate 3/		432	1	Germany 431.
Tantalum metal including alloys, all forms		39	32	Germany 3; Italy 2; Belgium-Luxembourg 1.
Copper:				
Ore and concentrate	value, thousands	$195	--	Australia $69; Belgium-Luxembourg $61; Italy $54.
Matte and speiss including cement copper		1,039	1	Belgium-Luxembourg 1,011; Nertherlands 25; Italy 2.
Metal including alloys:				
Scrap		89,416	27	Germany 26,369; Algeria 10,501; United Kingdom 10,396.
Unwrought		477,146	319	Chile 172,914; Poland 84,096; Russia 54,597.
Semimanufactures		230,328	1,822	Germany 86,792; Belgium-Luxembourg 50,704; United Kingdom 19,537.
Germanium: Metal including alloys, all forms		6	(2/)	Belgium-Luxembourg 5; Nertherlands 1.
Gold:				
Waste and sweepings	value, thousands	$2,388	--	Mauritius $1,874; Germany $213; Hungary $108.
Metal including alloys, unwrought and partly wrought	kilograms	84,718	46,842	United Kingdom 18,333; South Africa 6,400; Switzerland 4,002.
Iron and steel:				
Iron ore and concentrate:				
Excluding roasted pyrite	thousand tons	18,305	(2/)	Brazil 6,576; Australia 5,063; Mauritania 2,901.
Pyrite, roasted		17,880	--	Spain 9,085; Italy 6,341; Belgium-Luxembourg 2,383.
Metal:				
Scrap	thousand tons	1,536	(2/)	Germany 1,022; Belgium-Luxembourg 345; United Kingdom 49.
Pig iron, cast iron, related materials		212,136	57	Russia 61,856; Belgium-Luxembourg 33,837; Germany 33,792.
Ferroalloys:				
Ferrochromium		207,060	467	South Africa 128,617; Kazakstan 9,214; Zimbabwe 8,946.
Ferromanganese		51,427	34	Norway 23,822; South Africa 13,479; Belgium-Luxembourg 9,853.
Ferronickel		62,867	1	New Caledonia 40,713; Colombia 11,616; Dominican Republic 8,782.
Ferrosilicochromium		182	--	Zimbabwe 102; Belgium-Luxembourg 80.
Ferrosilicomanganese		46,722	--	Belgium-Luxembourg 14,756; Norway 12,610; Spain 4,646.
Ferrosilicon		49,651	4	Norway 16,811; Belgium-Luxembourg 7,700; Germany 5,507.
Silicon metal 4/		18,765	68	Norway 5,561; Spain 3,668; Brazil 3,231.
Unspecified		26,660	1,263	Germany 5,803; United Kingdom 4,984; Belgium-Luxembourg 2,678.
Steel, primary forms		797,946	730	Belgium-Luxembourg 422,553; Germany 168,853; Spain 99,292.
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	thousand tons	4,250	(2/)	Belgium-Luxembourg 2,094; Germany 663; Italy 449.
Clad, plated, coated	do.	1,521	16	Belgium-Luxembourg 674; Germany 306; Italy 149.
Of alloy steel		564,683	1,027	Belgium-Luxembourg 232,144; Germany 152,242; Spain 44,329.
Bars, rods, angles, shapes, sections	thousand tons	2,808	1	Belgium-Luxembourg 849; Germany 607; Italy 583.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Sources	
			United States	Other (principal)
METALS--Continued				
Iron and steel --Continued:				
Metal: Semimanufactures--Continued:				
Rails and accessories		22,903	11	Germany 8,635; Belgium-Luxembourg 7,489; United Kingdom 5,492.
Wire		365,060	706	Belgium-Luxembourg 96,233; Germany 79,106; Italy 76,917.
Tubes, pipes, fittings		941,389	5,956	Italy 325,836; Germany 219,722; Belgium-Luxembourg 86,095.
Lead:				
Ore and concentrate		205,018	34,395	Sweden 39,070; South Africa 38,778; Ireland 35,898.
Oxides		1,890	1	Germany 1,182; Italy 307; United Kingdom 115.
Metal including alloys:				
Scrap		34,761	--	Belgium-Luxembourg 17,675; Switzerland 9,061; Germany 3,068.
Unwrought		57,125	17	United Kingdom 20,868; Belgium-Luxembourg 13,150; Mexico 8,010.
Semimanufactures		8,614	4	Belgium-Luxembourg 5,134; Germany 3,274; Italy 124.
Magnesium, metal including alloys:				
Scrap		118	--	Italy 54; Germany 40; Belgium-Luxembourg 24.
Unwrought		6,218	1,428	Norway 3,605; Canada 230; Belgium-Luxembourg 227.
Semimanufactures		1,137	41	Austria 280; Belgium-Luxembourg 216; Germany 174.
Manganese:				
Ore and concentrate, metallurgical-grade	thousand tons	1,111	(2/)	Gabon 729; Brazil 183; South Africa 161.
Oxides and hydroxides		7,621	58	Greece 2,084; Brazil 1,668; Belgium-Luxembourg 1,325.
Metal including alloys, all forms		5,720	722	Netherlands 2,313; South Africa 768; Russia 481.
Mercury		67	10	Spain 23; Netherlands 9; Croatia 6.
Molybdenum:				
Ore and concentrate:				
Roasted		2,367	300	Belgium-Luxembourg 747; Chile 655; Nertherlands 302.
Unroasted		11	--	All from Italy.
Metal including alloys:				
Unwrought including waste and scrap		256	62	Germany 130; Netherlands 21; Chile 20.
Semimanufactures		172	59	Austria 86; Germany 15; Belgium-Luxembourg 5.
Nickel:				
Ore and concentrate		582	4	New Caledonia 336; Belgium-Luxembourg 120; Brazil 85.
Matte and speiss		16,368	--	New Caledonia 14,280; United Kingdom 1,063; Russia 423.
Metal including alloys:				
Scrap		1,500	702	Germany 346; Russia 106; Netherlands 79.
Unwrought		31,329	1,005	Russia 11,049; Australia 5,626; Germany 3,935.
Semimanufactures		8,146	2,943	United Kingdom 2,238; Germany 1,653; Sweden 308.
Platinum-group metals:				
Waste and sweepings	value, thousands	$8,126	--	Bulgaria $3,639; Japan $1,348; Tunisia $908.
Metal including alloys, unwrought and partly wrought	do.	$220,141	$7,560	United Kingdom $156,679; South Africa $14,781; Spain $9,783.
Silver:				
Ore and concentrate	do.	$24	--	Belgium-Luxembourg $16; Germany $8.
Metal including alloys, unwrought and partly wrought	do.	$330,984	$6,224	United Kingdom $111,004; Belgium-Luxembourg $106,890; Spain $36,244.
Tin:				
Ore and concentrate		447	--	Germany 436; United Kingdom 6; Netherlands 4.
Metal including alloys:				
Scrap		487	--	Netherlands 294; Belgium-Luxembourg 184; Tunisia 3.
Unwrought		8,772	--	Indonesia 2,786; Belgium-Luxembourg 1,346; China 1,258.
Semimanufactures		328	3	Germany 115; Netherlands 93; Spain 44.
Titanium:				
Ore and concentrate		154,628	(2/)	Norway 67,816; Australia 47,010; Canada 33,486.
Oxides		11,464	423	United Kingdom 2,070; Belgium-Luxembourg 1,611; Slovenia 1,549.
Metal including alloys:				
Unwrought including waste and scrap		1,947	159	Russia 653; Japan 647; United Kingdom 151.
Semimanufactures		2,881	1,395	United Kingdom 484; Japan 300; Italy 184.
Tungsten:				
Ore and concentrate		1,750	--	Brazil 1,741; Germany 4; Belgium-Luxembourg 1.
Metal including alloys:				
Unwrought including waste and scrap		499	9	China 357; Austria 67; Belgium-Luxembourg 17.
Semimanufactures		96	8	Germany 32; Belgium-Luxembourg 20; Italy 15.
Uranium and thorium:				
Uranium ore and concentrate	value, thousands	$4	--	All from Spain.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Sources: United States	Sources: Other (principal)
METALS--Continued				
Uranium and thorium--Continued:				
Metal including alloys, all forms:				
Uranium	value, thousands	$377,785	$7,530	Unspecified $263,467; Russia $49,544; South Africa $22,006.
Thorium	do.	$4,444	$4,406	Belgium-Luxembourg $26; Germany $3; United Kingdom $2.
Zinc:				
Ore and concentrate		601,108	21	Peru 133,885; Belgium-Luxembourg 127,903; Bolivia 93,369.
Oxides		15,818	11	Germany 3,739; Netherlands 3,104; Belgium-Luxembourg 2,919.
Metal including alloys:				
Scrap		11,921	--	Belgium-Luxembourg 6,022; Germany 3,633; Netherlands 1,562.
Unwrought including waste and scrap		157,099	7	Belgium-Luxembourg 46,883; Netherlands 26,958; Spain 22,783.
Semimanufactures 5/		30,972	29	Belgium-Luxembourg 14,208; Germany 9,976; Italy 2,594.
Zirconium:				
Ore and concentrate		63,504	1,004	Australia 30,658; South Africa 28,808; Ukraine 1,534.
Metal including alloys:				
Unwrought including waste and scrap		33	2	Japan 17; China 7; Italy 3.
Semimanufactures		106	55	Belgium-Luxembourg 28; United Kingdom 10; Germany 9.
Other:				
Ores and concentrates		14,150	--	Norway 13,241; Italy 350; Guatemala 260.
Oxides and hydroxides		5,455	403	Spain 1,257; Belgium-Luxembourg 894; Germany 739.
Ashes and residues		72,036	1,397	Germany 39,649; Belgium-Luxembourg 13,977; Spain 3,485.
Base metals including alloys, all forms		108	25	Belgium-Luxembourg 45; Germany 23; Russia 8.
Metalloids 6/		11,751	43	Netherlands 11,456; Belgium-Luxembourg 59; Spain 51.
Precious metals, n.e.s.:				
Ores and concentrates	value, thousands	$301	--	Greece $190; Spain $52; Bolivia $45.
Waste and sweepings	do.	$2,344	--	Belgium-Luxembourg $658; Switzerland $536; Sweden $409.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc.		6,893	563	Turkey 2,192; Italy 1,034; Germany 958.
Artificial corundum		24,621	193	Belgium-Luxembourg 5,894; China 4,386; United Kingdom 3,795.
Dust and powder of precious and semiprecious stones including diamonds	value, thousands	$7,070	$1,854	Ireland $2,474; Germany $1,408; Belgium-Luxembourg $519.
Grinding and polishing wheels and stones		13,551	240	Italy 3,385; Germany 3,244; Belgium-Luxembourg 1,456.
Asbestos, crude		20,544	7	Canada 14,155; South Africa 2,874; Russia 1,934.
Barite and witherite		17,624	430	China 7,347; Netherlands 4,306; Germany 3,839.
Boron:				
Crude natural borates		49,286	--	Turkey 47,281; United Kingdom 1,110; Belgium-Luxembourg 793.
Oxides and acids		19,129	4,095	Italy 9,313; Belgium-Luxembourg 2,334; Turkey 2,108.
Bromine, fluorine, iodine		11,012	54	Israel 7,967; Netherlands 1,081; Japan 671.
Cement	thousand tons	1,741	(2/)	Belgium-Luxembourg 468; Turkey 271; Spain 247.
Chalk		58,897	2	Germany 40,729; Belgium-Luxembourg 5,203; Spain 4,352.
Clays, crude:				
Bentonite		87,252	7,294	Italy 31,786; Greece 17,102; Germany 12,922.
Kaolin		391,595	57,882	United Kingdom 200,169; Brazil 41,533; Belgium-Luxembourg 39,868.
Unspecified		342,461	7,269	Germany 247,068; Senegal 40,483; Spain 14,310.
Cryolite and chiolite		5	--	Mainly from United Kingdom.
Diamond, natural:				
Gem, not set or strung	value, thousands	$238,381	$36,074	Belgium-Luxembourg $76,184; Switzerland $55,680; Israel $30,334.
Industrial stones	do.	$4,702	$5	Belgium-Luxembourg $3,094; Germany $573; Netherlands $268.
Diatomite and other infusorial earth		13,736	4,509	Germany 4,064; Denmark 2,517; Belgium-Luxembourg 1,031.
Feldspar		66,473	3	Norway 30,998; Germany 21,004; Netherlands 6,035.
Fertilizer materials:				
Crude, n.e.s.		108,131	58	Belgium-Luxembourg 49,729; Netherlands 34,069; Italy 15,090.
Manufactured:				
Ammonia		546,685	30	Netherlands 136,498; Germany 100,234; Estonia 80,171.
Nitrogenous	thousand tons	4,047	27	Netherlands 952; Belgium-Luxembourg 923; Russia 458.
Phosphatic		676,044	--	Belgium-Luxembourg 241,021; Netherlands 108,461; Tunisia 101,512.
Potassic	thousand tons	1,620	29	Spain 574; United Kingdom 351; Germany 279.
Unspecified and mixed	do.	1,825	27	Belgium-Luxembourg 657; Netherlands 342; Morocco 176.
Fluorspar		4,355	1	Mexico 3,312; United Kingdom 566; China 391.
Graphite, natural		3,869	18	Germany 1,024; Netherlands 616; United Kingdom 385.
Gypsum and plaster		217,524	1,809	Germany 127,492; Netherlands 23,433; Switzerland 22,163.
Lime		252,210	163	Belgium-Luxembourg 97,320; Germany 91,321; Spain 35,150.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Sources	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Magnesium compounds:				
Magnesite, crude		3,655	2	Spain 1,828; Germany 823; Turkey 528.
Oxides and hydroxides		186,568	1,876	Spain 34,721; North Korea 34,046; Greece 27,209.
Mica:				
Crude including splittings and waste		4,516	104	India 2,076; Brazil 860; China 481.
Worked including agglomerated splittings		452	16	Switzerland 118; Argentina 80; Belgium-Luxembourg 77.
Nitrates, crude		13,986	--	Belgium-Luxembourg 8,833; Germany 3,563; Chile 485.
Phosphates, crude	thousand tons	1,706	5	Israel 678; Morocco 360; Tunisia 279.
Pigments, mineral: Iron oxides and hydroxides, processed		39,316	398	Germany 12,936; Italy 8,501; Belgium-Luxembourg 4,132.
Potassium salts, crude		40,346	--	Israel 29,840; Canada 5,582; Jordan 4,005.
Precious and semiprecious stones other than diamond:				
Natural	value, thousands	$83,676	$2,906	Switzerland $44,459; Thailand $15,371; Germany $3,402.
Synthetic	do.	$11,131	$1,055	Switzerland $4,751; Mauritius $3,049; Germany $708.
Pyrite, unroasted		4,888	--	Italy 3,428; Belgium-Luxembourg 1,301; Netherlands 78.
Quartz crystal, piezoelectric	value, thousands	$4,180	$3,256	Russia $366; Japan $306; United Kingdom $69.
Salt and brine		451,257	156	Spain 135,020; Germany 102,376; United Kingdom 57,005.
Sodium compounds, n.e.s.:				
Soda ash, manufactured		259,130	15,316	Bulgaria 67,668; Poland 62,830; Germany 53,721.
Sulfate, manufactured		111,710	19	Spain 52,984; Belgium-Luxembourg 50,518; Germany 3,253.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked		285,558	271	South Africa 50,676; Brazil 45,742; India 35,747.
Worked		396,344	135	Spain 199,221; Germany 68,822; Italy 59,921.
Dolomite, chiefly refractory-grade		276,804	--	Belgium-Luxembourg 212,894; Italy 34,545; Germany 17,071.
Gravel and crushed rock	thousand tons	5,827	(2/)	Belgium-Luxembourg 4,152; United Kingdom 640; Germany 606.
Limestone other than dimension		172,773	--	Belgium-Luxembourg 172,718; Germany 52; Denmark 3.
Quartz and quartzite		263,519	373	Belgium-Luxembourg 239,329; Spain 13,988; Italy 4,633.
Sand other than metal-bearing	thousand tons	1,626	1	Belgium-Luxembourg 912; United Kingdom 445; Germany 112.
Sulfur:				
Elemental:				
Crude including native and byproduct		122,495	--	Poland 55,917; Germany 36,662; Netherlands 19,787.
Colloidal, precipitated, sublimed		17,801	9	Germany 14,734; Spain 1,513; Australia 577.
Dioxide		2,735	4	Sweden 1,534; Italy 1,012; Germany 179.
Sulfuric acid		251,840	9	Belgium-Luxembourg 96,037; Germany 38,141; Spain 34,348.
Talc, steatite, soapstone, pyrophyllite		31,587	790	Finland 6,724; Belgium-Luxembourg 6,258; Italy 5,631.
Vermiculite, perlite, chlorite		107,397	33	Switzerland 25,374; Turkey 25,020; Greece 19,440.
Other:				
Crude	thousand tons	2,007	2	Switzerland 1,207; Germany 238; Spain 213.
Slag and dross, not metal-bearing	do.	1,353	2	Germany 847; Belgium-Luxembourg 303; Canada 160.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural		76,658	1,540	Belgium-Luxembourg 71,921; Germany 2,796; Italy 203.
Carbon, black		118,661	1,964	Netherlands 30,462; Germany 27,247; Italy 16,819.
Coal:				
Anthracite	thousand tons	1,390	6	China 377; South Africa 372; United Kingdom 174.
Bituminous	do.	14,281	4,342	Australia 2,484; South Africa 2,197; Colombia 1,957.
Briquets of anthracite and bituminous coal		81,583	399	Germany 54,391; Italy 20,333; Belgium-Luxembourg 5,969.
Lignite including briquets		70,712	--	Germany 70,533; Belgium-Luxembourg 125; United Kingdom 50.
Unspecified	thousand tons	85	58	Colombia 14; Germany 11; United Kingdom 1.
Coke and semicoke		810,590	--	China 228,811; Netherlands 222,525; Belgium-Luxembourg 128,045.
Gas, natural:				
Gaseous	thousand tons	20,880	--	Russia 8,451; Norway 7,775; Netherlands 4,653.
Liquefied	do.	4,910	--	Algeria 4,827; United Arab Emirates 83.
Peat including briquets and litter		426,519	117	Germany 204,716; Netherlands 64,058; Belgium-Luxembourg 60,286.
Petroleum:				
Crude	thousand tons	83,131	--	Saudi Arabia 18,788; Norway 14,337; United Kingdom 13,677.
Refinery products:				
Liquefied petroleum gas	do.	1,702	1	United Kingdom 711; Algeria 284; Saudi Arabia 268.
Gasoline	do.	6,792	8	Algeria 1,222; United Kingdom 939; Belgium-Luxembourg 711.
Mineral jelly and wax		75,725	15,100	Germany 17,748; Netherlands 16,828; United Kingdom 7,917.
Kerosene and jet fuel		617,111	36,836	Bahrain 108,696; Netherlands Antilles 91,876; Algeria 91,328.
Distillate fuel oil		67,703	--	Russia 49,073; Netherlands 9,486; Malaysia 5,011.
Lubricants		250,637	6,647	Belgium-Luxembourg 80,415; Netherlands 34,873; Germany 33,272.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity		Total	Sources	
			United States	Other (principal)
MINERAL FUELS AND RELATED MATERIALS--Continued				
Petroleum: Refinery products--Continued:				
Residual fuel oil	thousand tons	14,291	245	Russia 3,463; United Kingdom 2,049; Netherlands 1,966.
Bitumen and other residues		579,183	62,773	Belgium-Luxembourg 167,770; Spain 128,778; Germany 94,919.
Bituminous mixtures		28,759	15	Belgium-Luxembourg 20,149; Germany 2,929; Spain 2,505.
Petroleum coke	thousand tons	1,536	1,055	Belgium-Luxembourg 191; Germany 119; United Kingdom 71.

1/ Table prepared by Glenn J. Wallace.
2/ Less than 1/2 unit.
3/ May include vanadium.
4/ May include high-purity silicon.
5/ Includes zinc dust, flakes, and powders.
6/ Reported under SITC item number as "selenium, tellurium, phosphorus, arsenic, etc."

Source: United Nations Statistical Office (microfiche).

TABLE 5
FRANCE: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of facilities	Annual capacity
Alumina		Aluminium Péchiney	Plant at Gardanne, Bouches-du-Rhone Province	700
Aluminum		do.	Aluminum smelters at:	
Do.		do.	Saint-Jean-de-Maurienne, Savoie Province	120
Do.		do.	Noguères, Pyrénées, Atlantiques Province	115
Do.		do.	Lannemezan, Hautes-Pyrénées Province	63
Do.		do.	Auzat, Arièege Province	44
Andalusite		Denain-Anzin Minéraux Refractaire Ceramique (DAMREC)	Glomel Mine, Brittany	75
Antimony, metal		Société Nouvelle des Mines de la Lucette	Plant at Le Genest, Mayeene Province	10
Barite		Barytine de Chaillac	Mine and plant at Chaillac, Indre Province	150
Do.		Société Industrielle du Centre	Mine at Rossigno, Indre Province	100
Bauxite		Aluminium Péchiney	Mines in Var Province (closed - maintence status)	900
Do.		Société Anonyme des Bauxites et	do.	400
Do.		Alumines de Province (S.A.B.A .P.)	do.	200
Cadmium	tons	Compagnie Royal Asturienne des Mines	Plant at D'Auby-les-Douai, Nord Province	200
Cement		Eight companies, of which the largest are:	80 plants, including--	23,233
Do.		Cement La Farge France	15 plants;	7,815
			Largest at St. Pierre-la-Cour	(1,160)
Do.		Société des Ciments Français	13 plants;	6,190
			Largest at Gargenville	(1,100)
Coal		Charbonnages de France (CdF) including:		13,000
Do.		Bassin de Paris	Mines and washeries in middle France	(2,500)
Do.		Bassin de Nord-Pas-de-Calais	Mines and washeries in northern France	(1,000)
Do.		Bassin de Lorraine	Mines and washeries in eastern France	(9,500)
Cobalt, metal	tons	Société Métallurgique Le Nickel (SLN)	Plant at Sandouville, near Le Havre	600
Copper, metal		Compagnie General d'Electrolyse du Palais	Electrolytic plant at Palais-sur-Vienne	45
Do.		Société Française d' Affinage du Cuivre.	Smelter at Poissy	11
Do.		Affinerie Sud-Ouest	Refinery at Toulouse	2
Feldspar		Denain-Anzin Minéraux S.A.	Mine and plant at St. Chély d' Apcher	55
Ferroalloys		Société du Ferromanganese de Paris, Outreau	Plant at Boulogne-sur-Mer	420
Do.		Péchiney Electrométallurgie	Plants at Bellegarde	387
Do.		Chromeurope S.A.	Plant at Dunkerque	25
Fluorspar		Société Générale de Recherches et d'Exploitation Minière (SOGEREM)	Mines at Le Burc, Montroc le Moulina, and Trebas	150
Gold	kilograms	Société des Mines du Bourneix (Government)	Mines in the Saint Yrieix la Perche District, Limoges	4,000
Do.	do.	Mines d'Or de Salsigne (Eltin Co., 51%, Ranger Co., 18% Peter Hambro Plc., 10%)	Mine near Carcassonne	3,000
Gypsum		S.A. de Materiel de Construction	Mine at Taverny	1,500
Iron and steel:				
Iron ore		Acieries Reunies de Burbach-Eich-Dudelang (ARBED)	Mine at Terres Rouges, Bassin de Lorraine, eastern France	8,000

TABLE 5--Continued
FRANCE: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of facilities	Annual capacity
Iron and steel--Continued:				
Steel		Usinor-Sacilor	Dunkerque	7,500
Do.		do.	Fos-sur-Mer	4,200
Do.		do.	Seramange	3,000
Do.		Sollac, Unimetal (Usinor-Sacillor, 100%)	Gadrange, Neuves Maisons, Thonville, Trith-St-Leper	8,400
Kaolin		La Source Compagnie Minière	Kaolin d'Arvor Mine, Quessoy	300
Lead, metal		Métaleurop S.A.	Imperial smelter, Noyelles Godault	110
Magnesium, metal		Société Française d'Electro-Metallurgique	Plant at Marignac, Haute Garonne	14
Natural gas	million cubic meters	Société Nationale Elf Aquaitane (SNEA)	Gasfield and plant at Lacq	20,000
Nickel, metal		Société Métallurgia le Nickel (SLN)	Plant at Sandouville	16
Petroleum:				
Crude	barrels per day	Société National Elf Aquaitane (SNEA)	Paris Basin oilfields	1,000
Refined	do.	Compagnie Française de Raffinage (Total)	Refineries at Gonfreville and La Mede	446,000
Do.		Shell-Française	Refinery at Petite Couron	285,000
Do.			Refinery at Berre	270,000
Do.		Elf Aquaitane-France	Refinery at Feyzin	120,000
Do.			Refinery at Donges	200,000
Do.			Refinery at Grandpuits	96,000
Do.		Société Française British Petroleum (S.F.B.P.)	Refineries at Lavera	175,000
Do.		Esso S.A.	Refineries at Fos-sur-Mer	237,000
Do.		Mobil Oil Française	Refineries at Gravenchon	62,000
Do.		Cie. Rhenane de Raffinage (CRR)	Refinery at Reichstett	80,000
Potash, K2O		Mines de Potasse d' Alsace S.A. (M.D.P.A.)	Mines at Amélie, Marie-Louise, and Theodore, in Alsace	1,1750
Salt, rock		Compagnie des Salins du Midi et des Salines de l'Est	Varangeville Mine at Saint-Nicolas-de-Port	9,000
Sulfur		Société Nationale Elf Aquaitane (SNEA)	Byproduct from natural gas desulfurization, Lacq plant	3,000
Talc		Talcs de Luzenac S.A. (Rio Tinto Corp, 100%)	Trimons Mine near Ariège, Pyrenees	350,000
Uranium, U3O8	tons	Compagnie Général des Matèrials Nucleaires (COGEMA) (Government)	Mines at Limousin, Vendee, and Hérault	1,800
Zinc, metal		Société des Mines et Fonderies de Zinc de la Vieille Montagne (VM)	Electrolytic plant, Auby-les-Douai	210