

## THE MINERAL INDUSTRY OF

# ALGERIA

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Hydrocarbons remained the leading mineral sector, accounting for \$13.6 billion, or 96.5%, of total Algerian export revenues in 1997 (Arab Petroleum Research Center, 1998). Production of metals and industrial minerals was modest. The minerals industry supplied 16% of the gross domestic product (Mining Journal, 1998). The Office de Recherche Géologique et Minières (ORGM) was responsible for the promotion of international investment in the Algerian mineral industry. Although several exploitable mineral deposits have been identified by ORGM, they were located in remote areas lacking infrastructure.

The Government's development priorities included expanding exploration activities, improving the recovery rate of oil and gas, augmenting hydrocarbon reserves, and increasing hydrocarbon production, transport, and export capacities. A production-sharing agreement with Atlantic Richfield Co. of the U.S. (ARCO) was Algeria's first association with a foreign partner in exploiting a producing field, the Rhourde El Baguel. The agreement permits ARCO to receive up to 49% of the field's output. In 1997, ARCO's share of production was 17,100 barrels per day (bbl/d) compared with 6,300 bbl/d in 1996, the first year of the partnership. ARCO's use of in-fill drilling and miscible gas injection technology was expected to add 50 to 100 million barrels (Mbbbl) to the field's recoverable reserves between 1997 and 2000. The field was expected to reach peak production of 125,000 bbl/d by the close of the century.

Since the decree of April 6, 1996, a foreign company engaged in hydrocarbon exploration and development is no longer required to form a commercial company subject to Algerian law with headquarters in Algiers if it sets up a joint stock company with the Government's Société Nationale pour la Recherche, la Production, le Transport, la Transformation, et la Commercialisation des Hydrocarbures (SONATRACH). If a field has not yet been developed or is under development, then the foreign company is required to pay a bonus to access reserves. If a foreign company finances a pipeline, priority will be given to transporting hydrocarbons from the field operated by that company. SONATRACH's foreign partners have the right to use the proceeds of natural gas exports covered by joint marketing agreements with SONATRACH. The foreign partners are not required to return their share of proceeds from these sales to Algeria.

In 1997, crude oil production was 847,000 bbl/d compared with 812,000 bbl/d in 1996. Lease condensates were produced at an average of 430,000 bbl/d in 1997 and 1996. The production of natural gas plant liquids averaged 145,000 bbl/d, slightly below 1996 levels (Energy Information Administration, 1998a). A variety of nonfuel minerals were produced in minor amounts, but only iron ore, mercury, and phosphate rock outputs were

significant. All iron ore produced was consumed domestically. Phosphate rock and mercury were produced entirely for export. Algerian production of mercury has fluctuated widely along with the price of this commodity in the world market. (*See table 1.*)

Natural gas and liquid fuels accounted for the bulk of Algeria's export earnings. Exports of natural gas totaled 52 billion cubic meters in 1997. Expanded export volumes and favorable prices through most of 1997 resulted in an almost 9% increase in earnings. Italy continued to be the principal market for Algerian natural gas, followed by France, Spain, Belgium, Turkey, and others, in order of volume. Algeria's share of the European gas market ranks third behind the Netherlands with 26% and Russia with 36%. Liquefied natural gas (LNG) exports were directed principally to Europe and the Western Hemisphere. In 1997, the United States imported 1.86 billion cubic meters, nearly double the amount of LNG imported from Algeria in 1996. Two-thirds of the Algerian LNG arriving in the United States was received at the Distrigas Corp. terminal north of Boston at Everett, Massachusetts. The remaining LNG was received at the Trunkline LNG Co. Terminal at Lake Charles, Louisiana. Most of Algeria's natural gas exports are sourced from the Hassi R'Mel Field (Energy Information Administration, 1998b).

In 1997, nearly 230 Mbbbl of Algerian crude oil and refined products were exported to Western Europe and 104 Mbbbl were exported to the United States. Nearly one-half of the U.S. imports from Algeria were slated as feedstock for the petrochemical industry (Energy Information Administration, 1998c). Other mineral exports from Algeria included helium, iron ore, metals, liquid and gaseous nitrogen, and phosphates (*See table 2.*)

Algeria's overall foreign trade surplus amounted to \$5.74 billion in 1997, compared with the \$4.28 billion reported in 1996. The higher trade surplus enabled Algeria to improve its financial situation despite its heavy external debt burden. Any decline in oil prices, however, has serious implications for the Government's domestic finances. The average spot price for Algeria's Saharan Blend crude oil was slightly higher at \$21.35 per barrel in 1997 compared with \$21.27 per barrel in 1996.

Entreprise d'Exploitation des Mines d'Or (ENOR), the state gold development company, has initiated fund raising for the development of the Tamesmessa and the Tirek gold deposits in southern Algeria. Government funding for the ENOR project will come from SONATRACH, and the Algerian Central Bank, \$6 million each; SAA (Algeria's insurance company), \$3 million; and ENOR, \$1.5 million. Completion of the project is expected to cost \$40 million. Foreign capital is expected to finance the remaining \$23.5 million (OPEC Bulletin, 1997).

The bulk of Algeria's iron ore output was extracted from the mine at Ouenza. Mining operations were spread over 17 square

kilometers (km<sup>2</sup>) with the main seam 2 kilometers (km) long and 500 meters wide. Iron ore also was mined at Bou Khadra and shipped with Ouenza ore by rail to the El Hadjar processing plant, near Bejaia, a distance of 170 km. Both mines were operated by Entreprise Nationale de Fer et de Phosphates.

Helium is produced at the Helios Co.'s Bethious plant, near Arzew. SONATRACH owns a 51% equity in the company, and Air Products & Chemicals, Inc., of the United States and L'Air Liquide of France share the remaining equity. Virtually all production is exported to Europe. The plant's capacity is 16 million cubic meters per year of liquid helium, accounting for 20% of world output and 33,000 metric tons per year of liquid and gaseous nitrogen. A feasibility study was undertaken covering the possible construction of the nation's second helium plant.

Anadarko Petroleum Corp. of the United States announced four oil and gas discoveries in 1997 - El Merk Central in block 208, Qoubba North in block 404, Hassi Berkine South-East, and Hassi Berkine Central in block 404. Partners in the concessions are Lasmo of the United Kingdom and Maersk Oil & Gas of Denmark.

The Louisiana Land & Exploration Co. (LL&E) of the United States reported a fourth discovery in block 405 in May 1997 and a fifth discovery in the same block in December 1977. Broken Hill Proprietary, Ltd., of Australia reported discoveries in block 402a, one in May 1977 and another in September 1977. Petro-Canada reported a discovery in the Tinrhert block in December 1977. Commerciality of these finds was under assessment.

British Petroleum Exploration Operating Co., Ltd., continued survey work on the In Salah license area, which lies in the Sahara Desert 1,200 km south of Algiers. Survey plans include 2,000 line km of 2 dimensional and 750 km<sup>2</sup> of 3 dimensional seismic data.

Gross production of natural gas was nearly 129 billion cubic meters, about 50% of which was reinjected to maintain petroleum-reservoir pressure. The combined total production of LNG at the three liquefaction plants at Arzew and the one at Skikda was about 85,000 cubic meters per day of LNG (Arab Oil and Gas Directory, 1998).

Most of Algeria's crude oil production was derived from the Hassi Messaoud-Haoud El Hamra Fields in the Sahara and the Tin Fouyé Tabankort and the In Amenas Fields, near the Libyan border.

Combined refined petroleum product output averaged about 445,000 bbl/d from four refineries. Algeria's petroleum-refining capacity was 462,300 bbl/d including: Skikda with capacity at 323,400 bbl/d; El Harrach, 58,200 bbl/d; Arzew, 54,000 bbl/d; and Hassi Messaoud, 26,700 bbl/d.

The national petrochemicals company, ENIP, has established a joint venture with Repsol of Spain to construct linear low-density polyethylene, polyvinyl chloride, and high-density polyethylene plants. To support this development, the Algerian Government has provided investment guarantees that include provision of public utilities and raw materials and preferential tax treatment. (U.S. Embassy, Algiers, Algeria, 1997)

Hydrocarbon reserves in January 1998 were 3.7 trillion cubic meters of natural gas. Unassociated natural gas accounted for 85% of these reserves. Recoverable petroleum reserves were reported to be 9.2 billion barrels (Arab Petroleum Research

Center, 1998).

Algeria's railroad system, which totaled 4,060 km of track, and its road network, which covered more than 90,000 km, were in the northern section of the country and supported long-established mining and other export-oriented industries. The existing infrastructure was too distant to lend support to the development of commercial mineral deposits reported in the southern desert.

More than 11,400 km of pipeline served the hydrocarbon industries within Algeria. The center of the crude oil pipeline network was Hassi Messaoud, in the southeast, from which three crude lines ran north to Skikda, Bejaia, and Arzew. The center for the natural gas pipeline network was Hassi R'Mel, with pipelines connecting to liquefaction facilities at Arzew and Skikda. Hassi R'Mel was also the source for natural gas exports to southern Europe by means of the 24-billion-cubic-meter-capacity Trans-Mediterranean pipeline and the 8-billion-cubic-meter-capacity Maghreb-Europe pipeline. The Transmed natural gas export pipeline extended for 2,340 km from Algeria northeastward through Tunisia and under the Mediterranean Sea to Sicily and the Italian mainland. Natural gas was exported to Slovenia by means of a 35-km spur line near the Italian end of the Trans-Mediterranean pipeline. The 1,845-km Maghreb-Europe pipeline traverses Algeria northwestwards through Morocco and the Straits of Gibraltar to southern Spain. The pipeline was inaugurated in November 1996 at an initial capacity of 8 billion cubic meters per year. The second phase of the Maghreb-Europe pipeline construction will include extensions to Portugal, France, and Germany. Additional compressor stations could bring the pipeline capacity to 19 billion cubic meters per year, if commercial outlets warrant it.

Algeria used seven marine terminals for the export of hydrocarbons, including La Skhirra, in Tunisia. The largest terminal was Arzew-Bethioua, which accommodated 40% of all hydrocarbon exports. Port capacity at Skikda was limited to 90,000-cubic meter LNG carriers. Efforts were underway to augment facilities to eventually accommodate 125,000-cubic meter LNG carriers.

The Government has not only encouraged petroleum exploration, but has offered a portion of production rights in existing oil and gas fields to private companies providing capital and enhanced recovery technology. ARCO, Agip, Anadarko, British Petroleum, Cepsa, LL&E, Petro-Canada, Repsol, and Total SA were among the 18 companies working in Algeria under 21 exploration contracts active in 1997.

The country's dependence on hydrocarbon revenues will impact the economy in the near term as the petroleum prices that have been declining since November 1997 affect revenues. In future years, recoverable reserves should increase as a result of new discoveries, improved data on existing fields, and the installation of enhanced recovery systems. Nine promising hydrocarbon discoveries were reported in 1997. Although the delineation and appraisal work were not completed, preliminary data are favorable. Algeria's state oil company and foreign parties will invest \$19.3 billion on field development and pipeline transportation through 2001. Exploration and development contracts should bring Algeria's crude oil capacity to 1.3 million barrels per day, and natural gas production should double in this time period (World Oil, 1997).

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## Major Sources of Information

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Table 1  
ALGERIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1993	1994	1995	1996	1997 e/	
<b>METALS</b>						
Cadmium, refined	65 r/	59 r/	50 r/	44 r/	40 3/	
Iron and steel:						
Iron ore, gross weight	thousand tons	2,311	2,047	2,202 r/	2,245	2,250
Metal:						
Pig iron	do.	925	919	940	800 e/	700
Steel, crude	do.	865	808	827	641 r/	427 3/
Lead:						
Concentrate, Pb content		1,538	1,100	1,383	1,016	1,000
Metal, refined		6,000	8,000	7,500	8,600 r/	8,000
Mercury	kilograms	459,100	414,000	292,000	367,800	365,000
Silver e/	do.	2,200	3,000	2,000 r/	1,600 r/	1,500
Zinc:						
Concentrate, Zn content		6,800	5,700	7,174	5,912	6,000
Metal, smelter output		33,400	30,000	30,000	25,000 e/	25,000
<b>INDUSTRIAL MINERALS</b>						
Barite, crude		47,232	20,584	29,838	31,348	31,400
Cement hydraulic		6,400	6,060	6,822 r/	6,900 r/	6,900
Clays:						
Bentonite		20,833	20,215	17,088	17,200 e/	17,200
Fuller's earth		3,229	4,550	4,500	4,500 e/	4,500
Kaolin		12,586	16,984	24,068	25,000 e/	25,000
Diatomite		3,471	2,800	3,700	3,700 e/	3,700
Feldspar		6,500	6,900	7,000	7,000 e/	7,000
Gypsum 4/	thousand tons	225	225	250	250 e/	275
Helium, liquid	million cubic meters	--	--	10	15 e/	15
Lime, hydraulic e/		62,000	62,000	62,000	62,000	65,000
Nitrogen, N content of ammonia		380,000	243,000 r/	176,100 r/	149,900 r/	379,500 3/
Phosphate rock:						
Gross weight	thousand tons	718	730	1,596	1,051	1,068 3/
P <sub>2</sub> O <sub>5</sub> content	do.	245	251	500	320 e/	325
Salt, brine and sea salt		179,000	178,000	250,000 r/	250,000 r/ e/	250,000
Sodium compounds, caustic soda e/		700	700	700	700	700
Strontium minerals, celestite, gross weight e/		5,400	5,400	5,400	5,400	5,400
Sulfur, elemental e/		20,000	20,000	20,000	23,000	23,000
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Coal	thousand tons	20	20	22	22	22
Gas, natural:						
Gross	million cubic meters	133,700	131,100	114,779	122,600 r/	128,700 3/
Dry 5/	do.	53,900	51,100	58,100	62,300	65,000
Natural gas plant liquids	thousand 42-gallon barrels	52,925	51,500	53,000	54,750 r/	52,935 3/
Petroleum:						
Crude including condensate	do.	424,130	430,700	436,905	453,300	466,100 3/
Refinery products:						
Liquefied petroleum gas	do.	9,000	5,220 r/	8,000 r/	8,500 r/ e/	8,500
Gasoline	do.	20,988	18,900 e/	21,900	20,148	20,000
Naphtha e/	do.	30,000	31,000	31,000	31,000	31,000
Kerosene	do.	3,723	8,540	8,030	8,796	8,100
Distillate fuel oil	do.	54,530	49,800	51,976	46,500	50,000
Lubricants	do.	800	825 e/	850	850 e/	850
Residual fuel oil	do.	37,700	37,400 e/	36,646	37,960	36,800
Other e/	do.	2,700	3,000	3,500	3,500	3,500
Total	do.	159,441	154,685 r/	161,902 r/	157,254 r/ e/	158,750

e/ Estimated. r/ Revised.

1/ Table includes data available through August 1, 1998.

2/ In addition to the commodities listed, secondary aluminum, secondary lead, and secondary copper may be produced in small quantities, and crude materials are produced for local consumption. Output is not reported, and available information is inadequate to make estimates of production levels.

3/ Reported figure.

4/ Includes about 50,000 metric tons of plaster each year.

5/ Excludes gas used in reinjection, flaring, venting, transmission losses, and natural gas liquids extraction.

TABLE 2  
ALGERIA: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Destinations	
		United States	Other (principal)
<b>METALS</b>			
Aluminum, metal including alloys:			
Scrap	5,039	--	France 4,948; Spain 69; Italy 13.
Semimanufactures	307	--	France 305; Tunisia 1.
Cadmium, metal including alloys, all forms	35	--	All to the Netherlands.
Copper, metal including alloys:			
Scrap	9,337	--	France 9,070; Spain 124; Belgium-Luxembourg 81.
Unwrought	255	--	France 191; Belgium-Luxembourg 42; Switzerland 12.
Semimanufactures	75	--	All to France.
Iron and steel:			
Ore and concentrate, roasted pyrite	2,000	--	All to Tunisia.
Metal:			
Scrap	60,178	--	France 23,197; Italy 12,245; Switzerland 9,289.
Pig iron, cast iron, related materials	298,285	--	Italy 253,585; Spain 18,000; Egypt 14,700.
Steel, primary forms	17,607	--	Tunisia 7,657; Spain 5,650; Lebanon 4,300.
Semimanufactures:			
Flat-rolled products, of iron or nonalloy steel:			
Not clad, plated, coated	59,914	--	Italy 22,970; United Kingdom 11,200; Morocco 9,232.
Clad, plated, coated	1,537	--	All to Tunisia.
Bars, rods, angles, shapes, sections	value, thousands \$4	\$4	
Wire	1	1	
Tubes, pipes, fittings	18,725	11	Netherlands 13,699; Belgium-Luxembourg 5,000; Saudi Arabia 7.
Lead:			
Ore and concentrate	1,140	--	All to Bulgaria.
Metal including alloys:			
Scrap	1,362	--	All to France.
Unwrought	1,539	--	Italy 1,238; Tunisia 300.
Semimanufactures	value, thousands \$1	\$1	
Magnesium, metal including alloys:			
Scrap	5	--	All to France.
Unwrought	6	--	All to Belgium-Luxembourg.
Mercury	245	--	Belgium-Luxembourg 105; Italy 69; United Kingdom 35.
Nickel, metal including alloys:			
Scrap	14	--	All to France.
Semimanufactures	20	--	Do.
Zinc, metal including alloys:			
Scrap	272	--	Do.
Unwrought	26,558	1,019	Netherlands 10,317; France 5,894; Italy 4,372.
Semimanufactures 2/	69	--	France 47; Italy 22.
Other, ashes and residues	5,917	--	Belgium-Luxembourg 5,359; France 345; Italy 200.
<b>INDUSTRIAL MINERALS</b>			
Abrasives, n.e.s., grinding and polishing wheels and stones	\$1	--	All to Italy.
value, thousands			
Cement	122	--	All to Mali.
Clays, crude:			
Bentonite	2,528	60	Tunisia 2,468.
Unspecified	1,830	--	Italy 1,430; Egypt 200; Tunisia 200.
Diatomite and other infusorial earth	1,123	--	Tunisia 760; Morocco 360; Spain 3.
Fertilizer materials, manufactured:			
Ammonia	129,821	11,000	Switzerland 42,001; Norway 24,700; Italy 17,609.
Nitrogenous	7,962	--	France 6,000; Spain 1,962.
Gypsum and plaster	20	--	All to Niger.
Phosphates, crude	444,826	--	Russia 172,746; Switzerland 108,206; Turkey 29,768.
Salt and brine	3,420	400	Guinea 3,020.
Stone, sand and gravel:			
Dimension stone:			
Crude and partly worked	86	--	All to Belgium-Luxembourg.
Worked	23	--	All to France.
Quartz and quartzite	1	--	Do.

See footnotes at end of table.

TABLE 2--Continued  
ALGERIA: EXPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Destinations	
		United States	Other (principal)
<b>MINERAL FUELS AND RELATED MATERIALS</b>			
Sulfur, sulfuric acid	24,115	--	Portugal 11,179; Spain 10,675; Tunisia 2,058.
<b>Gas, natural:</b>			
Gaseous	tons, thousands	18,269	-- Italy 16,770; Tunisia 1,178; Yugoslavia 321.
Liquefied	do.	15,071	664 France 5,586; Spain 3,703; Belgium-Luxembourg 2,777.
<b>Petroleum:</b>			
Crude	do.	33,934	6,471 Netherlands 4,151; Italy 4,005; Canada 3,725.
<b>Refinery products:</b>			
Liquefied petroleum gas	do.	3,864	795 Italy 842; Turkey 504; Spain 325.
Gasoline	do.	2,424	225 Netherlands 903; France 429; Spain 282.
Kerosene and jet fuel		129,055	-- United Kingdom 39,756; South Korea 26,338; Netherlands 21,015.
Distillate fuel oil	tons, thousands	2,013	57 South Korea 495; Italy 350; France 288.
Lubricants		11,560	-- Greece 5,339; Italy 3,203; India 2,962.
Residual fuel oil	tons, thousands	3,296	2,483 Italy 669; Germany 64; United Kingdom 53.

1/ Table prepared by Glenn J. Wallace.

2/ Includes dust, flakes, and powders.

Source: United Nations Statistical Office (microfiche).

TABLE 3  
ALGERIA: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
<b>METALS</b>			
Alkali and alkaline-earth metals:			
Alkali metals	2	(2/)	Mainly from France.
Alkaline-earth metals	3	--	Mainly from United Arab Emirates.
Aluminum:			
Oxides and hydroxides	239	(2/)	Germany 200; Spain 18; France 14.
Metal including alloys:			
Unwrought	5,574	--	Egypt 2,837; Spain 2,266; Germany 460.
Semimanufactures	15,920	52	Tunisia 7,200; France 2,185; Italy 1,599.
Antimony, metal including alloys, all forms	100	--	Mainly from China.
Beryllium, metal including alloys, all forms	value, thousands	\$1	-- All from France.
Chromium, oxides and hydroxides	44	--	Spain 42; China 2.
Cobalt, oxides and hydroxides	55	--	China 53; France 2.
Columbium and tantalum, ore and concentrate 3/	33	--	All from Spain.
Copper:			
Matte and speiss including cement copper	value, thousands	\$4	-- All from France.
Metal including alloys:			
Unwrought	2,056	(2/)	Portugal 1,997; Switzerland 37; France 13.
Semimanufactures	11,832	4	Spain 4,463; Turkey 2,369; Italy 2,301.
Gold, metal including alloys, unwrought and partly wrought	kilograms	363	-- Switzerland 298; France 50.
Iron and steel, metal:			
Scrap	86	--	All from France.
Pig iron, cast iron, related materials	485	--	France 227; Germany 127; Sweden 70.
Ferroalloys:			
Ferrochromium	10	--	Mainly from Belgium-Luxembourg.
Ferromanganese	402	--	Sweden 188; France 150; Belgium-Luxembourg 43.
Ferronickel	1	--	All from France.
Ferrosilicomanganese	29	--	Sweden 11; Belgium-Luxembourg 10; Norway 8.
Ferrosilicon	170	--	France 101; Norway 49; Belgium-Luxembourg 20.
Silicon metal 4/	88	(2/)	France 88.
Unspecified	52	--	Germany 47; France 5.
Steel, primary forms	1,701	--	Italy 595; France 444; Germany 282.
Semimanufactures:			
Flat-rolled products:			
Of iron or nonalloy steel:			
Not clad, plated, coated	165,365	25	Spain 72,214; France 23,603; Belgium-Luxembourg 19,525.
Clad, plated, coated	22,893	10	Spain 11,895; Portugal 2,969; Turkey 2,961.
Of alloy steel	10,596	36	Spain 4,881; Germany 3,989; France 1,472.
Bars, rods, angles, shapes, sections	619,176	377	Turkey 332,297; Spain 102,201; Russia 46,007.
Rails and accessories	2,900	--	Austria 2,385; France 513; Germany 1.
Wire	17,875	1	Turkey 6,773; Libya 2,736; Italy 2,717.
Tubes, pipes, fittings	288,061	59,035	France 100,952; Spain 251,717; Turkey 22,914.
Lead:			
Oxides	928	--	Italy 831; Spain 85; France 12.
Metal including alloys:			
Unwrought	7,235	--	Bulgaria 6,540; Yugoslavia 680; France 15.
Semimanufactures	1	--	Mainly from France.
Magnesium, metal including alloys:			
Unwrought	20	--	China 15; France 5.
Semimanufactures	1	--	Mainly from France.
Manganese:			
Oxides and hydroxides	262	--	Brazil 260; France 2.
Metal including alloys, all forms	value, thousands	\$6	-- All from France.
Mercury	1	--	Mainly from Spain.
Molybdenum, metal including alloys, semimanufactures	4	2	Belgium-Luxembourg 2.
Nickel, metal including alloys:			
Unwrought	17	--	All from France.
Semimanufactures	18	(2/)	France 17; Belgium-Luxembourg 1.

See footnotes at end of table.

TABLE 3--Continued  
ALGERIA: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
METALS--Continued			
Platinum-group metals, platinum metal including alloys, unwrought and partly wrought value, thousands	\$31	--	All from France.
Silver, metal including alloys, unwrought and partly wrought do.	\$683	--	Germany \$439; France \$204; Italy \$30.
Tin, metal including alloys:			
Unwrought	43	--	Malaysia 25; France 18; Germany 1.
Semimanufactures	52	3	China 39; France 5; Egypt 3.
Titanium:			
Ore and concentrate	370	--	India 270; Russia 100.
Oxides	7,680	--	Saudi Arabia 3,225; Spain 1,757; Russia 1,200.
Metal including alloys, semimanufactures	9	--	Mainly from Italy.
Tungsten, metal including alloys:			
Unwrought, including waste and scrap	2	--	All from China.
Semimanufactures	3	(2/)	Belgium-Luxembourg 1; France 1.
Zinc:			
Ore and concentrate	1,556	--	All from Peru.
Oxides	102	(2/)	Belgium-Luxembourg 53; France 40; Spain 8.
Metal including alloys, semimanufactures 5/	183	--	Belgium-Luxembourg 110; Italy 53; United Arab Emirates 20.
Zirconium, ore and concentrate	140	--	All from Italy.
Other:			
Ores and concentrates	5	--	All from Morocco.
Oxides and hydroxides	239	1	France 92; Belgium-Luxembourg 56; Germany 43.
Ashes and residues	347	302	Sweden 45.
Base metals including alloys, all forms	19	--	All from Germany.
Metalloids 6/ value, thousands	\$3	--	France \$2; Belgium-Luxembourg \$1.
INDUSTRIAL MINERALS			
Abrasives, n.e.s.:			
Natural, corundum, emery, pumice, etc.	96	--	Turkey 35; Greece 29; Italy 14.
Artificial corundum	427	223	Austria 201; France 3.
Grinding and polishing wheels and stones	1,361	1	Italy 841; Czech Republic 173; France 158.
Asbestos, crude	7,102	--	Canada 6,900; Zimbabwe 202.
Barite and witherite	11,544	2,354	Spain 4,802; Turkey 4,002; United Kingdom 384.
Boron:			
Crude natural borates	25	--	All from Belgium-Luxembourg.
Oxides and acids	75	--	Turkey 65; France 9; Germany 1.
Bromine, fluorine, iodine value, thousands	\$9	--	Belgium-Luxembourg \$6; France \$2.
Cement tons, thousands	1,492	(2/)	Spain 754; Tunisia 462; Greece 120.
Chalk	11,393	--	Jordan 4,750; France 4,249; Spain 2,392.
Clays, crude:			
Bentonite	636	412	United Kingdom 179; Tunisia 44; Egypt 1.
Kaolin	6,073	--	United Kingdom 5,100; Germany 800; Spain 173.
Unspecified	7,417	47	United Kingdom 7,230; Spain 120; Tunisia 20.
Diamond, natural:			
Gem, not set or strung value, thousands	\$34	--	Belgium-Luxembourg \$21; Democratic Republic of Congo \$13.
Industrial stones do.	\$1	--	All from Germany.
Diatomite and other infusorial earth	24	--	Tunisia 20; Germany 4.
Feldspar	3,680	--	Turkey 3,279; Spain 401.
Fertilizer materials:			
Crude, n.e.s.	7	--	All from France.
Manufactured:			
Ammonia	7	(2/)	Germany 3; United Kingdom 2.
Nitrogenous	26,943	(2/)	Bulgaria 10,422; France 5,504; Spain 4,032.
Phosphatic	36,690	--	Morocco 8,600; Tunisia 6,500; France 4,500.
Potassic	12,384	457	Spain 7,805; Ukraine 2,700; Romania 923.
Unspecified and mixed	38,354	--	France 13,653; Romania 12,500; Greece 7,600.
Fluorspar	250	--	Sweden 105; Germany 55; Belgium-Luxembourg 50.
Graphite, natural	279	--	Spain 205; Germany 44; China 30.
Gypsum and plaster	233	16	France 166; Italy 35; United Kingdom 9.
Lime	798	400	Tunisia 315; Netherlands 50; Belgium-Luxembourg 25.

See footnotes at end of table.

TABLE 3--Continued  
ALGERIA: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
<b>INDUSTRIAL MINERALS--Continued</b>			
<b>Magnesium compounds:</b>			
Magnesite, crude	151	--	Italy 63; Austria 52; Spain 23.
Oxides and hydroxides	35	--	France 32; Italy 2; Japan 1.
<b>Mica:</b>			
Crude including splittings and waste	110	1	Canada 90; France 11; United Kingdom 8.
Worked including agglomerated splittings	12	(2/)	Japan 10; Italy 1.
Nitrates, crude	1	(2/)	France 1.
Phosphates, crude	value, thousands \$5	--	All from China.
Pigments, mineral, iron oxides and hydroxides, processed	395	(2/)	China 164; Italy 121; France 61.
<b>Precious and semiprecious stones other than diamond:</b>			
Natural	value, thousands \$5	--	All from France.
Synthetic	do. \$17	--	All from Ireland.
Pyrite, unroasted	7	--	All from Denmark.
Salt and brine	550	23	Germany 251; France 156; Netherlands 106.
<b>Sodium compounds, n.e.s.:</b>			
Soda ash, manufactured	12,285	3,002	Bulgaria 5,266; Spain 1,500; Germany 1,407.
Sulfate, manufactured	23,673	(2/)	Spain 23,523; Tunisia 100; Belgium-Luxembourg 35.
<b>Stone, sand and gravel:</b>			
<b>Dimension stone:</b>			
Crude and partly worked	3,078	--	Mainly from Italy.
Worked	245	--	Italy 155; China 42; Spain 21.
Dolomite, chiefly refractory-grade	380	--	France 351; Austria 14; Spain 12.
Gravel and crushed rock	3,304	115	Italy 3,057; France 127; Denmark 5.
Quartz and quartzite	25	--	Spain 20; France 5.
Sand other than metal-bearing	262	149	United Kingdom 42; Denmark 37; Turkey 18.
<b>Sulfur:</b>			
<b>Elemental:</b>			
Crude including native and byproduct	652	--	All from Spain.
Colloidal, precipitated, sublimed	value, thousands \$2	--	All from Belgium-Luxembourg.
Dioxide	20	--	All from France.
Sulfuric acid	363	1	Belgium-Luxembourg 351; France 10; Germany 1.
Talc, steatite, soapstone, pyrophyllite	777	--	France 751; Switzerland 10; Tunisia 9.
Vermiculite, perlite, chlorite	12	--	Italy 11; France 1.
<b>Other:</b>			
Crude	949	(2/)	Belgium-Luxembourg 603; China 102; France 83.
Slag and dross, not metal-bearing	26	--	All from United Kingdom.
<b>MINERAL FUELS AND RELATED MATERIALS</b>			
Asphalt and bitumen, natural	129	125	Italy 3; France 1.
Carbon black	272	--	France 180; Germany 87; Spain 2.
<b>Coal:</b>			
Anthracite	304	--	All from United Kingdom.
Lignite including briquets	11	11	
Unspecified	317,793	160,165	Australia 157,628.
Coke and semicoke	89,100	--	All from Japan.
Gas, natural, liquefied	10	10	
Peat including briquets and litter	575	--	Belgium-Luxembourg 410; Germany 138; France 27.
<b>Petroleum:</b>			
Crude	68,590	--	Mainly from Brazil.
<b>Refinery products:</b>			
Liquefied petroleum gas	value, thousands \$17	\$5	Switzerland \$6; France \$5; United Kingdom \$1.
Gasoline	1,585	136	United Arab Emirates 1,099; Italy 95; Spain 91.
Mineral jelly and wax	3,459	--	Spain 1,667; France 1,601; Belgium-Luxembourg 110.

See footnotes at end of table.

TABLE 3--Continued  
 ALGERIA: IMPORTS OF MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
<b>MINERAL FUELS AND RELATED MATERIALS--Continued</b>			
<b>Refinery products--Continued:</b>			
Distillate fuel oil	value, thousands	\$1	-- All from France.
Lubricants		138,718	77 Syria 103,247; France 20,266; Netherlands 7,829.
Residual fuel oil		168,791	(2/) France 59,941; Italy 46,850; Greece 25,000.
Bitumen and other residues		11,839	-- Spain 11,574; Tunisia 225; France 40.
Bituminous mixtures		4,447	19 France 2,989; Spain 792; Austria 500.

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 dust, flakes, and powders.

6/ Reported under SITC item number as "selenium, tellurium, phosphorus, arsenic, etc."

Source: United Nations Statistical Office (microfiche).