### THE MINERAL INDUSTRY OF

# **BELGIUM AND LUXEMBOURG**

By Harold R. Newman

#### Belgium

The mineral processing industry was a significant contributor to the Belgian economy in 1996. The refining of copper, zinc, and minor metals and the production of steel, all from imported materials, were the largest mineral industries in Belgium. The extraction and recovery of nonferrous metals were carried out in high-technology large-scale plants. Europe's largest electrolytic copper and zinc refineries are in Belgium, as is one of the continent's largest lead refineries. The country was also a significant producer of cadmium, germanium, selenium, and tellurium as byproducts from smelting and refining operations. Complex industrial wastes were processed by various sophisticated techniques to recover rare or precious metals.

Although the country is relatively small in size, Belgium has a significant industrial minerals sector. Belgium is an important producer of four groups of industrial materials: carbonates, including limestone, dolomite, and whiting; synthetic materials in the form of soda ash and sodium sulfate; silica sand; and construction materials including a wide range of different types of marble.

Environmental policy in Belgium was the responsibility of the Federal Ministry of the Environment as well as its comparable ministries in the two separate regions of the country, Flanders and Wallonia. Individual companies were responsible for environmental protection in their own areas of concern and contributed to environmental investment programs. These investments programs range from treatment of oil effluent to reducing air emissions.

Belgium is a major exporting country and is the 10th largest trading nation in the world. Imports and exports are equivalent to nearly 70% of the country's gross domestic product, making Belgium one of the highest per capita exporters in the world. It has a long history of reliance on international trade.

Belgium, Luxembourg, and the Netherlands, form the BENELUX customs unit. Since 1921, there has been a close economic union between Belgium and Luxembourg, the Belgium-Luxembourg Economic Union (BLEU), involving the parity of currency, integrated foreign trade (including statistics), a balance-of-payments accounts, and a joint central bank. International trade data for Belgium were covered in the context of the BLEU and, as such, covered the exports, reexports, and imports of Luxembourg. Although detailed trade data have not been available for several years, other members of the European Union (EU) were the BLEU's most important trading partners.

After the accession of Austria, Finland, and Sweden into the EU in 1995, the shares of BLEU's exports accounted for by the

EU amounted to 76%. The top five destinations of exports, in descending order, were Germany, France, the Netherlands, the United Kingdom, and Italy. The top five origins of imports were, in descending order, Germany, the Netherlands, France, the United Kingdom, and the United States.

Production of mineral commodities generally remained stable or increased somewhat during 1996. Increases in production generally followed the lines of exported goods, such as valueadded nonferrous metals. (*See table 1.*)

Table 2 shows the principal mining and mineral-processing facilities in Belgium with their location and capacity. The only mining operations left in Belgium in 1996 were the production of sand and gravel and the quarrying of stone. Marble was an important export commodity. The metal processing sector of the industry almost exclusively used imported raw materials, whether metal concentrates, scrap, or other materials, for smelting and refining or metal for forming and casting.

Table 3 shows the relationship of selected classes of mineral commodities on Belgium-Luxembourg's balance of payments position in relation to the EU and the world.

In 1996, Union Minière SA (UM) (American Metal Market, 1996), traditionally a producer of cobalt special products such as powders and chemicals, started producing refined cobalt as well. Also, UM further increased the capacity of its cobalt/nickel refinery to 1,600 metric tons per year (t/yr). The upgraded facility was equipped to process a variety of materials, from low-grade cobalt metal to a variety of cobalt-bearing scraps and residues.

UM was in the process of updating its operations by replacing major part of its copper refinery at Olen with a new facility, scheduled to be operational in 1997. The new plant would have capacity of 200,000 t/yr, which is lower than the 270,000-t/yr capacity of the existing plant. The company announced that part of the old facility could be maintained to make up for any shortfall in output from the new facility.

UM was also planning to build a new smelter and a new precious metal refinery at its Hoboken plant. These would produce lead, copper, nickel, and precious metals and was expected to be in operation by the end of 1997. Not only will this increase Hoboken's unit capacity and reduce production costs, but it will reduce the amount of time that material is in process and is expected to reduce environmental problems at Hoboken.

These plans (American Metal Market, 1996) were directed toward making UM the largest zinc producer in Europe and one of the world's leading refined copper, cobalt, and germanium producer. Belgium, specifically Antwerp, retained its position in 1996 as the world's largest diamond center with a turnover in diamonds valued at about \$23 billion. The diamond industry contributed almost \$3 billion to the nation's economy. Belgium's international trade in diamonds for 1994-96 is shown in tables 4 and 5.

Belgium is recognized worldwide for the diversity and quality of its dimension stone. The so-called "petit granit," actually a dark blue-gray crinoidallimestone, is one of the most important facing stones the country produces. The country has been an important producer of marble for more than 2,000 years. All the marble quarries are in the Wallonia region. Red, black, and gray are the principal color ranges of the marble, most of which is exported.

When the last coal mines in Belgium closed in 1992, the country became entirely dependent on imported primary energy. Belgium imported all of its crude oil for its four petroleum refineries and imported coal to meet the needs of the steel, cement, and power-generating industries. Belgium's seven nuclear powerplants supplied more than 60% of its electricity needs. Natural gas has begun to play a more important role as an energy source. Natural gas was more environmentally acceptable as a fuel, and Belgium was at the center of the European gas grid.

Belgian National Railways operated 3,568 kilometers (km) of standard gauge track, 2,563 km of double track, and 2,207 km of electrified, all Government-owned. The country had 137,876 km of roadways, of which 129,603 km was paved. The inland waterway system consisted of 2,043 km of which 1,528 was in regular use. The principal ports were Antwerp, Brugge, Ghent, Oostende, and Zeebrugge.

Corporate restructuring and the Government policy of budget cuts, split between the Federal Government and the regional authorities of Flanders and Wallonia, were expected to make Belgian products more competitive on the world market. The Belgium export-oriented markets rely heavily on the markets of its trading partners; and, as profits increase and cash flow increases and improves, it is expected that the economy will continue to experience positive results for the near term.

#### Luxembourg

Luxembourg's mineral industry consisted principally of raw materials processing and was dominated by the steel company ARBED S.A., part of the ARBED Group, whose domestic and foreign subsidiaries have interests in steelmaking and steel products, cement, copper foil production, engineering, mining, information systems, and trading, among others.

As a member of the BLEU, trade statistics for Luxembourg are inextricably linked with those of Belgium and, therefore, are not able to be listed individually.

ARBED dominates the mineral industry and was involved in producing pig iron, crude steel, and stainless steel, all from imported material. Also, the company was involved in other areas of the economy, such as the cement and brickmaking industries.

Steel is the country's main export commodity. Mining in Luxembourg is represented by small industrial mineral operations that produce material for domestic consumption. These minerals include dolomite, limestone, sand and gravel, and slate. (*See table 6.*)

Luxembourg's principal producers of mineral industry products are shown in table 7.

The iron and steel sector remained the most important industrial sector of the economy. Although production remained below that of several years ago, it was not seen as a problem because production can be adjusted to meet demand that has been low in the recent past.

Luxembourg is a landlocked country with 272 km of standard-gauge track, 178 km of double track and 197 km of electrified railways operated by the Luxembourg National Railways. The country had 5,108 km of roadways, of which 4,995 km was paved. The only waterway is the Moselle River, of which 37 km in Luxembourg is navigable, and the only river Port was Mertert.

Reference Cited

American Metal Market, v. 103, no. 212, October 30, 1996, p. 1.

# TABLE 1 BELGIUM: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1992	1993	1994	1995	1996 e/
METALS	7.000	4.000	1.000	4.000	2 000
Aluminum, secondary including unspecified metals e/	7,000	4,000	4,000	4,000	3,000
Arsenic, white e/ Bismuth, metal e/	2,000 800	2,000 950	2,000 900	2,000 900	2,000 800
Cadmium, primary	1,549 r/	930 1,573	1,556	900 1.710 r/	1,580
Cobalt, primary	1,349 1/	1,375	1,330 1,200 e/	1,710 I/ 1,000 e/	1,380
Copper:			1,200 6/	1,000 6/	1,000
Blister: e/					
Primary	800	200	2,600	1,000	
Secondary	102,000	141,500	145,000	146,000	147,000
Total	102,800	141,700	147,600	147,000	147,000
Unwrought, total of smelter and refined, primary	,	*	,	,	,
and secondary, including alloys	471,985	455,235	468,000 e/	465,000 e/	470,000
Refined, primary and secondary including alloys	367,318	378,890	371,152	393,000 r/	399,000
Iron and steel:					
Pig iron thousand tons	8,524	8,178	8,974 r/	9,199 r/	9,000
Ferroalloys, electric furnace, ferromanganese e/	25,000	25,000	25,000	25,000	25,000
Steel:					
Crude thousand tons	10,337	10,173	11,319	11,606	11,600
Hot-rolled products do.	8,186	9,750	11,266 r/	11,540 r/	11,500
Lead:					
Smelter:					
Primary e/ 3/	75,400	76,000	76,000	75,000	75,000
Secondary 4/	19,700	25,400	25,500 e/	25,000 e/	25,000
Total e/	95,100	101,400	101,500	100,000	100,000
Refined:					
Primary	96,597	105,712	97,200	95,300 e/	94,400
Secondary	19,700	25,400	26,300	26,400 e/	26,400
Total	116,297	131,112	123,500	121,700 e/	120,800
Selenium e/	250 5 260	250	250	250	250
Tin metal, secondary including alloys e/	5,260	5,000	5,000	5,000	3,000
Zinc: Slab:					
Primary	217,200	209,600	211,200	211,100 r/	207,400
Secondary (possibly remelted zinc) e/	93,400	209,800	95,000	90,000	207,400 90,000
Total	310,600	299,600	306,200	301,100 r/	297,400
Powder	43,700	37,700	40,000 e/	36,000 e/	36,000
INDUSTRIAL MINERALS	43,700	57,700	40,000 0/	30,000 0/	50,000
Barite e/	30,000	30,000	30,000	30,000	30,000
Cement, hydraulic	8,072,718 r/	7,612,000 r/	8,000,000 e/	8,000,000 e/	8,000,000
Clays, kaolin e/	325,000	300,000	300,000	300,000	300,000
Lime and dead-burned dolomite, quicklime e/	1,871,000 r/ 5/	1,750,000	1,750,000	1,800,000	1,800,000
Nitrogen, N content of ammonia	514,000	535,000	500,000 e/	500,000 e/	500,000
Sodium compounds: e/	,	,		,	,
Soda ash	375,000	375,000			
Sulfate	250,000	250,000	250,000	250,000	250,000
Stone, sand and gravel:					
Calcareous:					
Dolomite thousand tons	3,980	4,000	4,000 e/	4,000 e/	4,000
Limestone do.	33,400	33,400	33,500 e/	33,000 e/	33,000
Marble:					
In blocks cubic meters	232	250	250 e/	275 e/	275
Crushed and other e/	80	80	80	100	100
Petit granite (Belgian bluestone): e/					
Quarried cubic meters	1,210,000	1,200,000	1,200,000	1,200,000	1,200,000
Sawed do.	90,000	90,000	90,000	100,000	100,000
Worked do.	15,000	15,000	15,000	15,000	15,000
Crushed and other cubic meters	800,000	800,000	800,000	800,000	800,000
Porphyry, all types thousand tons	4,130	4,000	4,000	4,000	4,000
Quartz and quartzite	500,000	500,000	500,000	500,000	500,000
Sandstone: e/					
Rough stone including crushed thousand tons Paving	2,400 14,000	2,400 14,000	2,400 14,000	2,400 15,000	2,400 15,000

See footnotes at end of table.

## TABLE 1--Continued BELGIUM: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/		1992	1993	1994	1995	1996 e
METALSC	ontinued					
Stone, sand and gravelContinued:						
Sand and gravel: e/						
Construction sand	thousand tons	9,200	9,200	9,200	9,000	9,000
Foundry sand		525,000	525,000	525,000	500,000	500,000
Dredged sand	thousand tons	2,300	2,300	2,300	2,300	2,300
Glass sand	do.	1,950	1,950	1,950	1,900	1,900
Other sand	do.	2,800	2,800	2,800	2,800	2,800
Gravel, dredged	do.	4,900	5,000	5,000	5,000	5,000
Sulfur: e/						
Byproduct:						
Elemental		160,000	160,000	160,000	160,000	160,000
Other forms		140,000	140,000	140,000	140,000	140,000
Total		300,000	300,000	300,000	300,000	300,000
Sulfuric acid, oleum	thousand tons	1,910	2,000	2,000	2,000	2,000
MINERAL FUELS AND RE	ELATED MATERIALS					
Carbon black e/		1,700	1,700	1,700	1,500	1,500
Coal, bituminous		226,000				
Coke, all types		4,510,000	3,895,000	3,673,000	3,600,000 e/	3,600,000
Gas:						
Manufactured e/	thousand cubic meters	551,000 5/	550,000	550,000	550,000	550,000
Natural (byproduct of coalmining	g):					
Gross	do.	7,500				
Marketable	do.	4,000				
Petroleum refinery products:						
Liquefied petroleum gas	thousand 42-gallon barrels	4,330	4,620	5,930	5,500 e/	5,500
Naphtha and white spirit e/	do.	8,600	9,200	9,200	9,000	9,000
Gasoline	do.	52,400	47,700	48,500	50,000 e/	50,000
Jet fuel	do.	13,700	12,100	13,200	13,000 e/	13,000
Kerosene	do.	566	597	566	600 e/	600
Distillate fuel oil	do.	80,500	79,800	85,100	85,000 e/	85,000
Refinery gas e/	do.	3,500	3,500	3,500	3,500	3,500
Residual fuel oil	do.	44,800	43,900	37,600	38,000 e/	38,000
Bitumen e/	do.	4,000	4,000	4,000	4,000	4,000
Other e/	do.	8,500	8,500	8,500	8,500	8,500
Refinery fuel and losses	do.	12,300	11,700	12,000	12,000 e/	12,000
Total e/	do.	233,196	225,617	228,096	229,100	229,100

e/ Estimated. r/ Revised.

1/ Table includes data available through Mar. 1997.

2/ In addition to the commodities listed, Belgium produced a number of other metals and alloys, for which only aggregate output figures were available.

3/ Data not reported; derived by taking reported total lead output plus exports of lead bullion less imports of lead bullion.

4/ Data represent secondary refined lead output less remelted lead; as such, the figures are probably high because they include some lead that was sufficiently pure as scrap that it did not require resmelting; but data are not adequate to permit differentiation.

5/ Reported figure.

# TABLE 2 BELGIUM: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

(Thousand metric tons unless otherwise specified)

		Major operating companies		Annual
	ommodity	and major equity owners	Location of main facilities	capacity
Cadmium, metal	tons	Vieille-Montagne NV	Balen-Wezel	1,550
Do.	do.	NV Metallurgie Hoboken-Overpelt SA	Overpelt	
		(NV MHO SA)		600
Cement		Major companies:		8,400
Do.		Cimenteries CBR SA (Societe Generale de	Plants at Lixhe, Mons/Obourg,	
		Belgique, or SGB)	Harmignies, Marchienne, Ghent,	
			et al.	3,200
Do.		Ciments d'Obourg SA	Plants at Obourg and Thieu	2,800 1
Do.		Compagnie des Ciment Belge	Plant at Gaurain-Ramecroix	
		(Ciments Francais)		2,400
Copper		Metallurgie Hoboken-Overpelt SA	Smelter at Antwerp-Hoboken	50
**		(Union Minière SA)	Refinery at Olen	330
Do.		Metallo-Chimique NV	Smelter at Beerse	80
Dolomite		Carsambre SA Dolomeuse	Quarry at Floreffe	300
Do.		do.	Quarry at Marche les Dames	600
Do.		do.	Plant at Namur	37
Do.		SA de Marche-les-Dames	Quarries at Vezin and Scalaigneaux	
			and Scalaigneaux	300
Do.		do.	Plant at Vezin	35
 Do.		SA des Dolomies de Marche-les-Dames	Quarry at Nameche	300
		bir des Bolonnes de l'harene les Banes	Of which:	
Do.		do.	Soft-burned	500
Do.		do.	Dead-burned	200
Do.		SA Dolomies de Villiers-le-Gambon	Quarry at Villiers-le-Gambon	300
Lead, metal		Metallurgie Hoboken-Overpelt SA	Smelter at Antwerp-Hoboken	90
Doud, moun		(Union Minière SA)	Refinery at Antwerp-Hoboken	125
Petroleum, refined	42-gallon barrels per day	Refineries:	Remery at Antwerp Hoboken	602,000
<u>retroicuin, retnicu</u>	42 ganon barrens per day	Keimeries.		Of which:
Do.	do.	Fina Raffinaderji Antwerp	Refinery at Antwerp	(268,000)
 	do.	SA Esso NV	do.	(239,000)
 	do.	Belgian Refining Corp.	do.	(80,000)
 	do.	Nynas Petroleum NV	do.	(125,000)
Steel:	d0.	Companies:	dð.	14.000
Steel.		Companies.		Of which:
Do.		Cockerill Sambre SA	Plants at Liège and Charleroi	(5,000)
D0.			Plants at Liège and Charleroi	(3,000)
		(Government of Wallonia, 80%)		
Do.		Sidmar NV (Belgian Government 28.11%; ARBED		(2.0.0)
		in Luxembourg, 66.97%)	Plant at Ghent	(3,960)
Do.		Usines Gustave Boël NV	Plant at La Louviere	(2,020)
Do.		Forges de Clabecq SA	Plant at Clabecq	(1,500)
Do.		SA FAbrique de Fer de Charleroi	Plant at Charleroi	(600)
Do.		ALZ NV	Plant at Genk-Zuid	(360)
Do.		New Tubemeuse (NTW) SA	Plant at Flemalle	(300)
Zinc, metal		Vieille-Montagne SA (Union Minière SA)	Smelter at Balen-Wezel	385

1/Includes the capacity of the company SA Ciments de Haccourt.

TABLE 3

#### BELGIUM-LUXEMBOURG: 1995 BALANCE OF PAYMENTS, SELECTED MINERAL COMMODITIES 1/

(Thousand dollars)

Mineral commodity	Exports	Imports	Net gain	Exports to	Imports from	Net gain
	to EU	from EU	or (loss)	the world	the world	or (loss)
Crude industrial minerals:						
Clays, kaolin	\$39,117	\$60,067	(\$20,950)	\$47,470	\$79,193	(\$31,723)
Feldspar	4	3,486	(3,482)	155	9,719	(9,564)
Magnesite	145	119	26	157	182	(25)
Marble	6,866	9,550	(2,684)	7,193	9,886	(2,693)
Slate	2,498	6,636	(4,138)	2,602	6,861	(4,259)
Other	515,587	503,531	12,056	600,281	781,153	(180,872)
Total	564,217	583,389	(19,172)	657,858	886,994	(229,136)
Metalliferous ores:						
Copper	6	151	(145)	630	11,839	(11,209)
Lead	6,857	15,204	(8,347)	6,920	70,051	(63,131)
Tin	22	2	20	103	6	97
Zinc	99,302	66,793	32,509	100,288	177,193	(76,905)
Other (including waste and scrap)	451,734	1,549,688	(1,097,954)	720,203	2,726,837	(2,006,634)
Total	557,921	1,631,838	(1,073,917)	828,144	2,985,926	(2,157,782)
Nonmetallic mineral manufactures:						,
Diamonds, natural, not set or strung	1,563,654	2,921,895	(1,358,241)	10,693,881	10,268,270	425,611
Lime	247	8,940	(8,693)	259	8,941	(8,682)
Mica	20,603	1,019	19,584	20,603	1,749	18,854
Millstones, grindstones, etc.	66,010	48,164	17,846	75,381	66,026	9,355
Portland cement	110,958	40,830	70,128	247,077	52,414	194,663
Precious stones, natural	3,187	816	2,371	30,425	33,949	(3,524)
Precious stones, synthetic	1,183	549	634	2,061	1,921	140
Stone, building	64,761	107,825	(43,064)	69,389	120,504	(51,115)
Sulfuric acid	21,627	17,796	3,831	23,070	18,955	4,115
Metals:						•
Aluminum: Metal including alloys:						
Unwrought	209,857	628,078	(418,221)	221,371	763,369	(541,998)
Semimanufactures	1,128,045	613,559	514,486	1,330,793	692,216	638,577
Total	1,337,902	1,241,637	96,265	1,552,164	1,455,585	96,579
Iron and steel	8,479,968	4,252,481	4,227,487	10,065,056	4,825,523	5,239,533
Magnesium: Metal including alloys:						
Scrap	121	5	116	1,217	5	1,212
Unwrought	8,398	9,168	(770)	8,415	13,008	(4,593)
Semimanufactures	2,837	3,356	(519)	3,129	3,903	(774)
Total	11,356	12,529	(1,173)	12,761	16,916	(4,155)
Mercury	50	121	(71)	80	165	(85)
Other nonferrous metals	2,474,261	978,639	1,495,622	2,915,386	2,007,170	908,216
Total, metals	10,957,116	5,234,597	5,722,519	12,983,651	6,836,761	6,146,890
Mineral fuels	3,201,678	6,570,336	(3,368,658)	4,423,277	9,246,323	(4,823,046)

1/ Table prepared by Glenn J. Wallace, International Data Unit.

 TABLE 4

 BELGIUM: EXPORTS AND REEXPORTS OF DIAMOND

	19	94	1995		1996	
	Quantity	Value	Quantity	Value	Quantity	Value
Destinations	(carats)	(thousands)	(carats)	(thousands)	(carats)	(thousands)
Sorted, unworked or simply sawn, cleaved, or bruted:						
Hong Kong	1,006,262	\$46,125	1,822,776	\$37,003	1,721,275	\$50,95
India	64,068,213	1,577,182	82,547,659	2,249,640	92,531,981	2,083,23
Israel	6,325,339	1,753,183	7,051,162	1,835,839	6,298,635	1,962,88
Malaysia	433,042	79,825	415,042	78,298	375,367	72,64
South Africa	117,316	71,178	89,718	53,388	154,400	48,55
Sri Lanka	608,774	95,938	1,244,669	211,220	733,684	108,92
Switzerland	272,015	56,414	507,073	144,882	1,411,670	154,02
Thailand	1,146,364	203,983	1,244,669	211,220	1,303,693	219,93
Tunisia	26,971	4,417	33,700	5,131	36,168	5,95
United Kingdom	4,513,043	528,574	5,003,377	578,951	7,876,475	825,33
United States	626,142	362,769	533,905	365,429	530,992	398,94
Unspecified	1,216,135	145,847	460,771	440,294	3,827,633	315,23
Total	80,359,616	4,925,435	100,954,525	5,842,745	116,801,973	6,246,63
Worked but not mounted or set:						
Germany	274,662	206,660	312,174	228,281	315,215	214,97
Hong Kong	767,866	608,939	828,602	539,027	1,002,874	568,50
Israel	400,191	270,355	526,382	342,204	634,934	405,122
Italy	236,920	119,463	311,296	148,354	370,723	196,05
Japan	454,846	610,170	527,585	691,432	506,836	549,17
Switzerland	500,650	397,461	615,554	472,952	587,933	482,26
Thailand	239,842	161,771	281,740	205,528	293,465	223,99
United Kingdom	196,729	226,120	189,034	263,017	212,571	317,91
United States	1,594,325	1,251,256	1,572,308	1,312,395	1,670,123	317,91
Unspecified	817,094	541,769	1,029,256	693,277	1,378,337	810,25
Total	5,483,125	4,393,964	6,193,931	4,896,467	6,973,011	5,191,51

Source: Diamond International, Mar.-Apr. 1997, No46, London, United Kingdom.

TABLE 5BELGIUM: IMPORTS OF DIAMONDS

	1994		19	95	1996	
	Quantity	Value	Quantity	Value	Quantity	Value
Sources	(carats)	(thousands)	(carats)	(thousands)	(carats)	(thousands)
Natural rough, unsorted, and unworked or						
simply sawn, cleaved, or bruted:						
Angola	689,443	\$132,687	562,665	\$152,948	820,153	\$229,375
Australia	9,245,275	58,016	9,158,490	62,680	27,341,654	191,805
Commonealth of Independent States	1,201,056	65,253	4,802,359	131,856	5,124,706	140,270
Côte d'Ivoire	605,078	94,051	1,614,396	121,046	5,124,706	202,685
Israel	1,633,937	339,423	2,667,741	366,300	2,865,656	451,316
Liberia	3,268,982	394,106	10,677,741	757,338	12,329,009	611,532
Sierra Leone	526,743	107,134	455,062	88,277	556,457	92,747
Switzerland	369,134	58,108	635,814	127,618	1,569,869	111,008
United Kingdom	19,473,831	2,331,784	28,862,328	2,474,073	39,911,802	2,745,058
United States	1,279,561	127,275	963,080	103,847	509,826	102,718
Zaire, Republic of	17,047,209	940,806	23,113,137	1,067,263	22,755,452	1,270,511
Unspecified	8,964,174	783,305	13,351,744	897,770	13,889,327	940,229
Total	64,304,423	5,431,948	95,864,524	6,351,016	129,888,307	7,089,254
Worked but not mounted or set:						
Commonwealth of Independent States	430,950	429,124	515,759	431,689	822,136	583,577
Germany	130,862	87,061	163,280	125,197	155,536	111,557
Hong Kong	304,382	207,782	276,698	188,375	274,680	172,785
India	1,888,913	605,959	2,076,986	724,182	2,424,577	755,234
Israel	460,859	482,312	458,301	474,617	511,631	544,051
South Africa	81,236	120,849	87,648	136,855	91,295	143,335
Sri Lanka	232,328	108,575	240,111	114,283	243,522	109,047
Switzerland	105,704	204,182	193,787	255,256	147,436	276,009
Thailand	395,514	203,806	430,544	231,311	378,130	214,028
United Kingdom	108,101	149,830	103,003	195,419	106,808	235,772
United States	483,997	443,815	579,267	508,253	685,971	597,948
Unspecified	666,320	472,993	758,472	507,621	914,893	594,184
Total	5,289,166	3,516,288	5,883,856	3,893,058	6,756,615	4,337,527

Source: Diamond International, Mar.-Apr 1997, No. 46, London, United Kingdom.

### TABLE 6 LUXEMBOURG: PRODUCTION OF MINERAL COMMODITIES 1/2/

#### (Metric tons unless otherwise specified)

Commodity	1992	1993	1994	1995	1996 e/
Cement, hydraulic e/	600,000	620,000	620,000	600,000	600,000
Gypsum and anhydrite, crude e/	400	400	400	400	400
Iron and steel, metal:					
Pig iron	2,256,000	2,411,000	1,927,000	1,028,000 r/	1,200,000
Steel:					
Crude	3,068,463	3,293,000	3,092,000	3,078,812 r/	3,000,000
Semimanufactures	3,590,000	3,650,000	3,620,000	3,600,000 r/e/	3,500,000
Phosphates: Thomas slag: e/					
Gross weight	519,000 3/	555,000	472,000	500,000	500,000
P2O5 content	93,000	100,000	75,000	75,000	75,000

e/ Estimated. r/ Revised.

 $1/\,Table$  includes data available through Mar. 1997.

2/ Construction materials such as dimension stone and sand and gravel are also produced, but the amounts are no longer reported, and no basis exists for the formulation of reliable estimates of output levels.

3/ Reported figure.

# TABLE 7 LUXEMBOURG: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

#### (Thousand metric tons)

	Major operating companies		Annual
Commodity	and major equity owners	Location of main facilities	capacity
Cement	SA des Ciments Luxembourgeois (ARBED, 50%; SGB, 25%)	Plant at Esch-sur-Alzette	
			450
Do.	Intermoselle SARL (ARBED, 33%)	Plant at Rumelange	1,000
Steel	Acieries Reunies de Burbach-Eich-Dudelang (ARBED)	Plants at Differdange, Dudelange, Esch-Belval,	5,320
	(SGB, 25%; Belgian Government, 31%; and others)	and Esch-Schifflange	