THE MINERAL INDUSTRIES OF BELGIUM AND LUXEMBOURG

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BELGIUM

Belgium, which is located at the heart of one of the world's most highly developed industrialized regions, has a highly developed market economy. The country had diversified industrial and commercial bases. Belgium developed an excellent transportation infrastructure of canals, highways, ports, and railways to integrate its industry with that of its neighbors.

Mining was less important than in the past. The deposits of iron ore, lead, and zinc were exhausted, and coal mining ceased in 1992 owing to high production costs. Although the country is small, Belgium has a well-developed industrial minerals sector. The country was a producer of industrial materials, such as carbonates, and construction materials, such as dolomite, limestone, and silica sand. Trading of diamond and the processing of minerals and metals were the main activities in the mineral industry of Belgium.

Belgium has an area of 30,530 square kilometers (km^2) and borders France, Germany, Luxembourg, the Netherlands, and the North Sea. Belgium is one of the smallest countries in Europe with an east-west extent of 290 kilometers (km) and with a north-south extent of 235 km. In 2004, Belgium's gross domestic product (GDP) at purchasing power parity was $309 billion, and per capita income was $30,062. The annual growth rate was 1.5% in real terms. The unemployment rate was 7.8% (International Monetary Fund, 2005§[1]).

The mineral-processing industry was a significant contributor to the Belgian economy in 2004. The refining of copper, zinc, and minor metals and the production of steel were the leading mineral industries in Belgium. The extraction and recovery of nonferrous metals were carried out in large-scale high-technology plants. Europe's largest electrolytic copper and zinc refineries and one of its leading lead refineries were in Belgium. The country was also a producer of cadmium, germanium, selenium, and tellurium as byproducts from base metals smelting and refining operations.

Production of mineral commodities generally remained stable during 2004. As in the past, any increases in production generally followed the lines of exported goods, such as value-added nonferrous metals (table 1). Table 2 lists the principal mining and mineral-processing facilities in Belgium with their locations and capacities.

Environmental programs and policies in Belgium were the responsibility of the Direction Générale Environnement (Federal Ministry of the Environment) and its comparable ministries in Flanders and Wallonia, which were two separate regions of the country. Environmental programs ranged from treating oil effluent to reducing air-pollution emissions. The environment was exposed to intense pressures from human activities— crop cultivation, a dense transportation network, extensive animal breeding, and urbanization. Natural hazards included flooding along rivers and in areas of reclaimed coastal land (U.S. Central Intelligence Agency, 2005§).

Belgium was heavily reliant on international trade. Belgium, Luxembourg, and the Netherlands comprise the BENELUX customs unit. Since 1921, close economic union between Belgium and Luxembourg, which is known as the Belgium-Luxembourg Economic Union (BLEU), has involved the parity of currency, integrated foreign trade (including statistics), a balance-of-payment account, and a joint central bank. International trade data for Belgium was covered in the context of BLEU and, as such, covered the exports, reexports, and imports of Luxembourg (U.S. Commercial Service, 2004b§).

The country's GDP was dominated by a very large service sector (more than 70% of the GDP) followed by manufacturing (26%) and agriculture (1.4%). Exports accounted for more than 74% of Belgium's GDP, which made it one of the highest per capita exporters in the world. More than 76% of Belgium's exports went to other member states of the European Union (EU). In 2003 (the latest date for which data were available), more than 8% of Belgium's imports came from the United States. The country ranked as the 11th leading commercial power worldwide and was the 9th leading trading partner of the United States (U.S. Commercial Service, 2004a§).

n.v. Umicore s.a. successfully developed a new generation of lithium compounds that are based on cobalt, manganese, and nickel to meet the demand from the rechargeable battery industry, specifically from lithium-ion battery manufacturers, for products that contain less cobalt. The new compounds contain up to three times less cobalt but provide an energy density comparable to lithium cobalt dioxide. Production could start in 2005. The performance of lithium-ion batteries is desirable in many applications where energy must be stored in the lightest and most compact form (n.v. Umicore s.a., 2004§).

Umicore reported that it would spin off its copper business to its existing shareholders in a move designed to allow Umicore to focus on the development and production of specialty materials. The copper business included the Olen refinery, which produced 343,180 metric tons (t) of cathode in 2004. The new copper company would be named Cumerio SA, and its headquarters would be located in Brussels (Mining Journal, 2005).

The Arcelor Group, which was the world's leading steel producer in 2004, ordered a 350,000-metric-ton-per-year-capacity slab grinder for its new Carinox stainless steelworks under construction at Charlerol. Maximum slab weight for the four grinding machines fed with slab from a continuous caster will be 35 t and up to 12 meters in length and 1,600 millimeters in thickness (Metal Bulletin, 2004).

[1]References that include a section mark (§) are found in the Internet References Cited sections.

Umicore will also reduce zinc production by 130,000 t to concentrate on value-added zinc products. This reduction will involve the company's smelters at Belen, Belgium, and Auby and Calais, France. The company said the reorganization was necessary to safeguard the competitive strength of its operations. Apart from zinc metal, Umicore produced high-value-added zinc alloys and zinc-based chemicals and had a zinc recycling business (Mining Journal, 2005).

The diamond district of Antwerp, which comprised 4 exchanges and 1,500 diamond companies, was the most important diamond distribution center in the world. Two-way trade in polished diamond exceeded $13 billion in 2003 (the latest date for which data were available). Exports of polished diamond rose by 11.9% to reach $7.2 billion from $6.4 billion in 2002. The United States remained the most important export market for cut diamond and accounted for $2.6 billion. The diamond sector accounted for 8% of Belgium's total exports (Diamond High Council, 2004).

Belgium, which has been an important producer of marble for more than 2,000 years, was recognized for the diversity and quality of its dimension stone. A dark blue-gray crinoidal limestone, which is referred to as "petit granit," was one of the most important facing stones that the country produced. All the marble quarries are located in Wallonia. Red, black, and gray are the principal color ranges of the marble, most of which was exported.

Solvay SA of Belgium and K+S Aktiengesellschaft of Germany announced the signing of a nonbinding letter of intent for the sale of Solvay's 38% interest in European Salt Company GmbH Co. KG (ESCO). K+S already owned 62% of the joint venture and was a major player in the European salt market. Solvay would retain the salt production activities needed for internal use and would continue to supply brine to ESCO from integrated activities, but would not be involved in any open market salt sales (Industrial Minerals, 2004).

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

The four ports in Flanders (Antwerp, Ghent, Ostend, and Zeebrugge), which are all within 100 km of each other, were leading players in international and intra-European cargo handling. The seaport of Antwerp was a particularly important link in the chain of international trade. Antwerp was the leading port for steel products; the 2d leading port in Europe after Rotterdam, the 4th leading port in the world, and the 10th leading port in the world for container traffic (Antwerp Municipal Port Authority, 2005).

Outlook

Belgium is expected to remain a major diamond trader in the world and a leading player in international and intra-European cargo handling.

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LUXEMBOURG

In 2004, Luxembourg's mineral industry was composed mainly of mineral information systems, mineral trading, and raw materials processing. Mining in Luxembourg was represented by small industrial mineral operations that produced material for domestic consumption. These minerals included dolomite, limestone, sand and gravel, and slate (table 1). Luxembourg's principal producers of industrial mineral products are listed in table 2.

Luxembourg has an area of 2,586 km^2 and had a population of 468,570. In 2004, the country's GDP based on purchasing power parity was $28.9 billion, and per capita income was $63,609. The annual growth rate was 1.2% in real terms; the inflation rate, 2.2%; and the unemployment rate, about 5% (International Monetary Fund, 2005§).

As a member of the BLEU, trade statistics for Luxembourg are inextricably linked with those of Belgium and, therefore, cannot be listed individually. The iron and steel industry was Luxembourg's most important mineral industry sector; steel was the country's main export commodity.

Acieries Reunies de Burbach-Eich-Dudelang (ARBED) dominated the country's mineral industry and was the major producer of crude steel, pig iron, and stainless steel, all of which were produced from imported material.

In January 2002, ARBED merged with the Usinor Group of France and Aceralia S.A. of Spain to form the Arcelor Group, which was the world's leading steel company in 2004. Arcelor was focusing its activities on four sectors—flat carbon steel products; long carbon steel products; stainless steel products; and distribution, processing, and trading. The total combined annual steel production of the Group was about 44 million metric tons (Mt) (Arcelor Group, 2004§).

Outlook

Luxembourg is expected to continue as a producer and exporter of steel; industrial mineral production is expected to be limited to domestic consumption.

Internet References Cited

Arcelor Group, 2004, Steel solutions, accessed June 9, 2005, at URL http://www.arcelor.com/index.php?page=0.
International Monetary Fund, 2005 (April), Luxembourg, World Economic Outlook Database, accessed June 9, 2005, at URL http://www.imf.org/external/pubs/ft/weo/2005/01/data/dbcoutm.cfm.

Major Sources of Information

Institute National de Statistiques
Rue de Louvain 44
1000 Brussels, Belgium
Service Geologique de Belgique
Rue Jenner 13
1040 Brussels, Belgium
Service Central de la Statistique et des Études Economiques (STATEC)
6 Boulevard Royal
2013 Luxembourg

TABLE 1
BELGIUM AND LUXEMBOURG: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Country and commodity		2000	2001	2002	2003	2004[e]
BELGIUM[2]						
Metals:						
Aluminum, secondary including unspecified metals[e]		1,000	500	500	300	300
Arsenic, white[e]		1,500	1,500	1,500	1,200	1,200
Bismuth, metal[e]		700	700	700	600	500
Cadmium, primary		1,148	1,236	117 [e]	100 [r]	--
Cobalt, primary[3]		1,110 [e]	1,090 [e]	1,135	1,704 [r]	1,600
Copper:						
Blister, secondary		144,700	138,200	125,900	117,500	140,000
Unwrought, total, primary and secondary including alloys[e]		485,000	475,000	483,978 [4]	485,000	475,000
Refined, primary and secondary including alloys[e]		423,100	425,000 [e]	423,000	425,000 [e]	423,000
Iron and steel:						
Pig iron	thousand metric tons	8,472	7,732	8,053	8,000 [e]	8,000
Steel:						
Crude	do.	11,635	10,763	11,495	11,128	11,698
Hot-rolled products	do.	13,689	12,770	12,000 [e]	12,000 [e]	12,000
Lead, refined, secondary		98,000	100,000 [r]	88,000 [r]	65,000 [r]	63,000
Selenium[e]		200	200	200	200	200
Tin, metal, secondary including alloys[e]		8,500	8,000	5,000	5,000	5,000
Zinc:[e]						
Slab:						
Primary		224,000 [4]	225,000 [4]	239,000	244,000 [r, 4]	263,000 [4]
Secondary, possibly remelted zinc		28,000	67,000	70,000 [r, 4]	42,000 [r, 4]	46,000 [4]
Total		252,000	292,000	309,000 [r]	286,000 [r, 4]	309,000 [4]
Powder		30,000	25,000	25,000	20,000	25,000
Industrial minerals:						
Barite[e]		30,000	30,000	30,000	30,000	30,000
Cement, hydraulic	thousand metric tons	8,171	8,064	8,152	8,000 [e]	8,000
Clay, kaolin[e]	do.	300	300	300	300	300
Lime and dead-burned dolomite, quicklime[e]	do.	1,963 [4]	1,800	1,800	1,800	1,800
Nitrogen, N content of ammonia	do.	863	860 [e]	842	874	857
Sodium sulfate[e]	do.	250	250	250	250	250
Stone, sand and gravel:[e]						
Calcareous:						
Alabaster		1,200	1,200	1,200	1,200	1,200
Dolomite	thousand metric tons	3,500	3,500	3,500	3,500	3,500
Limestone	do.	30,000	30,000	30,000	30,000	30,000
Marble:						
In blocks		300	300	300	300	300
Crushed and other	cubic meters	100	100	100	100	100
Petit granite, Belgian bluestone:						
Quarried	thousand cubic meters	1,200	1,200	1,200	1,200	1,200
Sawed	do.	100,000	100,000	100,000	100,000	100,000
Worked	do.	15,000	15,000	15,000	15,000	15,000
Crushed and other	do.	800,000	800,000	800,000	800,000	800,000
Porphyry, all types	thousand metric tons	4,000	4,000	4,000	4,000	4,000
Quartz and quartzite		500,000	500,000	500,000	500,000	500,000
Sandstone:						
Rough stone including crushed	thousand metric tons	2,400	2,400	2,400	2,400	2,400
Paving		14,000	14,000	14,000	14,000	14,000
Sand and gravel:						
Sand:						
Construction	thousand metric tons	8,500	8,500	8,500	8,500	8,500
Foundry		500,000	500,000	500,000	500,000	500,000
Dredged	thousand metric tons	2,000	2,000	2,000	2,000	2,000
Glass	do.	1,800	1,800	1,800	1,800	1,800
Other	do.	2,800	2,800	2,800	2,800	2,800
Gravel, dredged	do.	5,000	5,000	5,000	5,000	5,000

See footnotes at end of table.

TABLE 1--Continued
BELGIUM AND LUXEMBOURG: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Country and commodity		2000	2001	2002	2003	2004[e]
BELGIUM--Continued[2]						
Industrial minerals--Continued:						
Sulfur:[e]						
Byproducts:						
Elemental		230,000 [4]	230,000	225,000	225,000	225,000
Other forms		180,000 [4]	180,000	175,000	175,000	175,000
Total		410,000 [4]	410,000	400,000	400,000	400,000
Sulfuric acid, byproduct of petroleum	thousand metric tons	2,000	2,000	2,000	2,000	2,000
Mineral fuels and related materials:						
Carbon black[e]	do.	1,000	1,000	1,000	1,000	1,000
Coke, all types	thousand cubic meters	3,104	3,222	2,967	3,200 [e]	3,200
Gas, manufactured		360,155	342,572 [r]	339,807 [r]	340,000 [e]	340,000
Petroleum refinery products:[e]						
Liquefied petroleum gas	thousand 42-gallon barrels	8,758 [4]	9,000	9,000	9,000	9,000
Naphtha and white spirit	do.	17,213 [4]	16,000	16,000	16,000	16,000
Gasoline	do.	45,152 [4]	50,000	50,000	50,000	50,000
Jet fuel	do.	18,544 [4]	18,000	18,000	18,000	18,000
Distillate fuel oil	do.	93,086 [4]	90,000	90,000	90,000	90,000
Refinery gas	do.	3,500	3,500	3,500	3,500	3,500
Residual fuel oil	do.	49,557 [4]	50,000	50,000	50,000	50,000
Bitumen	do.	5,000	5,000	5,000	5,000	5,000
Other	do.	8,500	10,000	10,000	10,000	10,000
Refinery fuel and losses	do.	12,000	10,000	10,000	10,000	10,000
Total	do.	261,000	262,000	262,000	262,000	262,000
LUXEMBOURG[5]						
Metals, steel:						
Crude	thousand metric tons	2,571	2,725	2,736	2,675 [r]	2,684 [4]
Semimanufactures	do.	3,019	2,974	2,800	2,800 [e]	2,800
Industrial minerals:						
Cement, hydraulic[e]		750,000	750,000 [4]	700,000	700,000	700,000
Gypsum and anhydrite, crude[e]		400	400	400	400	400
Phosphates, Thomas slag:[e]						
Gross weight		475,000	475,000	475,000	475,000	475,000
P_2O_5 content		70,000	70,000	70,000	70,000	70,000

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. -- Zero.
[1]Table includes data available through March 2005.
[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]Production reported by n.v. Umicore s.a. includes production from China and South Africa.
[4]Reported figure.
[5]Construction materials such as dimension stone and sand and gravel are also reproduced, but the amounts are no longer reported, and no basis exists for the formulation of reliable estimates of output levels.

TABLE 2
BELGIUM AND LUXEMBOURG: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
BELGIUM				
Cadmium, metal	metric tons	n.v. Umicore s.a. (Sté. Générale de Belgique, 50.2%)	Balen	1,800
Cement		Major companies:	Plants:	8,400
Do.		Cimenteries CBR SA (Sté. Générale de Belgique)	Major plants at Lixhe, Mons/Obourg, Harmignies, Marchienne, and Ghent	3,200
Do.[1]		Ciments d'Obourg SA (Holcim Group)	Plants at Obourg and Thieu	2,800
Do.		Compagnie des Ciment Belge (Ciments Francais)	Plant at Gaurain-Ramecroix	2,400
Cobalt	metric tons	n.v. Umicore s.a. (Sté. Générale de Belgique, 50.2%)	Refinery at Olen	500
Copper		do.	Smelter at Antwerp-Hoboken	50
Do.		do.	Refinery at Olen	330
Do.		Metallo-Chimique NV	Smelter at Beerse	80
Dolomite		SA Dolomeuse (Group Lhoist)	Quarry at Marche les Dames	500
Do.		do.	Plant at Marche les Dames	750
Do.		SA de Marche-les-Dames (Group Lhoist)	Quarries at Nameche	3,000
Do.		do.	Plant at Nameche	3,000
Do.		SA Dolomies de Merlemont (Group Lhoist)	Quarry at Philippeville	100
Lead, metal		n.v. Umicore s.a. (Sté. Générale de Belgique, 50.2%)	Smelter at Antwerp-Hoboken	90
Do.		do.	Refinery at Antwerp-Hoboken	125
Limestone		Carmeuse S.A. (Long View Investment NV)	Mines and plant at Engis	1,850
Do.		do.	Mines and plant at Frasnes	450
Do.		do.	Mines and plant at Maizeret	850
Do.		do.	Mines and plant at Moha	800
Do.		SA Transcar (Royal Volker Stevin)	Mines and plant at Maizeret	850
Petroleum, refined	42-gallon berrels per day	Companies:	Refineries, of which:	
		TotalFina S.A.	Refinery at Antwerp	268,000
Do.	do.	SA Esso NV	do.	239,000
Do.	do.	Nynas Petroleum NV	do.	125,000
Do.	do.	Belgian Refining Corp.	do.	80,000
Do.	do.	Petroplus Refining Antwerp NV	do.	55,000
Salt		Zoutman NV	Plant at Roeselare	200
Sand, silica		SRC-Sibelco SA	Mines and plants at Lommel, Mol, and Maasmechelen	500
Steel		Companies:	Of which:	14,000
		Cockerill Sambre SA (Government of Wallonia, 80%)	Plants at Liege and Charleroi	(5,000)
Do.		Sidmar NV (Belgian Government 28.24%;, and Arcelor Group, 71.76%)	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		n.v. Umicore s.a. (Sté. Générale de Belgique, 50.2%)	Smelter and refinery at Balen	450
LUXEMBOURG				
Cement		SA des Ciments Luxembourgeois (Acieries Reunies de Burbach-Eich-Dudelang, 50.2%, Sté. Générale de Belgique, 25%)	Plant at Esch-sur-Alzette	450
Do.		Intermoselle SARL (Acieries Reunies de Burbach-Eich) Dudelang, 33%)	Plant at Rumelange	1,000
Steel		Arcelor Group	Plants at Differdange, Dudelange, Esch-Belval, Esch-Schifflange	5,320

[1]Includes the capacity of the company SA Ciments de Haccourt.